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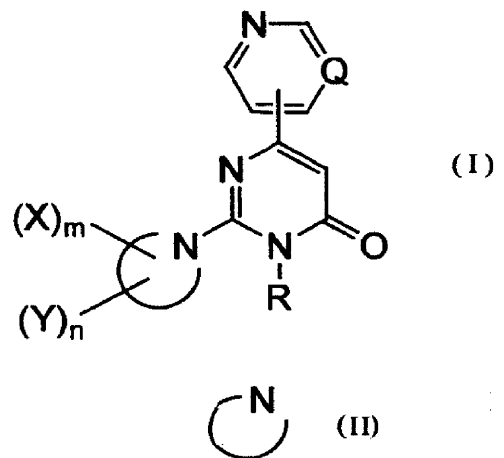
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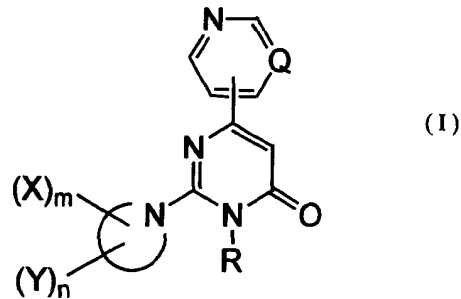
2,3,6-三取代的-4-嘧啶酮衍生物

[57] 摘要

一种具有 τ 蛋白激酶 1 抑制活性的式 (I) 表示的嘧啶酮衍生物、其盐、其溶剂化物或其水合物, 见式 (I) 其中 Q 表示 CH 或氮原子; R 表示 $C_1 - C_{12}$ 烷基; 环见式 (II) 表示哌嗪环或哌啶环; 每个 X 独立地表示 $C_1 - C_8$ 烷基、可任选地部分氢化的 $C_6 - C_{10}$ 芳环、茛满环等; m 表示 1 到 3 的整数; 每个 Y 独立地表示卤素原子、羟基、氰基、 $C_1 - C_6$ 烷基等; n 表示 0 到 8 的整数; 当 X 和 Y 基团或两个 Y 基团连接于相同的碳原子时, 它们可彼此结合形成 $C_2 - C_6$ 亚烷基。



1. 一种式 (I) 表示的嘧啶酮衍生物、其盐、其溶剂化物或其水合物：



其中 Q 表示 CH 或氮原子；

R 表示可被取代的 C₁-C₁₂ 烷基；

环 C_n^{N} 表示哌嗪环或哌啶环；

每个 X 独立地表示 X¹-X²。

15 其中 X¹ 表示：氧代；可被取代的 C₁-C₈ 烷基；可被取代的 C₃-C₈ 环烷基；可被取代的可任选地部分氢化的 C₆-C₁₀ 芳环；可被取代的茛满环；具有 1 到 4 个选自氧原子、硫原子和氮原子的杂原子并且总共具有 5 到 10 个成环原子的可任选取代的杂环；芳烷氧基；由 -N(Ra)(Rb) 表示的基团，其中 Ra 和 Rb 相同或不同，并且各自为氢、可被取代的 C₁-C₄

20 烷基、可被取代的芳烷基、可被取代的 C₃-C₈ 环烷基、可被取代的芳基、可被取代的 C₁-C₈ 烷基羰基、可被取代的 C₃-C₈ 环烷基羰基、可被取代的芳烷基羰基、可被取代的 C₆-C₁₀ 芳基羰基、可被取代的 C₁-C₈ 烷基磺酰基、可被取代的 C₃-C₈ 环烷基磺酰基、可被取代的芳烷基磺酰基、可被取代的 C₆-C₁₀ 芳基磺酰基、可被取代的 C₁-C₈ 烷氧羰基、可被取代的 C₃-C₈ 环烷氧羰基、可被取代的芳烷氧羰基、可被取代的 C₆-C₁₀ 芳氧羰基、氨基羰基、可被取代的 N-C₁-C₈ 烷基氨基羰基、可被取代的 N,N'-C₁-C₈ 二烷基氨基羰基、可被取代的 N-C₁-C₈ 烷基-N'-C₃-C₈ 环烷基氨基羰基、可被取代的 N-C₁-C₈ 烷基-N'-芳烷基氨基羰基、可被取代的 N-C₁-C₈ 烷基-N'-C₆-C₁₀ 芳基氨基羰基、可被取代的 C₃-C₈ 环烷基氨基羰基、可被取代的 N,N'-C₃-C₈ 二环烷基氨基羰基、可被取代的 N-C₃-C₈

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环烷基-N'-芳烷基氨基羰基、可被取代的 N-C₃-C₈ 环烷基-N'-C₆-C₁₀ 芳基氨基羰基、可被取代的芳烷基氨基羰基、可被取代的 N,N'-二芳烷基氨基羰基、可被取代的 N-芳烷基-N'-C₆-C₁₀ 芳基氨基羰基、可被取代的 C₆-C₁₀ 芳基氨基羰基、可被取代的 N,N'-C₆-C₁₀ 二芳基氨基羰基、或为具有 1 到 4 个选自氧原子、硫原子和氮原子的杂原子并且总共具有 5 到 10 个成环原子的可任选取代的杂环, 或 Ra 和 Rb 与相邻的氮原子一起形成 4 到 7 元杂环, 所述杂环可进一步在环中包含 1 到 4 个选自以下的基团: 氧原子、硫原子、N-Rc (其中 Rc 表示氢原子、可被取代的 C₁-C₄ 烷基、可被取代的芳烷基、可被取代的 C₃-C₈ 环烷基、可被取代的芳基、可被取代的 C₁-C₈ 烷基羰基、可被取代的 C₃-C₈ 环烷基羰基、可被取代的芳烷基羰基、可被取代的 C₆-C₁₀ 芳基羰基、可被取代的 C₁-C₈ 烷基磺酰基、可被取代的 C₃-C₈ 环烷基磺酰基、可被取代的芳烷基磺酰基、可被取代的 C₆-C₁₀ 芳基磺酰基、可被取代的 C₁-C₈ 烷氧羰基、可被取代的 C₃-C₈ 环烷氧羰基、可被取代的芳烷氧羰基、可被取代的 C₆-C₁₀ 芳氧羰基、氨基羰基、可被取代的 N-C₁-C₈ 烷基氨基羰基、可被取代的 N,N'-C₁-C₈ 二烷基氨基羰基、可被取代的 N-C₁-C₈ 烷基-N'-C₃-C₈ 环烷基氨基羰基、可被取代的 N-C₁-C₈ 烷基-N'-芳烷基氨基羰基、可被取代的 N-C₁-C₈ 烷基-N'-C₆-C₁₀ 芳基氨基羰基、可被取代的 C₃-C₈ 环烷基氨基羰基、可被取代的 N,N'-C₃-C₈ 二环烷基氨基羰基、可被取代的 N-C₃-C₈ 环烷基-N'-芳烷基氨基羰基、可被取代的 N-C₃-C₈ 环烷基-N'-C₆-C₁₀ 芳基氨基羰基、可被取代的芳烷基氨基羰基、可被取代的 N,N'-二芳烷基氨基羰基、可被取代的 N-芳烷基-N'-C₆-C₁₀ 芳基氨基羰基、可被取代的 C₆-C₁₀ 芳基氨基羰基、可被取代的 N,N'-C₆-C₁₀ 二芳基氨基羰基、或表示具有 1 到 4 个选自氧原子、硫原子和氮原子的杂原子并且总共具有 5 到 10 个成环原子的可任选取代的杂环)、羰基、亚磺酰基或磺酰基, 并且所述 4 到 7 元杂环可任选地稠合于可被取代的芳基;

X² 表示键、羰基、亚磺酰基、磺酰基、氧原子、硫原子、可被取代的 C₁-C₄ 亚烷基或 N-Rd (其中 Rd 表示氢原子、可被取代的 C₁-C₄ 烷基、可被取代的芳烷基、可被取代的 C₃-C₈ 环烷基、可被取代的芳基、可被取代的 C₁-C₈ 烷基羰基、可被取代的 C₃-C₈ 环烷基羰基、可被取代的芳

烷基羰基、可被取代的 C₆-C₁₀ 芳基羰基、可被取代的 C₁-C₈ 烷基磺酰基、
 可被取代的 C₃-C₈ 环烷基磺酰基、可被取代的芳烷基磺酰基、可被取代
 的 C₆-C₁₀ 芳基磺酰基、可被取代的 C₁-C₈ 烷氧羰基、可被取代的 C₃-C₈
 环烷氧羰基、可被取代的芳烷氧羰基、可被取代的 C₆-C₁₀ 芳氧羰基、
 5 氨基羰基、可被取代的 N-C₁-C₈ 烷基氨基羰基、可被取代的 N,N'-C₁-C₈
 二烷基氨基羰基、可被取代的 N-C₁-C₈ 烷基-N'-C₃-C₈ 环烷基氨基羰基、
 可被取代的 N-C₁-C₈ 烷基-N'-芳烷基氨基羰基、可被取代的 N-C₁-C₈ 烷
 基-N'-C₆-C₁₀ 芳基氨基羰基、可被取代的 C₃-C₈ 环烷基氨基羰基、可被
 10 取代的 N,N'-C₃-C₈ 二环烷基氨基羰基、可被取代的 N-C₃-C₈ 环烷基-N'
 芳烷基氨基羰基、可被取代的 N-C₃-C₈ 环烷基-N'-C₆-C₁₀ 芳基氨基羰基、
 可被取代的芳烷基氨基羰基、可被取代的 N,N'-二芳烷基氨基羰基、可
 被取代的 N-芳烷基-N'-C₆-C₁₀ 芳基氨基羰基、可被取代的 C₆-C₁₀ 芳基
 氨基羰基、可被取代的 N,N'-C₆-C₁₀ 二芳基氨基羰基、或表示具有 1 到
 15 4 个选自氧原子、硫原子和氮原子的杂原子并且总共具有 5 到 10 个成
 环原子的可任选取代的杂环);
 m 表示 1 到 3 的整数;
 每个 Y 独立地表示卤素原子、羟基、氰基、Y¹-Y³-, 其中 Y¹ 表示可被
 取代的 C₁-C₈ 烷基、可被取代的 C₃-C₈ 环烷基或可被取代的 C₆-C₁₀ 芳环;
 Y³ 表示羰基、亚磺酰基、磺酰基、氧原子、硫原子、可被取代的 C₁-C₄
 20 亚烷基或 N-Re (其中 Re 表示氢原子、可被取代的 C₁-C₄ 烷基、可被取
 代的芳烷基、可被取代的 C₃-C₈ 环烷基、可被取代的芳基、可被取代的
 C₁-C₈ 烷基羰基、可被取代的 C₃-C₈ 环烷基羰基、可被取代的芳烷基羰
 基、可被取代的 C₆-C₁₀ 芳基羰基、可被取代的 C₁-C₈ 烷基磺酰基、可被
 25 取代的 C₃-C₈ 环烷基磺酰基、可被取代的芳烷基磺酰基、可被取代的
 C₆-C₁₀ 芳基磺酰基、可被取代的 C₁-C₈ 烷氧羰基、可被取代的 C₃-C₈ 环
 烷氧羰基、可被取代的芳烷氧羰基、可被取代的 C₆-C₁₀ 芳氧羰基、氨
 基羰基、可被取代的 N-C₁-C₈ 烷基氨基羰基、可被取代的 N,N'-C₁-C₈
 二烷基氨基羰基、可被取代的 N-C₁-C₈ 烷基-N'-C₃-C₈ 环烷基氨基羰基、
 可被取代的 N-C₁-C₈ 烷基-N'-芳烷基氨基羰基、可被取代的 N-C₁-C₈ 烷
 30 基-N'-C₆-C₁₀ 芳基氨基羰基、可被取代的 C₃-C₈ 环烷基氨基羰基、可被

取代的 N,N' - C_3 - C_8 二环烷基氨基羰基、可被取代的 N - C_3 - C_8 环烷基- N' -芳烷基氨基羰基、可被取代的 N - C_3 - C_8 环烷基- N' - C_6 - C_{10} 芳基氨基羰基、可被取代的芳烷基氨基羰基、可被取代的 N,N' -二芳烷基氨基羰基、可被取代的 N -芳烷基- N' - C_6 - C_{10} 芳基氨基羰基、可被取代的 C_6 - C_{10} 芳基氨基羰基、可被取代的 N,N' - C_6 - C_{10} 二芳基氨基羰基、或表示具有 1 到 4 个选自氧原子、硫原子和氮原子的杂原子并且总共具有 5 到 10 个成环原子的可任选取代的杂环);

n 表示 0 到 8 的整数;

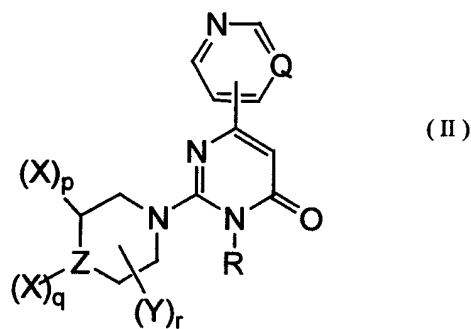
当 X 和 Y 基团或两个 Y 基团连接于相同的碳原子时, 它们可能彼此合并形成 C_2 - C_6 亚烷基;

并且当 m 为 1、 n 为 0 以及 X 为 X^1 -CO-时,

(1) X 不在未被取代的 1-哌嗪基的 3-位上, 也不在 4-烷基-1-哌嗪基的 3-位上; 或者

(2) X 不在未被取代的 1-哌啶基的 3-位或 4-位上。

2. 权利要求 1 所述的嘧啶酮衍生物、其盐、其溶剂化物或其水合物, 其具有下式(II)



其中 Q 、 R 、 X 和 Y 的定义同权利要求 1;

p 为 0 或 1; q 为 0 或 1; r 为 0 到 6 的整数; $p+q$ 为 1 或 2; 以及 Z 表示 N 或 CZ^1 , 其中 Z^1 表示氢原子或 Y 。

3. 权利要求 2 所述的嘧啶酮衍生物、其盐、其溶剂化物或其水合物, 其中 R 为可被 C_3 - C_8 环烷基取代的 C_1 - C_3 烷基。

4. 权利要求 3 所述的嘧啶酮衍生物、其盐、其溶剂化物或其水合物，其中 R 为甲基或乙基；Y 处于哌嗪环或哌啶环的 3-位、4-位或 5-位； $p+q$ 为 1； r 为 0 到 3 的整数。

5 5. 权利要求 4 所述的嘧啶酮衍生物、其盐、其溶剂化物或其水合物，其中 X 为可被取代的 C_1-C_8 烷基或可被取代的 C_6-C_{10} 芳基；Y 为可被取代的 C_1-C_6 烷基； p 为 1； q 为 0； r 为 0 到 3 的整数；Z 为 N 或 CH。

10 6. 权利要求 5 所述的嘧啶酮衍生物、其盐、其溶剂化物或其水合物，其中 X 为可被取代的苯环、可被取代的苄基；Y 为可被取代的甲基；Z 为 N； r 为 0 或 1。

15 7. 权利要求 4 所述的嘧啶酮衍生物、其盐、其溶剂化物或其水合物，其中 X 为可被取代的苯环、可被取代的苄基、可被取代的苯甲酰基或可被取代的苯并异噻唑环；Y 为可被取代的甲基；Z 为 N； p 为 0。

20 8. 权利要求 4 所述的嘧啶酮衍生物、其盐、其溶剂化物或其水合物，其中，X 为被苯环取代的 C_1-C_8 烷基，该苯环可被取代，或 X 为可被取代的苯环；Y 为羟基、氰基或 Y^1-CO- ，其中 Y^1 为 C_1-C_8 烷基；Z 为 CH 或 C-Y； r 为 0 或 1。

25 9. 权利要求 8 所述的嘧啶酮衍生物、其盐、其溶剂化物或其水合物，其中 X 为可被取代的苄基或可被取代的苯环；Y 为羟基、氰基或乙酰基；Z 为 CH 或 C-Y； r 为 0 或 1。

10. 一种嘧啶酮衍生物或其盐、其溶剂化物及其水合物，所述嘧啶酮衍生物选自：

2-(3-苯基哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮；
30 2-(3-(4-氟苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮；

- 2-(3-(3-氟苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(2-氟苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(4-氯苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
(*S*)-2-(3-(4-氯苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
5 (R)-2-(3-(4-氯苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(3-氯苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(2-氯苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(4-溴苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(3-溴苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
10 2-(3-(2-溴苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(4-甲基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(3-甲基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(2-甲基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(4-氰基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
15 2-(3-(3-氰基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(2-氰基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(4-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(3-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
20 2-(3-(2-乙氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(5-氟-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(4-氟-3-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
25 2-(3-(4-氟-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
(*S*)-2-(3-(4-氟-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
(*R*)-2-(3-(4-氟-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
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- 2-(3-(4-氯-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 2-(3-(4-氟-2-甲基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 2-(3-(2-氟-6-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 5 2-(3-(5-溴-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 2-(3-(2-溴-4-氟苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 2-(3-(2-氯-6-氟苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 10 2-(3-(2,4-二氟苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 2-(3-(2,6-二氟苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 2-(3-(2,6-二氯苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 2-(3-(2,4-二甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 2-(3-(3,4-二甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 15 2-(3-(2,5-二甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 2-(3-(2,6-二甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 2-(3-(2,4-二氟-6-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 2-(3-(5-氰基-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 20 2-(3-(4-氰基-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 2-(3-(1-萘基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 2-(3-(2-萘基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 25 2-(3-(2,3-二氢苯并呋喃-7-基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 2-(3-(苯并呋喃-2-基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- (S)-2-(3-(苯并呋喃-2-基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 2-(3-(4-(吡咯烷-1-基-甲基)苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
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- 2-(3-(4-(吡咯烷-1-基)苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 2-(3-(2-甲氧基-4-(吡咯烷-1-基)苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 5 2-(3-(2-甲氧基-5-(吡咯烷-1-基)苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 2-(3-(4-(苯基)苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 2-(3-(4-(4-氟苯基)苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 2-(3-(4-(4-甲氧基苯基)苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 10 2-(3-(4-(2-甲氧基苯基)苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 2-(3-(4-(吗啉-4-基)苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 2-(3-(4-(4-甲基哌嗪-1-基)苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 15 2-(4-苯基哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 2-(4-苄基哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 2-(4-苯甲酰基哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 2-(4-(1,2-苯并异噻唑-3-基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 20 2-(4-甲基-3-苯基哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 2-(3-(4-氟-2-甲氧基苯基)-4-甲基哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- (S)-2-(3-(4-氟-2-甲氧基苯基)-4-甲基哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 25 (R)-2-(3-(4-氟-2-甲氧基苯基)-4-甲基哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 2-(4-乙酰基-3-(4-氟-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;
- 30 2-(4-苄基-3-(4-氟-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;

啉-4-酮;

2-(4-苄基-3-(乙氧羰基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;

2-(4-甲基-3-(1-萘基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;

2-(5,5-二甲基-3-(2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;

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2-(3-苯基哌啉-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;

2-(3-(4-氟苯基)哌啉-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;

2-(3-(3-氟苯基)哌啉-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;

2-(3-(2-氟苯基)哌啉-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;

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2-(3-(4-氯苯基)哌啉-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;

2-(3-(4-溴苯基)哌啉-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;

2-(3-(4-甲氧基苯基)哌啉-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;

2-(3-(3-甲氧基苯基)哌啉-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;

2-(3-(2-甲氧基苯基)哌啉-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;

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2-(3-(4-((吡咯烷-1-基)甲基)苯基)哌啉-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;

(*S*)-2-(3-(4-(吡咯烷-1-基-甲基)苯基)哌啉-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;

(*R*)-2-(3-(4-(吡咯烷-1-基-甲基)苯基)哌啉-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;

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2-(3-羟基-3-苯基哌啉-1-基)-3-甲基-6-(4-吡啶基)-3H-咪啉-4-酮;

2-(3-苯基哌嗪-1-基)-3-甲基-6-(4-咪啉基)-3H-咪啉-4-酮;

2-(3-(4-氟苯基)哌嗪-1-基)-3-甲基-6-(4-咪啉基)-3H-咪啉-4-酮;

2-(3-(3-氟苯基)哌嗪-1-基)-3-甲基-6-(4-咪啉基)-3H-咪啉-4-酮;

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2-(3-(2-氟苯基)哌嗪-1-基)-3-甲基-6-(4-咪啉基)-3H-咪啉-4-酮;

2-(3-(4-氯苯基)哌嗪-1-基)-3-甲基-6-(4-咪啉基)-3H-咪啉-4-酮;

2-(3-(3-氯苯基)哌嗪-1-基)-3-甲基-6-(4-咪啉基)-3H-咪啉-4-酮;

2-(3-(2-氯苯基)哌嗪-1-基)-3-甲基-6-(4-咪啉基)-3H-咪啉-4-酮;

2-(3-(4-溴苯基)哌嗪-1-基)-3-甲基-6-(4-咪啉基)-3H-咪啉-4-酮;

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2-(3-(3-溴苯基)哌嗪-1-基)-3-甲基-6-(4-咪啉基)-3H-咪啉-4-酮;

- 2-(3-(2-溴苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(4-氰基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(3-氰基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(2-氰基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 5 2-(3-(4-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(3-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(2-乙氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(6-氟-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-
10 酮;
- 2-(3-(5-氟-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-
酮;
- 2-(3-(4-氟-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-
酮;
- 15 (*S*)-2-(3-(4-氟-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶
-4-酮;
- (*R*)-2-(3-(4-氟-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶
-4-酮;
- 2-(3-(4-氯-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-
20 酮;
- 2-(3-(5-溴-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-
酮;
- 2-(3-(2,6-二氯苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(2,4-二甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
- 25 2-(3-(3,4-二甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(2,5-二甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(2,6-二甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(2,4-二氟-6-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶
-4-酮;
- 30 2-(3-(1-萘基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;

- 2-(3-(2-萘基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(2,3-二氢苯并呋喃-7-基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(苯并呋喃-2-基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 5 2-(3-(4-(吡咯烷-1-基-甲基)苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(4-(吡咯烷-1-基)苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 10 2-(3-(2-甲氧基-4-(吡咯烷-1-基)苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(2-甲氧基-5-(吡咯烷-1-基)苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(4-(苯基)苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(4-(4-氟苯基)苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 15 2-(3-(4-(4-甲氧基苯基)苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(4-(2-甲氧基苯基)苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(4-(吗啉-4-基)苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 20 2-(3-(4-(4-甲基哌嗪-1-基)苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(4-氟-2-甲氧基苯基)-4-甲基哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- (*S*)-2-(3-(4-氟-2-甲氧基苯基)-4-甲基哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 25 (R)-2-(3-(4-氟-2-甲氧基苯基)-4-甲基哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(4-乙酰基-3-(4-氟-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 30 2-(4-苄基-3-(4-氟-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;

啉-4-酮；

2-(4-(4-氟苯基)哌啶-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮；

2-(4-氰基-4-苯基哌啶-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮；

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2-(4-(6-氟苯并呋喃-3-基)哌啶-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮；

2-(3-(苯并异噁唑-3-基)哌啶-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮；

(*S*)-2-(3-(苯并异噁唑-3-基)哌啶-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮；

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(*R*)-2-(3-(苯并异噁唑-3-基)哌啶-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮；

2-(3-(6-氟苯并异噁唑-3-基)哌啶-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮；

2-(4-(6-氟苯并异噁唑-3-基)哌啶-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮；

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2-(4-(5-甲基苯并呋喃-3-基)哌啶-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮； 和

2-(4-(6-氟苯并噁吩-3-基)哌啶-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮。

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11. 一种药物，其含有作为活性成分的选自权利要求1所述的式(I)表示的嘧啶酮衍生物、其盐、其溶剂化物及其水合物的物质。

12. 一种τ蛋白激酶1抑制剂，其选自权利要求1所述的式(I)表示的嘧啶酮衍生物、其盐、其溶剂化物及其水合物。

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13. 权利要求11所述的药物，其是被用于预防和/或治疗由于τ蛋白激酶1活性过高引起的疾病的药物。

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14. 权利要求11所述的药物，其是被用于预防和/或治疗神经变性疾病的药物。

15. 权利要求 14 所述的药物，其中所述神经变性疾病选自：阿尔茨海默病、缺血性脑卒中综合症、唐氏综合症、脑淀粉样血管病引起的脑出血、进行性核上性麻痹、亚急性硬化性全脑炎帕金森氏综合征、
5 脑炎后帕金森氏综合征、拳击手脑炎、关岛帕金森氏综合征-痴呆综合征、路易小体病、皮克氏病、皮质基底核变性症、额颞叶型痴呆症、血管性痴呆、创伤性损伤、脑和脊髓创伤、周围神经病、视网膜病和青光眼。

10 16. 权利要求 11 所述的药物，其中所述疾病选自非胰岛素依赖型糖尿病、肥胖症、躁狂抑郁病、精神分裂症、脱发症、乳癌、非小细胞肺癌、甲状腺癌、T 或 B-细胞白血病和病毒诱导的肿瘤。

2,3,6-三取代的-4-嘧啶酮衍生物

5 技术领域

本发明涉及可用作药物的活性成分的化合物，所述药物用于预防和/或治疗主要由 τ 蛋白激酶 1 的异常活性引起的疾病，如神经变性疾病（例如阿尔茨海默病）。

10 背景技术

阿尔茨海默病即进行性老年性痴呆，其中可观察到由于神经细胞的变性和神经细胞数目的减少而引起的大脑皮质萎缩。病理学上，在脑中观察到大量老年性斑和神经纤维缠结。随着人口的老龄化，患者的数量增加了，而且这种疾病也带来了严重的社会问题。虽然已经提出了很多理论，但其致病原因还没有得到阐明。人们期望早些判定病因。

已知阿尔茨海默病的两个特征性病理变化的表现程度与智力功能障碍的程度极为相关。因此，自二十世纪八十年代早期以来，通过分子水平上的对这两个病理变化的成分的研究手段来揭示该病病因的研究就一直进行着。老年性斑在细胞外聚集，并已阐明 β 淀粉样蛋白是其主要成分（以下在本说明书中简称为“ $A\beta$ ”：Biochem. Biophys. Res. Commun., 120, 855 (1984); EMBO J., 4, 2757 (1985); Proc. Natl. Acad. Sci. USA, 82, 4245 (1985)）。在另一病理变化、即神经纤维缠结中，被称为成对螺旋细丝（以下在本说明书中简称为“PHF”）的双螺旋细丝状物质在细胞内聚集，而且已揭示出 τ 蛋白作为一种特别针对脑部的微管相关蛋白，是它的主要成分（Proc. Natl. Acad. Sci. USA, 85, 4506 (1988); Neuron, 1, 827 (1988)）。

此外，在遗传研究基础上，发现早老素 1 和 2 是家族性阿尔茨海默病的致病基因（Nature, 375, 754 (1995); Science, 269, 973 (1995); Nature, 376, 775 (1995)），而且也揭示出早老素 1 和 2 突变体的存在

促进了 A β 的分泌 (Neuron, 17, 1005 (1996); Proc. Natl. Acad. Sci. USA, 94, 2025 (1997))。从这些结果可以认为, 在阿尔茨海默病中, 由于某种原因使 A β 不正常地聚集成团, 这与 PHF 的形成密切相关进而导致神经细胞的死亡。并且推测谷氨酸流出细胞外和谷氨酸受体对这一流出过程作出反应而活化可能是缺血性脑卒中综合症引起的神经细胞死亡的早期过程中的重要因素 (Sai-shin Igaku [Latest Medicine], 49, 1506 (1994))。

据报道, 刺激谷氨酸受体之一的 AMPA 受体的红藻氨酸处理, 增加了作为 A β 前体的淀粉样前体蛋白 (以下在本说明书中简称为“APP”) 的 mRNA (Society for Neuroscience Abstracts, 17, 1445 (1991)), 并且也促进了 APP 的代谢 (The Journal of Neuroscience, 10, 2400 (1990))。因此, 强烈暗示了 A β 的聚集与缺血性脑血管病造成的细胞死亡有关。其它观察到 A β 异常聚集成团的疾病包括, 例如, 唐氏综合症、单一脑淀粉样血管病引起的脑出血、路易小体病 (Shin-kei Shinpo [Nerve Advance], 34, 343 (1990); Tanpaku-shitu Kaku-san Koso [Protein, Nucleic Acid, Enzyme], 41, 1476 (1996)) 等。此外, 显示出由 PHF 聚集引起的神经纤维缠结的疾病的例子包括进行性核上性麻痹、亚急性硬化性全脑炎帕金森氏综合征、脑炎后帕金森氏综合征、拳击手脑炎、关岛帕金森氏综合征-痴呆综合征、路易小体病等 (Tanpakushitu Kakusan Koso [Protein, Nucleic Acid, Enzyme], 36, 2 (1991); Igaku no Ayumi [Progress of Medicine], 158, 511 (1991); Tanpakushitu Kakusan Koso [Protein, Nucleic Acid, Enzyme], 41; 1476 (1996))。

τ 蛋白通常由一组相关蛋白组成, 在 SDS 聚丙烯酰胺凝胶电泳中形成分子量为 48-65 kDa 的几条带, 并且 τ 蛋白促进了微管的形成。已经证实, 与通常的 τ 蛋白相比, 在患阿尔茨海默病的脑中结合进入 PHF 的 τ 蛋白磷酸化异常 (J. Biochem., 99, 1807 (1986); Proc. Natl. Acad. Sci. USA, 83, 4913 (1986))。催化这种异常磷酸化的蛋白已被分离。这种蛋白被称为 τ 蛋白激酶 1 (以下在本说明书中简称为“TPK1”), 其物理化学性质已阐明 (Seikagaku [Biochemistry], 64, 308 (1992); J. Biol. Chem., 267, 10897 (1992))。而且, 根据 TPK1 的一部分氨基酸序列从

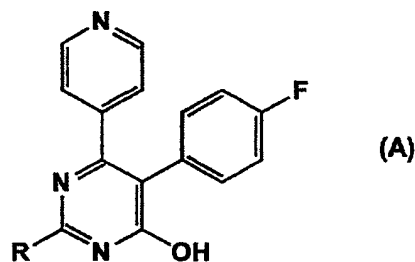
大鼠大脑皮质 cDNA 库中克隆大鼠 TPK1 的 cDNA, 并且确定其核苷酸序列以及推出氨基酸序列 (日本专利未审公开 No. 6-239893/1994)。结果是, 揭示出大鼠 TPK1 的一级结构与已知为大鼠 GSK-3 β (糖原合成酶激酶 3 β , FEBS Lett., 325, 167 (1993)) 的酶的一级结构对应。

5 据报道, 老年性斑的主要成分 A β 是有神经毒性的 (Science, 250, 279 (1990))。但是, 虽然对 A β 引起细胞死亡的原因提出了各种理论, 然而还没有建立任何权威理论。Takashima 等人观察到 A β 处理大鼠胎儿海马原代培养系统引起细胞死亡, 而后发现 A β 处理提高了 TPK1 的活性并且反义 TPK1 抑制了 A β 所引起的细胞死亡 (Proc. Natl. Acad. Sci. USA, 90, 7789 (1993); 日本专利未审公开 No. 6-329551/1994)。

10 鉴于前述, 抑制 TPK1 活性的化合物在阿尔茨海默病中可能遏制 A β 的神经毒性和 PHF 的形成, 并且抑制神经细胞的死亡, 从而终止或延缓该病的发展。该化合物还有可能被用作药物, 通过抑制 A β 的细胞毒性治疗缺血性脑卒中综合症、唐氏综合症、脑淀粉样血管病、由路易小体病引起的脑出血等。此外, 该化合物有可能作为药物, 用于
15 治疗神经变性疾病如进行性核上性麻痹、亚急性硬化性全脑炎帕金森氏综合征、脑炎后帕金森氏综合征、拳击手脑炎、关岛帕金森氏综合征-痴呆综合征、路易小体病、皮克氏病、皮质基底核变性症、额颞叶型痴呆症、血管性痴呆、急性休克和创伤性损伤、脑和脊髓创伤、周围神经病、视网膜病和青光眼; 非胰岛素依赖型糖尿病 (如 II 型糖尿病)
20 病) 和肥胖症、躁狂抑郁病、精神分裂症、脱发症、癌症如乳癌、非小细胞肺癌、甲状腺癌、T 或 B-细胞白血病和几种病毒诱导的肿瘤。

作为在结构上与后述式 (I) 所代表的本发明化合物类似的化合物, 由下面式 (A) 代表的化合物是已知的:

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其中 R 代表 2,6-二氯苯甲基、2-(2-氯苯基)乙氨基、3-苯基丙氨基或 1-甲基-3-苯基丙氨基 (WO98/24782)。式 (A) 代表的化合物特征是嘧啶环的 5-位上为 4-氟苯基以及 4-位上为羟基, 并且不在本发明范围之内。此外, 式 (A) 代表的化合物的主要药理学活性是抗炎作用, 而式 (I) 所代表的本发明化合物是可用作 TPK1 抑制剂或神经变性疾病治疗药物, 因此它们的药理学活性彼此完全不同。

专利文件 1: WO 00/18758

专利文件 2: WO 01/70728

10 专利文件 3: WO 01/70729

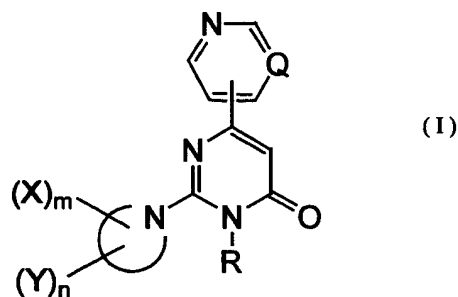
发明内容

本发明的目的是提供可用作药物活性成分的化合物, 其中所述药物用于预防和/或治疗如阿尔茨海默病的疾病。更明确地说, 本发明的目的是提供可用作药物活性成分的新化合物, 其中所述药物通过抑制 TPK1 活性遏制 A β 的神经毒性和 PHF 的形成、以及通过抑制细胞的死亡, 使得从根本上预防和/或治疗神经变性疾病如阿尔茨海默病成为可能。

20 为了达到上述目的, 本发明的发明人对具有 TPK1 磷酸化抑制活性的各种化合物进行了筛选。结果, 他们发现下述式 (I) 代表的化合物具有所期望的活性并且可作为预防和/或治疗上述疾病的药物的活性成分使用。本发明基于这些发现完成。

本发明因而提供式 (I) 代表的 3-取代的-4-嘧啶酮衍生物、其盐、其溶剂化物或其水合物:

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其中 Q 表示 CH 或氮原子；

R 表示可被取代的 C₁-C₁₂ 烷基；

环 \bigcirc^N 表示哌嗪环或哌啶环；

每个 X 独立地表示 X¹-X²。

- 5 其中 X¹ 表示：氧代；可被取代的 C₁-C₈ 烷基；可被取代的 C₃-C₈ 环烷基；可被取代的可任选地部分氢化的 C₆-C₁₀ 芳环；可被取代的茚满环；具有 1 到 4 个选自氧原子、硫原子和氮原子的杂原子并且总共具有 5 到 10 个成环原子的可任选取代的杂环；芳烷氧基；由 -N(Ra)(Rb) 表示的基团，其中 Ra 和 Rb 相同或不同，并且各自为氢、可被取代的 C₁-C₄
- 10 烷基、可被取代的芳烷基、可被取代的 C₃-C₈ 环烷基、可被取代的芳基、可被取代的 C₁-C₈ 烷基羰基、可被取代的 C₃-C₈ 环烷基羰基、可被取代的芳烷基羰基、可被取代的 C₆-C₁₀ 芳基羰基、可被取代的 C₁-C₈ 烷基磺酰基、可被取代的 C₃-C₈ 环烷基磺酰基、可被取代的芳烷基磺酰基、可被取代的 C₆-C₁₀ 芳基磺酰基、可被取代的 C₁-C₈ 烷氧羰基、可被取代的
- 15 C₃-C₈ 环烷氧羰基、可被取代的芳烷氧羰基、可被取代的 C₆-C₁₀ 芳氧羰基、氨基羰基、可被取代的 N-C₁-C₈ 烷基氨基羰基、可被取代的 N,N'-C₁-C₈ 二烷基氨基羰基、可被取代的 N-C₁-C₈ 烷基-N'-C₃-C₈ 环烷基氨基羰基、可被取代的 N-C₁-C₈ 烷基-N'-芳烷基氨基羰基、可被取代的 N-C₁-C₈ 烷基-N'-C₆-C₁₀ 芳基氨基羰基、可被取代的 C₃-C₈ 环烷基氨基羰基、可被取代的 N,N'-C₃-C₈ 二环烷基氨基羰基、可被取代的 N-C₃-C₈ 环烷基-N'-芳烷基氨基羰基、可被取代的 N-C₃-C₈ 环烷基-N'-C₆-C₁₀ 芳基氨基羰基、可被取代的芳烷基氨基羰基、可被取代的 N,N'-二芳烷基氨基羰基、可被取代的 N-芳烷基-N'-C₆-C₁₀ 芳基氨基羰基、可被取代的 C₆-C₁₀ 芳基氨基羰基、可被取代的 N,N'-C₆-C₁₀ 二芳基氨基羰基、或为
- 25 具有 1 到 4 个选自氧原子、硫原子和氮原子的杂原子并且总共具有 5 到 10 个成环原子的可任选取代的杂环，或 Ra 和 Rb 与相邻的氮原子一起形成 4 到 7 元杂环，所述杂环可进一步在环中包含 1 到 4 个选自以下的基团：氧原子、硫原子、N-Rc (其中 Rc 表示氢原子、可被取代的 C₁-C₄ 烷基、可被取代的芳烷基、可被取代的 C₃-C₈ 环烷基、可被取代的芳基、可被取代的 C₁-C₈ 烷基羰基、可被取代的 C₃-C₈ 环烷基羰基、
- 30

可被取代的芳烷基羰基、可被取代的 C₆-C₁₀ 芳基羰基、可被取代的 C₁-C₈ 烷基磺酰基、可被取代的 C₃-C₈ 环烷基磺酰基、可被取代的芳烷基磺酰基、可被取代的 C₆-C₁₀ 芳基磺酰基、可被取代的 C₁-C₈ 烷氧羰基、可被取代的 C₃-C₈ 环烷氧羰基、可被取代的芳烷氧羰基、可被取代的 C₆-C₁₀ 芳氧羰基、氨基羰基、可被取代的 N-C₁-C₈ 烷基氨基羰基、可被取代的 N,N'-C₁-C₈ 二烷基氨基羰基、可被取代的 N-C₁-C₈ 烷基-N'-C₃-C₈ 环烷基氨基羰基、可被取代的 N-C₁-C₈ 烷基-N'-芳烷基氨基羰基、可被取代的 N-C₁-C₈ 烷基-N'-C₆-C₁₀ 芳基氨基羰基、可被取代的 C₃-C₈ 环烷基氨基羰基、可被取代的 N,N'-C₃-C₈ 二环烷基氨基羰基、可被取代的 N-C₃-C₈ 环烷基-N'-芳烷基氨基羰基、可被取代的 N-C₃-C₈ 环烷基-N'-C₆-C₁₀ 芳基氨基羰基、可被取代的芳烷基氨基羰基、可被取代的 N,N'-二芳烷基氨基羰基、可被取代的 N-芳烷基-N'-C₆-C₁₀ 芳基氨基羰基、可被取代的 C₆-C₁₀ 芳基氨基羰基、可被取代的 N,N'-C₆-C₁₀ 二芳基氨基羰基、或表示具有 1 到 4 个选自氧原子、硫原子和氮原子的杂原子并且总共具有 5 到 10 个成环原子的可任选取代的杂环)、羰基、亚磺酰基或磺酰基，并且所述 4 到 7 元杂环可任选地稠合于可被取代的芳基；

X² 表示键、羰基、亚磺酰基、磺酰基、氧原子、硫原子、可被取代的 C₁-C₄ 亚烷基或 N-Rd (其中 Rd 表示氢原子、可被取代的 C₁-C₄ 烷基、可被取代的芳烷基、可被取代的 C₃-C₈ 环烷基、可被取代的芳基、可被取代的 C₁-C₈ 烷基羰基、可被取代的 C₃-C₈ 环烷基羰基、可被取代的芳烷基羰基、可被取代的 C₆-C₁₀ 芳基羰基、可被取代的 C₁-C₈ 烷基磺酰基、可被取代的 C₃-C₈ 环烷基磺酰基、可被取代的芳烷基磺酰基、可被取代的 C₆-C₁₀ 芳基磺酰基、可被取代的 C₁-C₈ 烷氧羰基、可被取代的 C₃-C₈ 环烷氧羰基、可被取代的芳烷氧羰基、可被取代的 C₆-C₁₀ 芳氧羰基、氨基羰基、可被取代的 N-C₁-C₈ 烷基氨基羰基、可被取代的 N,N'-C₁-C₈ 二烷基氨基羰基、可被取代的 N-C₁-C₈ 烷基-N'-C₃-C₈ 环烷基氨基羰基、可被取代的 N-C₁-C₈ 烷基-N'-芳烷基氨基羰基、可被取代的 N-C₁-C₈ 烷基-N'-C₆-C₁₀ 芳基氨基羰基、可被取代的 C₃-C₈ 环烷基氨基羰基、可被取代的 N,N'-C₃-C₈ 二环烷基氨基羰基、可被取代的 N-C₃-C₈ 环烷基-N'-芳烷基氨基羰基、可被取代的 N-C₃-C₈ 环烷基-N'-C₆-C₁₀ 芳基氨基羰基、

- 可被取代的芳烷基氨基羰基、可被取代的 N,N'-二芳烷基氨基羰基、可被取代的 N-芳烷基-N'-C₆-C₁₀ 芳基氨基羰基、可被取代的 C₆-C₁₀ 芳基氨基羰基、可被取代的 N,N'-C₆-C₁₀ 二芳基氨基羰基、或表示具有 1 到 4 个选自氧原子、硫原子和氮原子的杂原子并且总共具有 5 到 10 个成环原子的可任选取代的杂环);
- 5 m 表示 1 到 3 的整数;
- 每个 Y 独立地表示卤素原子、羟基、氰基、Y¹-Y³-, 其中 Y¹ 表示可被取代的 C₁-C₈ 烷基、可被取代的 C₃-C₈ 环烷基或可被取代的 C₆-C₁₀ 芳环; Y³ 表示羰基、亚磺酰基、磺酰基、氧原子、硫原子、可被取代的 C₁-C₄ 亚烷基或 N-Re (其中 Re 表示氢原子、可被取代的 C₁-C₄ 烷基、可被取代的芳烷基、可被取代的 C₃-C₈ 环烷基、可被取代的芳基、可被取代的 C₁-C₈ 烷基羰基、可被取代的 C₃-C₈ 环烷基羰基、可被取代的芳烷基羰基、可被取代的 C₆-C₁₀ 芳基羰基、可被取代的 C₁-C₈ 烷基磺酰基、可被取代的 C₃-C₈ 环烷基磺酰基、可被取代的芳烷基磺酰基、可被取代的 C₆-C₁₀ 芳基磺酰基、可被取代的 C₁-C₈ 烷氧羰基、可被取代的 C₃-C₈ 环烷氧羰基、可被取代的芳烷氧羰基、可被取代的 C₆-C₁₀ 芳氧羰基、氨基羰基、可被取代的 N-C₁-C₈ 烷基氨基羰基、可被取代的 N,N'-C₁-C₈ 二烷基氨基羰基、可被取代的 N-C₁-C₈ 烷基-N'-C₃-C₈ 环烷基氨基羰基、可被取代的 N-C₁-C₈ 烷基-N'-芳烷基氨基羰基、可被取代的 N-C₁-C₈ 烷基-N'-C₆-C₁₀ 芳基氨基羰基、可被取代的 C₃-C₈ 环烷基氨基羰基、可被取代的 N,N'-C₃-C₈ 二环烷基氨基羰基、可被取代的 N-C₃-C₈ 环烷基-N'-芳烷基氨基羰基、可被取代的 N-C₃-C₈ 环烷基-N'-C₆-C₁₀ 芳基氨基羰基、可被取代的芳烷基氨基羰基、可被取代的 N,N'-二芳烷基氨基羰基、可被取代的 N-芳烷基-N'-C₆-C₁₀ 芳基氨基羰基、可被取代的 C₆-C₁₀ 芳基氨基羰基、可被取代的 N,N'-C₆-C₁₀ 二芳基氨基羰基、或表示具有 1 到 4 个选自氧原子、硫原子和氮原子的杂原子并且总共具有 5 到 10 个成环原子的可任选取代的杂环);
- 10 15 20 25
- n 表示 0 到 8 的整数;
- 当 X 和 Y 基团或两个 Y 基团连接于相同的碳原子时, 它们可能彼此合并形成 C₂-C₆ 亚烷基;
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并且当 m 为 1、 n 为 0 以及 X 为 X^1 -CO-时，

(1) X 不在未被取代的 1-哌嗪基的 3-位上，也不在 4-烷基-1-哌嗪基的 3-位上；或者

(2) X 不在未被取代的 1-哌啶基的 3-位或 4-位上。

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依据本发明的另一方面，提供的药物含有一种作为活性成分的物质，该物质选自式 (I) 代表的 3-取代的-4-嘧啶酮衍生物、其可药用的盐、其溶剂化物及其水合物。作为药物的优选实施例，提供了上述用于预防和/或治疗由于 τ 蛋白激酶 1 活性过高引起的疾病的药物，以及

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上述用于预防和/或治疗神经变性疾病的药物。

作为本发明的进一步优选的实施方案，提供了上述药物用于以下疾病：阿尔茨海默病、缺血性脑卒中综合症、唐氏综合症、脑淀粉样血管病引起的脑出血、进行性核上性麻痹、亚急性硬化性全脑炎帕金森氏综合征、脑炎后帕金森氏综合征、拳击手脑炎、关岛帕金森氏综合征-痴呆综合征、路易小体病、皮克氏病、皮质基底核变性症和额颞叶型痴呆症、血管性痴呆、急性中风和创伤性损伤、脑和脊髓创伤、周围神经病、视网膜病和青光眼、非胰岛素依赖型糖尿病（如 II 型糖尿病），以及肥胖症、躁狂抑郁病、精神分裂症、脱发症、癌症如乳腺癌、非小细胞肺癌、甲状腺癌、T 或 B-细胞白血病和几种病毒诱导的

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肿瘤；并且，提供了的药物组合物形式的上述药物，所述药物组合物含有作为活性成分的前述物质与一种或一种以上的药物添加剂。

本发明进一步提供 τ 蛋白激酶 1 抑制剂，其含有一种作为活性成分的物质，该物质选自式 (I) 表示的 3-取代的-4-嘧啶酮衍生物、其盐、其溶剂化物及其水合物。

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依据本发明的其它方面，提供了用于预防和/或治疗由于 τ 蛋白激酶 1 活性过高引起的疾病的方法，包括给患者施用预防和/或治疗有效剂量的物质的步骤，其中所述物质选自式 (I) 表示的 3-取代的-4-嘧啶酮衍生物、其可药用的盐、其溶剂化物及其水合物；并且提供了对选自式 (I) 表示的 3-取代的-4-嘧啶酮衍生物、其可药用的盐、其溶剂化物及其水合物的物质在制造上述药物中的应用。

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本发明的最佳实施方式

在本说明书中，各个基团具有以下含义。

本文中使用的烷基可以是直链的也可以是支链的。

- 5 R 表示的 C_1 - C_{12} 烷基可为，例如，甲基、乙基、正丙基、异丙基、正丁基、异丁基、仲丁基、叔丁基、正戊基、异戊基、新戊基、叔戊基、正己基、异己基，或者是直链或支链的庚基、辛基、壬基、癸基、十一烷基或十二烷基。特别优选的 R 为甲基。

- 10 在本说明书中，当官能团定义为“可被取代的”或“可任选取代的”时，对于取代基数目及其类型和取代的位置没有特别限制，并且当存在两个或多个取代基时，它们可以相同或不同。

- 15 当 R 表示的 C_1 - C_{12} 烷基具有一个或多个取代基时，该烷基可以有一个或多个例如选自以下的取代基： C_3 - C_8 环烷基，如环丙基、环丁基、环戊基、环己基、环庚基、环辛基； C_1 - C_5 烷氧基，如甲氧基、乙氧基、丙氧基、异丙氧基、丁氧基、异丁氧基、叔丁氧基； C_1 - C_3 烷基氨基或 C_2 - C_6 二烷基氨基； C_6 - C_{10} 芳基，如苯基、1-萘基和 2-萘基。

C_1 - C_8 烷基可以是，例如，甲基、乙基、正丙基、异丙基、正丁基、异丁基、仲丁基、叔丁基、正戊基、异戊基、新戊基、叔戊基、正己基、异己基，或直链或支链的庚基或辛基。

- 20 C_1 - C_4 烷基可以是例如甲基、乙基、正丙基、异丙基、正丁基、异丁基、仲丁基或叔丁基。

C_3 - C_8 环烷基可以是例如环丙基、环丁基、环戊基、环己基、环庚基或环辛基。

- 25 可任选地部分氢化的 C_6 - C_{10} 芳环可以是例如苯环、萘环、茚满环或 1,2,3,4-四氢萘环。

- 30 具有 1 至 4 个选自氧原子、硫原子和氮原子的杂原子并且总共具有 5 至 10 个成环原子的杂环可以是，例如咪唑环、二氢咪唑环、四氢咪唑环、吡唑环、二氢吡唑环、四氢吡唑环、苯并咪唑环、二氢苯并咪唑环、异苯并咪唑环、苯并间二氧杂环戊烯环(benzodioxol ring)、色烯环、色满环、异色满环、噻吩环、苯并噻吩环、吡咯环、吡咯啉环、

吡咯烷环、2-氧代吡咯烷环、咪唑环、咪唑啉环、咪唑烷环、吡唑环、
 吡唑啉环、吡唑烷环、三唑环、四唑环、吡啶环、氧化吡啶环、哌啶
 环、4-氧代哌啶环、吡嗪环、哌嗪环、高哌嗪环、嘧啶环、哒嗪环、
 5 吡啶环、二氢吡啶环、异吡啶环、二氢异吡啶环、吡啶环、苯并咪唑
 环、苯并三唑环、四氢异喹啉环、苯并噻唑啉酮环、苯并噻唑啉酮环、
 噻吩环、喹啉环、喹啉环、2,3-二氮杂萘环、1,5-二氮杂萘环、喹喔啉
 环、喹唑啉环、噌啉环、蝶啶环、噁唑环、噁唑烷环、异噁唑环、异噁
 唑烷环、噁二唑环、噻唑环、苯并噻唑环、噻唑烷环、异噻唑环、异
 噻唑烷环、苯并间二氧杂环戊烯环、二噁烷环、苯并二噁烷环、二噁
 10 烷环、吗啉环、硫代吗啉环或酞酰亚胺环。

芳烷基可以是例如苄基、2-苯乙基、3-苯丙基或4-苯丁基。

C_1-C_4 亚烷基可以是例如亚甲基、亚乙基、1,3-亚丙基或1,4-亚丁
 基。

可以进一步含有1到4个基团的4到7元杂环可以是例如吡咯烷、
 15 哌啶、吗啉、硫代吗啉、哌嗪、高哌嗪、2-氧代吡咯烷、吡咯、咪唑
 啉、咪唑、吡唑、吡咯啉、吡咯烷、咪唑烷、咪唑啉酮、琥珀酰亚胺
 或戊二酰亚胺。

C_6-C_{10} 芳环可以是例如苯环或萘环，并且芳基或 C_6-C_{10} 芳基可以
 是例如苯基或萘基。

20 当由 X 或 X^1 代表的环具有一个或多个取代基时，所述环可以具有
 一个或多个选自以下的取代基： C_1-C_5 烷基，如甲基、乙基、丙基、异
 丙基、丁基、异丁基、仲丁基、叔丁基、戊基、异戊基、新戊基、叔
 戊基； C_3-C_6 环烷基，如环丙基、环丁基、环戊基、环己基； C_3-C_6 环
 烷基- C_1-C_4 烷基，如环丙基甲基、环戊基甲基、环己基甲基； C_1-C_4 羟
 25 烷基，如羟甲基、羟乙基、羟丙基；卤素原子，如氟原子、氯原子、
 溴原子和碘原子； C_1-C_5 卤代烷基，如三氟甲基；羟基；氰基；硝基；
 甲酰基；可被取代的苯环；可被取代的萘环；具有1到4个选自氧原
 子、硫原子和氮原子并且总共具有5到10个成环原子的可任选取代的
 杂环（与上述相同）；氨基；N- C_3-C_6 环烷基-N- C_1-C_4 烷基氨基烷基，
 30 其中所述 C_1-C_4 烷基可以被羟基或 C_1-C_4 烷氧基取代，如 N-环丙基-N-

甲基氨基甲基、N-环己基-N-甲基氨基甲基；C₁-C₅ 单烷基氨基甲基，
如甲基氨基甲基、乙基氨基甲基、丙基氨基甲基、异丙基氨基甲基、
丁基氨基甲基、异丁基氨基甲基、叔丁基氨基甲基、戊基氨基甲基、
异戊基氨基甲基；C₂-C₁₀ 二烷基氨基甲基，如二甲基氨基甲基、二乙基
5 氨基甲基、甲基乙基氨基甲基、甲基丙基氨基甲基；吡咯烷基甲基；
哌啶基甲基；吗啉代甲基；哌嗪基甲基；吡咯基甲基；咪唑基甲基；
吡唑基甲基；三唑基甲基；以及式-E-R_f所示的基团，其中E表示O、
S、SO、SO₂、CO或N(R⁴)，R_f表示C₁-C₅烷基（与上述相同）、C₄-C₇
10 环烷基（与上述相同）、C₄-C₇环烷基烷基（与上述相同）、C₁-C₅羟
烷基（与上述相同）、可被取代的苯环、可被取代的萘环、具有1到4
个选自氧原子、硫原子和氮原子的杂原子并且总共具有5到10个成环
原子的可任选取代的杂环（与上述相同）、N-C₃-C₆环烷基-N-C₁-C₄烷
基氨基烷基（与上述相同）、C₁-C₅单烷基氨基烷基（与上述相同）、
C₂-C₁₀二烷基氨基烷基（与上述相同）、吡咯烷基甲基、哌啶基甲基、
15 吗啉代甲基、哌嗪基甲基、吡咯基甲基、咪唑基甲基、吡唑基甲基或
三唑基甲基、可被取代的C₁-C₈烷基羰基、可被取代的C₃-C₈环烷基羰
基、可被取代的芳烷基羰基、可被取代的C₆-C₁₀芳基羰基、可被取代
的C₁-C₈烷基磺酰基、可被取代的C₃-C₈环烷基磺酰基、可被取代的芳
烷基磺酰基、可被取代的C₆-C₁₀芳基磺酰基、可被取代的C₁-C₈烷氧羰
20 基、可被取代的C₃-C₈环烷氧羰基、可被取代的芳烷氧羰基、可被取代
的C₆-C₁₀芳氧羰基、氨基羰基、可被取代的N-C₁-C₈烷基氨基羰基、
可被取代的N,N'-C₁-C₈二烷基氨基羰基、可被取代的N-C₁-C₈烷基
-N'-C₃-C₈环烷基氨基羰基、可被取代的N-C₁-C₈烷基-N'-芳烷基氨基羰
基、可被取代的N-C₁-C₈烷基-N'-C₆-C₁₀芳基氨基羰基、可被取代的
25 C₃-C₈环烷基氨基羰基、可被取代的N,N'-C₃-C₈二环烷基氨基羰基、可
被取代的N-C₃-C₈环烷基-N'-芳烷基氨基羰基、可被取代的N-C₃-C₈环
烷基-N'-C₆-C₁₀芳基氨基羰基、可被取代的芳烷基氨基羰基、可被取代
的N,N'-二芳烷基氨基羰基、可被取代的N-芳烷基-N'-C₆-C₁₀芳基氨基
羰基、可被取代的C₆-C₁₀芳基氨基羰基、可被取代的N,N'-C₆-C₁₀二芳
30 基氨基羰基，并且R⁴表示：氢原子、可被取代的C₁-C₄烷基、可被取

代的芳烷基、可被取代的 C₃-C₈ 环烷基、可被取代的芳基、可被取代的 C₁-C₈ 烷基羰基、可被取代的 C₃-C₈ 环烷基羰基、可被取代的芳烷基羰基、可被取代的 C₆-C₁₀ 芳基羰基、可被取代的 C₁-C₈ 烷基磺酰基、可被取代的 C₃-C₈ 环烷基磺酰基、可被取代的芳烷基磺酰基、可被取代的 C₆-C₁₀ 芳基磺酰基、可被取代的 C₁-C₈ 烷氧基羰基、可被取代的 C₃-C₈ 环烷氧羰基、可被取代的芳烷氧羰基、可被取代的 C₆-C₁₀ 芳氧羰基、氨基羰基、可被取代的 N-C₁-C₈ 烷基氨基羰基、可被取代的 N,N'-C₁-C₈ 二烷基氨基羰基、可被取代的 N-C₁-C₈ 烷基-N'-C₃-C₈ 环烷基氨基羰基、可被取代的 N-C₁-C₈ 烷基-N'-芳烷基氨基羰基、可被取代的 N-C₁-C₈ 烷基-N'-C₆-C₁₀ 芳基氨基羰基、可被取代的 C₃-C₈ 环烷基氨基羰基、可被取代的 N,N'-C₃-C₈ 二环烷基氨基羰基、可被取代的 N-C₃-C₈ 环烷基-N'-芳烷基氨基羰基、可被取代的 N-C₃-C₈ 环烷基-N'-C₆-C₁₀ 芳基氨基羰基、可被取代的芳烷基氨基羰基、可被取代的 N,N'-二芳烷基氨基羰基、可被取代的 N-芳烷基-N'-C₆-C₁₀ 芳基氨基羰基、可被取代的 C₆-C₁₀ 芳基氨基羰基、可被取代的 N,N'-C₆-C₁₀ 二芳基氨基羰基、或具有 1 到 4 个选自氧原子、硫原子和氮原子的杂原子并且总共具有 5 到 10 个成环原子的可任选取代的杂环。

当由 Y¹ 表示的 C₆-C₁₀ 芳环具有一个或多个取代基时，所述环可以被一个或多个选自以下的取代基取代：卤素原子、C₁-C₅ 烷基、C₃-C₆ 环烷基、C₃-C₆ 环烷氧基、C₁-C₅ 烷氧基、C₄-C₇ 环烷基烷氧基、C₁-C₅ 烷硫基、C₁-C₅ 烷基磺酰基、C₁-C₅ 卤代烷基和苯环。

当由 X、X¹ 或 Y¹ 表示的环具有一个或多个取代基时，所述取代基可进一步具有一个或多个选自以下的取代基：C₁-C₅ 烷基，如甲基、乙基、丙基、异丙基、丁基、异丁基、仲丁基、叔丁基、戊基、异戊基、新戊基、叔戊基；C₃-C₆ 环烷基，如环丙基、环丁基、环戊基、环己基；C₃-C₆ 环烷氧基，如环丙基氧基、环丁基氧基、环戊基氧基、环己基氧基；C₁-C₄ 羟烷基，如羟甲基、羟乙基、羟丙基、羟丁基；C₁-C₅ 烷氧基，如甲氧基、乙氧基、丙氧基、异丙氧基、丁氧基、异丁氧基、叔丁氧基、戊氧基和异戊氧基；C₄-C₇ 环烷基烷氧基，如环丙基甲氧基、环戊基甲氧基；C₁-C₅ 烷硫基，如甲硫基、乙硫基、丙硫基、丁硫基和

戊硫基； C_1-C_5 烷基磺酰基，如甲磺酰基、乙磺酰基、丙磺酰基、丁磺酰基和戊磺酰基；卤素原子，如氟原子、氯原子、溴原子和碘原子； C_1-C_5 卤代烷基，如三氟甲基； C_1-C_5 卤代烷氧基，如三氟甲氧基、2,2,2-三氟乙氧基；羟基；氰基；硝基；甲酰基； C_2-C_6 烷基羰基，如乙酰基、丙酰基、丁酰基和戊酰基；氨基； C_1-C_5 单烷基氨基，如甲氨基、乙氨基、丙氨基、异丙氨基、丁氨基、异丁氨基、叔丁氨基、戊氨基和异戊氨基； C_2-C_{10} 二烷基氨基，如二甲基氨基、甲基乙基氨基、二乙基氨基、甲基丙基氨基和二异丙基氨基；环氨基，如吡咯烷基、哌啶子基、吗啉代； C_2-C_{10} 单烷基氨基甲基，如甲基氨基甲基、乙基氨基甲基、丙基氨基甲基、异丙基氨基甲基、丁基氨基甲基、异丁基氨基甲基、叔丁基氨基甲基、戊基氨基甲基、异戊基氨基甲基； C_3-C_{11} 二烷基氨基甲基，如二甲基氨基甲基、二乙基氨基甲基、甲基乙基氨基甲基、甲基丙基氨基甲基；苯基；芳烷氧基，如苄氧基、2-苄乙氧基、3-苄丙氧基；芳烷氧羰基，如苄氧羰基、2-苄乙氧羰基； C_2-C_4 烷酰基氧基- C_1-C_4 烷基，如乙酰氧基甲基、2-乙酰氧基乙基、2-丙酰氧基乙基；烷酰基氨基，如乙酰氨基、丙酰氨基、丁酰氨基；N- C_1-C_4 烷基-N-烷酰基氨基，如N-甲基-N-乙酰氨基、N-乙基-N-乙酰氨基、N-甲基-N-丙酰氨基、N-甲基-N-丁酰氨基；杂环氨基，如吡啶氨基、嘧啶氨基、噁吩氨基、呋喃氨基；N- C_1-C_4 烷基-N-杂环氨基，如N-甲基-N-吡啶氨基、N-甲基-N-嘧啶氨基、N-甲基-N-噁吩氨基、N-甲基-N-呋喃氨基；二杂环氨基，如二吡啶氨基、二嘧啶氨基、二噁吩氨基、二呋喃氨基等。

R 可优选为 C_1-C_3 烷基，更优选甲基或乙基。所述烷基的取代基可以优选为 C_3-C_8 烷基。

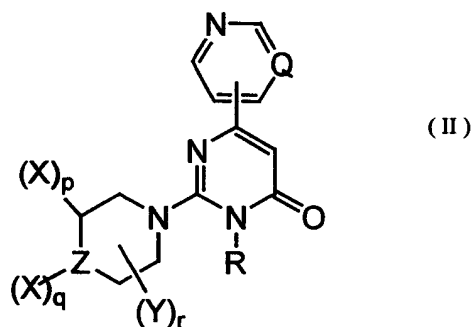
X 可优选为可被取代的苯环、可被取代的苄基、可被取代的萘基、可被取代的苯并呋喃环、可被取代的二氢苯并呋喃环、可被取代的苯并噁唑环、可被取代的苯并异噁唑环、可被取代的苯并噁吩环、可被取代的苯并噁唑环、可被取代的苯并异噁唑环、可被取代的苯并吡唑环；更优选为可被取代的苯环、可被取代的苄基。X 的取代基可优选选自卤素原子、 C_1-C_4 烷基、 C_1-C_4 烷氧基、羟基、硝基、氰基、全卤代 C_1-C_4 烷基、羰基、 C_1-C_4 烷氧羰基、 C_1-C_4 烷硫基、 C_1-C_4 烷氧磺酰

基、可被 C₁-C₄ 烷基取代的氨基、可被取代的苯环和可被取代的环氨基。

前述式 (I) 代表的化合物可形成盐。这些盐的实例包括，当酸性基团存在时，碱金属和碱土金属（如锂、钠、钾、镁和钙）的盐；氨和胺（如甲胺、二甲胺、三甲胺、二环己胺、三(羟基甲基)氨基甲烷、*N,N*-双(羟基乙基)哌嗪、2-氨基-2-甲基-1-丙醇、乙醇胺、*N*-甲基葡糖胺和 L-葡糖胺）的盐；或与碱性氨基酸（如赖氨酸、 δ -羟基赖氨酸和精氨酸）所形成的盐。当碱性基团存在时，实例包括与无机酸（如盐酸、氢溴酸、硫酸、硝酸和磷酸）所形成的盐，与有机酸（如甲磺酸、苯磺酸、对甲苯磺酸、乙酸、丙酸、酒石酸、富马酸、马来酸、苹果酸、草酸、琥珀酸、柠檬酸、苯甲酸、杏仁酸、肉桂酸、乳酸、羟基乙酸、葡糖醛酸、抗坏血酸、烟酸和水杨酸）所形成的盐；或与酸性氨基酸（如天冬氨酸和谷氨酸）所形成的盐。

除前述式 (I) 代表的 3-取代的-4-嘧啶酮衍生物及其盐之外，它们的溶剂化物和水合物也在本发明的范围之内。前述式 (I) 代表的 3-取代的-4 嘧啶酮衍生物可以具有一个或一个以上的不对称碳原子。对于这些不对称碳原子的立体化学，它们可以独立地为 (R) 或 (S) 构型，而该嘧啶酮衍生物可以作为立体异构体如旋光异构体或非对映异构体存在。任何纯式的立体异构体、任何立体异构体的混合物、外消旋体等，都在本发明的范围之内。

本发明优选的化合物由下式(II)表示：



其中 Q、R、X、Y 的定义同上；p 为 0 或 1；q 为 0 或 1；r 为 0 到 6 的整数；p+q 为 1 或 2；

并且 Z 表示 N 或 CZ¹，其中 Z¹ 表示氢原子或 Y。

由式(II)表示的化合物的更优选类别的例子包括：

- (1)其中 R 表示可被 C₃-C₈ 环烷基取代的 C₁-C₃ 烷基的化合物；
- (2)上述(1)的化合物，其中 R 为甲基或乙基；Y 处于哌嗪环或哌啶环的 3-位、4-位或 5-位；p+q 为 1；并且 r 为 0 到 3 的整数；
- 5 (3)上述(2)的化合物，其中 X 为可被取代的 C₁-C₈ 烷基或可被取代的 C₆-C₁₀ 芳环；Y 为可被取代的 C₁-C₆ 烷基；p 为 1；q 为 0；r 为 0 到 3 的整数；Z 为 N 或 CH；
- (4)上述(3)的化合物，其中 X 为可被取代的苯环、可被取代的苄基；Y 为可被取代的甲基；Z 为 N；r 为 0 或 1；
- 10 (5)上述(2)的化合物，其中 X 为可被取代的苯环、可被取代的苄基、可被取代的苯甲酰基或可被取代的苯并异噻唑环；Y 为可被取代的甲基；Z 为 N；p 为 0；
- (6)上述(2)的化合物，其中 X 为被苯环取代的 C₁-C₈ 烷基（其中苯环可被取代）或可被取代的苯环；Y 为羟基、氰基或 Y¹-CO-，其中 Y¹ 为 C₁-C₈ 烷基；Z 为 CH 或 C-Y；r 为 0 或 1；并且
- 15 (7)上述(6)的化合物，其中 X 为可被取代的苄基或可被取代的苯环；Y 为羟基、氰基或乙酰基；Z 为 CH 或 C-Y；r 为 0 或 1。




















由式(II)表示的化合物的特别优选的类别的例子包括：




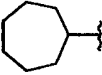



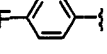


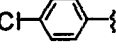


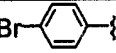


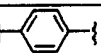

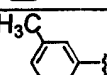
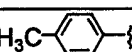
- (1)其中 R 为甲基，Y 为 CH₃O-CO-基团或 CH₃CH₂O-CO-基团，Z 为 N，
- 20 p 为 0，q 为 1，r 为 0 或 1，Y 位于哌嗪环的 3-位的化合物；
- (2)其中 R 为甲基，Y 为甲基、苄基或乙酰基，Z 为 N，p 为 1，q 为 0，r 为 0 或 1，Y 位于哌嗪环的 4-位的化合物；
- (3)其中 R 为甲基，Y 为甲基，Z 为 N，p 为 1，q 为 0，r 为 1 到 3，Y 位于哌嗪的 3-位、4-位或 5-位的化合物；
- 25 (4)R 为甲基，Y 为羟基或氰基，Z 为 CH，p 为 1，q 为 0，r 为 0 或 1，X 和 Y 连接在相同的碳原子上的化合物；
- (5)其中 R 为甲基，Y 为羟基、氰基或乙酰基，Z 为 C-Y，p 为 0，q 为 1，r 为 1 的化合物。

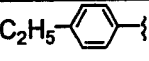
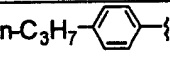
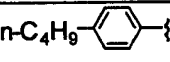

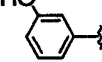
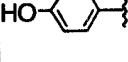

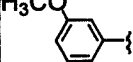
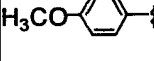
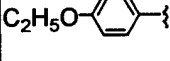
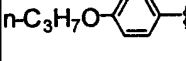
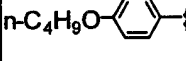

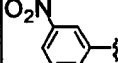
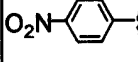

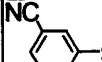
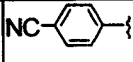

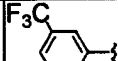
本发明的优选化合物的例子在下表示出，然而，本发明的范围不

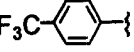

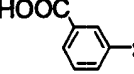
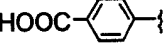

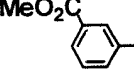
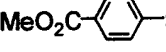

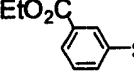
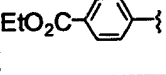

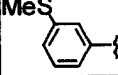
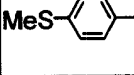

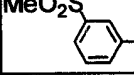
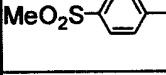

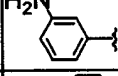
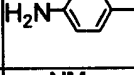

30 限于以下的化合物。

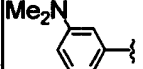
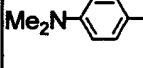
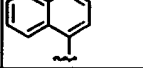
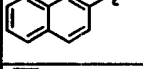

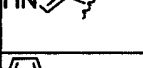

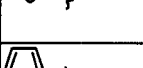
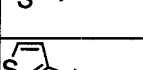
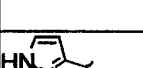
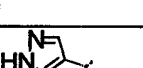
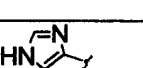
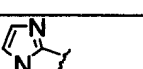
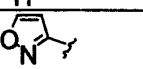
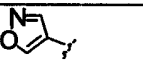
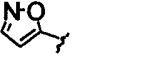
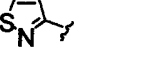
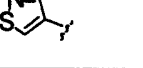
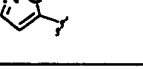

表-1

No.	R1	R2	R3	R4	R5	R6
XA1	CH3-	H	H	CH3-	H	H
XA2	CH3-	H	H	CH3CH2-	H	H
XA3	CH3-	H	H		H	H
XA4	CH3-	H	H		H	H
XA5	CH3-	H	H		H	H
XA6	CH3-	H	H		H	H
XA7	CH3-	H	H		H	H
XA8	CH3-	H	H		H	H
XA9	CH3-	H	H		H	H
XA10	CH3-	H	H		H	H
XA11	CH3-	H	H		H	H
XA12	CH3-	H	H		H	H
XA13	CH3-	H	H		H	H
XA14	CH3-	H	H		H	H
XA15	CH3-	H	H		H	H
XA16	CH3-	H	H		H	H
XA17	CH3-	H	H	n-C8H17-	H	H
XA18	CH3-	H	H		H	H
XA19	CH3-	H	H		H	H
XA20	CH3-	H	H		H	H
XA21	CH3-	H	H		H	H
XA22	CH3-	H	H		H	H





















No.	R1	R2	R3	R4	R5	R6
XA23	CH ₃ -	H	H		H	H
XA24	CH ₃ -	H	H		H	H
XA25	CH ₃ -	H	H		H	H
XA26	CH ₃ -	H	H		H	H
XA27	CH ₃ -	H	H		H	H
XA28	CH ₃ -	H	H		H	H
XA29	CH ₃ -	H	H		H	H
XA30	CH ₃ -	H	H		H	H
XA31	CH ₃ -	H	H		H	H
XA32	CH ₃ -	H	H		H	H
XA33	CH ₃ -	H	H		H	H
XA34	CH ₃ -	H	H		H	H
XA35	CH ₃ -	H	H		H	H
XA36	CH ₃ -	H	H		H	H
XA37	CH ₃ -	H	H		H	H
XA38	CH ₃ -	H	H		H	H
XA39	CH ₃ -	H	H		H	H
XA40	CH ₃ -	H	H		H	H
XA41	CH ₃ -	H	H		H	H
XA42	CH ₃ -	H	H		H	H

No.	R1	R2	R3	R4	R5	R6
XA43	CH ₃ -	H	H		H	H
XA44	CH ₃ -	H	H		H	H
XA45	CH ₃ -	H	H		H	H
XA46	CH ₃ -	H	H		H	H
XA47	CH ₃ -	H	H		H	H
XA48	CH ₃ -	H	H		H	H
XA49	CH ₃ -	H	H		H	H
XA50	CH ₃ -	H	H		H	H
XA51	CH ₃ -	H	H		H	H
XA52	CH ₃ -	H	H		H	H
XA53	CH ₃ -	H	H		H	H
XA54	CH ₃ -	H	H		H	H
XA55	CH ₃ -	H	H		H	H
XA56	CH ₃ -	H	H		H	H
XA57	CH ₃ -	H	H		H	H
XA58	CH ₃ -	H	H		H	H
XA59	CH ₃ -	H	H		H	H
XA60	CH ₃ -	H	H		H	H
XA61	CH ₃ -	H	H		H	H
XA62	CH ₃ -	H	H		H	H

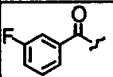
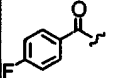
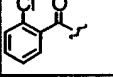
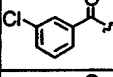
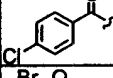
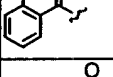
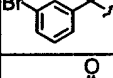
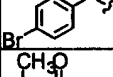
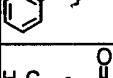
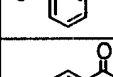
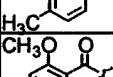
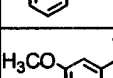
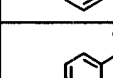
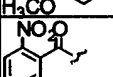
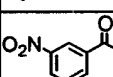
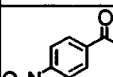
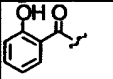
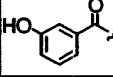
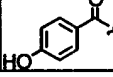

No.	R1	R2	R3	R4	R5	R6
XA63	CH3-	H	H		H	H
XA64	CH3-	H	H		H	H
XA65	CH3-	H	H		H	H
XA66	CH3-	H	H		H	H
XA67	CH3-	H	H		H	H
XA68	CH3-	H	H		H	H
XA69	CH3-	H	H		H	H
XA70	CH3-	H	H		H	H
XA71	CH3-	H	H		H	H
XA72	CH3-	H	H		H	H
XA73	CH3-	H	H		H	H
XA74	CH3-	H	H		H	H
XA75	CH3-	H	H		H	H
XA76	CH3-	H	H		H	H
XA77	CH3-	H	H		H	H
XA78	CH3-	H	H		H	H
XA79	CH3-	H	H		H	H
XA80	CH3-	H	H		H	H
XA81	CH3-	H	H		H	H
XA82	CH3-	H	H		H	H





















No.	R1	R2	R3	R4	R5	R6
XA83	CH3-	H	H		H	H
XA84	CH3-	H	H		H	H
XA85	CH3-	H	H		H	H
XA86	CH3-	H	H		H	H
XA87	CH3-	H	H		H	H
XA88	CH3-	H	H		H	H
XA89	CH3-	H	H		H	H
XA90	CH3-	H	H		H	H
XA91	CH3-	H	H		H	H
XA92	CH3-	H	H		H	H
XA93	CH3-	H	H		H	H
XA94	CH3-	H	H		H	H
XA95	CH3-	H	H		H	H
XA96	CH3-	H	H		H	H
XA97	CH3-	H	H		H	H
XA98	CH3-	H	H		H	H
XA99	CH3-	H	H		H	H
XA100	CH3-	H	H		H	H
XA101	CH3-	H	H		H	H
XA102	CH3-	H	H		H	H

No.	R1	R2	R3	R4	R5	R6
XA103	CH3-	H	H		H	H
XA104	CH3-	H	H		H	H
XA105	CH3-	H	H		H	H
XA106	CH3-	H	H		H	H
XA107	CH3-	H	H		H	H
XA108	CH3-	H	H		H	H
XA109	CH3-	H	H		H	H
XA110	CH3-	H	H		H	H
XA111	CH3-	H	H		H	H
XA112	CH3-	H	H		H	H
XA113	CH3-	H	H		H	H
XA114	CH3-	H	H		H	H
XA115	CH3-	H	H		H	H
XA116	CH3-	H	H		H	H
XA117	CH3-	H	H		H	H
XA118	CH3-	H	H		H	H
XA119	CH3-	H	H		H	H
XA120	CH3-	H	H		H	H
XA121	CH3-	H	H		H	H
XA122	CH3-	H	H		H	H

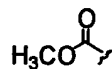
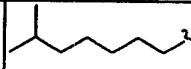
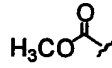
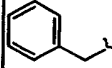
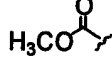
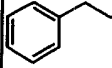
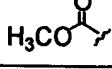
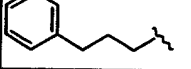
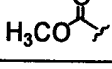

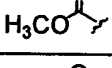

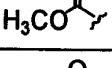

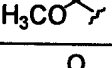

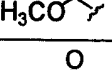

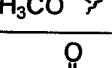

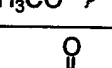

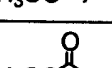

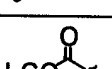

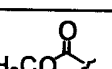

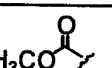

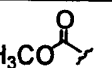

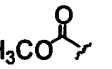

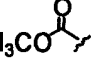

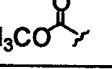



No.	R1	R2	R3	R4	R5	R6
XA123	CH3-	H	H		H	H
XA124	CH3-	H	H		H	H
XA125	CH3-	H	H		H	H
XA126	CH3-	H	H		H	H
XA127	CH3-	H	H		H	H
XA128	CH3-	H	H		H	H
XA129	CH3-	H	H		H	H
XA130	CH3-	H	H		H	H
XA131	CH3-	H	H		H	H
XA132	CH3-	H	H		H	H
XA133	CH3-	H	H		H	H
XA134	CH3-	H	H		H	H
XA135	CH3-	H	H		H	H
XA136	CH3-	H	H		H	H
XA137	CH3-	H	H		H	H
XA138	CH3-	H	H		H	H
XA139	CH3-	H	H		H	H
XA140	CH3-	H	H		H	H
XA141	CH3-	H	H		H	H
XA142	CH3-	H	H		H	H

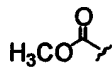
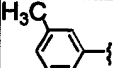
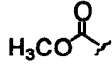
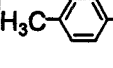
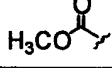
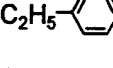
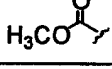
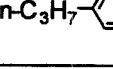
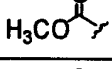
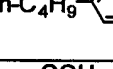
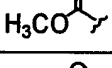
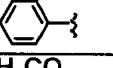
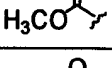
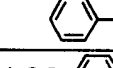
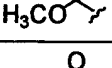
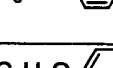
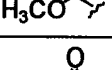
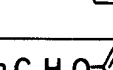
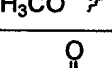
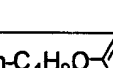
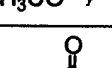
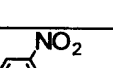
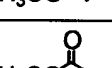
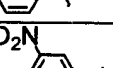
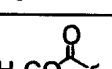
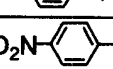
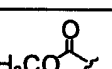
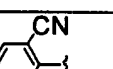
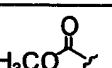
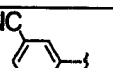
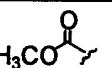
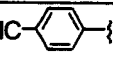
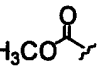
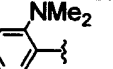
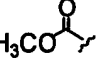
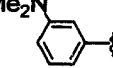
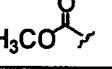
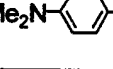


No.	R1	R2	R3	R4	R5	R6
XA143	CH3-	H	H		H	H
XA144	CH3-	H	H		H	H
XA145	CH3-	H	H		H	H
XA146	CH3-	H	H		H	H
XA147	CH3-	H	H		H	H
XA148	CH3-	H	H		H	H
XA149	CH3-	H	H		H	H
XA150	CH3-	H	H		H	H
XA151	CH3-	H	H		H	H
XA152	CH3-	H	H		H	H
XA153	CH3-	H	H		H	H
XA154	CH3-	H	H		H	H
XA155	CH3-	H	H		H	H
XA156	CH3-	H	H		H	H
XA157	CH3-	H	H		H	H
XA158	CH3-	H	H		H	H
XA159	CH3-	H	H		H	H
XA160	CH3-	H	H		H	H
XA161	CH3-	H	H		H	H
XA162	CH3-	H	H		H	H

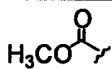

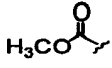
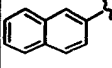
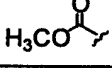

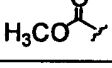

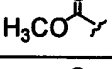
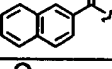
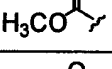

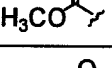

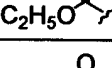
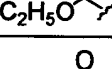
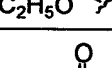
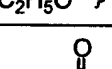

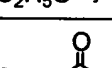

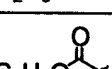

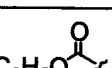

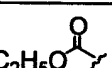

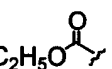

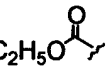
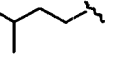
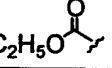

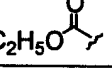



No.	R1	R2	R3	R4	R5	R6
XA163	CH3-	H	H		H	H
XA164	CH3-	H	H		H	H
XA165	CH3-	H	H		H	H
XA166	CH3-	H	H		H	H
XA167	CH3-	H	H		H	H
XA168	CH3-	H	H		H	H
XA169	CH3-	H	H		H	H
XA170	CH3-	H	H		H	H
XA171	CH3-	H	H		H	H
XA172	CH3-	H	H		H	H
XA173	CH3-	H	H		H	H
XA174	CH3-	H	H		H	H
XA175	CH3-	H	H		H	H
XA176	CH3-	H	H		H	H
XA177	CH3-	H	H		H	H
XA178	CH3-	H	H		H	H
XA179	CH3-	H	H		H	H
XA180	CH3-	H	H		H	H
XA181	CH3-	H	H		H	H
XA182	CH3-	H	H		H	H

No.	R1	R2	R3	R4	R5	R6
XA183	CH3-	H	H		H	H
XA184	CH3-	H	H		H	H
XA185	CH3-	H	H		H	H
XA186	CH3-	H	H		H	H
XA187	CH3-	H	H		H	H
XA188	CH3-	H	H		H	H
XA189	CH3-	H	H		H	H
XA190	CH3-	H	H		H	H
XA191	CH3-	H	H		H	H
XA192	CH3-	H	H		H	H
XA193	CH3-	H	H		H	H
XA194	CH3-	H	H		H	H
XA195	CH3-	H	H		H	H
XA196	CH3-	H	H		H	H
XA197	CH3-	H	H		H	H
XA198	CH3-	H	H		H	H
XA199	CH3-	H	H		H	H
XA200	CH3-	H	H		H	H
XA201	CH3-	H	H		H	H
XA202	CH3-	H	H		H	H

No.	R1	R2	R3	R4	R5	R6
XA203	CH3-	H	H		H	H
XA204	CH3-	H	H		H	H
XA205	CH3-		H	H	H	H
XA206	CH3-		H	CH3-	H	H
XA207	CH3-		H	CH3CH2-	H	H
XA208	CH3-		H		H	H
XA209	CH3-		H		H	H
XA210	CH3-		H		H	H
XA211	CH3-		H		H	H
XA212	CH3-		H		H	H
XA213	CH3-		H		H	H
XA214	CH3-		H		H	H
XA215	CH3-		H		H	H
XA216	CH3-		H		H	H
XA217	CH3-		H		H	H
XA218	CH3-		H		H	H
XA219	CH3-		H		H	H
XA220	CH3-		H		H	H
XA221	CH3-		H		H	H
XA222	CH3-		H	n-C8H17-	H	H

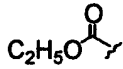
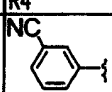
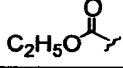
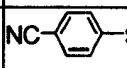
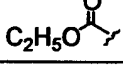
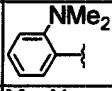
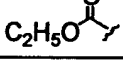
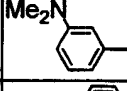
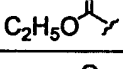
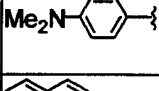
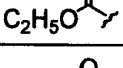

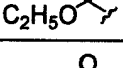
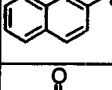
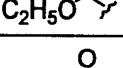

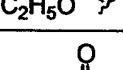

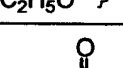
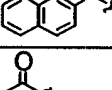
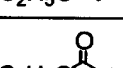

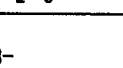







No.	R1	R2	R3	R4	R5	R6
XA223	CH ₃ -		H		H	H
XA224	CH ₃ -		H		H	H
XA225	CH ₃ -		H		H	H
XA226	CH ₃ -		H		H	H
XA227	CH ₃ -		H		H	H
XA228	CH ₃ -		H		H	H
XA229	CH ₃ -		H		H	H
XA230	CH ₃ -		H		H	H
XA231	CH ₃ -		H		H	H
XA232	CH ₃ -		H		H	H
XA233	CH ₃ -		H		H	H
XA234	CH ₃ -		H		H	H
XA235	CH ₃ -		H		H	H
XA236	CH ₃ -		H		H	H
XA237	CH ₃ -		H		H	H
XA238	CH ₃ -		H		H	H
XA239	CH ₃ -		H		H	H
XA240	CH ₃ -		H		H	H
XA241	CH ₃ -		H		H	H
XA242	CH ₃ -		H		H	H


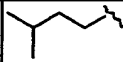
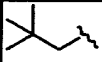
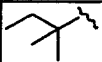

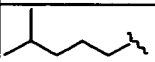

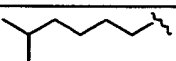
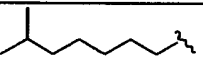
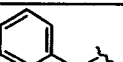
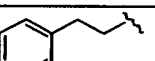
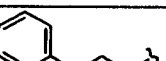



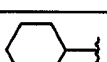
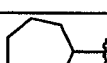


No.	R1	R2	R3	R4	R5	R6
XA243	CH ₃ -		H		H	H
XA244	CH ₃ -		H		H	H
XA245	CH ₃ -		H		H	H
XA246	CH ₃ -		H		H	H
XA247	CH ₃ -		H		H	H
XA248	CH ₃ -		H		H	H
XA249	CH ₃ -		H		H	H
XA250	CH ₃ -		H		H	H
XA251	CH ₃ -		H		H	H
XA252	CH ₃ -		H		H	H
XA253	CH ₃ -		H		H	H
XA254	CH ₃ -		H		H	H
XA255	CH ₃ -		H		H	H
XA256	CH ₃ -		H		H	H
XA257	CH ₃ -		H		H	H
XA258	CH ₃ -		H		H	H
XA259	CH ₃ -		H		H	H
XA260	CH ₃ -		H		H	H
XA261	CH ₃ -		H		H	H
XA262	CH ₃ -		H		H	H





















No.	R1	R2	R3	R4	R5	R6
XA263	CH3-		H		H	H
XA264	CH3-		H		H	H
XA265	CH3-		H		H	H
XA266	CH3-		H		H	H
XA267	CH3-		H		H	H
XA268	CH3-		H		H	H
XA269	CH3-		H		H	H
XA270	CH3-		H	H	H	H
XA271	CH3-		H	CH3-	H	H
XA272	CH3-		H	CH3CH2-	H	H
XA273	CH3-		H		H	H
XA274	CH3-		H		H	H
XA275	CH3-		H		H	H
XA276	CH3-		H		H	H
XA277	CH3-		H		H	H
XA278	CH3-		H		H	H
XA279	CH3-		H		H	H
XA280	CH3-		H		H	H
XA281	CH3-		H		H	H
XA282	CH3-		H		H	H

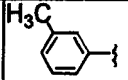
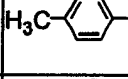
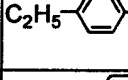
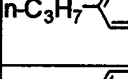
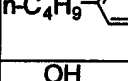
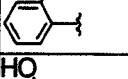
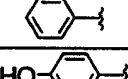
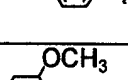
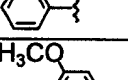
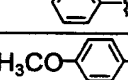
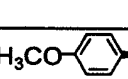
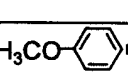
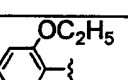
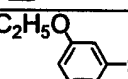
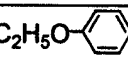
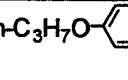
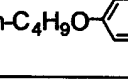
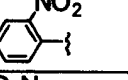
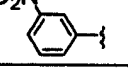

No.	R1	R2	R3	R4	R5	R6
XA283	CH3-		H		H	H
XA284	CH3-		H		H	H
XA285	CH3-		H		H	H
XA286	CH3-		H		H	H
XA287	CH3-		H	n-C8H17-	H	H
XA288	CH3-		H		H	H
XA289	CH3-		H		H	H
XA290	CH3-		H		H	H
XA291	CH3-		H		H	H
XA292	CH3-		H		H	H
XA293	CH3-		H		H	H
XA294	CH3-		H		H	H
XA295	CH3-		H		H	H
XA296	CH3-		H		H	H
XA297	CH3-		H		H	H
XA298	CH3-		H		H	H
XA299	CH3-		H		H	H
XA300	CH3-		H		H	H
XA301	CH3-		H		H	H
XA302	CH3-		H		H	H

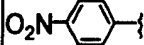


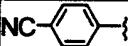


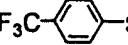


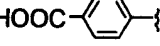


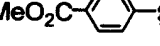


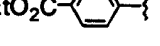




No.	R1	R2	R3	R4	R5	R6
XA303	CH ₃ -		H		H	H
XA304	CH ₃ -		H		H	H
XA305	CH ₃ -		H		H	H
XA306	CH ₃ -		H		H	H
XA307	CH ₃ -		H		H	H
XA308	CH ₃ -		H		H	H
XA309	CH ₃ -		H		H	H
XA310	CH ₃ -		H		H	H
XA311	CH ₃ -		H		H	H
XA312	CH ₃ -		H		H	H
XA313	CH ₃ -		H		H	H
XA314	CH ₃ -		H		H	H
XA315	CH ₃ -		H		H	H
XA316	CH ₃ -		H		H	H
XA317	CH ₃ -		H		H	H
XA318	CH ₃ -		H		H	H
XA319	CH ₃ -		H		H	H
XA320	CH ₃ -		H		H	H
XA321	CH ₃ -		H		H	H
XA322	CH ₃ -		H		H	H

No.	R1	R2	R3	R4	R5	R6
XA323	CH3-		H		H	H
XA324	CH3-		H		H	H
XA325	CH3-		H		H	H
XA326	CH3-		H		H	H
XA327	CH3-		H		H	H
XA328	CH3-		H		H	H
XA329	CH3-		H		H	H
XA330	CH3-		H		H	H
XA331	CH3-		H		H	H
XA332	CH3-		H		H	H
XA333	CH3-		H		H	H
XA334	CH3-		H		H	H
XA335	CH3-	CH3-	H	H	H	H
XA336	CH3-	CH3CH2-	H	H	H	H
XA337	CH3-		H	H	H	H
XA338	CH3-		H	H	H	H
XA339	CH3-		H	H	H	H
XA340	CH3-		H	H	H	H
XA341	CH3-		H	H	H	H
XA342	CH3-		H	H	H	H

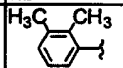
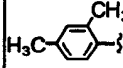
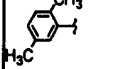
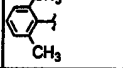
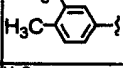
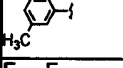
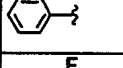
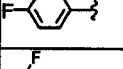
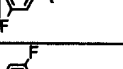
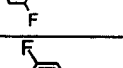
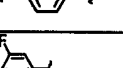
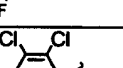
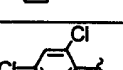
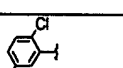
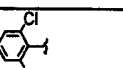
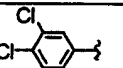
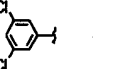
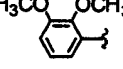
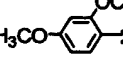

No.	R1	R2	R3	R4	R5	R6
XA343	CH3-		H	H	H	H
XA344	CH3-		H	H	H	H
XA345	CH3-		H	H	H	H
XA346	CH3-		H	H	H	H
XA347	CH3-		H	H	H	H
XA348	CH3-		H	H	H	H
XA349	CH3-		H	H	H	H
XA350	CH3-		H	H	H	H
XA351	CH3-	n-C8H17-	H	H	H	H
XA352	CH3-		H	H	H	H
XA353	CH3-		H	H	H	H
XA354	CH3-		H	H	H	H
XA355	CH3-		H	H	H	H
XA356	CH3-		H	H	H	H
XA357	CH3-		H	H	H	H
XA358	CH3-		H	H	H	H
XA359	CH3-		H	H	H	H
XA360	CH3-		H	H	H	H
XA361	CH3-		H	H	H	H
XA362	CH3-		H	H	H	H

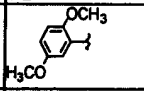
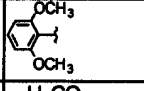
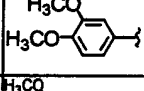
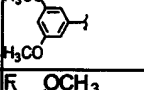
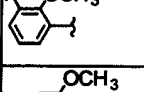
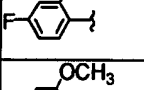
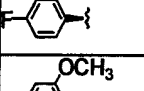
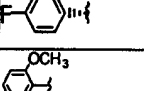
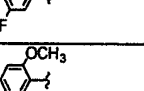
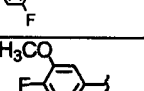
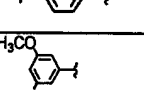
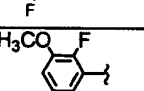
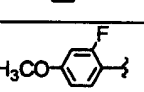
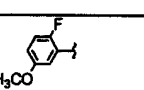
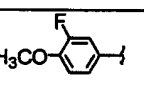
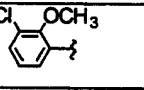
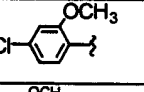
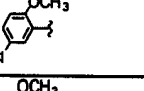
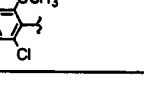

No.	R1	R2	R3	R4	R5	R6
XA363	CH3-		H	H	H	H
XA364	CH3-		H	H	H	H
XA365	CH3-		H	H	H	H
XA366	CH3-		H	H	H	H
XA367	CH3-		H	H	H	H
XA368	CH3-		H	H	H	H
XA369	CH3-		H	H	H	H
XA370	CH3-		H	H	H	H
XA371	CH3-		H	H	H	H
XA372	CH3-		H	H	H	H
XA373	CH3-		H	H	H	H
XA374	CH3-		H	H	H	H
XA375	CH3-		H	H	H	H
XA376	CH3-		H	H	H	H
XA377	CH3-		H	H	H	H
XA378	CH3-		H	H	H	H
XA379	CH3-		H	H	H	H
XA380	CH3-		H	H	H	H
XA381	CH3-		H	H	H	H
XA382	CH3-		H	H	H	H

No.	R1	R2	R3	R4	R5	R6
XA383	CH3-		H	H	H	H
XA384	CH3-		H	H	H	H
XA385	CH3-		H	H	H	H
XA386	CH3-		H	H	H	H
XA387	CH3-		H	H	H	H
XA388	CH3-		H	H	H	H
XA389	CH3-		H	H	H	H
XA390	CH3-		H	H	H	H
XA391	CH3-		H	H	H	H
XA392	CH3-		H	H	H	H
XA393	CH3-		H	H	H	H
XA394	CH3-		H	H	H	H
XA395	CH3-		H	H	H	H
XA396	CH3-		H	H	H	H
XA397	CH3-		H	H	H	H
XA398	CH3-		H	H	H	H
XA399	CH3-		H	H	H	H
XA400	CH3-		H	H	H	H
XA401	CH3-		H	H	H	H
XA402	CH3-		H	H	H	H

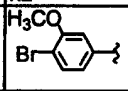
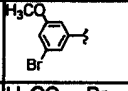
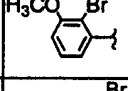
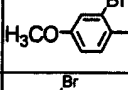
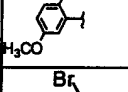
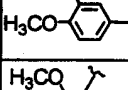
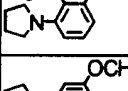
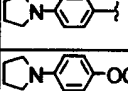
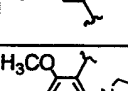
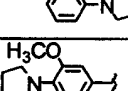
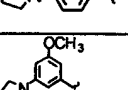
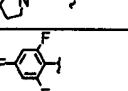
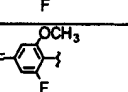
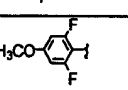
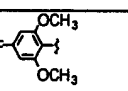
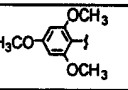
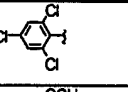
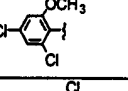
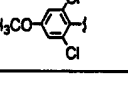

No.	R1	R2	R3	R4	R5	R6
XA403	CH3-		H	H	H	H
XA404	CH3-		H	H	H	H
XA405	CH3-		H	H	H	H
XA406	CH3-		H	H	H	H
XA407	CH3-		H	H	H	H
XA408	CH3-		H	H	H	H
XA409	CH3-		H	H	H	H
XA410	CH3-		H	H	H	H
XA411	CH3-		H	H	H	H
XA412	CH3-		H	H	H	H
XA413	CH3-		H	H	H	H
XA414	CH3-		H	H	H	H
XA415	CH3-		H	H	H	H
XA416	CH3-		H	H	H	H
XA417	CH3-		H	H	H	H
XA418	CH3-		H	H	H	H
XA419	CH3-		H	H	H	H
XA420	CH3-		H	H	H	H
XA421	CH3-		H	H	H	H
XA422	CH3-		H	H	H	H

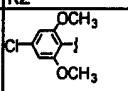
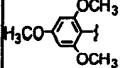
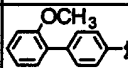
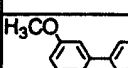
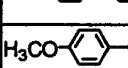
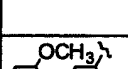
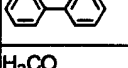
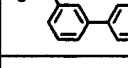
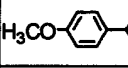
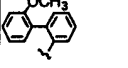
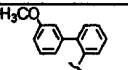
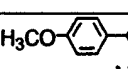
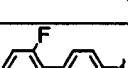
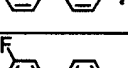
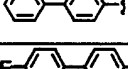
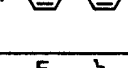
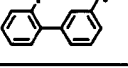
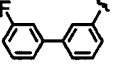
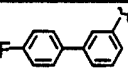
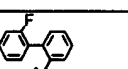
No.	R1	R2	R3	R4	R5	R6
XA423	CH3-		H	H	H	H
XA424	CH3-		H	H	H	H
XA425	CH3-		H	H	H	H
XA426	CH3-		H	H	H	H
XA427	CH3-		H	H	H	H
XA428	CH3-		H	H	H	H
XA429	CH3-		H	H	H	H
XA430	CH3-		H	H	H	H
XA431	CH3-		H	H	H	H
XA432	CH3-		H	H	H	H
XA433	CH3-		H	H	H	H
XA434	CH3-		H	H	H	H
XA435	CH3-		H	H	H	H
XA436	CH3-		H	H	H	H
XA437	CH3-		H	H	H	H
XA438	CH3-		H	H	H	H
XA439	CH3-		H	H	H	H
XA440	CH3-		H	H	H	H
XA441	CH3-		H	H	H	H
XA442	CH3-		H	H	H	H


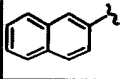


















No.	R1	R2	R3	R4	R5	R6
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XA444	CH3-		H	H	H	H
XA445	CH3-		H	H	H	H
XA446	CH3-		H	H	H	H
XA447	CH3-		H	H	H	H
XA448	CH3-		H	H	H	H
XA449	CH3-		H	H	H	H
XA450	CH3-		H	H	H	H
XA451	CH3-		H	H	H	H
XA452	CH3-		H	H	H	H
XA453	CH3-		H	H	H	H
XA454	CH3-		H	H	H	H
XA455	CH3-		H	H	H	H
XA456	CH3-		H	H	H	H
XA457	CH3-		H	H	H	H
XA458	CH3-		H	H	H	H
XA459	CH3-		H	H	H	H
XA460	CH3-		H	H	H	H
XA461	CH3-		H	H	H	H
XA462	CH3-		H	H	H	H





















No.	R1	R2	R3	R4	R5	R6
XA463	CH3-		H	H	H	H
XA464	CH3-		H	H	H	H
XA465	CH3-		H	H	H	H
XA466	CH3-		H	H	H	H
XA467	CH3-		H	H	H	H
XA468	CH3-		H	H	H	H
XA469	CH3-		H	H	H	H
XA470	CH3-		H	H	H	H
XA471	CH3-		H	H	H	H
XA472	CH3-		H	H	H	H
XA473	CH3-		H	H	H	H
XA474	CH3-		H	H	H	H
XA475	CH3-		H	H	H	H
XA476	CH3-		H	H	H	H
XA477	CH3-		H	H	H	H
XA478	CH3-		H	H	H	H
XA479	CH3-		H	H	H	H
XA480	CH3-		H	H	H	H
XA481	CH3-		H	H	H	H
XA482	CH3-		H	H	H	H

No.	R1	R2	R3	R4	R5	R6
XA483	CH3-		H	H	H	H
XA484	CH3-		H	H	H	H
XA485	CH3-		H	H	H	H
XA486	CH3-		H	H	H	H
XA487	CH3-		H	H	H	H
XA488	CH3-		H	H	H	H
XA489	CH3-		H	H	H	H
XA490	CH3-		H	H	H	H
XA491	CH3-		H	H	H	H
XA492	CH3-		H	H	H	H
XA493	CH3-		H	H	H	H
XA494	CH3-		H	H	H	H
XA495	CH3-		H	H	H	H
XA496	CH3-		H	H	H	H
XA497	CH3-		H	H	H	H
XA498	CH3-		H	H	H	H
XA499	CH3-		H	H	H	H
XA500	CH3-		H	H	H	H
XA501	CH3-		H	H	H	H
XA502	CH3-		H	H	H	H

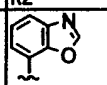
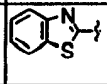
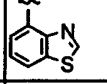
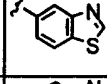
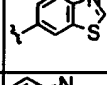
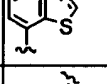
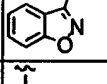
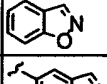
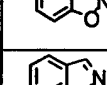
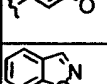
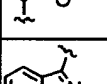
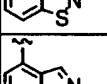
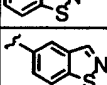
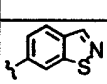
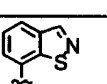
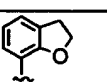
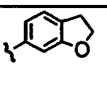
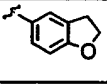
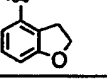

No.	R1	R2	R3	R4	R5	R6
XA503	CH3-		H	H	H	H
XA504	CH3-		H	H	H	H
XA505	CH3-		H	H	H	H
XA506	CH3-		H	H	H	H
XA507	CH3-		H	H	H	H
XA508	CH3-		H	H	H	H
XA509	CH3-		H	H	H	H
XA510	CH3-		H	H	H	H
XA511	CH3-		H	H	H	H
XA512	CH3-		H	H	H	H
XA513	CH3-		H	H	H	H
XA514	CH3-		H	H	H	H
XA515	CH3-		H	H	H	H
XA516	CH3-		H	H	H	H
XA517	CH3-		H	H	H	H
XA518	CH3-		H	H	H	H
XA519	CH3-		H	H	H	H
XA520	CH3-		H	H	H	H
XA521	CH3-		H	H	H	H
XA522	CH3-		H	H	H	H


















No.	R1	R2	R3	R4	R5	R6
XA523	CH3-		H	H	H	H
XA524	CH3-		H	H	H	H
XA525	CH3-		H	H	H	H
XA526	CH3-		H	H	H	H
XA527	CH3-		H	H	H	H
XA528	CH3-		H	H	H	H
XA529	CH3-		H	H	H	H
XA530	CH3-		H	H	H	H
XA531	CH3-		H	H	H	H
XA532	CH3-		H	H	H	H
XA533	CH3-		H	H	H	H
XA534	CH3-		H	H	H	H
XA535	CH3-		H	H	H	H
XA536	CH3-		H	H	H	H
XA537	CH3-		H	H	H	H
XA538	CH3-		H	H	H	H
XA539	CH3-		H	H	H	H
XA540	CH3-		H	H	H	H
XA541	CH3-		H	H	H	H
XA542	CH3-		H	H	H	H

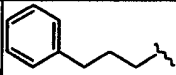




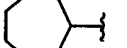














No.	R1	R2	R3	R4	R5	R6
XA543	CH3-		H	H	H	H
XA544	CH3-		H	H	H	H
XA545	CH3-		H	H	H	H
XA546	CH3-		H	H	H	H
XA547	CH3-		H	H	H	H
XA548	CH3-		H	H	H	H
XA549	CH3-		H	H	H	H
XA550	CH3-		H	H	H	H
XA551	CH3-		H	H	H	H
XA552	CH3-		H	H	H	H
XA553	CH3-		H	H	H	H
XA554	CH3-		H	H	H	H
XA555	CH3-		H	H	H	H
XA556	CH3-		H	H	H	H
XA557	CH3-		H	H	H	H
XA558	CH3-		H	H	H	H
XA559	CH3-		H	H	H	H
XA560	CH3-		H	H	H	H
XA561	CH3-		H	H	H	H
XA562	CH3-		H	H	H	H

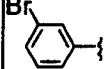
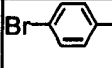
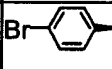
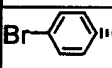
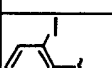
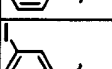
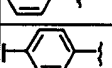
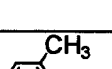
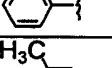
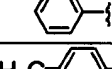
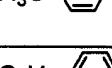
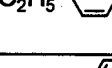
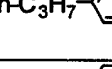
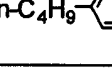
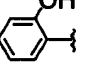
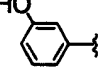
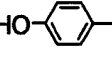
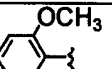
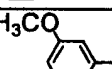
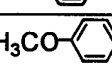
No.	R1	R2	R3	R4	R5	R6
XA563	CH3-		H	H	H	H
XA564	CH3-		H	H	H	H
XA565	CH3-		H	H	H	H
XA566	CH3-		H	H	H	H
XA567	CH3-		H	H	H	H
XA568	CH3-		H	H	H	H
XA569	CH3-		H	H	H	H
XA570	CH3-		H	H	H	H
XA571	CH3-		H	H	H	H
XA572	CH3-		H	H	H	H
XA573	CH3-		H	H	H	H
XA574	CH3-		H	H	H	H
XA575	CH3-		H	H	H	H
XA576	CH3-		H	H	H	H
XA577	CH3-		H	H	H	H
XA578	CH3-		H	H	H	H
XA579	CH3-		H	H	H	H
XA580	CH3-		H	H	H	H
XA581	CH3-		H	H	H	H
XA582	CH3-		H	H	H	H

No.	R1	R2	R3	R4	R5	R6
XA583	CH3-		H	H	H	H
XA584	CH3-		H	H	H	H
XA585	CH3-		H	H	H	H
XA586	CH3-		H	H	H	H
XA587	CH3-		H	H	H	H
XA588	CH3-		H	H	H	H
XA589	CH3-		H	H	H	H
XA590	CH3-		H	H	H	H
XA591	CH3-		H	H	H	H
XA592	CH3-		H	H	H	H
XA593	CH3-		H	H	H	H
XA594	CH3-		H	H	H	H
XA595	CH3-		H	H	H	H
XA596	CH3-		H	H	H	H
XA597	CH3-		H	H	H	H
XA598	CH3-		H	H	H	H
XA599	CH3-		H	H	H	H
XA600	CH3-		H	H	H	H
XA601	CH3-		H	H	H	H
XA602	CH3-		H	H	H	H

No.	R1	R2	R3	R4	R5	R6
XA603	CH3-		H	H	H	H
XA604	CH3-		H	H	H	H
XA605	CH3-		H	H	H	H
XA606	CH3-		H	H	H	H
XA607	CH3-		H	H	H	H
XA608	CH3-		H	H	H	H
XA609	CH3-		H	H	H	H
XA610	CH3-		H	H	H	H
XA611	CH3-		H	H	H	H
XA612	CH3-		H	H	H	H
XA613	CH3-		H	H	H	H
XA614	CH3-		H	H	H	H
XA615	CH3-		H	H	H	H
XA616	CH3-		H	H	H	H
XA617	CH3-		H	H	H	H
XA618	CH3-		H	H	H	H
XA619	CH3-		H	H	H	H
XA620	CH3-		H	H	H	H
XA621	CH3-		H	H	H	H
XA622	CH3-		H	H	H	H

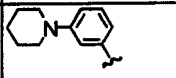
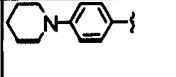
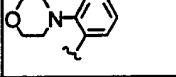
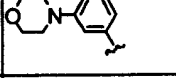
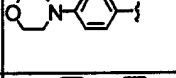
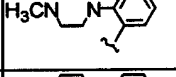
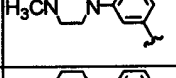
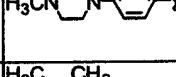
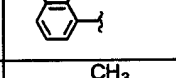
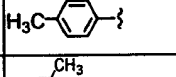
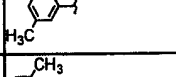
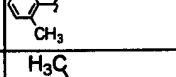
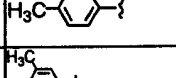
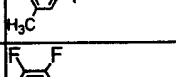
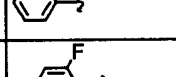
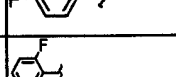
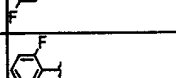
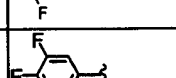
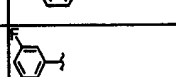

No.	R1	R2	R3	R4	R5	R6
XA623	CH3-	CH3-	H	CH3	H	H
XA624	CH3-	CH3CH2-	H	CH3	H	H
XA625	CH3-		H	CH3	H	H
XA626	CH3-		H	CH3	H	H
XA627	CH3-		H	CH3	H	H
XA628	CH3-		H	CH3	H	H
XA629	CH3-		H	CH3	H	H
XA630	CH3-		H	CH3	H	H
XA631	CH3-		H	CH3	H	H
XA632	CH3-		H	CH3	H	H
XA633	CH3-		H	CH3	H	H
XA634	CH3-		H	CH3	H	H
XA635	CH3-		H	CH3	H	H
XA636	CH3-		H	CH3	H	H
XA637	CH3-		H	CH3	H	H
XA638	CH3-		H	CH3	H	H
XA639	CH3-	n-C8H17-	H	CH3	H	H
XA640	CH3-		H	CH3	H	H
XA641	CH3-		H	CH3	H	H
XA642	CH3-		H	CH3	H	H

No.	R1	R2	R3	R4	R5	R6
XA643	CH3-		H	CH3	H	H
XA644	CH3-		H	CH3	H	H
XA645	CH3-		H	CH3	H	H
XA646	CH3-		H	CH3	H	H
XA647	CH3-		H	CH3	H	H
XA648	CH3-		H	CH3	H	H
XA649	CH3-		H	CH3	H	H
XA650	CH3-		H	CH3	H	H
XA651	CH3-		H	CH3	H	H
XA652	CH3-		H	CH3	H	H
XA653	CH3-		H	CH3	H	H
XA654	CH3-		H	CH3	H	H
XA655	CH3-		H	CH3	H	H
XA656	CH3-		H	CH3	H	H
XA657	CH3-		H	CH3	H	H
XA658	CH3-		H	CH3	H	H
XA659	CH3-		H	CH3	H	H
XA660	CH3-		H	CH3	H	H
XA661	CH3-		H	CH3	H	H
XA662	CH3-		H	CH3	H	H

No.	R1	R2	R3	R4	R5	R6
XA663	CH3-		H	CH3	H	H
XA664	CH3-		H	CH3	H	H
XA665	CH3-		H	CH3	H	H
XA666	CH3-		H	CH3	H	H
XA667	CH3-		H	CH3	H	H
XA668	CH3-		H	CH3	H	H
XA669	CH3-		H	CH3	H	H
XA670	CH3-		H	CH3	H	H
XA671	CH3-		H	CH3	H	H
XA672	CH3-		H	CH3	H	H
XA673	CH3-		H	CH3	H	H
XA674	CH3-		H	CH3	H	H
XA675	CH3-		H	CH3	H	H
XA676	CH3-		H	CH3	H	H
XA677	CH3-		H	CH3	H	H
XA678	CH3-		H	CH3	H	H
XA679	CH3-		H	CH3	H	H
XA680	CH3-		H	CH3	H	H
XA681	CH3-		H	CH3	H	H
XA682	CH3-		H	CH3	H	H

No.	R1	R2	R3	R4	R5	R6
XA683	CH3-		H	CH3	H	H
XA684	CH3-		H	CH3	H	H
XA685	CH3-		H	CH3	H	H
XA686	CH3-		H	CH3	H	H
XA687	CH3-		H	CH3	H	H
XA688	CH3-		H	CH3	H	H
XA689	CH3-		H	CH3	H	H
XA690	CH3-		H	CH3	H	H
XA691	CH3-		H	CH3	H	H
XA692	CH3-		H	CH3	H	H
XA693	CH3-		H	CH3	H	H
XA694	CH3-		H	CH3	H	H
XA695	CH3-		H	CH3	H	H
XA696	CH3-		H	CH3	H	H
XA697	CH3-		H	CH3	H	H
XA698	CH3-		H	CH3	H	H
XA699	CH3-		H	CH3	H	H
XA700	CH3-		H	CH3	H	H
XA701	CH3-		H	CH3	H	H
XA702	CH3-		H	CH3	H	H





















No.	R1	R2	R3	R4	R5	R6
XA703	CH3-		H	CH3	H	H
XA704	CH3-		H	CH3	H	H
XA705	CH3-		H	CH3	H	H
XA706	CH3-		H	CH3	H	H
XA707	CH3-		H	CH3	H	H
XA708	CH3-		H	CH3	H	H
XA709	CH3-		H	CH3	H	H
XA710	CH3-		H	CH3	H	H
XA711	CH3-		H	CH3	H	H
XA712	CH3-		H	CH3	H	H
XA713	CH3-		H	CH3	H	H
XA714	CH3-		H	CH3	H	H
XA715	CH3-		H	CH3	H	H
XA716	CH3-		H	CH3	H	H
XA717	CH3-		H	CH3	H	H
XA718	CH3-		H	CH3	H	H
XA719	CH3-		H	CH3	H	H
XA720	CH3-		H	CH3	H	H
XA721	CH3-		H	CH3	H	H
XA722	CH3-		H	CH3	H	H

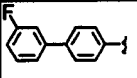
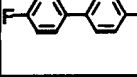
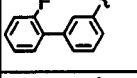
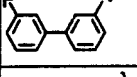
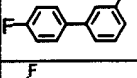
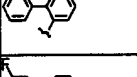
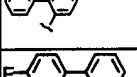
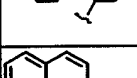
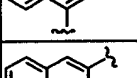
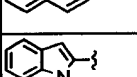
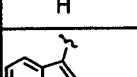
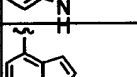
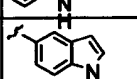
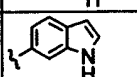
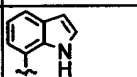
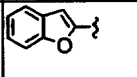
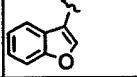
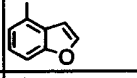
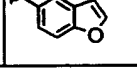

No.	R1	R2	R3	R4	R5	R6
XA723	CH3-		H	CH3	H	H
XA724	CH3-		H	CH3	H	H
XA725	CH3-		H	CH3	H	H
XA726	CH3-		H	CH3	H	H
XA727	CH3-		H	CH3	H	H
XA728	CH3-		H	CH3	H	H
XA729	CH3-		H	CH3	H	H
XA730	CH3-		H	CH3	H	H
XA731	CH3-		H	CH3	H	H
XA732	CH3-		H	CH3	H	H
XA733	CH3-		H	CH3	H	H
XA734	CH3-		H	CH3	H	H
XA735	CH3-		H	CH3	H	H
XA736	CH3-		H	CH3	H	H
XA737	CH3-		H	CH3	H	H
XA738	CH3-		H	CH3	H	H
XA739	CH3-		H	CH3	H	H
XA740	CH3-		H	CH3	H	H
XA741	CH3-		H	CH3	H	H
XA742	CH3-		H	CH3	H	H

No.	R1	R2	R3	R4	R5	R6
XA743	CH3-		H	CH3	H	H
XA744	CH3-		H	CH3	H	H
XA745	CH3-		H	CH3	H	H
XA746	CH3-		H	CH3	H	H
XA747	CH3-		H	CH3	H	H
XA748	CH3-		H	CH3	H	H
XA749	CH3-		H	CH3	H	H
XA750	CH3-		H	CH3	H	H
XA751	CH3-		H	CH3	H	H
XA752	CH3-		H	CH3	H	H
XA753	CH3-		H	CH3	H	H
XA754	CH3-		H	CH3	H	H
XA755	CH3-		H	CH3	H	H
XA756	CH3-		H	CH3	H	H
XA757	CH3-		H	CH3	H	H
XA758	CH3-		H	CH3	H	H
XA759	CH3-		H	CH3	H	H
XA760	CH3-		H	CH3	H	H
XA761	CH3-		H	CH3	H	H
XA762	CH3-		H	CH3	H	H

No.	R1	R2	R3	R4	R5	R6
XA763	CH3-		H	CH3	H	H
XA764	CH3-		H	CH3	H	H
XA765	CH3-		H	CH3	H	H
XA766	CH3-		H	CH3	H	H
XA767	CH3-		H	CH3	H	H
XA768	CH3-		H	CH3	H	H
XA769	CH3-		H	CH3	H	H
XA770	CH3-		H	CH3	H	H
XA771	CH3-		H	CH3	H	H
XA772	CH3-		H	CH3	H	H
XA773	CH3-		H	CH3	H	H
XA774	CH3-		H	CH3	H	H
XA775	CH3-		H	CH3	H	H
XA776	CH3-		H	CH3	H	H
XA777	CH3-		H	CH3	H	H
XA778	CH3-		H	CH3	H	H
XA779	CH3-		H	CH3	H	H
XA780	CH3-		H	CH3	H	H
XA781	CH3-		H	CH3	H	H
XA782	CH3-		H	CH3	H	H


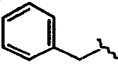
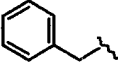

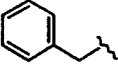
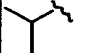
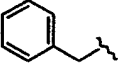

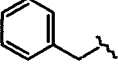
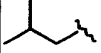
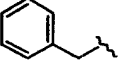
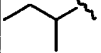
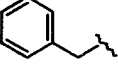
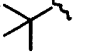
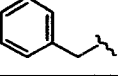

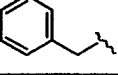
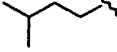
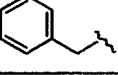
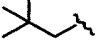
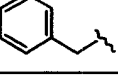
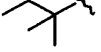
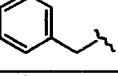

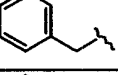
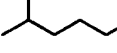
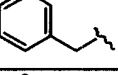

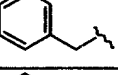
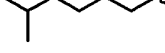
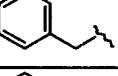
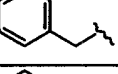
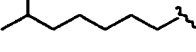
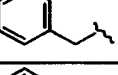
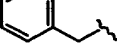
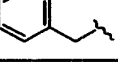
No.	R1	R2	R3	R4	R5	R6
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XA784	CH3-		H	CH3	H	H
XA785	CH3-		H	CH3	H	H
XA786	CH3-		H	CH3	H	H
XA787	CH3-		H	CH3	H	H
XA788	CH3-		H	CH3	H	H
XA789	CH3-		H	CH3	H	H
XA790	CH3-		H	CH3	H	H
XA791	CH3-		H	CH3	H	H
XA792	CH3-		H	CH3	H	H
XA793	CH3-		H	CH3	H	H
XA794	CH3-		H	CH3	H	H
XA795	CH3-		H	CH3	H	H
XA796	CH3-		H	CH3	H	H
XA797	CH3-		H	CH3	H	H
XA798	CH3-		H	CH3	H	H
XA799	CH3-		H	CH3	H	H
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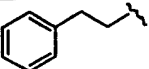
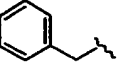
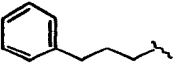
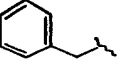

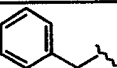

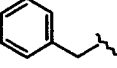

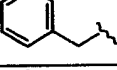

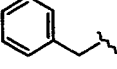

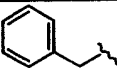

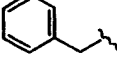

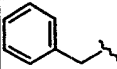

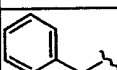

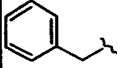

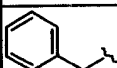

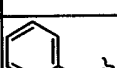

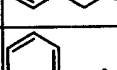

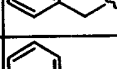

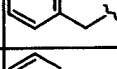

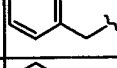

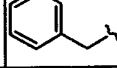

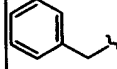

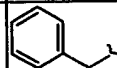
No.	R1	R2	R3	R4	R5	R6
XA803	CH3-		H	CH3	H	H
XA804	CH3-		H	CH3	H	H
XA805	CH3-		H	CH3	H	H
XA806	CH3-		H	CH3	H	H
XA807	CH3-		H	CH3	H	H
XA808	CH3-		H	CH3	H	H
XA809	CH3-		H	CH3	H	H
XA810	CH3-		H	CH3	H	H
XA811	CH3-		H	CH3	H	H
XA812	CH3-		H	CH3	H	H
XA813	CH3-		H	CH3	H	H
XA814	CH3-		H	CH3	H	H
XA815	CH3-		H	CH3	H	H
XA816	CH3-		H	CH3	H	H
XA817	CH3-		H	CH3	H	H
XA818	CH3-		H	CH3	H	H
XA819	CH3-		H	CH3	H	H
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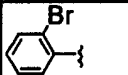
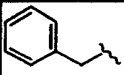
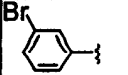
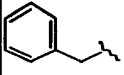
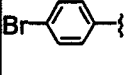
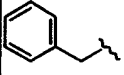
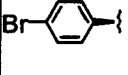
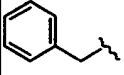
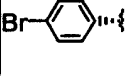
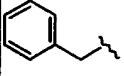
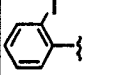
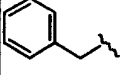
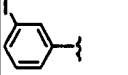
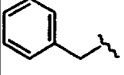
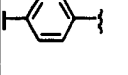
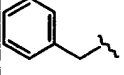
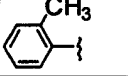
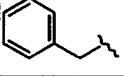
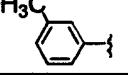
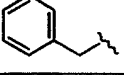
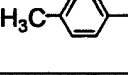
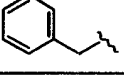
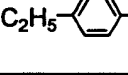
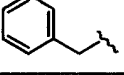
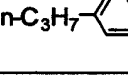
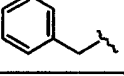
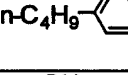
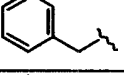
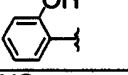
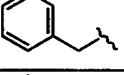
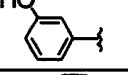
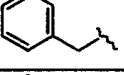
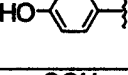
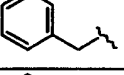
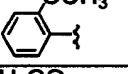
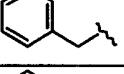
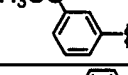
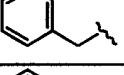
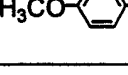
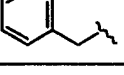
No.	R1	R2	R3	R4	R5	R6
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XA824	CH3-		H	CH3	H	H
XA825	CH3-		H	CH3	H	H
XA826	CH3-		H	CH3	H	H
XA827	CH3-		H	CH3	H	H
XA828	CH3-		H	CH3	H	H
XA829	CH3-		H	CH3	H	H
XA830	CH3-		H	CH3	H	H
XA831	CH3-		H	CH3	H	H
XA832	CH3-		H	CH3	H	H
XA833	CH3-		H	CH3	H	H
XA834	CH3-		H	CH3	H	H
XA835	CH3-		H	CH3	H	H
XA836	CH3-		H	CH3	H	H
XA837	CH3-		H	CH3	H	H
XA838	CH3-		H	CH3	H	H
XA839	CH3-		H	CH3	H	H
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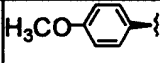
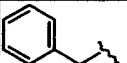
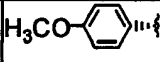
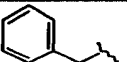
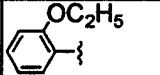
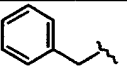
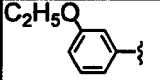
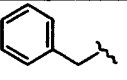
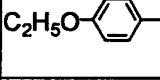
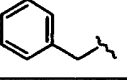
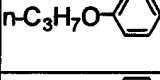
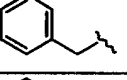
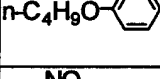
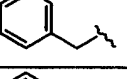
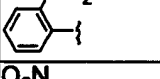
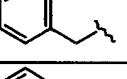
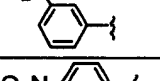
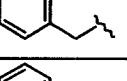
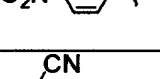
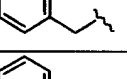
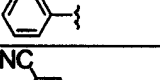
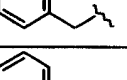
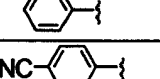
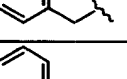
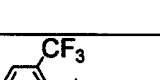
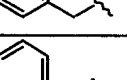
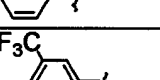
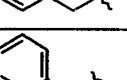
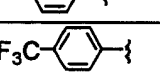
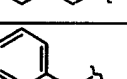
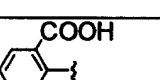
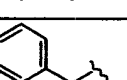
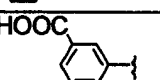
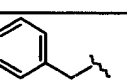
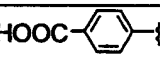
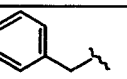
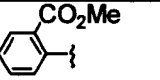
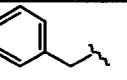


No.	R1	R2	R3	R4	R5	R6
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XA844	CH3-		H	CH3	H	H
XA845	CH3-		H	CH3	H	H
XA846	CH3-		H	CH3	H	H
XA847	CH3-		H	CH3	H	H
XA848	CH3-		H	CH3	H	H
XA849	CH3-		H	CH3	H	H
XA850	CH3-		H	CH3	H	H
XA851	CH3-		H	CH3	H	H
XA852	CH3-		H	CH3	H	H
XA853	CH3-		H	CH3	H	H
XA854	CH3-		H	CH3	H	H
XA855	CH3-		H	CH3	H	H
XA856	CH3-		H	CH3	H	H
XA857	CH3-		H	CH3	H	H
XA858	CH3-		H	CH3	H	H
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XA861	CH3-		H	CH3	H	H

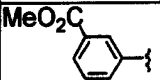
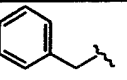
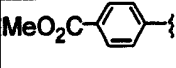
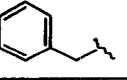
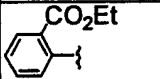
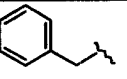
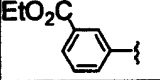
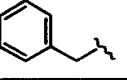
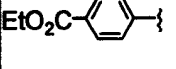
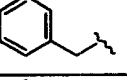
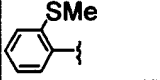
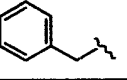
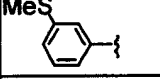
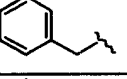
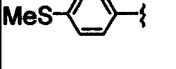
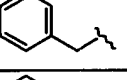
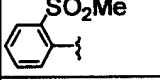
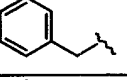
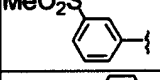
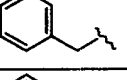
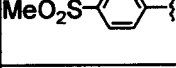
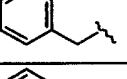
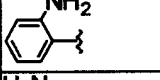
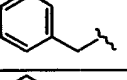
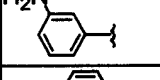
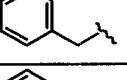

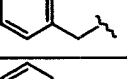
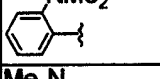
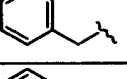
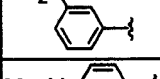
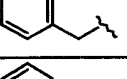
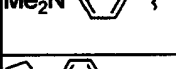
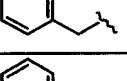
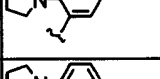
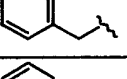
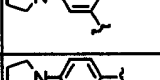
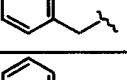
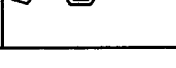
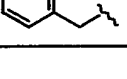
No.	R1	R2	R3	R4	R5	R6
XA862	CH3-		H	CH3	H	H
XA863	CH3-		H	CH3	H	H
XA864	CH3-		H	CH3	H	H
XA865	CH3-		H	CH3	H	H
XA866	CH3-		H	CH3	H	H
XA867	CH3-		H	CH3	H	H
XA868	CH3-		H	CH3	H	H
XA869	CH3-		H	CH3	H	H
XA870	CH3-		H	CH3	H	H
XA871	CH3-		H	CH3	H	H
XA872	CH3-		H	CH3	H	H
XA873	CH3-		H	CH3	H	H
XA874	CH3-		H	CH3	H	H
XA875	CH3-		H	CH3	H	H
XA876	CH3-		H	CH3	H	H
XA877	CH3-		H	CH3	H	H
XA878	CH3-		H	CH3	H	H
XA879	CH3-		H	CH3	H	H
XA880	CH3-		H	CH3	H	H
XA881	CH3-		H	CH3	H	H

No.	R1	R2	R3	R4	R5	R6
XA882	CH3-		H	CH3	H	H
XA883	CH3-	CH3-	H		H	H
XA884	CH3-	CH3CH2-	H		H	H
XA885	CH3-		H		H	H
XA886	CH3-		H		H	H
XA887	CH3-		H		H	H
XA888	CH3-		H		H	H
XA889	CH3-		H		H	H
XA890	CH3-		H		H	H
XA891	CH3-		H		H	H
XA892	CH3-		H		H	H
XA893	CH3-		H		H	H
XA894	CH3-		H		H	H
XA895	CH3-		H		H	H
XA896	CH3-		H		H	H
XA897	CH3-		H		H	H
XA898	CH3-		H		H	H
XA899	CH3-	n-C8H17-	H		H	H
XA900	CH3-		H		H	H
XA901	CH3-		H		H	H

No.	R1	R2	R3	R4	R5	R6
XA902	CH3-		H		H	H
XA903	CH3-		H		H	H
XA904	CH3-		H		H	H
XA905	CH3-		H		H	H
XA906	CH3-		H		H	H
XA907	CH3-		H		H	H
XA908	CH3-		H		H	H
XA909	CH3-		H		H	H
XA910	CH3-		H		H	H
XA911	CH3-		H		H	H
XA912	CH3-		H		H	H
XA913	CH3-		H		H	H
XA914	CH3-		H		H	H
XA915	CH3-		H		H	H
XA916	CH3-		H		H	H
XA917	CH3-		H		H	H
XA918	CH3-		H		H	H
XA919	CH3-		H		H	H
XA920	CH3-		H		H	H
XA921	CH3-		H		H	H

No.	R1	R2	R3	R4	R5	R6
XA922	CH3-		H		H	H
XA923	CH3-		H		H	H
XA924	CH3-		H		H	H
XA925	CH3-		H		H	H
XA926	CH3-		H		H	H
XA927	CH3-		H		H	H
XA928	CH3-		H		H	H
XA929	CH3-		H		H	H
XA930	CH3-		H		H	H
XA931	CH3-		H		H	H
XA932	CH3-		H		H	H
XA933	CH3-		H		H	H
XA934	CH3-		H		H	H
XA935	CH3-		H		H	H
XA936	CH3-		H		H	H
XA937	CH3-		H		H	H
XA938	CH3-		H		H	H
XA939	CH3-		H		H	H
XA940	CH3-		H		H	H
XA941	CH3-		H		H	H

No.	R1	R2	R3	R4	R5	R6
XA942	CH ₃ -		H		H	H
XA943	CH ₃ -		H		H	H
XA944	CH ₃ -		H		H	H
XA945	CH ₃ -		H		H	H
XA946	CH ₃ -		H		H	H
XA947	CH ₃ -		H		H	H
XA948	CH ₃ -		H		H	H
XA949	CH ₃ -		H		H	H
XA950	CH ₃ -		H		H	H
XA951	CH ₃ -		H		H	H
XA952	CH ₃ -		H		H	H
XA953	CH ₃ -		H		H	H
XA954	CH ₃ -		H		H	H
XA955	CH ₃ -		H		H	H
XA956	CH ₃ -		H		H	H
XA957	CH ₃ -		H		H	H
XA958	CH ₃ -		H		H	H
XA959	CH ₃ -		H		H	H
XA960	CH ₃ -		H		H	H
XA961	CH ₃ -		H		H	H

No.	R1	R2	R3	R4	R5	R6
XA962	CH ₃ -		H		H	H
XA963	CH ₃ -		H		H	H
XA964	CH ₃ -		H		H	H
XA965	CH ₃ -		H		H	H
XA966	CH ₃ -		H		H	H
XA967	CH ₃ -		H		H	H
XA968	CH ₃ -		H		H	H
XA969	CH ₃ -		H		H	H
XA970	CH ₃ -		H		H	H
XA971	CH ₃ -		H		H	H
XA972	CH ₃ -		H		H	H
XA973	CH ₃ -		H		H	H
XA974	CH ₃ -		H		H	H
XA975	CH ₃ -		H		H	H
XA976	CH ₃ -		H		H	H
XA977	CH ₃ -		H		H	H
XA978	CH ₃ -		H		H	H
XA979	CH ₃ -		H		H	H
XA980	CH ₃ -		H		H	H
XA981	CH ₃ -		H		H	H

No.	R1	R2	R3	R4	R5	R6
XA982	CH3-		H		H	H
XA983	CH3-		H		H	H
XA984	CH3-		H		H	H
XA985	CH3-		H		H	H
XA986	CH3-		H		H	H
XA987	CH3-		H		H	H
XA988	CH3-		H		H	H
XA989	CH3-		H		H	H
XA990	CH3-		H		H	H
XA991	CH3-		H		H	H
XA992	CH3-		H		H	H
XA993	CH3-		H		H	H
XA994	CH3-		H		H	H
XA995	CH3-		H		H	H
XA996	CH3-		H		H	H
XA997	CH3-		H		H	H
XA998	CH3-		H		H	H
XA999	CH3-		H		H	H
XA1000	CH3-		H		H	H
XA1001	CH3-		H		H	H

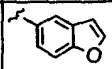
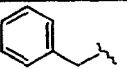
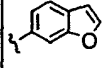
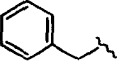
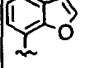
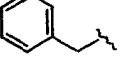
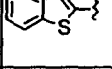
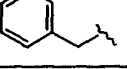
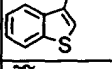
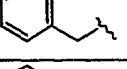
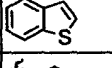
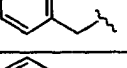
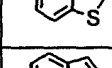
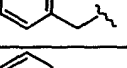

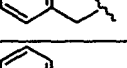
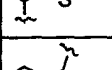
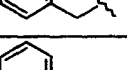
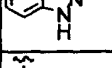

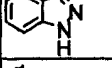
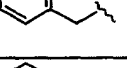
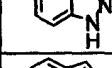
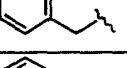
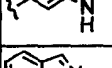
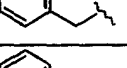
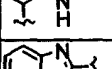
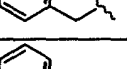
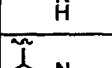
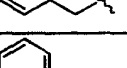
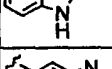
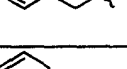
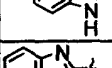
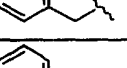
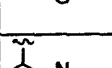
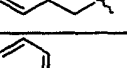
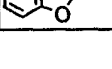
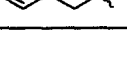
No.	R1	R2	R3	R4	R5	R6
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XA1003	CH3-		H		H	H
XA1004	CH3-		H		H	H
XA1005	CH3-		H		H	H
XA1006	CH3-		H		H	H
XA1007	CH3-		H		H	H
XA1008	CH3-		H		H	H
XA1009	CH3-		H		H	H
XA1010	CH3-		H		H	H
XA1011	CH3-		H		H	H
XA1012	CH3-		H		H	H
XA1013	CH3-		H		H	H
XA1014	CH3-		H		H	H
XA1015	CH3-		H		H	H
XA1016	CH3-		H		H	H
XA1017	CH3-		H		H	H
XA1018	CH3-		H		H	H
XA1019	CH3-		H		H	H
XA1020	CH3-		H		H	H
XA1021	CH3-		H		H	H

No.	R1	R2	R3	R4	R5	R6
XA1022	CH3-		H		H	H
XA1023	CH3-		H		H	H
XA1024	CH3-		H		H	H
XA1025	CH3-		H		H	H
XA1026	CH3-		H		H	H
XA1027	CH3-		H		H	H
XA1028	CH3-		H		H	H
XA1029	CH3-		H		H	H
XA1030	CH3-		H		H	H
XA1031	CH3-		H		H	H
XA1032	CH3-		H		H	H
XA1033	CH3-		H		H	H
XA1034	CH3-		H		H	H
XA1035	CH3-		H		H	H
XA1036	CH3-		H		H	H
XA1037	CH3-		H		H	H
XA1038	CH3-		H		H	H
XA1039	CH3-		H		H	H
XA1040	CH3-		H		H	H
XA1041	CH3-		H		H	H

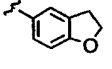
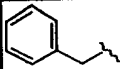
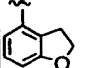
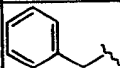


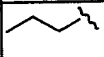



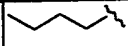

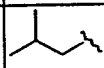

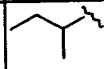





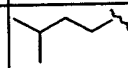

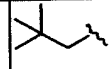





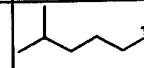



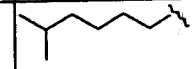


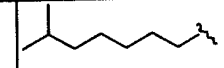

No.	R1	R2	R3	R4	R5	R6
XA1042	CH3-		H		H	H
XA1043	CH3-		H		H	H
XA1044	CH3-		H		H	H
XA1045	CH3-		H		H	H
XA1046	CH3-		H		H	H
XA1047	CH3-		H		H	H
XA1048	CH3-		H		H	H
XA1049	CH3-		H		H	H
XA1050	CH3-		H		H	H
XA1051	CH3-		H		H	H
XA1052	CH3-		H		H	H
XA1053	CH3-		H		H	H
XA1054	CH3-		H		H	H
XA1055	CH3-		H		H	H
XA1056	CH3-		H		H	H
XA1057	CH3-		H		H	H
XA1058	CH3-		H		H	H
XA1059	CH3-		H		H	H
XA1060	CH3-		H		H	H
XA1061	CH3-		H		H	H

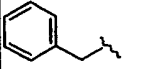

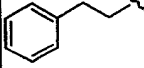

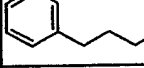









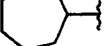

























No.	R1	R2	R3	R4	R5	R6
XA1062	CH3-		H		H	H
XA1063	CH3-		H		H	H
XA1064	CH3-		H		H	H
XA1065	CH3-		H		H	H
XA1066	CH3-		H		H	H
XA1067	CH3-		H		H	H
XA1068	CH3-		H		H	H
XA1069	CH3-		H		H	H
XA1070	CH3-		H		H	H
XA1071	CH3-		H		H	H
XA1072	CH3-		H		H	H
XA1073	CH3-		H		H	H
XA1074	CH3-		H		H	H
XA1075	CH3-		H		H	H
XA1076	CH3-		H		H	H
XA1077	CH3-		H		H	H
XA1078	CH3-		H		H	H
XA1079	CH3-		H		H	H
XA1080	CH3-		H		H	H
XA1081	CH3-		H		H	H

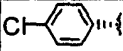





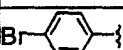



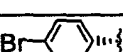











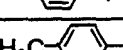

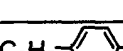

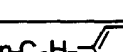

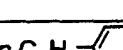





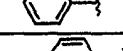





No.	R1	R2	R3	R4	R5	R6
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XA1083	CH3-		H		H	H
XA1084	CH3-		H		H	H
XA1085	CH3-		H		H	H
XA1086	CH3-		H		H	H
XA1087	CH3-		H		H	H
XA1088	CH3-		H		H	H
XA1089	CH3-		H		H	H
XA1090	CH3-		H		H	H
XA1091	CH3-		H		H	H
XA1092	CH3-		H		H	H
XA1093	CH3-		H		H	H
XA1094	CH3-		H		H	H
XA1095	CH3-		H		H	H
XA1096	CH3-		H		H	H
XA1097	CH3-		H		H	H
XA1098	CH3-		H		H	H
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XA1100	CH3-		H		H	H
XA1101	CH3-		H		H	H

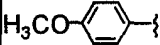

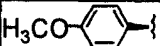

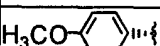

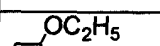

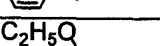

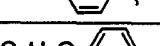

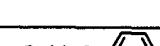

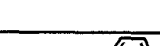

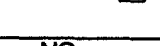

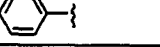

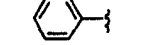



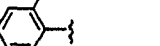

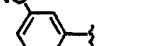

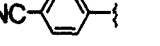

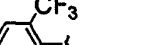



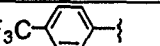

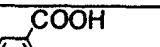

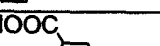

No.	R1	R2	R3	R4	R5	R6
XA1102	CH ₃ -		H		H	H
XA1103	CH ₃ -		H		H	H
XA1104	CH ₃ -		H		H	H
XA1105	CH ₃ -		H		H	H
XA1106	CH ₃ -		H		H	H
XA1107	CH ₃ -		H		H	H
XA1108	CH ₃ -		H		H	H
XA1109	CH ₃ -		H		H	H
XA1110	CH ₃ -		H		H	H
XA1111	CH ₃ -		H		H	H
XA1112	CH ₃ -		H		H	H
XA1113	CH ₃ -		H		H	H
XA1114	CH ₃ -		H		H	H
XA1115	CH ₃ -		H		H	H
XA1116	CH ₃ -		H		H	H
XA1117	CH ₃ -		H		H	H
XA1118	CH ₃ -		H		H	H
XA1119	CH ₃ -		H		H	H
XA1120	CH ₃ -		H		H	H

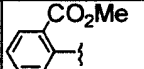

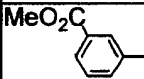

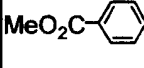

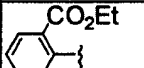

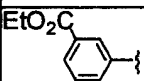

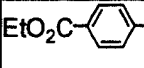

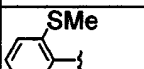

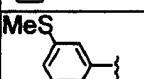

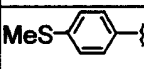

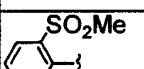

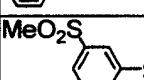

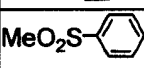

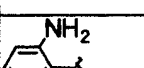

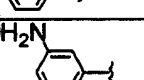

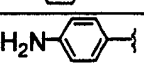

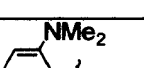

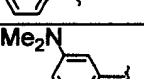

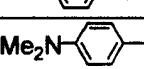

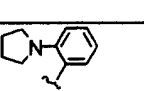

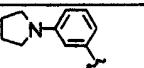

No.	R1	R2	R3	R4	R5	R6
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XA1122	CH3-		H		H	H
XA1123	CH3-		H		H	H
XA1124	CH3-		H		H	H
XA1125	CH3-		H		H	H
XA1126	CH3-		H		H	H
XA1127	CH3-		H		H	H
XA1128	CH3-		H		H	H
XA1129	CH3-		H		H	H
XA1130	CH3-		H		H	H
XA1131	CH3-		H		H	H
XA1132	CH3-		H		H	H
XA1133	CH3-		H		H	H
XA1134	CH3-		H		H	H
XA1135	CH3-		H		H	H
XA1136	CH3-		H		H	H
XA1137	CH3-		H		H	H
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XA1140	CH3-		H		H	H

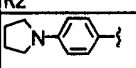

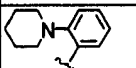

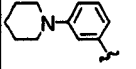

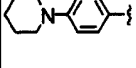

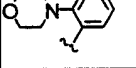

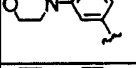



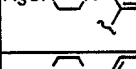

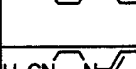

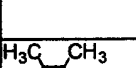

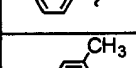

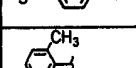

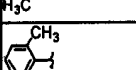

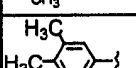

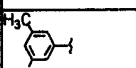

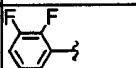

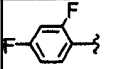

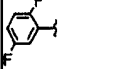

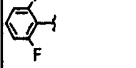



No.	R1	R2	R3	R4	R5	R6
XA1141	CH3-		H		H	H
XA1142	CH3-		H		H	H
XA1143	CH3-	CH3-	H		H	H
XA1144	CH3-	CH3CH2-	H		H	H
XA1145	CH3-		H		H	H
XA1146	CH3-		H		H	H
XA1147	CH3-		H		H	H
XA1148	CH3-		H		H	H
XA1149	CH3-		H		H	H
XA1150	CH3-		H		H	H
XA1151	CH3-		H		H	H
XA1152	CH3-		H		H	H
XA1153	CH3-		H		H	H
XA1154	CH3-		H		H	H
XA1155	CH3-		H		H	H
XA1156	CH3-		H		H	H
XA1157	CH3-		H		H	H
XA1158	CH3-		H		H	H
XA1159	CH3-	n-C8H17-	H		H	H
XA1160	CH3-		H		H	H









































No.	R1	R2	R3	R4	R5	R6
XA1161	CH3-		H		H	H
XA1162	CH3-		H		H	H
XA1163	CH3-		H		H	H
XA1164	CH3-		H		H	H
XA1165	CH3-		H		H	H
XA1166	CH3-		H		H	H
XA1167	CH3-		H		H	H
XA1168	CH3-		H		H	H
XA1169	CH3-		H		H	H
XA1170	CH3-		H		H	H
XA1171	CH3-		H		H	H
XA1172	CH3-		H		H	H
XA1173	CH3-		H		H	H
XA1174	CH3-		H		H	H
XA1175	CH3-		H		H	H
XA1176	CH3-		H		H	H
XA1177	CH3-		H		H	H
XA1178	CH3-		H		H	H
XA1179	CH3-		H		H	H
XA1180	CH3-		H		H	H

No.	R1	R2	R3	R4	R5	R6
XA1181	CH ₃ -		H		H	H
XA1182	CH ₃ -		H		H	H
XA1183	CH ₃ -		H		H	H
XA1184	CH ₃ -		H		H	H
XA1185	CH ₃ -		H		H	H
XA1186	CH ₃ -		H		H	H
XA1187	CH ₃ -		H		H	H
XA1188	CH ₃ -		H		H	H
XA1189	CH ₃ -		H		H	H
XA1190	CH ₃ -		H		H	H
XA1191	CH ₃ -		H		H	H
XA1192	CH ₃ -		H		H	H
XA1193	CH ₃ -		H		H	H
XA1194	CH ₃ -		H		H	H
XA1195	CH ₃ -		H		H	H
XA1196	CH ₃ -		H		H	H
XA1197	CH ₃ -		H		H	H
XA1198	CH ₃ -		H		H	H
XA1199	CH ₃ -		H		H	H
XA1200	CH ₃ -		H		H	H

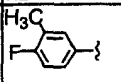



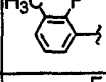

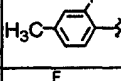



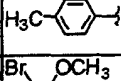

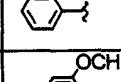

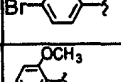





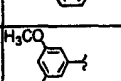



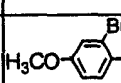

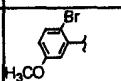



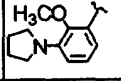

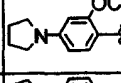

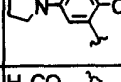

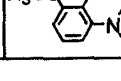



No.	R1	R2	R3	R4	R5	R6
XA1201	CH3-		H		H	H
XA1202	CH3-		H		H	H
XA1203	CH3-		H		H	H
XA1204	CH3-		H		H	H
XA1205	CH3-		H		H	H
XA1206	CH3-		H		H	H
XA1207	CH3-		H		H	H
XA1208	CH3-		H		H	H
XA1209	CH3-		H		H	H
XA1210	CH3-		H		H	H
XA1211	CH3-		H		H	H
XA1212	CH3-		H		H	H
XA1213	CH3-		H		H	H
XA1214	CH3-		H		H	H
XA1215	CH3-		H		H	H
XA1216	CH3-		H		H	H
XA1217	CH3-		H		H	H
XA1218	CH3-		H		H	H
XA1219	CH3-		H		H	H
XA1220	CH3-		H		H	H

No.	R1	R2	R3	R4	R5	R6
XA1221	CH3-		H		H	H
XA1222	CH3-		H		H	H
XA1223	CH3-		H		H	H
XA1224	CH3-		H		H	H
XA1225	CH3-		H		H	H
XA1226	CH3-		H		H	H
XA1227	CH3-		H		H	H
XA1228	CH3-		H		H	H
XA1229	CH3-		H		H	H
XA1230	CH3-		H		H	H
XA1231	CH3-		H		H	H
XA1232	CH3-		H		H	H
XA1233	CH3-		H		H	H
XA1234	CH3-		H		H	H
XA1235	CH3-		H		H	H
XA1236	CH3-		H		H	H
XA1237	CH3-		H		H	H
XA1238	CH3-		H		H	H
XA1239	CH3-		H		H	H
XA1240	CH3-		H		H	H

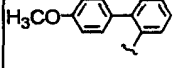

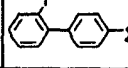

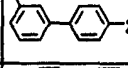

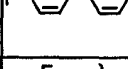

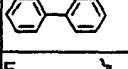

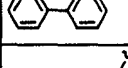

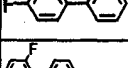

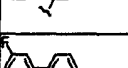

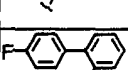

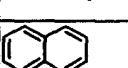

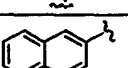

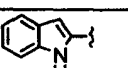

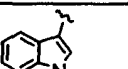

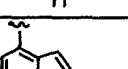

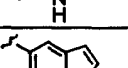

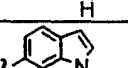

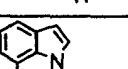

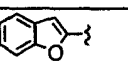

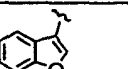



No.	R1	R2	R3	R4	R5	R6
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XA1242	CH3-		H		H	H
XA1243	CH3-		H		H	H
XA1244	CH3-		H		H	H
XA1245	CH3-		H		H	H
XA1246	CH3-		H		H	H
XA1247	CH3-		H		H	H
XA1248	CH3-		H		H	H
XA1249	CH3-		H		H	H
XA1250	CH3-		H		H	H
XA1251	CH3-		H		H	H
XA1252	CH3-		H		H	H
XA1253	CH3-		H		H	H
XA1254	CH3-		H		H	H
XA1255	CH3-		H		H	H
XA1256	CH3-		H		H	H
XA1257	CH3-		H		H	H
XA1258	CH3-		H		H	H
XA1259	CH3-		H		H	H
XA1260	CH3-		H		H	H

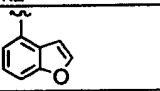

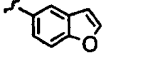

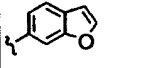

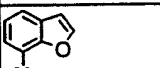

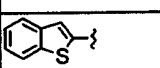

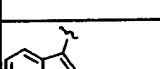

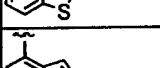

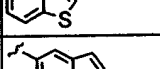

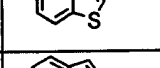

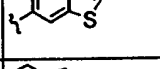

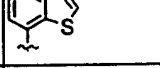

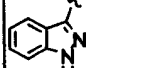

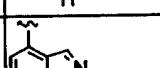

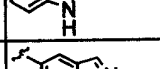

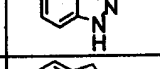

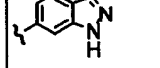

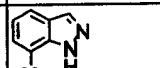

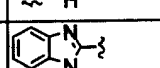

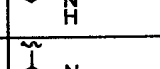

No.	R1	R2	R3	R4	R5	R6
XA1261	CH3-		H		H	H
XA1262	CH3-		H		H	H
XA1263	CH3-		H		H	H
XA1264	CH3-		H		H	H
XA1265	CH3-		H		H	H
XA1266	CH3-		H		H	H
XA1267	CH3-		H		H	H
XA1268	CH3-		H		H	H
XA1269	CH3-		H		H	H
XA1270	CH3-		H		H	H
XA1271	CH3-		H		H	H
XA1272	CH3-		H		H	H
XA1273	CH3-		H		H	H
XA1274	CH3-		H		H	H
XA1275	CH3-		H		H	H
XA1276	CH3-		H		H	H
XA1277	CH3-		H		H	H
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XA1279	CH3-		H		H	H
XA1280	CH3-		H		H	H

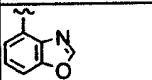

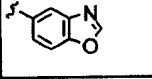

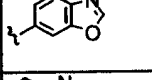

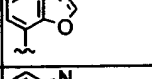

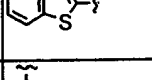

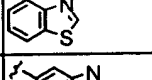

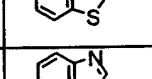

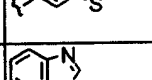

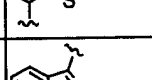

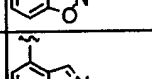

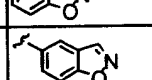

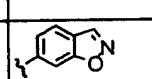

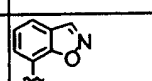

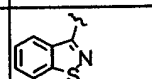

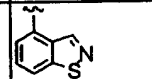

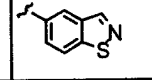

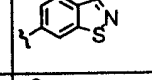

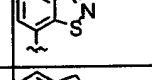

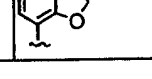



No.	R1	R2	R3	R4	R5	R6
XA1281	CH3-		H		H	H
XA1282	CH3-		H		H	H
XA1283	CH3-		H		H	H
XA1284	CH3-		H		H	H
XA1285	CH3-		H		H	H
XA1286	CH3-		H		H	H
XA1287	CH3-		H		H	H
XA1288	CH3-		H		H	H
XA1289	CH3-		H		H	H
XA1290	CH3-		H		H	H
XA1291	CH3-		H		H	H
XA1292	CH3-		H		H	H
XA1293	CH3-		H		H	H
XA1294	CH3-		H		H	H
XA1295	CH3-		H		H	H
XA1296	CH3-		H		H	H
XA1297	CH3-		H		H	H
XA1298	CH3-		H		H	H
XA1299	CH3-		H		H	H
XA1300	CH3-		H		H	H

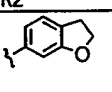

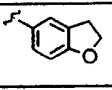

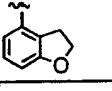

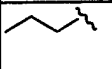
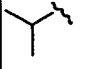
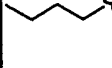
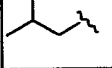
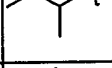

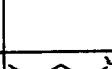

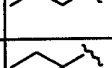
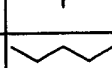
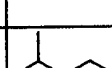
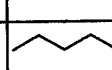
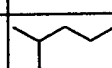
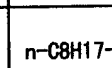
No.	R1	R2	R3	R4	R5	R6
XA1301	CH3-		H		H	H
XA1302	CH3-		H		H	H
XA1303	CH3-		H		H	H
XA1304	CH3-		H		H	H
XA1305	CH3-		H		H	H
XA1306	CH3-		H		H	H
XA1307	CH3-		H		H	H
XA1308	CH3-		H		H	H
XA1309	CH3-		H		H	H
XA1310	CH3-		H		H	H
XA1311	CH3-		H		H	H
XA1312	CH3-		H		H	H
XA1313	CH3-		H		H	H
XA1314	CH3-		H		H	H
XA1315	CH3-		H		H	H
XA1316	CH3-		H		H	H
XA1317	CH3-		H		H	H
XA1318	CH3-		H		H	H
XA1319	CH3-		H		H	H
XA1320	CH3-		H		H	H

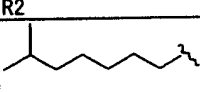
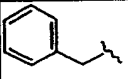
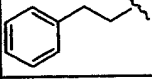
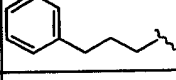



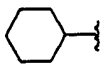
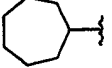











No.	R1	R2	R3	R4	R5	R6
XA1321	CH3-		H		H	H
XA1322	CH3-		H		H	H
XA1323	CH3-		H		H	H
XA1324	CH3-		H		H	H
XA1325	CH3-		H		H	H
XA1326	CH3-		H		H	H
XA1327	CH3-		H		H	H
XA1328	CH3-		H		H	H
XA1329	CH3-		H		H	H
XA1330	CH3-		H		H	H
XA1331	CH3-		H		H	H
XA1332	CH3-		H		H	H
XA1333	CH3-		H		H	H
XA1334	CH3-		H		H	H
XA1335	CH3-		H		H	H
XA1336	CH3-		H		H	H
XA1337	CH3-		H		H	H
XA1338	CH3-		H		H	H
XA1339	CH3-		H		H	H
XA1340	CH3-		H		H	H

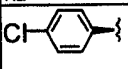
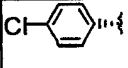
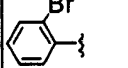
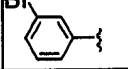
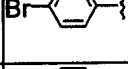
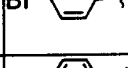
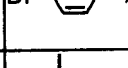
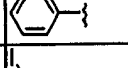
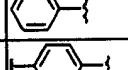
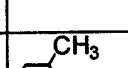
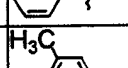
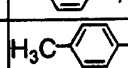
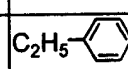
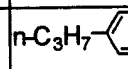
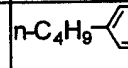
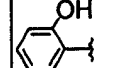
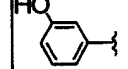
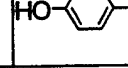
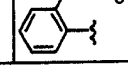

No.	R1	R2	R3	R4	R5	R6
XA1341	CH3-		H		H	H
XA1342	CH3-		H		H	H
XA1343	CH3-		H		H	H
XA1344	CH3-		H		H	H
XA1345	CH3-		H		H	H
XA1346	CH3-		H		H	H
XA1347	CH3-		H		H	H
XA1348	CH3-		H		H	H
XA1349	CH3-		H		H	H
XA1350	CH3-		H		H	H
XA1351	CH3-		H		H	H
XA1352	CH3-		H		H	H
XA1353	CH3-		H		H	H
XA1354	CH3-		H		H	H
XA1355	CH3-		H		H	H
XA1356	CH3-		H		H	H
XA1357	CH3-		H		H	H
XA1358	CH3-		H		H	H
XA1359	CH3-		H		H	H
XA1360	CH3-		H		H	H

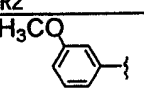
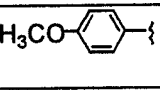
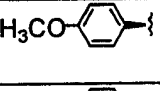
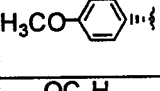
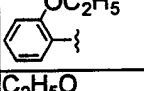
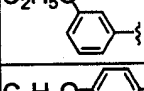
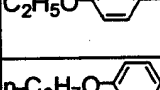
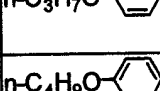
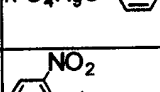
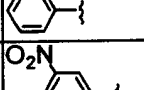
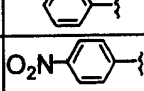
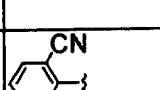
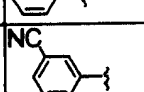
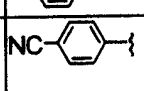
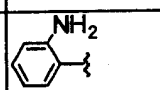
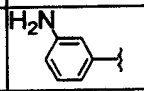
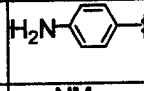
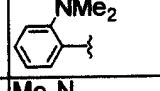
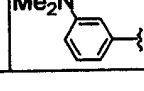

No.	R1	R2	R3	R4	R5	R6
XA1361	CH3-		H		H	H
XA1362	CH3-		H		H	H
XA1363	CH3-		H		H	H
XA1364	CH3-		H		H	H
XA1365	CH3-		H		H	H
XA1366	CH3-		H		H	H
XA1367	CH3-		H		H	H
XA1368	CH3-		H		H	H
XA1369	CH3-		H		H	H
XA1370	CH3-		H		H	H
XA1371	CH3-		H		H	H
XA1372	CH3-		H		H	H
XA1373	CH3-		H		H	H
XA1374	CH3-		H		H	H
XA1375	CH3-		H		H	H
XA1376	CH3-		H		H	H
XA1377	CH3-		H		H	H
XA1378	CH3-		H		H	H
XA1379	CH3-		H		H	H

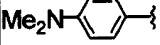
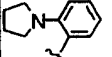
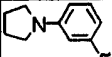
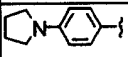
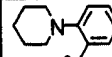
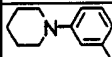
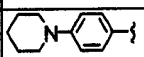
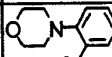
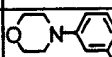
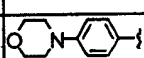
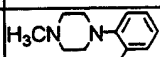
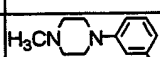
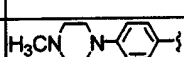
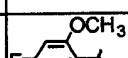
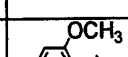
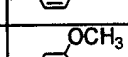
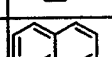
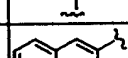
No.	R1	R2	R3	R4	R5	R6
XA1380	CH3-		H		H	H
XA1381	CH3-		H		H	H
XA1382	CH3-		H		H	H
XA1383	CH3-		H		H	H
XA1384	CH3-		H		H	H
XA1385	CH3-		H		H	H
XA1386	CH3-		H		H	H
XA1387	CH3-		H		H	H
XA1388	CH3-		H		H	H
XA1389	CH3-		H		H	H
XA1390	CH3-		H		H	H
XA1391	CH3-		H		H	H
XA1392	CH3-		H		H	H
XA1393	CH3-		H		H	H
XA1394	CH3-		H		H	H
XA1395	CH3-		H		H	H
XA1396	CH3-		H		H	H
XA1397	CH3-		H		H	H
XA1398	CH3-		H		H	H
XA1399	CH3-		H		H	H




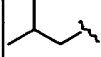
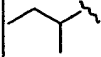

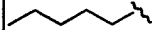
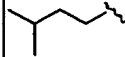
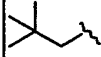
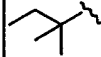

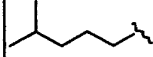

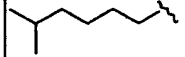
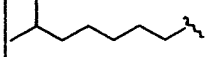
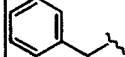
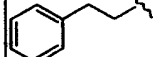
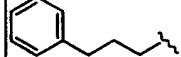

No.	R1	R2	R3	R4	R5	R6
XA1400	CH3-		H		H	H
XA1401	CH3-		H		H	H
XA1402	CH3-		H		H	H
XA1403	CH3-	CH3-	CH3-	H	H	H
XA1404	CH3-	CH3CH2-	CH3-	H	H	H
XA1405	CH3-		CH3-	H	H	H
XA1406	CH3-		CH3-	H	H	H
XA1407	CH3-		CH3-	H	H	H
XA1408	CH3-		CH3-	H	H	H
XA1409	CH3-		CH3-	H	H	H
XA1410	CH3-		CH3-	H	H	H
XA1411	CH3-		CH3-	H	H	H
XA1412	CH3-		CH3-	H	H	H
XA1413	CH3-		CH3-	H	H	H
XA1414	CH3-		CH3-	H	H	H
XA1415	CH3-		CH3-	H	H	H
XA1416	CH3-		CH3-	H	H	H
XA1417	CH3-		CH3-	H	H	H
XA1418	CH3-		CH3-	H	H	H
XA1419	CH3-	n-C8H17-	CH3-	H	H	H




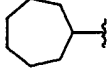










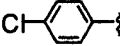
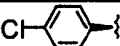
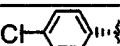


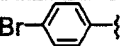
No.	R1	R2	R3	R4	R5	R6
XA1420	CH3-		CH3-	H	H	H
XA1421	CH3-		CH3-	H	H	H
XA1422	CH3-		CH3-	H	H	H
XA1423	CH3-		CH3-	H	H	H
XA1424	CH3-		CH3-	H	H	H
XA1425	CH3-		CH3-	H	H	H
XA1426	CH3-		CH3-	H	H	H
XA1427	CH3-		CH3-	H	H	H
XA1428	CH3-		CH3-	H	H	H
XA1429	CH3-		CH3-	H	H	H
XA1430	CH3-		CH3-	H	H	H
XA1431	CH3-		CH3-	H	H	H
XA1432	CH3-		CH3-	H	H	H
XA1433	CH3-		CH3-	H	H	H
XA1434	CH3-		CH3-	H	H	H
XA1435	CH3-		CH3-	H	H	H
XA1436	CH3-		CH3-	H	H	H
XA1437	CH3-		CH3-	H	H	H
XA1438	CH3-		CH3-	H	H	H
XA1439	CH3-		CH3-	H	H	H

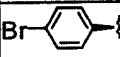
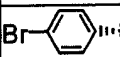
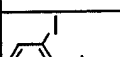
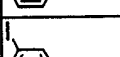
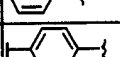
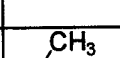
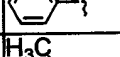
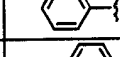
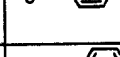
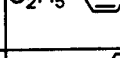
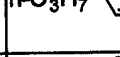
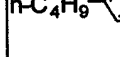
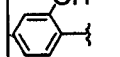
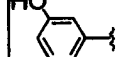
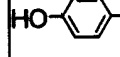
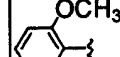
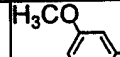
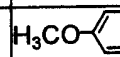
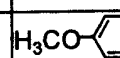
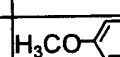
No.	R1	R2	R3	R4	R5	R6
XA1440	CH3-		CH3-	H	H	H
XA1441	CH3-		CH3-	H	H	H
XA1442	CH3-		CH3-	H	H	H
XA1443	CH3-		CH3-	H	H	H
XA1444	CH3-		CH3-	H	H	H
XA1445	CH3-		CH3-	H	H	H
XA1446	CH3-		CH3-	H	H	H
XA1447	CH3-		CH3-	H	H	H
XA1448	CH3-		CH3-	H	H	H
XA1449	CH3-		CH3-	H	H	H
XA1450	CH3-		CH3-	H	H	H
XA1451	CH3-		CH3-	H	H	H
XA1452	CH3-		CH3-	H	H	H
XA1453	CH3-		CH3-	H	H	H
XA1454	CH3-		CH3-	H	H	H
XA1455	CH3-		CH3-	H	H	H
XA1456	CH3-		CH3-	H	H	H
XA1457	CH3-		CH3-	H	H	H
XA1458	CH3-		CH3-	H	H	H
XA1459	CH3-		CH3-	H	H	H

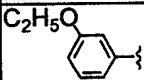
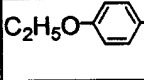
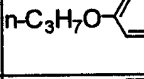
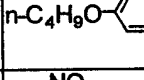
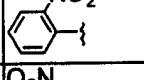
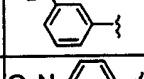
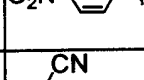
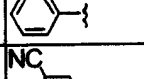
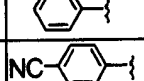
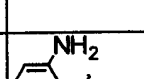
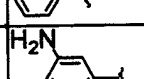
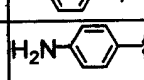
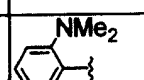
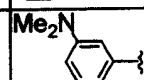
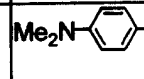
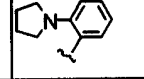
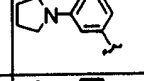
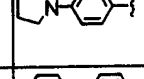
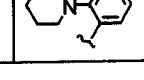

No.	R1	R2	R3	R4	R5	R6
XA1460	CH3-		CH3-	H	H	H
XA1461	CH3-		CH3-	H	H	H
XA1462	CH3-		CH3-	H	H	H
XA1463	CH3-		CH3-	H	H	H
XA1464	CH3-		CH3-	H	H	H
XA1465	CH3-		CH3-	H	H	H
XA1466	CH3-		CH3-	H	H	H
XA1467	CH3-		CH3-	H	H	H
XA1468	CH3-		CH3-	H	H	H
XA1469	CH3-		CH3-	H	H	H
XA1470	CH3-		CH3-	H	H	H
XA1471	CH3-		CH3-	H	H	H
XA1472	CH3-		CH3-	H	H	H
XA1473	CH3-		CH3-	H	H	H
XA1474	CH3-		CH3-	H	H	H
XA1475	CH3-		CH3-	H	H	H
XA1476	CH3-		CH3-	H	H	H
XA1477	CH3-		CH3-	H	H	H
XA1478	CH3-		CH3-	H	H	H
XA1479	CH3-		CH3-	H	H	H

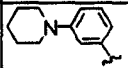
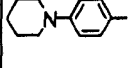
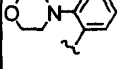
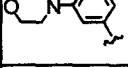
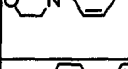

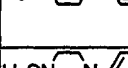
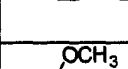
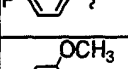
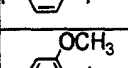
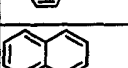
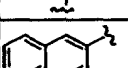
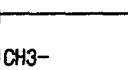
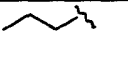

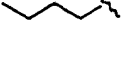
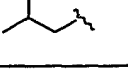
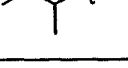
No.	R1	R2	R3	R4	R5	R6
XA1480	CH3-		CH3-	H	H	H
XA1481	CH3-		CH3-	H	H	H
XA1482	CH3-		CH3-	H	H	H
XA1483	CH3-		CH3-	H	H	H
XA1484	CH3-		CH3-	H	H	H
XA1485	CH3-		CH3-	H	H	H
XA1486	CH3-		CH3-	H	H	H
XA1487	CH3-		CH3-	H	H	H
XA1488	CH3-		CH3-	H	H	H
XA1489	CH3-		CH3-	H	H	H
XA1490	CH3-		CH3-	H	H	H
XA1491	CH3-		CH3-	H	H	H
XA1492	CH3-		CH3-	H	H	H
XA1493	CH3-		CH3-	H	H	H
XA1494	CH3-		CH3-	H	H	H
XA1495	CH3-		CH3-	H	H	H
XA1496	CH3-		CH3-	H	H	H
XA1497	CH3-		CH3-	H	H	H
XA1498	CH3-	CH3-	H	H	CH3-	H
XA1499	CH3-	CH3CH2-	H	H	CH3-	H


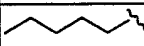
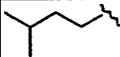


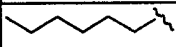
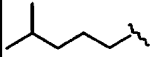
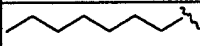
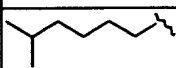
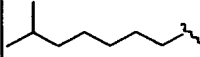
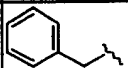
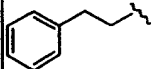
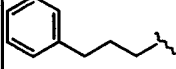



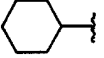
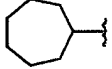

No.	R1	R2	R3	R4	R5	R6
XA1500	CH3-		H	H	CH3-	H
XA1501	CH3-		H	H	CH3-	H
XA1502	CH3-		H	H	CH3-	H
XA1503	CH3-		H	H	CH3-	H
XA1504	CH3-		H	H	CH3-	H
XA1505	CH3-		H	H	CH3-	H
XA1506	CH3-		H	H	CH3-	H
XA1507	CH3-		H	H	CH3-	H
XA1508	CH3-		H	H	CH3-	H
XA1509	CH3-		H	H	CH3-	H
XA1510	CH3-		H	H	CH3-	H
XA1511	CH3-		H	H	CH3-	H
XA1512	CH3-		H	H	CH3-	H
XA1513	CH3-		H	H	CH3-	H
XA1514	CH3-	n-C8H17-	H	H	CH3-	H
XA1515	CH3-		H	H	CH3-	H
XA1516	CH3-		H	H	CH3-	H
XA1517	CH3-		H	H	CH3-	H
XA1518	CH3-		H	H	CH3-	H
XA1519	CH3-		H	H	CH3-	H





















No.	R1	R2	R3	R4	R5	R6
XA1520	CH3-		H	H	CH3-	H
XA1521	CH3-		H	H	CH3-	H
XA1522	CH3-		H	H	CH3-	H
XA1523	CH3-		H	H	CH3-	H
XA1524	CH3-		H	H	CH3-	H
XA1525	CH3-		H	H	CH3-	H
XA1526	CH3-		H	H	CH3-	H
XA1527	CH3-		H	H	CH3-	H
XA1528	CH3-		H	H	CH3-	H
XA1529	CH3-		H	H	CH3-	H
XA1530	CH3-		H	H	CH3-	H
XA1531	CH3-		H	H	CH3-	H
XA1532	CH3-		H	H	CH3-	H
XA1533	CH3-		H	H	CH3-	H
XA1534	CH3-		H	H	CH3-	H
XA1535	CH3-		H	H	CH3-	H
XA1536	CH3-		H	H	CH3-	H
XA1537	CH3-		H	H	CH3-	H
XA1538	CH3-		H	H	CH3-	H
XA1539	CH3-		H	H	CH3-	H

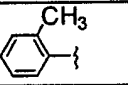
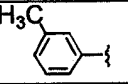
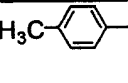
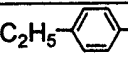
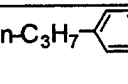
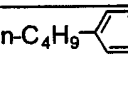
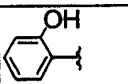
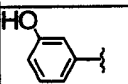
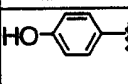
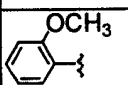
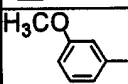
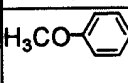
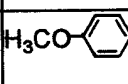
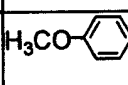
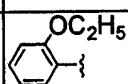
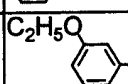
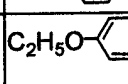
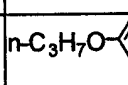
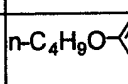
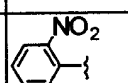
No.	R1	R2	R3	R4	R5	R6
XA1540	CH3-		H	H	CH3-	H
XA1541	CH3-		H	H	CH3-	H
XA1542	CH3-		H	H	CH3-	H
XA1543	CH3-		H	H	CH3-	H
XA1544	CH3-		H	H	CH3-	H
XA1545	CH3-		H	H	CH3-	H
XA1546	CH3-		H	H	CH3-	H
XA1547	CH3-		H	H	CH3-	H
XA1548	CH3-		H	H	CH3-	H
XA1549	CH3-		H	H	CH3-	H
XA1550	CH3-		H	H	CH3-	H
XA1551	CH3-		H	H	CH3-	H
XA1552	CH3-		H	H	CH3-	H
XA1553	CH3-		H	H	CH3-	H
XA1554	CH3-		H	H	CH3-	H
XA1555	CH3-		H	H	CH3-	H
XA1556	CH3-		H	H	CH3-	H
XA1557	CH3-		H	H	CH3-	H
XA1558	CH3-		H	H	CH3-	H
XA1559	CH3-		H	H	CH3-	H

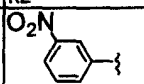
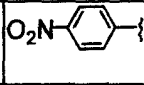
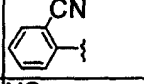
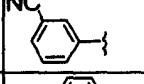
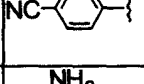
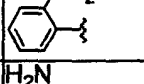
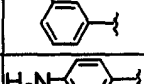
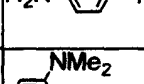
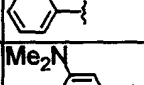
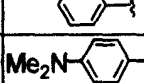
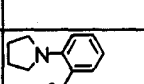
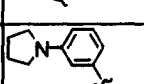
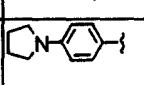
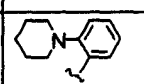
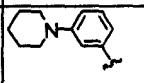
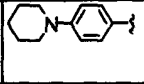
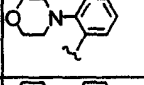
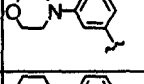
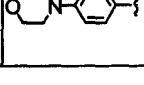

No.	R1	R2	R3	R4	R5	R6
XA1560	CH3-		H	H	CH3-	H
XA1561	CH3-		H	H	CH3-	H
XA1562	CH3-		H	H	CH3-	H
XA1563	CH3-		H	H	CH3-	H
XA1564	CH3-		H	H	CH3-	H
XA1565	CH3-		H	H	CH3-	H
XA1566	CH3-		H	H	CH3-	H
XA1567	CH3-		H	H	CH3-	H
XA1568	CH3-		H	H	CH3-	H
XA1569	CH3-		H	H	CH3-	H
XA1570	CH3-		H	H	CH3-	H
XA1571	CH3-		H	H	CH3-	H
XA1572	CH3-		H	H	CH3-	H
XA1573	CH3-		H	H	CH3-	H
XA1574	CH3-		H	H	CH3-	H
XA1575	CH3-		H	H	CH3-	H
XA1576	CH3-		H	H	CH3-	H
XA1577	CH3-		H	H	CH3-	H
XA1578	CH3-		H	H	CH3-	H
XA1579	CH3-		H	H	CH3-	H

No.	R1	R2	R3	R4	R5	R6
XA1580	CH3-		H	H	CH3-	H
XA1581	CH3-		H	H	CH3-	H
XA1582	CH3-		H	H	CH3-	H
XA1583	CH3-		H	H	CH3-	H
XA1584	CH3-		H	H	CH3-	H
XA1585	CH3-		H	H	CH3-	H
XA1586	CH3-		H	H	CH3-	H
XA1587	CH3-		H	H	CH3-	H
XA1588	CH3-		H	H	CH3-	H
XA1589	CH3-		H	H	CH3-	H
XA1590	CH3-		H	H	CH3-	H
XA1591	CH3-		H	H	CH3-	H
XA1592	CH3-		H	H	CH3-	H
XA1593	CH3-	CH3-	H	H	CH3-	CH3-
XA1594	CH3-	CH3CH2-	H	H	CH3-	CH3-
XA1595	CH3-		H	H	CH3-	CH3-
XA1596	CH3-		H	H	CH3-	CH3-
XA1597	CH3-		H	H	CH3-	CH3-
XA1598	CH3-		H	H	CH3-	CH3-
XA1599	CH3-		H	H	CH3-	CH3-


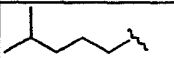
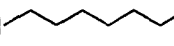

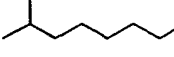
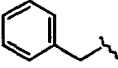
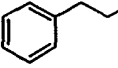
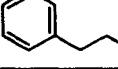




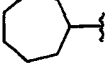






No.	R1	R2	R3	R4	R5	R6
XA1600	CH3-		H	H	CH3-	CH3-
XA1601	CH3-		H	H	CH3-	CH3-
XA1602	CH3-		H	H	CH3-	CH3-
XA1603	CH3-		H	H	CH3-	CH3-
XA1604	CH3-		H	H	CH3-	CH3-
XA1605	CH3-		H	H	CH3-	CH3-
XA1606	CH3-		H	H	CH3-	CH3-
XA1607	CH3-		H	H	CH3-	CH3-
XA1608	CH3-		H	H	CH3-	CH3-
XA1609	CH3-	n-C8H17-	H	H	CH3-	CH3-
XA1610	CH3-		H	H	CH3-	CH3-
XA1611	CH3-		H	H	CH3-	CH3-
XA1612	CH3-		H	H	CH3-	CH3-
XA1613	CH3-		H	H	CH3-	CH3-
XA1614	CH3-		H	H	CH3-	CH3-
XA1615	CH3-		H	H	CH3-	CH3-
XA1616	CH3-		H	H	CH3-	CH3-
XA1617	CH3-		H	H	CH3-	CH3-
XA1618	CH3-		H	H	CH3-	CH3-
XA1619	CH3-		H	H	CH3-	CH3-



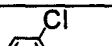
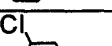



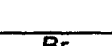

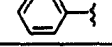



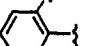
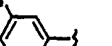
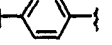
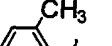

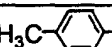
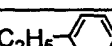
No.	R1	R2	R3	R4	R5	R6
XA1620	CH3-		H	H	CH3-	CH3-
XA1621	CH3-		H	H	CH3-	CH3-
XA1622	CH3-		H	H	CH3-	CH3-
XA1623	CH3-		H	H	CH3-	CH3-
XA1624	CH3-		H	H	CH3-	CH3-
XA1625	CH3-		H	H	CH3-	CH3-
XA1626	CH3-		H	H	CH3-	CH3-
XA1627	CH3-		H	H	CH3-	CH3-
XA1628	CH3-		H	H	CH3-	CH3-
XA1629	CH3-		H	H	CH3-	CH3-
XA1630	CH3-		H	H	CH3-	CH3-
XA1631	CH3-		H	H	CH3-	CH3-
XA1632	CH3-		H	H	CH3-	CH3-
XA1633	CH3-		H	H	CH3-	CH3-
XA1634	CH3-		H	H	CH3-	CH3-
XA1635	CH3-		H	H	CH3-	CH3-
XA1636	CH3-		H	H	CH3-	CH3-
XA1637	CH3-		H	H	CH3-	CH3-
XA1638	CH3-		H	H	CH3-	CH3-
XA1639	CH3-		H	H	CH3-	CH3-

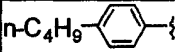


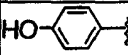

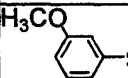
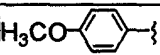
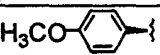
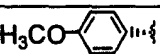
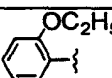
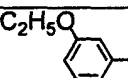
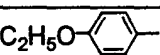
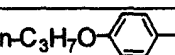
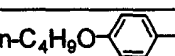

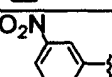
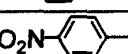


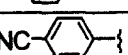
No.	R1	R2	R3	R4	R5	R6
XA1640	CH3-		H	H	CH3-	CH3-
XA1641	CH3-		H	H	CH3-	CH3-
XA1642	CH3-		H	H	CH3-	CH3-
XA1643	CH3-		H	H	CH3-	CH3-
XA1644	CH3-		H	H	CH3-	CH3-
XA1645	CH3-		H	H	CH3-	CH3-
XA1646	CH3-		H	H	CH3-	CH3-
XA1647	CH3-		H	H	CH3-	CH3-
XA1648	CH3-		H	H	CH3-	CH3-
XA1649	CH3-		H	H	CH3-	CH3-
XA1650	CH3-		H	H	CH3-	CH3-
XA1651	CH3-		H	H	CH3-	CH3-
XA1652	CH3-		H	H	CH3-	CH3-
XA1653	CH3-		H	H	CH3-	CH3-
XA1654	CH3-		H	H	CH3-	CH3-
XA1655	CH3-		H	H	CH3-	CH3-
XA1656	CH3-		H	H	CH3-	CH3-
XA1657	CH3-		H	H	CH3-	CH3-
XA1658	CH3-		H	H	CH3-	CH3-
XA1659	CH3-		H	H	CH3-	CH3-

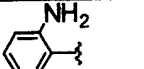
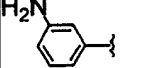
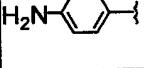
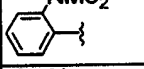
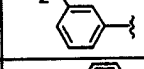
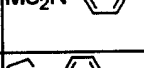
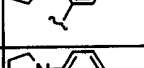
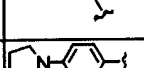
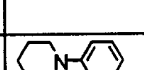
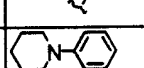
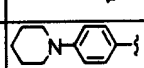
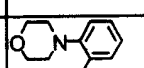
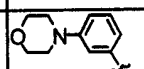
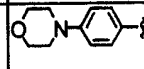

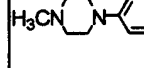
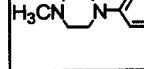
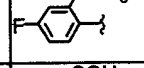
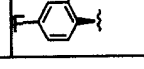

No.	R1	R2	R3	R4	R5	R6
XA1660	CH3-		H	H	CH3-	CH3-
XA1661	CH3-		H	H	CH3-	CH3-
XA1662	CH3-		H	H	CH3-	CH3-
XA1663	CH3-		H	H	CH3-	CH3-
XA1664	CH3-		H	H	CH3-	CH3-
XA1665	CH3-		H	H	CH3-	CH3-
XA1666	CH3-		H	H	CH3-	CH3-
XA1667	CH3-		H	H	CH3-	CH3-
XA1668	CH3-		H	H	CH3-	CH3-
XA1669	CH3-		H	H	CH3-	CH3-
XA1670	CH3-		H	H	CH3-	CH3-
XA1671	CH3-		H	H	CH3-	CH3-
XA1672	CH3-		H	H	CH3-	CH3-
XA1673	CH3-		H	H	CH3-	CH3-
XA1674	CH3-		H	H	CH3-	CH3-
XA1675	CH3-		H	H	CH3-	CH3-
XA1676	CH3-		H	H	CH3-	CH3-
XA1677	CH3-		H	H	CH3-	CH3-
XA1678	CH3-		H	H	CH3-	CH3-
XA1679	CH3-		H	H	CH3-	CH3-

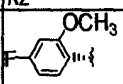
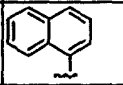
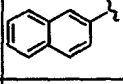
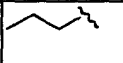
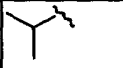
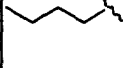
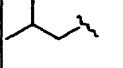
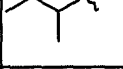
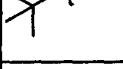
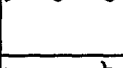
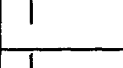

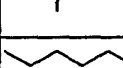
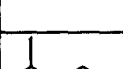
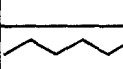

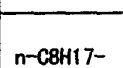
No.	R1	R2	R3	R4	R5	R6
XA1680	CH3-		H	H	CH3-	CH3-
XA1681	CH3-		H	H	CH3-	CH3-
XA1682	CH3-		H	H	CH3-	CH3-
XA1683	CH3-		H	H	CH3-	CH3-
XA1684	CH3-		H	H	CH3-	CH3-
XA1685	CH3-		H	H	CH3-	CH3-
XA1686	CH3-		H	H	CH3-	CH3-
XA1687	CH3-		H	H	CH3-	CH3-
XA1688	CH3-	CH3-	H	CH3-	CH3-	CH3-
XA1689	CH3-	CH3CH2-	H	CH3-	CH3-	CH3-
XA1690	CH3-		H	CH3-	CH3-	CH3-
XA1691	CH3-		H	CH3-	CH3-	CH3-
XA1692	CH3-		H	CH3-	CH3-	CH3-
XA1693	CH3-		H	CH3-	CH3-	CH3-
XA1694	CH3-		H	CH3-	CH3-	CH3-
XA1695	CH3-		H	CH3-	CH3-	CH3-
XA1696	CH3-		H	CH3-	CH3-	CH3-
XA1697	CH3-		H	CH3-	CH3-	CH3-
XA1698	CH3-		H	CH3-	CH3-	CH3-
XA1699	CH3-		H	CH3-	CH3-	CH3-

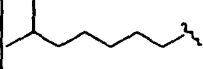
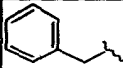
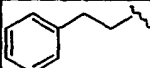
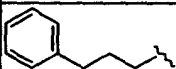




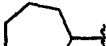











No.	R1	R2	R3	R4	R5	R6
XA1700	CH3-		H	CH3-	CH3-	CH3-
XA1701	CH3-		H	CH3-	CH3-	CH3-
XA1702	CH3-		H	CH3-	CH3-	CH3-
XA1703	CH3-		H	CH3-	CH3-	CH3-
XA1704	CH3-	n-C8H17-	H	CH3-	CH3-	CH3-
XA1705	CH3-		H	CH3-	CH3-	CH3-
XA1706	CH3-		H	CH3-	CH3-	CH3-
XA1707	CH3-		H	CH3-	CH3-	CH3-
XA1708	CH3-		H	CH3-	CH3-	CH3-
XA1709	CH3-		H	CH3-	CH3-	CH3-
XA1710	CH3-		H	CH3-	CH3-	CH3-
XA1711	CH3-		H	CH3-	CH3-	CH3-
XA1712	CH3-		H	CH3-	CH3-	CH3-
XA1713	CH3-		H	CH3-	CH3-	CH3-
XA1714	CH3-		H	CH3-	CH3-	CH3-
XA1715	CH3-		H	CH3-	CH3-	CH3-
XA1716	CH3-		H	CH3-	CH3-	CH3-
XA1717	CH3-		H	CH3-	CH3-	CH3-
XA1718	CH3-		H	CH3-	CH3-	CH3-
XA1719	CH3-		H	CH3-	CH3-	CH3-

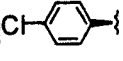
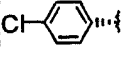
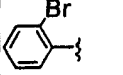
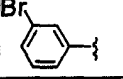
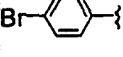
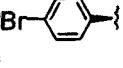
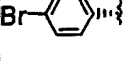
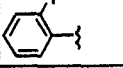
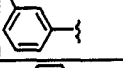
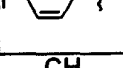
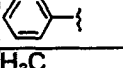
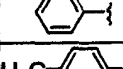
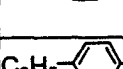
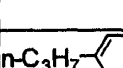
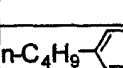
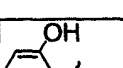
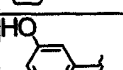
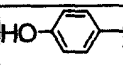
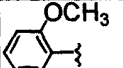

No.	R1	R2	R3	R4	R5	R6
XA1720	CH ₃ -		H	CH ₃ -	CH ₃ -	CH ₃ -
XA1721	CH ₃ -		H	CH ₃ -	CH ₃ -	CH ₃ -
XA1722	CH ₃ -		H	CH ₃ -	CH ₃ -	CH ₃ -
XA1723	CH ₃ -		H	CH ₃ -	CH ₃ -	CH ₃ -
XA1724	CH ₃ -		H	CH ₃ -	CH ₃ -	CH ₃ -
XA1725	CH ₃ -		H	CH ₃ -	CH ₃ -	CH ₃ -
XA1726	CH ₃ -		H	CH ₃ -	CH ₃ -	CH ₃ -
XA1727	CH ₃ -		H	CH ₃ -	CH ₃ -	CH ₃ -
XA1728	CH ₃ -		H	CH ₃ -	CH ₃ -	CH ₃ -
XA1729	CH ₃ -		H	CH ₃ -	CH ₃ -	CH ₃ -
XA1730	CH ₃ -		H	CH ₃ -	CH ₃ -	CH ₃ -
XA1731	CH ₃ -		H	CH ₃ -	CH ₃ -	CH ₃ -
XA1732	CH ₃ -		H	CH ₃ -	CH ₃ -	CH ₃ -
XA1733	CH ₃ -		H	CH ₃ -	CH ₃ -	CH ₃ -
XA1734	CH ₃ -		H	CH ₃ -	CH ₃ -	CH ₃ -
XA1735	CH ₃ -		H	CH ₃ -	CH ₃ -	CH ₃ -
XA1736	CH ₃ -		H	CH ₃ -	CH ₃ -	CH ₃ -
XA1737	CH ₃ -		H	CH ₃ -	CH ₃ -	CH ₃ -
XA1738	CH ₃ -		H	CH ₃ -	CH ₃ -	CH ₃ -
XA1739	CH ₃ -		H	CH ₃ -	CH ₃ -	CH ₃ -

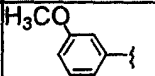
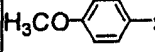
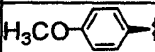
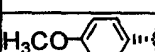
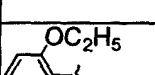
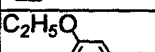
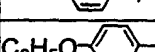
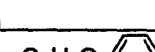
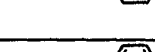
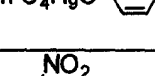
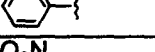
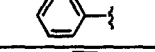

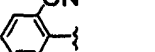
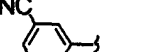
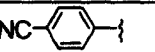
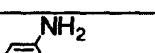
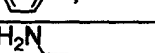

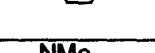
No.	R1	R2	R3	R4	R5	R6
XA1740	CH3-		H	CH3-	CH3-	CH3-
XA1741	CH3-		H	CH3-	CH3-	CH3-
XA1742	CH3-		H	CH3-	CH3-	CH3-
XA1743	CH3-		H	CH3-	CH3-	CH3-
XA1744	CH3-		H	CH3-	CH3-	CH3-
XA1745	CH3-		H	CH3-	CH3-	CH3-
XA1746	CH3-		H	CH3-	CH3-	CH3-
XA1747	CH3-		H	CH3-	CH3-	CH3-
XA1748	CH3-		H	CH3-	CH3-	CH3-
XA1749	CH3-		H	CH3-	CH3-	CH3-
XA1750	CH3-		H	CH3-	CH3-	CH3-
XA1751	CH3-		H	CH3-	CH3-	CH3-
XA1752	CH3-		H	CH3-	CH3-	CH3-
XA1753	CH3-		H	CH3-	CH3-	CH3-
XA1754	CH3-		H	CH3-	CH3-	CH3-
XA1755	CH3-		H	CH3-	CH3-	CH3-
XA1756	CH3-		H	CH3-	CH3-	CH3-
XA1757	CH3-		H	CH3-	CH3-	CH3-
XA1758	CH3-		H	CH3-	CH3-	CH3-
XA1759	CH3-		H	CH3-	CH3-	CH3-

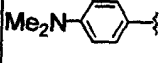
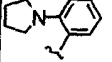
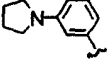
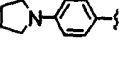
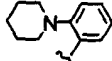
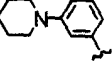
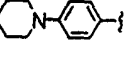
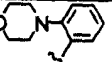
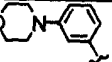
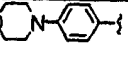
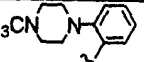
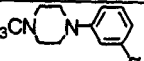
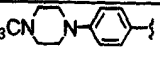





No.	R1	R2	R3	R4	R5	R6
XA1760	CH3-		H	CH3-	CH3-	CH3-
XA1761	CH3-		H	CH3-	CH3-	CH3-
XA1762	CH3-		H	CH3-	CH3-	CH3-
XA1763	CH3-		H	CH3-	CH3-	CH3-
XA1764	CH3-		H	CH3-	CH3-	CH3-
XA1765	CH3-		H	CH3-	CH3-	CH3-
XA1766	CH3-		H	CH3-	CH3-	CH3-
XA1767	CH3-		H	CH3-	CH3-	CH3-
XA1768	CH3-		H	CH3-	CH3-	CH3-
XA1769	CH3-		H	CH3-	CH3-	CH3-
XA1770	CH3-		H	CH3-	CH3-	CH3-
XA1771	CH3-		H	CH3-	CH3-	CH3-
XA1772	CH3-		H	CH3-	CH3-	CH3-
XA1773	CH3-		H	CH3-	CH3-	CH3-
XA1774	CH3-		H	CH3-	CH3-	CH3-
XA1775	CH3-		H	CH3-	CH3-	CH3-
XA1776	CH3-		H	CH3-	CH3-	CH3-
XA1777	CH3-		H	CH3-	CH3-	CH3-
XA1778	CH3-		H	CH3-	CH3-	CH3-
XA1779	CH3-		H	CH3-	CH3-	CH3-




















No.	R1	R2	R3	R4	R5	R6
XA1780	CH3-		H	CH3-	CH3-	CH3-
XA1781	CH3-		H	CH3-	CH3-	CH3-
XA1782	CH3-		H	CH3-	CH3-	CH3-
XA1783	CH3CH2-	CH3-	H	H	H	H
XA1784	CH3CH2-	CH3CH2-	H	H	H	H
XA1785	CH3CH2-		H	H	H	H
XA1786	CH3CH2-		H	H	H	H
XA1787	CH3CH2-		H	H	H	H
XA1788	CH3CH2-		H	H	H	H
XA1789	CH3CH2-		H	H	H	H
XA1790	CH3CH2-		H	H	H	H
XA1791	CH3CH2-		H	H	H	H
XA1792	CH3CH2-		H	H	H	H
XA1793	CH3CH2-		H	H	H	H
XA1794	CH3CH2-		H	H	H	H
XA1795	CH3CH2-		H	H	H	H
XA1796	CH3CH2-		H	H	H	H
XA1797	CH3CH2-		H	H	H	H
XA1798	CH3CH2-		H	H	H	H
XA1799	CH3CH2-	n-C8H17-	H	H	H	H



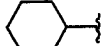
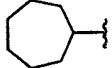
















No.	R1	R2	R3	R4	R5	R6
XA1800	CH3CH2-		H	H	H	H
XA1801	CH3CH2-		H	H	H	H
XA1802	CH3CH2-		H	H	H	H
XA1803	CH3CH2-		H	H	H	H
XA1804	CH3CH2-		H	H	H	H
XA1805	CH3CH2-		H	H	H	H
XA1806	CH3CH2-		H	H	H	H
XA1807	CH3CH2-		H	H	H	H
XA1808	CH3CH2-		H	H	H	H
XA1809	CH3CH2-		H	H	H	H
XA1810	CH3CH2-		H	H	H	H
XA1811	CH3CH2-		H	H	H	H
XA1812	CH3CH2-		H	H	H	H
XA1813	CH3CH2-		H	H	H	H
XA1814	CH3CH2-		H	H	H	H
XA1815	CH3CH2-		H	H	H	H
XA1816	CH3CH2-		H	H	H	H
XA1817	CH3CH2-		H	H	H	H
XA1818	CH3CH2-		H	H	H	H
XA1819	CH3CH2-		H	H	H	H

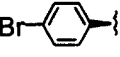
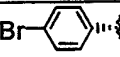
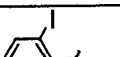
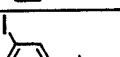
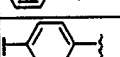
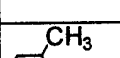
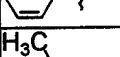


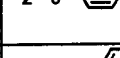
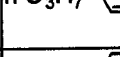
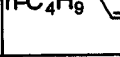
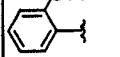
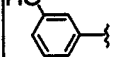
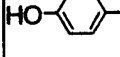
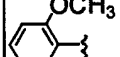
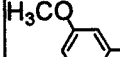
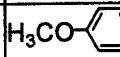
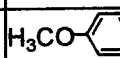
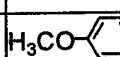
No.	R1	R2	R3	R4	R5	R6
XA1820	CH ₃ CH ₂ -		H	H	H	H
XA1821	CH ₃ CH ₂ -		H	H	H	H
XA1822	CH ₃ CH ₂ -		H	H	H	H
XA1823	CH ₃ CH ₂ -		H	H	H	H
XA1824	CH ₃ CH ₂ -		H	H	H	H
XA1825	CH ₃ CH ₂ -		H	H	H	H
XA1826	CH ₃ CH ₂ -		H	H	H	H
XA1827	CH ₃ CH ₂ -		H	H	H	H
XA1828	CH ₃ CH ₂ -		H	H	H	H
XA1829	CH ₃ CH ₂ -		H	H	H	H
XA1830	CH ₃ CH ₂ -		H	H	H	H
XA1831	CH ₃ CH ₂ -		H	H	H	H
XA1832	CH ₃ CH ₂ -		H	H	H	H
XA1833	CH ₃ CH ₂ -		H	H	H	H
XA1834	CH ₃ CH ₂ -		H	H	H	H
XA1835	CH ₃ CH ₂ -		H	H	H	H
XA1836	CH ₃ CH ₂ -		H	H	H	H
XA1837	CH ₃ CH ₂ -		H	H	H	H
XA1838	CH ₃ CH ₂ -		H	H	H	H
XA1839	CH ₃ CH ₂ -		H	H	H	H

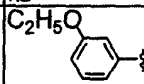
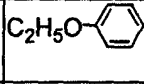
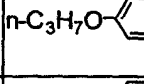
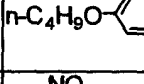
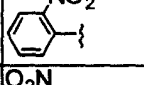
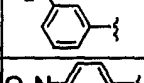
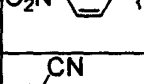
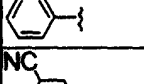
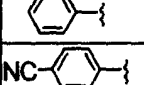
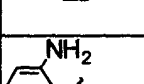
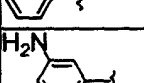
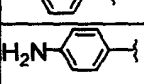
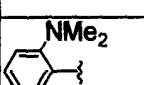
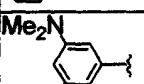
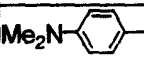
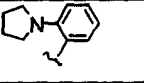
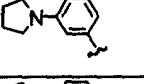
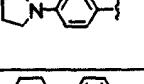
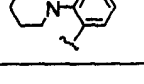

No.	R1	R2	R3	R4	R5	R6
XA1840	CH3CH2-		H	H	H	H
XA1841	CH3CH2-		H	H	H	H
XA1842	CH3CH2-		H	H	H	H
XA1843	CH3CH2-		H	H	H	H
XA1844	CH3CH2-		H	H	H	H
XA1845	CH3CH2-		H	H	H	H
XA1846	CH3CH2-		H	H	H	H
XA1847	CH3CH2-		H	H	H	H
XA1848	CH3CH2-		H	H	H	H
XA1849	CH3CH2-		H	H	H	H
XA1850	CH3CH2-		H	H	H	H
XA1851	CH3CH2-		H	H	H	H
XA1852	CH3CH2-		H	H	H	H
XA1853	CH3CH2-		H	H	H	H
XA1854	CH3CH2-		H	H	H	H
XA1855	CH3CH2-		H	H	H	H
XA1856	CH3CH2-		H	H	H	H
XA1857	CH3CH2-		H	H	H	H
XA1858	CH3CH2-		H	H	H	H
XA1859	CH3CH2-		H	H	H	H

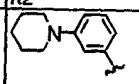
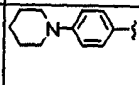
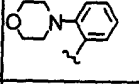
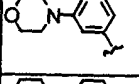
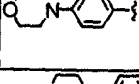
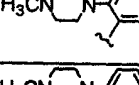
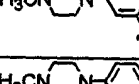
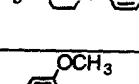
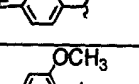
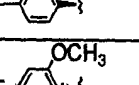
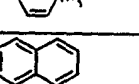
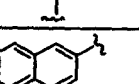
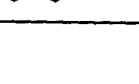
No.	R1	R2	R3	R4	R5	R6
XA1860	CH3CH2-		H	H	H	H
XA1861	CH3CH2-		H	H	H	H
XA1862	CH3CH2-		H	H	H	H
XA1863	CH3CH2-		H	H	H	H
XA1864	CH3CH2-		H	H	H	H
XA1865	CH3CH2-		H	H	H	H
XA1866	CH3CH2-		H	H	H	H
XA1867	CH3CH2-		H	H	H	H
XA1868	CH3CH2-		H	H	H	H
XA1869	CH3CH2-		H	H	H	H
XA1870	CH3CH2-		H	H	H	H
XA1871	CH3CH2-		H	H	H	H
XA1872	CH3CH2-		H	H	H	H
XA1873	CH3CH2-		H	H	H	H
XA1874	CH3CH2-		H	H	H	H
XA1875	CH3CH2-		H	H	H	H
XA1876	CH3CH2-		H	H	H	H
XA1877	CH3CH2-		H	H	H	H
XA1878	CH3CH2-	CH3-	H	CH3-	H	H
XA1879	CH3CH2-	CH3CH2-	H	CH3-	H	H

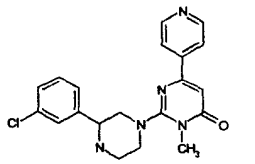
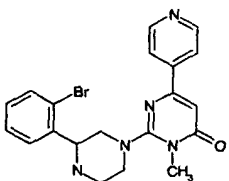
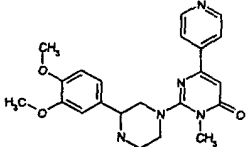
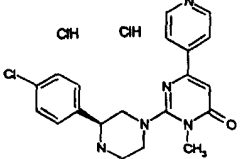
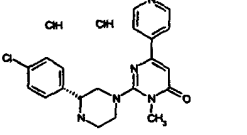
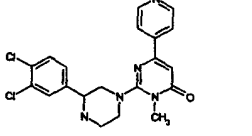
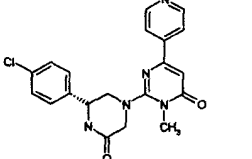
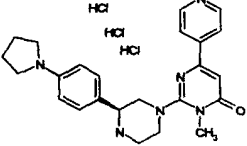
No.	R1	R2	R3	R4	R5	R6
XA1880	CH3CH2-		H	CH3-	H	H
XA1881	CH3CH2-		H	CH3-	H	H
XA1882	CH3CH2-		H	CH3-	H	H
XA1883	CH3CH2-		H	CH3-	H	H
XA1884	CH3CH2-		H	CH3-	H	H
XA1885	CH3CH2-		H	CH3-	H	H
XA1886	CH3CH2-		H	CH3-	H	H
XA1887	CH3CH2-		H	CH3-	H	H
XA1888	CH3CH2-		H	CH3-	H	H
XA1889	CH3CH2-		H	CH3-	H	H
XA1890	CH3CH2-		H	CH3-	H	H
XA1891	CH3CH2-		H	CH3-	H	H
XA1892	CH3CH2-		H	CH3-	H	H
XA1893	CH3CH2-		H	CH3-	H	H
XA1894	CH3CH2-	n-C8H17-	H	CH3-	H	H
XA1895	CH3CH2-		H	CH3-	H	H
XA1896	CH3CH2-		H	CH3-	H	H
XA1897	CH3CH2-		H	CH3-	H	H
XA1898	CH3CH2-		H	CH3-	H	H
XA1899	CH3CH2-		H	CH3-	H	H

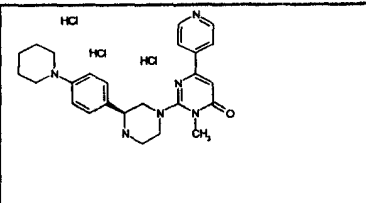
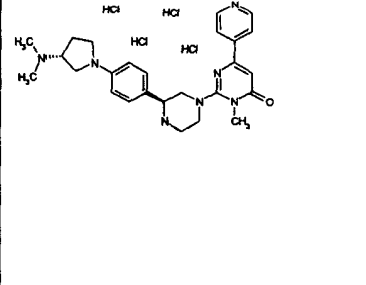
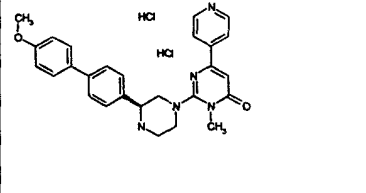
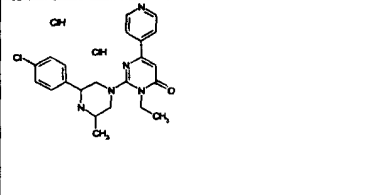
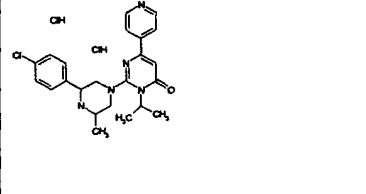
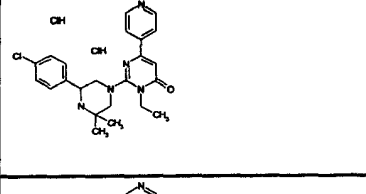
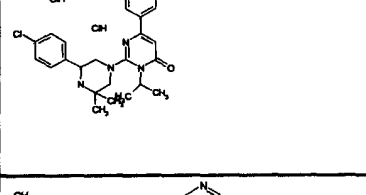
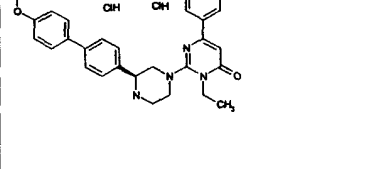
No.	R1	R2	R3	R4	R5	R6
XA1900	CH3CH2-		H	CH3-	H	H
XA1901	CH3CH2-		H	CH3-	H	H
XA1902	CH3CH2-		H	CH3-	H	H
XA1903	CH3CH2-		H	CH3-	H	H
XA1904	CH3CH2-		H	CH3-	H	H
XA1905	CH3CH2-		H	CH3-	H	H
XA1906	CH3CH2-		H	CH3-	H	H
XA1907	CH3CH2-		H	CH3-	H	H
XA1908	CH3CH2-		H	CH3-	H	H
XA1909	CH3CH2-		H	CH3-	H	H
XA1910	CH3CH2-		H	CH3-	H	H
XA1911	CH3CH2-		H	CH3-	H	H
XA1912	CH3CH2-		H	CH3-	H	H
XA1913	CH3CH2-		H	CH3-	H	H
XA1914	CH3CH2-		H	CH3-	H	H
XA1915	CH3CH2-		H	CH3-	H	H
XA1916	CH3CH2-		H	CH3-	H	H
XA1917	CH3CH2-		H	CH3-	H	H
XA1918	CH3CH2-		H	CH3-	H	H
XA1919	CH3CH2-		H	CH3-	H	H

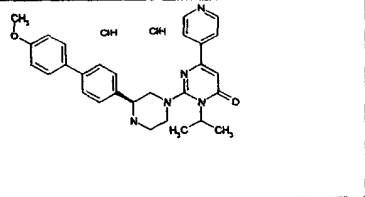
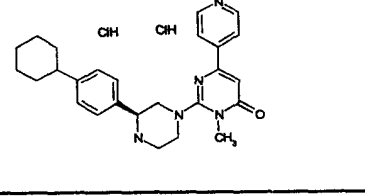
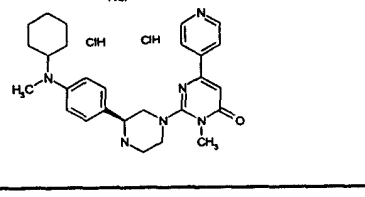
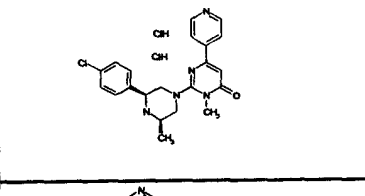
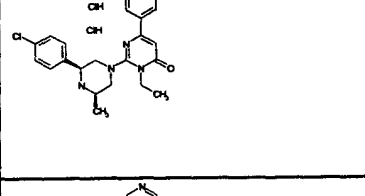
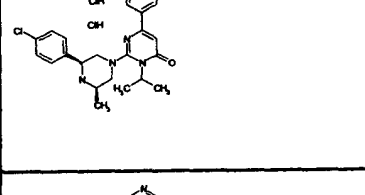
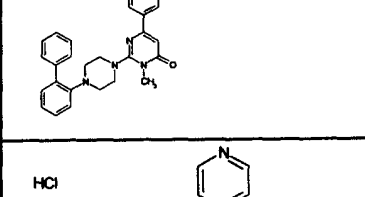
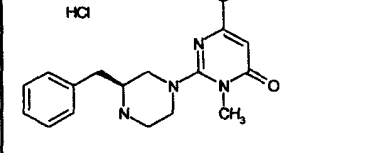
No.	R1	R2	R3	R4	R5	R6
XA1920	CH ₃ CH ₂ -		H	CH ₃ -	H	H
XA1921	CH ₃ CH ₂ -		H	CH ₃ -	H	H
XA1922	CH ₃ CH ₂ -		H	CH ₃ -	H	H
XA1923	CH ₃ CH ₂ -		H	CH ₃ -	H	H
XA1924	CH ₃ CH ₂ -		H	CH ₃ -	H	H
XA1925	CH ₃ CH ₂ -		H	CH ₃ -	H	H
XA1926	CH ₃ CH ₂ -		H	CH ₃ -	H	H
XA1927	CH ₃ CH ₂ -		H	CH ₃ -	H	H
XA1928	CH ₃ CH ₂ -		H	CH ₃ -	H	H
XA1929	CH ₃ CH ₂ -		H	CH ₃ -	H	H
XA1930	CH ₃ CH ₂ -		H	CH ₃ -	H	H
XA1931	CH ₃ CH ₂ -		H	CH ₃ -	H	H
XA1932	CH ₃ CH ₂ -		H	CH ₃ -	H	H
XA1933	CH ₃ CH ₂ -		H	CH ₃ -	H	H
XA1934	CH ₃ CH ₂ -		H	CH ₃ -	H	H
XA1935	CH ₃ CH ₂ -		H	CH ₃ -	H	H
XA1936	CH ₃ CH ₂ -		H	CH ₃ -	H	H
XA1937	CH ₃ CH ₂ -		H	CH ₃ -	H	H
XA1938	CH ₃ CH ₂ -		H	CH ₃ -	H	H
XA1939	CH ₃ CH ₂ -		H	CH ₃ -	H	H

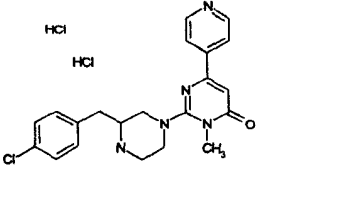
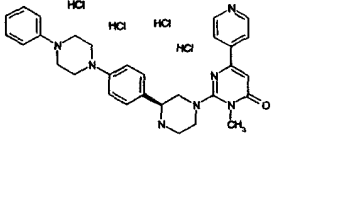
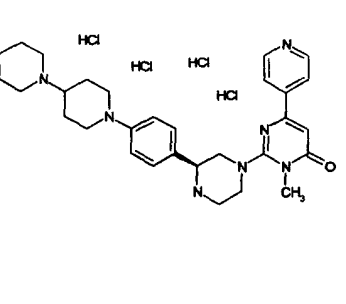
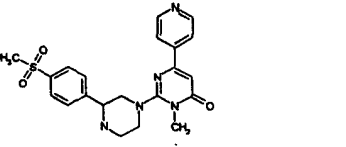
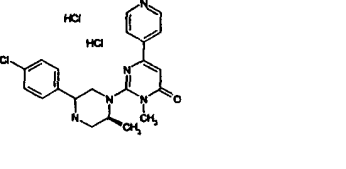
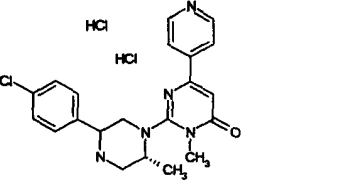
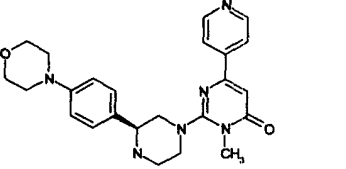
No.	R1	R2	R3	R4	R5	R6
XA1940	CH3CH2-		H	CH3-	H	H
XA1941	CH3CH2-		H	CH3-	H	H
XA1942	CH3CH2-		H	CH3-	H	H
XA1943	CH3CH2-		H	CH3-	H	H
XA1944	CH3CH2-		H	CH3-	H	H
XA1945	CH3CH2-		H	CH3-	H	H
XA1946	CH3CH2-		H	CH3-	H	H
XA1947	CH3CH2-		H	CH3-	H	H
XA1948	CH3CH2-		H	CH3-	H	H
XA1949	CH3CH2-		H	CH3-	H	H
XA1950	CH3CH2-		H	CH3-	H	H
XA1951	CH3CH2-		H	CH3-	H	H
XA1952	CH3CH2-		H	CH3-	H	H
XA1953	CH3CH2-		H	CH3-	H	H
XA1954	CH3CH2-		H	CH3-	H	H
XA1955	CH3CH2-		H	CH3-	H	H
XA1956	CH3CH2-		H	CH3-	H	H
XA1957	CH3CH2-		H	CH3-	H	H
XA1958	CH3CH2-		H	CH3-	H	H
XA1959	CH3CH2-		H	CH3-	H	H

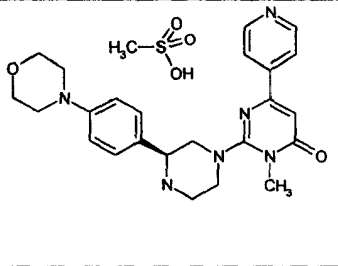
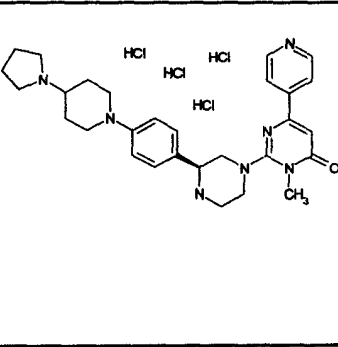
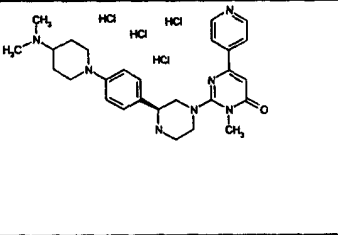
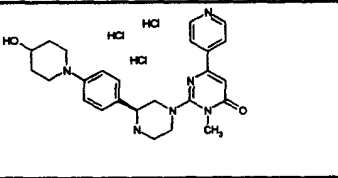
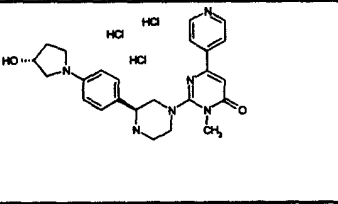
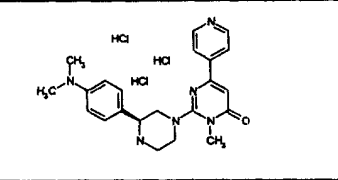
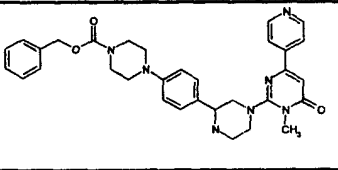
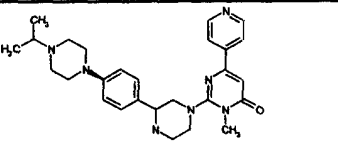
No.	R1	R2	R3	R4	R5	R6
XA1960	CH3CH2-		H	CH3-	H	H
XA1961	CH3CH2-		H	CH3-	H	H
XA1962	CH3CH2-		H	CH3-	H	H
XA1963	CH3CH2-		H	CH3-	H	H
XA1964	CH3CH2-		H	CH3-	H	H
XA1965	CH3CH2-		H	CH3-	H	H
XA1966	CH3CH2-		H	CH3-	H	H
XA1967	CH3CH2-		H	CH3-	H	H
XA1968	CH3CH2-		H	CH3-	H	H
XA1969	CH3CH2-		H	CH3-	H	H
XA1970	CH3CH2-		H	CH3-	H	H
XA1971	CH3CH2-		H	CH3-	H	H
XA1972	CH3CH2-		H	CH3-	H	H

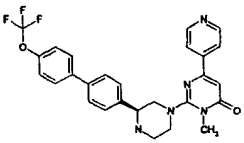
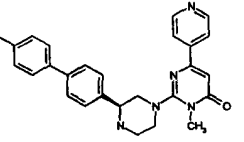
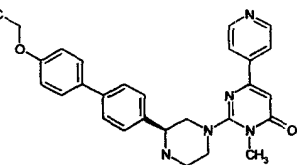
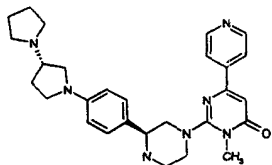
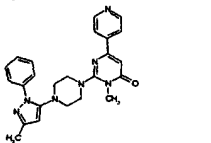
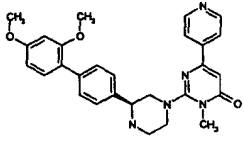
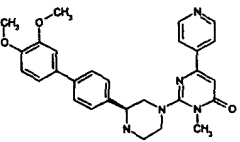
No.	结构
XA1973	
XA1974	
XA1975	
XA1976	
XA1977	
XA1978	
XA1979	
XA1980	

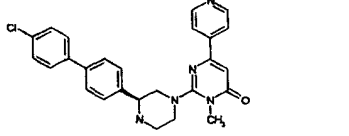
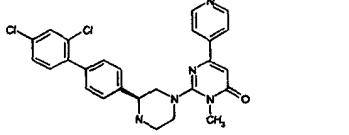
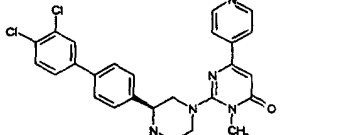
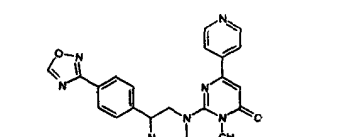
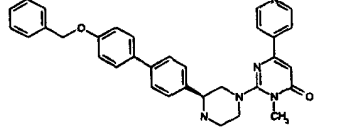
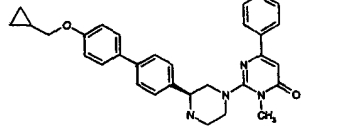
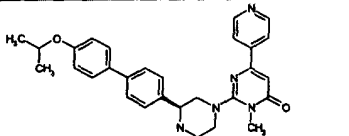
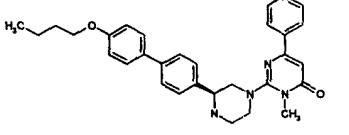
XA1989	
XA1990	
XA1991	
XA1992	
XA1993	
XA1994	
XA1995	
XA1996	

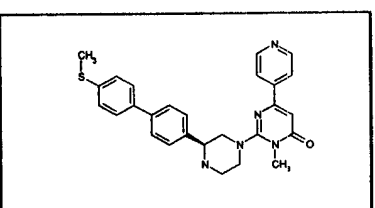
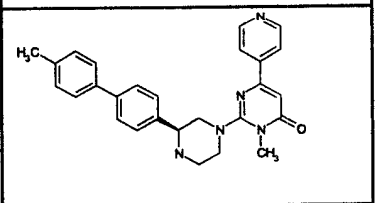
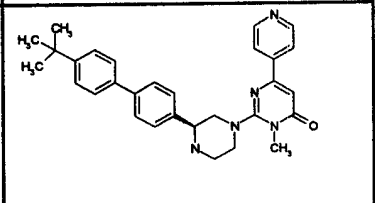
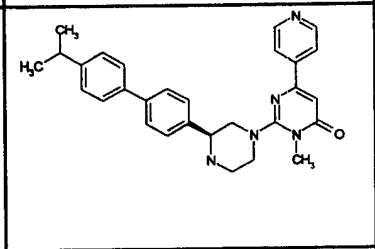
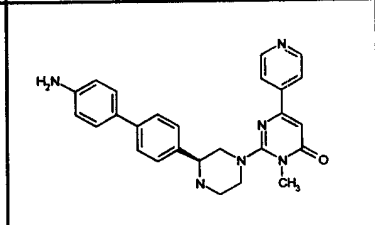
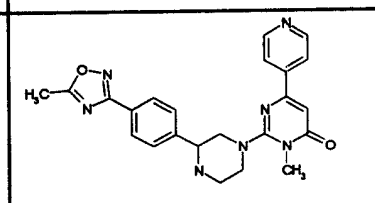
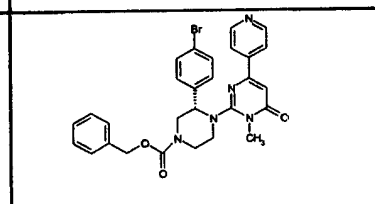
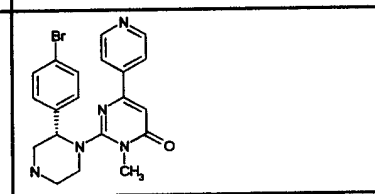
XA1997	
XA1998	
XA1999	
XA2000	
XA2001	
XA2002	
XA2003	
XA2004	

XA2005	 <p>Chemical structure of XA2005: A piperazine ring substituted with a 4-chlorophenyl group and a 2-methyl-4-(4-pyridyl)quinolin-3(1H)-one group. Two HCl molecules are shown above the structure.</p>
XA2006	 <p>Chemical structure of XA2006: A piperazine ring substituted with a phenyl group and a 2-methyl-4-(4-pyridyl)quinolin-3(1H)-one group. Three HCl molecules are shown above the structure.</p>
XA2007	 <p>Chemical structure of XA2007: A piperazine ring substituted with a piperidine ring and a 2-methyl-4-(4-pyridyl)quinolin-3(1H)-one group. Four HCl molecules are shown above the structure.</p>
XA2008	 <p>Chemical structure of XA2008: A piperazine ring substituted with a 4-methylsulfonylphenyl group and a 2-methyl-4-(4-pyridyl)quinolin-3(1H)-one group.</p>
XA2009	 <p>Chemical structure of XA2009: A piperazine ring substituted with a 4-chlorophenyl group and a 2-methyl-4-(4-pyridyl)quinolin-3(1H)-one group. Two HCl molecules are shown above the structure.</p>
XA2010	 <p>Chemical structure of XA2010: A piperazine ring substituted with a 4-chlorophenyl group and a 2-methyl-4-(4-pyridyl)quinolin-3(1H)-one group. Two HCl molecules are shown above the structure.</p>
XA2011	 <p>Chemical structure of XA2011: A piperazine ring substituted with a morpholine ring and a 2-methyl-4-(4-pyridyl)quinolin-3(1H)-one group.</p>

XA2012	
XA2013	
XA2014	
XA2015	
XA2016	
XA2017	
XA2018	
XA2019	

XA2029	
XA2030	
XA2031	
XA2032	
XA2033	
XA2034	
XA2035	

XA2036	
XA2037	
XA2038	
XA2039	
XA2040	
XA2041	
XA2042	
XA2043	

XA2044	
XA2045	
XA2046	
XA2047	
XA2048	
XA2049	
XA2050	
XA2051	

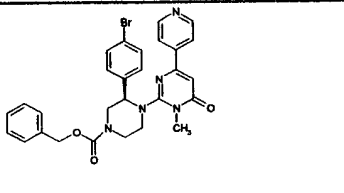
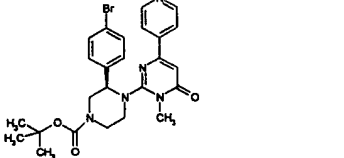
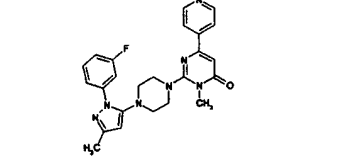
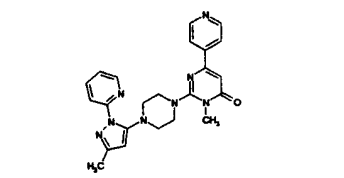
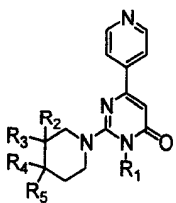
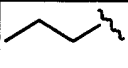

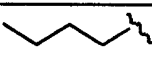
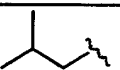

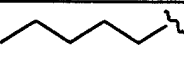
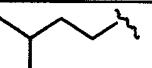

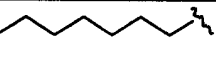
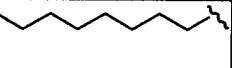
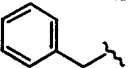
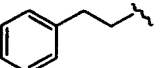
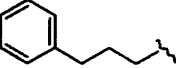




















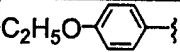

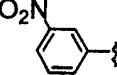
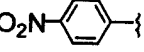


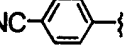
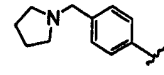

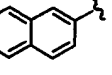
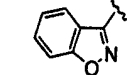
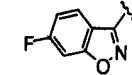
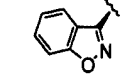
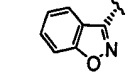





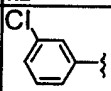
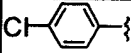

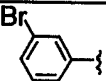
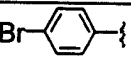

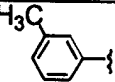
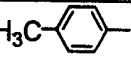
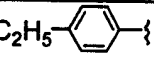


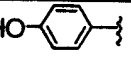

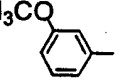
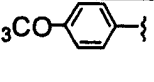
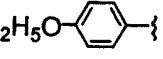


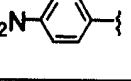
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XA2053	
XA2054	
XA2055	

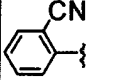
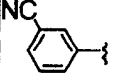
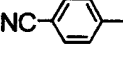
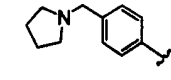
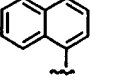
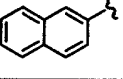
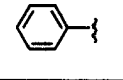
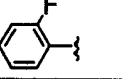
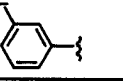
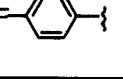
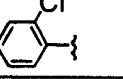
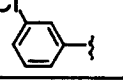
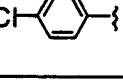
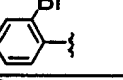
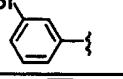
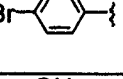
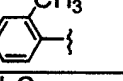
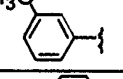
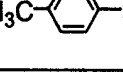
表2

					
No	R1	R2	R3	R4	R5
XB1	CH3-	CH3-	H	H	H
XB2	CH3-	CH3CH2-	H	H	H
XB3	CH3-		H	H	H
XB4	CH3-		H	H	H
XB5	CH3-		H	H	H
XB6	CH3-		H	H	H
XB7	CH3-		H	H	H
XB8	CH3-		H	H	H
XB9	CH3-		H	H	H
XB10	CH3-		H	H	H
XB11	CH3-		H	H	H
XB12	CH3-		H	H	H
XB13	CH3-		H	H	H
XB14	CH3-		H	H	H
XB15	CH3-		H	H	H
XB16	CH3-		H	H	H



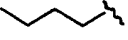



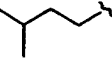


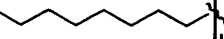
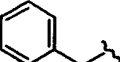
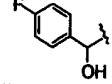
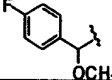
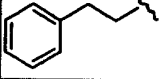
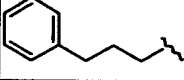



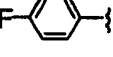
No	R1	R2	R3	R4	R5
XB17	CH3-		H	H	H
XB18	CH3-		H	H	H
XB19	CH3-		H	H	H
XB20	CH3-		H	H	H
XB21	CH3-		H	H	H
XB22	CH3-		H	H	H
XB23	CH3-		H	H	H
XB24	CH3-		H	H	H
XB25	CH3-		H	H	H
XB26	CH3-		H	H	H
XB27	CH3-		H	H	H
XB28	CH3-		H	H	H
XB29	CH3-		H	H	H
XB30	CH3-		H	H	H
XB31	CH3-		H	H	H
XB32	CH3-		H	H	H
XB33	CH3-		H	H	H
XB34	CH3-		H	H	H
XB35	CH3-		H	H	H



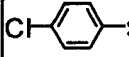
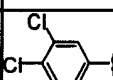


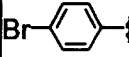


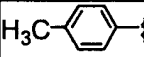
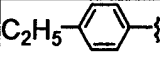


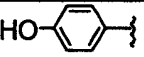


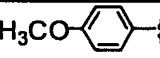
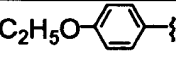

No	R1	R2	R3	R4	R5
XB36	CH3-		H	H	H
XB37	CH3-		H	H	H
XB38	CH3-		H	H	H
XB39	CH3-		H	H	H
XB40	CH3-		H	H	H
XB41	CH3-		H	H	H
XB42	CH3-		H	H	H
XB43	CH3-		H	H	H
XB44	CH3-		H	H	H
XB45	CH3-		H	H	H
XB46	CH3-		H	H	H
XB47	CH3-		H	H	H
XB48	CH3-		H	H	H
XB49	CH3-		H	H	H
XB50	CH3-		OH	H	H
XB51	CH3-		OH	H	H
XB52	CH3-		OH	H	H
XB53	CH3-		OH	H	H
XB54	CH3-		OH	H	H

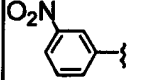
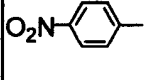
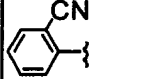
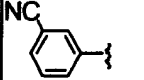
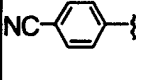
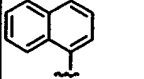
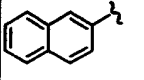
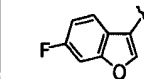
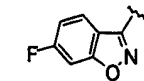
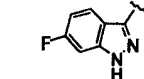
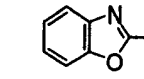
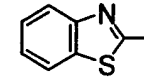
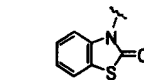
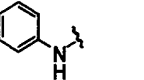
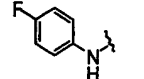
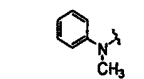
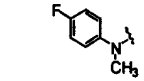
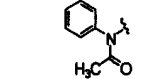
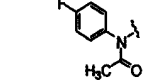
No	R1	R2	R3	R4	R5
XB55	CH3-		OH	H	H
XB56	CH3-		OH	H	H
XB57	CH3-		OH	H	H
XB58	CH3-		OH	H	H
XB59	CH3-		OH	H	H
XB60	CH3-		OH	H	H
XB61	CH3-		OH	H	H
XB62	CH3-		OH	H	H
XB63	CH3-		OH	H	H
XB64	CH3-		OH	H	H
XB65	CH3-		OH	H	H
XB66	CH3-		OH	H	H
XB67	CH3-		OH	H	H
XB68	CH3-		OH	H	H
XB69	CH3-		OH	H	H
XB70	CH3-		OH	H	H
XB71	CH3-		OH	H	H
XB72	CH3-		OH	H	H
XB73	CH3-		OH	H	H


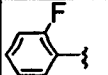
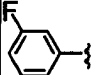

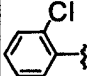
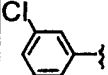
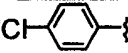
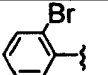
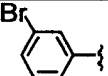
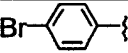
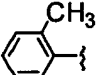
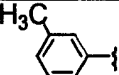
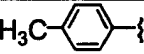
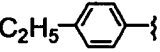
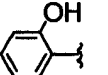
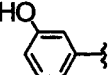
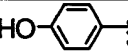
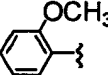
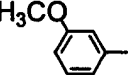
No	R1	R2	R3	R4	R5
XB74	CH3-		OH	H	H
XB75	CH3-		OH	H	H
XB76	CH3-		OH	H	H
XB77	CH3-		OH	H	H
XB78	CH3-		OH	H	H
XB79	CH3-		OH	H	H
XB80	CH3-		CN	H	H
XB81	CH3-		CN	H	H
XB82	CH3-		CN	H	H
XB83	CH3-		CN	H	H
XB84	CH3-		CN	H	H
XB85	CH3-		CN	H	H
XB86	CH3-		CN	H	H
XB87	CH3-		CN	H	H
XB88	CH3-		CN	H	H
XB89	CH3-		CN	H	H
XB90	CH3-		CN	H	H
XB91	CH3-		CN	H	H
XB92	CH3-		CN	H	H

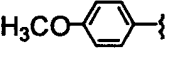
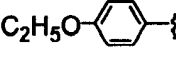
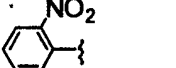
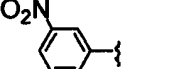
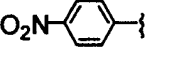
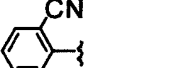
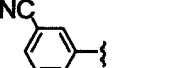
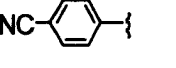
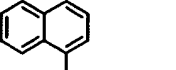
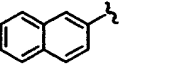
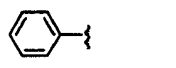
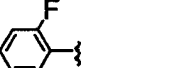
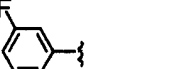
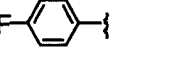
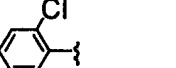
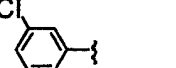
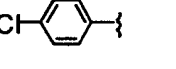
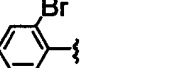
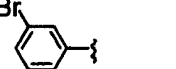
No	R1	R2	R3	R4	R5
XB93	CH3-		CN	H	H
XB94	CH3-		CN	H	H
XB95	CH3-		CN	H	H
XB96	CH3-		CN	H	H
XB97	CH3-		CN	H	H
XB98	CH3-		CN	H	H
XB99	CH3-		CN	H	H
XB100	CH3-		CN	H	H
XB101	CH3-		CN	H	H
XB102	CH3-		CN	H	H
XB103	CH3-		CN	H	H
XB104	CH3-		CN	H	H
XB105	CH3-		CN	H	H
XB106	CH3-		CN	H	H
XB107	CH3-		CN	H	H
XB108	CH3-		CN	H	H
XB109	CH3-		CN	H	H
XB110	CH3-	H	H	CH3-	H
XB111	CH3-	H	H	CH3CH2-	H

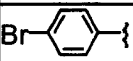

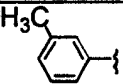
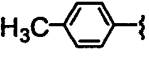
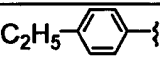

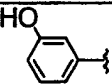
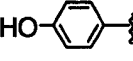
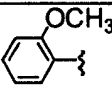
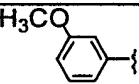
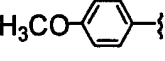
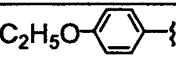

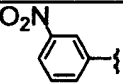
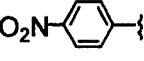

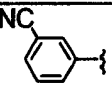
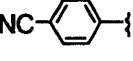

No	R1	R2	R3	R4	R5
XB112	CH3-	H	H		H
XB113	CH3-	H	H		H
XB114	CH3-	H	H		H
XB115	CH3-	H	H		H
XB116	CH3-	H	H		H
XB117	CH3-	H	H		H
XB118	CH3-	H	H		H
XB119	CH3-	H	H		H
XB120	CH3-	H	H		H
XB121	CH3-	H	H		H
XB122	CH3-	H	H		H
XB123	CH3-	H	H		H
XB124	CH3-	H	H		H
XB125	CH3-	H	H		H
XB126	CH3-	H	H		H
XB127	CH3-	H	H		H
XB128	CH3-	H	H		H
XB129	CH3-	H	H		H
XB130	CH3-	H	H		H

No	R1	R2	R3	R4	R5
XB131	CH ₃ -	H	H		H
XB132	CH ₃ -	H	H		H
XB133	CH ₃ -	H	H		H
XB134	CH ₃ -	H	H		H
XB135	CH ₃ -	H	H		H
XB136	CH ₃ -	H	H		H
XB137	CH ₃ -	H	H		H
XB138	CH ₃ -	H	H		H
XB139	CH ₃ -	H	H		H
XB140	CH ₃ -	H	H		H
XB141	CH ₃ -	H	H		H
XB142	CH ₃ -	H	H		H
XB143	CH ₃ -	H	H		H
XB144	CH ₃ -	H	H		H
XB145	CH ₃ -	H	H		H
XB146	CH ₃ -	H	H		H
XB147	CH ₃ -	H	H		H
XB148	CH ₃ -	H	H		H
XB149	CH ₃ -	H	H		H

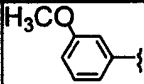

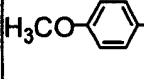

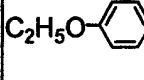

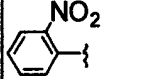

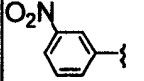

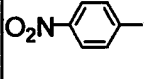

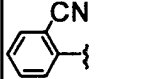

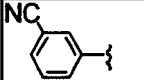

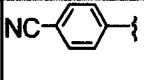

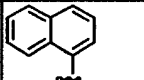

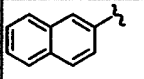

No	R1	R2	R3	R4	R5
XB150	CH3-	H	H		H
XB151	CH3-	H	H		H
XB152	CH3-	H	H		H
XB153	CH3-	H	H		H
XB154	CH3-	H	H		H
XB155	CH3-	H	H		H
XB156	CH3-	H	H		H
XB157	CH3-	H	H		H
XB158	CH3-	H	H		H
XB159	CH3-	H	H		H
XB160	CH3-	H	H		H
XB161	CH3-	H	H		H
XB162	CH3-	H	H		H
XB163	CH3-	H	H		H
XB164	CH3-	H	H		H
XB165	CH3-	H	H		H
XB166	CH3-	H	H		H
XB167	CH3-	H	H		H
XB168	CH3-	H	H		H

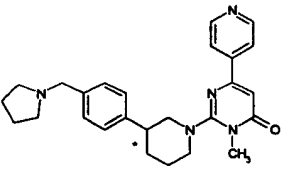
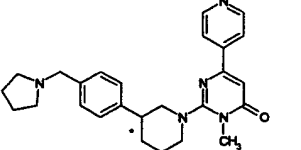
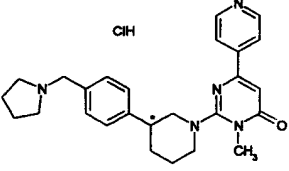
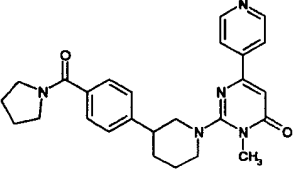
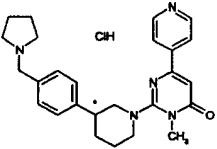
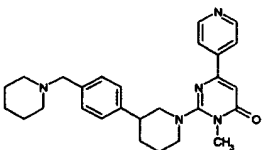
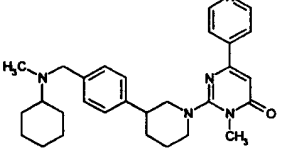
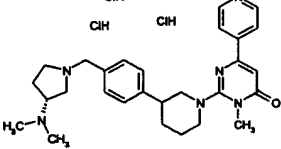
No	R1	R2	R3	R4	R5
XB169	CH3-	H	H		OH
XB170	CH3-	H	H		OH
XB171	CH3-	H	H		OH
XB172	CH3-	H	H		OH
XB173	CH3-	H	H		OH
XB174	CH3-	H	H		OH
XB175	CH3-	H	H		OH
XB176	CH3-	H	H		OH
XB177	CH3-	H	H		OH
XB178	CH3-	H	H		OH
XB179	CH3-	H	H		OH
XB180	CH3-	H	H		OH
XB181	CH3-	H	H		OH
XB182	CH3-	H	H		OH
XB183	CH3-	H	H		OH
XB184	CH3-	H	H		OH
XB185	CH3-	H	H		OH
XB186	CH3-	H	H		OH
XB187	CH3-	H	H		OH

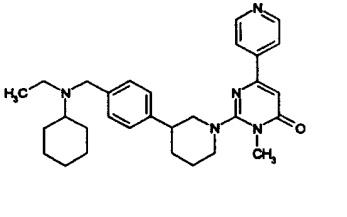
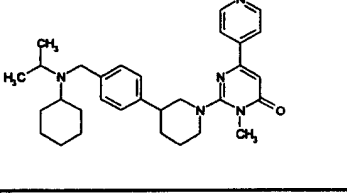
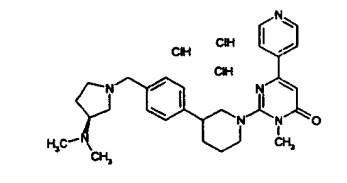
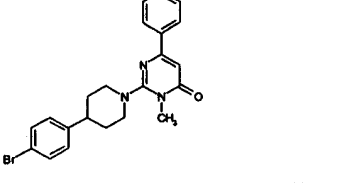
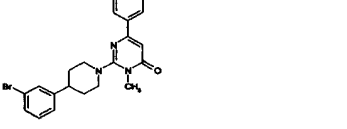
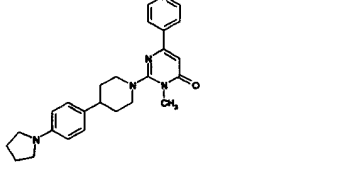
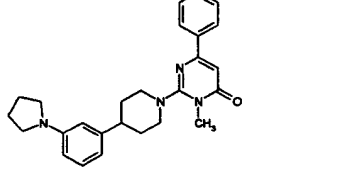
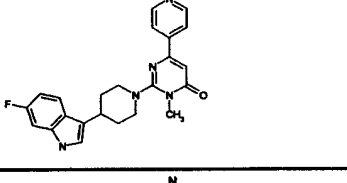
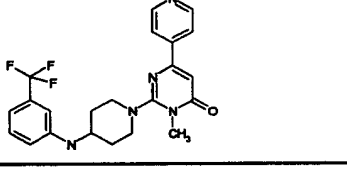
No	R1	R2	R3	R4	R5
XB188	CH ₃ -	H	H		OH
XB189	CH ₃ -	H	H		OH
XB190	CH ₃ -	H	H		OH
XB191	CH ₃ -	H	H		OH
XB192	CH ₃ -	H	H		OH
XB193	CH ₃ -	H	H		OH
XB194	CH ₃ -	H	H		OH
XB195	CH ₃ -	H	H		OH
XB196	CH ₃ -	H	H		OH
XB197	CH ₃ -	H	H		OH
XB198	CH ₃ -	H	H		CN
XB199	CH ₃ -	H	H		CN
XB200	CH ₃ -	H	H		CN
XB201	CH ₃ -	H	H		CN
XB202	CH ₃ -	H	H		CN
XB203	CH ₃ -	H	H		CN
XB204	CH ₃ -	H	H		CN
XB205	CH ₃ -	H	H		CN
XB206	CH ₃ -	H	H		CN

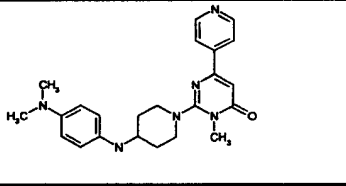
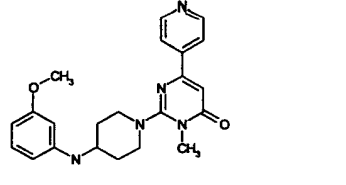
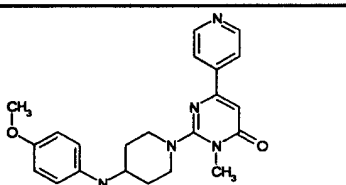
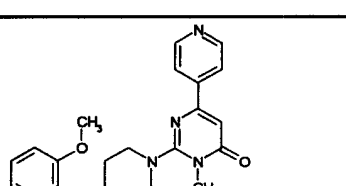
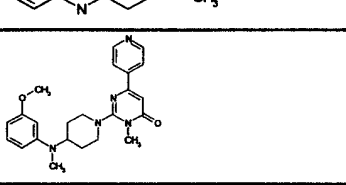
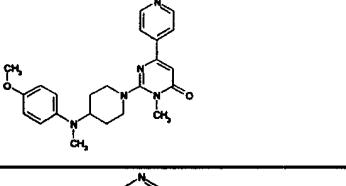
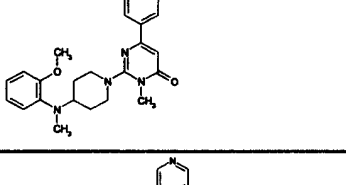
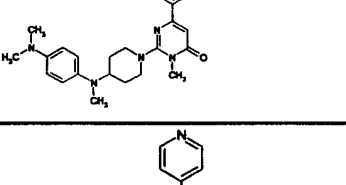
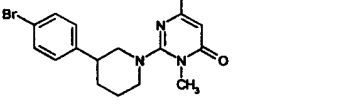
No	R1	R2	R3	R4	R5
XB207	CH3-	H	H		CN
XB208	CH3-	H	H		CN
XB209	CH3-	H	H		CN
XB210	CH3-	H	H		CN
XB211	CH3-	H	H		CN
XB212	CH3-	H	H		CN
XB213	CH3-	H	H		CN
XB214	CH3-	H	H		CN
XB215	CH3-	H	H		CN
XB216	CH3-	H	H		CN
XB217	CH3-	H	H		CN
XB218	CH3-	H	H		CN
XB219	CH3-	H	H		CN
XB220	CH3-	H	H		CN
XB221	CH3-	H	H		CN
XB222	CH3-	H	H		CN
XB223	CH3-	H	H		CN
XB224	CH3-	H	H		CN
XB225	CH3-	H	H		CN

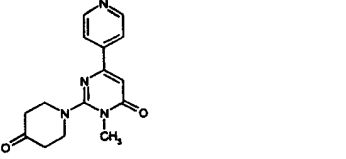
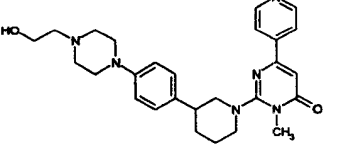
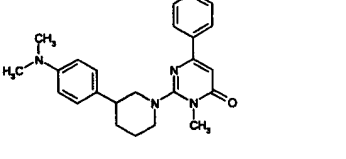
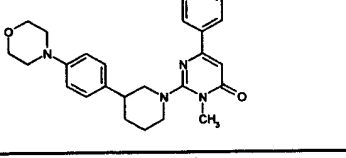
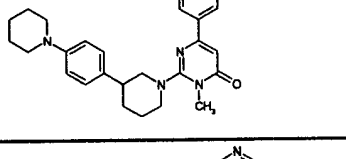
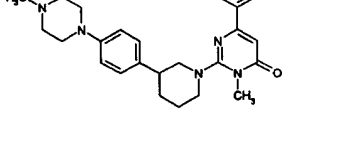
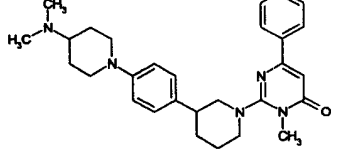
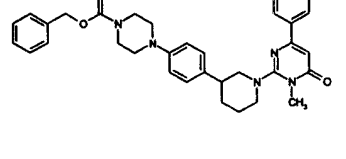
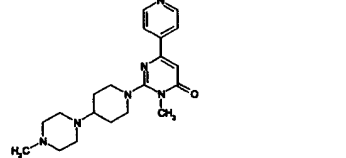
No	R1	R2	R3	R4	R5
XB226	CH ₃ -	H	H		CN
XB227	CH ₃ -	H	H		
XB228	CH ₃ -	H	H		
XB229	CH ₃ -	H	H		
XB230	CH ₃ -	H	H		
XB231	CH ₃ -	H	H		
XB232	CH ₃ -	H	H		
XB233	CH ₃ -	H	H		
XB234	CH ₃ -	H	H		
XB235	CH ₃ -	H	H		
XB236	CH ₃ -	H	H		
XB237	CH ₃ -	H	H		
XB238	CH ₃ -	H	H		
XB239	CH ₃ -	H	H		
XB240	CH ₃ -	H	H		
XB241	CH ₃ -	H	H		
XB242	CH ₃ -	H	H		
XB243	CH ₃ -	H	H		
XB244	CH ₃ -	H	H		

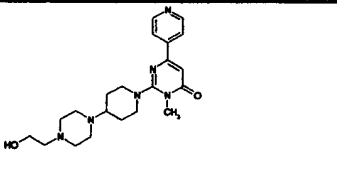
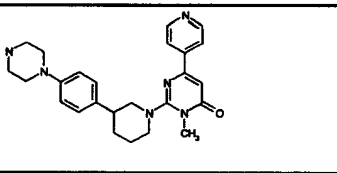
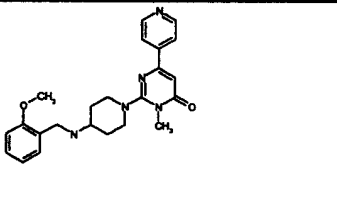
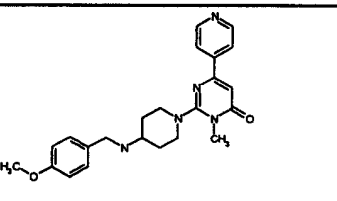
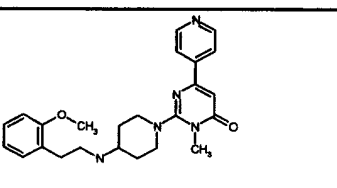
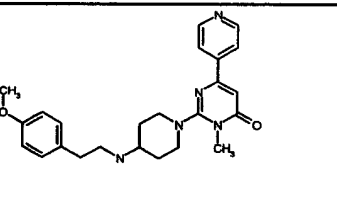
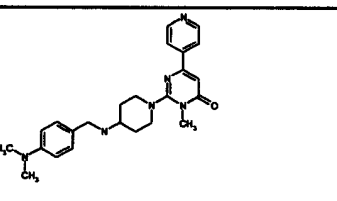
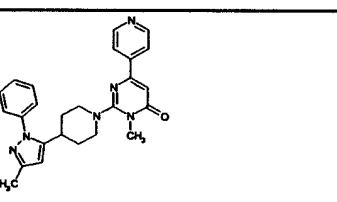
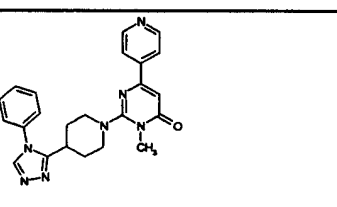
No	R1	R2	R3	R4	R5
XB245	CH ₃ -	H	H		
XB246	CH ₃ -	H	H		
XB247	CH ₃ -	H	H		
XB248	CH ₃ -	H	H		
XB249	CH ₃ -	H	H		
XB250	CH ₃ -	H	H		
XB251	CH ₃ -	H	H		
XB252	CH ₃ -	H	H		
XB253	CH ₃ -	H	H		
XB254	CH ₃ -	H	H		
XB255	CH ₃ -	H	H		

No.	结构
XB256	
XB257	
XB258	
XB259	
XB260	
XB261	
XB262	
XB263	

XB264	
XB265	
XB266	
XB267	
XB268	
XB269	
XB270	
XB271	
XB272	

XB273	
XB274	
XB275	
XB276	
XB277	
XB278	
XB279	
XB280	
XB281	

XB282	
XB283	
XB284	
XB285	
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XB288	
XB289	
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XB298	
XB299	

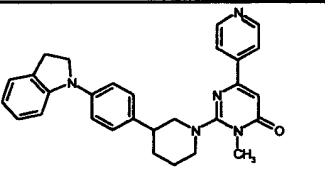
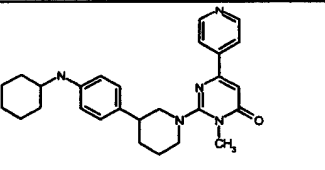
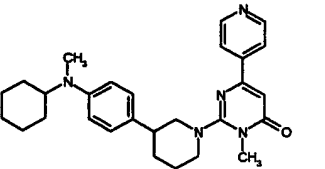
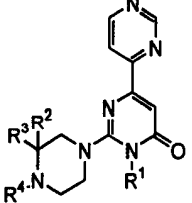


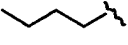



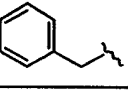
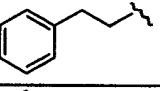
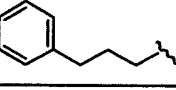


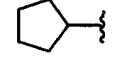
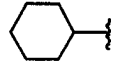
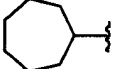



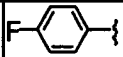

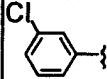
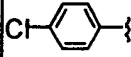

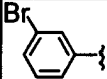
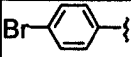


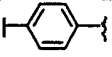

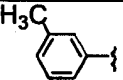
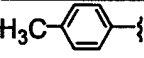
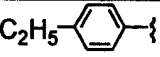
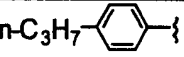
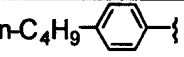

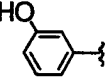
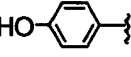
XB300	 <p>Chemical structure of XB300: A central piperidine ring is connected at its 4-position to a para-substituted benzene ring. This benzene ring is further connected at its other para-position to a 5-membered imidazolidine ring fused to a benzene ring. The piperidine ring is also connected at its 1-position to a pyridin-2(1H)-one ring, which has a methyl group (CH₃) at the 3-position and a pyridin-2-yl group at the 4-position.</p>
XB301	 <p>Chemical structure of XB301: A central piperidine ring is connected at its 4-position to a para-substituted benzene ring. This benzene ring is further connected at its other para-position to a secondary amine group (-NH-) which is bonded to another piperidine ring. The piperidine ring is also connected at its 1-position to a pyridin-2(1H)-one ring, which has a methyl group (CH₃) at the 3-position and a phenyl ring at the 4-position.</p>
XB302	 <p>Chemical structure of XB302: A central piperidine ring is connected at its 4-position to a para-substituted benzene ring. This benzene ring is further connected at its other para-position to a secondary amine group (-NH-) which is bonded to a methyl group (CH₃) and another piperidine ring. The piperidine ring is also connected at its 1-position to a pyridin-2(1H)-one ring, which has a methyl group (CH₃) at the 3-position and a pyridin-2-yl group at the 4-position.</p>




















表3

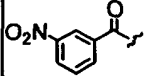
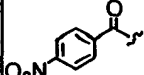
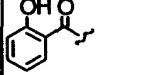
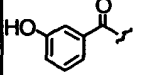
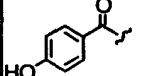
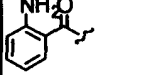
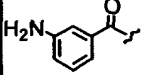
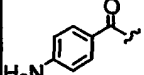
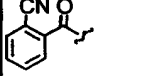
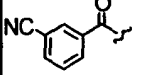
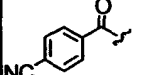
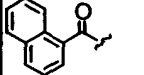
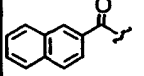
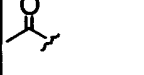
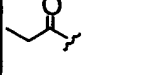
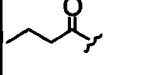
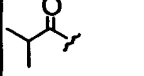
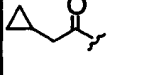
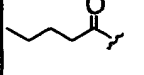
				
No.	R1	R2	R3	R4
YA0001	CH3-	H	H	CH3-
YA0002	CH3-	H	H	CH3CH2-
YA0003	CH3-	H	H	
YA0004	CH3-	H	H	
YA0005	CH3-	H	H	
YA0006	CH3-	H	H	
YA0007	CH3-	H	H	
YA0008	CH3-	H	H	
YA0009	CH3-	H	H	
YA0010	CH3-	H	H	
YA0011	CH3-	H	H	
YA0012	CH3-	H	H	
YA0013	CH3-	H	H	
YA0014	CH3-	H	H	
YA0015	CH3-	H	H	
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YA0019	CH3-	H	H	


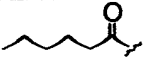
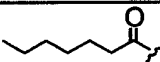
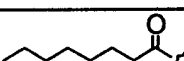




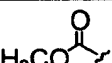
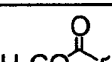
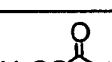
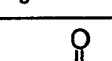
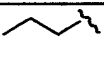
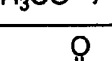

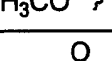
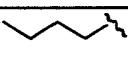
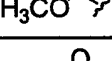
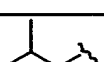
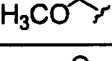
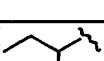
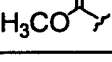

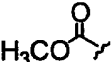

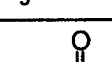
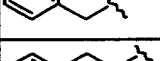
No.	R1	R2	R3	R4
YA0020	CH ₃ -	H	H	
YA0021	CH ₃ -	H	H	
YA0022	CH ₃ -	H	H	
YA0023	CH ₃ -	H	H	
YA0024	CH ₃ -	H	H	
YA0025	CH ₃ -	H	H	
YA0026	CH ₃ -	H	H	
YA0027	CH ₃ -	H	H	
YA0028	CH ₃ -	H	H	
YA0029	CH ₃ -	H	H	
YA0030	CH ₃ -	H	H	
YA0031	CH ₃ -	H	H	
YA0032	CH ₃ -	H	H	
YA0033	CH ₃ -	H	H	
YA0034	CH ₃ -	H	H	
YA0035	CH ₃ -	H	H	
YA0036	CH ₃ -	H	H	
YA0037	CH ₃ -	H	H	
YA0038	CH ₃ -	H	H	

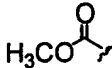
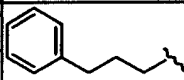
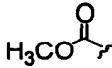

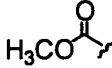

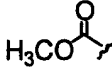

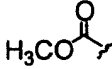

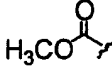
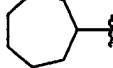
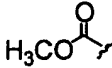

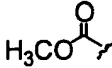

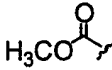

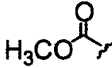
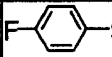
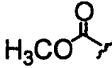

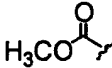
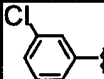
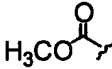
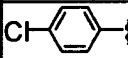
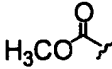

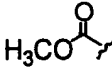
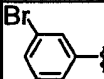
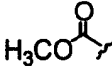
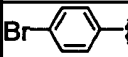
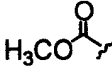

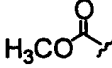
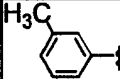
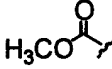
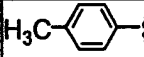
No.	R1	R2	R3	R4
YA0039	CH3-	H	H	
YA0040	CH3-	H	H	
YA0041	CH3-	H	H	
YA0042	CH3-	H	H	
YA0043	CH3-	H	H	
YA0044	CH3-	H	H	
YA0045	CH3-	H	H	
YA0046	CH3-	H	H	
YA0047	CH3-	H	H	
YA0048	CH3-	H	H	
YA0049	CH3-	H	H	
YA0050	CH3-	H	H	
YA0051	CH3-	H	H	
YA0052	CH3-	H	H	
YA0053	CH3-	H	H	
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YA0057	CH3-	H	H	

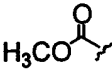
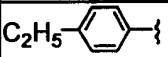
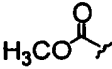
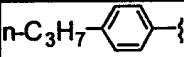
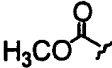
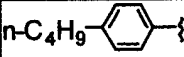
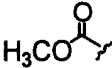

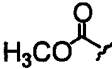
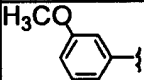
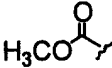
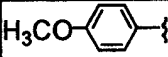
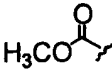
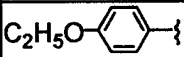
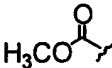
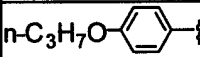
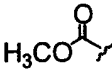
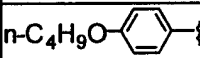
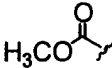

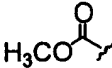
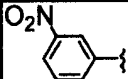
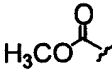
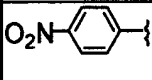
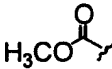

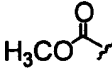
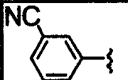
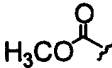
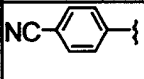
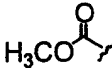
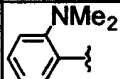
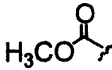
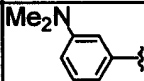
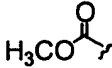
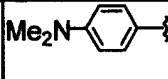
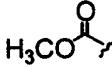
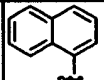
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YA0058	CH3-	H	H	
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YA0060	CH3-	H	H	
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YA0062	CH3-	H	H	
YA0063	CH3-	H	H	
YA0064	CH3-	H	H	
YA0065	CH3-	H	H	
YA0066	CH3-	H	H	
YA0067	CH3-	H	H	
YA0068	CH3-	H	H	
YA0069	CH3-	H	H	
YA0070	CH3-	H	H	
YA0071	CH3-	H	H	
YA0072	CH3-	H	H	
YA0073	CH3-	H	H	
YA0074	CH3-	H	H	
YA0075	CH3-	H	H	
YA0076	CH3-	H	H	

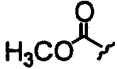
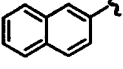
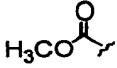

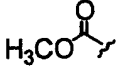
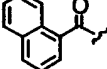
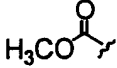
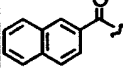
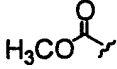

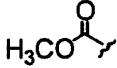

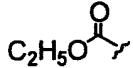
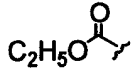
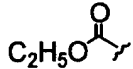
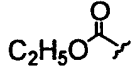

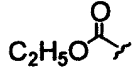

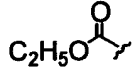
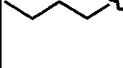
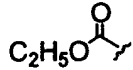

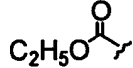

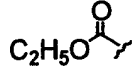

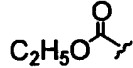
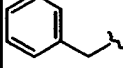
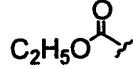
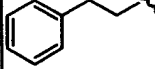
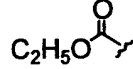
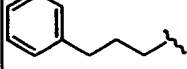
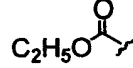

No.	R1	R2	R3	R4
YA0077	CH3-	H	H	
YA0078	CH3-	H	H	
YA0079	CH3-	H	H	
YA0080	CH3-	H	H	
YA0081	CH3-	H	H	
YA0082	CH3-	H	H	
YA0083	CH3-	H	H	
YA0084	CH3-	H	H	
YA0085	CH3-	H	H	
YA0086	CH3-	H	H	
YA0087	CH3-	H	H	
YA0088	CH3-	H	H	
YA0089	CH3-	H	H	
YA0090	CH3-	H	H	
YA0091	CH3-	H	H	
YA0092	CH3-	H	H	
YA0093	CH3-	H	H	
YA0094	CH3-	H	H	
YA0095	CH3-	H	H	

No.	R1	R2	R3	R4
YA0096	CH3-	H	H	
YA0097	CH3-	H	H	
YA0098	CH3-	H	H	
YA0099	CH3-	H	H	
YA0100	CH3-	H	H	
YA0101	CH3-	H	H	
YA0102	CH3-	H	H	
YA0103	CH3-	H	H	
YA0104	CH3-	H	H	
YA0105	CH3-	H	H	
YA0106	CH3-	H	H	
YA0107	CH3-	H	H	
YA0108	CH3-	H	H	
YA0109	CH3-	H	H	
YA0110	CH3-	H	H	
YA0111	CH3-	H	H	
YA0112	CH3-	H	H	
YA0113	CH3-	H	H	
YA0114	CH3-	H	H	

No.	R1	R2	R3	R4
YA0115	CH3-	H	H	
YA0116	CH3-	H	H	
YA0117	CH3-	H	H	
YA0118	CH3-	H	H	
YA0119	CH3-	H	H	
YA0120	CH3-	H	H	
YA0121	CH3-	H	H	
YA0122	CH3-	H	H	
YA0123	CH3-		H	H
YA0124	CH3-		H	CH3-
YA0125	CH3-		H	CH3CH2-
YA0126	CH3-		H	
YA0127	CH3-		H	
YA0128	CH3-		H	
YA0129	CH3-		H	
YA0130	CH3-		H	
YA0131	CH3-		H	
YA0132	CH3-		H	
YA0133	CH3-		H	

No.	R1	R2	R3	R4
YA0134	CH3-		H	
YA0135	CH3-		H	
YA0136	CH3-		H	
YA0137	CH3-		H	
YA0138	CH3-		H	
YA0139	CH3-		H	
YA0140	CH3-		H	
YA0141	CH3-		H	
YA0142	CH3-		H	
YA0143	CH3-		H	
YA0144	CH3-		H	
YA0145	CH3-		H	
YA0146	CH3-		H	
YA0147	CH3-		H	
YA0148	CH3-		H	
YA0149	CH3-		H	
YA0150	CH3-		H	
YA0151	CH3-		H	
YA0152	CH3-		H	

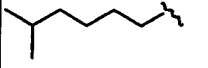
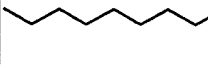
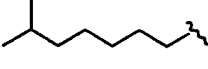
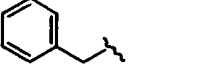
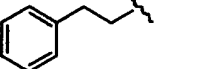
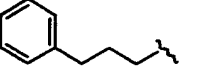
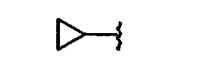
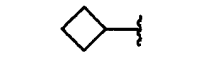
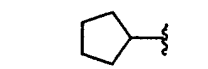
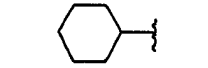
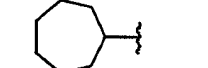





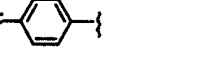
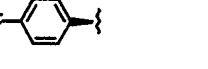
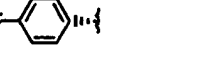
No.	R1	R2	R3	R4
YA0153	CH3-		H	
YA0154	CH3-		H	
YA0155	CH3-		H	
YA0156	CH3-		H	
YA0157	CH3-		H	
YA0158	CH3-		H	
YA0159	CH3-		H	
YA0160	CH3-		H	
YA0161	CH3-		H	
YA0162	CH3-		H	
YA0163	CH3-		H	
YA0164	CH3-		H	
YA0165	CH3-		H	
YA0166	CH3-		H	
YA0167	CH3-		H	
YA0168	CH3-		H	
YA0169	CH3-		H	
YA0170	CH3-		H	
YA0171	CH3-		H	




















No.	R1	R2	R3	R4
YA0172	CH3-		H	
YA0173	CH3-		H	
YA0174	CH3-		H	
YA0175	CH3-		H	
YA0176	CH3-		H	
YA0177	CH3-		H	
YA0178	CH3-		H	H
YA0179	CH3-		H	CH3-
YA0180	CH3-		H	CH3CH2-
YA0181	CH3-		H	
YA0182	CH3-		H	
YA0183	CH3-		H	
YA0184	CH3-		H	
YA0185	CH3-		H	
YA0186	CH3-		H	
YA0187	CH3-		H	
YA0188	CH3-		H	
YA0189	CH3-		H	
YA0190	CH3-		H	



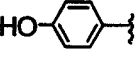

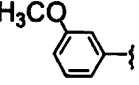
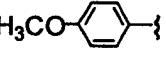
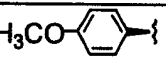
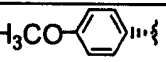

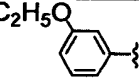
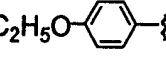
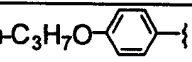
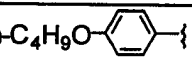

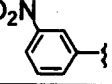
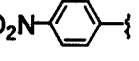


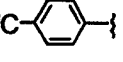
No.	R1	R2	R3	R4
YA0191	CH3-		H	
YA0192	CH3-		H	
YA0193	CH3-		H	
YA0194	CH3-		H	
YA0195	CH3-		H	
YA0196	CH3-		H	
YA0197	CH3-		H	
YA0198	CH3-		H	
YA0199	CH3-		H	
YA0200	CH3-		H	
YA0201	CH3-		H	
YA0202	CH3-		H	
YA0203	CH3-		H	
YA0204	CH3-		H	
YA0205	CH3-		H	
YA0206	CH3-		H	
YA0207	CH3-		H	
YA0208	CH3-		H	
YA0209	CH3-		H	




















No.	R1	R2	R3	R4
YA0210	CH3-		H	
YA0211	CH3-		H	
YA0212	CH3-		H	
YA0213	CH3-		H	
YA0214	CH3-		H	
YA0215	CH3-		H	
YA0216	CH3-		H	
YA0217	CH3-		H	
YA0218	CH3-		H	
YA0219	CH3-		H	
YA0220	CH3-		H	
YA0221	CH3-		H	
YA0222	CH3-		H	
YA0223	CH3-		H	
YA0224	CH3-		H	
YA0225	CH3-		H	
YA0226	CH3-		H	
YA0227	CH3-		H	
YA0228	CH3-		H	

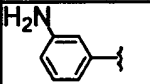
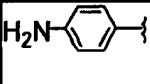
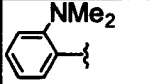
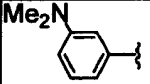
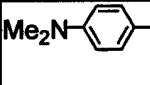
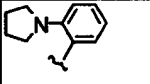
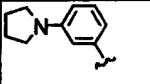
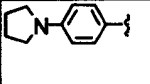
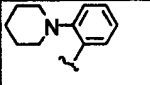
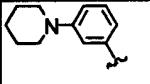
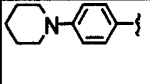
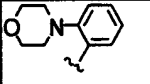
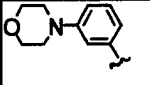
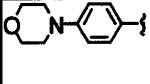
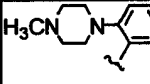
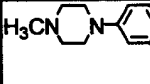
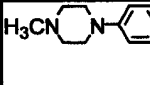
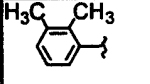
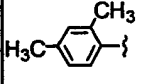
No.	R1	R2	R3	R4
YA0229	CH3-		H	
YA0230	CH3-		H	
YA0231	CH3-		H	
YA0232	CH3-		H	
YA0233	CH3-	CH3-	H	H
YA0234	CH3-	CH3CH2-	H	H
YA0235	CH3-		H	H
YA0236	CH3-		H	H
YA0237	CH3-		H	H
YA0238	CH3-		H	H
YA0239	CH3-		H	H
YA0240	CH3-		H	H
YA0241	CH3-		H	H
YA0242	CH3-		H	H
YA0243	CH3-		H	H
YA0244	CH3-		H	H
YA0245	CH3-		H	H
YA0246	CH3-		H	H
YA0247	CH3-		H	H

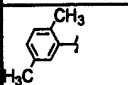
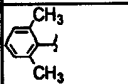
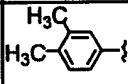
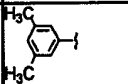
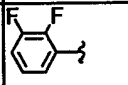
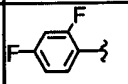
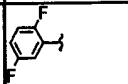
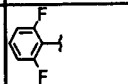
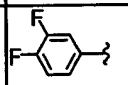
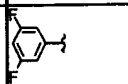
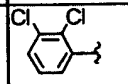
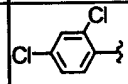
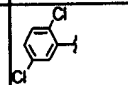
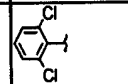
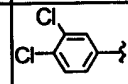
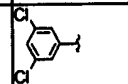
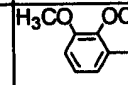
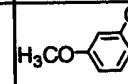
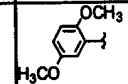
No.	R1	R2	R3	R4
YA0248	CH3-		H	H
YA0249	CH3-		H	H
YA0250	CH3-		H	H
YA0251	CH3-		H	H
YA0252	CH3-		H	H
YA0253	CH3-		H	H
YA0254	CH3-		H	H
YA0255	CH3-		H	H
YA0256	CH3-		H	H
YA0257	CH3-		H	H
YA0258	CH3-		H	H
YA0259	CH3-		H	H
YA0260	CH3-		H	H
YA0261	CH3-		H	H
YA0262	CH3-		H	H
YA0263	CH3-		H	H
YA0264	CH3-		H	H
YA0265	CH3-		H	H
YA0266	CH3-		H	H

No.	R1	R2	R3	R4
YA0267	CH3-		H	H
YA0268	CH3-		H	H
YA0269	CH3-		H	H
YA0270	CH3-		H	H
YA0271	CH3-		H	H
YA0272	CH3-		H	H
YA0273	CH3-		H	H
YA0274	CH3-		H	H
YA0275	CH3-		H	H
YA0276	CH3-		H	H
YA0277	CH3-		H	H
YA0278	CH3-		H	H
YA0279	CH3-		H	H
YA0280	CH3-		H	H
YA0281	CH3-		H	H
YA0282	CH3-		H	H
YA0283	CH3-		H	H
YA0284	CH3-		H	H
YA0285	CH3-		H	H

No.	R1	R2	R3	R4
YA0286	CH3-		H	H
YA0287	CH3-		H	H
YA0288	CH3-		H	H
YA0289	CH3-		H	H
YA0290	CH3-		H	H
YA0291	CH3-		H	H
YA0292	CH3-		H	H
YA0293	CH3-		H	H
YA0294	CH3-		H	H
YA0295	CH3-		H	H
YA0296	CH3-		H	H
YA0297	CH3-		H	H
YA0298	CH3-		H	H
YA0299	CH3-		H	H
YA0300	CH3-		H	H
YA0301	CH3-		H	H
YA0302	CH3-		H	H
YA0303	CH3-		H	H
YA0304	CH3-		H	H

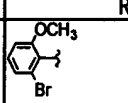
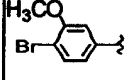
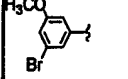
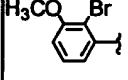
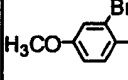
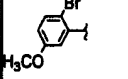
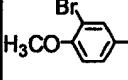
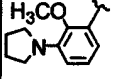
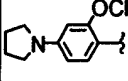
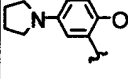
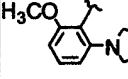
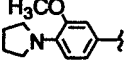
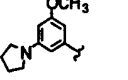
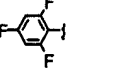
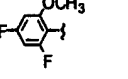
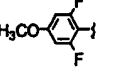
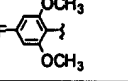
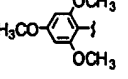
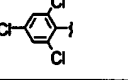
No.	R1	R2	R3	R4
YA0305	CH3-		H	H
YA0306	CH3-		H	H
YA0307	CH3-		H	H
YA0308	CH3-		H	H
YA0309	CH3-		H	H
YA0310	CH3-		H	H
YA0311	CH3-		H	H
YA0312	CH3-		H	H
YA0313	CH3-		H	H
YA0314	CH3-		H	H
YA0315	CH3-		H	H
YA0316	CH3-		H	H
YA0317	CH3-		H	H
YA0318	CH3-		H	H
YA0319	CH3-		H	H
YA0320	CH3-		H	H
YA0321	CH3-		H	H
YA0322	CH3-		H	H
YA0323	CH3-		H	H

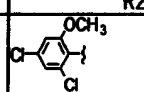
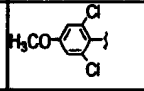
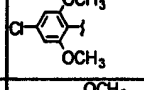
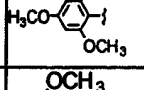
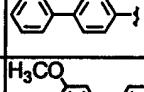
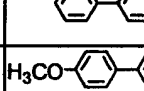
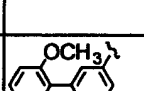
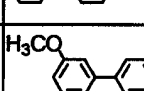
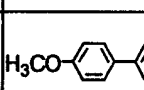
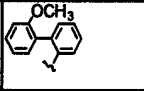
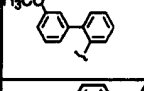
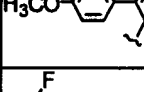
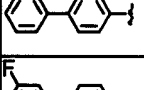
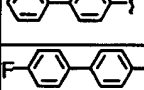
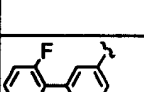
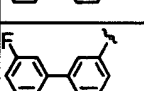
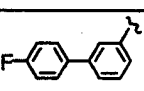


No.	R1	R2	R3	R4
YA0324	CH3-		H	H
YA0325	CH3-		H	H
YA0326	CH3-		H	H
YA0327	CH3-		H	H
YA0328	CH3-		H	H
YA0329	CH3-		H	H
YA0330	CH3-		H	H
YA0331	CH3-		H	H
YA0332	CH3-		H	H
YA0333	CH3-		H	H
YA0334	CH3-		H	H
YA0335	CH3-		H	H
YA0336	CH3-		H	H
YA0337	CH3-		H	H
YA0338	CH3-		H	H
YA0339	CH3-		H	H
YA0340	CH3-		H	H
YA0341	CH3-		H	H
YA0342	CH3-		H	H



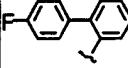

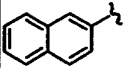














No.	R1	R2	R3	R4
YA0343	CH3-		H	H
YA0344	CH3-		H	H
YA0345	CH3-		H	H
YA0346	CH3-		H	H
YA0347	CH3-		H	H
YA0348	CH3-		H	H
YA0349	CH3-		H	H
YA0350	CH3-		H	H
YA0351	CH3-		H	H
YA0352	CH3-		H	H
YA0353	CH3-		H	H
YA0354	CH3-		H	H
YA0355	CH3-		H	H
YA0356	CH3-		H	H
YA0357	CH3-		H	H
YA0358	CH3-		H	H
YA0359	CH3-		H	H
YA0360	CH3-		H	H
YA0361	CH3-		H	H




















No.	R1	R2	R3	R4
YA0362	CH3-		H	H
YA0363	CH3-		H	H
YA0364	CH3-		H	H
YA0365	CH3-		H	H
YA0366	CH3-		H	H
YA0367	CH3-		H	H
YA0368	CH3-		H	H
YA0369	CH3-		H	H
YA0370	CH3-		H	H
YA0371	CH3-		H	H
YA0372	CH3-		H	H
YA0373	CH3-		H	H
YA0374	CH3-		H	H
YA0375	CH3-		H	H
YA0376	CH3-		H	H
YA0377	CH3-		H	H
YA0378	CH3-		H	H
YA0379	CH3-		H	H
YA0380	CH3-		H	H




















No.	R1	R2	R3	R4
YA0381	CH3-		H	H
YA0382	CH3-		H	H
YA0383	CH3-		H	H
YA0384	CH3-		H	H
YA0385	CH3-		H	H
YA0386	CH3-		H	H
YA0387	CH3-		H	H
YA0388	CH3-		H	H
YA0389	CH3-		H	H
YA0390	CH3-		H	H
YA0391	CH3-		H	H
YA0392	CH3-		H	H
YA0393	CH3-		H	H
YA0394	CH3-		H	H
YA0395	CH3-		H	H
YA0396	CH3-		H	H
YA0397	CH3-		H	H
YA0398	CH3-		H	H
YA0399	CH3-		H	H

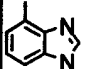
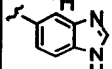
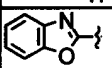
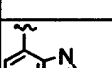
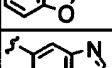
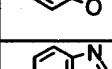
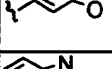
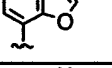
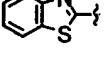
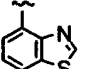
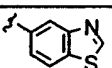
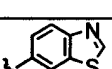
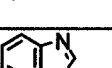
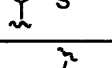
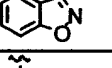
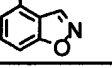
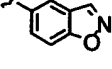
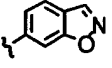
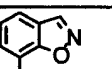
No.	R1	R2	R3	R4
YA0400	CH3-		H	H
YA0401	CH3-		H	H
YA0402	CH3-		H	H
YA0403	CH3-		H	H
YA0404	CH3-		H	H
YA0405	CH3-		H	H
YA0406	CH3-		H	H
YA0407	CH3-		H	H
YA0408	CH3-		H	H
YA0409	CH3-		H	H
YA0410	CH3-		H	H
YA0411	CH3-		H	H
YA0412	CH3-		H	H
YA0413	CH3-		H	H
YA0414	CH3-		H	H
YA0415	CH3-		H	H
YA0416	CH3-		H	H
YA0417	CH3-		H	H
YA0418	CH3-		H	H

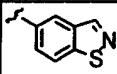
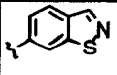
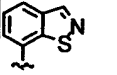
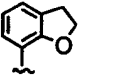
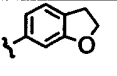
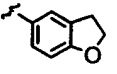
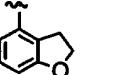
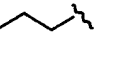
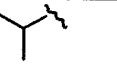
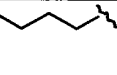
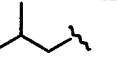
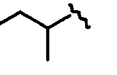

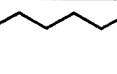
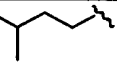
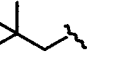
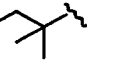
No.	R1	R2	R3	R4
YA0419	CH3-		H	H
YA0420	CH3-		H	H
YA0421	CH3-		H	H
YA0422	CH3-		H	H
YA0423	CH3-		H	H
YA0424	CH3-		H	H
YA0425	CH3-		H	H
YA0426	CH3-		H	H
YA0427	CH3-		H	H
YA0428	CH3-		H	H
YA0429	CH3-		H	H
YA0430	CH3-		H	H
YA0431	CH3-		H	H
YA0432	CH3-		H	H
YA0433	CH3-		H	H
YA0434	CH3-		H	H
YA0435	CH3-		H	H
YA0436	CH3-		H	H
YA0437	CH3-		H	H

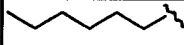

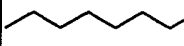

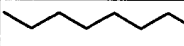


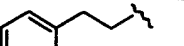





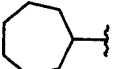





No.	R1	R2	R3	R4
YA0438	CH3-		H	H
YA0439	CH3-		H	H
YA0440	CH3-		H	H
YA0441	CH3-		H	H
YA0442	CH3-		H	H
YA0443	CH3-		H	H
YA0444	CH3-		H	H
YA0445	CH3-		H	H
YA0446	CH3-		H	H
YA0447	CH3-		H	H
YA0448	CH3-		H	H
YA0449	CH3-		H	H
YA0450	CH3-		H	H
YA0451	CH3-		H	H
YA0452	CH3-		H	H
YA0453	CH3-		H	H
YA0454	CH3-		H	H
YA0455	CH3-		H	H
YA0456	CH3-		H	H

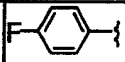


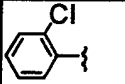
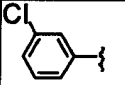
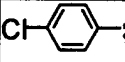
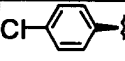
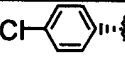
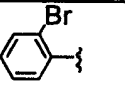
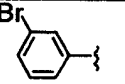
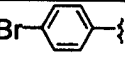
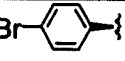
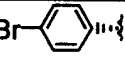
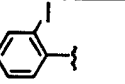
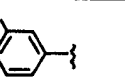
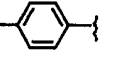
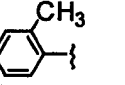
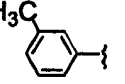
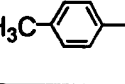
No.	R1	R2	R3	R4
YA0457	CH3-		H	H
YA0458	CH3-		H	H
YA0459	CH3-		H	H
YA0460	CH3-		H	H
YA0461	CH3-		H	H
YA0462	CH3-		H	H
YA0463	CH3-		H	H
YA0464	CH3-		H	H
YA0465	CH3-		H	H
YA0466	CH3-		H	H
YA0467	CH3-		H	H
YA0468	CH3-		H	H
YA0469	CH3-		H	H
YA0470	CH3-		H	H
YA0471	CH3-		H	H
YA0472	CH3-		H	H
YA0473	CH3-		H	H
YA0474	CH3-		H	H
YA0475	CH3-		H	H




















No.	R1	R2	R3	R4
YA0476	CH3-		H	H
YA0477	CH3-		H	H
YA0478	CH3-		H	H
YA0479	CH3-		H	H
YA0480	CH3-		H	H
YA0481	CH3-		H	H
YA0482	CH3-		H	H
YA0483	CH3-		H	H
YA0484	CH3-		H	H
YA0485	CH3-		H	H
YA0486	CH3-		H	H
YA0487	CH3-		H	H
YA0488	CH3-		H	H
YA0489	CH3-		H	H
YA0490	CH3-		H	H
YA0491	CH3-		H	H
YA0492	CH3-		H	H
YA0493	CH3-		H	H
YA0494	CH3-		H	H

No.	R1	R2	R3	R4
YA0495	CH3-		H	H
YA0496	CH3-		H	H
YA0497	CH3-		H	H
YA0498	CH3-		H	H
YA0499	CH3-		H	H
YA0500	CH3-		H	H
YA0501	CH3-		H	H
YA0502	CH3-		H	H
YA0503	CH3-		H	H
YA0504	CH3-		H	H
YA0505	CH3-		H	H
YA0506	CH3-		H	H
YA0507	CH3-		H	H
YA0508	CH3-		H	H
YA0509	CH3-		H	H
YA0510	CH3-		H	H
YA0511	CH3-		H	H
YA0512	CH3-		H	H
YA0513	CH3-		H	H

No.	R1	R2	R3	R4
YA0514	CH3-		H	H
YA0515	CH3-		H	H
YA0516	CH3-		H	H
YA0517	CH3-		H	H
YA0518	CH3-		H	H
YA0519	CH3-		H	H
YA0520	CH3-		H	H
YA0521	CH3-	CH3-	H	CH3
YA0522	CH3-	CH3CH2-	H	CH3
YA0523	CH3-		H	CH3
YA0524	CH3-		H	CH3
YA0525	CH3-		H	CH3
YA0526	CH3-		H	CH3
YA0527	CH3-		H	CH3
YA0528	CH3-		H	CH3
YA0529	CH3-		H	CH3
YA0530	CH3-		H	CH3
YA0531	CH3-		H	CH3
YA0532	CH3-		H	CH3

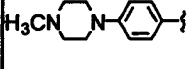
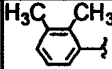
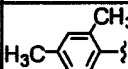


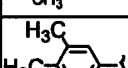








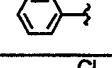


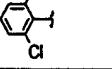

No.	R1	R2	R3	R4
YA0533	CH3-		H	CH3
YA0534	CH3-		H	CH3
YA0535	CH3-		H	CH3
YA0536	CH3-		H	CH3
YA0537	CH3-		H	CH3
YA0538	CH3-		H	CH3
YA0539	CH3-		H	CH3
YA0540	CH3-		H	CH3
YA0541	CH3-		H	CH3
YA0542	CH3-		H	CH3
YA0543	CH3-		H	CH3
YA0544	CH3-		H	CH3
YA0545	CH3-		H	CH3
YA0546	CH3-		H	CH3
YA0547	CH3-		H	CH3
YA0548	CH3-		H	CH3
YA0549	CH3-		H	CH3
YA0550	CH3-		H	CH3
YA0551	CH3-		H	CH3

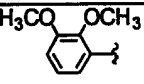
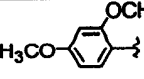
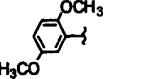
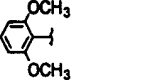
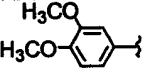
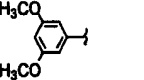
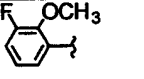
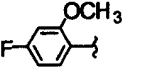
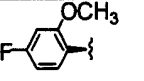
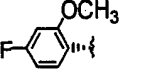
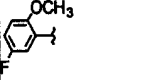
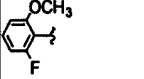
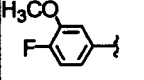
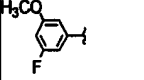
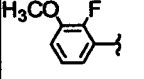
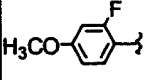
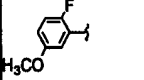
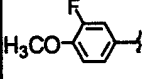
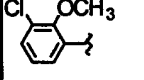
No.	R1	R2	R3	R4
YA0552	CH3-		H	CH3
YA0553	CH3-		H	CH3
YA0554	CH3-		H	CH3
YA0555	CH3-		H	CH3
YA0556	CH3-		H	CH3
YA0557	CH3-		H	CH3
YA0558	CH3-		H	CH3
YA0559	CH3-		H	CH3
YA0560	CH3-		H	CH3
YA0561	CH3-		H	CH3
YA0562	CH3-		H	CH3
YA0563	CH3-		H	CH3
YA0564	CH3-		H	CH3
YA0565	CH3-		H	CH3
YA0566	CH3-		H	CH3
YA0567	CH3-		H	CH3
YA0568	CH3-		H	CH3
YA0569	CH3-		H	CH3
YA0570	CH3-		H	CH3

No.	R1	R2	R3	R4
YA0571	CH3-	C_2H_5- 	H	CH3
YA0572	CH3-	$n-C_3H_7-$ 	H	CH3
YA0573	CH3-	$n-C_4H_9-$ 	H	CH3
YA0574	CH3-		H	CH3
YA0575	CH3-		H	CH3
YA0576	CH3-		H	CH3
YA0577	CH3-		H	CH3
YA0578	CH3-		H	CH3
YA0579	CH3-		H	CH3
YA0580	CH3-		H	CH3
YA0581	CH3-		H	CH3
YA0582	CH3-		H	CH3
YA0583	CH3-		H	CH3
YA0584	CH3-		H	CH3
YA0585	CH3-	$n-C_3H_7O-$ 	H	CH3
YA0586	CH3-	$n-C_4H_9O-$ 	H	CH3
YA0587	CH3-		H	CH3
YA0588	CH3-		H	CH3
YA0589	CH3-		H	CH3

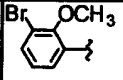
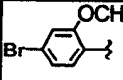
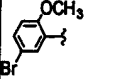
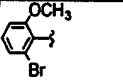
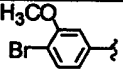
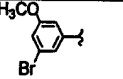
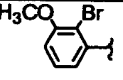
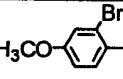
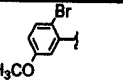
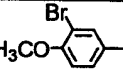
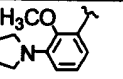
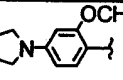
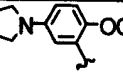
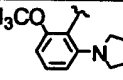
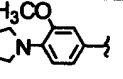
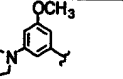
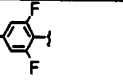
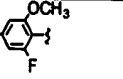
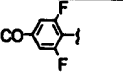
No.	R1	R2	R3	R4
YA0590	CH3-		H	CH3
YA0591	CH3-		H	CH3
YA0592	CH3-		H	CH3
YA0593	CH3-		H	CH3
YA0594	CH3-		H	CH3
YA0595	CH3-		H	CH3
YA0596	CH3-		H	CH3
YA0597	CH3-		H	CH3
YA0598	CH3-		H	CH3
YA0599	CH3-		H	CH3
YA0600	CH3-		H	CH3
YA0601	CH3-		H	CH3
YA0602	CH3-		H	CH3
YA0603	CH3-		H	CH3
YA0604	CH3-		H	CH3
YA0605	CH3-		H	CH3
YA0606	CH3-		H	CH3
YA0607	CH3-		H	CH3
YA0608	CH3-		H	CH3

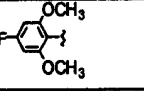
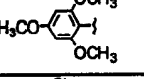
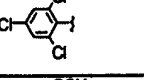
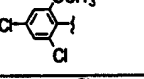
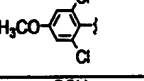
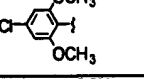
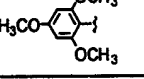
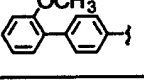
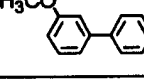
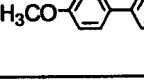
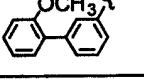
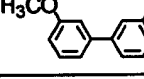
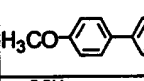
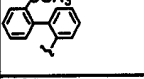
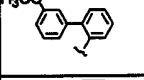
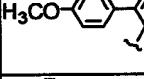
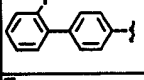
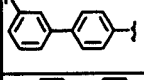
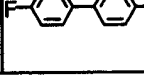
No.	R1	R2	R3	R4
YA0609	CH3-		H	CH3
YA0610	CH3-		H	CH3
YA0611	CH3-		H	CH3
YA0612	CH3-		H	CH3
YA0613	CH3-		H	CH3
YA0614	CH3-		H	CH3
YA0615	CH3-		H	CH3
YA0616	CH3-		H	CH3
YA0617	CH3-		H	CH3
YA0618	CH3-		H	CH3
YA0619	CH3-		H	CH3
YA0620	CH3-		H	CH3
YA0621	CH3-		H	CH3
YA0622	CH3-		H	CH3
YA0623	CH3-		H	CH3
YA0624	CH3-		H	CH3
YA0625	CH3-		H	CH3
YA0626	CH3-		H	CH3
YA0627	CH3-		H	CH3

No.	R1	R2	R3	R4
YA0628	CH3-		H	CH3
YA0629	CH3-		H	CH3
YA0630	CH3-		H	CH3
YA0631	CH3-		H	CH3
YA0632	CH3-		H	CH3
YA0633	CH3-		H	CH3
YA0634	CH3-		H	CH3
YA0635	CH3-		H	CH3
YA0636	CH3-		H	CH3
YA0637	CH3-		H	CH3
YA0638	CH3-		H	CH3
YA0639	CH3-		H	CH3
YA0640	CH3-		H	CH3
YA0641	CH3-		H	CH3
YA0642	CH3-		H	CH3
YA0643	CH3-		H	CH3
YA0644	CH3-		H	CH3
YA0645	CH3-		H	CH3
YA0646	CH3-		H	CH3


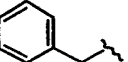

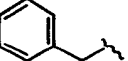
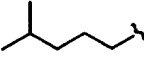
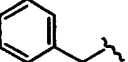

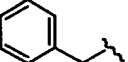
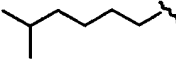
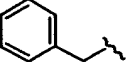

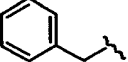
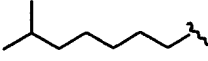
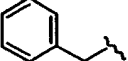
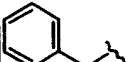
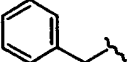
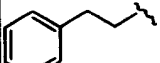
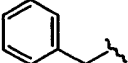
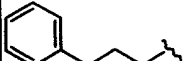
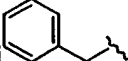

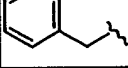

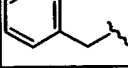

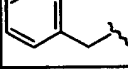
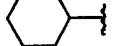
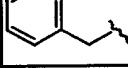
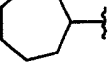
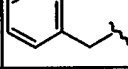

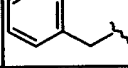

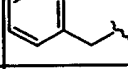

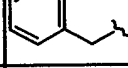

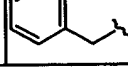
No.	R1	R2	R3	R4
YA0647	CH3-		H	CH3
YA0648	CH3-		H	CH3
YA0649	CH3-		H	CH3
YA0650	CH3-		H	CH3
YA0651	CH3-		H	CH3
YA0652	CH3-		H	CH3
YA0653	CH3-		H	CH3
YA0654	CH3-		H	CH3
YA0655	CH3-		H	CH3
YA0656	CH3-		H	CH3
YA0657	CH3-		H	CH3
YA0658	CH3-		H	CH3
YA0659	CH3-		H	CH3
YA0660	CH3-		H	CH3
YA0661	CH3-		H	CH3
YA0662	CH3-		H	CH3
YA0663	CH3-		H	CH3
YA0664	CH3-		H	CH3
YA0665	CH3-		H	CH3

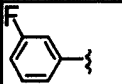
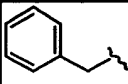
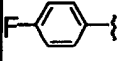
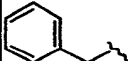
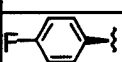


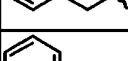
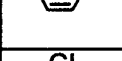
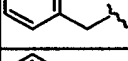
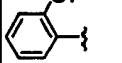
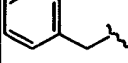
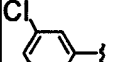
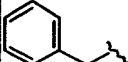
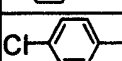


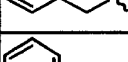
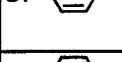
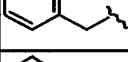
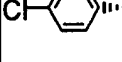
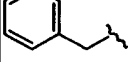
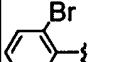
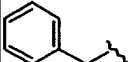
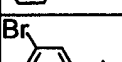


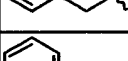
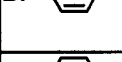
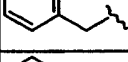
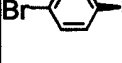
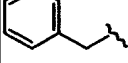
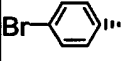
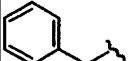
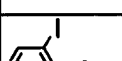

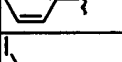
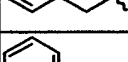
No.	R1	R2	R3	R4
YA0666	CH3-		H	CH3
YA0667	CH3-		H	CH3
YA0668	CH3-		H	CH3
YA0669	CH3-		H	CH3
YA0670	CH3-		H	CH3
YA0671	CH3-		H	CH3
YA0672	CH3-		H	CH3
YA0673	CH3-		H	CH3
YA0674	CH3-		H	CH3
YA0675	CH3-		H	CH3
YA0676	CH3-		H	CH3
YA0677	CH3-		H	CH3
YA0678	CH3-		H	CH3
YA0679	CH3-		H	CH3
YA0680	CH3-		H	CH3
YA0681	CH3-		H	CH3
YA0682	CH3-		H	CH3
YA0683	CH3-		H	CH3
YA0684	CH3-		H	CH3

No.	R1	R2	R3	R4
YA0685	CH3-		H	CH3
YA0686	CH3-		H	CH3
YA0687	CH3-		H	CH3
YA0688	CH3-		H	CH3
YA0689	CH3-		H	CH3
YA0690	CH3-		H	CH3
YA0691	CH3-		H	CH3
YA0692	CH3-		H	CH3
YA0693	CH3-		H	CH3
YA0694	CH3-		H	CH3
YA0695	CH3-		H	CH3
YA0696	CH3-		H	CH3
YA0697	CH3-		H	CH3
YA0698	CH3-		H	CH3
YA0699	CH3-		H	CH3
YA0700	CH3-		H	CH3
YA0701	CH3-		H	CH3
YA0702	CH3-		H	CH3
YA0703	CH3-		H	CH3

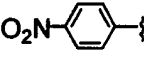
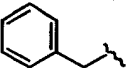
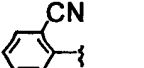
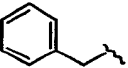
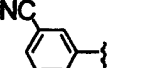
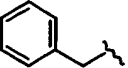
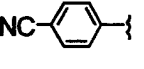
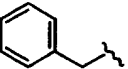
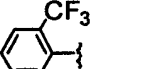
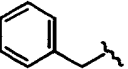
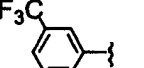
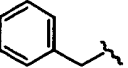
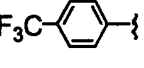
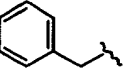
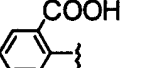
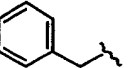
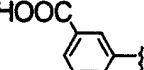
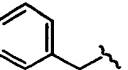
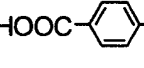
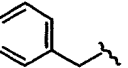
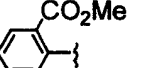
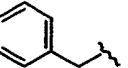
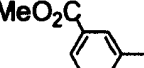
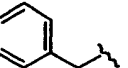
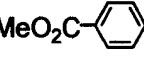
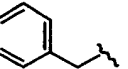
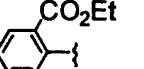
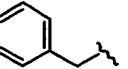
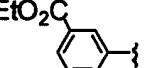
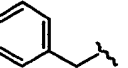
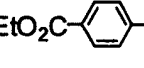
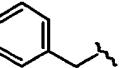
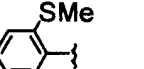
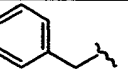
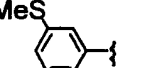
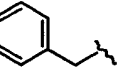
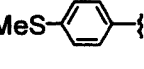
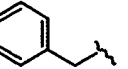
No.	R1	R2	R3	R4
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YA0706	CH3-		H	CH3
YA0707	CH3-		H	CH3
YA0708	CH3-		H	CH3
YA0709	CH3-		H	CH3
YA0710	CH3-		H	CH3
YA0711	CH3-		H	CH3
YA0712	CH3-		H	CH3
YA0713	CH3-		H	CH3
YA0714	CH3-		H	CH3
YA0715	CH3-		H	CH3
YA0716	CH3-		H	CH3
YA0717	CH3-		H	CH3
YA0718	CH3-		H	CH3
YA0719	CH3-		H	CH3
YA0720	CH3-		H	CH3
YA0721	CH3-		H	CH3
YA0722	CH3-		H	CH3

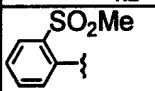
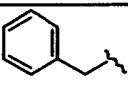
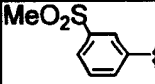
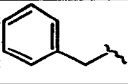
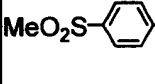
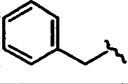
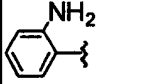
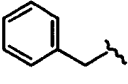
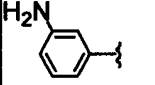
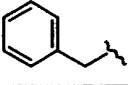
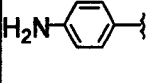
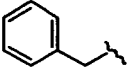
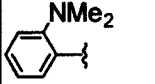
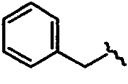
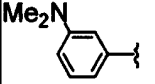
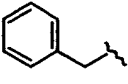
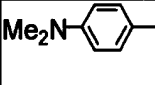
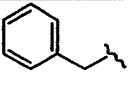
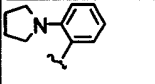
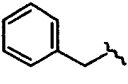
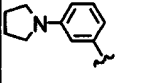
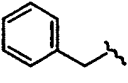
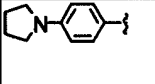
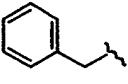
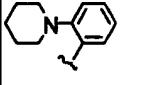
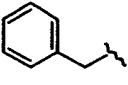
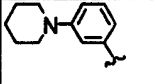
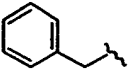
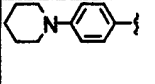
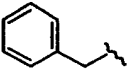
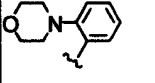
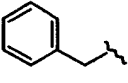
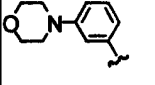
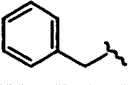
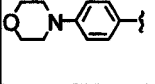
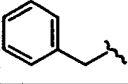
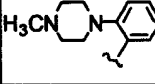
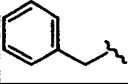
No.	R1	R2	R3	R4
YA0723	CH3-		H	CH3
YA0724	CH3-		H	CH3
YA0725	CH3-		H	CH3
YA0726	CH3-		H	CH3
YA0727	CH3-		H	CH3
YA0728	CH3-		H	CH3
YA0729	CH3-		H	CH3
YA0730	CH3-		H	CH3
YA0731	CH3-	CH3-	H	
YA0732	CH3-	CH3CH2-	H	
YA0733	CH3-		H	
YA0734	CH3-		H	
YA0735	CH3-		H	
YA0736	CH3-		H	
YA0737	CH3-		H	
YA0738	CH3-		H	
YA0739	CH3-		H	
YA0740	CH3-		H	
YA0741	CH3-		H	

No.	R1	R2	R3	R4
YA0742	CH3-		H	
YA0743	CH3-		H	
YA0744	CH3-		H	
YA0745	CH3-		H	
YA0746	CH3-		H	
YA0747	CH3-		H	
YA0748	CH3-		H	
YA0749	CH3-		H	
YA0750	CH3-		H	
YA0751	CH3-		H	
YA0752	CH3-		H	
YA0753	CH3-		H	
YA0754	CH3-		H	
YA0755	CH3-		H	
YA0756	CH3-		H	
YA0757	CH3-		H	
YA0758	CH3-		H	
YA0759	CH3-		H	
YA0760	CH3-		H	

No.	R1	R2	R3	R4
YA0761	CH3-		H	
YA0762	CH3-		H	
YA0763	CH3-		H	
YA0764	CH3-		H	
YA0765	CH3-		H	
YA0766	CH3-		H	
YA0767	CH3-		H	
YA0768	CH3-		H	
YA0769	CH3-		H	
YA0770	CH3-		H	
YA0771	CH3-		H	
YA0772	CH3-		H	
YA0773	CH3-		H	
YA0774	CH3-		H	
YA0775	CH3-		H	
YA0776	CH3-		H	
YA0777	CH3-		H	
YA0778	CH3-		H	
YA0779	CH3-		H	

No.	R1	R2	R3	R4
YA0780	CH3-		H	
YA0781	CH3-		H	
YA0782	CH3-		H	
YA0783	CH3-		H	
YA0784	CH3-		H	
YA0785	CH3-		H	
YA0786	CH3-		H	
YA0787	CH3-		H	
YA0788	CH3-		H	
YA0789	CH3-		H	
YA0790	CH3-		H	
YA0791	CH3-		H	
YA0792	CH3-		H	
YA0793	CH3-		H	
YA0794	CH3-		H	
YA0795	CH3-		H	
YA0796	CH3-		H	
YA0797	CH3-		H	
YA0798	CH3-		H	

No.	R1	R2	R3	R4
YA0799	CH3-		H	
YA0800	CH3-		H	
YA0801	CH3-		H	
YA0802	CH3-		H	
YA0803	CH3-		H	
YA0804	CH3-		H	
YA0805	CH3-		H	
YA0806	CH3-		H	
YA0807	CH3-		H	
YA0808	CH3-		H	
YA0809	CH3-		H	
YA0810	CH3-		H	
YA0811	CH3-		H	
YA0812	CH3-		H	
YA0813	CH3-		H	
YA0814	CH3-		H	
YA0815	CH3-		H	
YA0816	CH3-		H	
YA0817	CH3-		H	

No.	R1	R2	R3	R4
YA0818	CH3-		H	
YA0819	CH3-		H	
YA0820	CH3-		H	
YA0821	CH3-		H	
YA0822	CH3-		H	
YA0823	CH3-		H	
YA0824	CH3-		H	
YA0825	CH3-		H	
YA0826	CH3-		H	
YA0827	CH3-		H	
YA0828	CH3-		H	
YA0829	CH3-		H	
YA0830	CH3-		H	
YA0831	CH3-		H	
YA0832	CH3-		H	
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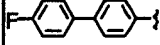
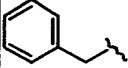
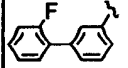
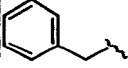
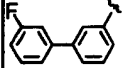
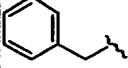
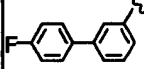
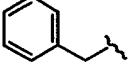

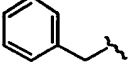

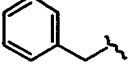
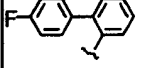
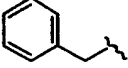

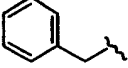
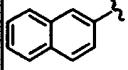
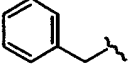


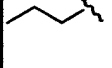



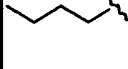

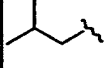





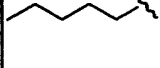

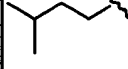

No.	R1	R2	R3	R4
YA0837	CH3-		H	
YA0838	CH3-		H	
YA0839	CH3-		H	
YA0840	CH3-		H	
YA0841	CH3-		H	
YA0842	CH3-		H	
YA0843	CH3-		H	
YA0844	CH3-		H	
YA0845	CH3-		H	
YA0846	CH3-		H	
YA0847	CH3-		H	
YA0848	CH3-		H	
YA0849	CH3-		H	
YA0850	CH3-		H	
YA0851	CH3-		H	
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YA0855	CH3-		H	

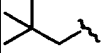

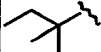

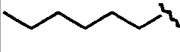

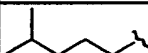

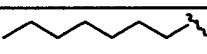

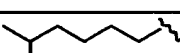

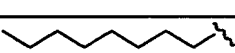

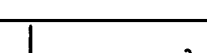

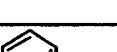

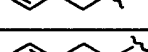

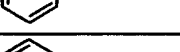









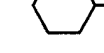







No.	R1	R2	R3	R4
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YA0857	CH3-		H	
YA0858	CH3-		H	
YA0859	CH3-		H	
YA0860	CH3-		H	
YA0861	CH3-		H	
YA0862	CH3-		H	
YA0863	CH3-		H	
YA0864	CH3-		H	
YA0865	CH3-		H	
YA0866	CH3-		H	
YA0867	CH3-		H	
YA0868	CH3-		H	
YA0869	CH3-		H	
YA0870	CH3-		H	
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



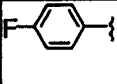

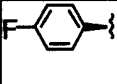

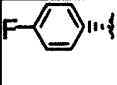





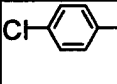

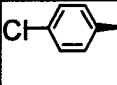

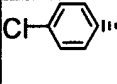





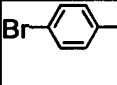

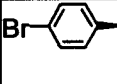

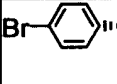





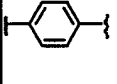



No.	R1	R2	R3	R4
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YA0876	CH3-		H	
YA0877	CH3-		H	
YA0878	CH3-		H	
YA0879	CH3-		H	
YA0880	CH3-		H	
YA0881	CH3-		H	
YA0882	CH3-		H	
YA0883	CH3-		H	
YA0884	CH3-		H	
YA0885	CH3-		H	
YA0886	CH3-		H	
YA0887	CH3-		H	
YA0888	CH3-		H	
YA0889	CH3-		H	
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YA0891	CH3-		H	
YA0892	CH3-		H	
YA0893	CH3-		H	

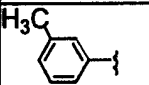

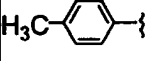

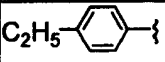

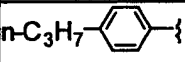

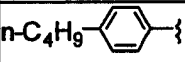

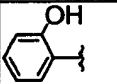

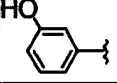

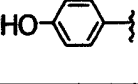

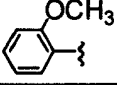

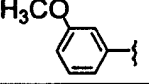

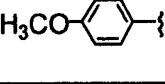

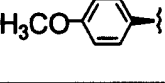

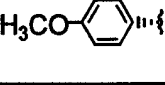

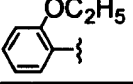

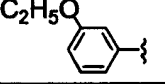

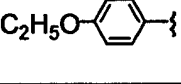

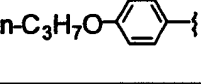

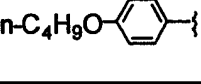

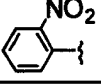

No.	R1	R2	R3	R4
YA0894	CH3-		H	
YA0895	CH3-		H	
YA0896	CH3-		H	
YA0897	CH3-		H	
YA0898	CH3-		H	
YA0899	CH3-		H	
YA0900	CH3-		H	
YA0901	CH3-		H	
YA0902	CH3-		H	
YA0903	CH3-		H	
YA0904	CH3-		H	
YA0905	CH3-		H	
YA0906	CH3-		H	
YA0907	CH3-		H	
YA0908	CH3-		H	
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YA0911	CH3-		H	
YA0912	CH3-		H	

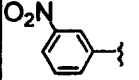

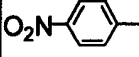



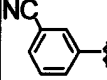

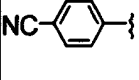



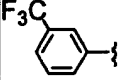

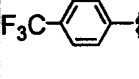



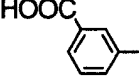

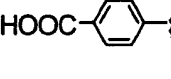



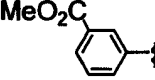

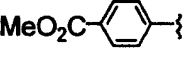



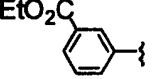

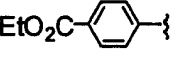



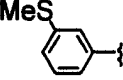

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YA0914	CH3-		H	
YA0915	CH3-		H	
YA0916	CH3-		H	
YA0917	CH3-		H	
YA0918	CH3-		H	
YA0919	CH3-		H	
YA0920	CH3-		H	
YA0921	CH3-		H	
YA0922	CH3-		H	
YA0923	CH3-		H	
YA0924	CH3-		H	
YA0925	CH3-		H	
YA0926	CH3-		H	
YA0927	CH3-		H	
YA0928	CH3-		H	
YA0929	CH3-		H	
YA0930	CH3-		H	
YA0931	CH3-		H	

No.	R1	R2	R3	R4
YA0932	CH3-		H	
YA0933	CH3-		H	
YA0934	CH3-		H	
YA0935	CH3-		H	
YA0936	CH3-		H	
YA0937	CH3-		H	
YA0938	CH3-		H	
YA0939	CH3-		H	
YA0940	CH3-		H	
YA0941	CH3-	CH3-	H	
YA0942	CH3-	CH3CH2-	H	
YA0943	CH3-		H	
YA0944	CH3-		H	
YA0945	CH3-		H	
YA0946	CH3-		H	
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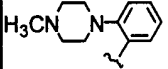

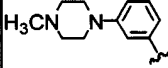

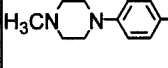

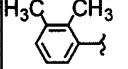

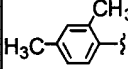

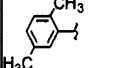

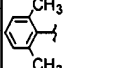

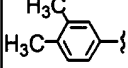

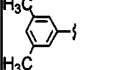

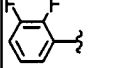

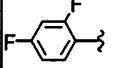

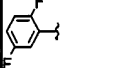

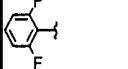

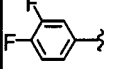

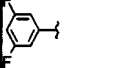

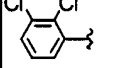

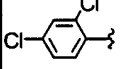

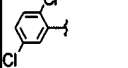

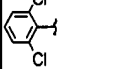

No.	R1	R2	R3	R4
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YA0952	CH3-		H	
YA0953	CH3-		H	
YA0954	CH3-		H	
YA0955	CH3-		H	
YA0956	CH3-		H	
YA0957	CH3-		H	
YA0958	CH3-		H	
YA0959	CH3-		H	
YA0960	CH3-		H	
YA0961	CH3-		H	
YA0962	CH3-		H	
YA0963	CH3-		H	
YA0964	CH3-		H	
YA0965	CH3-		H	
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YA0968	CH3-		H	
YA0969	CH3-		H	

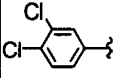



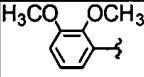

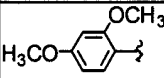

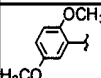



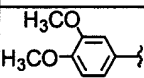



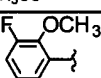

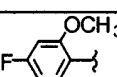

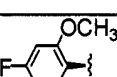

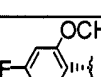





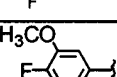



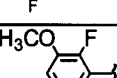

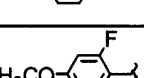



No.	R1	R2	R3	R4
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YA0971	CH3-		H	
YA0972	CH3-		H	
YA0973	CH3-		H	
YA0974	CH3-		H	
YA0975	CH3-		H	
YA0976	CH3-		H	
YA0977	CH3-		H	
YA0978	CH3-		H	
YA0979	CH3-		H	
YA0980	CH3-		H	
YA0981	CH3-		H	
YA0982	CH3-		H	
YA0983	CH3-		H	
YA0984	CH3-		H	
YA0985	CH3-		H	
YA0986	CH3-		H	
YA0987	CH3-		H	
YA0988	CH3-		H	

No.	R1	R2	R3	R4
YA0989	CH3-		H	
YA0990	CH3-		H	
YA0991	CH3-		H	
YA0992	CH3-		H	
YA0993	CH3-		H	
YA0994	CH3-		H	
YA0995	CH3-		H	
YA0996	CH3-		H	
YA0997	CH3-		H	
YA0998	CH3-		H	
YA0999	CH3-		H	
YA1000	CH3-		H	
YA1001	CH3-		H	
YA1002	CH3-		H	
YA1003	CH3-		H	
YA1004	CH3-		H	
YA1005	CH3-		H	
YA1006	CH3-		H	
YA1007	CH3-		H	

No.	R1	R2	R3	R4
YA1008	CH ₃ -		H	
YA1009	CH ₃ -		H	
YA1010	CH ₃ -		H	
YA1011	CH ₃ -		H	
YA1012	CH ₃ -		H	
YA1013	CH ₃ -		H	
YA1014	CH ₃ -		H	
YA1015	CH ₃ -		H	
YA1016	CH ₃ -		H	
YA1017	CH ₃ -		H	
YA1018	CH ₃ -		H	
YA1019	CH ₃ -		H	
YA1020	CH ₃ -		H	
YA1021	CH ₃ -		H	
YA1022	CH ₃ -		H	
YA1023	CH ₃ -		H	
YA1024	CH ₃ -		H	
YA1025	CH ₃ -		H	
YA1026	CH ₃ -		H	







































No.	R1	R2	R3	R4
YA1027	CH3-		H	
YA1028	CH3-		H	
YA1029	CH3-		H	
YA1030	CH3-		H	
YA1031	CH3-		H	
YA1032	CH3-		H	
YA1033	CH3-		H	
YA1034	CH3-		H	
YA1035	CH3-		H	
YA1036	CH3-		H	
YA1037	CH3-		H	
YA1038	CH3-		H	
YA1039	CH3-		H	
YA1040	CH3-		H	
YA1041	CH3-		H	
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YA1045	CH3-		H	

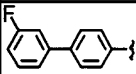

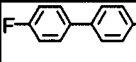

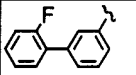

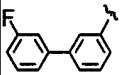

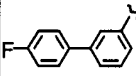

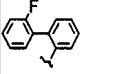

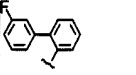

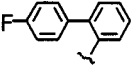

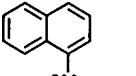

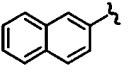

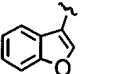

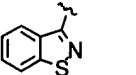

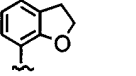


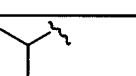


No.	R1	R2	R3	R4
YA1046	CH3-		H	
YA1047	CH3-		H	
YA1048	CH3-		H	
YA1049	CH3-		H	
YA1050	CH3-		H	
YA1051	CH3-		H	
YA1052	CH3-		H	
YA1053	CH3-		H	
YA1054	CH3-		H	
YA1055	CH3-		H	
YA1056	CH3-		H	
YA1057	CH3-		H	
YA1058	CH3-		H	
YA1059	CH3-		H	
YA1060	CH3-		H	
YA1061	CH3-		H	
YA1062	CH3-		H	
YA1063	CH3-		H	
YA1064	CH3-		H	

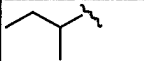
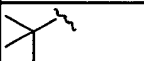
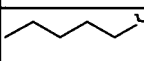
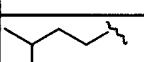
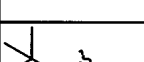
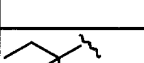
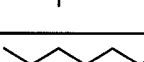
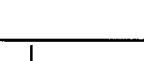
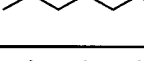


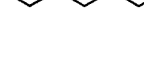
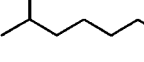
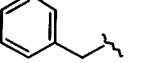
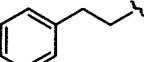
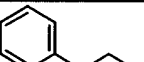

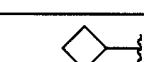
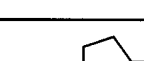
No.	R1	R2	R3	R4
YA1065	CH3-		H	
YA1066	CH3-		H	
YA1067	CH3-		H	
YA1068	CH3-		H	
YA1069	CH3-		H	
YA1070	CH3-		H	
YA1071	CH3-		H	
YA1072	CH3-		H	
YA1073	CH3-		H	
YA1074	CH3-		H	
YA1075	CH3-		H	
YA1076	CH3-		H	
YA1077	CH3-		H	
YA1078	CH3-		H	
YA1079	CH3-		H	
YA1080	CH3-		H	
YA1081	CH3-		H	
YA1082	CH3-		H	
YA1083	CH3-		H	

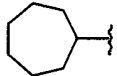





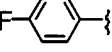
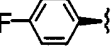
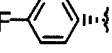


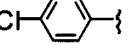
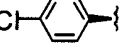



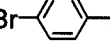
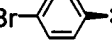
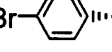
No.	R1	R2	R3	R4
YA1084	CH3-		H	
YA1085	CH3-		H	
YA1086	CH3-		H	
YA1087	CH3-		H	
YA1088	CH3-		H	
YA1089	CH3-		H	
YA1090	CH3-		H	
YA1091	CH3-		H	
YA1092	CH3-		H	
YA1093	CH3-		H	
YA1094	CH3-		H	
YA1095	CH3-		H	
YA1096	CH3-		H	
YA1097	CH3-		H	
YA1098	CH3-		H	
YA1099	CH3-		H	
YA1100	CH3-		H	
YA1101	CH3-		H	
YA1102	CH3-		H	




















No.	R1	R2	R3	R4
YA1103	CH3-		H	
YA1104	CH3-		H	
YA1105	CH3-		H	
YA1106	CH3-		H	
YA1107	CH3-		H	
YA1108	CH3-		H	
YA1109	CH3-		H	
YA1110	CH3-		H	
YA1111	CH3-		H	
YA1112	CH3-		H	
YA1113	CH3-		H	
YA1114	CH3-		H	
YA1115	CH3-		H	
YA1116	CH3-		H	
YA1117	CH3-		H	
YA1118	CH3-		H	
YA1119	CH3-		H	
YA1120	CH3-		H	
YA1121	CH3-		H	

No.	R1	R2	R3	R4
YA1122	CH3-		H	
YA1123	CH3-		H	
YA1124	CH3-		H	
YA1125	CH3-		H	
YA1126	CH3-		H	
YA1127	CH3-		H	
YA1128	CH3-		H	
YA1129	CH3-		H	
YA1130	CH3-		H	
YA1131	CH3-		H	
YA1132	CH3-		H	
YA1133	CH3-		H	
YA1134	CH3-		H	
YA1135	CH3-		H	
YA1136	CH3-		H	
YA1137	CH3-		H	
YA1138	CH3-		H	
YA1139	CH3-		H	
YA1140	CH3-		H	

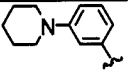
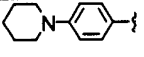
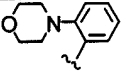
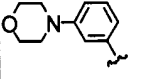
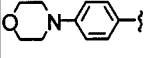
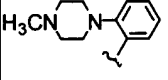
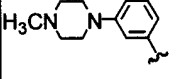
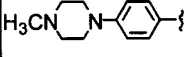
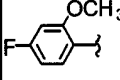
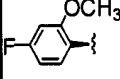
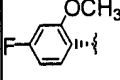
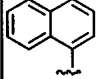
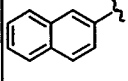
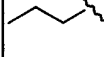

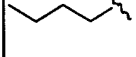
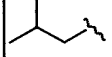
No.	R1	R2	R3	R4
YA1141	CH3-		H	
YA1142	CH3-		H	
YA1143	CH3-		H	
YA1144	CH3-		H	
YA1145	CH3-		H	
YA1146	CH3-		H	
YA1147	CH3-		H	
YA1148	CH3-		H	
YA1149	CH3-		H	
YA1150	CH3-		H	
YA1151	CH3-		H	
YA1152	CH3-		H	
YA1153	CH3-		H	
YA1154	CH3-	CH3-	CH3-	H
YA1155	CH3-	CH3CH2-	CH3-	H
YA1156	CH3-		CH3-	H
YA1157	CH3-		CH3-	H
YA1158	CH3-		CH3-	H
YA1159	CH3-		CH3-	H

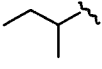

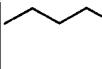
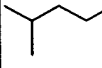
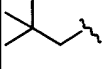
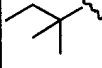
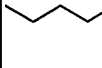
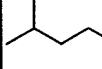
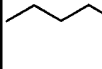
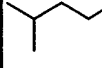
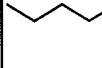
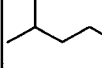
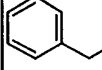
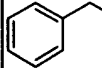
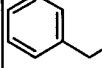

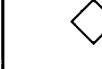

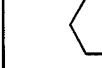
No.	R1	R2	R3	R4
YA1160	CH3-		CH3-	H
YA1161	CH3-		CH3-	H
YA1162	CH3-		CH3-	H
YA1163	CH3-		CH3-	H
YA1164	CH3-		CH3-	H
YA1165	CH3-		CH3-	H
YA1166	CH3-		CH3-	H
YA1167	CH3-		CH3-	H
YA1168	CH3-		CH3-	H
YA1169	CH3-		CH3-	H
YA1170	CH3-		CH3-	H
YA1171	CH3-		CH3-	H
YA1172	CH3-		CH3-	H
YA1173	CH3-		CH3-	H
YA1174	CH3-		CH3-	H
YA1175	CH3-		CH3-	H
YA1176	CH3-		CH3-	H
YA1177	CH3-		CH3-	H
YA1178	CH3-		CH3-	H

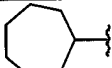


















No.	R1	R2	R3	R4
YA1179	CH3-		CH3-	H
YA1180	CH3-		CH3-	H
YA1181	CH3-		CH3-	H
YA1182	CH3-		CH3-	H
YA1183	CH3-		CH3-	H
YA1184	CH3-		CH3-	H
YA1185	CH3-		CH3-	H
YA1186	CH3-		CH3-	H
YA1187	CH3-		CH3-	H
YA1188	CH3-		CH3-	H
YA1189	CH3-		CH3-	H
YA1190	CH3-		CH3-	H
YA1191	CH3-		CH3-	H
YA1192	CH3-		CH3-	H
YA1193	CH3-		CH3-	H
YA1194	CH3-		CH3-	H
YA1195	CH3-		CH3-	H
YA1196	CH3-		CH3-	H
YA1197	CH3-		CH3-	H




















No.	R1	R2	R3	R4
YA1198	CH3-		CH3-	H
YA1199	CH3-		CH3-	H
YA1200	CH3-		CH3-	H
YA1201	CH3-		CH3-	H
YA1202	CH3-		CH3-	H
YA1203	CH3-		CH3-	H
YA1204	CH3-		CH3-	H
YA1205	CH3-		CH3-	H
YA1206	CH3-		CH3-	H
YA1207	CH3-		CH3-	H
YA1208	CH3-		CH3-	H
YA1209	CH3-		CH3-	H
YA1210	CH3-		CH3-	H
YA1211	CH3-		CH3-	H
YA1212	CH3-		CH3-	H
YA1213	CH3-		CH3-	H
YA1214	CH3-		CH3-	H
YA1215	CH3-		CH3-	H
YA1216	CH3-		CH3-	H

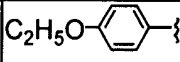
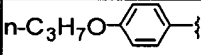
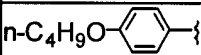

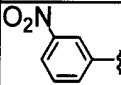
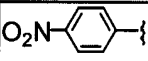

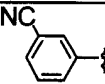
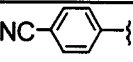

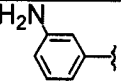
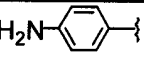

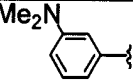
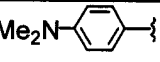
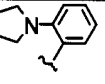
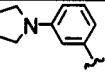
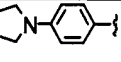
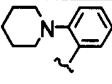
No.	R1	R2	R3	R4
YA1217	CH3-		CH3-	H
YA1218	CH3-		CH3-	H
YA1219	CH3-		CH3-	H
YA1220	CH3-		CH3-	H
YA1221	CH3-		CH3-	H
YA1222	CH3-		CH3-	H
YA1223	CH3-		CH3-	H
YA1224	CH3-		CH3-	H
YA1225	CH3-		CH3-	H
YA1226	CH3-		CH3-	H
YA1227	CH3-		CH3-	H
YA1228	CH3-		CH3-	H
YA1229	CH3-		CH3-	H
YA1230	CH3-		CH3-	H
YA1231	CH3-		CH3-	H
YA1232	CH3-		CH3-	H
YA1233	CH3-		CH3-	H
YA1234	CH3-		CH3-	H
YA1235	CH3-		CH3-	H

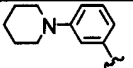
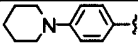
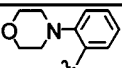
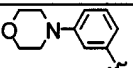
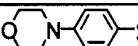
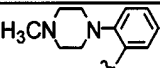
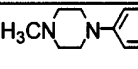
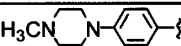
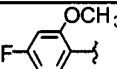
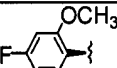
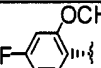

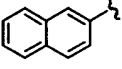


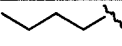
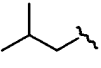
No.	R1	R2	R3	R4
YA1236	CH3-		CH3-	H
YA1237	CH3-		CH3-	H
YA1238	CH3-		CH3-	H
YA1239	CH3-		CH3-	H
YA1240	CH3-		CH3-	H
YA1241	CH3-		CH3-	H
YA1242	CH3-		CH3-	H
YA1243	CH3-		CH3-	H
YA1244	CH3-		CH3-	H
YA1245	CH3-		CH3-	H
YA1246	CH3-		CH3-	H
YA1247	CH3-		CH3-	H
YA1248	CH3-		CH3-	H
YA1249	CH3-	CH3-	H	CH3-
YA1250	CH3-	CH3CH2-	H	CH3-
YA1251	CH3-		H	CH3-
YA1252	CH3-		H	CH3-
YA1253	CH3-		H	CH3-
YA1254	CH3-		H	CH3-

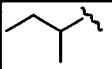

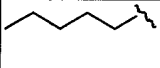
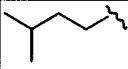
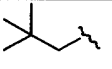
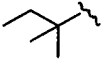
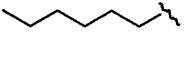
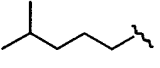
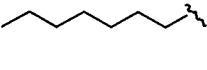
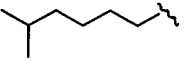
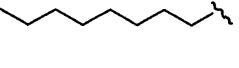
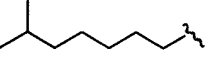
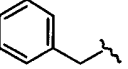
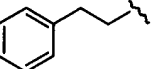
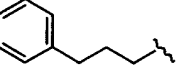


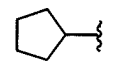
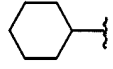
No.	R1	R2	R3	R4
YA1255	CH3-		H	CH3-
YA1256	CH3-		H	CH3-
YA1257	CH3-		H	CH3-
YA1258	CH3-		H	CH3-
YA1259	CH3-		H	CH3-
YA1260	CH3-		H	CH3-
YA1261	CH3-		H	CH3-
YA1262	CH3-		H	CH3-
YA1263	CH3-		H	CH3-
YA1264	CH3-		H	CH3-
YA1265	CH3-		H	CH3-
YA1266	CH3-		H	CH3-
YA1267	CH3-		H	CH3-
YA1268	CH3-		H	CH3-
YA1269	CH3-		H	CH3-
YA1270	CH3-		H	CH3-
YA1271	CH3-		H	CH3-
YA1272	CH3-		H	CH3-
YA1273	CH3-		H	CH3-

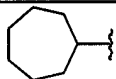










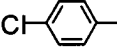
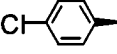
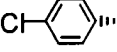


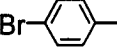
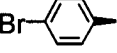
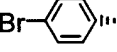
No.	R1	R2	R3	R4
YA1274	CH3-		H	CH3-
YA1275	CH3-		H	CH3-
YA1276	CH3-		H	CH3-
YA1277	CH3-		H	CH3-
YA1278	CH3-		H	CH3-
YA1279	CH3-		H	CH3-
YA1280	CH3-		H	CH3-
YA1281	CH3-		H	CH3-
YA1282	CH3-		H	CH3-
YA1283	CH3-		H	CH3-
YA1284	CH3-		H	CH3-
YA1285	CH3-		H	CH3-
YA1286	CH3-		H	CH3-
YA1287	CH3-		H	CH3-
YA1288	CH3-		H	CH3-
YA1289	CH3-		H	CH3-
YA1290	CH3-		H	CH3-
YA1291	CH3-		H	CH3-
YA1292	CH3-		H	CH3-




















No.	R1	R2	R3	R4
YA1293	CH3-		H	CH3-
YA1294	CH3-		H	CH3-
YA1295	CH3-		H	CH3-
YA1296	CH3-		H	CH3-
YA1297	CH3-		H	CH3-
YA1298	CH3-		H	CH3-
YA1299	CH3-		H	CH3-
YA1300	CH3-		H	CH3-
YA1301	CH3-		H	CH3-
YA1302	CH3-		H	CH3-
YA1303	CH3-		H	CH3-
YA1304	CH3-		H	CH3-
YA1305	CH3-		H	CH3-
YA1306	CH3-		H	CH3-
YA1307	CH3-		H	CH3-
YA1308	CH3-		H	CH3-
YA1309	CH3-		H	CH3-
YA1310	CH3-		H	CH3-
YA1311	CH3-		H	CH3-

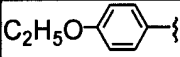
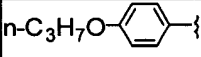
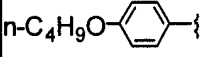

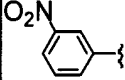
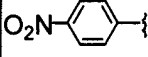

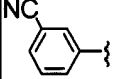
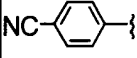

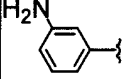
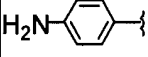

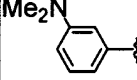
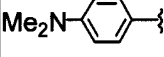
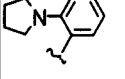
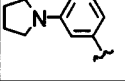
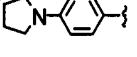
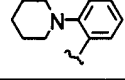
No.	R1	R2	R3	R4
YA1312	CH3-		H	CH3-
YA1313	CH3-		H	CH3-
YA1314	CH3-		H	CH3-
YA1315	CH3-		H	CH3-
YA1316	CH3-		H	CH3-
YA1317	CH3-		H	CH3-
YA1318	CH3-		H	CH3-
YA1319	CH3-		H	CH3-
YA1320	CH3-		H	CH3-
YA1321	CH3-		H	CH3-
YA1322	CH3-		H	CH3-
YA1323	CH3-		H	CH3-
YA1324	CH3-		H	CH3-
YA1325	CH3-		H	CH3-
YA1326	CH3-		H	CH3-
YA1327	CH3-		H	CH3-
YA1328	CH3-		H	CH3-
YA1329	CH3-		H	CH3-
YA1330	CH3-		H	CH3-

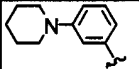
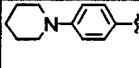
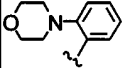
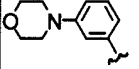
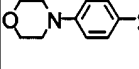
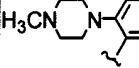
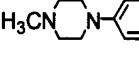
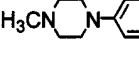
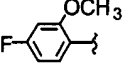
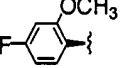
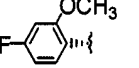
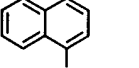
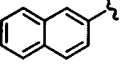
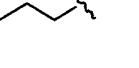
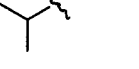
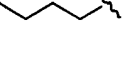
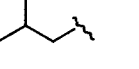
No.	R1	R2	R3	R4
YA1331	CH3-		H	CH3-
YA1332	CH3-		H	CH3-
YA1333	CH3-		H	CH3-
YA1334	CH3-		H	CH3-
YA1335	CH3-		H	CH3-
YA1336	CH3-		H	CH3-
YA1337	CH3-		H	CH3-
YA1338	CH3-		H	CH3-
YA1339	CH3-		H	CH3-
YA1340	CH3-		H	CH3-
YA1341	CH3-		H	CH3-
YA1342	CH3-		H	CH3-
YA1343	CH3-		H	CH3-
YA1344	CH3CH2-	CH3-	H	H
YA1345	CH3CH2-	CH3CH2-	H	H
YA1346	CH3CH2-		H	H
YA1347	CH3CH2-		H	H
YA1348	CH3CH2-		H	H
YA1349	CH3CH2-		H	H

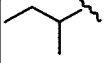
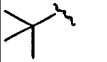
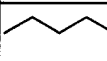
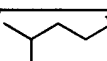
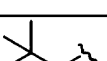
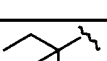
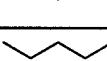
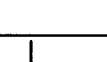
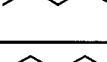

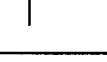

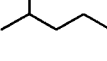
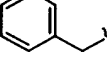
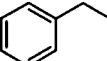
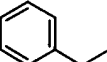

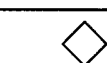
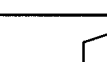
No.	R1	R2	R3	R4
YA1350	CH3CH2-		H	H
YA1351	CH3CH2-		H	H
YA1352	CH3CH2-		H	H
YA1353	CH3CH2-		H	H
YA1354	CH3CH2-		H	H
YA1355	CH3CH2-		H	H
YA1356	CH3CH2-		H	H
YA1357	CH3CH2-		H	H
YA1358	CH3CH2-		H	H
YA1359	CH3CH2-		H	H
YA1360	CH3CH2-		H	H
YA1361	CH3CH2-		H	H
YA1362	CH3CH2-		H	H
YA1363	CH3CH2-		H	H
YA1364	CH3CH2-		H	H
YA1365	CH3CH2-		H	H
YA1366	CH3CH2-		H	H
YA1367	CH3CH2-		H	H
YA1368	CH3CH2-		H	H

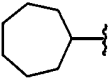


















No.	R1	R2	R3	R4
YA1369	CH3CH2-		H	H
YA1370	CH3CH2-		H	H
YA1371	CH3CH2-		H	H
YA1372	CH3CH2-		H	H
YA1373	CH3CH2-		H	H
YA1374	CH3CH2-		H	H
YA1375	CH3CH2-		H	H
YA1376	CH3CH2-		H	H
YA1377	CH3CH2-		H	H
YA1378	CH3CH2-		H	H
YA1379	CH3CH2-		H	H
YA1380	CH3CH2-		H	H
YA1381	CH3CH2-		H	H
YA1382	CH3CH2-		H	H
YA1383	CH3CH2-		H	H
YA1384	CH3CH2-		H	H
YA1385	CH3CH2-		H	H
YA1386	CH3CH2-		H	H
YA1387	CH3CH2-		H	H




















No.	R1	R2	R3	R4
YA1388	CH ₃ CH ₂ -		H	H
YA1389	CH ₃ CH ₂ -		H	H
YA1390	CH ₃ CH ₂ -		H	H
YA1391	CH ₃ CH ₂ -		H	H
YA1392	CH ₃ CH ₂ -		H	H
YA1393	CH ₃ CH ₂ -		H	H
YA1394	CH ₃ CH ₂ -		H	H
YA1395	CH ₃ CH ₂ -		H	H
YA1396	CH ₃ CH ₂ -		H	H
YA1397	CH ₃ CH ₂ -		H	H
YA1398	CH ₃ CH ₂ -		H	H
YA1399	CH ₃ CH ₂ -		H	H
YA1400	CH ₃ CH ₂ -		H	H
YA1401	CH ₃ CH ₂ -		H	H
YA1402	CH ₃ CH ₂ -		H	H
YA1403	CH ₃ CH ₂ -		H	H
YA1404	CH ₃ CH ₂ -		H	H
YA1405	CH ₃ CH ₂ -		H	H
YA1406	CH ₃ CH ₂ -		H	H

No.	R1	R2	R3	R4
YA1407	CH ₃ CH ₂ -		H	H
YA1408	CH ₃ CH ₂ -		H	H
YA1409	CH ₃ CH ₂ -		H	H
YA1410	CH ₃ CH ₂ -		H	H
YA1411	CH ₃ CH ₂ -		H	H
YA1412	CH ₃ CH ₂ -		H	H
YA1413	CH ₃ CH ₂ -		H	H
YA1414	CH ₃ CH ₂ -		H	H
YA1415	CH ₃ CH ₂ -		H	H
YA1416	CH ₃ CH ₂ -		H	H
YA1417	CH ₃ CH ₂ -		H	H
YA1418	CH ₃ CH ₂ -		H	H
YA1419	CH ₃ CH ₂ -		H	H
YA1420	CH ₃ CH ₂ -		H	H
YA1421	CH ₃ CH ₂ -		H	H
YA1422	CH ₃ CH ₂ -		H	H
YA1423	CH ₃ CH ₂ -		H	H
YA1424	CH ₃ CH ₂ -		H	H
YA1425	CH ₃ CH ₂ -		H	H

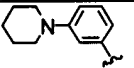
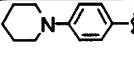
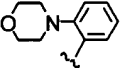
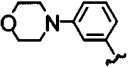
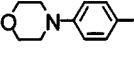
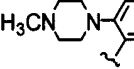
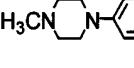
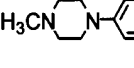
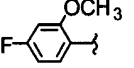
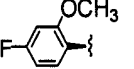
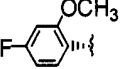
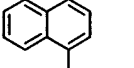
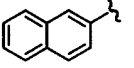
No.	R1	R2	R3	R4
YA1426	CH ₃ CH ₂ -		H	H
YA1427	CH ₃ CH ₂ -		H	H
YA1428	CH ₃ CH ₂ -		H	H
YA1429	CH ₃ CH ₂ -		H	H
YA1430	CH ₃ CH ₂ -		H	H
YA1431	CH ₃ CH ₂ -		H	H
YA1432	CH ₃ CH ₂ -		H	H
YA1433	CH ₃ CH ₂ -		H	H
YA1434	CH ₃ CH ₂ -		H	H
YA1435	CH ₃ CH ₂ -		H	H
YA1436	CH ₃ CH ₂ -		H	H
YA1437	CH ₃ CH ₂ -		H	H
YA1438	CH ₃ CH ₂ -		H	H
YA1439	CH ₃ CH ₂ -	CH ₃ -	H	CH ₃ -
YA1440	CH ₃ CH ₂ -	CH ₃ CH ₂ -	H	CH ₃ -
YA1441	CH ₃ CH ₂ -		H	CH ₃ -
YA1442	CH ₃ CH ₂ -		H	CH ₃ -
YA1443	CH ₃ CH ₂ -		H	CH ₃ -
YA1444	CH ₃ CH ₂ -		H	CH ₃ -

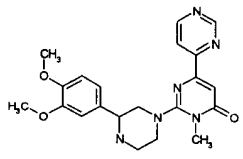
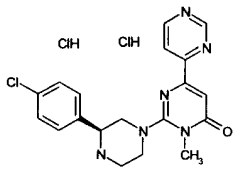
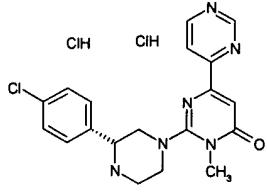
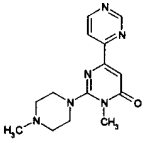
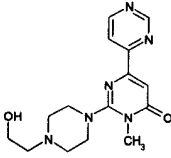
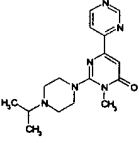
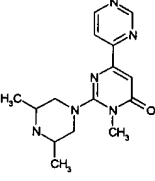
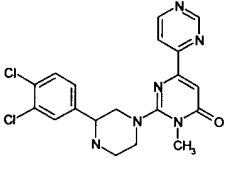
No.	R1	R2	R3	R4
YA1445	CH ₃ CH ₂ -		H	CH ₃ -
YA1446	CH ₃ CH ₂ -		H	CH ₃ -
YA1447	CH ₃ CH ₂ -		H	CH ₃ -
YA1448	CH ₃ CH ₂ -		H	CH ₃ -
YA1449	CH ₃ CH ₂ -		H	CH ₃ -
YA1450	CH ₃ CH ₂ -		H	CH ₃ -
YA1451	CH ₃ CH ₂ -		H	CH ₃ -
YA1452	CH ₃ CH ₂ -		H	CH ₃ -
YA1453	CH ₃ CH ₂ -		H	CH ₃ -
YA1454	CH ₃ CH ₂ -		H	CH ₃ -
YA1455	CH ₃ CH ₂ -		H	CH ₃ -
YA1456	CH ₃ CH ₂ -		H	CH ₃ -
YA1457	CH ₃ CH ₂ -		H	CH ₃ -
YA1458	CH ₃ CH ₂ -		H	CH ₃ -
YA1459	CH ₃ CH ₂ -		H	CH ₃ -
YA1460	CH ₃ CH ₂ -		H	CH ₃ -
YA1461	CH ₃ CH ₂ -		H	CH ₃ -
YA1462	CH ₃ CH ₂ -		H	CH ₃ -
YA1463	CH ₃ CH ₂ -		H	CH ₃ -

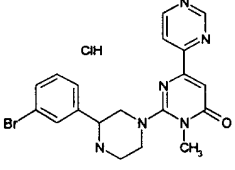
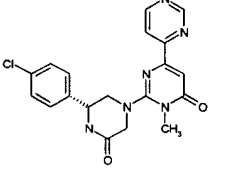
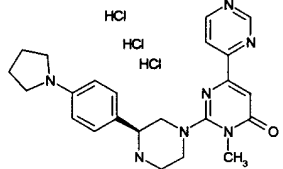
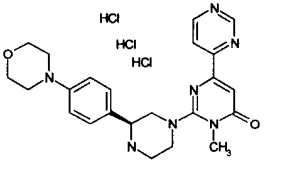
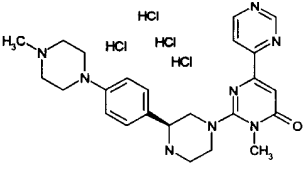
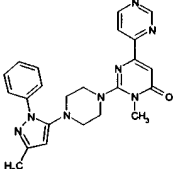
No.	R1	R2	R3	R4
YA1464	CH ₃ CH ₂ -		H	CH ₃ -
YA1465	CH ₃ CH ₂ -		H	CH ₃ -
YA1466	CH ₃ CH ₂ -		H	CH ₃ -
YA1467	CH ₃ CH ₂ -		H	CH ₃ -
YA1468	CH ₃ CH ₂ -		H	CH ₃ -
YA1469	CH ₃ CH ₂ -		H	CH ₃ -
YA1470	CH ₃ CH ₂ -		H	CH ₃ -
YA1471	CH ₃ CH ₂ -		H	CH ₃ -
YA1472	CH ₃ CH ₂ -		H	CH ₃ -
YA1473	CH ₃ CH ₂ -		H	CH ₃ -
YA1474	CH ₃ CH ₂ -		H	CH ₃ -
YA1475	CH ₃ CH ₂ -		H	CH ₃ -
YA1476	CH ₃ CH ₂ -		H	CH ₃ -
YA1477	CH ₃ CH ₂ -		H	CH ₃ -
YA1478	CH ₃ CH ₂ -		H	CH ₃ -
YA1479	CH ₃ CH ₂ -		H	CH ₃ -
YA1480	CH ₃ CH ₂ -		H	CH ₃ -
YA1481	CH ₃ CH ₂ -		H	CH ₃ -
YA1482	CH ₃ CH ₂ -		H	CH ₃ -

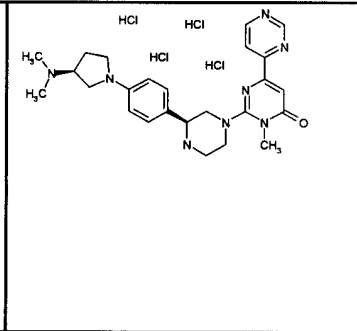
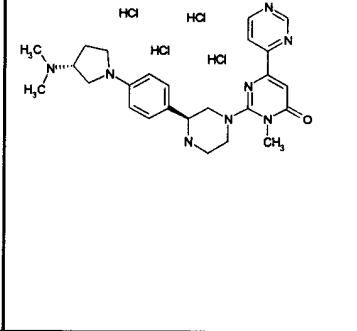
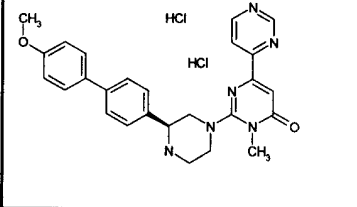
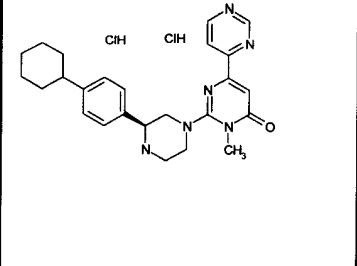
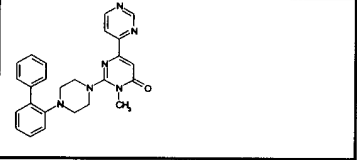
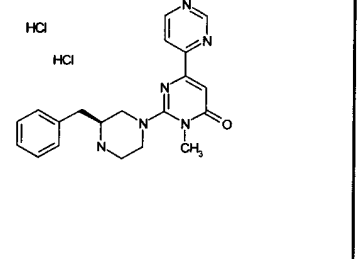
No.	R1	R2	R3	R4
YA1483	CH3CH2-		H	CH3-
YA1484	CH3CH2-		H	CH3-
YA1485	CH3CH2-		H	CH3-
YA1486	CH3CH2-		H	CH3-
YA1487	CH3CH2-		H	CH3-
YA1488	CH3CH2-		H	CH3-
YA1489	CH3CH2-		H	CH3-
YA1490	CH3CH2-		H	CH3-
YA1491	CH3CH2-		H	CH3-
YA1492	CH3CH2-		H	CH3-
YA1493	CH3CH2-		H	CH3-
YA1494	CH3CH2-		H	CH3-
YA1495	CH3CH2-		H	CH3-
YA1496	CH3CH2-		H	CH3-
YA1497	CH3CH2-		H	CH3-
YA1498	CH3CH2-		H	CH3-
YA1499	CH3CH2-		H	CH3-
YA1500	CH3CH2-		H	CH3-
YA1501	CH3CH2-		H	CH3-

No.	R1	R2	R3	R4
YA1502	CH ₃ CH ₂ -		H	CH ₃ -
YA1503	CH ₃ CH ₂ -		H	CH ₃ -
YA1504	CH ₃ CH ₂ -		H	CH ₃ -
YA1505	CH ₃ CH ₂ -		H	CH ₃ -
YA1506	CH ₃ CH ₂ -		H	CH ₃ -
YA1507	CH ₃ CH ₂ -		H	CH ₃ -
YA1508	CH ₃ CH ₂ -		H	CH ₃ -
YA1509	CH ₃ CH ₂ -		H	CH ₃ -
YA1510	CH ₃ CH ₂ -		H	CH ₃ -
YA1511	CH ₃ CH ₂ -		H	CH ₃ -
YA1512	CH ₃ CH ₂ -		H	CH ₃ -
YA1513	CH ₃ CH ₂ -		H	CH ₃ -
YA1514	CH ₃ CH ₂ -		H	CH ₃ -
YA1515	CH ₃ CH ₂ -		H	CH ₃ -
YA1516	CH ₃ CH ₂ -		H	CH ₃ -
YA1517	CH ₃ CH ₂ -		H	CH ₃ -
YA1518	CH ₃ CH ₂ -		H	CH ₃ -
YA1519	CH ₃ CH ₂ -		H	CH ₃ -
YA1520	CH ₃ CH ₂ -		H	CH ₃ -

No.	R1	R2	R3	R4
YA1521	CH3CH2-		H	CH3-
YA1522	CH3CH2-		H	CH3-
YA1523	CH3CH2-		H	CH3-
YA1524	CH3CH2-		H	CH3-
YA1525	CH3CH2-		H	CH3-
YA1526	CH3CH2-		H	CH3-
YA1527	CH3CH2-		H	CH3-
YA1528	CH3CH2-		H	CH3-
YA1529	CH3CH2-		H	CH3-
YA1530	CH3CH2-		H	CH3-
YA1531	CH3CH2-		H	CH3-
YA1532	CH3CH2-		H	CH3-
YA1533	CH3CH2-		H	CH3-

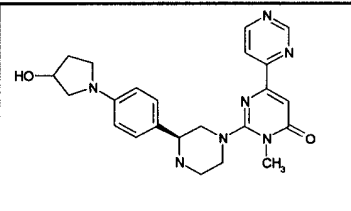
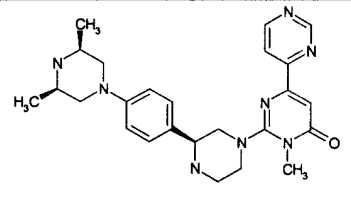
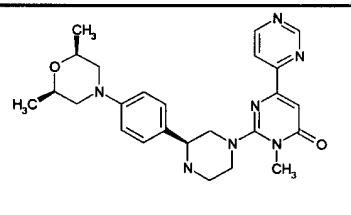
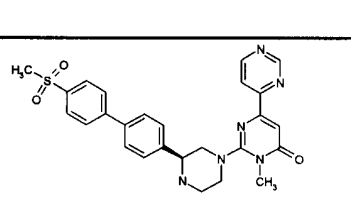
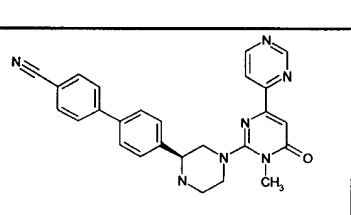
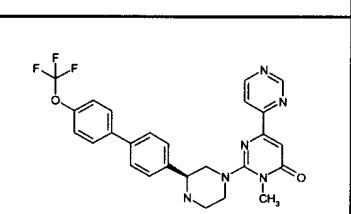
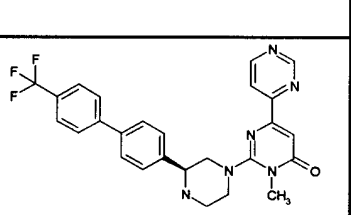
No.	结构
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YA1536	
YA1537	
YA1538	
YA1539	
YA1540	
YA1541	

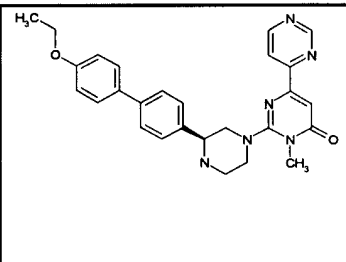
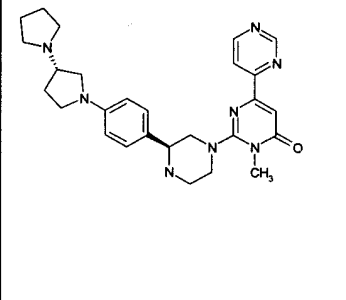
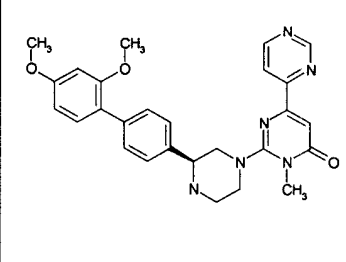
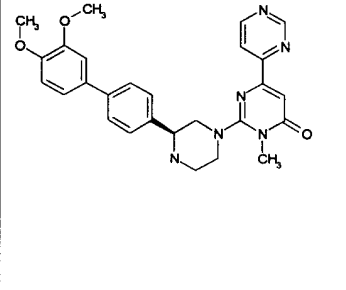
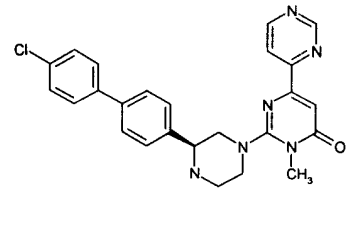
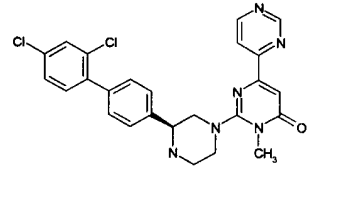
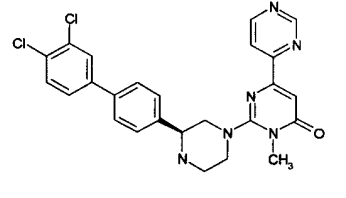
YA1542	 <p>Chemical structure YA1542: A piperazine ring substituted with a 4-bromophenyl group and a 4-(4-(4-oxo-1-methyl-2-(pyrimidin-2-yl)pyridin-5-yl)phenyl)piperazine-1-carbonyl group. A 'CH' label is above the bromine atom.</p>
YA1543	 <p>Chemical structure YA1543: A piperazine ring substituted with a 4-chlorophenyl group and a 4-(4-(4-oxo-1-methyl-2-(pyrimidin-2-yl)pyridin-5-yl)phenyl)piperazine-1-carbonyl group.</p>
YA1544	 <p>Chemical structure YA1544: A piperazine ring substituted with a 4-(4-(4-oxo-1-methyl-2-(pyrimidin-2-yl)pyridin-5-yl)phenyl)piperazine-1-carbonyl group and a 4-(4-(4-oxo-1-methyl-2-(pyrimidin-2-yl)pyridin-5-yl)phenyl)piperazine-1-carbonyl group. Three 'HCl' labels are above the structure.</p>
YA1545	 <p>Chemical structure YA1545: A piperazine ring substituted with a 4-(4-(4-oxo-1-methyl-2-(pyrimidin-2-yl)pyridin-5-yl)phenyl)piperazine-1-carbonyl group and a 4-(4-(4-oxo-1-methyl-2-(pyrimidin-2-yl)pyridin-5-yl)phenyl)piperazine-1-carbonyl group. Three 'HCl' labels are above the structure.</p>
YA1546	 <p>Chemical structure YA1546: A piperazine ring substituted with a 4-(4-(4-oxo-1-methyl-2-(pyrimidin-2-yl)pyridin-5-yl)phenyl)piperazine-1-carbonyl group and a 4-(4-(4-oxo-1-methyl-2-(pyrimidin-2-yl)pyridin-5-yl)phenyl)piperazine-1-carbonyl group. Four 'HCl' labels are above the structure.</p>
YA1547	 <p>Chemical structure YA1547: A piperazine ring substituted with a 4-(4-(4-oxo-1-methyl-2-(pyrimidin-2-yl)pyridin-5-yl)phenyl)piperazine-1-carbonyl group and a 4-(4-(4-oxo-1-methyl-2-(pyrimidin-2-yl)pyridin-5-yl)phenyl)piperazine-1-carbonyl group. A 'H₃C' label is below the structure.</p>

YA1548	
YA1549	
YA1550	
YA1551	
YA1552	
YA1553	

YA1554	<p>Chemical structure of YA1554: A piperazine ring substituted with a 4-chlorophenyl group and a 2-methyl-4-(pyrimidin-2-yl)quinolin-3(1H)-one group. Two HCl molecules are shown above the structure.</p>
YA1555	<p>Chemical structure of YA1555: A piperazine ring substituted with a 4-(piperidin-1-yl)phenyl group and a 2-methyl-4-(pyrimidin-2-yl)quinolin-3(1H)-one group. Three HCl molecules are shown above the structure.</p>
YA1556	<p>Chemical structure of YA1556: A piperazine ring substituted with a 4-(phenylamino)phenyl group and a 2-methyl-4-(pyrimidin-2-yl)quinolin-3(1H)-one group. Four HCl molecules are shown above the structure.</p>
YA1557	<p>Chemical structure of YA1557: A piperazine ring substituted with a 4-(piperidin-1-yl)phenyl group and a 2-methyl-4-(pyrimidin-2-yl)quinolin-3(1H)-one group. Four HCl molecules are shown above the structure.</p>
YA1558	<p>Chemical structure of YA1558: A piperazine ring substituted with a 4-(methylsulfonyl)phenyl group and a 2-methyl-4-(pyrimidin-2-yl)quinolin-3(1H)-one group.</p>
YA1559	<p>Chemical structure of YA1559: A piperazine ring substituted with a 4-(pyrrolidin-1-yl)phenyl group and a 2-methyl-4-(pyrimidin-2-yl)quinolin-3(1H)-one group. Four HCl molecules are shown above the structure.</p>
YA1560	<p>Chemical structure of YA1560: A piperazine ring substituted with a 4-(N,N-dimethylamino)phenyl group and a 2-methyl-4-(pyrimidin-2-yl)quinolin-3(1H)-one group. Four HCl molecules are shown above the structure.</p>

YA1561	 <chem>CN1C=NC(=O)N1C2CCN(C2)c3ccc(cc3)N4CCCC(O)N4.Cl.Cl.Cl</chem>
YA1562	 <chem>CN1C=NC(=O)N1C2CCN(C2)c3ccc(cc3)N4CC(O)N4.Cl</chem>
YA1563	 <chem>CN1C=NC(=O)N1C2CCN(C2)c3ccc(cc3)N4CCCC(N4)c5ccc(cc5)N6CCCCC6.Cl.Cl.Cl</chem>
YA1564	 <chem>CN1C=NC(=O)N1C2CCN(C2)c3ccc(cc3)N4CCCC(N4)c5ccc(cc5)N(C)C.Cl.Cl.Cl</chem>
YA1565	 <chem>CN1C=NC(=O)N1C2CCN(C2)c3ccc(cc3)N4CCCC(N4)c5ccc(cc5)C(=O)OCC6=CC=CC=C6.Cl</chem>
YA1566	 <chem>CN1C=NC(=O)N1C2CCN(C2)c3ccc(cc3)N4CCCC(N4)c5ccc(cc5)N(C)C.Cl</chem>
YA1567	 <chem>CN1C=NC(=O)N1C2CCN(C2)c3ccc(cc3)N4CCCC(N4)c5ccc(cc5)N(C)C.Cl</chem>
YA1568	 <chem>CN1C=NC(=O)N1C2CCN(C2)c3ccc(cc3)N4CCCC(N4)c5ccc(cc5)N6CCNCC6.Cl</chem>

YA1569	
YA1570	
YA1571	
YA1572	
YA1573	
YA1574	
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YA1576	
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YA1581	
YA1582	

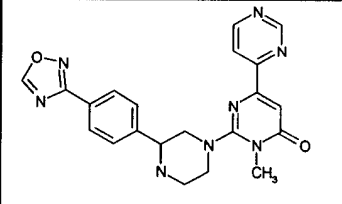
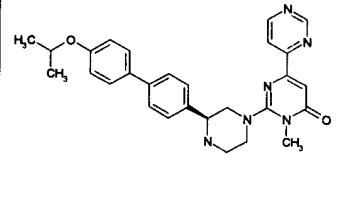
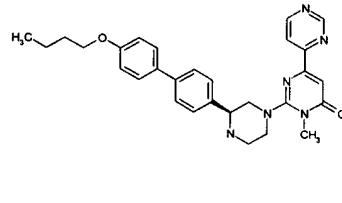
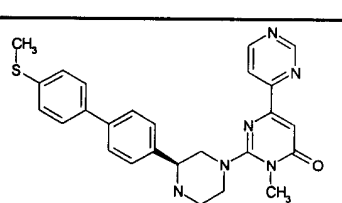
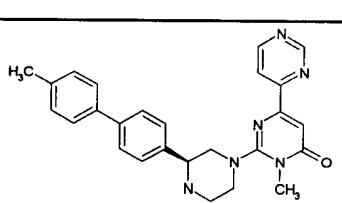
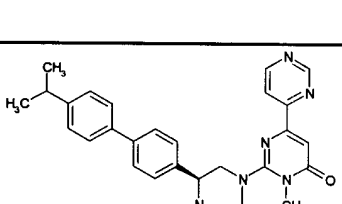
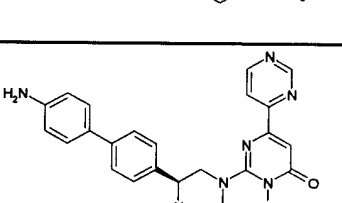
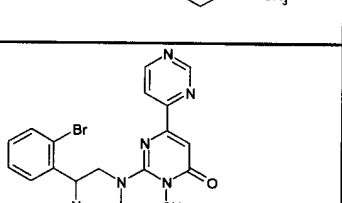


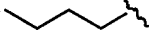
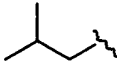

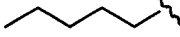
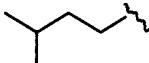


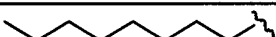
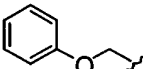
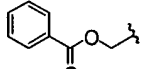
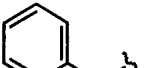
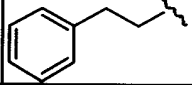
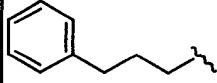
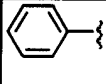
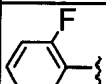
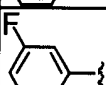
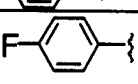
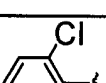
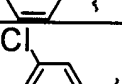
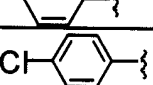
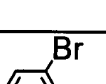
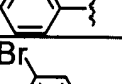
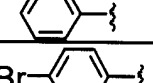
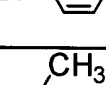
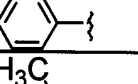
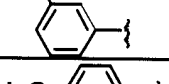

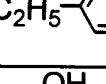
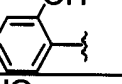

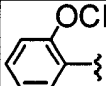
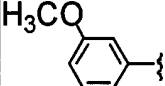
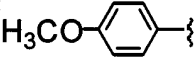
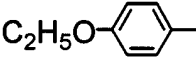
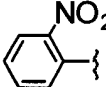
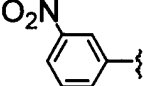
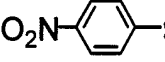
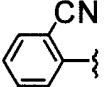
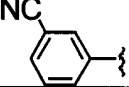
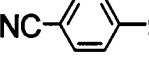
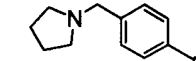
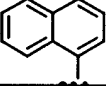
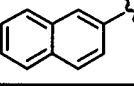
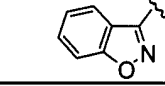
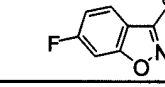
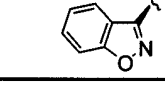
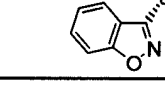
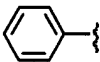
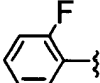
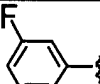
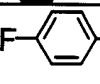
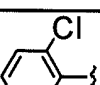
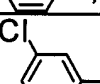
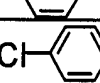
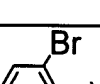
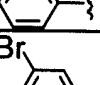
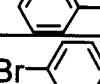
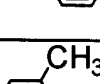
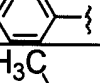
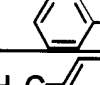
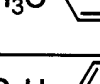
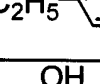
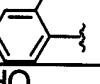
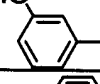
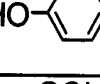
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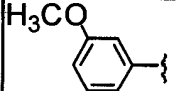
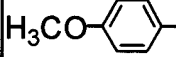
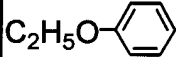
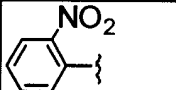
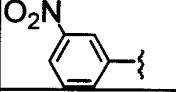
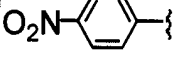
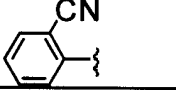
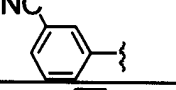

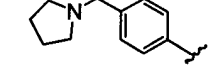
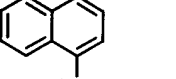
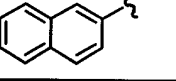
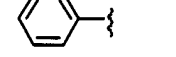
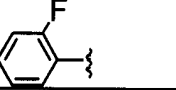
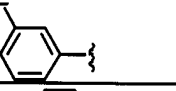
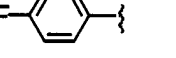
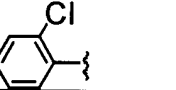
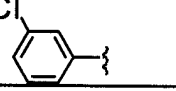
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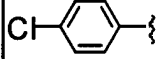
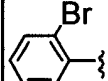
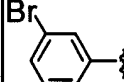
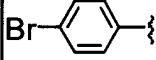
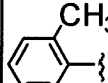
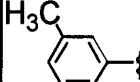
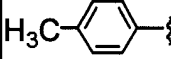
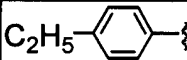
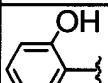
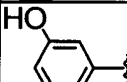
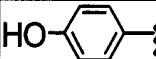
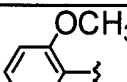
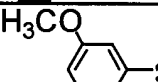
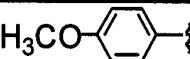
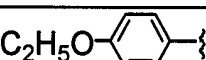
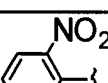
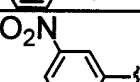
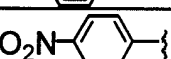
No.	R1	R2	R3	R4	R5
YB1	CH3-	CH3-	H	H	H
YB2	CH3-	CH3CH2-	H	H	H
YB3	CH3-		H	H	H
YB4	CH3-		H	H	H
YB5	CH3-		H	H	H
YB6	CH3-		H	H	H
YB7	CH3-		H	H	H
YB8	CH3-		H	H	H
YB9	CH3-		H	H	H
YB10	CH3-		H	H	H
YB11	CH3-		H	H	H
YB12	CH3-		H	H	H
YB13	CH3-		H	H	H
YB14	CH3-		H	H	H
YB15	CH3-		H	H	H

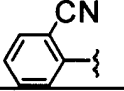
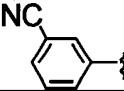
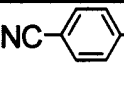
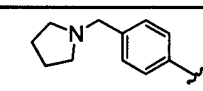
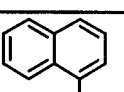
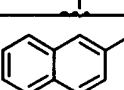
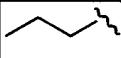

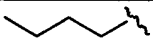
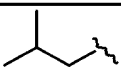

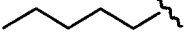
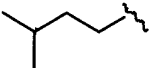


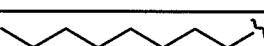
No.	R1	R2	R3	R4	R5
YB16	CH3-		H	H	H
YB17	CH3-		H	H	H
YB18	CH3-		H	H	H
YB19	CH3-		H	H	H
YB20	CH3-		H	H	H
YB21	CH3-		H	H	H
YB22	CH3-		H	H	H
YB23	CH3-		H	H	H
YB24	CH3-		H	H	H
YB25	CH3-		H	H	H
YB26	CH3-		H	H	H
YB27	CH3-		H	H	H
YB28	CH3-		H	H	H
YB29	CH3-		H	H	H
YB30	CH3-		H	H	H
YB31	CH3-		H	H	H
YB32	CH3-		H	H	H
YB33	CH3-		H	H	H

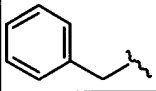
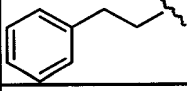
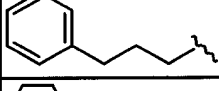
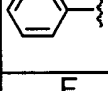
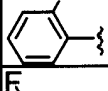
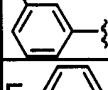
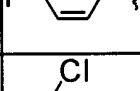
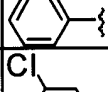
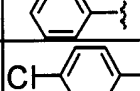
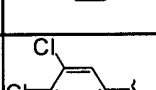
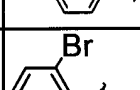
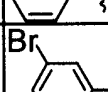
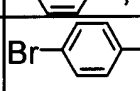
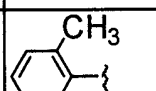
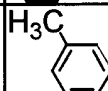
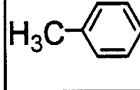
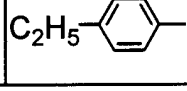

No.	R1	R2	R3	R4	R5
YB34	CH3-		H	H	H
YB35	CH3-		H	H	H
YB36	CH3-		H	H	H
YB37	CH3-		H	H	H
YB38	CH3-		H	H	H
YB39	CH3-		H	H	H
YB40	CH3-		H	H	H
YB41	CH3-		H	H	H
YB42	CH3-		H	H	H
YB43	CH3-		H	H	H
YB44	CH3-		H	H	H
YB45	CH3-		H	H	H
YB46	CH3-		H	H	H
YB47	CH3-		H	H	H
YB48	CH3-		H	H	H
YB49	CH3-		H	H	H
YB50	CH3-		H	H	H
YB51	CH3-		H	H	H

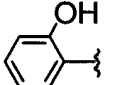
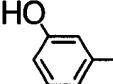
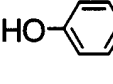
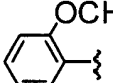
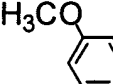
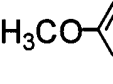
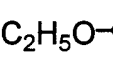
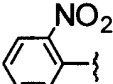
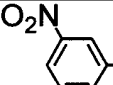
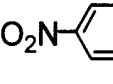
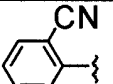
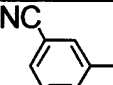
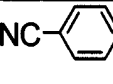
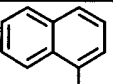
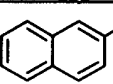
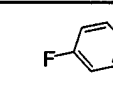
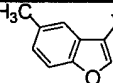
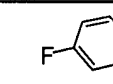
No.	R1	R2	R3	R4	R5
YB52	CH3-		OH	H	H
YB53	CH3-		OH	H	H
YB54	CH3-		OH	H	H
YB55	CH3-		OH	H	H
YB56	CH3-		OH	H	H
YB57	CH3-		OH	H	H
YB58	CH3-		OH	H	H
YB59	CH3-		OH	H	H
YB60	CH3-		OH	H	H
YB61	CH3-		OH	H	H
YB62	CH3-		OH	H	H
YB63	CH3-		OH	H	H
YB64	CH3-		OH	H	H
YB65	CH3-		OH	H	H
YB66	CH3-		OH	H	H
YB67	CH3-		OH	H	H
YB68	CH3-		OH	H	H
YB69	CH3-		OH	H	H

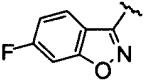
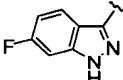
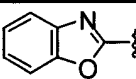
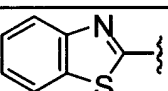
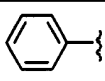
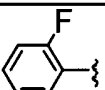
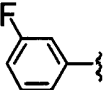
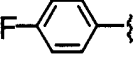
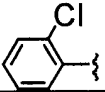
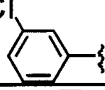
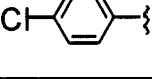
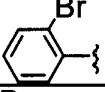
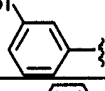
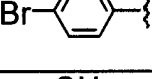
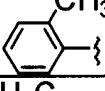
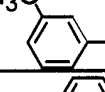
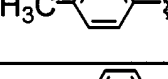
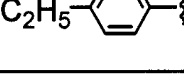
No.	R1	R2	R3	R4	R5
YB70	CH3-		OH	H	H
YB71	CH3-		OH	H	H
YB72	CH3-		OH	H	H
YB73	CH3-		OH	H	H
YB74	CH3-		OH	H	H
YB75	CH3-		OH	H	H
YB76	CH3-		OH	H	H
YB77	CH3-		OH	H	H
YB78	CH3-		OH	H	H
YB79	CH3-		OH	H	H
YB80	CH3-		OH	H	H
YB81	CH3-		OH	H	H
YB82	CH3-		CN	H	H
YB83	CH3-		CN	H	H
YB84	CH3-		CN	H	H
YB85	CH3-		CN	H	H
YB86	CH3-		CN	H	H
YB87	CH3-		CN	H	H

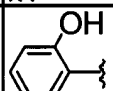
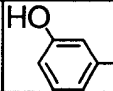
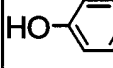
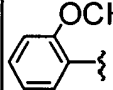
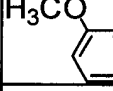
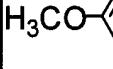
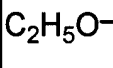
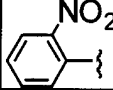
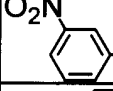
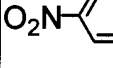
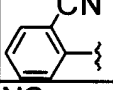
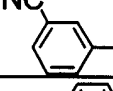
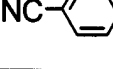
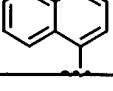
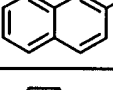
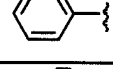
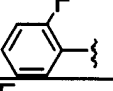
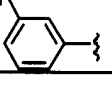
No.	R1	R2	R3	R4	R5
YB88	CH3-		CN	H	H
YB89	CH3-		CN	H	H
YB90	CH3-		CN	H	H
YB91	CH3-		CN	H	H
YB92	CH3-		CN	H	H
YB93	CH3-		CN	H	H
YB94	CH3-		CN	H	H
YB95	CH3-		CN	H	H
YB96	CH3-		CN	H	H
YB97	CH3-		CN	H	H
YB98	CH3-		CN	H	H
YB99	CH3-		CN	H	H
YB100	CH3-		CN	H	H
YB101	CH3-		CN	H	H
YB102	CH3-		CN	H	H
YB103	CH3-		CN	H	H
YB104	CH3-		CN	H	H
YB105	CH3-		CN	H	H

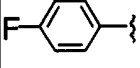
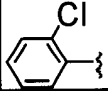
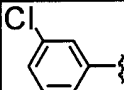
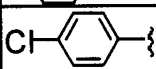
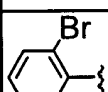
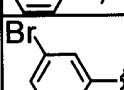
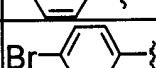
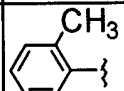
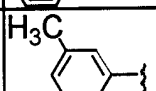
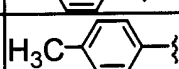
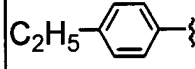
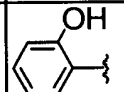
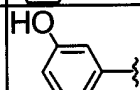
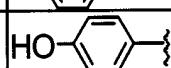
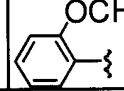
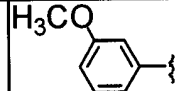
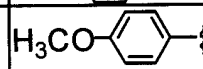
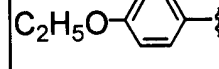
No.	R1	R2	R3	R4	R5
YB106	CH3-		CN	H	H
YB107	CH3-		CN	H	H
YB108	CH3-		CN	H	H
YB109	CH3-		CN	H	H
YB110	CH3-		CN	H	H
YB111	CH3-		CN	H	H
YB112	CH3-	H	H	CH3-	H
YB113	CH3-	H	H	CH3CH2-	H
YB114	CH3-	H	H		H
YB115	CH3-	H	H		H
YB116	CH3-	H	H		H
YB117	CH3-	H	H		H
YB118	CH3-	H	H		H
YB119	CH3-	H	H		H
YB120	CH3-	H	H		H
YB121	CH3-	H	H		H
YB122	CH3-	H	H		H
YB123	CH3-	H	H		H

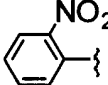
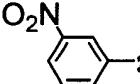
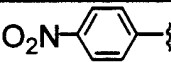
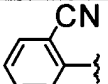
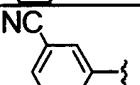
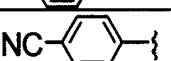
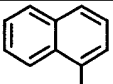
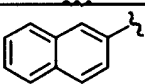
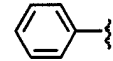

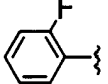

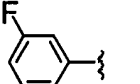



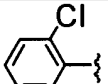

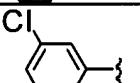

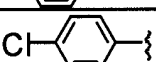

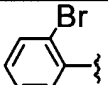

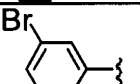

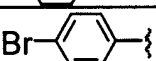

No.	R1	R2	R3	R4	R5
YB124	CH ₃ -	H	H		H
YB125	CH ₃ -	H	H		H
YB126	CH ₃ -	H	H		H
YB127	CH ₃ -	H	H		H
YB128	CH ₃ -	H	H		H
YB129	CH ₃ -	H	H		H
YB130	CH ₃ -	H	H		H
YB131	CH ₃ -	H	H		H
YB132	CH ₃ -	H	H		H
YB133	CH ₃ -	H	H		H
YB134	CH ₃ -	H	H		H
YB135	CH ₃ -	H	H		H
YB136	CH ₃ -	H	H		H
YB137	CH ₃ -	H	H		H
YB138	CH ₃ -	H	H		H
YB139	CH ₃ -	H	H		H
YB140	CH ₃ -	H	H		H
YB141	CH ₃ -	H	H		H

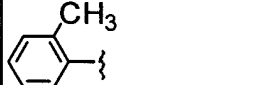

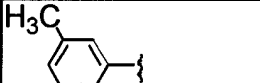

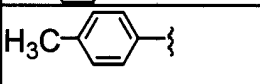

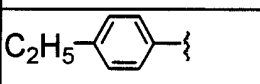

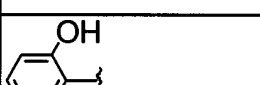

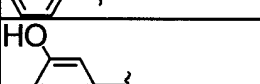

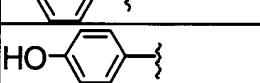

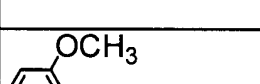

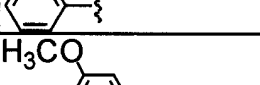

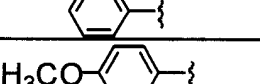

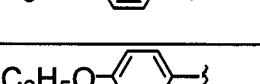

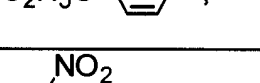

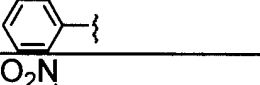

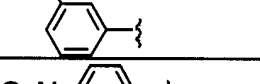

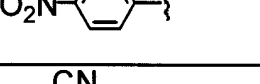

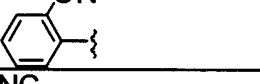

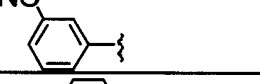

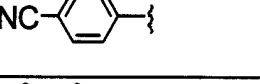

No.	R1	R2	R3	R4	R5
YB142	CH3-	H	H		H
YB143	CH3-	H	H		H
YB144	CH3-	H	H		H
YB145	CH3-	H	H		H
YB146	CH3-	H	H		H
YB147	CH3-	H	H		H
YB148	CH3-	H	H		H
YB149	CH3-	H	H		H
YB150	CH3-	H	H		H
YB151	CH3-	H	H		H
YB152	CH3-	H	H		H
YB153	CH3-	H	H		H
YB154	CH3-	H	H		H
YB155	CH3-	H	H		H
YB156	CH3-	H	H		H
YB157	CH3-	H	H		H
YB158	CH3-	H	H		H
YB159	CH3-	H	H		H

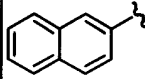

No.	R1	R2	R3	R4	R5
YB160	CH3-	H	H		H
YB161	CH3-	H	H		H
YB162	CH3-	H	H		H
YB163	CH3-	H	H		H
YB164	CH3-	H	H		OH
YB165	CH3-	H	H		OH
YB166	CH3-	H	H		OH
YB167	CH3-	H	H		OH
YB168	CH3-	H	H		OH
YB169	CH3-	H	H		OH
YB170	CH3-	H	H		OH
YB171	CH3-	H	H		OH
YB172	CH3-	H	H		OH
YB173	CH3-	H	H		OH
YB174	CH3-	H	H		OH
YB175	CH3-	H	H		OH
YB176	CH3-	H	H		OH
YB177	CH3-	H	H		OH

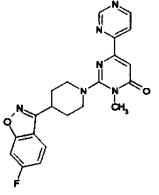
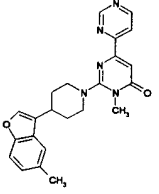
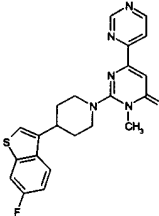
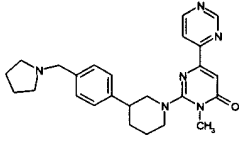
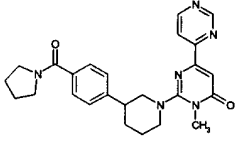
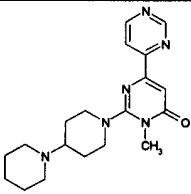
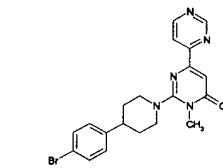
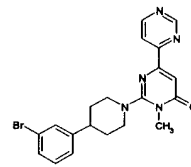
No.	R1	R2	R3	R4	R5
YB178	CH3-	H	H		OH
YB179	CH3-	H	H		OH
YB180	CH3-	H	H		OH
YB181	CH3-	H	H		OH
YB182	CH3-	H	H		OH
YB183	CH3-	H	H		OH
YB184	CH3-	H	H		OH
YB185	CH3-	H	H		OH
YB186	CH3-	H	H		OH
YB187	CH3-	H	H		OH
YB188	CH3-	H	H		OH
YB189	CH3-	H	H		OH
YB190	CH3-	H	H		OH
YB191	CH3-	H	H		OH
YB192	CH3-	H	H		OH
YB193	CH3-	H	H		CN
YB194	CH3-	H	H		CN
YB195	CH3-	H	H		CN

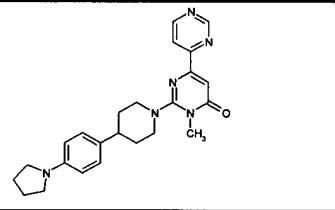
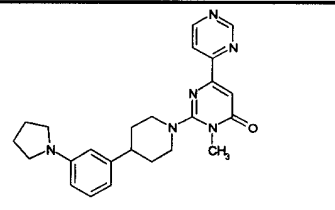
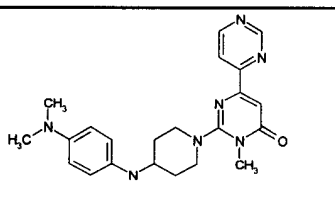
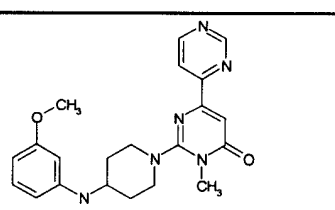
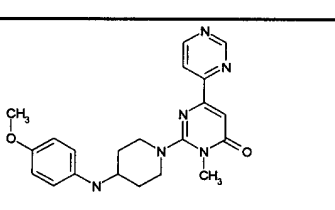
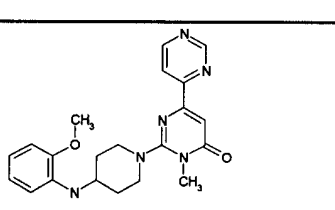
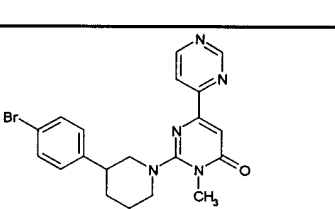
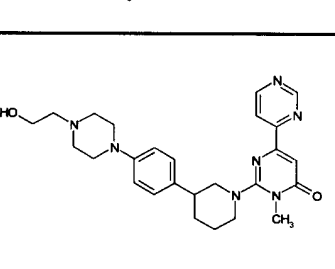
No.	R1	R2	R3	R4	R5
YB196	CH3-	H	H		CN
YB197	CH3-	H	H		CN
YB198	CH3-	H	H		CN
YB199	CH3-	H	H		CN
YB200	CH3-	H	H		CN
YB201	CH3-	H	H		CN
YB202	CH3-	H	H		CN
YB203	CH3-	H	H		CN
YB204	CH3-	H	H		CN
YB205	CH3-	H	H		CN
YB206	CH3-	H	H		CN
YB207	CH3-	H	H		CN
YB208	CH3-	H	H		CN
YB209	CH3-	H	H		CN
YB210	CH3-	H	H		CN
YB211	CH3-	H	H		CN
YB212	CH3-	H	H		CN
YB213	CH3-	H	H		CN

No.	R1	R2	R3	R4	R5
YB214	CH3-	H	H		CN
YB215	CH3-	H	H		CN
YB216	CH3-	H	H		CN
YB217	CH3-	H	H		CN
YB218	CH3-	H	H		CN
YB219	CH3-	H	H		CN
YB220	CH3-	H	H		CN
YB221	CH3-	H	H		CN
YB222	CH3-	H	H		
YB223	CH3-	H	H		
YB224	CH3-	H	H		
YB225	CH3-	H	H		
YB226	CH3-	H	H		
YB227	CH3-	H	H		
YB228	CH3-	H	H		
YB229	CH3-	H	H		
YB230	CH3-	H	H		
YB231	CH3-	H	H		

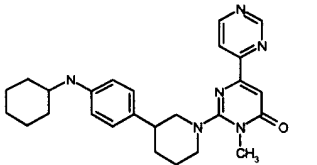
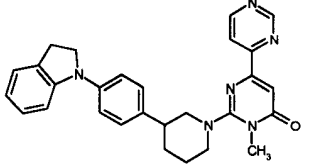
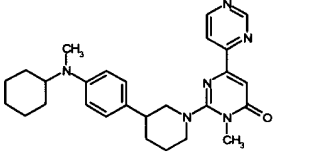
No.	R1	R2	R3	R4	R5
YB232	CH3-	H	H		
YB233	CH3-	H	H		
YB234	CH3-	H	H		
YB235	CH3-	H	H		
YB236	CH3-	H	H		
YB237	CH3-	H	H		
YB238	CH3-	H	H		
YB239	CH3-	H	H		
YB240	CH3-	H	H		
YB241	CH3-	H	H		
YB242	CH3-	H	H		
YB243	CH3-	H	H		
YB244	CH3-	H	H		
YB245	CH3-	H	H		
YB246	CH3-	H	H		
YB247	CH3-	H	H		
YB248	CH3-	H	H		
YB249	CH3-	H	H		

No.	R1	R2	R3	R4	R5
YB250	CH ₃ -	H	H		

No.	结构
YB251	
YB252	
YB253	
YB254	
YB255	
YB256	
YB257	
YB258	

YB259	
YB260	
YB261	
YB262	
YB263	
YB264	
YB265	
YB266	

YB267	
YB268	
YB269	
YB270	
YB271	
YB272	
YB273	
YB274	
YB275	

YB276	
YB277	
YB278	

由式(I)表示的本发明特别优选的化合物包括:

- 2-(3-苯基哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(4-氟苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(3-氟苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
5 2-(3-(2-氟苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(4-氯苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
(*S*)-2-(3-(4-氯苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
(*R*)-2-(3-(4-氯苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(3-氯苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
10 2-(3-(2-氯苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(4-溴苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(3-溴苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(2-溴苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(4-甲基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
15 2-(3-(3-甲基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(2-甲基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(4-氰基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(3-氰基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(2-氰基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
20 2-(3-(4-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(3-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(2-乙氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(5-氟-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-
25 酮;
2-(3-(4-氟-3-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-
酮;
2-(3-(4-氟-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-
酮;
30 (*S*)-2-(3-(4-氟-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉

- 4-酮;
(*R*)-2-(3-(4-氟-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉
-4-酮;
2-(3-(4-氯-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-
5 酮;
2-(3-(4-氟-2-甲基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(2-氟-6-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-
酮;
2-(3-(5-溴-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-
10 酮;
2-(3-(2-溴-4-氟苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(2-氯-6-氟苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(2,4-二氟苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(2,6-二氟苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
15 2-(3-(2,6-二氯苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(2,4-二甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(3,4-二甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(2,5-二甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(2,6-二甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
20 2-(3-(2,4-二氟-6-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉
-4-酮; (1034)
2-(3-(5-氰基-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-
酮;
2-(3-(4-氰基-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-
25 酮;
2-(3-(1-萘基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(2-萘基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;
2-(3-(2,3-二氢苯并呋喃-7-基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉
-4-酮;
30 2-(3-(苯并呋喃-2-基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-咪啉-4-酮;

- (*S*)-2-(3-(苯并呋喃-2-基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
2-(3-(4-(吡咯烷-1-基-甲基)苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
2-(3-(4-(吡咯烷-1-基)苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
5 2-(3-(2-甲氧基-4-(吡咯烷-1-基)苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
2-(3-(2-甲氧基-5-(吡咯烷-1-基)苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
10 2-(3-(4-(苯基)苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
2-(3-(4-(4-氟苯基)苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
2-(3-(4-(4-甲氧基苯基)苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
15 2-(3-(4-(2-甲氧基苯基)苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
2-(3-(4-(吗啉-4-基)苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
2-(3-(4-(4-甲基哌嗪-1-基)苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
2-(4-苯基哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
20 2-(4-苄基哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
2-(4-苯甲酰基哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
2-(4-(1,2-苯并异噻唑-3-基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
2-(4-甲基-3-苯基哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
25 2-(3-(4-氟-2-甲氧基苯基)-4-甲基哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
(*S*)-2-(3-(4-氟-2-甲氧基苯基)-4-甲基哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
(*R*)-2-(3-(4-氟-2-甲氧基苯基)-4-甲基哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
30

- 2-(4-乙酰基-3-(4-氟-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-
嘧啶-4-酮;
- 2-(4-苄基-3-(4-氟-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-
嘧啶-4-酮;
- 5 2-(4-苄基-3-(乙氧羰基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
2-(4-甲基-3-(1-萘基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
2-(5,5-二甲基-3-(2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-
嘧啶-4-酮;
- 2-(3-苯基哌啶-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
- 10 2-(3-(4-氟苯基)哌啶-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
2-(3-(3-氟苯基)哌啶-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
2-(3-(2-氟苯基)哌啶-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
2-(3-(4-氯苯基)哌啶-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
2-(3-(4-溴苯基)哌啶-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
- 15 2-(3-(4-甲氧基苯基)哌啶-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
2-(3-(3-甲氧基苯基)哌啶-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
2-(3-(2-甲氧基苯基)哌啶-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
2-(3-(4-((吡咯烷-1-基)甲基)苯基)哌啶-1-基)-3-甲基-6-(4-吡啶基)-3*H*-
嘧啶-4-酮;
- 20 (*S*)-2-(3-(4-(吡咯烷-1-基-甲基)苯基)哌啶-1-基)-3-甲基-6-(4-吡啶
基)-3*H*-嘧啶-4-酮;
(*R*)-2-(3-(4-(吡咯烷-1-基-甲基)苯基)哌啶-1-基)-3-甲基-6-(4-吡啶
基)-3*H*-嘧啶-4-酮;
- 2-(3-羟基-3-苯基哌啶-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
- 25 2-(3-苯基哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
2-(3-(4-氟苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
2-(3-(3-氟苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
2-(3-(2-氟苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
2-(3-(4-氯苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 30 2-(3-(3-氯苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;

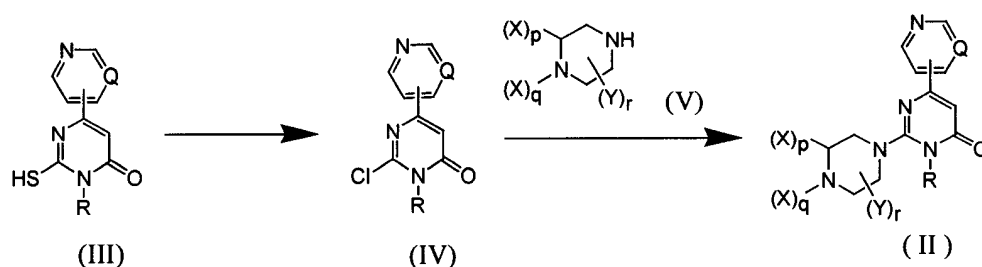
- 2-(3-(2-氯苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
2-(3-(4-溴苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
2-(3-(3-溴苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
2-(3-(2-溴苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
5 2-(3-(4-氰基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
2-(3-(3-氰基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
2-(3-(2-氰基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
2-(3-(4-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
2-(3-(3-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
10 2-(3-(2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
2-(3-(2-乙氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
2-(3-(6-氟-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
2-(3-(5-氟-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
15 2-(3-(4-氟-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
(*S*)-2-(3-(4-氟-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
20 (*R*)-2-(3-(4-氟-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
2-(3-(4-氯-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
2-(3-(5-溴-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
25 2-(3-(2,6-二氯苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
2-(3-(2,4-二甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮;
2-(3-(3,4-二甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
2-(3-(2,5-二甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
30 2-(3-(2,6-二甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;

- 2-(3-(2,4-二氟-6-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(1-萘基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(2-萘基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 5 2-(3-(2,3-二氢苯并呋喃-7-基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(苯并呋喃-2-基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(4-(吡咯烷-1-基-甲基)苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 10 2-(3-(4-(吡咯烷-1-基)苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(2-甲氧基-4-(吡咯烷-1-基)苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(2-甲氧基-5-(吡咯烷-1-基)苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 15 2-(3-(4-(苯基)苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(4-(4-氟苯基)苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(4-(4-甲氧基苯基)苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 20 2-(3-(4-(2-甲氧基苯基)苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(4-(吗啉-4-基)苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 2-(3-(4-(4-甲基哌嗪-1-基)苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 25 2-(3-(4-氟-2-甲氧基苯基)-4-甲基哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- (*S*)-2-(3-(4-氟-2-甲氧基苯基)-4-甲基哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- (*R*)-2-(3-(4-氟-2-甲氧基苯基)-4-甲基哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮;
- 30

- 2-(4-乙酰基-3-(4-氟-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3H-嘧啶-4-酮;
- 2-(4-苄基-3-(4-氟-2-甲氧基苯基)哌嗪-1-基)-3-甲基-6-(4-嘧啶基)-3H-嘧啶-4-酮;
- 5 2-(4-(4-氟苯基)哌啶-1-基)-3-甲基-6-(4-嘧啶基)-3H-嘧啶-4-酮;
- 2-(4-氰基-4-苯基哌啶-1-基)-3-甲基-6-(4-嘧啶基)-3H-嘧啶-4-酮;
- 2-(4-(6-氟苯并呋喃-3-基)哌啶-1-基)-3-甲基-6-(4-嘧啶基)-3H-嘧啶-4-酮;
- 2-(3-(苯并异噁唑-3-基)哌啶-1-基)-3-甲基-6-(4-嘧啶基)-3H-嘧啶-4-酮;
- 10 (*S*)-2-(3-(苯并异噁唑-3-基)哌啶-1-基)-3-甲基-6-(4-嘧啶基)-3H-嘧啶-4-酮;
- (*R*)-2-(3-(苯并异噁唑-3-基)哌啶-1-基)-3-甲基-6-(4-嘧啶基)-3H-嘧啶-4-酮;
- 2-(3-(6-氟苯并异噁唑-3-基)哌啶-1-基)-3-甲基-6-(4-嘧啶基)-3H-嘧啶-4-酮;
- 15 2-(4-(6-氟苯并异噁唑-3-基)哌啶-1-基)-3-甲基-6-(4-嘧啶基)-3H-嘧啶-4-酮;
- 2-(4-(5-甲基苯并呋喃-3-基)哌啶-1-基)-3-甲基-6-(4-嘧啶基)-3H-嘧啶-4-酮; 和
- 20 2-(4-(6-氟苯并噁吩-3-基)哌啶-1-基)-3-甲基-6-(4-嘧啶基)-3H-嘧啶-4-酮。

上述优选化合物的盐和上述化合物及其盐的溶剂化物或水合物也是优选的。

- 25 由上式(I)表示的 3-取代的-4-嘧啶酮化合物可根据例如以下说明的方法制备。



(在上述图解中，Q、R、X 和 Y 的定义与已经描述的定义相同)

- 5 上面式 (III) 代表的 2-硫嘧啶酮是通过对 EP354,179 中所述的方法的改进方法容易地制得的。该反应可以在有碱如氢氧化钠、氢氧化钾、甲醇钠、乙醇钠、叔丁醇钾、碳酸钠、碳酸氢钠、碳酸钾、三乙胺、二异丙基乙基胺和 1,8-二氮杂双环[5,4,0]十一碳-7-烯存在时、在从 0°C 到 200°C 范围内的适宜温度下、在氮气或氩气环境或者普通空气中进行 1-100 小时，得到所期望的化合物 (III)。该反应的溶剂的实例包括，例如，醇溶剂如甲醇、乙醇、1-丙醇、异丙醇、叔丁醇、乙二醇、丙二醇；醚溶剂如乙醚、甲基叔丁基醚、四氢呋喃、异丙基醚；烃溶剂如苯、甲苯、二甲苯；卤代烃溶剂如二氯甲烷、氯仿、二氯乙烷；非质子极性溶剂如甲酰胺、*N,N*-二甲基甲酰胺、*N,N*-二甲基乙酰胺、*N*-甲基吡咯烷酮、二甲亚砜、环丁砜、六甲基磷酰三胺、水等。
- 10 通常，可以采用单一溶剂或两种或两种以上溶剂的混合物以适合所采用的碱。

- 然后通过氯化剂将 2-硫嘧啶酮衍生物 (III) 转化为 2-氯嘧啶酮 (IV)。其反应时间和温度取决于所用的氯化剂。反应的氯化剂的实例包括，例如，亚硫酸氯、亚硫酸氯和二甲基甲酰胺、磷酰氯、磷酰氯和二甲基甲酰胺、草酰氯、磷酰氯和二甲基甲酰胺、五氯化磷。
- 20

由上式(V)表示的胺可通过日本专利未审公开 No. 52-139085/1977 中所述方法的改进方法或根据本领域技术人员公知的方法制备。

- 然后将该氯化物衍生物 (IV) 与胺 (V) 或其盐在有碱如氢氧化钠、氢氧化钾、甲醇钠、乙醇钠、碳酸钠、碳酸氢钠、碳酸钾、三乙胺、二异丙基乙基胺和 1,8-二氮杂双环[5,4,0]十一碳-7-烯存在时、在从 0°C 到 200°C 范围内的适宜温度下、在氮气或氩气环境或者普通空气中进
- 25

行 0.1-100 小时，得到所期望的化合物 (II)。

该反应的溶剂的实例包括，例如，醇溶剂如甲醇、乙醇、1-丙醇、异丙醇、叔丁醇、乙二醇、丙二醇；醚溶剂如乙醚、甲基叔丁基醚、四氢呋喃、异丙基醚；烃溶剂如苯、甲苯、二甲苯；卤代烃溶剂如二氯甲烷、氯仿、二氯乙烷；非质子极性溶剂如甲酰胺、*N,N*-二甲基甲酰胺、*N,N*-二甲基乙酰胺、*N*-甲基吡咯烷酮、二甲亚砜、环丁砜、六甲基磷酰三胺、水等。通常，可以采用单一溶剂或两种或两种以上溶剂的混合物以适合所采用的碱。

本发明的化合物具有抑制 TPK1 的活性，并且它们在神经变性疾病如阿尔茨海默病中抑制 TPK1 的活性，从而遏制 A β 的神经毒性和 PHF 的形成以及抑制神经细胞的死亡。因此，本发明的化合物可用作药物的活性成分，使之能够从根本上预防和/或治疗阿尔茨海默病。另外，本发明的化合物也可用作以下疾病的预防治疗和/或治疗性治疗的药物的活性成分：缺血性脑卒中综合症、唐氏综合症、单一脑淀粉样血管病引起的脑出血、进行性核上性麻痹、亚急性硬化性全脑炎、脑炎后帕金森氏综合症、拳击手脑炎、关岛帕金森氏综合症-痴呆综合症、路易小体病、皮克氏病、皮质基底核变性症、额颞叶型痴呆症、血管性痴呆、急性中风和创伤性损伤、脑和脊髓创伤、周围神经病、视网膜病和青光眼、非胰岛素依赖型糖尿病（如 II 型糖尿病）、肥胖症、躁狂抑郁病、精神分裂症、脱发症、癌症如乳癌、非小细胞肺癌、甲状腺癌、T 或 B-细胞白血病和几种病毒诱导的肿瘤。

作为本发明的药物活性成分，可以采用的物质选自前述式 (I) 代表的化合物、其可药用的盐、其溶剂化物及其水合物。该物质本身可以作为本发明的药物给药，然而通常希望将药物以药物组合物的形式给药，其包括作为活性成分的上述物质以及一种或一种以上的药物添加剂。作为本发明的药物活性成分，可以将两种或者两种以上的上述物质联合使用。上述的药物组合物可以补充有其它治疗以下疾病的药物活性成分，例如阿尔茨海默病、血管性痴呆、急性中风和创伤性损伤、脑和脊髓创伤、周围神经病、视网膜病和青光眼、非胰岛素依赖型糖尿病（如 II 型糖尿病）、肥胖症、躁狂抑郁病、精神分裂症、脱

或者间断地进行给药。

实施例

5 本发明将参照实施例作更详细地说明。然而，本发明的范围不限于下列实施例。实施例中的化合物编号与上述表格中的对应。

参考例 1：2-巯基-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮的合成

10 将 3-氧代-3-(4-吡啶基)丙酸乙酯 (29.0 克, 150 毫摩尔)、*N*-甲基硫脲 (40.6 克, 450 毫摩尔) 和 1,8-二氮杂双环[5,4,0]-7-十一碳烯 (22.4 毫升, 150 毫摩尔) 的溶液回流 4 小时, 用冰水冷却后加入甲磺酸 (14.4 克, 150 毫摩尔) 的水 (50 毫升) 溶液。沉淀物用水洗涤, 过滤并干燥, 得到标题化合物 (23.7 克, 72%)。

¹H-NMR (DMSO-*d*₆) δ: 3.58(s, 3H), 6.40(s, 1H), 7.72(dd, *J* = 1.8, 4.5Hz, 2H), 8.73(dd, *J* = 1.5, 4.8Hz, 2H), 12.92(brd, 1H)。

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参考例 2：2-氯-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮的合成

20 将磷酸氯 (26.11 克, 170 毫摩尔) 加入到二甲基甲酰胺 (180 毫升) 中并搅拌 20 分钟。向该溶液中加入 2-巯基-3-甲基-6-(4-吡啶基)-嘧啶-4-酮 (24.15 克, 110 毫摩尔) 并搅拌 5 分钟, 然后在 70°C 下搅拌 2 小时。向冰冷却后的溶液中加入乙酸乙酯 (630 毫升) 并在搅拌 20 分钟之后过滤收集沉淀物。干燥后, 将沉淀物溶解于水 (400 毫升) 并用氢氧化钠水溶液调 pH 值至 10。沉淀物用水洗涤, 过滤并干燥, 得到标题化合物 (18.82 克, 77%)。

25 ¹H-NMR (CDCl₃) δ: 3.72(s, 3H), 6.90(s, 1H), 7.78(dd, *J* = 1.7, 4.5Hz, 2H), 8.75(dd, *J* = 1.6, 4.5Hz, 2H)。

参考例 3：2-巯基-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮的合成

30 将 3-氧代-3-(4-嘧啶基)丙酸乙酯 (34.1 克, 176 毫摩尔)、*N*-甲基硫脲 (47.5 克, 527 毫摩尔) 和 1,8-二氮杂双环[5,4,0]-7-十一碳烯 (26.3 毫升, 176 毫摩尔) 的乙醇 (340 毫升) 溶液回流 2 小时, 用冰水冷却

后加入甲磺酸（16.9 克，176 毫摩尔）的水（70 毫升）溶液。沉淀物用水洗涤，过滤并干燥，得到标题化合物（30.2 克，78%）。

$^1\text{H-NMR}$ (DMSO- d_6) δ : 3.56(s, 3H), 6.88(s, 1H), 8.24(dd, $J = 1.2, 5.4\text{Hz}$, 1H), 9.05(dd, $J = 5.4\text{Hz}$, 1H), 11.94(s, 1H)。

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参考例 4: 2-氯-3-甲基-6-(4-嘧啶基)-3H-嘧啶-4-酮的合成

将磷酰氯（4.60 克，30 毫摩尔）加入到二甲基甲酰胺（32 毫升）中在 0°C 下搅拌 20 分钟。向该溶液中加入 2-巯基-3-甲基-6-(4-嘧啶基)-3H-嘧啶-4-酮（4.40 克，20 毫摩尔）并搅拌 5 分钟，然后在 70°C 下搅拌 2 小时。将反应混合物倒入冰水中，用固体碳酸钾中和，再用乙酸乙酯提取。有机层用盐水洗涤，用硫酸钠干燥，并经减压蒸发。用硅胶柱色谱法（乙酸乙酯）提纯残余物，得到标题化合物（1.20 克，27%）。

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$^1\text{H-NMR}$ (CDCl_3) δ : 3.74(s, 3H), 7.56(s, 1H), 8.18(d, $J = 5.1\text{Hz}$, 1H), 8.92(d, $J = 5.1\text{Hz}$, 1H), 9.30(s, 1H)。

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$\text{MS}[\text{M}^+\text{H}]^+$: 223。

实施例 1: 2-(2-(4-氟-2-甲氧基苯基)哌嗪-4-基)-3-甲基-6-(4-吡啶基)-3H-嘧啶-4-酮二盐酸盐(No. XA468)的合成

将 2-溴-5-氟苯甲醚(11.8 克，57.6 毫摩尔)的四氢呋喃(60 毫升)溶液滴加到经回流的含有镁(1.40 克，57.6 毫摩尔)并含有少量 1,2-二溴乙烷的四氢呋喃(32 毫升)中，并回流 15 分钟。加入四氢呋喃(50 毫升)，将溶液冷却到 -78°C ，向该溶液中滴加草酸二乙酯(7.41 克，50.7 毫摩尔)的乙醚(50 毫升)溶液，在相同温度下搅拌 30 分钟，将溶液回温到 -10°C ，加入 1N 的盐酸水溶液(50 毫升)和水，有机层用乙醚提取，用盐水洗涤，用硫酸镁干燥，在减压除去溶剂后，将残余物通过硅胶柱色谱法纯化(洗脱液：己烷/乙酸乙酯 = 5/2)，得到 2-(4-氟-2-甲氧基苯基)-2-氧代乙酸乙酯(6.80 克,59%)。

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$^1\text{H-NMR}$ (CDCl_3) δ : 1.40 (3H, t, $J = 7.1\text{Hz}$), 3.87(3H, s), 4.89(2H, q, $J = 7.1\text{Hz}$), 6.68(1H, d, $J = 10.5\text{Hz}$), 6.77-6.81(1H, m), 7.91-7.95(1H, m)。

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将乙二胺(0.60 克, 10.0 毫摩尔)加入到 2-(4-氟-2-甲氧基苯基)-2-氧代乙酸乙酯(2.26 克, 10.0 毫摩尔)的乙醇(30 毫升)溶液中, 回流 4 小时。减压除去溶剂后, 将残余物用乙醇-乙醚洗涤, 得到 5,6-二氢-3-(4-氟-2-甲氧基苯基)吡嗪酮(1.76 克, 79%)。

5 $^1\text{H-NMR}$ (CDCl_3) δ : 3.50-3.56 (2H, m), 3.81 (3H, s), 3.88-3.92 (2H, m), 6.65(1H, d, $J = 11.0\text{Hz}$), 6.70-6.76 (1H, m), 6.89(1H, bs), 7.36-7.40(1H, m)。

10 将 5,6-二氢-3-(4-氟-2-甲氧基苯基)吡嗪酮加入到氢化铝锂(0.46 克, 12 毫摩尔)的乙醚(25 毫升)溶液中并回流 6 小时。向冰冷却的溶液中加入水(0.48 毫升)和 15%氢氧化钠溶液(0.48 毫升), 并再加入水(1.21 毫升), 将沉淀物过滤并用二氯甲烷洗涤。蒸发合并的有机层, 得到 2-(4-氟-2-甲氧基苯基)哌嗪(0.83 克, 99%)。

15 $^1\text{H-NMR}$ (CDCl_3) δ : 2.02(2H, s), 2.57-2.63(1H, m), 2.80-2.89(1H, m), 2.92-2.99(2H, m), 3.06-3.12(2H, m), 3.80(3H, s), 4.06(1H, d, $J = 10.0\text{Hz}$), 6.56-6.65(2H, m), 7.40(1H, t, $J = 7.8\text{Hz}$)。

20 将 2-氯-3-甲基-6-(4-吡啶基)-嘧啶-4-酮(222 毫克, 1.0 毫摩尔)加入到冰冷却的 2-(4-氟-2-甲氧基苯基)哌嗪(210 毫克, 1.0 毫摩尔)和三乙胺(0.15 毫升, 1.1 毫摩尔)溶于 N,N-二甲基甲酰胺(10 毫升)所形成的溶液中, 在该温度下搅拌 1 小时, 然后在室温下搅拌 2 小时, 第二天, 用冰-水使反应停止, 将滤液用水洗涤, 干燥得到 2-(2-(4-氟-2-甲氧基苯基)哌嗪-4-基)-3-甲基-6-(4-吡啶基)-嘧啶-4-酮(246 毫克, 62%)。

25 $^1\text{H-NMR}$ (CDCl_3) δ : 2.89-2.96(1H, m), 3.19-3.31(3H, m), 3.59(3H, s), 3.62-3.74(2H, m), 3.85(3H, s), 4.39-4.44(1H, m), 6.63-6.71(2H, m), 6.67(1H, s), 7.51-7.55(1H, m), 7.81(2H, dd, $J = 1.7, 4.6\text{Hz}$), 8.71(2H, dd, $J = 1.7, 4.6\text{Hz}$)。

30 将 4N 氯化氢的 1,4-二氧杂环己烷溶液(0.4 毫升)加入到 2-(2-(4-氟-2-甲氧基苯基)哌嗪-4-基)-3-甲基-6-(4-吡啶基)-嘧啶-4-酮(217 毫克, 0.6 毫摩尔)的二氯甲烷(5 毫升)溶液中, 并搅拌 15 分钟。加入乙醚后, 过滤, 用乙醚洗涤, 干燥得到标题化合物(260 毫克, 定量)。

实施例 2: 2-(2-(4-甲氧基苯基)-哌嗪-4-基)-3-甲基-6-(4-吡啶基)嘧啶-4-酮二盐酸盐(No. XA393)的合成

5 将 4-甲氧基苯甲酰甲基溴(9.94 克, 43.4 毫摩尔)的二甲基亚砜(50 毫升)溶液与水(1.6 毫升, 88.8 毫摩尔)在 50℃ 搅拌 2.5 小时。加入水并用乙酸乙酯提取溶液 3 次, 并用盐水洗涤, 然后用硫酸钠干燥。除去溶剂, 得到 4-甲氧基苯基乙二醛(8.30 克, 定量)。

$^1\text{H-NMR}$ (DMSO) δ : 3.84(3H, s), 6.60-6.69(1H, m), 7.04(2H, d, $J = 8.8$ Hz), 8.05(2H, d, $J = 9.1$ Hz)。

10 将乙二胺(3.74 克, 62.29 毫摩尔)的甲醇(5 毫升)溶液加入到冰冷却的 4-甲氧基苯基乙二醛(8.30 克, 45.5 毫摩尔)溶于甲醇(100 毫升)和四氢呋喃(50 毫升)所形成的溶液中并搅拌 10 分钟。冷却到 0℃ 后, 加入硼氢化钠(6.14 克, 162.2 毫摩尔)和另外的甲醇(50 毫升)并搅拌过夜。在除去溶剂之后, 加入氢氧化钠水溶液并用二氯甲烷提取三次, 用盐水洗涤, 并用硫酸钠干燥。在除去溶剂之后, 将残余物通过硅胶柱色谱法纯化(洗脱液: 二氯甲烷/乙醇/二乙胺 = 20/2/1), 得到 2-(4-甲氧基苯基)哌嗪(3.96 克, 45%)。

15 $^1\text{H-NMR}$ (CDCl_3) δ : 2.69(1H, dd, $J = 10.3, 11.9$ Hz), 2.80-3.01(4H, m), 3.07-3.11(1H, m), 3.68-3.73(1H, m), 3.79(3H, s), 6.84-6.88(2H, m), 7.27-7.32(2H, m)。

20 将三乙胺(697 毫克, 6.9 毫摩尔)、2-(4-甲氧基苯基)-哌嗪(430 毫克)的四氢呋喃(10 毫升)溶液在室温下搅拌 30 分钟并在 50℃ 搅拌 3 小时。减压除去溶剂, 并向残余物加入 1N 氢氧化钠水溶液并用二氯甲烷提取三次, 用盐水洗涤并用硫酸钠干燥。在减压除去溶剂之后, 将残余物通过硅胶柱色谱法纯化(洗脱液: 二氯甲烷/乙醇 = 10/1), 得到 2-(2-(4-甲氧基苯基)-哌嗪-4-基)-3-甲基-6-(4-吡啶基)嘧啶-4-酮(594 毫克, 76%)。

25 $^1\text{H-NMR}$ (CDCl_3) δ : 3.02(1H, dd, $J = 10.8, 12.7$ Hz), 3.18-3.25(3H, m), 3.55(3H, s), 3.57-3.67(2H, m), 3.82(3H, s), 3.98(1H, dd, $J = 2.7, 10.8$ Hz), 6.67(1H, s), 6.92(2H, d, $J = 8.7$ Hz), 7.37(2H, d, $J = 8.7$ Hz), 7.80(2H, d, $J = 6.0$ Hz), 8.71(2H, d, $J = 6.0$ Hz)。

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将4 N氯化氢的乙酸乙酯溶液(5毫升)加入到2-(2-(4-甲氧基苯基)-哌嗪-4-基)-3-甲基-6-(4-吡啶基)嘧啶-4-酮(594毫克, 1.6毫摩尔)的二氯甲烷(5毫升)溶液中, 并搅拌1小时。除去溶剂之后用乙酸乙酯洗涤, 干燥得到标题化合物(683毫克, 96%)。

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实施例 3: 2-(2-(4-氯苯基)-哌嗪-4-基)-3-甲基-6-(4-吡啶基)嘧啶-4-酮盐酸盐(No. XA371)的合成

将(4-氯苯基)乙酸甲酯(5.10 克, 27.6 毫摩尔)和 N-溴丁二酰亚胺(5.16 克, 29 毫摩尔)的四氯化碳溶液混合物用 Hg 灯处理。过滤之后, 减压除去溶剂, 并且将残余物溶于甲醇中。向 3-(4-氯苯基)哌嗪-2-酮(2.60 克, 12.3 毫摩尔)的二氯甲烷(100 毫升)溶液中加入乙二胺(2.03 毫升, 30.4 毫摩尔)、三乙胺(2.06 毫升, 14.8 毫摩尔)和二碳酸二叔丁酯(3.10 毫升, 13.5 毫摩尔)并搅拌。用 1N 氯化氢水溶液、水、盐水洗涤反应混合物, 然后干燥。在减压除去溶剂之后, 用硅胶柱色谱法纯化残余物, 得到 4-(叔丁氧羰基)-3-(4-氯苯基)-哌嗪-2-酮。

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$^1\text{H-NMR}$ (CDCl_3) δ : 1.44(9H, s), 3.21-3.32(2H, m), 3.48(1H, m), 4.04(1H, brs), 5.66(1H, brs), 7.10(1H, brs), 7.30-7.38(4H, m)。

将 4-(叔丁氧羰基)-3-(4-氯苯基)-哌嗪-2-酮(500 毫克, 1.6 毫摩尔)和乙酸(929 微升, 16 毫摩尔)加入到硼氢化钠(608 毫克, 16 毫摩尔)的 1,4-二氧杂环己烷(5 毫升)的回流溶液中, 并继续回流。用水猝灭反应并用二氯甲烷提取, 用盐水洗涤并干燥。除去溶剂之后, 将残余物用硅胶柱色谱法纯化, 得到 4-(叔丁氧羰基)-3-(4-氯苯基)哌嗪(330 毫克, 69%)。

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$^1\text{H-NMR}$ (CDCl_3) δ : 1.46(9H, s), 2.76-2.99(3H, m), 3.13(1H, dd, $J = 13.0\text{Hz}, 4.3\text{Hz}$), 3.45-3.49(2H, m), 3.92(1H, m), 5.15(1H, s), 7.27-7.33(4H, m)。

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将 4-(叔丁氧羰基)-3-(4-氯苯基)哌嗪(330 毫克, 1.1 毫摩尔)、2-氯-3-甲基-6-(4-吡啶基)嘧啶-4-酮(246 毫克, 1.1 毫摩尔)和三乙胺(170 微升, 1.22 毫摩尔)溶于四氢呋喃所形成的溶液回流。经过常规的反应后处理并通过硅胶柱色谱法纯化, 得到 2-(1-(叔丁氧羰基)-2-(4-氯苯基)-

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哌嗪-4-基)-3-甲基-6-(4-吡啶基)嘧啶-4-酮(500 毫克, 93%)。

$^1\text{H-NMR}$ (CDCl_3) δ : 1.45(9H, s), 3.09(1H, m), 3.35(3H, s), 3.40-3.63(4H, m), 3.96-4.19(2H, m), 5.43(1H, s), 6.68(1H, s), 7.23(2H, d, $J = 8.3\text{Hz}$), 7.32(2H, d, $J = 8.3\text{Hz}$), 7.78(2H, d, $J = 5.9\text{Hz}$), 8.72(2H, d, $J = 5.9\text{Hz}$)。

- 5 将4N氯化氢的乙酸乙酯溶液加入到2-(1-(叔丁氧羰基)-2-(4-氯苯基)-哌嗪-4-基)-3-甲基-6-(4-吡啶基)嘧啶-4-酮(500毫克, 1.0毫摩尔)的乙酸乙酯溶液中并搅拌。过滤而后干燥, 得到标题化合物(373毫克, 79%)。

- 10 实施例4: 3-甲基-2-(3-(4-((1-吡咯烷基)甲基)苯基)哌啶-1-基)-6-(4-吡啶基)嘧啶-4-酮富马酸盐(No. XB43)的合成

- 15 将四(三苯磷)钨(0.65 克, 0.56 毫摩尔)、4-甲酰基苯基硼酸(2.81 克, 18.7 毫摩尔)、2M 碳酸钠水溶液(18.7 毫升, 37.4 毫摩尔)和乙醇加入到氮气饱和的 3-溴吡啶(2.66 克, 16.8 毫摩尔)的甲苯溶液中并在氮气下回流 8 小时。向溶液中加入水并用乙酸乙酯提取, 用水和盐水洗涤并干燥。减压除去溶剂并用硅胶柱色谱法纯化残余物(洗脱液: 己烷/乙酸乙酯 = 1/1.5), 得到 4-(3-吡啶基)苯甲醛(0.78 克, 25%)。

- 20 将碘甲烷(0.8 毫升, 12.9 毫摩尔)加入到 4-(3-吡啶基)苯甲醛(0.78 克, 4.3 毫摩尔)的二氯甲烷溶液中并搅拌 2 天。加入另外的碘甲烷(0.8 毫升, 12.9 毫摩尔)并搅拌 3 小时。除去溶剂之后, 向残余物加入甲醇并用冰冷却。向溶液中加入硼氢化钠(6.4 克, 17.0 毫摩尔)并搅拌溶液 1.5 小时, 同时升温到室温。加入水之后减压除去有机溶剂并用乙酸乙酯提取, 用水和盐水洗涤并用硫酸钠干燥。在减压除去溶剂之后, 通过硅胶色谱法纯化残余物(洗脱液为乙酸乙酯到甲醇), 得到 3-(4-羟基甲基苯基)-1-甲基-1,2,5,6-四氢吡啶(0.63 克, 72%)。

- 25 向 4-(羟基甲基)苯基-1-甲基-1,2,5,6-四氢吡啶(0.63 克, 3.1 毫摩尔)的二氯甲烷溶液中加入三乙胺(1.29 毫升, 9.2 毫摩尔)、乙酸酐(0.35 毫升, 3.7 毫摩尔)并搅拌过夜。加入水之后减压除去有机溶剂并用乙酸乙酯提取, 用水和盐水洗涤并用硫酸钠干燥。减压除去溶剂, 得到 3-(4-乙酰氧基甲基苯基)-1-甲基-1,2,5,6-四氢吡啶(0.67 克, 89%)。

- 30 将 3-(4-乙酰氧基甲基苯基)-1-甲基-1,2,5,6-四氢吡啶(0.67 克, 2.7

毫摩尔)和氯甲酸 1-氯乙酯(0.36 毫升, 3.3 毫摩尔)溶于二氯乙烷所形成的溶液回流 2 小时。加入水之后减压除去有机溶剂并用乙酸乙酯提取, 用水和盐水洗涤, 并用硫酸钠干燥。在除去溶剂之后, 加入甲醇并回流 1.5 小时。在减压除去溶剂之后向残余物中加入四氢呋喃和水, 并且加入三乙胺(1.9 毫升, 13.6 毫摩尔)和二碳酸二叔丁酯(0.66 克, 3.0 毫摩尔)并搅拌。在加入水之后减压除去有机溶剂并用乙酸乙酯提取, 用水和盐水洗涤并用硫酸钠干燥。减压除去溶剂并通过硅胶色谱法纯化残余物, 得到 3-(4-乙酰氧基甲基苯基)-1-(叔丁氧羰基)-1,2,5,6-四氢吡啶(0.71 克, 78%)。

10 将钯炭加入到 3-(4-乙酰氧基甲基苯基)-1-(叔丁氧羰基)-1,2,5,6-四氢吡啶(0.71 克, 2.1 毫摩尔)的乙酸乙酯溶液中并在氢气环境下搅拌。在通过硅藻土过滤并减压除去溶剂之后, 加入甲醇和 1N 氢氧化钠水溶液并搅拌。在加入水之后减压除去有机溶剂, 用乙酸乙酯提取, 用水和盐水洗涤, 并用硫酸钠干燥。减压除去溶剂, 并将残余物通过硅胶色谱法纯化(洗脱液: 己烷/乙酸乙酯 = 3/1), 得到 3-(4-羟基甲基苯基)-1-(叔丁氧羰基)哌啶(0.39 克, 62%)。

15 将三乙胺(0.47 克, 3.4 毫摩尔)和甲磺酰氯(0.12 毫升, 1.6 毫摩尔)加入到冰冷却的 3-(4-羟基甲基苯基)-1-(叔丁氧羰基)哌啶(0.39 克, 1.34 毫摩尔)的二氯甲烷溶液中并搅拌 7.5 小时。向溶液加入吡咯烷(1.0 毫升, 12 毫摩尔)并搅拌过夜。在加入水之后减压除去有机溶剂并用乙酸乙酯提取, 用水和盐水洗涤并用硫酸钠干燥。减压除去溶剂并通过硅胶色谱法(洗脱液: 乙酸乙酯到乙酸乙酯/甲醇 = 1/1, 然后只是甲醇)纯化残余物, 得到 3-(4-(1-吡咯烷基)甲基苯基)-1-(叔丁氧羰基)哌啶(0.26 克, 56%)。

20 将 4N 氯化氢的乙酸乙酯溶液加入到 3-(4-(1-吡咯烷基)甲基苯基)-1-(叔丁氧羰基)哌啶(0.26 克, 0.75 毫摩尔)中并搅拌过夜。过滤并干燥之后, 加入三乙胺(0.5 毫升, 3.6 毫摩尔)、2-氯-3-甲基-6-(4-吡啶基)-嘧啶-4-酮(0.14 克, 0.63 毫摩尔)和四氢呋喃并在 70°C 搅拌。在加入水之后减压除去有机溶剂, 并用乙酸乙酯提取, 用水和盐水洗涤并用硫酸钠干燥。减压除去溶剂并将残余物溶解到乙酸乙酯中。加入富

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马酸(0.095 克, 0.82 毫摩尔)的丙酮溶液, 将所得沉淀物过滤并干燥, 得到标题化合物(0.29 克, 76%)。

5 实施例5: (R)-2-(2-(4-氯苯基)哌嗪-4-基)-3-甲基-6-(4-吡啶基)-嘧啶-4-酮(No. XA372)的合成

在-40°C下向(S)-2-甲基-CBS-噁唑硼烷(27.6 毫升, 1.0 M, 甲苯溶液, 27.6 毫摩尔)的溶液中加入硼烷-四氢呋喃络合物(166 毫升, 1.0 M, 四氢呋喃溶液, 166 毫摩尔)。在-40°C下通过滴液漏斗在 1 小时的时间内向所得溶液中加入 4'-氯苯甲酰甲基溴(32.25 克, 138.1 毫摩尔)的四氢呋喃(200 毫升)溶液。在低于 0°C 搅拌 3 小时之后, 滴加甲醇(约 50 毫升)。在室温下将所得溶液再搅拌 30 分钟之后, 减压除去溶剂。用 1 N 盐酸处理溶解于乙酸乙酯中的残余物, 形成白色沉淀, 将其过滤掉。分离滤液层, 先后用盐酸和盐水洗涤有机层, 用无水硫酸钠干燥, 过滤并减压浓缩。残余物不经进一步纯化用于下一步。

15 将残余物溶解于乙醚(250 毫升)中, 并与氢氧化钾(15.5 克, 276 毫摩尔)的水(250 毫升)溶液一起剧烈搅拌。在反应原料耗尽之后, 分层。用盐水洗涤有机层, 用无水硫酸钠干燥, 过滤, 并减压浓缩。残余物不经再纯化就用于下一步反应。

20 将残余物与苄胺(37.7 毫升, 345 毫摩尔)在 80°C 加热 4.5 小时。在冷却到室温后, 用乙醚/己烷洗涤所得白色晶体并收集, 得到(S)-2-苄基氨基-1-(4-氯苯基)乙醇(23.8 克, 65.8%)。在 120°C 下减压蒸馏出滤液中过量的苄胺。从残余物中得到另一份(S)-2-苄基氨基-1-(4-氯苯基)乙醇(2.41 克, 6.7%)。

25 $^1\text{H NMR}(\text{CDCl}_3)$ δ : 2.68(1H, dd, $J = 12.3, 8.9\text{Hz}$), 2.92(1H, dd, $J = 12.3, 3.7\text{Hz}$), 3.80(1H, d, $J = 11.9\text{Hz}$), 3.86(1H, d, $J = 11.9\text{Hz}$), 4.68(1H, dd, $J = 8.9, 3.7\text{Hz}$), 7.30(9H, m)。

30 在-78°C下在 20 分钟内向(S)-2-苄基氨基-1-(4-氯苯基)乙醇(15.76 克, 60.21 毫摩尔)和三乙胺(33.6 毫升, 241 毫摩尔)的二氯甲烷(300 毫升)悬浮液中加入亚硫酸氯(4.83 毫升, 66.2 毫摩尔)的二氯甲烷(20 毫升)溶液。在-78°C 搅拌所得悬浮液 20 分钟, 并在 0°C 再搅拌 20 分钟。将

反应混合物在乙醚和水之间分配，并用盐水洗涤有机层，用硫酸钠干燥，过滤，并减压浓缩。残余物通过硅胶柱色谱法纯化(洗脱液：10-20%乙酸乙酯-己烷)，得到(2RS,5S)-3-苄基-5-(4-氯苯基)-1,2,3-噁噻唑烷-2-氧化物(16.2克，87.4%)，为浅黄色固体。

5 由于是 S-氧化物，所得产物为两种非对应异构体的混合物。

主要的异构体： $^1\text{H NMR}(\text{CDCl}_3)$ δ : 3.31(1H, dd, $J = 10.5, 9.9\text{Hz}$), 3.55(1H, dd, $J = 9.0, 6.3\text{Hz}$), 3.88(1H, d, $J = 13.2\text{Hz}$), 4.37(1H, d, $J = 13.2\text{Hz}$), 5.49(1H, dd, $J = 10.5, 6.3\text{Hz}$), 7.22-7.43(9H, m)。

次要的异构体： $^1\text{H NMR}(\text{CDCl}_3)$ δ : 3.21(1H, dd, $J = 13.5, 4.5\text{Hz}$),
10 3.77(1H, dd, $J = 13.5, 11.4\text{Hz}$), 4.05(1H, d, $J = 13.5\text{Hz}$), 4.38(1H, d, $J = 13.5\text{Hz}$), 5.99(1H, dd, $J = 11.4, 4.5\text{Hz}$), 7.22-7.43(9H, m)。

将(2RS,5S)-3-苄基-5-(4-氯苯基)-1,2,3-噁噻唑烷-2-氧化物(16.2克，52.6毫摩尔)和叠氮化钠(17.11克，263.2毫摩尔)溶于N,N-二甲基甲酰胺(100毫升)所形成的溶液在70℃加热24小时。将反应混合物在乙醚
15 和水之间分配，并先后用水和盐水洗涤有机层，用无水硫酸钠干燥，并减压浓缩。残余物通过硅胶柱色谱法纯化(洗脱液：10-20%乙酸乙酯-己烷)，得到(R)-N-苄基-2-叠氨基-2-(4-氯苯基)乙胺(12.7克，83.8%)，为黄色油状物。

$^1\text{H NMR}(\text{CDCl}_3)$ δ : 2.81(1H, dd, $J = 12.5, 5.1\text{Hz}$), 2.89(1H, dd, $J = 12.5, 8.5\text{Hz}$), 3.82(2H, s), 4.64(1H, dd, $J = 8.5, 5.1\text{Hz}$), 7.23-7.36(9H, m)。
20

在室温下用三苯膦(13.9克，52.9毫摩尔)处理(R)-N-苄基-2-叠氨基-2-(4-氯苯基)乙胺(12.7克，44.1毫摩尔)的四氢呋喃(176毫升)溶液。在加入水(20毫升)之后，在60℃加热反应混合物1小时。将反应混合物浓缩并在乙醚和1N盐酸之间分配。用1N氢氧化钠水溶液处理水层
25 直到溶液变为碱性。用二氯甲烷充分地提取所得溶液。用水洗涤合并的有机层，用无水硫酸钠干燥，过滤，并且减压浓缩。残余物不经进一步纯化用于下一步反应。

将残余物与草酸二乙酯(18毫升，132毫摩尔)在120℃加热1.5小时。用乙醚洗涤所得白色沉淀并收集，得到(R)-1-苄基-5-(4-氯苯基)-2,3-二氧代哌嗪(11.4克，82.2%)。
30

$^1\text{H NMR}(\text{CDCl}_3)$ δ : 3.46(1H, dd, $J = 12.9, 8.1\text{Hz}$), 3.60(1H, dd, $J = 12.9, 3.8\text{Hz}$), 4.48(1H, d, $J = 14.7\text{Hz}$), 4.79(1H, d, $J = 14.7\text{Hz}$), 4.80(1H, dd, $J = 8.9, 3.8\text{Hz}$), 6.83(1H, s), 7.13(4H, m), 7.27(5H, m)。

5 在室温下向(*R*)-1-苄基-5-(4-氯苯基)-2,3-二氧代哌嗪(11.4 克, 36.3 毫摩尔)的四氢呋喃(300 毫升)悬浮液中加入硼烷-四氢呋喃络合物(181 毫升, 1.0 M 的四氢呋喃溶液, 181 毫摩尔)。在将反应混合物搅拌 24 小时之后, 在 0°C 用甲醇(50 毫升)猝灭, 并减压浓缩。用 10% 氢氧化钠水溶液(300 毫升)处理残余物并在 100°C 加热 2 小时。在室温下冷却后, 用二氯甲烷充分地提取混合物。将合并的有机层用无水硫酸钠干燥, 10 过滤, 减压浓缩。残余物不经再纯化就用于下一步反应。

在室温下向残余物和三乙胺(7.58 毫升, 54.4 毫摩尔)的二氯甲烷(150 毫升)溶液中加入二碳酸二叔丁酯(9.49 克, 43.5 毫摩尔)。搅拌 45 分钟之后, 将所得混合物在二氯甲烷和水之间分配, 用无水硫酸钠干燥, 过滤并减压浓缩。残余物通过硅胶柱色谱法纯化(洗脱液: 10-20% 乙酸乙酯-己烷), 得到(*R*)-1-苄基-4-(叔丁氧羰基)-3-(4-氯苯基)哌嗪(11.6 克, 82.8%), 为油状物。

15 $^1\text{H NMR}(\text{CDCl}_3)$ δ : 1.43(9H, s), 2.16(1H, dt, $J = 4.4, 11.7\text{Hz}$), 2.40(1H, dd, $J = 4.4, 11.7\text{Hz}$), 2.78(1H, dd, $J = 4.4, 11.7\text{Hz}$), 2.98(1H, dt, $J = 4.4, 11.7\text{Hz}$), 3.20(1H, d, $J = 12.8\text{Hz}$), 3.42(1H, d, $J = 12.9\text{Hz}$), 3.57(1H, d, $J = 12.9\text{Hz}$), 3.89(1H, d, $J = 12.8\text{Hz}$), 5.17(1H, s), 7.24-7.36(9H, m)。

20 在室温下向(*R*)-1-苄基-4-(叔丁氧羰基)-3-(4-氯苯基)哌嗪(11.6 克, 30.1 毫摩尔)的 1,2-二氯乙烷(80 毫升)溶液中加入氯甲酸 1-氯乙酯(4.91 毫升, 45.1 毫摩尔)。在该反应原料消失后, 减压浓缩反应混合物。然后将残余物溶解于甲醇(100 毫升)中并回流 30 分钟。过滤所得白色沉淀并用甲醇洗涤, 得到(*R*)-2-(4-氯苯基)哌嗪二盐酸盐, 使用氢氧化钠水溶液使其分离并用二氯甲烷提取, 得到(*R*)-2-(4-氯苯基)哌嗪(3.04 克, 51.4%), 为白色固体。

25 $^1\text{H NMR}(\text{CDCl}_3)$ δ : 2.65(1H, dd, $J = 12.0, 10.5\text{Hz}$), 2.82-3.04(4H, m), 3.09(1H, d, $J = 12.6\text{Hz}$), 3.73(1H, dd, $J = 10.1, 2.7\text{Hz}$), 7.29(4H, m)。

30 减压浓缩滤液并将其在乙醚和 1 N 盐酸之间分配。用 1 N 氢氧化

钠水溶液中和水层并用二氯甲烷充分地提取。将合并的有机提取液用无水硫酸钠干燥，过滤并减压浓缩。在 Boc 保护(Boc_2O , Et_3N , CH_2Cl_2)之后纯化残余物，得到(*R*)-1,4-二(叔丁氧羰基)-2-(4-氯苯基)哌嗪(2.70 克, 22.6%)，为浅黄色固体。

5 $^1\text{H NMR}(\text{CDCl}_3)$ δ : 1.43(9H, s), 1.46(9H, s), 2.96(2H, m), 3.32(1H, dd, $J = 13.8, 4.2\text{Hz}$), 3.74(1H, m), 3.94(1H, d, $J = 11.4\text{Hz}$), 4.40(1H, d, $J = 13.2\text{Hz}$), 5.23(1H, s), 7.25(2H, m)。

向(*R*)-2-(4-氯苯基)哌嗪二盐酸盐(1.09 克, 4.05 毫摩尔)的四氢呋喃(24 毫升)悬浮液加入三乙胺(2.82 毫升, 20.3 毫摩尔)，在室温下搅拌
10 15 分钟之后，分批加入 2-氯-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮(748 毫克, 3.38 毫摩尔)。在氯嘧啶酮消失后，减压浓缩反应混合物。将残余物在饱和碳酸氢钠水溶液和二氯甲烷之间分配。用无水硫酸钠干燥有机层，过滤并减压浓缩，得到浅黄色固体，用乙醇重结晶，得到
15 (*R*)-2-(2-(4-氯苯基)哌嗪-4-基)-3-甲基-6-(4-吡啶基)-嘧啶-4-酮(998 毫克, 77.4%)，为白色晶体。通过 HPLC 测定对映体过量(>99% ee)。将晶体转化为其二盐酸盐。

$^1\text{H NMR}(\text{DMSO-}d_6)$ δ : 3.40(3H, m), 3.46(3H, s), 3.62(1H, dd, $J = 12.0, 13.2\text{Hz}$), 3.72(1H, m), 3.92(1H, t, $J = 15.5\text{Hz}$), 4.68(1H, t, $J = 10.1\text{Hz}$),
20 7.18(1H, s), 7.58(2H, d, $J = 8.6\text{Hz}$), 7.83(2H, d, $J = 8.6\text{Hz}$), 8.57(2H, d, $J = 6.6\text{Hz}$), 9.01(2H, d, $J = 6.6\text{Hz}$), 10.20(1H, d, $J = 7.8\text{Hz}$), 10.76(1H, br s)
MS: 382(M+H)

$[\alpha]_D^{24} = +62.2^\circ (c 1.00, \text{H}_2\text{O})$

25 实施例6: (*S*)-2-(2-(4-氯苯基)哌嗪-4-基)-3-甲基-6-(4-吡啶基)-嘧啶-4-酮
(No. XA373)的合成

使用与上述方法相同的方法、但用(*R*)-2-甲基-CBS-噁唑硼烷替换(*S*)-2-甲基-CBS-噁唑硼烷来制备(*S*)-异构体。

$^1\text{H NMR}(\text{DMSO-}d_6)$ δ : 3.40(3H, m), 3.45(3H, s), 3.53-3.96(3H, m),
30 4.68(1H, t, $J = 13.5\text{Hz}$), 7.10(1H, s), 7.60(2H, d, $J = 8.3\text{Hz}$), 7.76(2H, d, $J = 8.3\text{Hz}$), 8.38(1H, br s), 8.91(1H, d, $J = 4.8\text{Hz}$), 9.88(1H, br s), 10.31(1H,

br s)

MS: 382(M+H)

$[\alpha]_D^{24} = -63.3$ (c 1.00, H₂O)

5 实施例7: 2-(2-(4-氟-2-甲氧基苯基)哌嗪-4-基)-3-甲基-6-(4-嘧啶基)-嘧啶-4-酮(No. YA0366)的合成

将 2-溴-5-氟苯甲醚(11.8 克, 57.6 毫摩尔)的四氢呋喃(60 毫升)溶液滴加到经回流的含有镁(1.40 克, 57.6 毫摩尔)并包含少量 1,2-二溴乙烷的四氢呋喃(32 毫升)中并回流 15 分钟。在加入四氢呋喃(50 毫升)之后, 10 将溶液冷却到-78℃, 并向溶液中滴加在乙醚(50 毫升)中的草酸二乙酯(7.41 克, 50.7 毫摩尔)。在相同温度下搅拌 30 分钟之后, 将溶液升温到-10℃并加入 1N 氯化氢水溶液(50 毫升)和水。用乙醚提取有机层, 用盐水洗涤并用硫酸镁干燥。在减压除去溶剂之后, 通过硅胶柱色谱法纯化残余物(洗脱液:己烷/乙酸乙酯 = 5/2), 得到 2-(4-氟-2-甲氧基苯基)-2-氧代乙酸乙酯(6.80g, 59%)。 15

¹H-NMR(CDCl₃) δ: 1.40(3H, t, J = 7.1Hz), 3.87(3H, s), 4.89(2H, q, J = 7.1Hz), 6.68(1H, d, J = 10.5Hz), 6.77-6.81(1H, m), 7.91-7.95(1H, m)。

将乙二胺(0.60 克, 10.0 毫摩尔)加入到 2-(4-氟-2-甲氧基苯基)-2-氧代乙酸乙酯(2.26 克, 10.0 毫摩尔)的乙醇(30 毫升)溶液中并回流 4 小时。在减压除去溶剂之后, 用乙醇-乙醚洗涤残余物, 得到 5, 6-二氢-3-(4-氟-2-甲氧基苯基)吡嗪酮(1.76 克, 79%)。 20

¹H-NMR(CDCl₃) δ: 3.50-3.56(2H, m), 3.81(3H, s), 3.88-3.92(2H, m), 6.65(1H, d, J = 11.0Hz), 6.70-6.76(1H, m), 6.89(1H, bs), 7.36-7.40(1H, m)。

25 将 5,6-二氢-3-(4-氟-2-甲氧基苯基)吡嗪酮加入到氢化铝锂(0.46 克, 12 毫摩尔)的乙醚(25 毫升)溶液中并回流 6 小时。向冰冷冷却的溶液中加入水(0.48 毫升)、15%氢氧化钠溶液(0.48 毫升), 并再加入水(1.21 毫升), 将沉淀过滤并用二氯甲烷洗涤。蒸发合并的有机层, 得到 2-(4-氟-2-甲氧基苯基)哌嗪(0.83 克, 99%)。

30 ¹H-NMR(CDCl₃) δ: 2.02(2H, s), 2.57-2.63(1H, m), 2.80-2.89(1H, m),

2.92-2.99(2H, m), 3.06-3.12(2H, m), 3.80(3H, s), 4.06(1H, d, J = 10.0Hz), 6.56-6.65(2H, m), 7.40(1H, t, J = 7.8Hz)。

5 将2-氯-3-甲基-6-(4-嘧啶基)-嘧啶-4-酮(223毫克, 1.0毫摩尔)加入到冰冷却的2-(4-氟-2-甲氧基苯基)哌嗪(210毫克, 1.0毫摩尔)和三乙胺(0.15毫升, 1.1毫摩尔)溶于N,N-二甲基甲酰胺(10毫升)所得溶液中, 并在该温度下搅拌0.5小时, 然后在室温下搅拌3小时。通过冰-水猝灭反应并用水洗涤滤液, 干燥, 得到2-(2-(4-氟-2-甲氧基苯基)哌嗪-4-基)-3-甲基-6-(4-嘧啶基)-嘧啶-4-酮(262毫克, 66%)。

10 $^1\text{H-NMR}$ (CDCl_3) δ : 2.89-2.98(1H, m), 3.22-3.31(3H, m), 3.60(3H, s), 3.62-3.71(2H, m), 3.86(3H, s), 4.39-4.44(1H, m), 6.43-6.73(2H, m), 7.33(1H, s), 7.52-7.56(1H, m), 8.19(1H, d, J = 5.1Hz), 8.87(1H, d, J = 5.2Hz), 9.28(1H, d, J = 1.2Hz)。

15 将4N氯化氢的1,4-二氧杂环己烷溶液(0.2毫升)加入到2-(2-(4-氟-2-甲氧基苯基)哌嗪-4-基)-3-甲基-6-(4-嘧啶基)-嘧啶-4-酮(238毫克, 0.6毫摩尔)的二氯甲烷(5毫升)溶液中并搅拌15分钟。在除去溶剂之后用甲醇和乙酸乙酯洗涤, 干燥, 得到标题化合物(223毫克, 86%)。

实施例8: 2-(2-(4-氯苯基)-哌嗪-4-基)-3-甲基-6-(4-嘧啶基)嘧啶-4-酮(No. YA0269)的合成

20 搅拌4-氯苯甲酰甲基溴(11.11克, 65.9毫摩尔)的二甲基亚砜(60毫升)溶液和水(1.7毫升)。用乙酸乙酯提取溶液3次并用水洗涤两次和盐水洗涤, 然后用硫酸钠干燥。在除去溶剂之后, 用己烷-乙酸乙酯洗涤残余物并干燥, 得到4-氯苯基乙二醛(4.43克, 50%)。

25 $^1\text{H-NMR}$ (CDCl_3) δ : 4.02-4.16(2H, m), 5.90-5.95(1H, m), 7.45-7.53(2H, m), 8.05-8.11(2H, m)。

30 将乙二胺(1.90克, 31.6毫摩尔)的甲醇(10毫升)溶液加入到冰冷却的4-氯苯基乙二醛(4.43克, 26.3毫摩尔)的甲醇(100毫升)和四氢呋喃(30毫升)溶液中并搅拌10分钟。在加入硼氢化钠(3.26克, 86.3毫摩尔)之后, 加入另外的甲醇(50毫升)并搅拌过夜。在除去溶剂之后, 加入稀盐酸并用乙醚提取两次。在加入氢氧化钠之后, 用二氯甲烷提取碱

性的水层三次并用盐水洗涤，再用硫酸钠干燥。在通过过滤除去溶剂之后，通过硅胶柱色谱法纯化残余物(洗脱液：二氯甲烷/乙醇 = 10/1 到二氯甲烷/乙醇/二乙胺 = 20/2/1)，得到 2-(4-氯苯基)-哌嗪(0.43 克，9%)。

5 $^1\text{H-NMR}$ (CDCl_3) δ : 2.67(1H, dd, $J = 10.5, 12.0$ Hz), 2.87-3.03(4H, m), 3.07-3.13(1H, m), 3.77(1H, dd, $J = 2.7, 10.2$ Hz), 7.27-7.36(4H, m)。

将三乙胺(528 毫克，5.2 毫摩尔)加入到 4-(氯苯基)哌嗪(216 毫克，1.1 毫摩尔)和 2-氯-3-甲基-6-(4-嘧啶基)嘧啶-4-酮的溶液中并在 50°C 搅拌 2 小时。减压除去溶剂，并向残余物中加入 1N 氢氧化钠水溶液，并用二氯甲烷提取。在用盐水洗涤并通过硫酸钠干燥之后，减压除去溶剂，并使用 ISOLUTE(注册商标) SI(英国 International Sorvent Technology 公司)纯化残余物(洗脱液：二氯甲烷/乙醇 = 10/1)，得到标题化合物(396 毫克，95%)。

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15 实施例 9: 2-(2-(4-氯苯基)-6,6-二甲基-哌嗪-4-基)-3-甲基-6-吡啶-4-基-3H-嘧啶-4-酮二盐酸盐(No. XA1986)的合成

在 80°C 下搅拌 4'-氯-2-溴乙酰苯(25.0 克，107 毫摩尔)、水(1.92 毫升，107 毫摩尔)和 47% 氢溴酸(0.20 毫升)的二甲基亚砜(160 毫升)溶液 5 小时。在将反应混合物倾入到水中之后，过滤沉淀物，用乙醚洗涤并干燥，得到 4'-氯-2,2-二羟基乙酰苯(14.0 克，70%)。 $^1\text{H NMR}$ (300MHz, CDCl_3), δ : 5.92(1H, s), 7.45-7.52(2H, m), 8.05-8.20(2H, m)。

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在室温下将 2,2-二甲基-乙二胺(2.10 毫升，20.0 毫摩尔)加入到 4'-氯-2,2-二羟基乙酰苯(3.70 克，20.0 毫摩尔)的甲醇(120 毫升)和四氢呋喃(30 毫升)溶液中。2 小时之后，在 0°C 下向反应混合物中加入硼氢化钠(1.50 克，40.0 毫摩尔)。搅拌反应混合物过夜，然后用 1N 盐酸猝灭反应并真空蒸发。用乙酸乙酯提取该酸性溶液，然后使用 15% 的氢氧化钠水溶液将之碱化到 pH 11 并用二氯甲烷提取。将提取液用硫酸钠干燥，并真空浓缩。向残余物在 1N 氢氧化钠水溶液(40 毫升)和四氢呋喃(60 毫升)的溶液中加入二碳酸二叔丁酯(6.40 毫升，27.9 毫摩尔)。

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30 将所得悬浮液在 40°C 加热 8 小时，然后用乙酸乙酯和水稀释。将有机

层用另外的乙酸乙酯提取，干燥，并真空浓缩。粗产物通过闪柱色谱法纯化，得到 2-(4-氯苯基)-4-叔丁氧羰基-6,6-二甲基-哌嗪(1.69 克，28%，2 步)。¹H NMR(300MHz, CDCl₃), δ: 1.15(3H, s), 1.21(3H, s), 2.47-2.70(2H, m), 3.72-4.16(3H, m), 7.26-7.37(4H, m)。

5 将 4 M 氯化氢的乙酸乙酯溶液(5.0 毫升，20.0 毫摩尔)加入到 2-(4-氯苯基)-4-叔丁氧羰基-6,6-二甲基-哌嗪(1.69 克，5.2 毫摩尔)的溶液中。12 小时后，除去溶剂，过滤并用乙酸乙酯洗涤沉淀物，得到 2-(4-氯苯基)-6,6-二甲基-哌嗪二盐酸盐(1.43 克，95%)。¹H NMR(300MHz, DMSO-d₆), δ: 1.40(3H, s), 1.58(3H, s), 3.24-3.99(4H, m), 4.73(1H, m),
10 7.69(2H, d, J = 8.4Hz), 7.79(2H, m), 9.99-10.12(2H, m)。

在室温下搅拌 2-(4-氯苯基)-6,6-二甲基-哌嗪盐酸盐(155 毫克，0.52 毫摩尔)、2-氯-3-甲基-6-(4-吡啶基)-嘧啶-4-酮(111 毫克，0.50 毫摩尔)和三乙胺(0.42 毫升，2.50 毫摩尔)的四氢呋喃(5 毫升)溶液 6 小时。将全体进行真空蒸发并用二氯甲烷提取残余物。将有机层用水洗涤，干燥，并真空浓缩。将残余物溶解于甲醇(5mL)中并用 4 M 氯化氢的乙酸乙酯溶液(0.50 毫升，2.0 毫摩尔)处理 20 分钟。在除去溶剂之后，过滤并用乙醇洗涤沉淀物，得到 2-(2-(4-氯苯基)-6,6-二甲基-哌嗪-4-基)-3-甲基-6-吡啶-4-基-3H-嘧啶-4-酮二盐酸盐(235 毫克，97%)。

20 实施例 10: 2-(2S-(4-溴苯基)-哌嗪-1-基)-3-甲基-6-吡啶-4-基-3H-嘧啶-4-酮(No. XA2051)的合成

将氯甲酸苄酯(2.40 毫升，15.0 毫摩尔)加入到 2S-(4-溴苯基)-哌嗪二盐酸盐溶于 1 N 氢氧化钠水溶液(30 毫升)和二氯甲烷(60 毫升)中所得的溶液中。在室温下搅拌所得悬浮液 1.5 小时。将其在乙酸乙酯之间分配
25 之后用另外的乙酸乙酯提取有机层，干燥，并真空浓缩。用乙醚洗涤沉淀物，得到 2S-(4-溴苯基)-4-苄氧羰基-哌嗪(2.92 克，57%)。¹H NMR(300MHz, CDCl₃), δ 2.87-3.01(2H, m), 3.47(2H, m), 3.93-3.97(1H, m), 4.20(2H, m), 5.16(2H, s), 7.36(5H, m), 7.42-7.61(4H, m)。

30 在 80 °C 下搅拌 2S-(4-溴苯基)-4-苄基氧羰基-哌嗪(788 毫克，2.10 毫摩尔)、2-氯-3-甲基-6-(4-吡啶基)-嘧啶-4-酮(444 毫克，2.00 毫摩尔)和二

5 异丙基乙基胺(0.70毫升, 4.00毫摩尔)的二甲基甲酰胺(20毫升)溶液3小时。将反应混合物倾入到水中并全部用乙酸乙酯提取。用盐水洗涤有机层, 干燥, 并真空浓缩。对残余物进行色谱纯化, 得到2-(2*S*-(4-溴苯基)-4-苄氧羰基-哌嗪-1-基)-3-甲基-6-吡啶-4-基-3*H*-咪啶-4-酮(601毫克, 54%)。¹H NMR(300MHz, CDCl₃), δ: 3.05(1H, m), 3.30-3.48(3H, m), 3.64(3H, s), 4.08-4.22(2H, m), 4.68(1H, m), 5.15(1H, d, J = 12.3Hz), 5.21(1H, d, J = 12.6Hz), 6.63(1H, s), 7.21(2H, d, J = 8.4Hz), 7.28-7.39(7H, m), 7.59(2H, d, J = 6.3Hz), 8.68(2H, d, J = 6.3Hz)。

10 将氢氧化钾(168毫克, 3.0毫摩尔)加入到2-{2*S*-(4-溴苯基)-4-苄氧羰基-哌嗪-1-基}-3-甲基-6-吡啶-4-基-3*H*-咪啶-4-酮的乙醇(2.0毫升)溶液中。在室温下搅拌8小时之后, 通过制备HPLC纯化, 得到2-(2*S*-(4-溴苯基)-哌嗪-1-基)-3-甲基-6-吡啶-4-基-3*H*-咪啶-4-酮(40毫克, 26%)。

15 实施例 11: (*S*)-3-甲基-6-(4-吡啶基)-2-(3-(4-(3-(吡咯烷-1-基)吡咯烷-1-基)苯基)哌嗪-1-基)咪啶-4-酮(No. XA2032)的合成

20 在 90°C 加热(*S*)-2-(4-溴苯基)-1,4-二(叔丁氧羰基)哌嗪(1.33 克, 3.00 毫摩尔)、(*R*)-3-羟基吡咯烷(520 毫克, 4.20 毫摩尔)、乙酸钡(27 毫克, 0.12 毫摩尔)、2-(二叔丁基膦)联苯(72 毫克, 0.24 毫摩尔)和叔丁醇钠(808 毫克, 8.41 毫摩尔)的叔丁醇(20 毫升)悬浮液 3.5 小时。在用乙酸乙酯稀释后, 将所得混合物通过硅藻土柱。真空浓缩滤液, 并且通过硅胶柱色谱法纯化残余物, 用 10-50%乙酸乙酯-己烷洗脱, 得到(*S*)-1,4-二(叔丁氧羰基)-2-(4-((*R*)-3-羟基吡咯烷基)苯基)哌嗪(733 毫克, 54.5%), 为黄色泡沫。

25 在 0°C 下向(*S*)-1,4-二(叔丁氧羰基)-2-(4-((*R*)-3-羟基吡咯烷基)苯基)哌嗪(733 毫克, 1.64 毫摩尔)和三乙胺(0.34 毫升, 2.46 毫摩尔)的二氯甲烷(20 毫升)溶液中加入甲磺酰氯(0.152 毫升, 1.97 毫摩尔)。搅拌 20 分钟之后, 将反应混合物在乙酸乙酯和水之间分配。用盐水洗涤有机层, 用无水硫酸钠干燥, 并真空浓缩, 得到(*S*)-1,4-二(叔丁氧羰基)-2-(4-((*R*)-3-(甲磺酰氧基)吡咯烷-1-基)苯基)哌嗪(877 毫克, 定量), 为褐色固体。

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向(*S*)-1,4-二(叔丁氧羰基)-2-(4-((*R*)-3-甲磺酰氧基-吡咯烷基)苯基)哌嗪(877毫克, 1.64毫摩尔)的甲苯(10毫升)溶液中加入吡咯烷(0.64毫升, 8.19毫摩尔), 并在90°C加热所得溶液8小时。在用TLC检查反应原料的消耗情况之后, 将反应混合物在乙酸乙酯和饱和碳酸氢钠水溶液之间分配。用盐水洗涤有机层, 用无水硫酸钠干燥, 并真空浓缩。通过硅胶柱色谱法纯化残余物, 用30-100%乙酸乙酯-己烷、然后是3-10%甲醇-乙酸乙酯洗脱, 得到(*S*)-1,4-二(叔丁氧羰基)-2-(4-((*S*)-3-(吡咯烷-1-基)吡咯烷-1-基)苯基)哌嗪(479毫克, 58%), 为浅黄色粉末。

在室温下向(*S*)-1,4-二(叔丁氧羰基)-2-(4-((*S*)-3-(吡咯烷-1-基)吡咯烷-1-基)苯基)哌嗪(479毫克, 0.957毫摩尔)的二氯甲烷(4毫升)溶液中加入4 N氯化氢的乙酸乙酯溶液(4毫升)。搅拌3小时后, 收集所得沉淀并真空干燥, 得到(*S*)-2-(4-((*S*)-3-(吡咯烷-1-基)吡咯烷-1-基)苯基)哌嗪四盐酸盐(370毫克, 87%), 为白色固体。

在室温下向(*S*)-2-(4-((*S*)-3-(吡咯烷-1-基)吡咯烷-1-基)苯基)哌嗪四盐酸盐(98毫克, 0.22毫摩尔)的四氢呋喃(5毫升)悬浮液加入三乙胺(0.20毫升, 1.40毫摩尔)和2-氯-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮(44毫克, 0.20毫摩尔)。搅拌24小时后, 真空浓缩反应混合物。将残余物溶解于二氯甲烷和碳酸氢钠水溶液中, 并将溶液通过CHEM ELUT CE1010(由VARIAN生产)。浓缩滤液, 并在二异丙醚和乙醇的混合物中洗涤所得晶体, 得到(*S*)-2-(3-(4-(3-(吡咯烷-1-基)吡咯烷-1-基)苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)嘧啶-4-酮(80毫克, 82%), 为浅黄色固体。

实施例12: (*S*)-3-甲基-6-(4-嘧啶基)-2-(3-(4-(3-(吡咯烷-1-基)吡咯烷-1-基)苯基)哌嗪-1-基)嘧啶-4-酮(No. YA1577)的合成

在室温下向(*S*)-2-(4-((*S*)-3-(吡咯烷-1-基)吡咯烷-1-基)苯基)哌嗪四盐酸盐(99毫克, 0.22毫摩尔)的四氢呋喃(5毫升)悬浮液中加入三乙胺(0.20毫升, 1.40毫摩尔)和2-氯-3-甲基-6-(4-嘧啶基)-3*H*-嘧啶-4-酮(45毫克, 0.20毫摩尔)。搅拌24小时之后, 真空浓缩反应混合物。将残余物溶解于二氯甲烷和碳酸氢钠水溶液中, 并将溶液通过CHEM ELUT CE1010(由VARIAN生产)。浓缩滤液, 并用二异丙醚和乙醇的混合物洗

涤所得晶体,得到(*S*)-3-甲基-6-(4-吡啶基)-2-(3-(4-(3-(吡咯烷-1-基)吡咯烷-1-基)苯基)哌嗪-1-基)-吡啶-4-酮(65毫克, 66%), 为浅黄色固体。

5 实施例13: (*S*)-2-(3-(4-(*N*-环己基-*N*-甲基氨基)苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)嘧啶-4-酮(No. XA1999)的合成

10 在 80°C 加热(*S*)-2-(4-溴苯基)-1,4-二(叔丁氧羰基)哌嗪(1.21 克, 2.75 毫摩尔)、*N*-甲基环己基胺(0.43 毫升, 3.30 毫摩尔)、乙酸钡(25 毫克, 0.11 毫摩尔)、2-(二叔丁基膦)联苯(66 毫克, 0.22 毫摩尔)和叔丁醇钠(370 毫克, 3.85 毫摩尔)的叔丁醇(15 毫升)悬浮液 8 小时。将所得溶液在乙酸乙酯和水之间分配。用盐水洗涤有机层, 用无水硫酸钠干燥, 并真空浓缩。通过硅胶柱色谱法纯化残余物, 用 10-15% 乙酸乙酯-己烷洗脱, 得到(*S*)-1,4-二(叔丁氧羰基)-2-(4-(*N*-环己基-*N*-甲基氨基)苯基)哌嗪(917 毫克), 为白色晶体。

15 向(*S*)-1,4-二(叔丁氧羰基)-2-(4-(*N*-环己基-*N*-甲基氨基)苯基)哌嗪的二氯甲烷(4 毫升)溶液中加入 4*N* 氯化氢的乙酸乙酯溶液(4 毫升)。在搅拌 40 分钟之后, 收集含有杂质的白色沉淀。通过反相色谱法纯化该混合物, 用 0.05% TFA 的水-乙腈溶液洗脱, 得到(*S*)-2-(4-(*N*-环己基-*N*-甲基氨基)苯基)哌嗪(59 毫克, 两步收率 8%), 为澄清的油状物。

20 在室温下向(*S*)-2-(4-(*N*-环己基-*N*-甲基氨基)苯基)哌嗪(50 毫克, 0.183 毫摩尔)和三乙胺(0.077 毫升, 0.55 毫摩尔)的溶液中加入 2-氯-3-甲基-6-(4-吡啶基)-3*H*-嘧啶-4-酮(37 毫克, 0.17 毫摩尔)。搅拌 4.5 小时之后, 真空浓缩反应混合物。将残余物在二氯甲烷和饱和碳酸氢钠水溶液之间分配。用无水硫酸钠干燥有机层并浓缩。残余物用反相色谱法纯化, 用 0.05% TFA 的水-乙腈溶液洗脱, 得到(*S*)-2-(3-(4-(*N*-环己基-*N*-甲基氨基)苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)嘧啶-4-酮(67 毫克, 88%), 为油状物, 将其溶解于乙酸乙酯中, 并用 4 *N* 氯化氢的乙酸乙酯溶液处理, 得到其三盐酸盐。

30 实施例14: (*S*)-2-(3-(4-(*N,N*-二甲基氨基)苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)嘧啶-4-酮三盐酸盐(No. XA2017)的合成

5 在 90°C 加热(S)-2-(4-溴苯基)-1,4-二(叔丁氧羰基)哌嗪(1.14 克, 2.59 毫摩尔)、N,N-二甲胺盐酸盐(422 毫克, 5.17 毫摩尔)、乙酸钡(23 毫克, 0.10 毫摩尔)、2-(二叔丁基膦)联苯(62 毫克, 0.21 毫摩尔)和叔丁醇钠(845 毫克, 8.80 毫摩尔)的叔丁醇(15 毫升)悬浮液 3 小时。在用乙酸乙酯稀释之后, 将所得溶液通过硅藻土柱。浓缩滤液, 并用硅胶柱色谱法纯化残余物, 用 10-20% 乙酸乙酯-己烷洗脱, 得到(S)-1,4-二(叔丁氧羰基)-2-(4-(N,N-二甲基氨基)苯基)哌嗪(556 毫克, 53%), 为白色晶体。

10 向(S)-1,4-二(叔丁氧羰基)-2-(4-(N,N-二甲基氨基)苯基)哌嗪(556 毫克, 1.37 毫摩尔)的二氯甲烷(4 毫升)溶液中加入 4 N 氯化氢的乙酸乙酯溶液(4 毫升)。搅拌 8.5 小时之后, 收集白色沉淀并真空干燥, 得到(S)-2-(4-(N,N-二甲基氨基)苯基)哌嗪三盐酸盐(413 毫克, 96%), 为白色晶体。

15 在室温下向(S)-2-(4-(N,N-二甲基氨基)苯基)哌嗪三盐酸盐(115 毫克, 0.365 毫摩尔)的四氢呋喃(5 毫升)悬浮液中加入三乙胺(0.28 毫升, 2.0 毫摩尔), 然后加入 2-氯-3-甲基-6-(4-吡啶基)-3H-嘧啶-4-酮(74 毫克, 0.33 毫摩尔)。搅拌 10 小时之后, 将所得混合物真空浓缩。将残余物溶解于二氯甲烷和饱和碳酸氢钠水溶液中, 并将溶液通过 CHEM ELUT CE1010(由 VARIAN 生产)。真空浓缩滤液, 得到晶体, 将其用二异丙醚洗涤。在将晶体溶解于乙酸乙酯中之后, 用 4 N 氯化氢的乙酸乙酯溶液处理所得溶液。收集白色沉淀并真空干燥, 得到(S)-2-(3-(4-(N,N-二甲基氨基)苯基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)嘧啶-4-酮三盐酸盐(135 毫克, 81%)。

25 实施例 15: (S)-2-(3-(4-甲氧基联苯-4-基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)嘧啶-4-酮(No. XA1991)的合成

30 将(S)-2-(4-溴苯基)-1,4-二(叔丁氧羰基)哌嗪(1.82 克, 4.11 毫摩尔)、4-甲氧基苯基硼酸(937 毫克, 6.17 毫摩尔)、碳酸钠(2.18 克, 20.6 毫摩尔)和四(三苯膦)钯(0)(238 毫克, 0.206 毫摩尔)的混合物溶解于二甲氧基乙烷(20 毫升)和水(20 毫升)中, 并将所得溶液回流 3 小时。在冷却到室温之后, 将混合物在乙酸乙酯和水之间分配。用盐水洗涤有机层,

用无水硫酸钠干燥，并真空浓缩。用乙酸乙酯洗涤所得固体，得到(S)-1,4-二(叔丁氧羰基)-2-(4'-甲氧基联苯-4-基)哌嗪(1.46克，75.9%)，为白色固体。

5 在室温下向(S)-1,4-二(叔丁氧羰基)-2-(4'-甲氧基联苯-4-基)-哌嗪(1.46克，3.12毫摩尔)的二氯甲烷(8毫升)溶液中加入4N氯化氢的乙酸乙酯溶液(8毫升)。搅拌1小时之后，收集沉淀并真空干燥，得到(S)-2-(4'-甲氧基联苯-4-基)哌嗪二盐酸盐(1.00克，94%)，为白色固体。

10 在室温下向(S)-2-(4'-甲氧基联苯-4-基)-哌嗪二盐酸盐(237毫克，0.694毫摩尔)的四氢呋喃(5毫升)悬浮液中加入三乙胺(0.40毫升，2.9毫摩尔)，然后加入2-氯-3-甲基-6-(4-吡啶基)-3H-嘧啶-4-酮(128毫克，0.579毫摩尔)。在搅拌28小时之后，真空浓缩所得混合物。将残余物在二氯甲烷和饱和碳酸氢钠水溶液之间分配，并用无水硫酸钠干燥有机层，然后真空浓缩。用热乙醇洗涤所得固体，得到(S)-2-(3-(4-甲氧基联苯-4-基)哌嗪-1-基)-3-甲基-6-(4-吡啶基)嘧啶-4-酮(252毫克，96%)，
15 将其用4N氯化氢的乙酸乙酯溶液处理，得到其二盐酸盐(252毫克)，为浅黄色晶体。

实施例16: (S)-2-(3-苄基哌嗪-1-基)-3-甲基-6-(4-吡啶基)嘧啶-4-酮(No. XA2004)的合成

20 在室温下向L-苯丙氨酸乙酯盐酸盐(3.875克，16.87毫摩尔)、Boc-甘氨酸(2.815克，16.07毫摩尔)的二氯甲烷(100毫升)溶液中加入三乙胺(2.35毫升，16.87毫摩尔)，然后加入1-(3-二甲基氨基丙基)-3-乙基碳二亚胺盐酸盐(3.23克，16.87毫摩尔)。搅拌所得混合物2.5小时，之后将其在乙酸乙酯和水之间分配。用1N盐酸、盐水、然后是饱和碳酸氢钠
25 水溶液洗涤有机层，用无水硫酸钠干燥，并真空浓缩，得到Boc-甘氨酸酰基苯丙氨酸乙酯(5.96克)。

30 在室温下向Boc-甘氨酸酰基苯丙氨酸乙酯(5.96克)的二氯甲烷(20毫升)溶液中加入三氟乙酸(20毫升)。在搅拌1.5小时之后，将所得溶液真空浓缩。将残余物溶解于水中，向其中加入碳酸氢钠，直到pH为9。在搅拌溶液几小时之后，收集所得白色晶体并真空干燥，得到(S)-3-苄基

-2, 5-二氧代哌嗪(2.29克, 两步收率70%), 为白色粉末。

5 在室温下向(S)-3-苄基-2, 5-二氧代哌嗪(2.284 克, 11.18 毫摩尔)的四氢呋喃(20 毫升)悬浮液中加入硼烷-四氢呋喃络合物(49 毫升, 1.0 M, THF 溶液, 49 毫摩尔)。将所得混合物回流几小时, 然后在 0℃用甲醇猝灭。在真空浓缩之后, 用 10%氢氧化钠水溶液处理残余物, 将其用二氯甲烷充分地提取。用水洗涤有机层, 用无水硫酸钠干燥, 并真空浓缩, 得到白色晶体, 用乙醚洗涤, 得到(S)-2-苄基哌嗪(795 毫克, 40.3%)。

10 在室温下向(S)-2-苄基哌嗪(48毫克, 0.27毫摩尔)的四氢呋喃(5毫升)溶液中加入三乙胺(0.10毫升, 0.74毫摩尔), 然后加入 2-氯-3-甲基-6-(4-吡啶基)-3H-嘧啶-4-酮(55毫克, 0.248毫摩尔)。在回流24小时之后, 真空浓缩所得混合物。将残余物在二氯甲烷和饱和碳酸氢钠水溶液之间分配, 用无水硫酸钠干燥有机层, 然后真空浓缩。残余物通过反相色谱法纯化, 用0.05% TFA的水-乙腈溶液洗脱, 得到(S)-2-(3-苄基哌嗪-1-基)-3-甲基-6-(4-吡啶基)嘧啶-4-酮(73毫克, 81%), 将其用4 N氯化氢的乙酸乙酯溶液处理, 得到其二盐酸盐, 为黄色粉末。

15 实施例17: (S)-3-甲基-2-(3-(4-(1,2,4-噁二唑-3-基)苯基)哌嗪-1-基)-6-(4-吡啶基)嘧啶-4-酮(No. XA2039)的合成

20 在室温下向 4-氰基乙酰基苯(11.32 克, 77.98 毫摩尔)的二氯甲烷(200 毫升)溶液中滴加溴(4.00 毫升, 78.0 毫摩尔)。在搅拌几分钟之后, 用水洗涤反应混合物, 用无水硫酸钠干燥, 并真空浓缩, 得到 4-氰基苯甲酰甲基溴(17.73 克), 为白色固体。

25 用水(0.90 毫升, 49.99 毫摩尔)处理 4-氰基苯甲酰甲基溴(11.20 克, 49.99 毫摩尔)的二甲基亚砜(83 毫升)溶液。在室温下搅拌 24 小时之后, 将其倾入到冰-水中, 并用乙醚提取。用水、然后是盐水洗涤有机层, 用无水硫酸钠干燥, 并真空浓缩。通过硅胶柱色谱法纯化残余物, 用 20-50%乙酸乙酯的己烷溶液洗脱, 得到 4-氰基苯基乙二醛(5.10 克, 64.1%), 为黄色固体。

30 在室温下向 4-氰基苯基乙二醛(2.21 克, 12.5 毫摩尔)的甲醇(30 毫

升)和四氢呋喃(10 毫升)溶液中加入乙二胺(1.00 毫升, 14.96 毫摩尔)。在室温下搅拌混合物 1 小时之后, 在 0℃加入硼氢化钠(943 毫克, 24.92 毫摩尔)。将溶液升温到室温并再搅拌 2 小时, 然后用 1 N 盐酸将其猝灭。在真空浓缩之后, 将混合物在乙醚和水之间分配。用氢氧化钠碱化水层并用二氯甲烷提取。将提取液用无水硫酸钠干燥, 然后真空浓缩, 得到带红色的油状物(1.69 克)。将油状物溶解于二氯甲烷(30 毫升)中, 在室温下向其中加入三乙胺(3.82 毫升, 27.41 毫摩尔)和二碳酸二叔丁基酯(5.98 克, 27.41 毫摩尔)。搅拌反应混合物几小时, 然后将其在乙酸乙酯和水之间分配。用无水硫酸钠干燥有机层, 然后真空浓缩。通过硅胶柱色谱法纯化残余物, 用 5-20%乙酸乙酯的己烷溶液洗脱, 得到 1,4-二(叔丁氧羰基)-2-(4-氰基苯基)哌嗪(2.46 克, 50.9%), 为白色晶体。

将 1,4-二(叔丁氧羰基)-2-(4-氰基苯基)哌嗪(558 毫克, 1.44 毫摩尔)、羟胺盐酸盐(300 毫克, 4.23 毫摩尔)和碳酸钠(763 毫克, 7.20 毫摩尔)的乙醇(3 毫升)和水(3 毫升)溶液在 80℃加热 2.5 小时, 然后将其在二氯甲烷和水之间分配。用二氯甲烷提取水层。合并的有机层用硫酸钠干燥, 并真空浓缩, 得到白色泡沫(680 毫克), 将其溶解于甲苯(5 毫升)中, 并用原甲酸三乙酯(2.4 毫升, 14.4 毫摩尔)和对甲苯磺酸(27 毫克, 0.14 毫摩尔)处理。将溶液在 90℃加热 1 小时, 然后将其在二氯甲烷和饱和碳酸氢钠水溶液之间分配。有机层用无水硫酸钠干燥, 并真空浓缩。用乙酸乙酯洗涤所得白色晶体并真空干燥, 得到 1,4-二(叔丁氧羰基)-2-(4-(1,2,4-咪唑-3-基)苯基)哌嗪(464 毫克, 两步收率 75%)。

在室温下向 1,4-二(叔丁氧羰基)-2-(4-(1,2,4-咪唑-3-基)苯基)哌嗪(464 毫克, 1.08 毫摩尔)的二氯甲烷(2 毫升)溶液中加入 4 N 氯化氢的乙酸乙酯溶液(3 毫升)。在搅拌 1.5 小时之后, 收集沉淀物并真空干燥, 得到 2-(4-(1,2,4-咪唑-3-基)苯基)哌嗪二盐酸盐(321 毫克, 98%), 为白色粉末。

在室温下向 2-(4-(1,2,4-咪唑-3-基)苯基)哌嗪二盐酸盐(102 毫克, 0.34 毫摩尔)的四氢呋喃(6 毫升)悬浮液中加入三乙胺(0.23 毫升, 1.65 毫摩尔), 然后加入 2-氯-3-甲基-6-(4-吡啶基)-3H-嘧啶-4-酮(73 毫克, 0.33

毫摩尔)。在搅拌24小时之后，真空浓缩所得混合物。将残余物溶解于二氯甲烷和饱和碳酸氢钠水溶液中，并将溶液通过CHEM ELUT CE1010(由VARIAN生产)。真空浓缩滤液，得到晶体，将其用二异丙醚和乙醇洗涤，得到(S)-2-(3-(4-(1,2,4-噁二唑-3-基)苯基)哌啶-1-基)-3-甲基-6-(4-吡啶基)嘧啶-4-酮(102毫克，74%)，为白色粉末。

实施例 18: 2-[4-(2-甲氧基苯基氨基)-哌啶-1-基]-3-甲基-6-(吡啶-4-基)-3H-嘧啶-4-酮(No. XB276)的合成

在室温下向甲氧基苯胺(3.1g, 25.2毫摩尔)和 4-氧代-哌啶-1-羧酸叔丁酯(5.0克, 25.1毫摩尔)的甲醇(100毫升)溶液中加入三乙酰氧基硼氢化钠(13.4克, 63.2毫摩尔)。在搅拌6小时之后，将所得悬浮液在乙酸乙酯和1N氢氧化钠之间分配。用乙酸乙酯提取水层。用盐水洗涤合并的有机层，用硫酸镁干燥，并真空浓缩。通过硅胶色谱法纯化残余物，用10-20%乙酸乙酯的己烷溶液洗脱，得到4-(2-甲氧基苯基氨基)-哌啶-1-羧酸叔丁酯(2.7g, 8.8mmol, 35%)，为浅黄色油状物。

在室温下向 4-(2-甲氧基苯基氨基)-哌啶-1-羧酸叔丁酯(2.7g, 8.8mmol)的甲醇(30 毫升)溶液中加入 4 N 氯化氢的乙酸乙酯溶液(20 毫升)。在搅拌 1 小时之后，将所得悬浮液真空浓缩。将残余物在氯仿和 1N 氢氧化钠之间分配。用氯仿提取水层。用盐水洗涤合并的有机层，用硫酸镁干燥，并真空浓缩。通过硅胶色谱法纯化残余物，用 10-20% 甲醇的氯仿溶液洗脱，得到 4-(2-甲氧基苯基氨基)-哌啶(1.8 克, 8.7 毫摩尔, 99%)，为白色晶体。

向 4-(2-甲氧基苯基氨基)-哌啶(0.8 克, 3.87 毫摩尔)和三乙胺(1.3 克, 12.8 毫摩尔)的四氢呋喃(20 毫升)溶液中分批加入 2-氯-3-甲基-6-(吡啶-4-基)-3H-嘧啶-4-酮(0.8 克, 3.61 毫摩尔)。在搅拌 12 小时之后，将所得悬浮液在氯仿和 1N 氢氧化钠之间分配。用氯仿提取水层。用盐水洗涤合并的有机层，用硫酸镁干燥，并真空浓缩。通过硅胶色谱法纯化残余物，用 5-10% 甲醇的氯仿溶液洗脱，得到 2-(4-(2-甲氧基苯基氨基)-哌啶-1-基)-3-甲基-6-(吡啶-4-基)-3H-嘧啶-4-酮(1.2 克, 3.07 毫摩尔, 85%)，为白色晶体。

实施例19: 3-甲基-2-(3-(4-(4-甲基哌嗪-1-基)-苯基)-哌啶-1-基)-6-(吡啶-4-基)-3H-嘧啶-4-酮(No. XB278)的合成

5 将(4-溴-苯基)-乙酸乙酯(2.31克, 9.50毫摩尔)的二甲基亚砜(6毫升)溶液加入到氢氧化钠(407毫克, 60%的油, 10.17毫摩尔)的悬浮液中并搅拌3分钟。向溶液中加入(3-溴丙基)-氨基甲酸叔丁酯(2.03克, 8.52毫摩尔)的二甲基亚砜(6毫升)溶液并在50℃搅拌30分钟。将所得溶液在乙酸乙酯和饱和氯化铵水溶液之间分配。用乙酸乙酯提取水层。用水和盐水洗涤合并的有机层, 通过硅藻土柱干燥, 并真空浓缩。残余物用硅胶色谱法纯化, 用乙酸乙酯/己烷(4/1到3/1, v/v)洗脱, 得到3-(4-溴-苯基)-6-叔丁氧羰基氨基己酸乙酯(2.43克, 74%)。

10 在室温下向3-(4-溴-苯基)-6-叔丁氧羰基氨基己酸乙酯(2.43克, 6.32毫摩尔)的乙酸乙酯(3毫升)溶液中加入4 N氯化氢的乙酸乙酯溶液(6毫升)。在搅拌30分钟之后真空除去溶剂, 得到6-氨基-3-(4-溴-苯基)-己酸乙酯盐酸盐, 其不经进一步纯化用于下一步。

15 将6-氨基-3-(4-溴-苯基)-己酸乙酯盐酸盐、碳酸钾(1039毫克, 7.52毫摩尔)的乙醇(50毫升)溶液回流20小时。在加入稀盐酸之后真空除去溶剂并向残余物加入水。过滤, 用水洗涤并干燥, 得到3-(4-溴-苯基)-哌啶-2-酮(1387毫克, 两步收率86%)。

20 向冰冷却的3-(4-溴-苯基)-哌啶-2-酮(37.97克, 149毫摩尔)的四氢呋喃(250毫升)溶液中加入硼烷-四氢呋喃络合物(335毫升, 1.0 M, THF溶液, 335毫摩尔)。在室温下搅拌溶液过夜, 然后在加入10%的氯化氢水溶液之后回流1.5小时。真空除去溶剂, 并将残余物在二氯甲烷和1N氢氧化钠之间分配。用二氯甲烷提取水层。用水和盐水洗涤合并的有机层, 用硫酸钠干燥, 并真空浓缩。将残余物溶解于水(100毫升)和浓盐酸(100毫升)中并回流3小时。向溶液加入氢氧化钠并用二氯甲烷提取所得溶液。用水和盐水洗涤有机层, 用硫酸钠干燥, 真空浓缩, 得到3-(4-溴-苯基)-哌啶(32.18克, 90%)。

25 在室温下向3-(4-溴-苯基)-哌啶(25.2克, 105毫摩尔)和三乙胺(13克, 128毫摩尔)的四氢呋喃(250毫升)悬浮液中加入二碳酸二叔丁酯(25.2

克, 105毫摩尔)。在搅拌1小时之后, 将所得悬浮液在乙酸乙酯和1N氢氧化钠之间分配。用乙酸乙酯提取水层。用盐水洗涤合并的有机层, 用硫酸镁干燥, 并真空浓缩。由己烷洗涤残余物, 得到3-(4-溴苯基)-哌啶-1-羧酸叔丁酯(35.7克, 105毫摩尔, 100%), 为白色晶体。

5 在室温下向 3-(4-溴苯基)-哌啶-1-羧酸叔丁酯(3.0 克, 8.8 毫摩尔)、乙酸钡(80 毫克, 0.36 毫摩尔)、2-(二叔丁基膦)联苯(210 毫克, 0.70 毫摩尔)和叔丁醇钠(1.2 克, 125 毫摩尔)的甲苯(30 毫升)悬浮液中加入 N-甲基哌嗪(1.3 克, 13.0 毫摩尔)。在 90°C 加热 5 小时之后, 使所得悬浮液通过硅藻土柱。减压浓缩滤液, 并通过硅胶色谱法纯化残余物, 用
10 5-25%乙酸乙酯的己烷溶液洗脱, 得到 3-(4-(4-甲基哌嗪-1-基)-苯基)-哌啶-1-羧酸叔丁酯(2.0 克, 5.56 毫摩尔, 63%), 为白色晶体。

 在室温下向3-(4-(4-甲基哌嗪-1-基)-苯基)-哌啶-1-羧酸叔丁酯(2.0 克, 5.56毫摩尔)的甲醇(20毫升)溶液中加入4 N氯化氢的乙酸乙酯溶液(20毫升)。搅拌1小时之后, 真空浓缩所得悬浮液。用乙酸乙酯洗涤残余物, 得到3-(4-(4-甲基哌嗪-1-基)-苯基)-哌啶三盐酸盐(1.84克, 4.99
15 毫摩尔, 90%), 为白色晶体。

 向3-(4-(4-甲基哌嗪-1-基)-苯基)-哌啶三盐酸盐(0.4克, 1.08毫摩尔)和三乙胺(0.6克, 5.93毫摩尔)的四氢呋喃(10毫升)溶液中分批加入2-氯-3-甲基-6-(吡啶-4-基)-3H-嘧啶-4-酮(0.22克, 0.99毫摩尔)。在搅拌12小
20 时之后, 将所得悬浮液在氯仿和1N氢氧化钠之间分配。用氯仿提取水层。用盐水洗涤合并的有机层, 用硫酸镁干燥, 并真空浓缩。通过硅胶色谱法纯化残余物, 用5-10%甲醇的氯仿溶液洗脱, 得到3-甲基-2-(3-(4-(4-甲基哌嗪-1-基)-苯基)-哌啶-1-基)-6-(吡啶-4-基)-3H-嘧啶-4-酮(0.31克, 0.70毫摩尔, 71%), 为白色晶体。

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实施例 20: 2-(3-(4-环己基氨基苯基)-哌啶-1-基)-3-甲基-6-(吡啶-4-基)-3H-嘧啶-4-酮(No. XB301)的合成

 在室温下向3-(4-溴苯基)-哌啶-1-羧酸叔丁酯(8.0克, 23.5毫摩尔)、乙酸钡(210毫克, 0.94毫摩尔)、2-(二叔丁基膦)联苯(560毫克, 1.88毫
30 摩尔)和叔丁醇钠(3.2克, 33.3毫摩尔)的甲苯(80毫升)悬浮液中加入环己

胺(2.8克, 28.2毫摩尔)。在90℃加热5小时之后, 将所得悬浮液通过硅藻土柱。减压浓缩滤液并通过硅胶色谱法纯化残余物, 用5-25%乙酸乙酯的己烷溶液洗脱, 得到3-(4-环己基氨基苯基)-哌啶-1-羧酸叔丁酯(6.74克, 18.8毫摩尔, 80%), 为白色晶体。

5 在室温下向3-(4-环己基氨基苯基)-哌啶-1羧酸叔丁酯(6.74克, 18.8毫摩尔)的甲醇(50毫升)溶液中加入4 N氯化氢的乙酸乙酯溶液(40毫升)。在搅拌1小时之后, 真空浓缩所得悬浮液。用乙酸乙酯洗涤残余物, 得到3-(4-环己基氨基苯基)-哌啶二盐酸盐(5.84克, 17.6毫摩尔, 94%), 为白色晶体。

10 向3-(4-环己基氨基苯基)-哌啶二盐酸盐(1.0克, 3.02毫摩尔)和三乙胺(1.5克, 14.8毫摩尔)的四氢呋喃(20毫升)溶液中分批加入2-氯-3-甲基-6-(吡啶-4-基)-3H-嘧啶-4-酮(0.64克, 2.89毫摩尔)。在搅拌12小时之后, 将所得悬浮液在氯仿和1N氢氧化钠之间分配。用氯仿提取水层。用盐水洗涤合并的有机层, 用硫酸镁干燥, 并真空浓缩。通过硅胶色谱法
15 纯化残余物, 用5-10%甲醇的氯仿溶液洗脱, 得到2-(3-(4-环己基氨基苯基)-哌啶-1-基)-3-甲基-6-(吡啶-4-基)-3H-嘧啶-4-酮(1.23克, 2.77毫摩尔, 96%), 为白色晶体。

20 实施例21: 2-(4-(4-溴-苯基)-哌啶-1-基)-3-甲基-6-吡啶-4-基-3H-嘧啶-4-酮(No. XB267)的合成

将4-溴苯甲醛(22.40克, 121.1毫摩尔)、丙二酸二甲酯(19.37克, 146.6毫摩尔)、催化量的乙酸和催化量的哌啶在甲苯(100毫升)中的混合物回流6小时, 同时共沸除水。将所得溶液在乙酸乙酯和水之间分配。用乙酸乙酯提取水层。用水、饱和碳酸氢钠水溶液和盐水洗涤合并的有机
25 层, 用硫酸钠干燥。真空浓缩有机溶剂, 得到2-(4-溴-苯亚甲基)-丙二酸二乙酯, 为油状物, 其不经进一步纯化用于下一步。

30 向冰冷却的丙二酸二甲酯(19.35克, 146.5毫摩尔)和甲醇钠(30.12g, 为28%的甲醇溶液, 156.1毫摩尔)的甲醇(300毫升)溶液中加入2-(4-溴-苯亚甲基)-丙二酸二乙酯的甲醇溶液(50毫升)。在搅拌3小时之后, 真空除去溶剂, 并将残余物在乙酸乙酯和稀盐酸之间分配。

用乙酸乙酯提取水层。用盐水洗涤合并的有机层，用硫酸钠干燥。真空浓缩有机溶剂，得到 3-(4-溴-苯基)-2,4-双-乙氧羰基-戊二酸二乙酯，为油状物，其不经进一步纯化用于下一步。

5 将 3-(4-溴-苯基)-2,4-双-乙氧羰基-戊二酸二乙酯的浓盐酸(100 毫升)和乙酸(100 毫升)溶液回流 8 小时。真空除去溶剂并将残余物用乙腈重结晶，得到 3-(4-溴-苯基)-戊二酸(第一批产量 22.84 克，65%；第二批产量 3.84 克，11.05%；从 4-溴代苯甲醛计算)。

10 将 3-(4-溴-苯基)-戊二酸(26.68 克，92.9 毫摩尔)的乙酸酐(100 毫升)溶液回流 1.5 小时。真空除去溶剂，使用甲苯共沸除去残留的溶剂。向残余物中加入四氢呋喃(200 毫升)和氨水(28%，50 毫升)并搅拌过夜。在真空除去溶剂之后，加入乙酸酐(100 毫升)并回流 4 小时。真空除去溶剂，接着用甲苯共沸蒸馏，之后将残余物在乙醚和水之间分配。过滤悬浮液并干燥，得到 4-(4-溴-苯基)-哌啶-2,6-二酮(12.53 克，50%)，为固体。

15 向冰冷却的硼氢化锂(4.13 克，189.6 毫摩尔)的四氢呋喃(200 毫升)溶液中加入三甲基氯硅烷(41.52 克，382.2 毫摩尔)。搅拌 5 分钟之后，加入 4-(4-溴-苯基)-哌啶-2,6-二酮(12.53 克，46.7 毫摩尔)并搅拌过夜。在加入 10%氯化氢水溶液之后真空浓缩所得溶液。将残余物溶解于氢氧化钠水溶液和甲醇中，加入二碳酸二叔丁酯(11.45 克，52.5 毫摩尔)的甲醇(10 毫升)溶液并搅拌 6 小时。在真空除去溶剂之后，加入浓盐酸并搅拌过夜。在用乙醚提取溶液之后，向水层加入氢氧化钠将其变为碱性，并用二氯甲烷提取。用盐水洗涤有机层，用硫酸钠干燥。减压除去溶剂之后，将残余的乙醚和二氯甲烷混合并溶解于四氢呋喃(200 毫升)中。加入二碳酸二叔丁酯(7.45 克，34.1 毫摩尔)的四氢呋喃(10 毫升)溶液和三乙胺并搅拌过夜。真空浓缩所得溶液。通过硅胶色谱法纯化残余物，用己烷/乙酸乙酯(5/1, v/v)洗脱，得到 4-(4-溴-苯基)-哌啶-1-羧酸叔丁酯(14.4 克，91%)，为固体。

30 在室温下向所得 4-(4-溴-苯基)-哌啶-1-羧酸叔丁酯(1114 毫克，3.27 毫摩尔)的乙酸乙酯(1 毫升)溶液中加入 4 N 氯化氢的乙酸乙酯溶液(2 毫升)。搅拌 5 小时之后，真空除去溶剂，并用乙酸乙酯洗涤所得固体

并真空干燥，得到 4-(4-溴苯基)-哌啶盐酸盐(884 毫克，98%)，为白色固体。

5 搅拌4-(4-溴苯基)-哌啶盐酸盐(279毫克，1.01毫摩尔)和三乙胺(554毫克，5.47毫摩尔)、2-氯-3-甲基-6-(吡啶-4-基)-3H-嘧啶-4-酮(206毫克，0.929毫摩尔)的四氢呋喃(20毫升)溶液3小时。将所得溶液用四氢呋喃稀释并过滤。在减压除去溶剂之后，通过CHEM ELUT CE1010(由VARIAN生产)纯化所得残余物，用二氯甲烷/乙醇(15/1, v/v)洗脱并用乙酸乙酯洗涤，得到2-(4-(4-溴苯基)-哌啶-1-基)-3-甲基-6-吡啶-4-基-3H-嘧啶-4-酮(368毫克，93%)，为固体。

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实施例22：3-甲基-6-吡啶-4-基-2-[4-(4-吡咯烷-1-基-苯基)-哌啶-1-基]-3H-嘧啶-4-酮(No. XB269)的合成

15 在氮保护气氛下在 90℃下加热 4-(4-溴苯基)-哌啶-1-羧酸叔丁酯(1.97克，5.79毫摩尔)、乙酸钯(54毫克，0.24毫摩尔)、2-(二叔丁基膦)联苯(154毫克，0.52毫摩尔)和叔丁醇钠(846毫克，8.80毫摩尔)、吡咯烷(587毫克，8.25毫摩尔)的甲苯(80毫升)悬浮液3小时。将所得悬浮液通过硅藻土柱并在乙酸乙酯和水之间分配。用乙酸乙酯提取水层。将合并的有机层用盐水洗涤，用硫酸钠干燥，并真空浓缩。残余物通过HPLC纯化，得到4-(4-吡咯烷-1-基-苯基)-哌啶-1-羧酸叔丁酯为固体，其不经再纯化就用于下一步。

20

25 在室温下向所得 4-(4-吡咯烷-1-基-苯基)-哌啶-1-羧酸叔丁酯的乙酸乙酯(5毫升)溶液中加入 4 N 氯化氢的乙酸乙酯溶液(10毫升)。搅拌3小时之后，真空除去溶剂并通过 HPLC 纯化所得固体。向所得级分加入氢氧化钠并用二氯甲烷提取水层。有机层用盐水洗涤后并使之通过硅藻土。减压除去溶剂，得到 4-(4-吡咯烷-1-基-苯基)-哌啶(1.01克，76%)。

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30 将 4-(4-吡咯烷-1-基-苯基)-哌啶(215毫克，0.933毫摩尔)和三乙胺(391毫克，3.86毫摩尔)、2-氯-3-甲基-6-(吡啶-4-基)-3H-嘧啶-4-酮(187毫克，0.844毫摩尔)的四氢呋喃(10毫升)溶液回流5小时。用四氢呋喃稀释所得溶液并过滤。在减压除去溶剂之后，通过 CHEM ELUT

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CE1010(由 VARIAN 生产)纯化所得残余物,用二氯甲烷/乙醇(15/1, v/v)洗脱并用乙酸乙酯洗涤,得到 3-甲基-6-吡啶-4-基-2-(4-(4-吡咯烷-1-基-苯基)-哌啶-1-基)-3*H*-嘧啶-4-酮(284 毫克, 81%), 为固体。

5 实施例23: 2-(4-(6-氟苯并[b]噻吩-3-基)哌啶-1-基)-1-甲基-1*H*-[4,4']联嘧啶基-6-酮(No. YB253)的合成

从根据 Watanabe(J. Heterocyclic Chem., 30, 445(1993))报导的方法制备的 1-乙酰基哌啶-4-羧酸来合成 2-[4-(6-氟苯并[b]噻吩-3-基)哌啶-1-基]-1-甲基-1*H*-[4,4']联嘧啶-6-酮的关键中间体 4-(6-氟苯并[b]噻吩-3-基)哌啶盐酸盐。

10 向 1-苯甲酰基哌啶-4-羧酸(66 克, 285 毫摩尔)的二氯甲烷(160 毫升)溶液中加入亚硫酸氯(26 毫升, 388 毫摩尔)。在 60℃ 搅拌 1 小时之后, 将混合物分批加入到搅拌的 2,4-二氟苯(45 克, 397 毫摩尔)和无水氯化铝(88 克, 666 毫摩尔)的二氯甲烷(245 毫升)悬浮液中, 并将反应混合物回流 5 小时。将反应混合物倾入到冰和浓盐酸的混合物中并用氯仿提取。将有机层用硫酸钠干燥, 并减压蒸发溶剂。用己烷重结晶, 得到 1-苯甲酰基-4-(2,4-二氟苯甲酰基)哌啶(46 克, 50%), 为无色晶体。

15 在室温下搅拌 1-苯甲酰基-4-(2,4-二氟苯甲酰基)哌啶(40 克, 120 毫摩尔)、巯基乙酸甲酯(12 毫升, 130 毫摩尔)的二甲基甲酰胺(500 毫升)溶液 12 小时。真空蒸除溶剂并用水和乙酸乙酯处理残余物。有机层用硫酸钠干燥, 并减压蒸发溶剂。所得残余物通过硅胶柱色谱法纯化, 用己烷/乙酸乙酯洗脱, 得到 3-(1-苯甲酰基哌啶-4-基)-6-氟苯并[b]噻吩-2-羧酸(11.8 克, 26%), 为油状物。

20 将 3-(1-苯甲酰基哌啶-4-基)-6-氟苯并[b]噻吩-2-羧酸(10 克, 26 毫摩尔)悬浮在喹啉(100 毫升)中并加入铜粉(0.5g)。在 200℃ 搅拌 1 小时之后, 将反应混合物冷却到室温并在乙酸乙酯和水之间分配。有机层用硫酸镁干燥, 并蒸发。将所得残余物用硅胶柱色谱法纯化, 用己烷/乙酸乙酯洗脱, 得到(4-(6-氟苯并[b]噻吩-3-基)哌啶-1-基)苯甲酮(5.0 克, 48%), 为黄色晶体。

30 在 90℃ 搅拌(4-(6-氟苯并[b]噻吩-3-基)哌啶-1-基)苯甲酮(6.5 克, 19

毫摩尔)的乙酸(100毫升)和浓盐酸(100毫升)溶液10小时。向反应混合物的溶液中加入乙酸乙酯。通过过滤收集沉淀的晶体并用乙酸乙酯洗涤,得到4-(6-氟苯并[b]噻吩-3-基)哌啶盐酸盐(4.8克, 89%), 为黄色晶体。

5 向4-(6-氟苯并[b]噻吩-3-基)哌啶盐酸盐(200毫克, 0.74毫摩尔)和2-氯-1-甲基-1*H*-[4,4']联嘧啶-6-酮(160毫克, 0.70毫摩尔)的四氢呋喃(10毫升)溶液中加入三乙胺(212毫克, 2.1毫摩尔)。在90℃搅拌混合物6小时。真空蒸除溶剂并用水和氯仿处理残余物。将有机层用硫酸钠干燥, 并减压蒸发溶剂。用乙酸乙酯重结晶得到2-[4-(6-氟苯并[b]噻吩-3-基)哌啶-1-基]-1-甲基-1*H*-[4,4']联嘧啶-6-酮(220毫克, 96%), 为无色晶体。

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实施例24: 2-(4-(联苯-2-基)哌嗪-1-基)-1-甲基-1*H*-[4,4']联嘧啶-6-酮(No. YA1552)的合成

15 向1-联苯-2-基-哌嗪二盐酸盐(311毫克, 1.0毫摩尔)和2-氯-1-甲基-1*H*-[4,4']联嘧啶-6-酮(202毫克, 0.91毫摩尔)的四氢呋喃(20毫升)溶液中加入三乙胺(404毫克, 4.0毫摩尔), 在90℃搅拌混合物4小时。真空蒸除溶剂并用水和氯仿处理残余物。将有机层用硫酸钠干燥, 并减压蒸发溶剂。用乙酸乙酯重结晶得到2-[4-(联苯-2-基)哌嗪-1-基]-1-甲基-1*H*-[4,4']联嘧啶-6-酮(250毫克, 65%), 为无色晶体。

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用与上述方法同样的方法制备下表中的化合物。下表中化合物的编号与上述优选化合物表中的化合物对应。

表 5

化合物编号	NMR	精确MS
XA19	2.51-2.89(4H,m),3.31-3.34(4H,m),3.39(3H,s),3.56(2H,s),6.80(1H,s),7.25-7.31(1H,m),7.31-7.36(4H,m),7.98(2H,dd,J=1.5,4.8 Hz),8.68(2H,dd,J=1.5,4.5 Hz)(DMSO-d ₆)	362
XA25	3.32-3.34(4H,m),3.46(3H,s),3.48-3.51(4H,m),6.80-6.85(1H,m),6.84(1H,s),7.01(2H,d,J=8.0	348

	H _z),7.23-7.28(2H,m),8.00(2H,dd,J=1.3,4.6 Hz),8.70(2H,dd,J=1.5,4.5 Hz)(DMSO-d ₆)	
XA156	3.47(3H,s),3.51-3.60(4H,m),3.62-3.71(4H,m),6.85 (1H,s),7.41-7.49(1H,m),7.56-7.61(1H,m),8.02(2H, dd,J=1.5,4.5 Hz),8.09(1H,d,J=8.1 Hz),8.16(1H,d,J=8.1 Hz),8.70(2H,dd,J=1.5,4.8 Hz)(DMSO-d ₆)	405
XA289	1.11-1.28(3H,m),2.98-3.16(1H,m),3.28-3.41(1H,m),3.39(3H,s),3.54-3.80(3H,m),3.88-3.99(1H,m),4.0 8-4.26(4H,m),4.32-4.45(1H,m),7.13(1H,s),7.37- 7.53(5H,m),8.45(2H,d,J=5.8 Hz),8.96(2H,d,J=6.0 Hz) (DMSO-d ₆)	434
XA361	3.44(3H,s),3.54-3.95(6H,m),4.64(1H,brs),7.11(1H ,s),7.42-7.51(3H,m),7.74(2H,d,J=6.6Hz),8.46(2H,d ,J=5.7Hz),8.94(2H,d,J=5.7Hz),9.98(1H,brs),10.46(1H,brs) (DMSO-d ₆).	348
XA364	(DMSO-d ₆): 3.41-3.76(4H,m),3.48(3H,s),3.89-4.01(2H,m),4.96 (1H,m), 7.16(1H,s),7.33-7.58(3H,m),8.11(1H,dd,J=7.2,7.2 Hz),8.52(2H,d,J=6.6Hz),8.97(2H,d,J=6.6Hz),10.04 (1H,m),10.66(1H,m).	366
XA365	3.43(s,3H),3.51-3.96(m,6H),4.70(m,1H),7.00(s,1H),7.25(m,1H),7.54(m,2H),7.60(m,1H),8.20(d,J=5.7 Hz,2H),8.80 (d,J=5.7Hz,2H)(CDCl ₃)	366
XA366	2.27-2.85(1H,m),2.94-3.08(3H,m),3.43(3H,s),3.59 -3.67(2H,m),3.94-3.97(1H,m),6.81(1H,s),7.19(2H, t,J=8.9 Hz),7.50-7.55(2H,m),7.96(2H,dd,J=1.6,4.5 Hz),8.68(2H,dd,J=1.5,4.6 Hz)(DMSO-d ₆)	366
XA366 (HCl)	3.35-3.50(2H,m),3.46(3H,s),3.58-3.75(2H,m),3.86 -3.97(2H,m),4.68(1H,t,J=9.3 Hz),7.15(1H,s),7.35(2H,t,J=9.0 Hz),7.82-7.87(2H,m),8.48(2H,d,J=6.6 Hz),8.96(2H,d,J=6.3 Hz),9.55-10.08(1H,m),10.54-10.70(1H,m)(DMSO-	366

	d6)	
XA369	(CDCl ₃) :2.81(1H,dd,J=10.4,12.5Hz),3.18-3.40(3H,m),3.50-3.80(5H,m),4.50(1H,dd,J=2.5,10.1Hz),6.67(1H,s),7.20-7.45(3H,m),7.74(1H,dd,J=1.9,7.6Hz),7.81(2H,dd,J=1.4,4.6Hz),8.70(2H,dd,J=1.4,4.6Hz).	382
XA370	(CDCl ₃) :3.01(1H,dd,J=10.4,12.5Hz),3.10-3.30(3H,m),3.50-3.80(5H,m),4.04(1H,dd,J=2.7,10.8Hz),6.67(1H,s),7.20-7.45(4H,m),7.50(1H,s),7.80(2H,d,J=1.5,4.8Hz),8.71(2H,dd,J=1.5,5.1Hz).	382
XA371	3.44(3H,s),3.44-3.71(7H,m),3.90(2H,m),4.66(1H,brs),7.11(1H,s),7.55(2H,d,J=8.4Hz),7.78(2H,d,J=8.4Hz),8.50(2H,d,J=5.7Hz),8.95(2H,d,J=5.7Hz),10.13(1H,brs),10.60(1H,brs)(DMSO-d6)	382
XA376	(DMSO-d6):3.45(3H,s),3.50-4.20(6H,m),4.66(1H,brs),7.12(1H,s),7.72(4H,s),8.44(2H,d,J=6.6Hz),8.94(2H,d,J=6.6Hz),10.00(1H,brs),10.05(1H,brs).	426
XA391	3.37-3.93(6H,m),3.48(3H,s),3.87(3H,s),4.89-4.95(1H,m),7.04-7.12(2H,m),7.17(1H,d,J=8.5Hz),7.45-7.51(1H,m),7.75-7.81(1H,m),8.29-8.38(2H,m),8.83-8.91(2H,m),9.66-9.77(1H,m),9.91-10.10(1H,m)(DMSO)	378
XA392	(DMSO-d6) :3.30-3.58(5H,m),3.58-3.80(2H,m),3.81(3H,s),3.85-4.00(2H,m),4.58-4.75(1H,m),7.03(1H,dd,J=1.8,8.1Hz),7.11(1H,s),7.26(1H,d,J=7.8Hz),7.35-7.50(2H,m),8.41(2H,d,J=5.7Hz),8.92(2H,d,J=6.0Hz),9.80-10.00(1H,brd),10.30-10.60(1H,brd).	378
XA393	3.40-3.43(5H,m),3.51-3.63(2H,m),3.78(3H,s),3.93(2H,m),4.58(1H,br),7.02-7.06(3H,m),7.64(2H,d,J=8.7Hz),8.34(2H,d,J=6.3Hz),8.88(2H,d,J=8.7Hz),9.76(1H,br),10.16(1H,br)(DMSO-d6)	378
XA396	1.30(3H,t,J=6.9Hz),3.38-3.54(1H,m),3.49(3H,s),3.65-3.79(1H,m),3.84-3.98(2H,m),4.02-4.18(2H,m),4.84(1H,t,J=	392

	10.5 Hz),7.04-7.16(2H,m),7.15(1H,s),7.39-7.45(1H,m), 7.89(1H,d,J=6.6 Hz),8.49(2H,d,J=6.3 Hz),8.95(2H,d,J=6.6 Hz),9.92(1H,d,J=9.3 Hz),10.51-10.64(1H,m)(DMSO-d6)	
XA406	(DMSO-d6):3.64(2H,m),3.94(2H,t,J=11.4Hz),4.02 -4.40(5H,m),4.78(1H,t,J=10.4Hz),7.06(1H,s),7.98(2H,d,J=8.3Hz),8.01(2H,d,J=8.3Hz),8.23(1H,dd,J= 1.2,5.1Hz),9.02(1H,d,J=5.1Hz),9.31(1H,d,J=1.2Hz) ,10.03(1H,d,J=8.7Hz),10.57(1H,s).	373
XA433	(CDCl ₃):2.00(4H,m),3.03(1H,dd,J=10.8,12.0Hz),3 .21(3H,m),3.29(4H,m),3.57(3H,s),3.62(2H,m),3.90 (1H,dd,J=2.7,10.8Hz),6.57(2H,d,J=8.7Hz),6.66(1H ,s),7.29(2H,d,J=8.7Hz),7.80(2H,d,J=4.8Hz),8.70(2 H,d,J=4.8Hz).	417
XA439	(CDCl ₃):3.02(1H,dd,J=10.7,12.4Hz),3.18(7H,m),3 .55(3H,s),3.62(2H,m),3.87(4H,m),3.96(1H,dd,J= 2.5,11.1Hz),6.66(1H,S),6.93(2H,d,J=8.7Hz),7.36(2 H,d,J=8.7Hz),7.79(2H,d,J=4.5Hz),8.70(2H,d,J=4.5 Hz).	434
XA442	(CDCl ₃):2.36(3H,s),2.59(4H,m),3.02(1H,t,J=11.6 Hz),3.22(7H,m),3.55(3H,s),3.63(2H,m),3.94(1H,d, J=10.5Hz),6.66(1H,s),6.93(2H,d,J=8.7Hz),7.34(2H ,d,J=8.7Hz),7.80(2H,d,J=4.5Hz),8.70(2H,d,J=4.5H z).	446
XA463	3.41-3.54(3H,m),3.48(3H,s),3.69-3.73(1H,m),3.78 (3H,s),3.82(3H,s),3.86-3.93(2H,m),4.89(1H,t,J=10 .5 Hz),6.97-7.01(1H,m),7.08(1H,d,J=9.0 Hz),7.15(1H,s),7.66(1H,d,J=3.0 Hz),8.51(2H,d,J=6.3 Hz),8.96(2H,d,J=6.3 Hz),9.93(1H,d,J=9.0 Hz),10.60-10.73(1H,m)(DMSO-d6)	408
XA464	(DMSO-d6): 3.45(3H,s),3.38-3.81(6H,m),3.88(6H,s),5.06(1H,m) , 6.82(2H,d,J=8.7Hz),	408

	7.04(1H,s),7.44(1H,t,J=8.4Hz), 8.20(1H,m),8.30(2H,d,J=6.3Hz),8.87(2H,d,J=6.3Hz),10.07(1H,m).	
XA468	3.40-3.50(4H,m),3.47(3H,s),3.83-3.94(2H,m),3.88(3H,s),4.81-4.91(1H,m),6.92-6.99(1H,m),7.07-7.10(1H,m),7.12(1H,s),7.79-7.91(1H,m),8.30-8.40(2H,m),8.85-8.92(2H,m),9.70-9.79(1H,m),10.02-10.23(1H,m)(DMSO)	396
XA469 / XA470	(DMSO-d6) :3.38-3.60(6H,m),3.60-3.80(1H,m) 3.80-4.00(5H,m),4.80-4.97(1H,m),6.85-7.00(1H,m), 7.09(1H,dd,J=2.4,11.4Hz), 7.13(1H,s),7.95(1H,dd,J=6.9,8.7Hz),8.46(2H,d,J=6.6Hz),8.94(2H,d,J=6.3Hz),9.80-10.00(1H,brd), 10.35-10.60(1H,brd).	396
XA472	3.36-4.00(6H,m),3.46(3H,s),3.94(3H,s),4.94-5.02(1H,m),6.96-7.01(1H,m),7.05(1H,d,J=8.6 Hz),7.14(1H,s),7.49-7.58(1H,m),8.44-8.50(2H,m), 8.52-8.64(1H,m),8.96(2H,d,J=6.6 Hz),10.49-10.60(1H,m)(DMSO)	396
XA480	2.78(1H,dd,J=10.0,12.1 Hz),3.18-3.27(3H,m),3.59(3H,s),3.64-3.74(2H,m), 3.86(3H,s),4.37(1H,dd,J=2.4,10.1 Hz),6.67(1H,s),6.89(1H,d,J=2.1 Hz),6.99(1H,dd,J=1.7,8.0 Hz),7.50(1H,d,J=8.2 Hz),7.82(2H,dd,J=1.5,4.8 Hz),8.71(2H,dd,J=1.8,4.5 Hz)(CDCl ₃)	412
XA490 (2HCl)	3.35-3.94(6H,m),3.49(3H,s),4.71-4.80(1H,m),7.02-7.11(1H,m),7.18-7.28(2H,m),7.98-8.10(1H,m), 8.31-8.48(2H,m),8.87-8.97(2H,m),9.79-9.92(1H,m),10.18-10.39(1H,m) (DMSO)	380
XA501	(CDCl ₃) :2.77(1H,dd,J=10.2,12.0Hz),3.15-3.35(3 H,m),3.50-3.80(5H,m),3.84(3H,s),4.39(1H,d,J=7.8 Hz),6.67(1H,s),6.78(1H,d,J=8.8Hz),7.39(1H,dd,J=2.4,8.7Hz),7.71(1H,d,J=2.3Hz),7.82(2H,d,J=6.0Hz), 8.71(2H,d,J=6.0Hz).	456

XA510	(CDCl ₃): 1.98-2.05(4H,m),2.85(1H,dd,J=12,10.5Hz),3.17-3.24(7H,m),3.58(3H,s),3.65-3.72(2H,m),3.85(3H,s),4.28(1H,dd,10.5,2.7Hz),6.10(1H,d,J=2.1Hz),6.18(1H,dd,J=8.7,2.1Hz),6.65(1H,s),7.33(1H,d,J=8.4Hz),7.83(2H,dd,J=4.5,1.8Hz),8.70(2H,dd,J=4.5,1.5Hz).	447
XA511	(CDCl ₃):1.90-2.05(4H,m),2.93(1H,t,J=12.0Hz),3.15-3.40(7H,m),3.59(3H,s),3.65-3.85(5H,m),4.11(1H,dd,J=2.1,10.2Hz),6.49(1H,dd,J=3.0,9.0Hz),6.66(1H,s),7.83(2H,dd,J=1.8,4.5Hz),8.70(2H,dd,J=1.5,4.5Hz).	447
XA516	(DMSO-d ₆):3.20-3.70(4H,m),3.70(1H,m),3.98(3H,s),3.99(3H,s),4.00(1H,m),4.96(1H,d,J=10.2Hz),7.01(1H,s),7.03(2H,m),8.26(2H,d,J=6.1Hz),8.53(1H,s),8.84(2H,d,J=6.1Hz),10.25(1H,d,J=10.7Hz)	414
XA525	(DMSO-d ₆):3.30-3.50(2H,m),3.48(3H,s),3.55-3.78(2H,m),3.78(3H,s),3.96(2H,d,J=13.5Hz),4.69(1H,t,J=10.4Hz),7.06(1H,t,J=7.4Hz),7.12(1H,s),7.14(1H,d,J=7.4Hz),7.31(1H,d,J=7.4Hz),7.39(1H,t,J=7.4Hz),7.59(2H,d,J=8.3Hz),7.77(2H,d,J=8.3Hz),8.43(2H,d,J=6.5Hz),8.93(2H,d,J=6.5Hz),9.89(1H,d,J=8.7Hz),10.34(1H,s).	454
XA527	(DMSO-d ₆):3.40-4.10(9H,m),3.81(3H,s),4.69(1H,m),7.05(1H,s),7.05(2H,d,J=9.0Hz),7.67(2H,d,J=9.0Hz),7.75(4H,s),8.27(2H,d,J=5.7Hz),8.85(2H,d,J=5.7Hz),9.75(1H,s),10.04(1H,s).	454
XA536	(DMSO-d ₆):3.40-3.60(2H,m),3.47(3H,s),3.68(2H,m),3.95(2H,m),4.71(1H,t,J=9.9Hz),7.16(1H,s),7.33(2H,t,J=8.85Hz),7.78(6H,m),8.50(2H,d,J=6.3Hz),8.97(2H,d,J=6.3Hz),10.02(1H,s),10.50(1H,s).	443
XA543	3.52(s,3H),3.57-4.10(m,6H),5.57(m,1H),7.02(s,1H),7.53-7.70(m,2H),8.06(d,J=7.2Hz,2H),8.21-8.34(m,3H),8.82(d,J=6.3Hz,2H),9.88-9.92(m,1H),10.58-10.61(m,1H)(DMSO d ₆)	398

XA544	3.41-3.59(2H,m),3.49(3H,s),3.68-3.76(2H,m),3.97-4.02(2H,m),4.78-4.89(1H,m),7.15(1H,s),7.58-7.63(2H,m),7.89-8.07(4H,m),8.30(1H,s),8.49(2H,d,J=6.3 Hz),8.95(2H,d,J=6.3 Hz),10.17(1H,d,J=8.4 Hz),10.57-10.70(1H,m)(DMSO-d6)	398
XA619	(CDCl ₃): 2.98(1H,dd,J=12.6,10.8Hz),3.17-3.28(5H,m),3.58(3H,s),3.62(1H,m),3.79(1H,m), 4.26(1H,dd,10.5,2.7Hz), 4.62(2H,m), 6.66(1H,s), 6.88(1H,t,J=7.5Hz), 7.16(1H,d,J=7.2Hz),7.27(1H,m),7.84(2H,d,J=6.0), 8.70(2H,dd,J=4.8,1.2Hz).	390
XA626	3.33-3.41(4H,m),3.42(3H,s),3.47-3.87(4H,m),6.84(1H,s),7.44-7.49(5H,m),7.99(2H,dd,J=1.5,4.5 Hz),8.69(2H,dd,J=1.4,4.8 Hz)(DMSO-d6)	376
XA649	3.44(3H,s),3.37-4.04(9H,m),4.67(1H,d,J=9.6Hz), 7.10(1H,s),7.45-7.55(3H,m),7.83(2H,d,J=6.0Hz), 8.47(2H,d,J=6.6Hz),8.95(2H,d,J=6.6Hz),12.15(1H,brs)(DMSO-d6)	362
XA756	(CDCl ₃) :2.50-2.61(1H,m),2.80-2.95(1H,m),3.05-3.20(1H,m),3.25-3.40(1H,m),3.50-3.60(1H,m), 3.57(3H,s),3.65-3.75(1H,m),3.75-3.80(1H,m),3.85(3H,s),6.60-6.80(3H,m),7.47(1H,dd,J=7.2,8.4Hz), 7.82(2H,dd,J=1.5,4.5Hz),8.71(2H,dd,J=1.5,4.5Hz).	410
XA757 / XA758	(DMSO-d ₆) :2.54(3H,s),3.40-3.79(3H,m),3.46(3H,s),3.80-4.10(6H,m),4.83-5.10(1H,m),6.90-7.05(1H,m),7.08(1H,s),7.13(1H,dd,J=2.7,11.4Hz),8.00-8.25(1H,brd),8.37(2H,d,J=6.3Hz),8.91(2H,d,J=6.6 Hz),11.80-12.20(1H,brd).	410
XA831	2.55(s,3H),3.51(s,3H),3.67-3.82(m,4H),4.04-4.08(m,2H),5.64(m,1H),7.05(s,1H),7.59-7.72(m,3H), 8.06-8.11(m,2H),8.35(d,J=6.6Hz,2H),8.41(d,J=7.8 Hz,1H),8.49 (d,J=6.9Hz,1H),8.84(d,J=6.6Hz,2H)(DMSO d6)	412

XA 1016	(DMSO-d6) :3.15-3.35(1H,m),3.38-3.60(4H,m), 3.75-4.15(8H,m),4.18-4.25(1H,m),4.90-5.20(1H,m ,7.00-7.20(3H,m),7.30-7.55(6H,m),8.50-8.70(3H, m),9.00(2H,d,J=6.3Hz).	486
XA 1276	(CDCl3) :1.80-2.42(3H,m),3.08-3.39(4H,m),3.40- 3.62(1H,m),3.65-4.23(6.8H,m),4.63-4.90(0.6H,m), 5.40-5.62(0.7H,m),5.80-6.00(0.1H,m),6.52-6.78(3 H,m),6.90-7.2(1H,m),7.68-7.90(2H,m),8.64-8.80(2 H,m)	438
XA 1649	1.48(3H,s),1.57(3H,s),3.50(3H,s),3.51-3.66(2H,m) ,3.72-3.76(1H,m),3.90(3H,s),3.99(1H,d,J=13.4 Hz),5.15-5.23(1H,m),7.08-7.12(2H,m),7.18(1H,d,J =8.6 Hz),7.46-7.49(1H,m),8.04-8.11(1H,m),8.37-8.45(2 H,m),8.89-8.97(2H,m),9.49-9.60(1H,m),9.95-10.1 1(1H,m)(DMSO)	406
XA 1973	3.01 (1H,dd,J = 10.8,12.9 Hz),3.10-3.30 (3H,m),3.50-3.75 (5H,m),4.04 (1H,dd,J = 2.7,10.8 Hz),6.67 (1H,s),7.20-7.40 (4H,m),7.50 (1H,s),7.80 (2H,dd,J = 1.5,4.8 Hz),8.71 (2H,dd,J = 1.5,5.1 Hz) (CDCl3)	382
XA 1974	2.80 (1H,dd,J = 10.3,12.2 Hz),3.15-3.30 (3H,m),3.50-3.80 (5H,m),4.44 (1H,dd,J = 2.6,10.3 Hz),6.67 (1H,s),7.10-7.20 (1H,m),7.25-7.40 (1H,m),7.58 (1H,dd,J = 1.0,8.1 Hz),7.73 (1H,dd,J = 1.6,7.8 Hz),7.81 (2H,dd,J = 1.6,4.5 Hz),8.70 (2H,dd,J = 1.6,4.5 Hz) (CDCl3)	426
XA 1975	2.95-3.10 (1H,m),3.10-3.35 (3H,m),3.56 (3H,s),3.60-3.70 (2H,m),3.80-4.05 (7H,m),6.67 (1H,s),6.87 (1H,d,J = 8.1 Hz),6.90-7.10 (2H,m),7.80 (2H,dd,J = 1.8,6.3 Hz),8.71 (2H,dd,J = 1.5,4.8 Hz) (CDCl3)	407

XA 1976	3.40 (3H,m),3.45 (3H,s),3.53-3.96 (3H,m),4.68 (1H,t,J = 13.5Hz),7.10 (1H,s),7.60 (2H,d,J=8.3Hz),7.76 (2H,d,J=8.3Hz),8.38 (1H,br s),8.91 (1H,d,J=4.8Hz),9.88 (1H,br s),10.31 (1H,br s) (DMSO-d6)	382
XA 1977	3.40(3H,m),3.46(3H,s),3.62(1H,dd,J=12.0,13.2Hz),3.72(1H,m),3.92(1H,t,J=15.5Hz),4.68(1H,t,J=10.1 Hz),7.18(1H,s),7.58(2H,d,J=8.6Hz),7.83(2H,d,J=8.6Hz),8.57(2H,d,J=6.6Hz),9.01(2H,d,J=6.6Hz),10.20(1H,d,J=7.8Hz),10.76(1H,br s) (DMSO-d6)	382
XA 1978	2.98 (1H,t,J = 10.9 Hz),3.22 (m,3H),3.56 (3H,s),3.60 (2H,m),4.03 (1H,d,J = 8.7 Hz),6.68 (1H,s),7.28 (1H,d,J = 8.2 Hz),7.46 (1H,d,J = 8.2 Hz),7.61 (1H,s),7.79 (2H,d,J = 5.6 Hz),8.71 (2H,d,J = 5.6 Hz) (CDCl3)	
XA 1979	3.31 (1H,dd,J = 13.8,8.9 Hz),3.46 (3H,s),3.85 (1H,dd,J = 13.8,3.6 Hz),4.10 (1H,d,J = 17.7 Hz),4.19 (1H,d,J = 17.7 Hz),4.91 (1H,dd,J = 8.9,3.6 Hz),6.11 (1H,s),6.74 (1H,s),7.32 (2H,d,J = 8.4 Hz),7.42 (2H,d,J = 8.4 Hz),7.79 (2H,dd,J = 4.8,1.5 Hz),8.74 (2H,dd,J = 4.8,1.5 Hz) (CDCl3)	396
XA 1980	1.97 (4H,m),3.26 (4H,m),3.38 (2H,m),3.45 (3H,s),3.60 (2H,m),3.80 (1H,d,J = 13.8 Hz),3.92 (1H,d,J = 14.1 Hz),4.48 (1H,t,J = 10.4 Hz),6.65 (2H,d,J = 8.7 Hz),7.16 (1H,s),7.54 (2H,d,J = 8.7 Hz),8.57 (2H,d,J = 6.6 Hz),9.00 (2H,d,J = 6.6 Hz),9.83 (1H,d,J = 9.3 Hz),10.32 (1H,br s) (DMSO-d6)	417
XA 1981	3.21 (4H,m),3.40 (2H,m),3.46 (3H,s),3.65 (2H,m),3.78 (4H,m),3.91 (2H,t,J = 13.7 Hz),4.55 (1H,t,J = 10.1 Hz),7.14 (2H,d,J = 8.7 Hz),7.20 (1H,s),7.64 (2H,d,J = 8.7 Hz),8.60 (2H,d,J = 6.6 Hz),9.02 (2H,d,J = 6.6 Hz),9.93 (1H,d,J = 9.0 Hz),10.47 (1H,br s) (DMSO-d6)	433

XA 1982	2.80 (3H,d,J = 4.5 Hz),3.15 (4H,m),3.44 (4H,m),3.45 (3H,s),3.60 (2H,m),3.82 (1H,d,J = 13.5 Hz),3.90 (3H,m),4.54 (1H,t,J = 10.5),7.10 (2H,d,J = 8.7 Hz),7.17 (1H,s),7.64 (2H,d,J = 8.7 Hz),8.54 (2H,d,J = 6.3 Hz),8.99 (2H,d,J = 6.3 Hz),9.94 (1H,d,J = 8.7 Hz),10.47 (1H,br s),11.26 (1H,br s) (DMSO-d6)	446
XA 1983	1.27(3H,t,J=6.6 Hz),3.46-4.14(8H,m),4.70(1H,m),7.11(1H,s),7.60(2H,d,J=8.4 Hz),7.76(2H,d,J=8.4 Hz),8.32(2H,d,J=6 Hz),8.89(2H,d,J=6.0 Hz),9.87(1H,m),10.23(1H,m),(DMSO-d6)	396
XA 1984	1.27(6H,dd,J=6.9,6.9 Hz),3.37-4.36(6H,m),4.66-4.79(2H,m),7.03(1H,s),7.62(2H,d,J=8.7 Hz),7.78(2H,d,J=8.7 Hz),8.33(2H,d,J=6 Hz),8.90(2H,d,J=6.0 Hz),9.93(1H,m),10.25(1H,m),(DMSO-d6)	410
XA 1985	1.40(3H,d,J=6.3 Hz),3.44-4.04(5H,m),3.48(3H,s),4.69(1H,m),7.08(1H,s),7.60(2H,d,J=8.4 Hz),7.79(2H,d,J=8.4 Hz),8.33(2H,d,J=6.3 Hz),8.90(2H,d,J=6.3 Hz),9.83(1H,m),10.00(1H,m),(DMSO-d6)	396
XA 1986	1.57(6H,s),3.50(3H,s),3.51-3.93(4H,m),4.98(1H,m),7.11(1H,s),7.60(2H,d,J=7.4 Hz),7.94(2H,d,J=7.4 Hz),8.41(2H,d,J=6.0 Hz),8.93(2H,d,J=6.0 Hz),9.88(1H,m),10.05(1H,m),(DMSO-d6)	410
XA 1987	1.43(3H,d,J=6.6 Hz),3.38-3.93(5H,m),3.48(3H,s),4.72(1H,m),7.12(1H,s),7.59(2H,d,J=8.4 Hz),7.84(2H,d,J=8.4 Hz),8.43(2H,d,J=6.6 Hz),8.95(2H,d,J=6.6 Hz),9.65(1H,m),10.23(1H,m),(DMSO-d6)	396
XA 1988	2.34 (1H,m),2.42 (1H,m),2.80 (3H,d,J = 5.6 Hz),2.81 (3H,d,J = 5.6 Hz),3.28 (1H,q,J = 8.8 Hz),3.43 (2H,m),3.45 (3H,s),3.57 (5H,m),3.80 (1H,d,J = 11.4 Hz),3.96 (2H,m),4.50 (1H,t,J = 10.4	460

	H _z),6.69 (2H,d,J = 8.4 Hz),7.14 (1H,s),7.55 (2H,d,J = 8.4 Hz),8.47 (2H,d,J = 5.6 Hz),8.96 (2H,d,J = 5.6 Hz),9.75 (1H,d,J = 8.0 Hz),10.16 (1H,br s),11.40 (1H,br s) (DMSO-d ₆)	
XA 1989	1.65 (2H,br s),1.91 (4H,br s),3.46 (9H,s),3.70 (2H,m),3.92 (2H,t,J = 16.6 Hz),4.66 (1H,br s),7.16 (1H,s),7.85 (4H,br s),8.50 (2H,d,J = 6.4 Hz),8.97 (2H,d,J = 6.4 Hz),10.01 (1H,br s),10.59 (1H,br s) (DMSO-d ₆)	431
XA 1990	2.32 (1H,m),2.42 (1H,m),2.79 (3H,d,J = 5.2 Hz),2.81 (3H,d,J = 5.2 Hz),3.27 (1H,m),3.39 (2H,m),3.45 (3H,s),3.59 (5H,m),3.79 (1H,d,J = 13.3 Hz),3.95 (2H,m),4.50 (1H,t,J = 11.6 Hz),6.69 (2H,d,J = 8.4 Hz),7.16 (1H,s),7.56 (2H,d,J = 8.4 Hz),8.50 (2H,s),8.98 (2H,d,J = 5.6 Hz),9.78 (1H,br s),10.19 (1H,br s),11.44 (1H,br s) (DMSO-d ₆)	460
XA 1991	3.47 (3H,s),3.61 (3H,m),3.81 (3H,s),4.02 (3H,m),4.69 (1H,t,J = 10.6 Hz),7.05 (2H,d,J = 8.8 Hz),7.10 (1H,s),7.67 (2H,d,J = 8.8 Hz),7.77 (4H,s),8.38 (2H,br s),8.91 (2H,d,J = 5.2 Hz),9.90 (1H,br s),10.28 (1H,br s) (DMSO-d ₆)	454
XA 1992	1.26(3H,t,J=6.9 Hz),1.41(3H,d,J=6.3 Hz),3.43-4.06(7H,m),4.74(1H,m),7.09(1H,s),7.58(2H,d,J=8.4 Hz),7.84(2H,d,J=8.4 Hz),8.32(2H,d,J=6.6 Hz),8.90(2H,d,J=6.6 Hz),9.90(1H,m),10.03(1H,m),(DMSO-d ₆)	410
XA 1993	1.41(3H,t,J=6.3 Hz),1.55(6H,dd,J=6.6,6.6 Hz),3.49-3.73(5H,m),4.64(1H,m),4.78(1H,m),6.99(1H,s),7.58(2H,d,J=8.7 Hz),7.81(2H,d,J=8.7 Hz),8.28(2H,d,J=6.3 Hz),8.87(2H,d,J=6.3 Hz),9.91(2H,m)(DMSO-d ₆)	424
XA 1994	1.27(3H,t,J=6.9 Hz),1.55(3H,s),1.60(3H,s),3.42-4.14(6H,m),5.04(1 H,m),7.13(1H,s),7.60(2H,d,J=8.4 Hz),7.91(2H,d,J=8.4 Hz),8.32(2H,d,J=6.3	424

	Hz),8.89(2H,d,J=6.3 Hz),9.80-9.84(2H,m)(DMSO-d6)	
XA 1995	1.52(3H,d,J=6.6 Hz),1.58(6H,s),1.59(3H,d,J=6.6 Hz),3.40-3.68(4H,m),4.75(1H,m),5.09(1H,m),7.03 (1H,s),7.60(2H,d,J=8.4 Hz),7.93(2H,d,J=8.4 Hz),8.33(2H,d,J=6.0 Hz),8.89(2H,d,J=6.0 Hz),9.89(2H,m)(DMSO-d6)	438
XA 1996	1.29 (3H,t,J =6.8 Hz),3.47 (2H,br s),3.66 (3H,m),3.81 (3H,s),3.83 (1H,m),4.04 (2H,m),4.71 (1H,d,J = 10.6 Hz),7.05 (2H,d,J = 8.8 Hz),7.12 (1H,s),7.67 (2H,d,J = 8.8 Hz),7.75 (2H,d,J = 8.4 Hz),7.79 (2H,d,J = 8.4 Hz),8.36 (2H,d,J = 6.4 Hz),8.91 (2H,d,J = 6.4 Hz),9.92 (1H,d,J = 8.8 Hz),10.29 (1H,br s) (DMSO-d6)	468
XA 1997	1.56 (3H,d,J = 6.4 Hz),1.58 (3H,d,J = 6.4 Hz),3.47 (2H,br s),3.60 (1H,m),3.77 (2H,m),3.81 (3H,s),4.72 (3H,m),7.05 (2H,d,J = 8.8 Hz),7.06 (1H,s),7.68 (2H,d,J = 8.8 Hz),7.76 (2H,d,J = 8.4 Hz),7.80 (2H,d,J = 8.4 Hz),8.42 (2H,d,J = 6.4 Hz),8.94 (2H,d,J = 6.4 Hz),10.02 (1H,d,J = 9.6 Hz),10.39 (1H,br s) (DMSO-d6)	482
XA 1998	1.24 (1H,m),1.39 (4H,m),1.72 (1H,m),1.79 (4H,m),2.55 (1H,m),3.45 (3H,s),4.00-3.45 (6H,m),4.61 (1H,t,J = 11.2 Hz),7.09 (1H,s),7.35 (2H,d,J = 8.4 Hz),7.62 (2H,d,J = 8.4 Hz),8.37 (2H,d,J = 4.0 Hz),8.90 (2H,d,J = 4.0 Hz),9.75 (1H,d,J = 9.6 Hz),10.17 (1H,br s),(DMSO-d6)	430
XA 1999	1.04 (1H,m),1.17 (2H,m),1.43 (2H,m),1.60 (1H,m),1.79 (4H,m),2.96 (3H,br s),3.45 (3H,s),4.18-3.44 (6H,m),4.62 (1H,br s),7.13 (1H,s),7.75 (4H,br s),8.46 (1H,br s),8.95 (1H,br s),9.87 (1H,br s),10.40 (1H,br s) (DMSO-d6)	459

XA 2000	1.40(3H,d,J=6.6 Hz),3.44-4.04(5H,m),3.48(3H,s),4.72(1H,m),7.05(1H,s),7.61(2H,d,J=8.4 Hz),7.78(2H,d,J=8.4 Hz),8.29(2H,d,J=6.0 Hz),8.90(2H,d,J=6.0 Hz),9.78-10.00(2H,m),(DMSO-d6)	396
XA 2001	1.26(3H,t,J=6.9 Hz),1.41(3H,d,J=6.0 Hz),3.43-4.06(7H,m),4.74(1H,m),7.08(1H,s),7.58(2H,d,J=8.4 Hz),7.81(2H,d,J=8.4 Hz),8.29(2H,d,J=6.3 Hz),8.88(2H,d,J=6.3 Hz),9.84-10.00(2H,m),(DMSO-d6)	410
XA 2002	1.41(3H,t,J=6.0 Hz),1.56(6H,dd,J=6.6,6.6 Hz),3.49-3.73(5H,m),4.62(1H,m),4.78(1H,m),7.00(1H,s),7.59(2H,d,J=8.4 Hz),7.81(2H,d,J=8.4 Hz),8.30(2H,d,J=6.3 Hz),8.88(2H,d,J=6.3 Hz),9.91(2H,m)(DMSO-d6)	424
XA 2003	3.03(4H,td,J=4.6Hz),3.26(4H,t,J=4.5Hz),3.48(3H,s),6.65(1H,s),7.10(2H,m),7.20-7.45(5H,m),7.65(2H,d,J=8.5Hz),7.79(2H,d,J=6.3Hz),8.71(2H,d,J=1.5,4.8Hz)(CDCl ₃),	425
XA 2004	2.93 (1H,m),3.20 (2H,m),3.30 (3H,s),3.36 (1H,d,J = 12.8 Hz),3.46 (1H,t,J = 12.0 Hz),3.73 (4H,m),7.03 (1H,s),7.33 (2H,m),7.42 (3H,m),8.16 (2H,d,J = 6.4 Hz),8.86 (2H,d,J = 6.4 Hz),9.61 (1H,d,J = 10.0 Hz),9.95 (1H,d,J = 8.4 Hz) (DMSO-d6)	362
XA 2005	2.93 (1H,dd,J = 14.8,8.4 Hz),3.07 (1H,m),3.19 (1H,m),3.33 (3H,s),3.41 (3H,s),3.69 (1H,m),3.80 (2H,d,J = 14.0 Hz),6.96 (1H,br s),7.39 (2H,d,J = 8.0 Hz),7.49 (2H,d,J = 8.0 Hz),8.00 (2H,br s),8.77 (2H,br s),9.24 (1H,s),9.54 (1H,s) (DMSO-d6)	396

XA 2006	3.39 (2H,m),3.46 (3H,s),3.56 (2H,m),3.85 (1H,d,J = 13.2 Hz),3.93 (1H,d,J = 13.6 Hz),4.55 (1H,t,J = 10.4 Hz),6.94 (1H,br s),7.13 (1H,s),7.14 (4H,m),7.30 (2H,m),7.59 (2H,d,J = 8.0 Hz),8.45 (2H,s),8.95 (2H,s),9.73 (1H,br s),10.10 (1H,br s) (DMSO-d6)	508
XA 2007	1.39 (1H,m),1.80 (8H,m),2.18 (2H,d,J = 11.2 Hz),2.76 (2H,t,J = 11.4 Hz),3.90 (2H,m),3.33 (1H,m),3.40 (3H,m),3.45 (3H,s),3.58 (2H,m),3.82 (1H,d,J = 13.3 Hz),3.93 (3H,m),4.53 (1H,t,J = 10.4 Hz),7.09 (2H,d,J = 8.8 Hz),7.11 (1H,s),7.56 (2H,d,J = 8.8 Hz),8.40 (2H,d,J = 6.0 Hz),8.92 (2H,d,J = 6.0 Hz),9.75 (1H,d,J = 8.8 Hz),10.14 (1H,br s),10.39 (1H,br s) (DMSO-d6)	514
XA 2008	2.82-2.90(1H,m),3.01-3.05(4H,m),3.22(3H,s),3.44 (3H,s),3.58-3.66(2H,m),4.08(1H,dd,J=1.2,10.2Hz), 6.81(1H,s),7.77(2H,d,J=7.2Hz),7.92-7.98(4H,m), 8.69(2H,d,J=4.2Hz)(DMSO-d6)	426
XA 2009	1.21(3H,d,J=6.6 Hz),3.17-3.45(4H,m),3.52(3H,s),4.02(1H,m),4.69(1H,m),7.20(1H,s),7.54(2H,d,J=8.4 Hz),7.70(2H,d,J=8.4 Hz),8.26(2H,d,J=6.3 Hz),8.88(2H,d,J=6.3 Hz),9.90(1H,m),10.16(1H,m),(DMSO-d6)	396
XA 2010	1.21(3H,d,J=6.0 Hz),3.17-3.45(4H,m),3.53(3H,s),4.02(1H,m),4.70(1H,m),7.24(1H,s),7.54(2H,d,J=8.7 Hz),7.73(2H,d,J=8.7 Hz),8.33(2H,d,J=5.7 Hz),8.93(2H,d,J=5.7 Hz),10.04(1H,m),10.37(1H,m),(DMSO-d6)	396
XA 2011	3.02 (1H,t,J = 11.9 Hz),3.17 (6H,m),3.55 (3H,s),3.63 (2H,m),3.86 (4H,m),3.96 (1H,d,J = 10.2 Hz),6.66 (1H,s),6.92 (2H,d,J = 8.4 Hz),7.35 (2H,d,J = 8.4 Hz),7.80 (2H,d,J = 5.1 Hz),8.70 (2H,d,J = 5.1 Hz) (CDCl3)	433

XA 2012	2.31 (3.6H,s),3.16 (4H,t,J = 4.8 Hz),3.44 (3H,s),3.45 (4H,m),3.75 (4H,t,J = 4.8 Hz),3.86 (1H,d,J = 14.0 Hz),3.92 (1H,d,J = 12.4 Hz),4.56 (1H,d,J = 10.4 Hz),6.95 (1H,s),7.06 (2H,d,J = 8.8 Hz),7.43 (2H,d,J = 8.8 Hz),8.06 (2H,d,J = 6.0 Hz),8.75 (2H,d,J = 6.0 Hz),9.03 (1H,s),9.33 (1H,d,J = 10.0 Hz) (DMSO-d6)	433
XA 2013	1.82 (4H,m),1.97 (2H,m),2.12 (2H,m),2.77 (2H,t,J = 11.6 Hz),3.01 (2H,m),3.27 (1H,m),3.40 (2H,m),3.45 (3H,s),3.49 (2H,m),3.57 (1H,m),3.63 (1H,m),3.84 (1H,d,J = 13.6 Hz),3.92 (3H,d,J = 12.8 Hz),4.53 (1H,t,J = 11.2 Hz),7.12 (2H,d,J = 8.4 Hz),7.14 (1H,s),7.58 (2H,d,J = 8.9 Hz),8.49 (2H,d,J = 5.2 Hz),8.97 (2H,d,J = 5.2 Hz),9.82 (1H,br s),10.24 (1H,br s),11.12 (1H,br s) (DMSO-d6)	500
XA 2014	1.75(2H,m),2.14(2H,m),2.72(6H,d,J=4.5 Hz),2.74-2.80(3H,m),3.30-3.95(8H,m),3.45(3H,s),4.54(1H,m),7.10(2H,d,J=9.0 Hz),7.15(1H,s),7.60(2H,d,J=9.0 Hz),8.51(2H,d,J=6.6 Hz),8.98(2H,d,J=6.6 Hz),9.86(1H,m),10.32(1H,m),10.93(1H,m),(DMSO-d6)	474
XA 2015	1.68(2H,m),2.09(2H,m),3.16-3.90(10H,m),3.45(3H,s),4.60(1H,m),7.13(1H,s),7.45-7.71(4H,m),8.45(2H,d,J=6.0 Hz),8.94(2H,d,J=6.0 Hz),9.83(1H,m),10.22(1H,m) (DMSO-d6)	447
XA 2016	1.91-2.03(2H,m),3.09(1H,m),3.28-3.57(7H,m),3.40(3H,s),4.41(2H,m),6.58(2H,d,J= 8.7 Hz),7.13(1H,s),7.46(2H,d,J= 8.7 Hz),8.44(2H,d,J=6.3 Hz),8.94(2H,d,J=6.3 Hz),9.61(1H,m),9.89(1H,m) (DMSO-d6)	433

XA 2017	2.97 (6H,s),3.45 (3H,s),4.20-3.30 (6H,m),4.53 (1H,t,J = 9.8 Hz),6.69 (2H,br s),7.14 (1H,s),7.57 (2H,br s),8.48 (2H,br s),8.96 (2H,br s),9.72 (1H,br s),10.09 (1H,br s) (DMSO-d6)	391
XA 2018	3.18-3.22(1H,m),3.44-3.80(15H,m),4.51-4.55(1H,m),5.11(2H,s),7.04-7.07(3H,m),7.32-7.39(5H,m),7.52-7.55(2H,m),8.33-8.35(2H,m),8.82-8.87(2H,m),9.65-9.75(2H,br)(DMSO-d6)	566
XA 2019	1.32(6H,d,J=6.8Hz),3.04-3.88(18H,m),4.52-4.55(1H,m),7.09-7.12(3H,m),7.62(2H,d,J=7.2Hz),8.45(2H,d,J=4.2Hz),8.94(2H,d,J=4.2Hz),9.83-10.34(3H,br),11.00-11.04(1H,br)(DMSO-d6)	474
XA 2020	1.32(6H,d,J=6.8Hz),3.04-3.88(18H,m),4.52-4.55(1H,m),7.09-7.12(3H,m),7.62(2H,d,J=7.2Hz),8.45(2H,d,J=4.2Hz),8.94(2H,d,J=4.2Hz),9.83-10.34(3H,br),11.00-11.04(1H,br)(DMSO-d6)	476
XA 2021	2.09(3H,s),3.19-4.00(20H,m),4.43-4.54(3H,m),7.06-7.19(3H,m),7.62(2H,d,J=7.2Hz),8.44(2H,d,J=4.2 Hz),8.94(2H,d,J=4.2Hz),9.82-9.85(1H,br),10.26-10.30(1H,br),11.30-11.40(1H,br)(DMSO-d6)	518
XA 2022	3.17-3.21(4H,m),3.38-4.16(14H,m),4.51-4.54(1H,m),7.08-7.18(3H,m),7.60(2H,d,J=7.2Hz),8.43(2H,d,J=4.2Hz),8.93(2H,d,J=4.2Hz),9.26-9.34(2H,br),9.81-84(1H,br),10.25-10.30(1H,br)(DMSO-d6)	432
XA 2023	1.82(3H,m),3.29(3H,m),3.40-3.96(9H,m),3.48(3H,s),4.55(1H,m),7.10(1H,s),7.13(2H,d,J=8.4 Hz),7.56(2H,d,J=8.4 Hz),8.39(2H,d,J=6.0 Hz),8.91(2H,d,J=6.0 Hz),9.67(1H,m),9.97(1H,m) (DMSO-d6)	445
XA 2024	1.89-2.03(2H,m),2.95-3.07(5H,m),3.29-3.83(5H,m),3.40(3H,s),4.40(1H,m),4.94(1H,m),6.49(2H,d,J=8.4 Hz),7.13(1H,s),7.25(2H,d,J=8.4 Hz),7.95(2H,d,J=6.0 Hz),8.69(2H,d,J=6.0 Hz) (DMSO-d6)	433

XA 2025	1.16(6H,d,J= 6.3 Hz),2.28-2.36(2H,m),2.97-3.21(6H,m),3.54(3H,s),3.55-3.62(4H,m),3.95(1H,m),6.66(1H,s),6.93(2H,d,J= 8.7 Hz),7.32(2H,d,J= 8.7 Hz),7.80(2H,d,J=6.3 Hz),8.70(2H,d,J=6.3 Hz) (CDCl ₃)	460
XA 2026	1.26(6H,d,J= 6.3 Hz),2.42(2H,dd,J= 11.1,11.1 Hz), 3.02(1H,dd,J= 12.3,10.8 Hz),3.17-3.22(3H,m),3.45-3.63(4H,m),3.55(3H,s),3.81(1H,m), 3.95(1H,dd,J= 13.2,2.1 Hz),6.66(1H,s),6.92(2H,d,J= 8.4 Hz),7.34(2H,d,J= 8.4 Hz),7.80(2H,d,J=6.0 Hz),8.70(2H,d,J=6.0 Hz) (CDCl ₃)	461
XA 2027	2.91-3.09(5H,m),3.26(3H,s),3.46(3H,s),3.69-3.73(2H,m),4.07-4.11(1H,m),6.81(1H,s),7.64(2H,d,J= 7.2Hz),7.77(2H,d,J=7.2Hz),7.94-8.02(6H,m),8.68(1H,d,J=4.2Hz)(DMSO-d ₆)	502
XA 2028	3.28-3.32(4H,m),3.46(3H,s),3.86-3.91(2H,m),4.59-4.61(1H,m),6.90(1H,s),7.77-8.06(10H,m),8.70(2H,d,J=4.2Hz),9.36-9.44(1H,br)(DMSO-d ₆)	449
XA 2029	3.08 (1H,dd,J = 12.4,10.4 Hz),3.25 (3H,m),3.58 (3H,s),3.68 (2H,m),4.09 (1H,dd,J = 10.4,2.4 Hz),6.68 (1H,s),7.29 (2H,d,J = 8.4 Hz),7.54 (2H,d,J = 8.4 Hz),7.56 (2H,d,J = 8.4 Hz),7.59 (2H,d,J = 8.4 Hz),7.81 (2H,dd,J = 4.4,1.6 Hz),8.71 (2H,dd,J = 4.4,1.6 Hz) (CDCl ₃)	508
XA 2030	3.08 (1H,dd,J = 12.4,10.4 Hz),3.27 (3H,m),3.58 (3H,s),3.70 (2H,m),4.11 (1H,dd,J = 10.4,2.4 Hz),6.68 (1H,s),7.57 (2H,d,J = 8.0 Hz),7.63 (2H,d,J = 8.0 Hz),7.70 (4H,s),7.81 (2H,dd,J = 4.8,1.2 Hz),8.71 (2H,dd,J = 4.8,1.2 Hz) (CDCl ₃)	492
XA 2031	1.45 (3H,t,J = 12.4 Hz),3.08 (1H,dd,J = 12.4,10.8 Hz),3.24 (3H,m),3.57 (3H,s),3.67 (2H,m),4.07 (1H,m),4.09 (2H,q,J = 7.0 Hz),6.67 (1H,s),6.97 (2H,d,J = 8.4 Hz),7.51 (2H,d,J = 8.4 Hz),7.51 (2H,d,J = 8.4 Hz),7.54 (2H,d,J = 8.4 Hz),7.57	468

	(2H,d,J = 8.4 Hz),7.81 (2H,dd,J = 4.8,1.2 Hz),8.71 (2H,dd,J = 4.8,1.2 Hz) (CDCl ₃)	
XA 2032	1.94 (4H,m),2.02 (1H,m),2.21 (1H,m),2.62 (4H,m),2.91 (1H,m),3.03 (1H,dd,J = 12.4,10.4 Hz),3.20 (4H,m),3.33 (1H,m),3.48 (2H,m),3.54 (3H,s),3.62 (2H,m),3.91 (1H,dd,J = 10.4,2.4 Hz),6.55 (2H,d,J = 8.4 Hz),6.66 (1H,s),7.29 (2H,d,J = 8.4 Hz),7.81 (2H,dd,J = 4.4,0.8 Hz),8.70 (2H,dd,J = 4.4,0.8 Hz) (CDCl ₃)	468
XA 2033	2.29(3H,s),3.06(4H,t,J=4.8Hz),3.38(4H,t,J=4.8Hz),3.51(3H,s),5.70(1H,s),6.67(1H,s),7.24-7.29(5H,m),7.83(2H,dd,J=1.6,4.3Hz),8.72(2H,dd,J=1.3,4.5Hz)(CDCl ₃)	427
XA 2034	3.09 (1H,dd,J = 12.0,10.8 Hz),3.23 (3H,m),3.57 (3H,s),3.66 (2H,m),3.82 (3H,s),3.86 (3H,s),4.06 (1H,dd,J = 10.8,2.4 Hz),6.58 (2H,m),6.67 (1H,s),7.24 (2H,m),7.47 (2H,d,J = 8.0 Hz),7.53 (2H,d,J = 8.0 Hz),7.82 (2H,dd,J = 4.8,1.2 Hz),8.71 (2H,dd,J = 4.8,1.2 Hz) (CDCl ₃)	484
XA 2035	3.08 (3H,dd,J = 12.4,10.8 Hz),3.25 (3H,m),3.57 (3H,s),3.67 (2H,m),3.93 (3H,s),3.96 (3H,s),4.08 (1H,dd,J = 10.0,2.0 Hz),6.68 (1H,s),6.95 (1H,d,J = 8.4 Hz),7.11 (1H,d,J = 2.4 Hz),7.16 (1H,dd,J = 8.4,2.4 Hz),7.51 (2H,d,J = 8.0 Hz),7.58 (2H,d,J = 8.0 Hz),7.81 (2H,dd,J = 4.8,1.2 Hz),8.71 (2H,dd,J = 4.8,1.2 Hz) (CDCl ₃)	484
XA 2036	3.08 (1H,dd,J = 12.4,10.8 Hz),3.26 (3H,m),3.57 (3H,s),3.67 (2H,m),4.09 (1H,dd,J = 10.0,2.0 Hz),6.68 (1H,s),7.42 (2H,d,J = 8.4 Hz),7.53 (4H,d,J = 8.4 Hz),7.58 (2H,d,J = 8.4 Hz),7.80 (2H,dd,J = 4.8,1.6 Hz),8.71 (2H,dd,J = 4.8,1.6 Hz) (CDCl ₃)	458

XA 2037	3.09 (1H,dd,J = 12.4,10.8 Hz),3.25 (3H,m),3.58 (3H,s),3.69 (2H,m),4.11 (1H,dd,J = 10.4,2.4 Hz),6.68 (1H,s),7.28 (2H,m),7.44 (2H,d,J = 8.0 Hz),7.51 (3H,m),8.81 (2H,dd,J = 4.0,1.2 Hz),8.72 (2H,dd,J = 4.0,1.2 Hz) (CDCl ₃)	492
XA 2038	3.07 (1H,dd,J = 12.3,11.0 Hz),3.26 (3H,m),3.57 (3H,s),3.67 (2H,m),4.10 (1H,dd,J = 10.2,2.1 Hz),6.68 (1H,s),7.42 (1H,dd,J = 8.1,2.2 Hz),7.55 (5H,m),7.68 (1H,d,J = 2.2 Hz),7.80 (2H,dd,J = 4.8,1.3 Hz),8.71 (2H,dd,J = 4.8,1.3 Hz) (CDCl ₃)	492
XA 2039	3.06 (1H,dd,J = 12.0,10.8 Hz),3.24 (3H,m),3.58 (3H,s),3.67 (2H,m),4.13 (1H,dd,J = 10.4,2.4 Hz),6.68 (1H,s),7.61 (2H,d,J = 8.4 Hz),7.80 (2H,d,J = 4.4 Hz),8.15 (2H,d,J = 8.4 Hz),8.71 (2H,d,J = 4.4 Hz),8.77 (1H,s) (CDCl ₃)	416
XA 2040	3.04-3.26(4H,m),3.57(3H,s),3.66-3.71(2H,m),4.07 (1H,m),5.12(2H,s),6.68(1H,s),7.06(2H,d,J= 8.7 Hz),7.40-7.59(11H,m),7.81(2H,d,J=6.0 Hz),8.71(2H,d,J=6.0 Hz) (CDCl ₃)	530
XA 2041	0.38(2H,m),0.67(2H,m),1.32(1H,m),3.09(1H,dd,J =12.6,11.1 Hz),3.22-3.28(3H,m),3.58(3H,s),3.67-3.71(2H,m), 3.86(2H,d,J= 6.9 Hz),4.08(1H,m),6.68(1H,s),7.06(2H,d,J= 9.0 Hz),7.49-7.60(6H,m),7.82(2H,d,J=6.0 Hz),8.72(2H,d,J=6.0 Hz) (CDCl ₃)	494
XA 2042	1.37(6H,d,J= 6.0 Hz),3.08(1H,dd,J=12.3,11.1 Hz),3.20-3.28(3H,m),3.57(3H,s),3.65-3.70(2H,m), 4.06(1H,m),4.59(1H,m),6.67(1H,s),7.06(2H,d,J= 9.0 Hz),7.48-7.59(6H,m),7.81(2H,d,J=6.0 Hz),8.71(2H,d,J=6.0 Hz) (CDCl ₃)	482
XA 2043	0.99(3H,t,J= 7.5 Hz),1.40-1.85(4H,m),3.05-3.30(4H,m),3.57(3H,s), 3.65-3.70(2H,m),4.00-4.10(3H,m),6.67(1H,s),6.97 (2H,d,J= 8.7 Hz),7.50-7.56(6H,m),7.81(2H,d,J=6.0	496

	H _z),8.71(2H,d,J=6.0 Hz) (CDCl ₃)	
XA 2044	1.66(1H,br.s),2.52(3H,s),3.05(1H,dd,J=10.5,12.6Hz),3.20-3.26(3H,m),3.57(3H,s),3.62-3.72(2H,m),4.07(1H,dd,J=2.1,10.5Hz),6.67(1H,s),7.33(2H,d,J=8.4Hz),7.50-7.61(6H,m),7.81(2H,dd,J=1.6,4.3Hz),8.70(2H,dd,J=1.3,4.5Hz)(CDCl ₃)	469
XA 2045	1.72(1H,br.s),2.40(3H,s),2.98-3.26(5H,m),3.57(3H,s),3.57-3.67(1H,m),4.07(1H,dd,J=2.1,10.5Hz),6.67(1H,s),7.24(2H,d,J=8.1Hz),7.49-7.52(4H,m),7.60(2H,d,J=8.1Hz),7.81(2H,dd,J=1.6,4.3Hz),8.70(2H,dd,J=1.3,4.5Hz)(CDCl ₃)	437
XA 2046	1.36(9H,s),1.72(1H,br.s),3.06(1H,dd,J=10.5,12.4Hz),3.20-3.28(3H,m),3.57(3H,s),3.57-3.67(2H,m),4.07(1H,dd,J=2.1,10.5Hz),6.67(1H,s),7.24(2H,d,J=8.1Hz),7.43-7.56(6H,m),7.81(2H,dd,J=1.6,4.3Hz),8.71(2H,dd,J=1.3,4.5Hz)(CDCl ₃)	479
XA 2047	1.29(6H,d,J=6.9Hz),1.73(1H,br.s),2.96(1H,m),3.06(1H,dd,J=10.5,12.4Hz),3.21-3.29(3H,m),3.57(3H,s),3.62-3.71(2H,m),4.07(1H,dd,J=2.1,10.5Hz),6.67(1H,s),7.31(2H,d,J=8.1Hz),7.45-7.54(4H,m),7.63(2H,d,J=8.1Hz),7.81(2H,dd,J=1.6,4.3Hz),8.71(2H,dd,J=1.3,4.5Hz),(CDCl ₃)	465
XA 2048	1.68(2H,br.s),2.98(1H,dd,J=10.5,12.6Hz),3.20-3.27(2H,m),3.56(3H,s),3.64-3.74(1H,m),4.04(1H,dd,J=3.3,11.1Hz),4.80(3H,s),6.66(1H,s),6.72(2H,d,J=8.5Hz),7.49-7.52(4H,m),7.63(2H,d,J=8.1Hz),7.81(2H,dd,J=1.6,4.3Hz),8.70(2H,dd,J=1.3,4.5Hz)(DM SO-d ₆)	438
XA 2049	2.67 (3H,s),3.06 (1H,dd,J = 12.4,10.8 Hz),3.25 (3H,m),3.57 (3H,s),3.62 (2H,m),4.12 (1H,dd,J = 10.0,2.0 Hz),6.68 (1H,s),7.59 (2H,d,J = 8.0 Hz),7.80 (1H,dd,J = 4.8,1.2 Hz),8.09 (1H,d,J = 8.0 Hz),8.71 (1H,dd,J = 4.8,1.2 Hz) (CDCl ₃)	430

XA 2050	3.05(1H,m),3.30-3.48(3H,m),3.64(3H,s),4.08-4.22 (2H,m),4.68(1H,m),5.15(1H,d,J= 12.3 Hz), 5.21(1H,d,J= 12.6 Hz),6.63(1H,s),7.21(2H,d,J= 8.4 Hz),7.28-7.39(7H,m),7.59(2H,d,J=6.3 Hz),8.68(2H,d,J=6.3 Hz) (CDCl ₃)	560
XA 2051	2.88-3.34(6H,m),3.67(3H,s),4.56(1H,dd,J= 9.9,3.3 Hz),6.62(1H,s),7.19(2H,d,J= 10.8 Hz),7.36(2H,d,J= 10.8 Hz),7.58(2H,dd,J=4.5,1.5 Hz),8.67(2H,dd,J=4.5,1.5 Hz) (CDCl ₃)	426
XA 2052	3.04(1H,m),3.29-3.48(3H,m),3.64(3H,s),4.10-4.15 (2H,m),4.68(1H,m),5.15(1H,d,J= 12.3 Hz), 5.21(1H,d,J= 12.6 Hz),6.63(1H,s),7.21(2H,d,J= 8.1 Hz),7.32-7.39(7H,m),7.59(2H,d,J=6.0 Hz),8.68(2H,d,J=6.0 Hz) (CDCl ₃)	560
XA 2053	3.01(1H,m),3.29-3.41(3H,m),3.66(3H,s),4.05-4.13 (2H,m),4.67(1H,m),6.64(1H,s),7.23(2H,d,J= 8.4 Hz),7.41(2H,d,J= 8.4 Hz),7.60(2H,dd,J=4.5,1.5 Hz),8.69(2H,dd,J=4.5,1.5 Hz) (CDCl ₃)	527
XA 2054	2.28(3H,s),3.07(4H,m),3.59(4H,m),3.73(3H,s),5.7 8(1H,s),6.70(1H,s),6.98(1H,m),7.40(1H,m),7.60- 7.66(2H,m),7.81(2H,dd,J=1.6,4.3Hz),8.72(2H,dd,J =1.3,4.5Hz)(CDCl ₃)	445
XA 2055	2.31(3H,s),3.19(4H,m),3.46(4H,m),3.54(3H,s),5.7 9(1H,s),6.69(1H,s),7.18-7.23(1H,m),7.79(2H,d,J=5 .4Hz), 7.79-7.87(2H,m),8.54(1H,d,J=5.2Hz),8.72(2H,d,J= 4.5Hz)(CDCl ₃)	428
XB13	1.16-1.28(1H,m),1.50-1.64(1H,m),1.70-1.82(2H,m) ,1.90-2.01(1H,m),2.58(2H,d,J=7.3 Hz),2.64-2.72(1H,m),2.89-2.97(1H,m),3.28(3H,s), 3.57-3.67(2H,m),6.93(1H,s),7.20-7.35(5H,m),8.26 (2H,d,J=5.7 Hz),8.87(2H,d,J=5.9 Hz)(DMSO-d ₆)	361
XB16	1.75-2.16(4H,m),2.96-3.08(3H,m),3.55(3H,s),3.69- 3.79(2H,m),6.66(1H,s),7.26-7.40(5H,m),7.81(2H,d ,J = 6.0 Hz),8.70(2H,d,J = 6.0 Hz) (CDCl ₃)	347

XB17	1.76-1.99(5H,m),2.97-3.10(2H,m),3.75(1H,d,J=12.4Hz),6.81(1H,s),7.18-7.24(2H,m),7.28-7.35(1H,m),7.47(1H,t,J=7.1 Hz),7.98(2H,d,J=5.8 Hz),8.68(2H,d,J=5.8 Hz)(DMSO-d6)	365
XB19	1.86-2.14(4H,m),2.94-3.03(3H,m),3.55(3H,s),3.68-3.75(2H,m),6.66(1H,s),7.05(2H,m),7.23(2H,m),7.80(2H,d,J = 6.3 Hz),8.70(2H,d,J = 6.3 Hz)(CDCl3)	365
XB33	1.75-2.08(4H,m),2.80(1H,m),3.03(1H,m),3.42(3H,s),3.77(2H,m),3.85(3H,s),6.65(1H,s),6.89-7.00(2H,m),7.22-7.28(2H,m),7.82(2H,d,J = 6.0 Hz),8.70(2H,d,J = 6.0 Hz) (CDCl3)	377
XB35	1.73-1.83(4H,m),2.90-3.02(3H,m),3.42(3H,s),3.67-3.81(2H,m),3.74(3H,s),6.80(1H,s),6.91(2H,d,J=8.7 Hz),7.27(2H,d,J=8.5 Hz),7.97(2H,d,J=5.9 Hz),8.69(2H,d,J=5.7 Hz)(DMSO-d6)	377
XB43	1.69-1.90(7H,m),1.94-2.00(1H,m),2.59-2.68(4H,m),2.92-3.02(3H,m),3.43(3H,s),3.69-3.80(4H,m),6.59(3H,s),6.79(1H,s),7.29-7.36(4H,m),7.96(2H,d,J=5.9 Hz),8.68(2H,d,J=5.1 Hz)(DMSO-d6)	430
XB46	(CDCl3): 1.95-2.09(3H,m),2.39(1H,m),3.15(1H,m),3.45(1H,dd,J=12.9,10.8Hz),3.57(3H,s),3.61-3.72(2H,m),4.08(1H,m),6.67(1H,s),7.32(1H,m),7.58-7.60(2H,m),7.74(1H,d,J=7.8Hz),7.80(2H,dd,J=4.5,1.5Hz),8.69(2H,dd,J=4.5,1.5Hz).	388
XB47	(CDCl3): 1.90-2.06(3H,m),2.36(1H,m),3.14(1H,m),3.42(1H,m),3.57(3H,s),3.61-3.71(2H,m),4.06(1H,m),6.68(1H,s),7.09(1H,m),7.28(1H,m),7.68(1H,dd,J=8.8,5.1 Hz),7.79(2H,d,J=4.7Hz),8.69(2H,d,J=5.9Hz).	406
XB48	1.90-2.10(3H,m),2.32-2.44(1H,m),3.11-3.20(1H,m),3.45(1H,dd,J=10.5,12.6 Hz),3.57(3H,s),3.61-3.72(2H,m),4.08(1H,d,J=11.1 Hz),6.67(1H,s),7.30-7.35(1H,m),7.56-7.62(2H,m),	388

	7.74(1H,d,J=13.8 Hz),7.80(2H,dd,J=1.8,4.5 Hz),8.70(2H,dd,J=1.8,4.8 Hz)(CDCl ₃)	
XB49	1.91-2.09(3H,m),2.37-2.42(1H,m),3.12-3.19(1H,m),3.45(1H,dd,J=10.8,12.9 Hz),3.57(3H,s),3.60-3.72(2H,m),4.08(1H,d,J=11.1 Hz),6.67(1H,s),7.30-7.35(1H,m),7.54-7.62(2H,m),7.75(1H,d,J=8.1 Hz),7.80(2H,dd,J=1.5,4.5 Hz),8.70(2H,dd,J=1.8,4.5 Hz)(CDCl ₃)	388
XB50	1.59-1.67(1H,m),1.72-1.81(1H,m),2.08(1H,dt,J=3.4,12.7Hz),2.23-2.40(1H,m),3.06-3.14(1H,m),3.41-3.54(2H,m),3.42(3H,s),3.93(1H,d,J=14.0 Hz),7.02(1H,s),7.24-7.29(1H,m),7.34-7.39(2H,m),7.56-7.59(2H,m),8.55(2H,d,J=6.6 Hz),8.98(2H,d,J=6.5 Hz)(DMSO-d ₆)	363
XB80	2.21-2.36(4H,m),3.19-3.31(2H,m),3.46(3H,s),3.88(2H,d,J=13.2Hz),6.86(1H,s),7.38-7.42(1H,m),7.46-7.51(2H,m),7.58-7.64(2H,m),8.01(2H,d,J=5.1 Hz),8.70(2H,d,J=5.1 Hz)(DMSO-d ₆)	372
XB122	1.44(2H,m),1.75-1.83(3H,m),2.63(2H,d,J = 6.9 Hz),2.90(2H,m),3.51(3H,s),3.64(2H,m),6.65(1H,s),7.17-7.34(5H,m),7.80(2H,d,J = 6.3 Hz),8.70(2H,d,J = 6.3 Hz) (CDCl ₃)	361
XB123	1.44-2.16(5H,m),2.86-2.97(2H,m),3.49(3H,s),3.62(1H,m),3.72(1H,m),4.48(1H,d,J = 7.2 Hz),6.64(1H,s),7.07(2H,m),7.32(2H,m),7.79(2H,d,J = 6.3 Hz),8.69(2H,d,J = 6.3 Hz) (CDCl ₃)	395
XB124	1.38-1.60(3H,m),1.78(1H,m),2.16(1H,m),2.79-2.94(2H,m),3.20(3H,s),3.49(3H,s),3.59(1H,m),3.69(1H,m),3.88(1H,d,J = 7.5 Hz,1H),6.64(1H,s),7.08(2H,m),7.25(2H,m),7.79(2H,d,J = 6.0 Hz),8.70(2H,d,J = 6.0 Hz) (CDCl ₃)	409
XB127	1.87-2.06(4H,m),2.79(1H,m),3.10(2H,m),3.57(3H,s),3.78(2H,m),6.68(1H,s),7.23-7.29(3H,m),7.34(2H,m),7.84(2H,d,J = 6.0 Hz),8.72(2H,d,J = 6.0 Hz) (CDCl ₃)	347

XB130	1.81-2.03(4H,m),2.78(1H,m),3.09(2H,m),3.57(3H,s),3.79(2H,m),6.69(1H,s),7.03(2H,m),7.23(2H,m),7.84(2H,d,J = 5.4 Hz),8.72(2H,br s) (CDCl ₃)	365
XB134	1.78-1.95(4H,m),2.80-2.91(1H,m),2.96-3.09(2H,m),3.45(3H,s),3.81(2H,d,J=13.1 Hz),6.80(1H,s),7.33(1H,dd,J=2.0,8.3 Hz),7.56-7.60(2H,m),7.99(2H,dd,J=1.6,4.5 Hz),8.69(2H,dd,J=1.5,4.5 Hz)(DMSO-d ₆)	415
XB145	1.82-2.02(4H,m),3.09-3.27(3H,m),3.57(3H,s),3.79(2H,m),3.86(3H,s),6.67(1H,s),6.89-6.99(2H,m),7.21-7.26(2H,m),7.84(2H,d,J = 6.0 Hz),8.72(2H,d,J = 6.0 Hz) (CDCl ₃)	377
XB157	1.85-2.07(2H,m),2.17-2.30(2H,m),2.91-3.10(1H,m),3.10-3.24(2H,m),3.57(3H,s),3.71-3.88(2H,m),6.69(1H,s),6.99-7.06(1H,m),7.21(1H,dd,J=2.1,8.7Hz),7.45(1H,s),7.49-7.65(1H,m),7.83(2H,dd,J=1.8,4.5 Hz),8.72(2H,dd,J=1.2,4.8Hz)(CDCl ₃)	405
XB158	2.22-2.32(4H,m),3.22(2H,m),3.37(1H,m),3.58(3H,s),3.82(2H,m),6.71(1H,s),7.10(1H,m),7.29(1H,m),7.67(1H,m),7.83(2H,d,J = 6.3 Hz),8.72(2H,d,J = 6.3 Hz) (CDCl ₃)	406
XB159	2.19-2.26(4H,m),3.21(2H,m),3.35(1H,m),3.59(3H,s),3.82(2H,m),6.70(1H,s),6.95(1H,dt,J = 9.0,2.1 Hz),7.13(1H,dd,J = 9.0,2.1 Hz),7.71(1H,m),7.85(2H,d,J = 6.3 Hz),8.72(2H,d,J = 6.3 Hz) (CDCl ₃)	405
XB160	2.13-2.34(2H,m),2.34-2.43(2H,m),3.10-3.38(3H,m),3.57(3H,s),3.68-3.83(2H,m),6.69(1H,s),7.29-7.40(2H,m),7.46-7.59(1H,m),7.64-7.78(1H,m),7.80-7.78(2H,m),8.72(2H,d,J=6.0Hz)(CDCl ₃)	388
XB161	2.19(2H,m),2.38(2H,m),3.18(2H,m),3.39(1H,m),3.58(3H,s),3.80(2H,m),6.70(1H,s),7.39(1H,m),7.50(1H,m),7.83(2H,d,J = 6.0 Hz),7.89(1H,d,J = 7.2 Hz),8.01(1H,d,J = 7.8 Hz),8.73(2H,d,J = 6.0 Hz) (CDCl ₃)	404

XB162	1.96(2H,m),2.88(2H,m),3.15(2H,m),3.60(3H,s),3.85(2H,m),4.63(1H,m),6.73(1H,s),7.13-7.23(3H,m),7.46(1H,d,J = 7.5 Hz),7.84(2H,d,J = 6.3 Hz),8.73(2H,d,J = 6.3 Hz)(CDCl ₃)	420
XB164	1.64(2H,m),2.23(2H,m),3.13(2H,m),3.50(1H,m),3.53(3H,s),3.68(2H,m),6.58(2H,m),6.68(1H,s),6.91(2H,m),7.81(2H,d,J = 6.0 Hz),8.72(2H,d,J = 6.0 Hz) (CDCl ₃)	380
XB165	1.91-1.99(4H,m),2.84(3H,s),3.07(2H,m),3.55(3H,s),3.77(2H,m),3.84(1H,m),6.69(1H,s),6.75-6.87(3H,m),7.27(2H,m),7.82(2H,d,J = 6.3 Hz),8.72(2H,d,J = 6.3 Hz) (CDCl ₃)	376
XB168	1.52(2H,m),1.79(3H,s),1.96(2H,m),3.09(2H,m),3.42(3H,s),3.64(2H,m),4.86(1H,m),6.63(1H,s),7.09-7.19(4H,m),7.74(2H,d,J = 6.0 Hz),8.70(2H,d,J = 6.0 Hz) (CDCl ₃)	422
XB169	1.86(1H,br s),1.95(2H,m),2.30(2H,m),3.47-3.63(7H,m),6.68(1H,s),7.30-7.44(3H,m),7.54(2H,d,J = 7.5 Hz),7.84(2H,d,J = 6.0 Hz),8.71(2H,d,J = 6.0 Hz) (CDCl ₃)	363
XB201	2.20-2.31(4H,m),3.20-3.29(2H,m),3.46(3H,s),3.87(2H,d,J=13.8 Hz),6.86(1H,s),7.29-7.35(2H,m),7.64-7.69(2H,m),8.01(2H,dd,J=1.5,4.5 Hz),8.70(2H,dd,J=1.5,4.5 Hz)(DMSO-d ₆)	390
XB227	2.16-2.25(2H,m),2.48-2.58(2H,m),3.14-3.21(2H,m),3.40(3H,s),3.41-3.50(2H,m),6.79(1H,s),7.28-7.33(1H,m),7.39-7.46(4H,m),7.97(2H,dd,J=1.5,4.5 Hz),8.68(2H,dd,J=1.5,4.5 Hz)(DMSO-d ₆)	389
XB256	1.77-1.85(8H,m),2.10(1H,m),2.51(4H,m),2.97-3.02(3H,m),3.58(3H,s),3.55(3H,s),3.62(2H,s),3.74(1H,m),6.66(1H,s),7.16(2H,d,J=7.8Hz),7.32(1H,d,J=7.8Hz),7.80(2H,dd,J=1.5,4.8Hz),8.70(2H,dd,J=1.5,4.8Hz)(CDCl ₃)	430

XB257	1.77-1.85(8H,m),2.10(1H,m),2.51(4H,m),2.97-3.02(3H,m),3.58(3H,s),3.55(3H,s),3.62(2H,s),3.74(1H,m),6.66(1H,s),7.16(2H,d,J=7.8Hz),7.32(1H,d,J=7.8Hz),7.80(2H,dd,J=1.5,4.8Hz),8.70(2H,dd,J=1.5,4.8Hz)(CDCl ₃)	430
XB258	1.86 (4H,m),1.99 (4H,m),3.03 (5H,m),3.35 (4H,m),3.43 (3H,s),3.73 (2H,m),4.30 (2H,s),6.81 (1H,s),7.43 (2H,d,J = 8.1 Hz),7.69 (2H,d,J = 8.1 Hz),7.97 (2H,d,J = 6.0 Hz),8.69 (2H,d,J = 6.0 Hz),11.01 (1H,br s) (DMSO-d ₆)	429
XB259	1.75 (1H,m),1.89 (3H,m),1.97 (3H,m),2.13 (1H,d,J = 13.6 Hz),3.02 (3H,m),3.46 (2H,t,J = 7.0 Hz),3.55 (3H,s),3.66 (2H,t,J = 7.0 Hz),3.75 (2H,m),6.66 (1H,s),7.30 (2H,d,J = 8.0 Hz),7.52 (2H,d,J = 8.0 Hz),7.80 (2H,dd,J = 6.0,1.2 Hz),8.71 (2H,dd,J = 6.0,1.2 Hz)	443
XB260	1.77-1.86(8H,m),2.94-3.06(5H,m),3.43(3H,s),3.73-3.78(2H,m),4.28-4.31(2H,m),6.81(1H,s),7.44(2H,d,J=7.3Hz),7.57(2H,d,J=7.3Hz),7.96(2H,d,J=4.2Hz),8.63(2H,d,J=4.2Hz),10.75-10.80(1H,br)(DMSO-d ₆)	430
XB261	1.45-1.59(6H,m),1.73-1.94(4H,m),2.10-2.15(4H,m),2.98-3.05(3H,m),3.49(2H,m),3.55(3H,s),3.74-3.77(2H,m),6.65(1H,s),7.22(2H,d,J=8.4 Hz),7.33(2H,d,J=8.4 Hz),7.80(2H,d,J=6.0 Hz),8.70(2H,d,J=6.0 Hz)(CDCl ₃)	444
XB262	1.19-1.31(6H,m),1.80-1.94(7H,m),2.10(1H,m),2.32(3H,s),2.45(1H,m),2.97-3.02(3H,m),3.54(3H,s),3.55(2H,m),3.69-3.74(2H,m),6.66(1H,s),7.22(2H,d,J=8.4 Hz),7.33(2H,d,J=8.4 Hz),7.81(2H,d,J=6.0 Hz),8.71(2H,d,J=6.0 Hz)(CDCl ₃)	472
XB263	1.77-1.86(4H,m),2.44(1H,m),2.80(6H,s),2.98-3.16(4H,m),3.42(3H,s),3.62-3.79(6H,m),4.42(3H,m),6.93(1H,s),7.45(2H,d,J=8.4 Hz),7.58(2H,d,J=8.4 Hz),8.21(2H,d,J=6.0 Hz),8.82(2H,d,J=6.0 Hz)	473

	Hz)(DMSO-d6)	
XB264	0.99(3H,t,J=7.2Hz),1.20-1.24(6H,m),1.80-1.93(7H,m),2.10(1H,m),2.50-2.55(2H,m),2.97-3.00(3H,m),3.55(3H,s),3.60(2H,s),3.69-3.74(2H,m),6.65(1H,s),7.18(2H,d,J=8.4 Hz),7.34(2H,d,J=8.4 Hz),7.80(2H,d,J=6.0 Hz),8.70(2H,d,J=6.0 Hz)(CDCl3)	486
XB265	1.02(6H,d,J=6.6Hz),1.23-1.28(5H,m),1.72-2.15(9H,m),2.51(1H,m),2.97-3.08(4H,m),3.55(3H,s),3.70(2H,s),3.74-3.78(2H,m),6.65(1H,s),7.18(2H,d,J=7.8 Hz),7.34(2H,d,J=7.8 Hz),7.81(2H,d,J=6.0 Hz),8.70(2H,d,J=6.0 Hz)(CDCl3)	500
XB266	1.77-1.87(4H,m),2.44(1H,m),2.80(6H,s),2.99-3.09(4H,m),3.42(3H,s),3.62-3.79(6H,m),4.42(3H,m),6.95(1H,s),7.45(2H,d,J=8.1 Hz),7.58(2H,d,J=8.1 Hz),8.29(2H,d,J=6.0 Hz),8.86(2H,d,J=6.0 Hz)(DMSO-d6)	473
XB267	1.85-1.88(4H,m),2.81(1H,m),2.99-3.07(2H,m),3.44(3H,s),3.79-3.84(2H,m),6.82(1H,s),7.29(2H,d,J=8.4 Hz),7.51(2H,d,J=8.4 Hz),8.01(2H,d,J=6.0 Hz),8.70(2H,d,J=6.0 Hz)(DMSO-d6)	425
XB268	1.83-1.99(4H,m),2.83(1H,m),2.98-3.06(2H,m),3.45(3H,s),3.79-3.84(2H,m),6.82(1H,s),7.29-7.43(3H,m),7.53(1H,s),8.01(2H,d,J=6.0 Hz),8.70(2H,d,J=6.0 Hz)(DMSO-d6)	425
XB269	1.74-1.96(8H,m),2.51(1H,m),2.65-3.01(2H,m),3.04-3.18(4H,m),3.44(3H,s),3.77-3.81(2H,m),6.49(2H,d,J=8.4 Hz),6.80(1H,s),7.09(2H,d,J=8.4 Hz),8.00(2H,dd,J=4.5,1.8 Hz),8.69(2H,dd,J=4.5,1.8 Hz)(DMSO-d6)	416
XB270	1.83-1.99(8H,m),2.72(1H,m),2.97-3.07(2H,m),3.19-3.23(4H,m),3.45(3H,s),3.78-3.83(2H,m),6.38(1H,d,J=7.8 Hz) 6.44(1H,s),6.53(1H,d,J=7.5 Hz),6.81(1H,s),7.09(1H,dd,J=7.8,7.8 Hz),8.00(2H,d,J=5.4 Hz),8.70(2H,d,J=5.7	416

	Hz)(DMSO-d6)	
XB271	1.81-1.92(2H,m),2.07-2.15(2H,m),3.02-3.21(3H,m),3.51(3H,s),3.79-3.83(2H,m),6.80-6.86(2H,m),7.10-7.17(2H,m),7.58-7.63(1H,m),8.00(2H,d,J=4.2Hz),8.69(2H,d,J=4.2Hz),10.90(1H,brs)(DMSO-d6)	404
XB272	1.53-1.63(2H,m),2.02-2.07(2H,m),3.11-3.19(2H,m),3.41(3H,s),3.60-3.72(3H,m),6.12(1H,d,J=8.2Hz),6.79-6.80(2H,m),6.88-6.91(2H,m),7.25-7.31(1H,m),8.00(2H,d,J=4.2Hz),8.70(2H,d,J=4.2Hz)(DMSO-d6)	430
XB273	1.47-1.57(2H,m),2.00-2.07(2H,m),2.71(6H,s),3.04-3.12(2H,m),3.37-3.42(4H,m),3.67-3.71(2H,m),4.87(1H,d,J=8.2Hz),6.56-6.65(4H,m),6.79(1H,s),7.99(2H,d,J=4.2Hz),8.69(2H,d,J=4.2Hz)(DMSO-d6)	405
XB274	1.51-1.61(2H,m),2.01-2.07(2H,m),3.08-3.16(2H,m),3.43(3H,s),3.50-3.53(1H,m),3.67(3H,s),3.70-3.73(2H,m),5.56(1H,d,J=8.2Hz),6.09-6.24(3H,m),6.78(1H,s),6.96(1H,dd,J=7.2Hz,7.3Hz),7.99(2H,d,J=4.2Hz),8.69(2H,d,J=4.2Hz)(DMSO-d6)	392
XB275	1.48-1.59(2H,m),2.00-2.07(2H,m),3.06-3.13(2H,m),3.40(3H,s),3.44-3.46(1H,m),3.64(3H,s),3.66-3.71(2H,m),5.07(1H,d,J=8.2Hz),6.59(2H,d,J=7.2Hz),6.70(2H,d,J=7.2Hz),6.79(1H,s),7.98(2H,d,J=4.2Hz),8.68(2H,d,J=4.2Hz)(DMSO-d6)	392
XB276	1.57-1.68(2H,m),2.03-2.07(2H,m),3.05-3.09(2H,m),3.41(3H,s),3.51-3.77(6H,m),4.57(1H,d,J=8.2Hz),6.53-6.58(1H,m),6.66-6.69(1H,m),6.74-6.82(3H,m),7.99(2H,d,J=4.2Hz),8.68(2H,d,J=4.2Hz)(DMSO-d6)	392
XB277	1.78-1.92(4H,m),2.94-3.07(5H,m),3.41-3.86(10H,m),6.88-6.92(1H,m),7.04(1H,s),7.21-7.24(2H,m),7.39-7.44(1H,m),8.48(2H,d,J=4.2Hz),8.95(2H,d,J=4.2Hz)(DMSO-d6)	406

XB278	1.68-2.08(4H,m),2.90-2.96(2H,m),3.15(3H,s),3.38(3H,s),3.81-4.04(7H,m),7.03(1H,s),7.13(2H,d,J=7.2Hz),7.81(2H,d,J=7.2Hz),8.45(2H,d,J=4.2Hz),8.94(2H,d,J=4.2Hz)(DMSO-d6)	406
XB279	1.76-1.85(4H,m),2.65(3H,s),2.85-2.94(2H,m),3.41-3.42(1H,m),3.44(3H,s),3.74-3.79(2H,m),4.02(3H,s),6.78(1H,s),6.83-6.99(4H,m),7.97(2H,d,J=4.2Hz),8.68(2H,d,J=4.2Hz)(DMSO-d6)	406
XB280	1.86-1.98(4H,m),2.98(6H,s),3.01-3.10(2H,m),3.40-3.92(11H,m),7.00-7.13(2H,m),7.42-7.50(2H,m),8.51(2H,d,J=4.2Hz),8.97(2H,d,J=4.2Hz)(DMSO-d6)	419
XB281	1.69-1.88(3H,m),1.92-2.00(1H,m),2.92-3.06(3H,m),3.42(3H,s),3.63-3.88(2H,m),6.79(1H,s),7.33(2H,d,J=8.4 Hz),7.54(2H,d,J=8.4 Hz),7.96(2H,d,J=5.7 Hz),8.68(2H,d,J=6.0 Hz)(DMSO-d6)	425
XB282	2.51-2.60(4H,m),3.47(3H,s),3.65-3.68(4H,m),6.54(1H,s),8.00(2H,d,J=4.2Hz),8.70(1H,d,J=4.2Hz)(DMSO-d6)	285
XB283	1.71-1.82(4H,m),2.40-2.49(2H,m),2.50-2.53(4H,m),2.86-2.94(3H,m),3.06-3.09(4H,m),3.41(3H,s),3.50-3.68(4H,m),4.43-4.46(1H,m),6.78(1H,s),6.89(2H,d,J=7.2Hz),7.17(2H,d,J=7.2Hz),7.95(2H,d,J=4.2Hz),8.67(2H,d,J=4.2Hz)(DMSO-d6)	475
XB284	1.71-1.93(4H,m),2.86(6H,s),2.88-2.97(3H,m),3.41(3H,s),3.65-3.75(2H,m),6.73(2H,d,J=7.2Hz),6.78(1H,s),7.15(2H,d,J=7.2Hz),7.96(2H,d,J=4.2Hz),8.68(2H,d,J=4.2Hz)(DMSO-d6)	390
XB285	1.72-1.83(4H,m),2.89-2.96(3H,m),3.05-3.09(4H,m),3.42(3H,s),3.71-3.75(4H,m),6.78(1H,s),6.91(2H,d,J=7.2Hz),7.20(2H,d,J=7.2Hz),7.96(2H,d,J=4.2Hz),8.68(2H,d,J=4.2Hz)(DMSO-d6)	432
XB286	1.52-1.91(10H,m),2.86-2.94(3H,m),3.07-3.10(4H,m),3.41(3H,s),3.66-3.75(2H,m),6.78(1H,s),6.89(2H,d,J=7.2Hz),7.16(2H,d,J=7.2Hz),7.95(2H,d,J=4.2	430

	Hz),8.68(2H,d,J=4.2Hz)(DMSO-d6)	
XB287	1.64-1.88(4H,m),2.21(3H,s),2.42-2.45(4H,m),2.89-2.94(3H,m),3.07-3.11(4H,m),3.41(3H,s),3.69-3.75(2H,m),6.78(1H,s),6.90(2H,d,J=7.2Hz),7.18(2H,d,J=7.2Hz),7.96(2H,d,J=4.2Hz),8.68(2H,d,J=4.2Hz)(DMSO-d6)	445
XB288	1.43-1.47(2H,m),1.71-1.90(6H,m),2.19(6H,s),2.58-2.66(2H,m),2.87-2.95(2H,m),2.87-2.98(3H,m),3.30-3.32(1H,m),3.41(3H,s),3.64-3.75(4H,m),6.78(1H,s),6.90(2H,d,J=7.2Hz),7.16(2H,d,J=7.2Hz),7.96(2H,d,J=4.2Hz),8.68(2H,d,J=4.2Hz)(DMSO-d6)	473
XB289	1.72-1.94(4H,m),2.92-2.99(3H,m),3.08-3.11(4H,m),3.41(3H,s),3.52-3.56(4H,m),3.66-3.75(2H,m),5.11(2H,s),6.78(1H,s),6.93(2H,d,J=7.2Hz),7.20(2H,d,J=7.2Hz),7.28-7.39(5H,m),7.95(2H,d,J=4.2Hz),8.69(2H,d,J=4.2Hz)(DMSO-d6)	565
XB290	1.53-1.63(2H,m),1.85-1.89(2H,m),2.14(3H,s),2.31-2.46(8H,m),2.86-2.94(2H,m),3.34-3.35(1H,m),3.39(3H,s),3.70-3.74(2H,m),6.79(1H,s),7.98(2H,d,J=4.2Hz),8.69(2H,d,J=4.2Hz)(DMSO-d6)	369
XB291	1.52-1.63(2H,m),1.85-1.90(2H,m),2.34-2.42(11H,m),2.86-2.94(2H,m),3.39(3H,s),3.45-3.50(2H,m),3.70-3.74(2H,m),4.38-4.40(1H,m),6.80(1H,s),7.98(2H,d,J=4.2Hz),8.69(2H,d,J=4.2Hz)(DMSO-d6)	399
XB292	1.71-1.83(4H,m),2.81-3.00(11H,m),3.28-3.30(1H,m),3.41(3H,s),3.66-3.75(2H,m),6.78(1H,s),6.89(2H,d,J=7.2Hz),7.17(2H,d,J=7.2Hz),7.96(2H,d,J=4.2Hz),8.68(2H,d,J=4.2Hz)(DMSO-d6)	431
XB293	1.43-1.53(2H,m),1.93-1.98(3H,m),2.63-2.66(1H,m),2.92-3.00(2H,m),3.39(3H,s),3.62-3.79(7H,m),6.78(1H,s),6.88-6.97(2H,m),7.18-7.22(1H,m),7.35(1H,d,J=7.3Hz),7.98(2H,d,J=4.2Hz),8.68(2H,d,J=4.2Hz)(DMSO-d6)	406

XB294	1.42-1.53(2H,m),1.96-2.08(3H,m),2.61-2.67(1H,m),2.91-2.99(2H,m),3.39(3H,s),3.62-3.80(7H,m),6.77(1H,s),6.86(2H,d,J=7.2Hz),7.25(2H,d,J=7.2Hz),7.97(2H,d,J=4.2Hz),8.68(2H,d,J=4.2Hz)(DMSO-d6)	406
XB295	1.81-1.91(2H,m),2.61-2.20(2H,m),2.96-3.17(6H,m),3.41-3.47(5H,m),3.74-3.86(4H,m),6.90-7.03(3H,m),7.21-7.29(2H,m),8.44(2H,d,J=4.2Hz),8.93(2H,d,J=4.2Hz),9.30-9.38(2H,br)(DMSO-d6)	420
XB296	1.80-1.91(2H,m),2.07-2.21(2H,m),2.96-3.11(6H,m),3.34-3.41(5H,m),3.69-3.86(4H,m),6.91(2H,d,J=7.2Hz),7.05(1H,s),7.20(2H,d,J=7.2Hz),8.49(2H,d,J=4.2Hz),8.96(2H,d,J=4.2Hz),9.44-9.50(2H,br)(DMSO-d6)	420
XB297	1.41-1.51(2H,m),1.91-1.96(3H,m),2.61-2.65(1H,m),2.86(6H,s),2.91-2.98(2H,m),3.38(3H,s),3.61-3.67(4H,m),6.70(2H,d,J=7.2Hz),6.77(1H,s),7.20(2H,d,J=7.2Hz),7.97(2H,d,J=4.2Hz),8.68(2H,d,J=4.2Hz)(DMSO-d6)	419
XB298	2.04(2H,d,J=13.1Hz),2.34(3H,s),2.53(2H,m),2.91(2H,m),3.55(3H,s),3.70(2H,d,J=13.1Hz),4.27(1H,m),6.08(1H,s),6.86(1H,s),7.36-7.48(5H,m),7.80(2H,dd,J=1.6,4.3Hz),8.69(2H,dd,J=1.3,4.5Hz)(CDCl3)	426
XB299	2.06(2H,d,J=13.1Hz),2.22(2H,m),2.99(2H,m),3.13(1H,m),3.54(3H,s),3.70(2H,d,J=13.1Hz),6.68(1H,s),7.25(1H,s),7.44-7.48(2H,m),7.64-7.67(3H,m),7.78(2H,dd,J=1.6,4.3Hz),8.69(2H,dd,J=1.3,4.5Hz)(CDCl3)	413
XB300	1.75-1.85(4H,m),2.97-3.10(5H,m),3.43(3H,s),3.71-3.76(2H,m),3.88-3.93(2H,m),6.70(1H,dd,J=7.2,7.3Hz),6.79(1H,s),7.02-7.06(2H,m),7.15-7.23(3H,m),7.31-7.35(2H,m),7.97(2H,d,J=4.2Hz),8.69(2H,d,J=4.2Hz)(DMSO-d6)	464
XB301	1.09-1.34(5H,m),1.57-1.88(9H,m),2.78-2.93(3H,m),3.08-3.18(1H,m),3.41(3H,s),3.62-3.74(2H,m),5.27(1H,d,J=8.2Hz),6.52(2H,d,J=7.2Hz),6.79(1H,s	444

	,7.01(2H,d,J=7.2Hz),7.96(2H,d,J=4.2Hz),8.68(2H,d,J=4.2Hz)(DMSO-d6)	
XB302	1.10-1.16(1H,m),1.32-1.46(4H,m),1.64-1.82(9H,m),2.68(3H,s),2.82-2.93(3H,m),3.41(3H,s),3.54-3.74(3H,m),6.72(2H,d,J=7.2Hz),6.78(1H,s),7.12(2H,d,J=7.2Hz),7.95(2H,d,J=4.2Hz),8.68(2H,d,J=4.2Hz)(DMSO-d6)	458

化合物编号	NMR	MS[M+1]
YA0262	(DMSO-d6): 3.47(3H,s),3.48-3.66(4H,m),3.89-4.02(2H,m),4.98(1H,m), 7.06(1H,s),7.35-7.59(3H,m),7.99(1H,dd,J=7.2,6.9Hz),8.25(1H,dd,J=5.4,1.2Hz),9.01(1H,d,J=5.1Hz),9.31(1H,s),9.84(1H,m),10.19(1H,m).	367
YA0263	(CDCl ₃):3.01(1H,dd,J=10.5,12.4Hz),3.10-3.35(3H,m),3.57(3H,s),3.55-3.65(2H,m),4.05(1H,dd,J=2.4,10.4Hz),7.00-7.10(1H,m),7.30(1H,s),7.22(2H,m),7.30-7.42(2H,m),8.15(1H,dd,J=1.3,5.2Hz),8.86(1H,d,J=5.2Hz),9.27(1H,d,J=1.0Hz).	367
YA0264	2.83(1H,dd,J=11.0,11.9 Hz),2.93(1H,s),2.99-3.10(3H,m),3.45(3H,s),3.61-3.69(2H,m),3.95(1H,dd,J=2.1,10.3 Hz),6.97(1H,s),7.19(2H,t,J=8.8 Hz),7.48-7.56(2H,m),8.17(1H,dd,J=1.0,5.0 Hz),8.99(1H,d,J=5.1 Hz),9.29(1H,d,J=1.0 Hz)(DMSO-d6)	367
YA0264 (HCl)	3.39-3.47(2H,m),3.45(3H,s),3.55-3.66(2H,m),3.86-3.96(2H,m),4.64-4.71(1H,m),7.05(1H,s),7.36(2H,t,J=8.7 Hz),7.77-7.81(2H,m),8.23(1H,dd,J=1.2,5.1 Hz),9.02(1H,d,J=5.1 Hz),9.32(1H,d,J=1.2	367

	Hz),9.79(1H,d,J=10.2 Hz),10.13-10.28(1H,m)(DMSO-d6)	
YA0267	(CDCl ₃):2.81(1H,dd,J=10.5,12.6Hz),3.15-3.40(3H,m),3.50-3.65(4H,m),3.65-3.80(1H,m),4.51(1H,dd,J=2.7,10.5Hz),7.20-7.45(4H,m),7.74(1H,dd,J=1.5,7.5Hz),8.15-8.20(1H,m),8.85(1H,d,J=5.1Hz),9.27(1H,s).	383
YA0268	(CDCl ₃):3.00(1H,dd,J=10.5,12.6Hz),3.10-3.35(3H,m),3.50-3.70(5H,m),4.03(1H,dd,J=2.4,10.5Hz),7.32(4H,m),7.50(1H,s),8.15(1H,dd,J=1.2,5.1Hz),8.87(1H,d,J=5.1Hz),9.27(1H,d,J=1.5Hz).	383
YA0269	3.40-3.50(2H,m),3.45(3H,s),3.53-3.65(2H,m),3.87-3.97(2H,m),4.68(1H,t,J=10.2 Hz),7.05(1H,s),7.59(2H,d,J=11.1 Hz),7.75(2H,d,J=11.1 Hz),8.22(1H,dd,J=1.5,5.4 Hz),9.02(1H,d,J=5.1 Hz),9.31(1H,s),9.83(1H,d,J=9.6 Hz),10.11-10.25(1H,m)(DMSO-d6)	383
YA0274	(DMSO-d ₆):3.45(3H,s),3.40-3.70(4H,m),3.92(2H,t,J=14.1Hz),4.67(1H,br s),7.06(1H,s),7.68(2H,d,J=10.0Hz),7.72(2H,d,J=10.0Hz),8.22(1H,d,J=4.8Hz),9.03(1H,d,J=4.8Hz),9.31(1H,s),9.88(1H,br s),10.22(1H,br s).	427
YA0289	3.38-3.57(4H,m),3.35(3H,s),3.89(3H,s),3.91-3.97(2H,m),4.84-4.94(1H,m),7.06(1H,s),7.08-7.15(1H,m),7.18(1H,d,J=8.4 Hz),7.41-7.49(1H,m),7.68(1H,d,J=7.6 Hz),8.25(1H,d,J=4.9 Hz),9.04(1H,d,J=5.1 Hz),9.32(1H,s)(DMSO)	379
YA0290	(DMSO-d ₆):3.40-3.75(7H,m),3.92(2H,t,J=13.2Hz),4.64(1H,t,J=9.1Hz),7.00-7.10(2H,m),7.23(1H,d,J=7.6Hz),7.35(1H,s),7.42(1H,t,J=7.8Hz),8.23(1H,d,J=5.6Hz),9.02(1H,d,J=5.2Hz),9.32(1H,s),9.65-9.80(1H,brd),9.90-10.15(1H,	379

	brd).	
YA0291	(DMSO-d6): 3.42(3H,s),3.36-3.58(4H,m),3.79(3H,s),3.83-3.95(2H,m),4.61(1H,m), 7.05(1H,s),7.07(2H,d,J=8.1Hz),7.60(2H,d,J=8.7Hz), 8.22(1H,dd,J=5.1,1.2Hz),9.02(1H,d,J=5.4Hz), 9.31(1H,s),9.58-9.74(2H,m).	379
YA0294	1.31(3H,t,J=6.8 Hz),3.44-3.59(2H,m),3.48(3H,s),3.87-3.97(2H,m),4.09-4.20(2H,m),4.80-4.91(1H,m),7.06(1H,s),7.09-7.17(2H,m),7.44(1H,t,J=7.4 Hz),7.64(1H,d,J=7.5 Hz),8.23(1H,d,J=5.3 Hz),9.03(1H,d,J=5.2 Hz),9.32(1H,s),9.49-9.60(2H,m)(DMSO-d6)	393
YA0304	(DMSO-d6):3.45(3H,s),3.64(3H,m),3.93(3H,m),4.78(1H,t,J=9.6Hz),7.13(1H,s),7.97(2H,d,J=8.7Hz),8.01(2H,d,J=8.7Hz),8.43(2H,d,J=6.2 Hz),8.93(2H,d,J=6.2Hz),10.12(1H,s),10.70(1H,s).	374
YA0331	(CDCl ₃):2.00(4H,m),3.05(1H,t,J=11.7Hz), 3.18-3.30(3H,m),3.29(4H,m),3.56(3H,s),3.62(2H,m),3.91(1H,d,J=8.4Hz),6.57(2H,d,J=8.7Hz), 7.31(3H,m),8.17(1H,dd,J=1.2,5.1Hz),8.85(1H,d,J=5.1Hz),9.27(1H,d,J=1.2Hz).	418
YA0337	(CDCl ₃):3.02(1H,dd,J=10.8,12.6Hz),3.18(8H,m),3.56(3H,s),3.61(1H,t,J=9.0Hz),3.87(4H,m), 3.95(1H,dd,J=2.7,10.8Hz),6.93(2H,d,J=8.9Hz), 7.31(1H,s),7.36(2H,d,J=8.9Hz),8.16(1H,dd,J=1.5,5.4Hz),8.85(1H,d,J=5.4Hz),9.27(1H,d,J=1.5Hz).	434
YA0340	(CDCl ₃):2.36(3H,s),2.59(4H,m),3.02(1H,t,J=11.4Hz),3.16-3.29(7H,m),3.26(3H,s),3.61(2H,m), 3.94(1H,d,J=8.0Hz),6.94(2H,d,J=8.7Hz),7.31(1H,s),7.34(2H,d,J=8.7Hz),8.16(1H,d,J=5.1Hz)	447

),8.85(1H,d,J=5.1Hz),9.27(1H,s).	
YA0361	3.39-3.50(2H,m),3.47(3H,s),3.61-3.73(1H,m), 3.78(3H,s),3.83(3H,s),3.87-3.92(3H,m),4.92(1 H,t,J=10.5 Hz),6.99-7.11(3H,m),7.57(1H,d,J=2.7 Hz),8.25(1H,dd,J=1.2,5.1 Hz),9.03(1H,d,J=4.8 Hz),9.31(1H,d,J=0.9 Hz),9.78(1H,d,J=9.0 Hz),10.21-10.38(1H,m)(DMSO-d6)	409
YA0362	(DMSO-d6): 3.47(3H,s),3.37-4.04(6H,m),3.94(6H,s),5.09(1 H,m), 6.82(2H,d,J=8.4Hz), 7.05(1H,s),7.45(1H,t,J=8.4Hz), 8.22(1H,m),8.24(1H,dd,J=5.4,1.5Hz),9.05(1H, d,J=5.1Hz),9.32(1H,s),10.06(1H,m).	409
YA0366	3.38-3.60(4H,m),3.47(3H,s),3.88-3.95(2H,m), 3.90(3H,s),4.86-4.92(1H,m),6.96-7.01(1H,m), 7.06(1H,s),7.12(1H,d,J=8.8 Hz),7.71-7.79(1H,m),8.23-8.24(1H,m),9.03(1 H,d,J=5.1 Hz),9.32(1H,d,J=1.2 Hz),9.55-9.72(2H,m)(DMSO)	397
YA0367/ YA0368	(DMSO-d6) :3.30-3.75(7H,m),3.80-4.00(5H,m ,4.80-5.00(1H,m),6.93-7.00(1H,m),7.05(1H,s) ,7.11(1H,dd,J=2.4,11.4Hz),7.84(1H,m),8.23(1 H,d,J=5.1Hz),9.03(1H,d,J=5.1Hz),9.31(1H,s), 9.60-9.80(1H,brd),9.90-10.15(1H,brd).	397
YA0370	3.31-3.56(3H,m),3.45(3H,s),3.69-3.78(1H,m), 3.90-3.99(2H,m),3.94(3H,s),4.95-5.03(1H,m), 6.96-7.02(1H,m),7.03-7.09(2H,m),7.49-7.56(1 H,m),8.24(1H,d,J=4.4 Hz),8.51-8.69(1H,m),9.03(1H,d,J=5.1 Hz),9.32(1H,s),10.55-10.67(1H,m) (DMSO)	397
YA0378	2.77(1H,dd,J=10.5,12.0 Hz),3.18-3.30(3H,m),3.61(3H,s),3.64-3.71(2H ,m),3.86(3H,s),4.37(1H,dd,J=2.1,10.1 Hz),6.89(1H,d,J=1.7 Hz),6.99(1H,dd,J=1.6,8.2	413

	Hz),7.32(1H,s),7.50(1H,d,J=8.2 Hz),8.19(1H,d,J=5.2 Hz),8.86(1H,d,J=5.2 Hz),9.27(1H,s)(CDCl ₃)	
YA0399	(CDCl ₃) :2.76(1H,dd,J=10.2,12.3Hz),3.10-3.40(3H,m),3.55-3.80(5H,m),3.85(3H,s),4.39(1H,dd,J=2.4,10.2Hz),6.78(1H,d,J=8.7Hz),7.32(1H,s),7.39(1H,dd,J=2.7,8.7Hz),7.72(1H,d,J=2.4Hz),8.20(1H,dd,J=1.2,5.1Hz),8.87(1H,d,J=5.1Hz),9.27(1H,d,J=1.2Hz).	457
YA0408	(CDCl ₃): 1.98-2.03(4H,m),2.84(1H,m),3.17-3.32(7H,m),3.60(3H,s),3.59-3.71(2H,m),3.85(3H,s),4.28(1H,d,8.4Hz),6.10(1H,d,J=1.8Hz),6.18(1H,d,J=8.3Hz),7.29(1H,s),7.33(1H,d,J=8.4Hz),8.21(1H,d,J=5.2Hz),8.85(1H,d,J=5.2Hz),9.27(1H,s).	448
YA0409	(CDCl ₃) :1.95-2.10(4H,m),2.95-3.10(1H,m),3.19-3.45(7H,m),3.59(3H,s),3.50-3.80(2H,m),3.80(3H,s),4.48(1H,dd,J=2.2,10.2Hz),6.49(1H,dd,J=3.0,8.9Hz),6.63-6.87(2H,m),7.32(1H,s),8.20(1H,dd,J=1.4,5.2Hz),8.86(2H,d,J=5.2Hz),9.27(1H,d,J=1.1Hz).	448
YA0414	(CDCl ₃) :3.14(2H,m),3.22(1H,t,J=11.6Hz),3.41(1H,t,J=11.6Hz),3.82(2H,m),3.83(3H,s),3.88(3H,s),4.58(1H,dd,J=3.1,11.0Hz),6.51(2H,m),7.32(1H,s),8.19(1H,dd,J=1.5,5.3Hz),8.86(1H,d,J=5.3Hz),9.27(1H,d,J=1.5Hz).	415
YA0423	(DMSO-d ₆):3.35-3.70(4H,m),3.48(3H,s),3.78(3H,s),3.97(2H,m),4.70(1H,m),7.06(1H,t,J=7.7Hz),7.07(1H,s),7.15(1H,d,J=7.7Hz),7.31(1H,d,J=7.7Hz),7.39(1H,t,J=7.7Hz),7.61(2H,d,J=8.1Hz),7.70(2H,d,J=8.1Hz),8.25(1H,d,J=4.5Hz),9.07(1H,d,J=4.5Hz),9.33(1H,s),9.66(1H,br s).	455

YA0425	(DMSO-d6):3.61(3H,m),3.76(3H,s),3.81(3H,s),4.01(3H,m),4.69(1H,t,J=9.9Hz),7.05(2H,d,J=9.0Hz),7.07(1H,s),7.67(2H,d,J=9.0Hz),7.76(4H,s),8.24(1H,dd,J=1.2,5.1Hz),9.03(1H,d,J=5.1Hz),9.32(1H,d,J=1.2Hz),9.79(1H,d,J=10.2Hz),10.07(1H,s).	455
YA0434	(DMSO-d6):3.30-3.70(4H,m),3.42(3H,s),3.96(2H,d,J=13.8Hz),4.71(1H,t,J=11.3Hz),7.06(1H,s),7.33(2H,t,J=8.0Hz),7.77(6H,m),8.24(1H,d,J=5.4Hz),9.03(1H,d,J=5.4Hz),9.32(1H,s),9.80(1H,d,J=8.7Hz),10.03(1H,s).	443
YA0442	3.43-3.59(2H,m),3.48(3H,s),3.63-3.75(2H,m),3.97-4.01(2H,m),4.80-4.86(1H,m),7.06(1H,s),7.60-7.64(2H,m),7.86-7.88(1H,m),7.95-8.00(2H,m),8.05-8.07(1H,m),8.24-8.27(2H,m),9.02(1H,d,J=5.4 Hz),9.32(1H,s),10.01(1H,d,J=10.2 Hz),10.30-10.41(1H,m)(DMSO-d6)	399
YA0517	(CDCl3): 2.97(1H,dd,J=12.3,10.5Hz),3.18-3.28(5H,m),3.58(3H,s),3.59(1H,m),3.77(1H,m),4.27(1H,dd,10.2,2.7Hz),4.62(2H,m),6.89(1H,t,J=7.5Hz),7.16(1H,m),7.27(1H,m),7.28(1H,s),8.26(1H,dd,J=5.4,1.5Hz),8.86(1H,d,J=5.4Hz),9.26(1H,s).	391
YA0864	(DMSO-d6):3.15-3.35(1H,m),3.38-3.50(4H,m),3.70-4.30(9H,m),5.00-5.20(1H,m),7.00-7.10(2H,m),7.10-7.20(1H,m),7.30-7.50(6H,m),8.15-8.20(1H,m),8.30-8.40(1H,brd),9.05(1H,d,J=5.1Hz),9.31(1H,d,J=0.9Hz).	487
YA1074	(CDCl3):1.80-2.40(3H,m),3.12-3.34(4H,m),3.39-4.20(7.6H,m),4.50-5.07(0.6H,m),5.30-5.60(0.7H,m),5.72-6.05(0.1H,m),6.52-6.80(2H,m),6.82-7.22(1H,m),7.28(1H,s),8.18(1H,d,J=4.8 Hz),8.89(1H,d,J=5.1Hz),9.28(1H,d,J=1.2Hz)	439

YA1339	(CDCl ₃) :2.50-2.62(1H,m),2.80-2.95(1H,m), 3.02-3.20(1H,m),3.25-3.40(1H,m),3.50-3.74(5 H,m),3.75-3.80(1H,m),3.85(3H,s),6.60-6.80(2 H,m),7.30(1H,s),7.48(1H,t,J=8.4Hz),8.19(1H, dd,J=1.2,5.1Hz),8.86(1H,d,J=5.1Hz),9.27(1H, d,J=1.5Hz).	411
YA1340/ YA1341	(DMSO-d ₆) :2.55(3H,d,J=3.9Hz),3.40-3.80(3 H,m),3.45(3H,s),3.80-4.15(6H,m),4.85-5.15(1 H,m),6.90-7.05(1H,m),7.05(1H,s),7.13(1H,dd, J=2.4,11.4Hz),8.21(1H,dd,J=1.2,5.1Hz),9.04(1 H,d,J=5.1Hz),9.31(1H,d,J=1.2Hz),11.50-12.20 (1H,brd).	411
YA1534	2.90-3.10 (1H,m),3.15-3.35 (3H,m),3.50-3.70 (5H,m),3.80-4.05 (7H,m),6.87 (1H,d,J = 8.1 Hz),6.90-7.10 (2H,m),7.31 (1H,s),8.16 (1H,d,J = 4.6 Hz),8.85 (1H,d,J = 5.0 Hz),9.27 (1H,s) (CDCl ₃)	408
YA1535	3.45 (3H,s),3.46 (2H,m),3.64 (m,2H),3.91 (2H,t,J = 16.1 Hz),4.68 (1H,t,J = 10.5 Hz),7.05 (1H,s),7.59 (2H,d,J = 8.4 Hz),7.79 (2H,d,J = 8.4 Hz),8.23 (1H,dd,J = 5.1,1.2 Hz),9.02 (1H,d,J = 5.1 Hz),9.31 (1H,d,J = 1.2 Hz),10.00 (1H,d,J = 8.7 Hz),10.49 (1H,br s) (DMSO-6)	383
YA1536	3.45 (3H,s),3.46 (2H,m),3.64 (m,2H),3.91 (2H,t,J = 16.1 Hz),4.68 (1H,t,J = 10.5 Hz),7.05 (1H,s),7.59 (2H,d,J = 8.4 Hz),7.79 (2H,d,J = 8.4 Hz),8.23 (1H,dd,J = 5.1,1.2 Hz),9.02 (1H,d,J = 5.1 Hz),9.31 (1H,d,J = 1.2 Hz),10.00 (1H,d,J = 8.7 Hz),10.49 (1H,br s) (DMSO-6)	383
YA1537	2.39(3H,s),2.60(4H,t,J=4.6Hz),3.37(4H,t,J= 4.8Hz),3.53(3H,s),7.27(1H,s),8.18(1H,dd,J= 1.2,5.4Hz),8.87(1H,d,J=5.1Hz),9.28(1H,s)(CD Cl ₃)	286

YA1538	2.64-2.74(1H,br.s),2.66(2H,t,J=5.3Hz),2.73(4H,t,J=4.4Hz),3.39(4H,t,J=4.0Hz),3.54(3H,s),3.69-3.70(2H,m),7.26(1H,s),8.18(1H,d,J=5.0Hz),8.88(1H,t,J=5.0Hz),9.28(1H,s)(CDCl ₃)	316
YA1539	1.10(6H,t,J=6.6Hz),2.71(4H,t,J=4.9Hz),2.77(1H,m),3.36(4H,t,J=4.9Hz),3.54(3H,s),7.27(1H,s),8.18(1H,dd,J=1.1,5.2Hz),8.87(2H,d,J=5.1Hz),9.27(1H,s)(CDCl ₃)	314
YA1540	1.15(6H,d,J=6.2Hz),1.50(1H,br.s),2.61(2H,dd,J=1.6,12.4Hz),3.06-3.16(2H,m),3.49(2H,d,J=13.0Hz),3.52(3H,s),7.27(1H,s),8.16(1H,dd,J=1.3,5.0Hz),8.88(1H,d,J=5.0Hz),9.27(1H,d,J=1.3Hz)(CDCl ₃)	300
YA1541	2.98 (1H,t,J = 11.5 Hz),3.20 (3H,m),3.57 (3H,s),3.58 (2H,m),4.02 (1H,dd,J = 10.5,2.2 Hz),7.27 (1H,s),7.29 (1H,d,J = 8.3 Hz),7.46 (1H,d,J = 8.3 Hz),7.61 (1H,s),8.13 (1H,d,J = 5.2 Hz),8.86 (1H,d,J = 5.2 Hz),9.27 (1H,s) (CDCl ₃)	417
YA1542	3.44(3H,s),3.62-3.73(2H,m),3.86-3.93(2H,m),4.66(1H,m),7.05(1H,s),7.45(1H,dd,J=8.4,8.4Hz),7.67(1H,d,J=8.4Hz),7.81(1H,d,J=8.4Hz),8.04(1H,s),8.25(1H,dd,J=5.4,1.5Hz),9.02(1H,d,J=5.4 Hz),8.18(1H,dd,J=5.4,1.2 Hz),8.99(1H,d,J=5.1 Hz),9.32(1H,d,J=1.5 Hz),10.13(1H,m),10.67(1H,m) (DMSO)	427
YA1543	3.33 (1H,dd,J = 13.5,8.9 Hz),3.47 (3H,s),3.79 (1H,dd,J = 13.5,3.9 Hz),4.73 (1H,d,J = 17.1 Hz),4.22 (1H,d,J = 17.1 Hz),4.82 (1H,dd,J = 8.9,3.9 Hz),6.08 (1H,s),7.31 (2H,d,J = 8.4 Hz),7.42 (2H,d,J = 8.4 Hz),8.14 (1H,d,J = 5.1,1.5 Hz),8.90 (1H,d,J = 5.1 Hz),9.29 (1H,d,J = 1.5 Hz) (CDCl ₃)	397

YA1544	1.97 (4H,m),3.26 (4H,m),3.39 (2H,m),3.44 (3H,s),3.60 (2H,m),3.79 (1H,d,J = 13.5 Hz),3.91 (1H,d,J =13.8 Hz),4.48 (1H,t,J = 10.1 Hz),6.66 (2H,d,J = 8.4 Hz),7.04 (1H,s),7.51 (2H,d,J = 8.4 Hz),8.21 (1H,d,J = 5.1 Hz),9.02 (1H,d,J = 5.1 Hz),9.31 (1H,s),9.70 (1H,d,J = 10.8 Hz),10.07 (1H,br s) (DMSO-d6)	418
YA1545	3.21 (4H,m),3.42 (2H,m),3.44 (3H,s),3.62 (2H,m),3.79 (4H,m),3.90 (2H,t,J = 14.6 Hz),4.54 (1H,t,J = 10.5 Hz),7.05 (1H,s),7.13 (2H,d,J = 8.7 Hz),7.62 (2H,d,J = 8.7 Hz),8.22 (1H,d,J = 4.8 Hz),9.02 (1H,d,J = 4.8 Hz),9.31 (1H,s),9.80 (1H,d,J = 9.3 Hz),10.23 (1H,br s) (DMSO-d6)	434
YA1546	2.80 (3H,d,J = 4.5 Hz),3.26 (4H,m),3.44 (3H,s),3.45 (4H,m),3.60 (2H,m),3.80 (1H,d,J = 3.5 Hz),3.90 (3H,m),4.54 (1H,t,J = 10.5 Hz),7.04 (1H,s),7.10 (2H,d,J = 8.7 Hz),7.62 (2H,d,J = 8.7 Hz),8.20 (1H,dd,J = 5.1,1.2 Hz),9.02 (1H,d,J = 5.1 Hz),9.32 (1H,d,J = 1.2 Hz),9.86 (1H,d,J = 10.2 Hz),10.33 (1H,br s),11.15 (1H,br s) (DMSO-d6)	447
YA1547	2.28(3H,s),3.07(4H,t,J=4.7Hz),3.37(4H,t,J=4.8Hz),3.75(3H,s),5.76(1H,s),7.26-7.33(2H,m),7.45(2H,dd,J=7.8,7.8Hz),7.79(2H,d,J=7.8Hz),8.14(1H,d,J=5.4Hz),8.87(1H,dd,J=7.8,7.8Hz),9.28(1H,d,J=1.2Hz)(CDCl3)	428
YA1548	2.37 (1H,m),2.43 (1H,m),2.80 (3H,d,J = 5.2 Hz),2.81 (3H,d,J = 5.2 Hz),3.28 (1H,q,J = 8.8 Hz),3.40 (2H,m),3.44 (3H,s),3.57 (5H,m),3.79 (1H,d,J = 11.4 Hz),3.97 (2H,m),4.50 (1H,t,J = 10.0 Hz),6.69 (2H,d,J = 8.4 Hz),7.05 (1H,s),7.54 (2H,d,J = 8.4 Hz),8.20 (1H,dd,J = 4.8,1.2 Hz),9.03 (1H,d,J = 4.8 Hz),9.32 (1H,d,J = 1.2 Hz),9.71 (1H,br s),10.06 (1H,br	461

	s),11.35 (1H,br s) (DMSO-d6)	
YA1549	2.33 (1H,m),2.41 (1H,m),2.79 (3H,d,J = 4.8 Hz),2.81 (3H,d,J = 4.8 Hz),3.28 (1H,d,J = 8.4 Hz),3.39 (2H,m),3.44 (3H,s),3.57 (5H,m),3.79 (1H,d,J = 13.3 Hz),3.97 (2H,m),4.50 (1H,t,J = 11.6 Hz),6.69 (2H,d,J = 8.4 Hz),7.04 (1H,s),7.55 (2H,d,J = 8.4 Hz),8.21 (2H,d,J = 5.2 Hz),9.02 (2H,d,J = 5.2 Hz),9.32 (1H,s),9.75 (1H,br s),10.14 (1H,br s),11.45 (1H,br s) (DMSO-d6)	461
YA1550	3.47 (3H,s),3.60 (2H,m),3.76 (2H,m),3.81 (3H,s),3.94 (2H,m),4.68 (1H,m),7.05 (2H,d,J = 8.6 Hz),7.06 (1H,s),7.67 (2H,d,J = 8.6 Hz),7.76 (4H,s),8.25 (1H,d,J = 5.0 Hz),9.03 (1H,d,J = 5.0 Hz),9.32 (1H,s) (DMSO-d6)	455
YA1551	1.18 (1H,m),1.40 (4H,m),1.70 (1H,m),1.80 (4H,m),2.55 (1H,m),3.43 (2H,m),3.45 (3H,s),3.60 (2H,m),3.91 (2H,m),4.60 (1H,t,J = 10.8 Hz),7.05 (1H,s),7.35 (2H,d,J = 8.0 Hz),7.64 (2H,d,J = 8.0 Hz),9.03 (1H,d,J = 4.8 Hz),9.31 (1H,s),9.80 (1H,d,J = 8.8 Hz),10.24 (1H,m) (DMSO-d6)	431
YA1552	3.02(4H,m),3.23(4H,m),3.49(3H,s),7.08-7.67(10H,m),8.15(1H,d,J=5.1Hz),8.87(1H,d,J=5.1Hz),9.27(1H,s)(CDCl3)	424
YA1553	2.90 (1H,dd,J = 13.2,9.6 Hz),3.16 (2H,m),3.24 (1H,d,14.4 Hz),3.31 (3H,s),3.34 (1H,d,J = 13.6 Hz),3.47 (1H,t,J = 13.2 Hz),3.80 (3H,m),6.97 (1H,s),7.38 (2H,m),7.45 (3H,m),7.64 (1H,dd,J = 5.2,1.2 Hz),8.94 (1H,d,J = 5.2 Hz),9.28 (1H,d,J = 1.2 Hz),9.54 (1H,br s),9.78 (1H,br s) (DMSO-d6)	363

YA1554	2.95 (1H,m),3.29-3.05 (3H,m),3.34 (3H,s),3.35 (1H,m),3.44 (1H,t,J = 12.4 Hz),3.79 (3H,m),6.99 (1H,s),7.40 (2H,d,J = 8.4 Hz),7.51 (2H,d,J = 8.4 Hz),7.76 (1H,dd,J = 4.8,1.2 Hz),8.96 (1H ,d,J = 4.8 Hz),9.29 (1H,d,J = 1.2 Hz),9.38 (1H,br s),9.71 (1H,br s) (DMSO-d6)	397
YA1555	1.65 (2H,br s),1.90 (4H,br s),3.44 (6H,m),3.45 (3H,s),3.61 (2H,m),3.88 (1H,d,J = 13.6 Hz),3.94 (1H,d,J = 13.6 Hz),4.66 (1H,t,J = 8.8 Hz),7.05 (1H,s),7.82 (4H,br s),8.23 (1H,dd,J = 5.2,1.2 Hz),9.02 (1H,d,J = 5.2 Hz),9.31 (1H,d,J = 1.2 Hz),9.89 (1H,br s),10.37 (1H,br s) (DMSO-d6)	432
YA1556	3.42 (2H,m),3.45 (3H,s),3.56 (2H,m),3.85 (1H,d,J = 13.2 Hz),3.93 (1H,d,J = 14.0 Hz),4.55 (1H,t,J = 10.8 Hz),6.94 (1H,br s),7.05 (1H,s),7.15 (4H,br s),7.31 (2H,br s),7.57 (2H,br s),8.22 (1H,d,J = 4.8 Hz),9.03 (1H,d,J = 4.8 Hz),9.32 (1H,s),9.66 (1H,br s),9.90 (1H,br s) (DMSO-d6)	509
YA1557	1.40 (1H,m),1.78 (8H,m),2.18 (2H,d,J = 11.2 Hz),2.78 (2H,m),2.91 (2H,m),3.30 (1H,m),3.40 (3H,m),3.44 (3H,s),3.58 (2H,m),3.82 (1H,d,J = 13.3 Hz),3.93 (3H,m),4.53 (1H,m),7.05 (1H,s),7.11 (2H,d,J = 8.8 Hz),7.57 (2H,d,J = 8.8 Hz),8.21 (1H,d,J = 5.2 Hz),9.02 (1H,d,J = 5.2 Hz),9.32 (1H,s),9.73 (1H,d,J = 8.4 Hz),10.09 (1H,br s),10.39 (1H,br s) (DMSO-d6)	515
YA1558	2.84-2.91(1H,m),3.01-3.05(4H,m),3.22(3H,s), 3.46(3H,s),3.68-3.72(2H,m),4.07-4.11(1H,m), 6.95(1H,s),7.78(2H,d,J=7.2Hz),7.93(2H,d,J= 7.2Hz),8.31(1H,d,J=4.2Hz),8.99(1H,d,J=4.2Hz),9.28(1H,s)(DMSO-d6)	427

YA1559	1.84 (4H,m),1.97 (2H,m),2.13 (2H,m),2.79 (2H,t,J = 11.6 Hz),3.04 (2H,m),3.24 (1H,m),3.40 (2H,m),3.44 (3H,s),3.59 (2H,m),3.80 (1H,d,J = 14.0 Hz),3.91 (3H,m),4.53 (1H,t,J = 11.2 Hz),7.05 (1H,s),7.13 (2H,d,J = 8.4 Hz),7.58 (2H,d,J = 8.4 Hz),8.22 (1H,d,J = 5.2 Hz),9.02 (1H,d,J = 5.2 Hz),9.31 (1H,s),9.75 (1H,d,J = 8.4 Hz),10.10 (1H,br s),11.04 (1H,br s) (DMSO-d6)	501
YA1560	1.71(2H,m),2.12(2H,m),2.74(6H,d,J=4.8 Hz),2.74-2.80(3H,m),3.30-3.96(8H,m),3.40(3 H,s),4.54(1H,m),7.05(1H,s),7.10(2H,d,J=9.0 Hz),7.54(2H,d,J=9.0 Hz),8.21(1H,dd,J=5.1,1.2 Hz),9.03(1H,d,J=5.4 Hz),9.32(1H,s),9.68(1H,m),9.92(1H,m),10.54(1H,m),(DMSO-d6)	475
YA1561	1.51(2H,m),1.84(2H,m),3.00-3.20(3H,m),3.38 (3H,s),3.38-3.91(8H,m),4.55(1H,m),7.05(1H,s),7.18(2H,d,J=9.0 Hz),7.51(2H,d,J=9.0 Hz),8.21(1H,d,J=6.0 Hz),9.02(1H,d,J=5.1 Hz),9.31(1H,s),9.54-9.62(3H,m),(DMSO-d6)	448
YA1562	1.89-2.05(2H,m),2.65-3.20(5H,m),3.25-3.82(5 H,m),3.41(3H,s),4.39(1H,m),4.91(1H,m),6.49(2H,d,J= 8.4 Hz),6.96(1H,s),7.25(2H,d,J=8.4 Hz),8.18(1H,dd,J=4.2,0.9 Hz),8.99(1H,d,J=5.1 Hz),9.28(1H,s), (DMSO-d6)	434
YA1563	1.06 (1H,m),1.30 (2H,m),1.43 (2H,m),1.60 (2H,m),1.79 (3H,m),2.97 (3H,m),3.45 (3H,s),3.60 (2H,m),3.80 (3H,s),3.90 (2H,m),4.63 (1H,m),7.05 (1H,s),7.70 (4H,br s),8.23 (1H,d,J = 5.2 Hz),9.03 (1H,d,J = 5.2 Hz),9.32 (1H,s),9.75 (1H,br s) (DMSO-d6)	460

YA1564	2.99 (6H,m),3.44 (1H,m),3.45 (3H,s),3.57 (3H,m),3.82 (1H,d,J = 13.2 Hz),4.92 (1H,d,J = 14.4 Hz),4.55 (1H,t,J = 10.0 Hz),7.05 (1H,s),7.06 (2H,br s),7.61 (2H,br s),8.22 (1H,d,J = 5.2 Hz),9.03 (1H,d,J = 5.2 Hz),9.32 (1H,s),9.73 (1H,br s),10.11 (1H,br s) (DMSO-d6)	392
YA1565	3.20-3.22(4H,m),3.44-3.89(15H,m),4.51-4.55(1H,m),5.11(2H,s),7.04-7.07(3H,m),7.35-7.39(5H,m),7.53(2H,d,J=7.2Hz),8.20(1H,d,J=4.2Hz),9.01(1H,d,J=4.2Hz),9.31(1H,s),9.78-9.92(2H,br)(DMSO-d6)	567
YA1566	1.33(6H,d,J=6.8Hz),3.02-3.55(13H,m),3.89-3.93(5H,m),4.52-4.55(1H,m),6.99-7.13(3H,m),7.60(2H,d,J=7.2Hz),8.21(1H,d,J=4.2Hz),9.02(1H,d,J=4.2Hz),9.32(1H,s),9.67-10.15(3H,br),10.84-10.88(1H,br)(DMSO-d6)	475
YA1567	3.17-3.26(8H,m),3.44-3.55(6H,m),3.80-3.94(9H,m),4.50-4.57(1H,m),7.05-7.12(3H,m),7.60(2H,d,J=7.2Hz),8.21(1H,d,J=4.2Hz),9.02(1H,d,J=4.2Hz),9.32(1H,s),9.77-9.80(1H,br),10.16-10.20(1H,br),10.49-10.52(1H,br)(DMSO-d6)	477
YA1568	3.18-3.24(3H,m),3.40-3.59(13H,m),4.02-4.06(2H,m),4.51-4.55(1H,m),7.03-7.11(3H,m),7.52(2H,d,J=7.2Hz),8.21(1H,d,J=4.2Hz),9.02(1H,d,J=4.2Hz),9.18-9.22(1H,br),9.38(1H,s),9.72-9.78(1H,br),10.04-10.10(1H,br)(DMSO-d6)	433
YA1569	1.90-2.02(2H,m),2.80-3.06(5H,m),3.25-3.82(5H,m),3.65(3H,s),4.39(1H,m),4.94(1H,m),6.49(2H,d,J= 8.4 Hz),6.96(1H,s),7.25(2H,d,J=8.4 Hz),8.16(1H,dd,J=5.4,0.9 Hz),8.99(1H,d,J=5.1 Hz),9.29(1H,s) (DMSO-d6)	434

YA1570	1.15(6H,d,J= 6.3 Hz),2.31(2H,dd,J= 11.1 Hz),2.98-3.23(6H,m),3.48-3.62(4H,m),3.56(3 H,s),3.94(1H,dd,J= 10.2,2.1 Hz),6.94(2H,d,J= 8.7 Hz),7.31(1H,s),7.34(2H,d,J=8.7 Hz),8.16(1H,dd,J=5.1,1.2 Hz),8.86(1H,d,J=5.1 Hz),9.26(1H,s) (CDCl ₃)	461
YA1571	1.27(6H,d,J= 6.0 Hz),2.43(2H,dd,J= 11.1,11.1 Hz), 3.02(1H,dd,J=12.0,10.5 Hz),3.17-3.23(3H,m),3.45-3.61(4H,m),3.56(3 H,s),3.81(1H,m), 3.95(1H,m),6.92(2H,d,J= 8.7 Hz),7.32(1H,s),7.35(2H,d,J=8.7 Hz),8.17(1H,m),8.86(1H,d,J=5.1 Hz),9.26(1H,d,J=1.2 Hz) (CDCl ₃)	462
YA1572	3.27-3.32(8H,m),3.47(3H,s),3.82-3.86(2H,m), 4.36-4.39(1H,m),7.02(1H,s),7.72(2H,d,J=7.2H z),7.84(2H,d,J=7.2Hz),7.96-8.04(4H,m),8.22(1 H,d,J=4.2Hz),9.01(1H,d,J=4.2Hz),9.30(1H,s)(DMSO-d ₆)	503
YA1573	2.93-3.10(5H,m),3.46(3H,s),3.69-3.71(1H,m), 4.01-4.04(1H,m),6.99(1H,s),7.63(2H,d,J=7.2H z),7.77(2H,d,J=7.2Hz),7.88-7.95(4H,m),8.18(1 H,d,J=4.2Hz),8.99(1H,d,J=4.2Hz),9.29(1H,s)(DMSO-d ₆)	450
YA1574	3.08 (1H,dd,J =12.5,10.4 Hz),3.24 (3H,m),3.59 (3H,s),3.66 (2H,m),4.09 (1H,dd,J = 10.4,2.4 Hz),7.29 (2H,d,J = 8.3 Hz),7.33 (1H,s),7.54 (2H,d,J = 8.3 Hz),7.56 (2H,d,J = 8.3 Hz),7.59 (2H,d,J = 8.3 Hz),8.17 (1H,d,J = 4.9 Hz),8.86 (1H,d,J = 4.9 Hz),9.27 (1H,s) (CDCl ₃)	509
YA1575	3.08 (1H,dd,J = 12.4,10.0 Hz),3.25 (3H,m),3.59 (3H,s),3.67 (2H,m),4.11 (1H,dd,J = 10.0,2.0 Hz),7.33 (1H,s),7.57 (2H,d,J = 8.0 Hz),7.63 (2H,d,J = 8.0 Hz),7.71 (4H,s),8.16 (1H,dd,J = 5.2,1.2 Hz),8.16 (1H,dd,J = 5.2,1.2	493

	H _z), 8.86 (1H, d, J = 5.2 Hz), 9.27 (1H, d, J = 1.2 Hz) (CDCl ₃)	
YA1576	1.45 (3H, t, J = 7.0 Hz), 3.08 (1H, dd, J = 12.5, 10.6 Hz), 3.22 (3H, m), 3.58 (3H, s), 3.62 (2H, m), 4.05 (1H, m), 4.08 (2H, q, J = 7.0 Hz), 6.98 (2H, d, J = 8.0 Hz), 7.32 (1H, s), 7.49 (2H, d, J = 8.0 Hz), 7.52 (2H, d, J = 8.0 Hz), 7.58 (2H, d, J = 8.0 Hz), 8.17 (1H, d, J = 5.3 Hz), 8.86 (1H, d, J = 5.3 Hz), 9.27 (1H, s), (CDCl ₃)	469
YA1577	1.83 (4H, m), 1.99 (1H, m), 2.21 (1H, m), 2.61 (4H, m), 2.87 (1H, m), 3.03 (1H, dd, J = 12.0, 10.0 Hz), 3.20 (4H, m), 3.33 (1H, m), 3.42 (1H, m), 3.49 (1H, m), 3.56 (3H, s), 3.61 (2H, m), 3.90 (1H, dd, J = 10.0, 2.0 Hz), 6.55 (2H, d, J = 8.8 Hz), 7.29 (2H, d, J = 8.8 Hz), 7.30 (1H, s), 8.16 (1H, d, J = 5.2 Hz), 8.85 (1H, d, J = 5.2 Hz), 9.26 (1H, s) (CDCl ₃)	487
YA1578	3.09 (1H, dd, J = 12.4, 10.8 Hz), 3.20 (3H, m), 3.58 (3H, s), 3.64 (2H, m), 3.82 (3H, s), 3.86 (3H, s), 4.05 (1H, dd, J = 10.4, 2.8 Hz), 6.58 (2H, m), 7.24 (2H, m), 7.32 (1H, s), 7.47 (2H, d, J = 8.4 Hz), 7.53 (2H, d, J = 8.4 Hz), 8.17 (1H, dd, J = 5.2, 1.2 Hz), 8.86 (1H, d, J = 5.2 Hz), 9.27 (1H, d, J = 1.2 Hz) (CDCl ₃)	485
YA1579	3.08 (1H, dd, J = 12.5, 10.6 Hz), 3.23 (3H, m), 3.59 (3H, s), 3.66 (2H, m), 3.93 (3H, s), 3.96 (3H, s), 4.07 (1H, dd, J = 10.3, 2.2 Hz), 6.95 (1H, d, J = 8.3 Hz), 7.11 (1H, d, J = 2.0 Hz), 7.16 (1H, dd, J = 8.3, 2.0 Hz), 7.33 (1H, s), 7.52 (1H, d, J = 8.1 Hz), 7.59 (1H, d, J = 8.1 Hz), 8.17 (1H, dd, J = 5.3, 1.2 Hz), 8.85 (1H, d, J = 5.3 Hz), 9.27 (1H, d, J = 1.2 Hz) (CDCl ₃)	485

YA1580	3.07 (1H,dd,J = 12.4,10.4 Hz),3.23 (3H,m),3.59 (3H,s),3.65 (2H,m),4.08 (1H,dd,J = 10.4,2.0 Hz),7.32 (1H,s),7.41 (2H,d,J = 8.4 Hz),7.52 (2H,d,J = 8.4 Hz),7.53 (2H,d,J = 8.4 Hz),7.58 (2H,d,J = 8.4 Hz),8.16 (1H,d,J = 4.8 Hz),8.86 (1H,d,J = 4.8 Hz),9.27 (1H,s) (CDCl ₃)	459
YA1581	3.09 (1H,dd,J = 12.2,11.0 Hz),3.24 (3H,m),3.59 (3H,s),3.66 (2H,m),4.10 (1H,dd,J = 10.4,2.4 Hz),7.29 (2H,m),7.33 (1H,s),7.44 (2H,d,J = 8.0 Hz),7.52 (3H,m),8.18 (1H,dd,J = 5.3,1.0 Hz),8.87 (1H,d,J = 5.3 Hz),9.27 (1H,d,J = 1.0 Hz) (CDCl ₃)	493
YA1582	3.06 (1H,dd,J = 12.4,10.4 Hz),3.25 (3H,m),3.58 (3H,s),3.65 (2H,m),4.09 (1H,dd,J = 10.0,2.0 Hz),7.33 (1H,s),7.42 (1H,dd,J = 8.0,2.0 Hz),7.56 (5H,m),7.68 (1H,d,J = 2.0 Hz),8.16 (1H,dd,J = 5.2,1.2 Hz),8.85 (1H,d,J = 5.2 Hz),9.27 (1H,d,J = 1.2 Hz) (CDCl ₃)	493
YA1583	3.06 (1H,dd,J = 12.3,10.8 Hz),3.23 (3H,m),3.59 (3H,s),3.65 (2H,m),4.13 (1H,dd,J = 10.2,2.2 Hz),7.33 (1H,s),8.14 (1H,d,J = 5.3 Hz),8.15 (2H,d,J = 8.4 Hz),8.78 (1H,s),8.86 (1H,d,J = 5.3 Hz),9.27 (1H,s) (CDCl ₃)	417
YA1584	1.37(6H,d,J= 6.0 Hz),3.07(1H,dd,J=12.6,10.8 Hz),3.20-3.26(3H,m),3.58(3H,s),3.65-3.68(2H,m),4.07(1H,m),4.59(1H,m),6.98(2H,d,J= 8.7 Hz),7.48(1H,s),7.50-7.61(6H,m),8.17(1H,d,J= 4.8 Hz),8.86(1H,d,J=5.1 Hz),9.26(1H,d,J=1.2 Hz) (CDCl ₃)	483
YA1585	0.99(3H,t,J= 7.5 Hz),1.47-1.82(4H,m),3.07(1H,dd,J=12.3,10.5 Hz),3.22-3.27(3H,m),3.58(3H,s),3.62-3.65(2H,m),4.03(2H,t,J= 6.3 Hz),4.04(1H,m),6.98(2H,d,J= 8.7	497

	H _z), 7.48(1H,s), 7.50-7.59(6H,m), 8.17(1H,dd, J=5.1, 1.2 Hz), 8.86(1H,d, J=5.1 Hz), 9.26(1H,d, J=1.2 Hz) (CDCl ₃)	.
YA1586	1.28(1H,br.s), 2.51(3H,s), 3.07(1H,dd, J=10.8, 12.6Hz), 3.21-3.28(3H,m), 3.58(3H,s), 3.64(2H,m), 4.08(1H,dd, J=2.5, 19.5Hz), 7.34(2H,d, J=7.8 Hz), 7.45-7.67(7H,m), 8.17(1H,d, J=5.4Hz), 8.86(1H,d, J=5.1Hz), 9.27(1H,d, J=1.2Hz)(CDCl ₃)	470
YA1587	1.86(1H,br.s), 2.40(3H,s), 3.07(1H,dd, J=10.8, 12.6Hz), 3.20-3.27(2H,m), 3.58(3H,s), 3.62-3.68(3H,m), 4.06(1H,dd, J=2.5, 19.5Hz), 7.24-7.27(2H,m), 7.49-7.52(5H,m), 7.60(2H,d, J=8.2Hz), 8.17(1H,d, J=5.4Hz), 8.85(1H,d, J=5.2Hz), 9.27(1H,s)(CDCl ₃)	438
YA1588	1.29(6H,s), 1.85(1H,br.s), 2.94-2.96(1H,m), 3.08(1H,dd, J=10.8, 12.6Hz), 3.21-3.27(3H,m), 3.59(3H,s), 3.65(2H,m), 4.07(1H,dd, J=2.5, 19.5Hz), 7.28-7.62(9H,m), 8.17(1H,dd, J=1.2, 5.7Hz), 8.86(1H,d, J=5.1Hz), 9.27(1H,d, J=1.2Hz)(CDCl ₃)	466
YA1589	1.72(1H,br.s), 3.10(1H,m), 3.21-3.24(3H,m), 3.58(3H,s), 3.58-3.73(4H,m), 4.09(1H,dd, J=2.5, 19.5Hz), 6.75(2H,dd, J=2.1, 6.6Hz), 7.23-7.57(7H,m), 8.16(1H,d, J=5.4Hz), 8.86(1H,d, J=5.1Hz), 9.27(1H,d, J=1.2Hz)(CDCl ₃)	439
YA1590	2.79 (1H,dd, J = 10.5, 12.6 Hz), 3.20-3.40 (3H,m), 3.50-3.80 (5H,m), 4.45 (1H,dd, J = 3.0, 10.2 Hz), 7.10-7.20 (1H,m), 7.30-7.40 (2H,m), 7.58 (1H,dd, J = 0.9, 7.8 Hz), 7.73 (1H,dd, J = 1.5, 7.8 Hz), 8.19 (1H,dd, J = 0.9, 4.8 Hz), 8.85 (1H,d, J = 5.1 Hz), 9.26 (1H,d, J = 0.9 Hz) (CDCl ₃)	427
YB013	1.31-1.46(1H,m), 1.60-1.96(3H,m), 2.17-2.30(1H,m), 2.89-3.02(2H,m), 3.41(3H,s), 3.61(1H,d, J=12.4 Hz), 3.80(1H,d, J=13.5 Hz), 3.90-4.01(2H,m), 6.89-7.01(3H,m), 6.96(1	378

	H,s),7.27-7.32(2H,m),8.18(1H,d,J=4.4 Hz),8.96(1H,d,J=5.0 Hz),9.28(1H,s)(DMSO-d6)	
YB014	1.33-1.49(1H,m),1.60-1.93(3H,m),2.20-2.32(1H,m),2.89-3.04(2H,m),3.41(3H,s),3.63(1H,d,J=13.3 Hz),3.82(1H,d,J=11.1 Hz),4.22-4.37(2H,m),6.95(1H,s),7.51-7.56(2H,m),7.65-7.70(1H,m),8.00-8.03(2H,m),8.17(1H,dd,J=1.1,5.1 Hz),8.87(1H,d,J=5.1 Hz),9.28(1H,d,J=1.0 Hz)(DMSO-d6)	406
YB048	(CDCl ₃): 1.93-2.07(3H,m),2.38(1H,m),3.09(1H,m),3.46(1H,m),3.57(3H,s),3.61-3.70(2H,m),4.05(1H,m),7.26-7.34(2H,m),7.59-7.61(2H,m),7.76(1H,m),8.16(1H,m),8.83(1H,m),9.27(1H,s).	389
YB049	(CDCl ₃): 1.92-2.08(3H,m),2.36(1H,m),3.11(1H,m),3.44(1H,dd,J=12.9,10.8Hz),3.58(3H,s),3.61-3.70(2H,m),4.06(1H,m),7.11(1H,m),7.28-7.33(2H,m),7.70(1H,dd,J=8.7,4.8Hz),8.15(1H,m),8.86(1H,d,J=5.4Hz),9.28(1H,s).	407
YB050	1.93-2.11(3H,m),2.33-2.45(1H,m),3.08-3.16(1H,m),3.46(1H,dd,J=11.4,12.9 Hz),3.59(3H,s),3.62-3.71(2H,m),4.06(1H,d,J=12.6 Hz),7.32-7.37(1H,m),7.32(1H,s),7.57-7.64(2H,m),7.75(1H,d,J=8.1 Hz),8.16(1H,dd,J=1.2,5.4 Hz),8.84(1H,d,J=4.8 Hz),9.28(1H,d,J=0.9 Hz)(CDCl ₃)	389
YB051	1.91-2.11(3H,m),2.35-2.43(1H,m),3.08-3.16(1H,m),3.42-3.50(1H,m),3.59(3H,s),3.62-3.71(2H,m),4.05(1H,d,J=11.1 Hz),7.32(1H,s),7.33-7.37(1H,m),7.57-7.65(2H	389

	,m),7.75(1H,d,J=7.8 Hz),8.16(1H,d,J=5.7 Hz),8.84(1H,d,J=5.4 Hz),9.28(1H,d,J=1.2 Hz)(CDCl ₃)	
YB130	1.78-1.96(4H,m),2.73-2.90(1H,m),3.02-3.09(2 H,m),3.46(3H,s),3.84(2H,d,J=12.6 Hz),6.98(1H,s),7.11-7.17(2H,m),7.33-7.38(2H ,m),8.25(1H,d,J=5.1 Hz),9.01(1H,d,J=4.8 Hz),9.30(1H,s)(DMSO-d ₆)	366
YB157	1.90-2.05(2H,m),2.18-2.35(2H,m),2.92-3.09(1 H,m),3.10-3.23(2H,m),3.58(3H,s),3.72-3.83(2 H,m),6.95-7.07(1H,m),7.22(1H,dd,J=2.2,9.0H z),7.34(1H,s),7.46(1H,s),7.48-7.55(1H,m),8.20 (1H,d,J=5.3Hz),8.88(1H,d,J=5.2Hz),9.29(1H.s)(CDCl ₃)	406
YB158	1.91-2.04(2H,m),2.23(2H,d,J=8.9Hz),2.44(3H ,s),2.97-3.11(1H,m),3.16(2H,dd,J=11.1,12.4Hz),3.58(3H,s),3.77(2H,d,J=13.0Hz),7.12(1H,d,J =8.5Hz),7.36-7.41(4H,m),8.20(1H,d,J=5.3Hz), 8.87(1H,d,J=4.8Hz),9.28(1H,s) (CDCl ₃)	402
YB159	1.93-2.05(2H,m),2.23(2H,d,J=12.6Hz),3.19(3 H,m),3.58(3H,s),3.81(2H,d,J=13.2Hz),7.12-7. 16(1H,m),7.26(1H,s),7.34(1H,s),7.56(1H,dd,J =2.4,8.7Hz),7.77-7.76(1H,m),8.20(1H,dd,J=1. 2,5.1Hz),8.87(1H,d,J=5.1Hz),9.29(1H,s) (CDCl ₃)	422
YB160	2.01-2.22(5H,m),3.20(2H,dd,J=1.4,11.7Hz),3. 47(3H,s),3.84(2H,d,J=13.2Hz),6.99(1H,s),7.32 (1H,m),7.72(1H,dd,J=2.1,9.0Hz),8.09(1H,dd,J =2.7,9.1Hz),8.27(1H,m),9.01(1H,d,J=5.1Hz),9 .31(1H,d,J=1.5Hz) (DMSO-d ₆)	407
YB162	2.13-2.43(4H,m),3.10-3.38(3H,m),3.57(3H,s), 3.65-3.83(2H,m),7.30-7.40(3H,m),7.45-7.59(1 H,m),7.62-7.80(1H,m),8.10-8.22(1H,m),8.88(1 H,d,J=5.1Hz),9.28(1H,s)(CDCl ₃)	389

YB193	2.22-2.39(4H,m),3.21-3.35(2H,m),3.48(3H,s), 3.90(2H,d,J=13.5 Hz),7.03(1H,s),7.38-7.43(1H,m),7.46-7.51(2H ,m),7.59-7.66(2H,m),8.28(1H,d,J=5.0 Hz),9.01(1H,d,J=5.0 Hz),9.30(1H,s)(DMSO-d6)	373
YB251	2.01-2.22(5H,m),3.20(2H,dd,J=11.4,11.7Hz),3 .47(3H,s),3.82(2H,d,J=13.2Hz),7.32(1H,m), 6.70(1H,s),7.72(1H,dd,J=2.1,9.0Hz),8.09(1H,d d,J=2.7,9.1Hz),8.27(1H,m),9.01(1H,d,J=5.1Hz ,),9.31(1H,d,J=1.5Hz)(DMSO-d6)	406
YB252	1.64(2H,m),2.23(2H,d,J=8.9Hz),2.44(3H,s),2. 97-3.11(1H,m),3.16(2H,dd,J=11.1,11.4Hz),3.5 8(3H,s),3.77(2H,d,J=13.0Hz) 7.12(1H,d,J=8.5Hz),7.36-7.41(4H,m),8.20(1H, d,J=5.3Hz),8.87(1H,d,J=4.8Hz),9.28(1H,s)(C DCl3)	401
YB253	1.93-2.05(2H,m),2.23(2H,d,J=12.6Hz),3.19(3 H,m),3.58(3H,s),3.81(2H,d,J=13.2Hz),7.12- 7.16(1H,m),7.26(1H,s) 7.34(1H,s),7.56(1H,dd,J=2.4,8.7Hz),7.11-7.76 (1H,m),8.20(1H,dd,J=1.2,5.1Hz),8.87(1H,d,J= 5.1Hz),9.29(1H,s)(CDCl3)	421
YB254	1.72-1.94(8H,m),2.52(4H,m),2.97-3.05(3H,m) ,3.56(3H,s),3.61(2H,s),3.67-3.73(2H,m),7.21- 7.34(4H,m),8.17(1H,d,J=5.4 Hz),8.86(1H,d,J=5.1 Hz),9.27(1H,s) (CDCl3)	431
YB255	1.78 (1H,m),1.89 (3H,m),1.96 (3H,m),2.13 (1H,d,J = 13.6 Hz),3.46 (2H,m),3.56 (3H,s),3.66 (2H,t,J = 6.8 Hz),3.73 (2H,m),7.30 (2H,d,J = 8.0 Hz),7.31 (1H,s),7.52 (2H,d,J = 5.2 Hz),8.15 (1H,d,J = 5.2 Hz),8.86 (1H,d,J = 5.2 Hz),9.27 (1H,s)	444

YB256	1.46-1.73(9H,m),2.01(2H,d,J=12.1Hz),2.56(4H,t,J=5.0Hz),2.94(2H,td,J=1.3,12.7Hz),3.52(3H,s),3.70(2H,d,J=13.8Hz),7.27(1H,s),8.18(1H,dd,J=1.3,5.3Hz),8.86(1H,d,J=5.3Hz),9.27(1H,d,J=1.3Hz)(CDCl ₃)	354
YB257	1.81-1.88(4H,m),2.80(1H,m),2.99-3.08(2H,m),3.46(3H,s),3.82-3.86(2H,m),6.98(1H,s),7.26-7.43(3H,m),7.53(1H,s),8.26(1H,d,J=4.8Hz),9.01(1H,d,J=4.8 Hz),9.30(1H,s) (DMSO-d ₆)	425
YB258	1.80-1.90(4H,m),2.83(1H,m),2.99-3.08(2H,m),3.46(3H,s),3.81-3.86(2H,m),6.98(1H,s),7.26-7.43(3H,m),7.53(1H,s),8.26(1H,d,J=4.8Hz),9.01(1H,d,J=4.8 Hz),9.30(1H,s) (DMSO-d ₆)	425
YB259	1.76-1.96(8H,m),2.67(1H,m),2.99-3.07(2H,m),3.16-3.21(4H,m),3.45(3H,s),3.79-3.84(2H,m),6.49(2H,d,J=8.4 Hz) 6.97(1H,s),7.09(2H,d,J=8.4 Hz),8.24(1H,d,J=5.1Hz),9.01(1H,d,J=5.1 Hz),9.30(1H,s) (DMSO-d ₆)	417
YB260	1.87-1.99(8H,m),2.72(1H,m),2.99-3.09(2H,m),3.19-3.23(4H,m),3.46(3H,s),3.80-3.85(2H,m),6.38(1H,d,J=7.8 Hz) 6.44(1H,s),6.53(1H,d,J=7.8 Hz),6.98(1H,s),7.09(1H,dd,J=7.8,7.8Hz),8.25(1H,d,J=5.1Hz),9.01(1H,d,J=5.1Hz),9.30(1H,s) (DMSO-d ₆)	417
YB261	1.48-1.58(2H,m),2.00-2.07(2H,m),2.71(6H,s),3.07-3.14(2H,m),3.34-3.36(1H,m),3.48(3H,s),3.69-3.73(2H,m),4.87(1H,d,J=8.2Hz),6.56-6.66(4H,m),6.96(1H,s),8.24(1H,d,J=4.2Hz),9.00(1H,d,J=4.2Hz),9.30(1H,s)(DMSO-d ₆)	406
YB262	1.51-1.62(2H,m),2.02-2.08(2H,m),3.10-3.18(2H,m),3.42(3H,s),3.46-3.50(1H,m),3.67(3H,s),3.69-3.73(2H,m),5.56(1H,d,J=8.2Hz),6.10-6.24(3H,m),6.94-6.99(2H,m),8.24(1H,d,J=4.2Hz),	393

	9.00(1H,d,J=4.2Hz),9.29(1H,s)(DMSO-d6)	
YB263	1.48-1.58(2H,m),2.01-2.08(2H,m),3.08-3.17(2H,m),3.40(3H,s),3.41-3.43(1H,m),3.63(3H,s),3.69-3.73(2H,m),5.09(1H,d,J=8.2Hz),6.59(2H,d,J=7.2Hz),6.72(2H,d,J=7.2Hz),6.96(1H,s),8.24(1H,d,J=4.2Hz),9.01(1H,d,J=4.2Hz),9.29(1H,s)(DMSO-d6)	393
YB264	1.58-1.69(2H,m),2.04-2.08(2H,m),3.08-3.15(2H,m),3.42(3H,s),3.55-3.83(6H,m),4.57(1H,d,J=8.2Hz),6.53-6.90(4H,m),7.03(1H,s),8.25(1H,d,J=4.2Hz),9.00(1H,d,J=4.2Hz),9.30(1H,s)(DMSO-d6)	393
YB265	1.66-1.87(3H,m),1.91-1.99(1H,m),2.93-3.08(3H,m),3.43(3H,s),3.72-3.78(2H,m),6.97(1H,s),7.34(2H,d,J=5.7 Hz),7.54(2H,d,J=5.4 Hz),8.18(1H,dd,J=5.4,1.2 Hz),8.99(1H,d,J=5.1 Hz),9.29(1H,d,J=0.9 Hz)(DMSO)	426
YB266	1.71-1.91(4H,m),2.41-2.45(2H,m),2.53-2.56(4H,m),2.93-3.00(3H,m),3.08-3.10(4H,m),3.43(3H,s),3.50-3.54(2H,m),3.67-3.71(2H,m),4.42-4.46(1H,m),6.90(2H,d,J=7.2Hz),6.96(1H,s),7.19(2H,d,J=7.2Hz),8.17(1H,dd,J=1.2,4.2Hz),8.99(1H,d,J=4.2Hz),9.29(1H,d,J=1.2Hz)(DMSO-d6)	476
YB267	1.70-1.94(4H,m),2.86(6H,s),2.89-2.90(3H,m),3.43(3H,s),3.66-3.77(2H,m),6.71(2H,d,J=7.2Hz),6.96(1H,s),7.15(2H,d,J=7.2Hz),8.17(1H,d,J=4.2Hz),8.99(1H,d,J=4.2Hz),9.28(1H,s)(DMSO-d6)	391
YB268	1.72-1.84(4H,m),2.89-3.08(7H,m),3.43(3H,s),3.67-3.77(6H,m),6.90-6.96(3H,m),7.21(2H,d,J=7.2Hz),8.17(1H,d,J=4.2Hz),8.99(1H,d,J=4.2 Hz),9.29(1H,s)(DMSO-d6)	433

YB269	1.51-1.83(10H,m),2.87-3.00(3H,m),3.07-3.10(4H,m),3.43(3H,s),3/68-3.77(2H,m),6.89(2H,d,J=7.2Hz),6.96(1H,s),7.17(2H,d,J=7.2Hz),8.18(1H,d,J=4.2Hz),8.99(1H,d,J=4.2Hz),9.29(1H,s)(DMSO-d6)	431
YB270	1.72-1.90(4H,m),2.21(3H,s),2.42-2.45(4H,m),2.87-2.97(3H,m),3.08-3.10(4H,m),3.43(3H,s),3.67-3.77(2H,m),6.90(2H,d,J=7.2Hz),6.96(1H,s),7.19(2H,d,J=7.2Hz),8.17(1H,d,J=4.2Hz),8.98(1H,d,J=4.2Hz),9.29(1H,s)(DMSO-d6)	446
YB271	1.63-1.95(6H,m),2.04-2.08(2H,m),2.61-2.65(2H,m),2.69(6H,s),2.86-3.00(3H,m),3.13-3.16(1H,m),3.43(3H,s),3.67-3.81(4H,m),6.92-6.96(3H,m),7.20(2H,d,J=7.2Hz),8.17(1H,d,J=4.2Hz),9.00(1H,d,J=4.2Hz),9.29(1H,s)(DMSO-d6)	474
YB272	1.72-1.83(4H,m),2.89-3.09(7H,m),3.42(3H,s),3.54-3.57(4H,m),3.67-3.77(2H,m),5.11(2H,s),6.91-6.96(3H,m),7.21(2H,d,J=7.2Hz),7.26-7.44(5H,m),8.17(1H,d,J=4.2Hz),8.99(1H,d,J=4.2Hz),9.29(1H,s)(DMSO-d6)	566
YB273	1.57-1.63(2H,m),1.82-1.89(2H,m),2.51-2.98(13H,m),3.41(3H,s),3.76-3.80(3H,m),6.70(1H,s),8.22(1H,d,J=4.2Hz),9.01(1H,d,J=4.2Hz),9.30(1H,s)(DMSO-d6)	370
YB274	1.52-1.63(2H,m),1.84-1.90(2H,m),2.36-2.42(11H,m),2.86-2.94(2H,m),3.40(3H,s),3.49-3.53(2H,m),3.73-3.77(2H,m),4.40-4.43(1H,m),6.96(1H,s),8.22(1H,d,J=4.2Hz),9.01(1H,d,J=4.2Hz),9.30(1H,s)(DMSO-d6)	400
YB275	1.72-1.92(4H,m),2.80-3.02(11H,m),3.28-3.30(1H,m),3.43(3H,s),6.88(2H,d,J=7.2Hz),6.96(1H,s),7.18(2H,d,J=7.2Hz),8.18(1H,d,J=4.2Hz),8.99(1H,d,J=4.2Hz),9.29(1H,s)(DMSO-d6)	432

YB276	1.06-1.38(5H,m),1.61-1.92(9H,m),2.77-2.91(3H,m),3.03-3.12(1H,m),3.42(3H,s),3.64-3.75(2H,m),5.27(1H,d,J=8.2Hz),6.52(2H,d,J=7.2Hz),6.96(1H,s),7.02(2H,d,J=7.2Hz),8.17(1H,d,J=4.2Hz),8.99(1H,d,J=4.2Hz),9.28(1H,s)(DMSO-d6)	445
YB277	1.76-1.97(4H,m),2.97-3.10(5H,m),3.47(3H,s),3.73-3.76(2H,m),3.88-3.93(2H,m),6.71(1H,dd,J=7.2,7.3Hz),6.96-7.34(8H,m),8.19(1H,d,J=4.2Hz),9.00(1H,d,J=4.2Hz),9.29(1H,s)(DMSO-d6)	465
YB278	1.10-1.15(1H,m),1.32-1.47(4H,m),1.64-1.82(9H,m),2.69(3H,s),2.82-2.97(3H,m),3.42(3H,s),3.54-3.75(3H,m),6.73(2H,d,J=7.2Hz),6.95(1H,s),7.13(2H,d,J=7.2Hz),8.16(1H,d,J=4.2Hz),8.98(1H,d,J=4.2Hz),9.28(1H,s)(DMSO-d6)	459

试验实施例：本发明药物对由牛脑 TPK1 催化的 P-GS1 磷酸化的抑制活性

5 将含有 100 毫摩尔/升的 MES-氢氧化钠 (pH 6.5)、1 毫摩尔/升的乙酸镁、0.5 毫摩尔/升的 EGTA、5 毫摩尔/升的 β -巯基乙醇、0.02% 的吐温 20、10% 的甘油、12 微克/毫升的 P-GS1、41.7 微摩尔/升的 $[\gamma\text{-}^{32}\text{P}]\text{ATP}$ (68 千贝可/毫升)、牛脑 TPK1 和如表中所示化合物的混合物 (由于制备试验化合物的溶液中存在 10% 的 DMSO, 最终混合物含有 1.7% 的 DMSO) 作为反应体系。通过加入 ATP 启动磷酸化反应, 并且该反应

10 在 25°C 下进行 2 小时, 然后在冰冷却下加入 21% 高氯酸终止反应。反应混合物在 12,000 转每分钟下离心 5 分钟并吸附于 P81 纸 (Whatmann) 上, 然后该纸用 75 毫摩尔/升的磷酸洗涤 4 次、水洗涤 3 次和丙酮洗涤 1 次。将该纸干燥, 并用液体闪烁计数器测定残余的放射活性。结果如下表所示。试验化合物显著抑制经由 TPK1 催化的 P-GS1 磷酸化。该

15 结果强烈暗示着本发明的药物抑制了 TPK1 的活性, 进而遏制 A β 的神经毒性和 PHF 的形成, 以及本发明的药物能够有效预防和/或治疗阿

尔茨海默病和上面提及的疾病。

表 6

化合物编号	IC ₅₀
XA361	0.018 μ M
XB80	0.23 μ M
YA0864	0.216 μ M
YB257	0.014 μ M

5 制剂实施例

(1) 片剂

以常规方法混合下列成分并用常规设备压片。

实施例 1 的化合物	30 毫克
结晶纤维素	60 毫克
10 玉米淀粉	100 毫克
乳糖	200 毫克
硬脂酸镁	4 毫克

(2) 软胶囊

15 以常规方法混合下列成分并填充软胶囊。

实施例 1 的化合物	30 毫克
橄榄油	300 毫克
卵磷脂	20 毫克

20 工业应用

本发明的化合物具有抑制 TPK1 的活性并用作药物活性成分以预防和/或治疗由于 TPK1 活性过高而引起的疾病如神经变性疾病（例如阿尔茨海默病）和上面提及的疾病。