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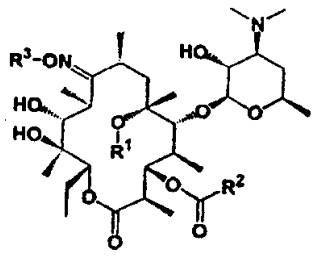
[54]发明名称 红霉素衍生物

[57]摘要

本发明涉及下面通式所示的新的红霉素衍生物,(式中,R^1代表 氢原子或低级烷基,R^2代表烷基,环烷基,芳基,芳烷基,或式 $-X-R^4$所示的基团,X 代表氧原子或氨基,R^4代表烷基或芳基,R^3代表烷基,环烷基,烯基,或式 $-(CH_2)_n-Y-R^5$所示的基 团,Y 代表亚 甲基,氧原子,硫原子,亚硫酰基,或羰基,R^5代表芳基,n 代表1—5的整数。),以及含有该衍生物作为有效成分的对非典型耐酸细菌 感染症治疗有用的药物。



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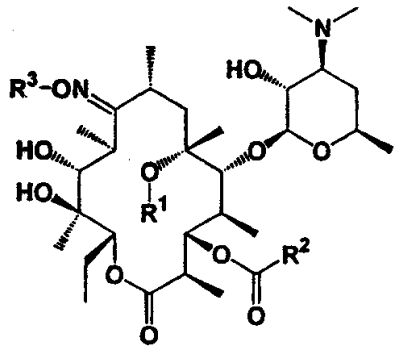
权　利　要　求　书

1、下述通式所示的红霉素衍生物或其盐:



（式中，R^1代表氢原子或低级烷基，R^2代表可有取代基取代的烷基，可有取代基取代的环烷基，可有取代基取代的（环烷基）烷基，可有取代基取代的芳基，可有取代基取代的芳烷基，可有取代基取代的苯乙烯基，或式－X－R^4所示的基团，X代表氧原子或氨基，R^4代表可有取代基取代的烷基或可有取代基取代的芳基，R^3代表羧基，烷氧羰基，芳氧羰基或芳烷氧羰基取代的烷基，可有取代基取代的环烷基，可有取代基取代的（环烷基）烷基，可有取代基取代的烯基，或式－$(CH_2)_n$－Y－R^5所示的基团，Y代表可有取代基取代的亚甲基，氧原子，硫原子，亚硫酰基，磺酰基，烷基取代或未取代的氨基，或羰基，R^5代表可有取代基取代的芳基，n代表1～5的整数）。

2、权利要求1中记载的化合物或其盐，其中R^1是氢原子。

3、含有权利要求1或2中记载的化合物或其生理上可接受的盐作为有效成分的药物。

4、作为感染症治疗剂使用的权利要求3中记载的药物。

5、作为非典型耐酸细菌感染症治疗剂使用的权利要求4中记载的药物。

6、权利要求5中记载的药物，其中非典型耐酸细菌是鸟分支杆菌复合体。

7、权利要求1中记载的通式（I）所示化合物或其盐在制备权利要求3～6中任一项中记载的药物中的应用。

8、感染症的治疗方法，包括对患者使用治疗有效量的权利要求1中记载的通式（I）所示化合物或其生理上可接受的盐。

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说　明　书

红霉素衍生物

技术领域

本发明涉及作为抗菌剂有用的红霉素衍生物，特别涉及对非典型耐酸细菌感染症（非结核性耐酸细菌感染）有用的新的红霉素衍生物或其盐。

背景技术

由于非典型耐酸细菌对于以抗结核剂为首的各种抗菌剂的敏感性低，因此，非典型耐酸细菌感染是非常难治的疾病。作为与本发明化合物有类似适应症的化合物，已知有利福平[rifampicin；默克索引第 12 版，8382]，另外，作为与本发明化合物有近似化学结构的大环内酯衍生物，已知有克拉霉素[clarithromycin；默克索引第 12 版，2400]，9 位肟型化合物的罗红霉素[roxithromycin；默克索引第 12 版，8433]等。另外，作为 3 位克拉定糖衍生物，国际公开 WO93/13116 号等中公开了酯型化合物，国际公开 WO93/13115 号中公开了氨基甲酸酯型化合物。在美国等，克拉霉素作为这些大环内酯衍生物中被视为有望作为现在最优秀的非典型耐酸细菌感染治疗剂临床应用已得到认可。但是，对于克拉霉素的抗菌力还不能说令人满意，因此需要开发更优秀的抗菌剂。

发明的描述

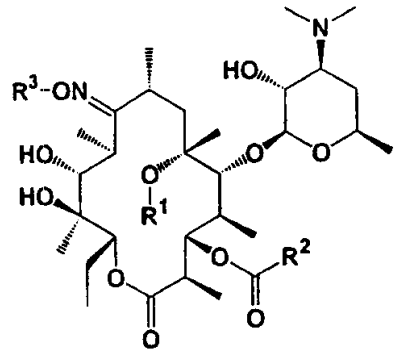
近年来，日和见感染症的增加已成为社会的重大问题。作为该日和见感染症增加的原因，有人类免疫缺陷病毒(HIV)感染者，癌症患者，糖尿病患者或老年人等体内防御机构衰退的易感染者增加，有对甲氧西林有耐药性的金黄色葡萄球菌(Methicillin-resistant Staphylococcus aureus)等为代表的对多种抗菌剂有耐药性的细菌增加等原因，或由于细菌交叉感染使得日和见感染症的化学疗法变得更加困难。由非典型耐酸细菌引起的日和见感染症也逐渐成为问题。由于非典型耐酸细菌繁殖速度慢，而且即使被巨噬细胞吞食后也可在该细胞中长期生存，因此，对于该细菌引起的感染症必须进行长时间

的化学治疗。

特别是，几乎没有对非典型耐酸细菌中的鸟分支杆菌复合体(Mycobacterium avium complex: MAC)有效的抗菌剂，现在也在进行对该感染症的外科疗法的研究。另外，即使是上述记载的克拉霉素，作为非典型耐酸细菌感染治疗剂也缺乏选择性，并存在出现对克拉霉素有耐药性的MAC的问题。这样，对于非典型耐酸细菌感染的化学疗法，存在细菌对药剂缺乏敏感性，有容易出现细菌交叉感染或耐药菌的环境等各种问题。本发明的课题就是提供对非典型耐酸细菌有选择性，且具有优秀的抗菌活性的化合物。

本发明者为解决上述课题，进行了认真研究，其结果发现，本发明涉及的新的红霉素衍生物或其盐作为具有上述特征的抗菌剂是有用的，特别是，发现了对于非典型耐酸细菌具有优秀的选择性和抗菌力的化合物，并因此完成了本发明。

即，本发明涉及下述通式（I）所示的新的红霉素衍生物及其盐:



(I)

（式中，R^1代表氢原子或低级烷基，R^2代表可有取代基取代的烷基，可有取代基取代的环烷基，可有取代基取代的（环烷基）烷基，可有取代基取代的芳基，可有取代基取代的芳烷基，可有取代基取代的苯乙烯基，或式－X－R^4所示的基团，X代表氧原子或氨基，R^4代表可有取代基取代的烷基或可有取代基取代的芳基，R^3代表羧基，烷氧羰基，芳氧羰基或芳烷氧羰基取代的烷基，可有取代基取代的环烷基，可有取代基取代的（环烷基）烷基，可有取代基取代的烯基，或式－$(CH_2)_n$－Y－R^5所示的基团，Y代表可有取代基取代的亚甲基，氧原子，硫原子，亚硫酰基，磺酰基，烷基取代或未取代的氨基，或羰基，R^5代表可有取代基取代的芳基，n代表1～5的整数。）

本发明的另一方案，提供了上述通式（I）所示化合物中，R^1 是氢原子的化合物或其盐。

从另一观点看，本发明提供了含有上述通式（I）所示化合物或其盐作为有效成分的药物。该药物作为抗菌剂是有用的，例如，它可作为各种微生物引起的感染症的治疗剂。优选非典型耐酸细菌感染症，进一步优选对于鸟分支杆菌复合体感染症的治疗是有用的。

再从另一观点看，本发明提供了以制造上述药物为目的的上述通式（I）所示化合物或其盐。另外，本发明提供了感染症，优选非典型耐酸细菌感染症，特别优选鸟分支杆菌复合体感染症的治疗方法，包括使用有效量的上述通式（I）所示化合物或其盐对患者给药。

发明实施的最佳方式

本发明的上述通式（I）中，作为 R^1 所示的低级烷基，可列举的有，例如，甲基，乙基，正丙基，正丁基等。另外，作为 R^2，R^3，R^4 所示的烷基，或 Y 所示的氨基中可有取代的烷基表示碳原子数 1～10 的直链或支链烷基，该烷基，可含有一个或多个选自氧原子，硫原子，和氮原子的杂原子。可列举的有，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，正庚基，正辛基，正壬基，正癸基，甲氧乙基，乙氧乙基，甲氧丙基，甲氧丁基，甲氧戊基，甲氧己基，甲硫乙基，乙硫乙基，甲硫丙基，甲硫丁基，甲硫戊基，甲硫己基，甲基氨基乙基，乙基氨基乙基，甲基氨基丙基，甲基氨基丁基，甲基氨基戊基，甲基氨基己基，二甲基氨基乙基，二甲基氨基丙基，二甲基氨基丁基，二甲基氨基戊基，二甲基氨基己基等。R^2 或 R^3 所示的环烷基表示碳原子数 3～7 的环烷基，可列举的有，例如，环丙基，环丁基，环戊基，环己基，环庚基等。R^2 或 R^3 所示的（环烷基）烷基，表示单环或多环的环烷基在任意位置取代的可含有氧原子，硫原子或氮原子的烷基。可列举的有，例如，（环丙基）甲基，（环丁基）甲基，（环戊基）甲基，（环己基）甲基，（环庚基）甲基，（环丙基）乙基，（环丁基）乙基，（环戊基）乙基，（环己基）乙基，（环庚基）乙基，（环己基）丙基，（环己基）丁基，（环己基）戊基，（环己基）己基，（环己基）庚基，（环己基）辛基，（环己基）壬基，（环己基）癸

基，（2，3－二氢苯并呋喃－2－基）甲基，（2，3－二氢苯并呋喃－3－基）甲基，（3，4－二氢苯并[b]吡喃－2－基）甲基，（3，4－二氢苯并[b]吡喃－3－基）甲基，（3，4－二氢苯并[b]吡喃－4－基）甲基，（2，3－二氢－1，4－苯并二噁烯－2－基）甲基等。R^3所示的烯基表示碳原子数3～7的烯基，可列举的有，例如，烯丙基，丁烯基，戊烯基，己烯基，庚烯基等。

作为R^3所示的烷氧羰基，芳氧羰基或芳烷氧羰基取代的烷基中的烷氧羰基，可列举的有，例如，甲氧羰基，乙氧羰基，正丙氧羰基，异丙氧羰基，正丁氧羰基，异丁氧羰基，仲丁氧羰基，叔丁氧羰基，正戊氧羰基，异戊氧羰基，新戊氧羰基等，作为芳氧羰基，可列举的有，例如，苯氧羰基，吡啶氧羰基，噻吩氧羰基等，作为芳烷氧羰基，可列举的有，例如，苄氧羰基，吡啶甲基氧羰基，噻吩甲基氧羰基等。

本发明的上述通式（I）中，作为R^2，R^4或R^5所示的芳基，可列举的有，例如，苯基，吡啶基，嘧啶基，吡嗪基，咪唑基，萘基，呋喃基，苯并呋喃基，苯并[b]苯硫基，苯并咪唑基，吲哚基，噻吩基，吡咯基，喹啉基，异喹啉基，1,2,3,4-四氢萘-5-基，1,2,3,4-四氢萘-6-基等单环或多环的芳香环。另外，R^2所示的芳烷基，表示在前述芳基的任意位置上被可含有氧原子，硫原子或氮原子的碳原子数1～6的直链或支链烷基取代的基团，可列举的有，例如，苄基，吡啶甲基，嘧啶甲基，吡嗪甲基，萘甲基，糠基，苯并呋喃甲基，噻吩甲基，吡咯甲基，喹啉甲基，异喹啉甲基，苯乙基，苯基丙基，苯基丁基，苯基戊基，苯基己基，苯氧甲基，吡啶氧甲基，嘧啶氧甲基，吡嗪氧甲基，萘氧甲基，四氢萘氧乙基，苯硫甲基，吡啶硫甲基，嘧啶硫甲基，吡嗪硫甲基，萘硫甲基，苯基氨基甲基等。

作为R^2或R^4所示的可有取代基取代的烷基，R^2和R^3所示的可有取代基取代的环烷基，可有取代基取代的（环烷基）烷基，R^2，R^4或R^5所示可有取代基取代的芳基，R^2所示的可有取代基取代的芳烷基和可有取代基取代的苯乙烯基，R^3所示的可有取代基取代的链烯基，或Y所示的可有取代基取代的亚甲基的取代基，可以是任何可在这些基团上取代的基团。对取代基的个数和种类没有特别的限制，在存在2个或2个以上的取代基时，它们可相同或不同。可列举的有，例如，可有保护基的羟基，烷氧基，可有取代基取代的氨基，可有取代基取

代的氨基甲酰基，卤原子，烷基，三氟甲基，烷酰基，环烷基，芳基，芳氧基，氰基，硝基，胍基，脒基，羧基，烷氧羰基，芳氧羰基，芳烷氧羰基等。作为该羟基保护基，可使用在羟基不会发生反应的体系中实质为惰性，且在特定的脱保护条件下容易断裂的任何基团，可列举的有，例如，烷酰基，卤代烷酰基，三烷基甲硅烷基，苄基等。作为羟基保护基的烷酰基，可列举的有，例如，甲酰基，乙酰基，丙酰基，丁酰基，三甲基乙酰基等，作为羟基保护基的卤代烷酰基，可列举的有，例如，三氟乙酰基，三氯乙酰基等。作为羟基保护基的三烷基甲硅烷基，可列举的有，例如，三甲基甲硅烷基，三乙基甲硅烷基等。另外，烷氧基表示碳原子数 1～6 的直链或支链烷氧基，可列举的有，例如，甲氧基，乙氧基，正丙氧基，异丙氧基，正丁氧基，异丁氧基，仲丁氧基，叔丁氧基，正戊氧基，异戊氧基，新戊氧基，叔戊氧基，正己氧基等。作为可有取代基取代的氨基，可列举的有，例如，氨基，甲基氨基，乙基氨基，正丙基氨基，异丙基氨基，正丁基氨基，异丁基氨基，仲丁基氨基，叔丁基氨基，正戊基氨基，异戊基氨基，新戊基氨基，叔戊基氨基，正己基氨基，N,N－二甲基氨基，N,N－二乙基氨基等，作为可有取代基取代的氨基甲酰基，可列举的有，氨基甲酰基，N－甲基氨基甲酰基，N－乙基氨基甲酰基，N－正丙基氨基甲酰基，N－异丙基氨基甲酰基，N－正丁基氨基甲酰基，N－异丁基氨基甲酰基，N－仲丁基氨基甲酰基，N－叔丁基氨基甲酰基，N－正戊基氨基甲酰基，N－异戊基氨基甲酰基，N－新戊基氨基甲酰基，N－正己基氨基甲酰基，N,N－二甲基氨基甲酰基，N,N－二乙基氨基甲酰基等。作为卤原子，可以是氟原子，氯原子，溴原子或碘原子中的任何一个。作为烷酰基，可列举的有，例如，乙酰基，丙酰基，丁酰基等，作为芳氧基，可列举的有，苯氧基，吡啶氧基，嘧啶氧基，吡嗪氧基，萘氧基，呋喃氧基，苯并呋喃氧基，噻吩氧基，吡咯氧基，喹啉氧基，异喹啉氧基等。

另外，作为上述可取代的烷基，烷酰基，环烷基，芳基，烷氧羰基，芳氧羰基，芳烷氧羰基，可列举的有，例如，前述举例中所列的基团。

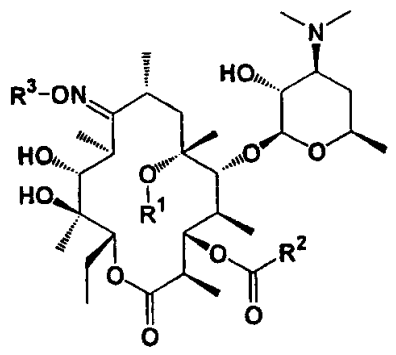
本发明的前述通式（Ⅰ）所示化合物中，存在光学异构体，非对映异构体，几何异构体等立体异构体，这些异构体及它们的混合物和

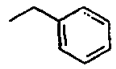
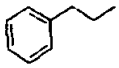
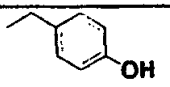
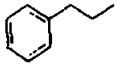
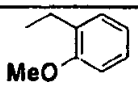
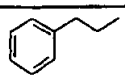
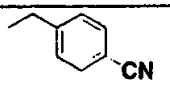
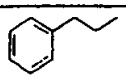
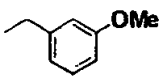
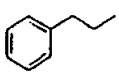
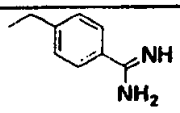
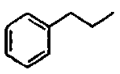
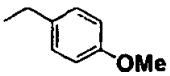
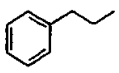
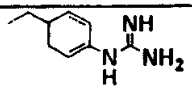
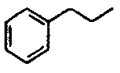
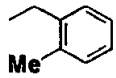
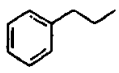
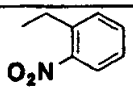
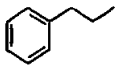
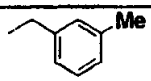
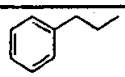
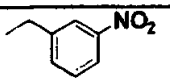
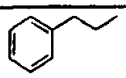
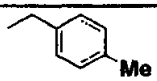
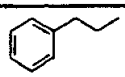
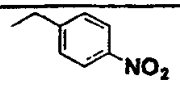
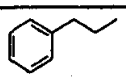
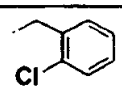
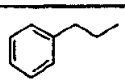
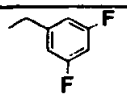
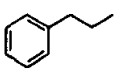
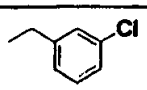
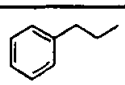
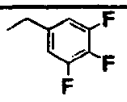
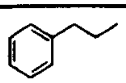
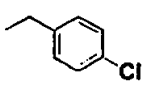
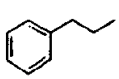
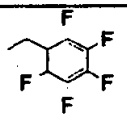
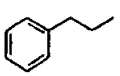
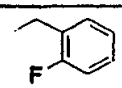
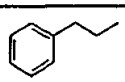
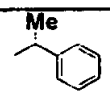
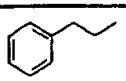
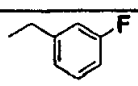
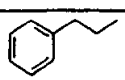
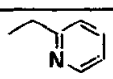
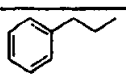
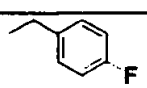
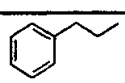
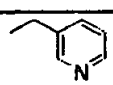
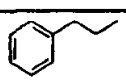
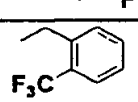
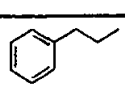
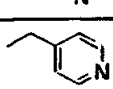
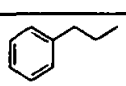
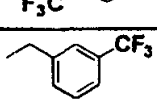
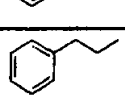
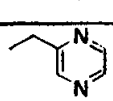
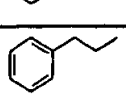
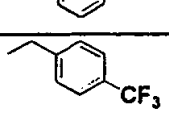
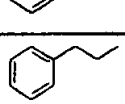
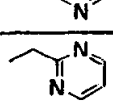
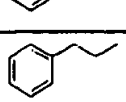
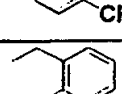
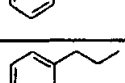
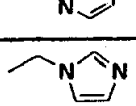
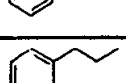
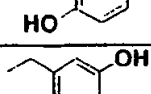
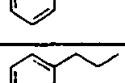
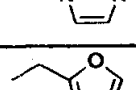
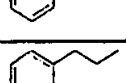
它们的盐都包括在本发明范围内。

本发明前述通式（I）所示化合物，可转化为所需的盐，优选药学上可接受的盐，另外，也可从生成的盐转化为游离形式的化合物。作为本发明前述通式（I）所示化合物的盐，可列举的有，酸加成盐或碱加成盐，作为酸加成盐，可列举的有，例如，盐酸盐，氢溴酸盐，硝酸盐，硫酸盐，氢碘酸盐，磷酸等无机酸盐，醋酸盐，丙酸盐，丁酸盐，甲酸盐，三氟乙酸盐，马来酸盐，酒石酸盐，柠檬酸盐，硬脂酸盐，琥珀酸盐，乳糖醛酸盐，葡糖酸盐，苯甲酸盐，甲磺酸盐，乙磺酸盐，2－羟基乙磺酸盐，苯磺酸盐，对甲苯磺酸盐，十二烷基硫酸盐，グルセプト酸盐，苹果酸盐，天冬氨酸盐，谷氨酸盐，己二酸盐，草酸盐，烟酸盐，苦味酸盐，硫氰酸盐，十一烷酸盐，扁桃酸盐，富马酸盐，10－樟脑磺酸盐，乳酸盐，5－氧四氢呋喃－2－羧酸盐，2－羟基戊二酸盐等有机酸盐，作为碱加成盐，可列举的有，例如，钠盐，钾盐，钙盐，镁盐，铵盐等无机碱盐，乙醇胺盐，N,N－二烷基乙醇胺盐等有机碱盐。

本发明的前述通式（I）所示化合物或其盐，可根据制备条件以各种结晶形式存在，另外，也有以水合物或与有机溶剂的溶剂化物形式存在的情况，它们任意的结晶形式，水合物，和溶剂化物，以及它们的混合物都包括在本发明的范围内。

作为本发明优选的化合物，可列举的有下列化合物，但本发明并不限于这些化合物。另外，表中所示 Me 表示甲基，Et 表示乙基，n-Pr 表示正丙基，i-Pr 表示异丙基，n-Bu 表示正丁基，n-Pent 表示正戊基，n-Hex 表示正己基，n-Hept 表示正庚基，n-Oct 表示正辛基，n-Non 表示正壬基，n-Dec 表示正癸基，Ph 表示苯基，Bn 表示苄基。



化合物序号	R^1	R^2	R^3	化合物序号	R^1	R^2	R^3
1	H			19	H		
2	H			20	H		
3	H			21	H		
4	H			22	H		
5	H			23	H		
6	H			24	H		
7	H			25	H		
8	H			26	H		
9	H			27	H		
10	H			28	H		
11	H			29	H		
12	H			30	H		
13	H			31	H		
14	H			32	H		
15	H			33	H		
16	H			34	H		
17	H			35	H		
18	H			36	H		

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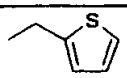
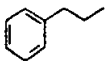
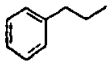
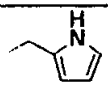
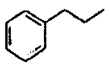
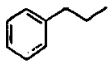
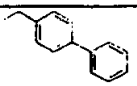
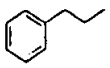
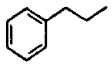
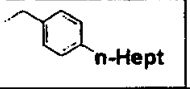
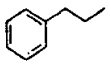
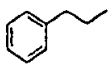
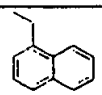
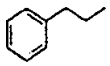
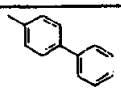
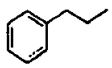
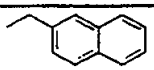
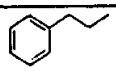
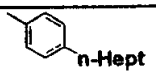
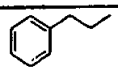
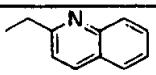
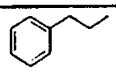
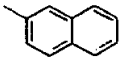
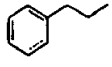
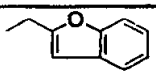
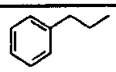
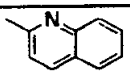
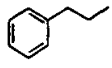
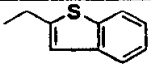
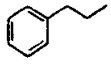
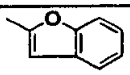
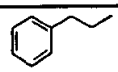
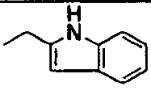
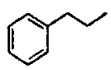
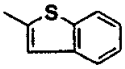
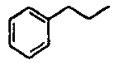
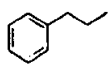
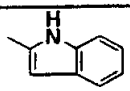
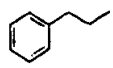
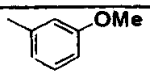
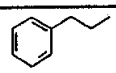
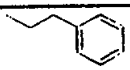
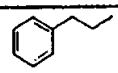
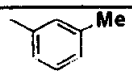
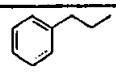
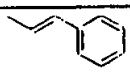
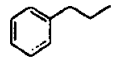
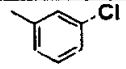
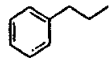
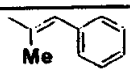
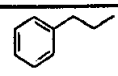
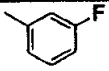
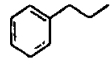
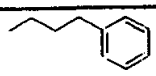
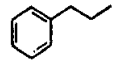
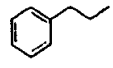
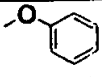
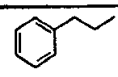
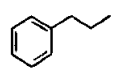
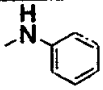
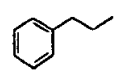
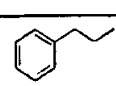
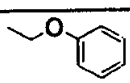
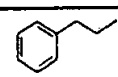
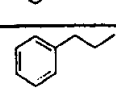
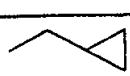
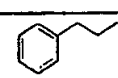
37	H			56	H		
38	H			57	H		
39	H			58	H		
40	H			59	H		
41	H			60	H		
42	H			61	H		
43	H			62	H		
44	H			63	H		
45	H			64	H		
46	H			65	H		
47	H			66	H		
48	H			67	H		
49	H			68	H		
50	H			69	H		
51	H			70	H		
52	H			71	H		
53	H			72	H		
54	H			73	H		
55	H			74	H		

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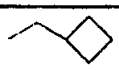
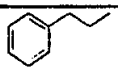
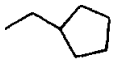
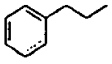
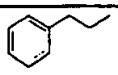
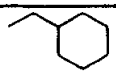
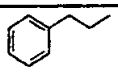
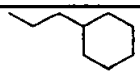
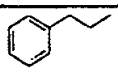
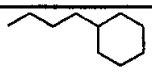
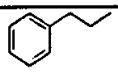
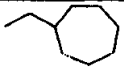
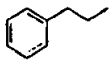
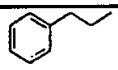
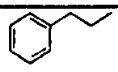
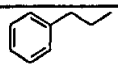
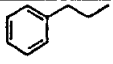
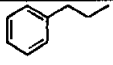
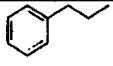
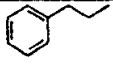
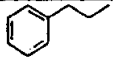
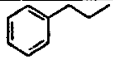
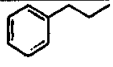
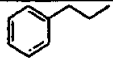
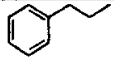
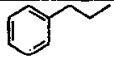
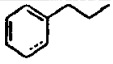
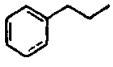
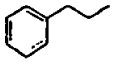
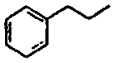
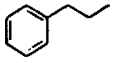
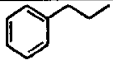
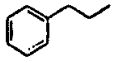
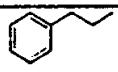
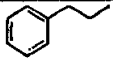
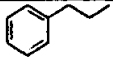
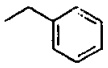
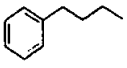
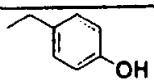
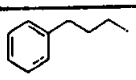
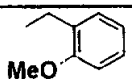
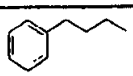
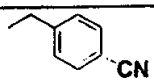
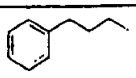
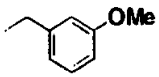
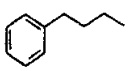
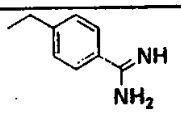
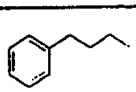
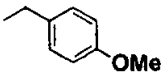
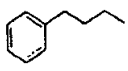
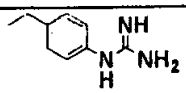
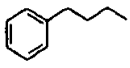
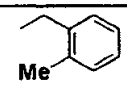
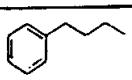
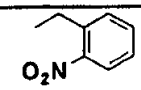
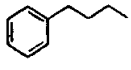
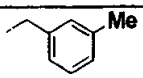
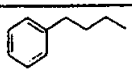
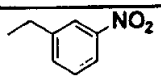
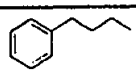
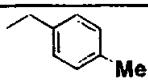
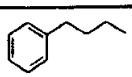
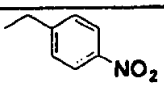
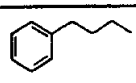
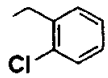
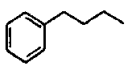
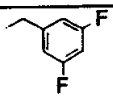
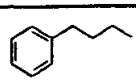
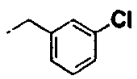
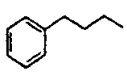
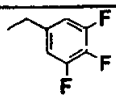
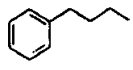
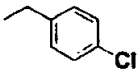
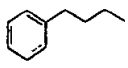
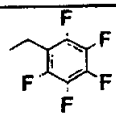
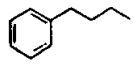
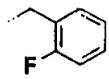
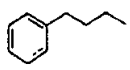
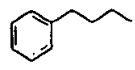
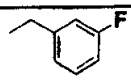
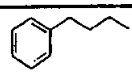
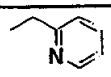
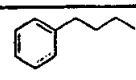
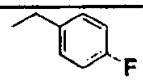
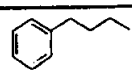
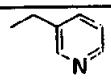
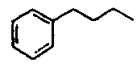
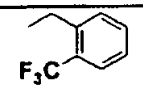
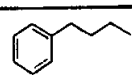
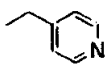
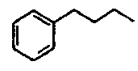
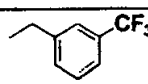
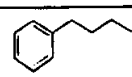
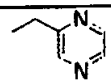
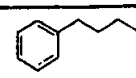
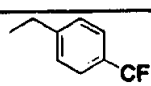
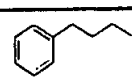
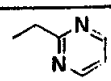
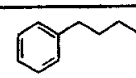
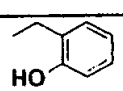
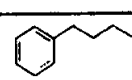
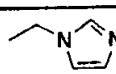
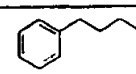
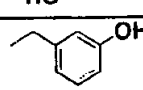
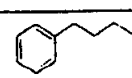
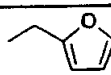
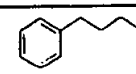
75	H		
76	H		
77	H		
78	H		
79	H		
80	H		
81	H		
82	H	Me	
83	H	Et	
84	H	n-Pr	
85	H	n-Bu	
86	H	n-Pent	
87	H	n-Hex	
88	H	n-Hept	
89	H	n-Oct	
90	H	n-Non	
91	H	n-Dec	
92	H	CF_2CF_3	
93	H	CO_2H	
94	H	CO_2H	

化合物序号	R^1	R^2	R^3
95	H	CO_2Me	
96	H	CO_2Me	
97	H	OMe	
98	H	OEt	
99	H	OEt	
100	H	OBn	
101	H	SMe	
102	H	SMe	
103	H	NHMe	
104	H	NHMe	

00.08.10

化合物序号	R¹	R²	R³	化合物序号	R¹	R²	R³
105	H			123	H		
106	H			124	H		
107	H			125	H		
108	H			126	H		
109	H			127	H		
110	H			128	H		
111	H			129	H		
112	H			130	H		
113	H			131	H		
114	H			132	H		
115	H			133	H		
116	H			134	H		
117	H			135	H		
118	H			136	H		
119	H			137	H		
120	H			138	H		
121	H			139	H		
122	H			140	H		

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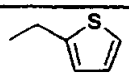
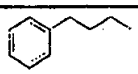
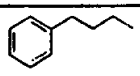
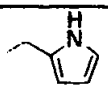
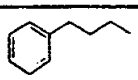
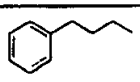
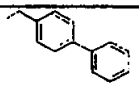
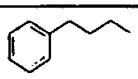
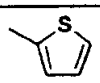
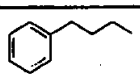
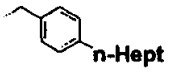
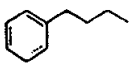
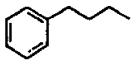
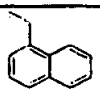
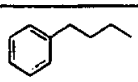
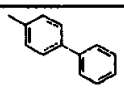
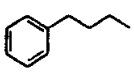
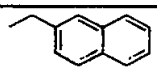
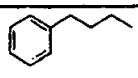
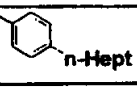
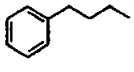
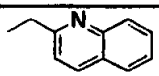
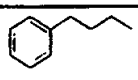
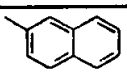
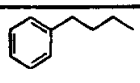
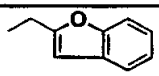
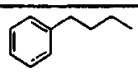
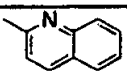
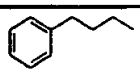
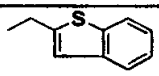
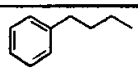
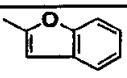
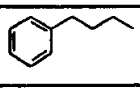
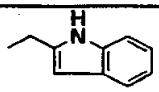
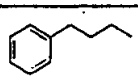
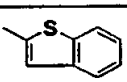
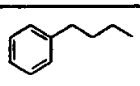
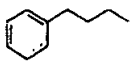
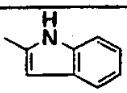
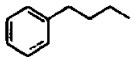
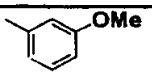
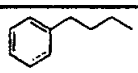
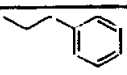
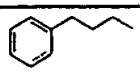
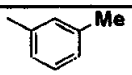
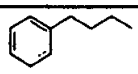
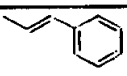
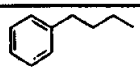
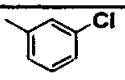
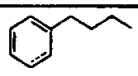
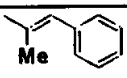
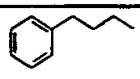
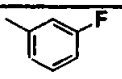
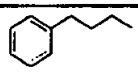
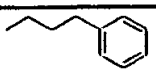
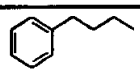
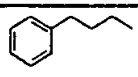
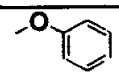
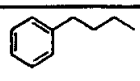
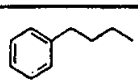
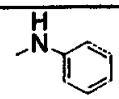
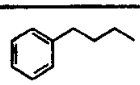
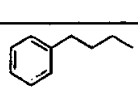
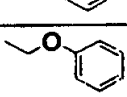
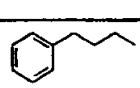
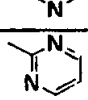
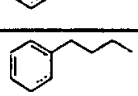
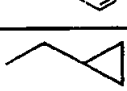
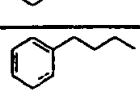
141	H			160	H		
142	H			161	H		
143	H			162	H		
144	H			163	H		
145	H			164	H		
146	H			165	H		
147	H			166	H		
148	H			167	H		
149	H			168	H		
150	H			169	H		
151	H			170	H		
152	H			171	H		
153	H			172	H		
154	H			173	H		
155	H			174	H		
156	H			175	H		
157	H			176	H		
158	H			177	H		
159	H			178	H		

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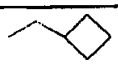
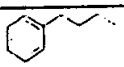
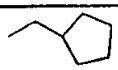
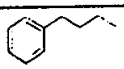
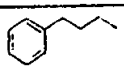
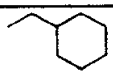
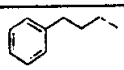
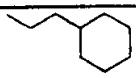
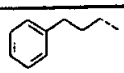
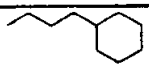
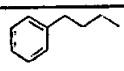
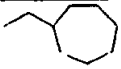
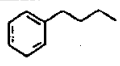
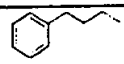
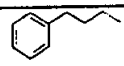
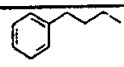
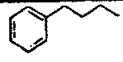
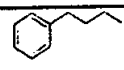
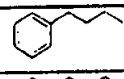
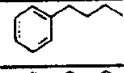
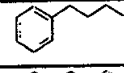
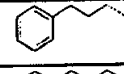
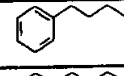
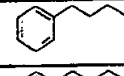
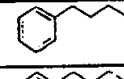
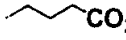
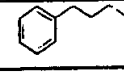
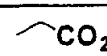
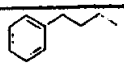
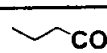
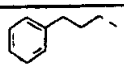
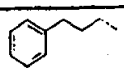
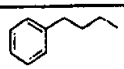
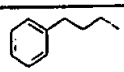
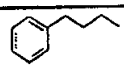
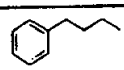
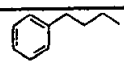
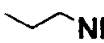
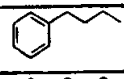
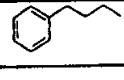
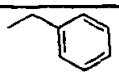
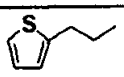
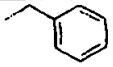
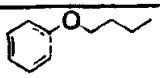
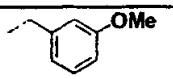
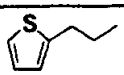
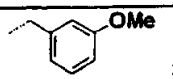
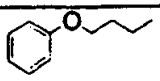
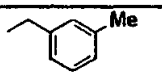
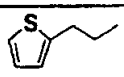
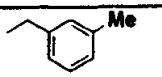
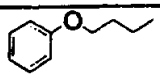
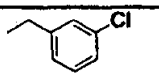
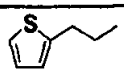
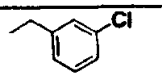
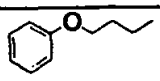
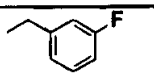
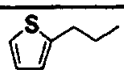
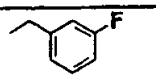
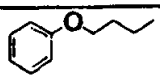
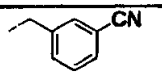
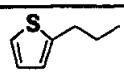
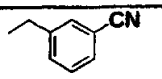
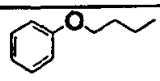
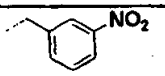
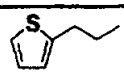
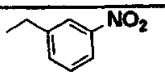
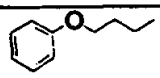
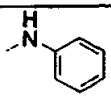
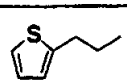
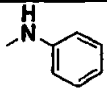
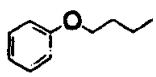
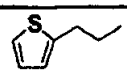
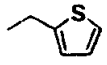
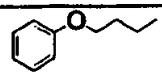
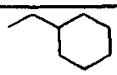
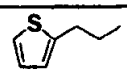
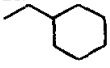
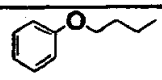
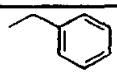
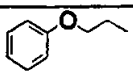
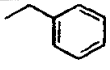
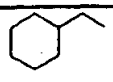
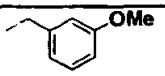
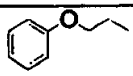
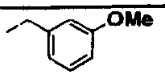
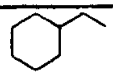
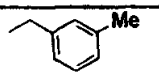
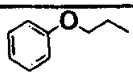
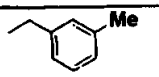
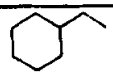
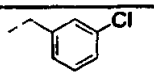
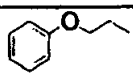
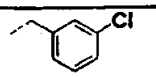
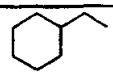
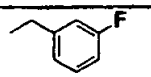
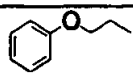
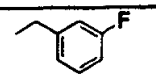
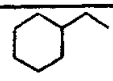
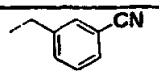
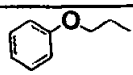
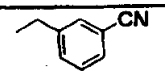
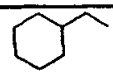
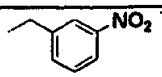
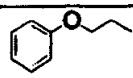
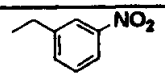
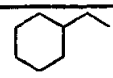
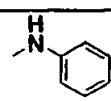
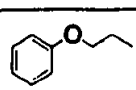
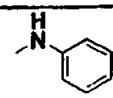
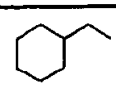
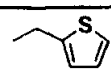
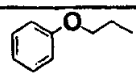
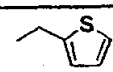
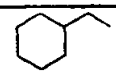
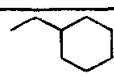
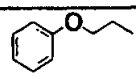
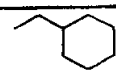
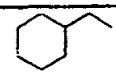
179	H		
180	H		
181	H		
182	H		
183	H		
184	H		
185	H		
186	H	Me	
187	H	Et	
188	H	n-Pr	
189	H	n-Bu	
190	H	n-Pent	
191	H	n-Hex	
192	H	n-Hept	
193	H	n-Oct	
194	H	n-Non	
195	H	n-Dec	
196	H		
197	H		
198	H		

化合物序号	R^1	R^2	R^3
199	H		
200	H		
201	H		
202	H		
203	H		
204	H		
205	H		
206	H		
207	H		
208	H		

化合物序号	R^1	R^2	R^3	化合物序号	R^1	R^2	R^3
209	H			229	H		
210	H			230	H		
211	H			231	H		
212	H			232	H		
213	H			233	H		
214	H			234	H		
215	H			235	H		
216	H			236	H		
217	H			237	H		
218	H			238	H		
219	H			239	H		
220	H			240	H		
221	H			241	H		
222	H			242	H		
223	H			243	H		
224	H			244	H		
225	H			245	H		
226	H			246	H		
227	H			247	H		
228	H			248	H		

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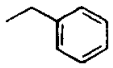
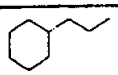
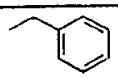
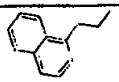
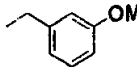
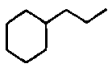
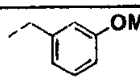
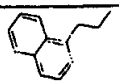
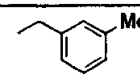
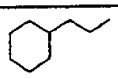
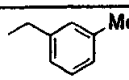
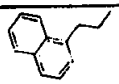
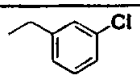
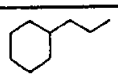
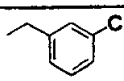
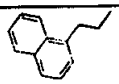
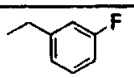
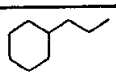
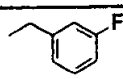
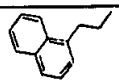
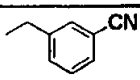
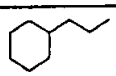
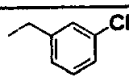
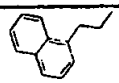
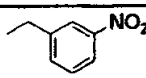
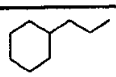
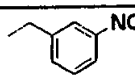
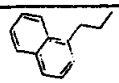
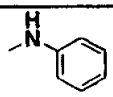
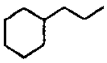
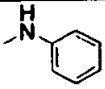
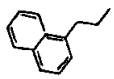
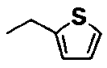
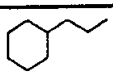
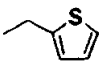
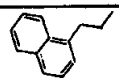
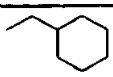
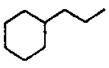
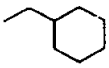
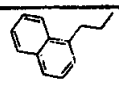
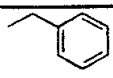
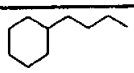
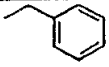
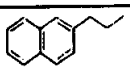
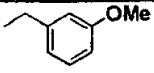
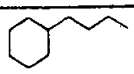
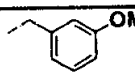
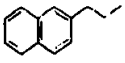
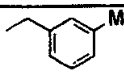
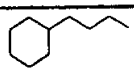
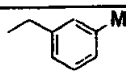
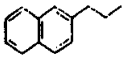
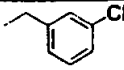
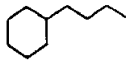
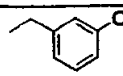
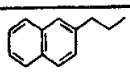
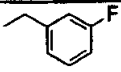
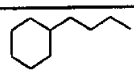
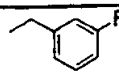
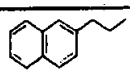
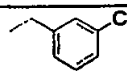
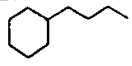
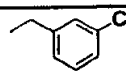
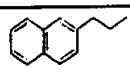
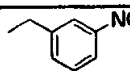
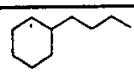
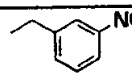
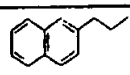
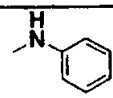
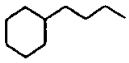
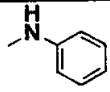
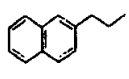
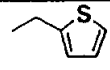
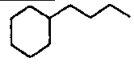
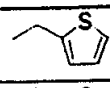
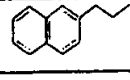
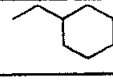
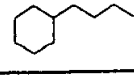
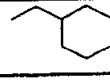
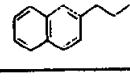
249	H			269	H		
250	H			270	H		
251	H			271	H		
252	H			272	H		
253	H			273	H		
254	H			274	H		
255	H			275	H		
256	H			276	H		
257	H			277	H		
258	H			278	H		
259	H			279	H		
260	H			280	H		
261	H			281	H		
262	H			282	H		
263	H			283	H		
264	H			284	H		
265	H			285	H		
266	H			286	H		
267	H			287	H		
268	H			288	H		

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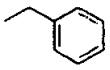
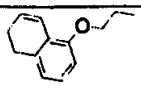
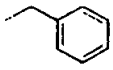
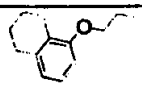
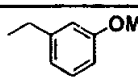
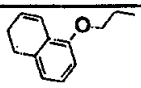
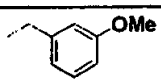
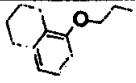
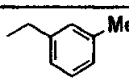
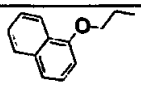
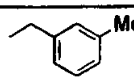
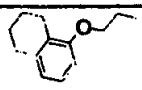
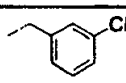
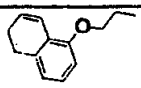
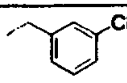
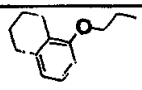
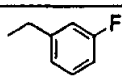
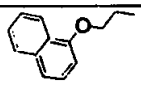
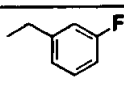
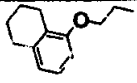
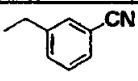
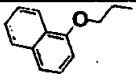
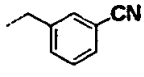
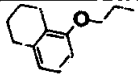
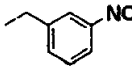
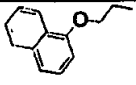
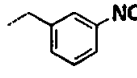
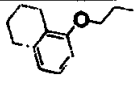
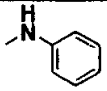
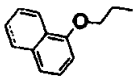
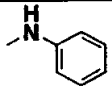
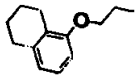
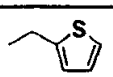
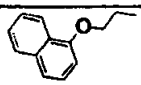
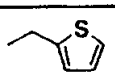
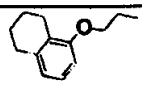
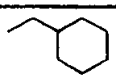
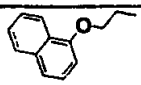
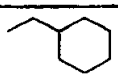
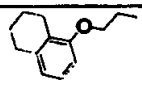
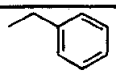
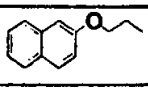
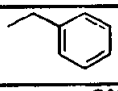
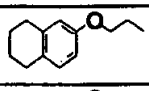
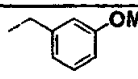
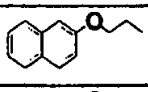
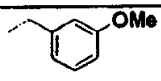
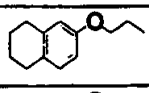
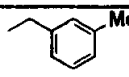
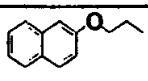
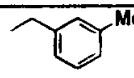
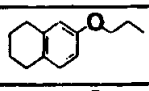
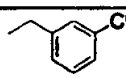
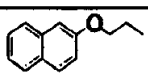
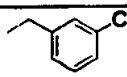
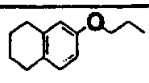
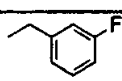
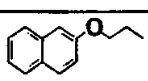
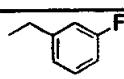
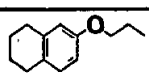
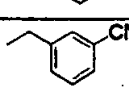
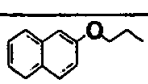
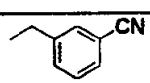
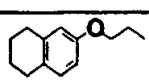
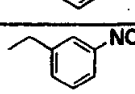
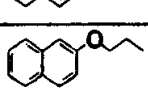
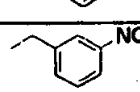
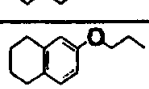
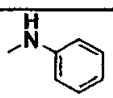
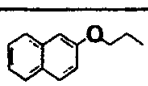
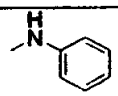
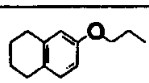
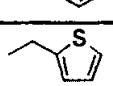
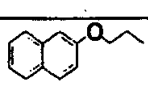
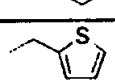
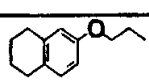
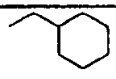
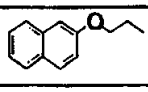
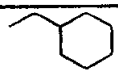
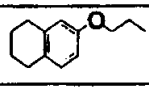
289	H			309	H		
290	H			310	H		
291	H			311	H		
292	H			312	H		
293	H			313	H		
294	H			314	H		
295	H			315	H		
296	H			316	H		
297	H			317	H		
298	H			318	H		
299	H			319	H		
300	H			320	H		
301	H			321	H		
302	H			322	H		
303	H			323	H		
304	H			324	H		
305	H			325	H		
306	H			326	H		
307	H			327	H		
308	H			328	H		

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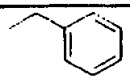
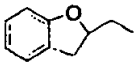
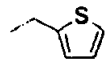
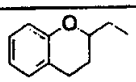
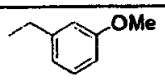
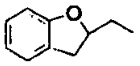
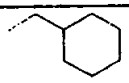
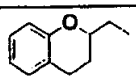
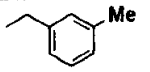
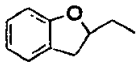
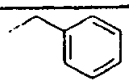
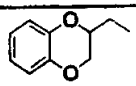
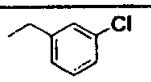
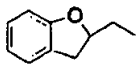
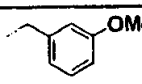
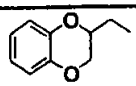
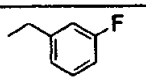
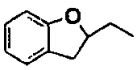
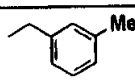
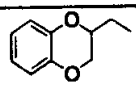
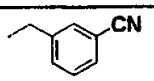
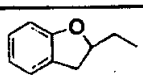
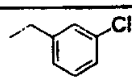
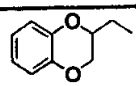
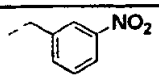
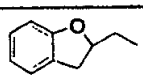
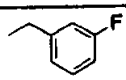
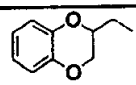
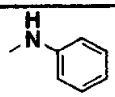
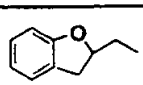
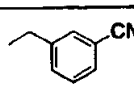
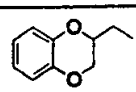
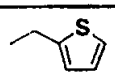
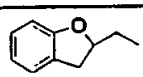
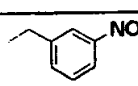
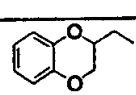
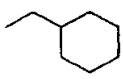
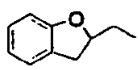
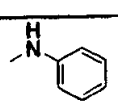
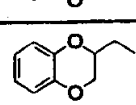
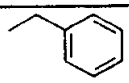
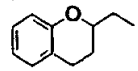
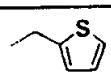
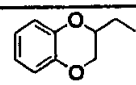
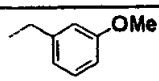
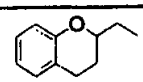
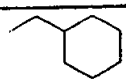
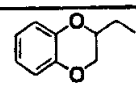
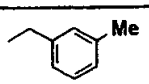
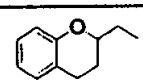
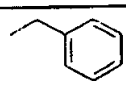
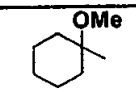
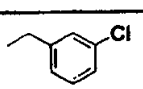
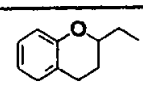
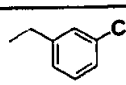
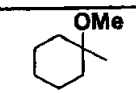
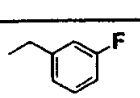
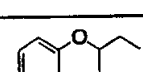
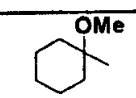
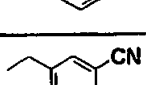
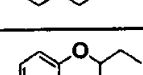
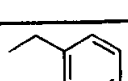
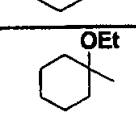
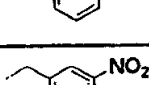
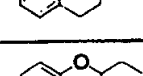
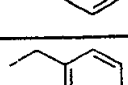
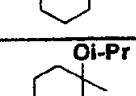
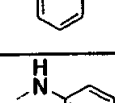
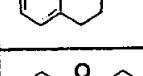
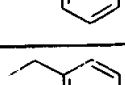
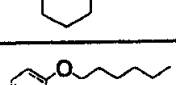
329	H			347	H		
330	H			348	H		
331	H			349	H		
332	H			350	H		
333	H			351	H		
334	H			352	H		
335	H			353	H		
336	H			354	H		
337	H			355	H		
338	H			356	H		
339	H			357	H		
340	H			358	H		
341	H			359	H		
342	H			360	H		
343	H			361	H	n-Oct	
344	H			362	H		
345	H			363	H		
346	H			364	H		

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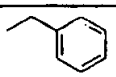
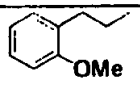
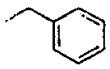
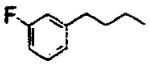
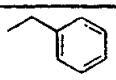
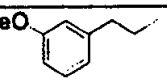
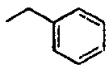
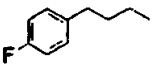
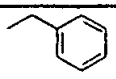
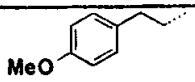
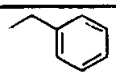
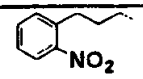
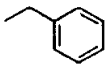
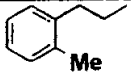
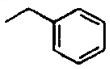
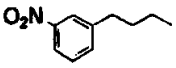
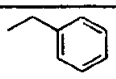
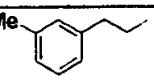
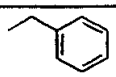
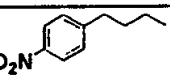
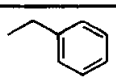
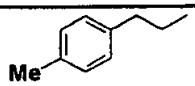
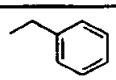
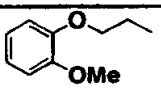
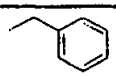
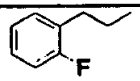
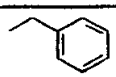
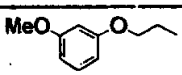
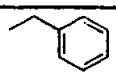
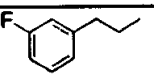
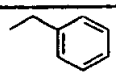
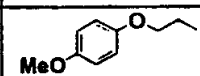
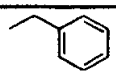
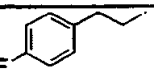
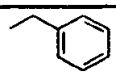
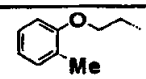
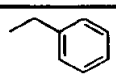
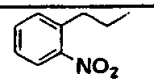
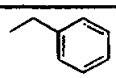
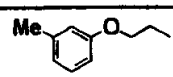
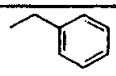
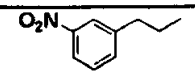
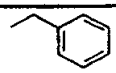
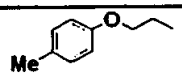
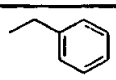
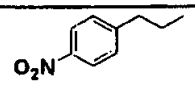
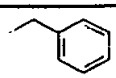
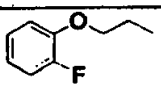
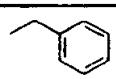
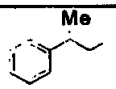
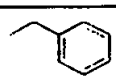
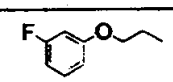
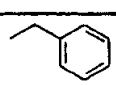
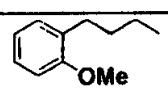
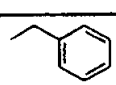
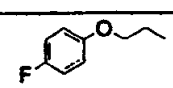
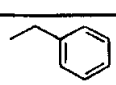
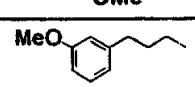
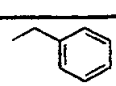
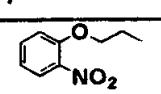
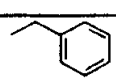
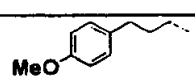
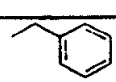
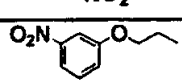
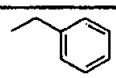
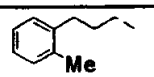
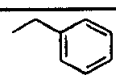
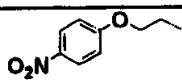
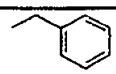
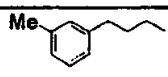
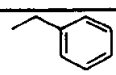
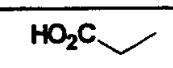
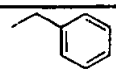
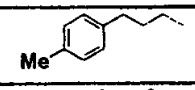
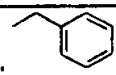
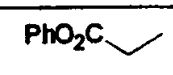
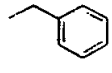
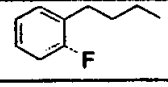
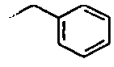
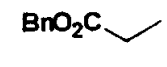
365	H			385	H		
366	H			386	H		
367	H			387	H		
368	H			388	H		
369	H			389	H		
370	H			390	H		
371	H			391	H		
372	H			392	H		
373	H			393	H		
374	H			394	H		
375	H			395	H		
376	H			396	H		
377	H			397	H		
378	H			398	H		
379	H			399	H		
380	H			400	H		
381	H			401	H		
382	H			402	H		
383	H			403	H		
384	H			404	H		

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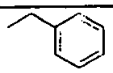
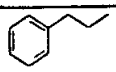
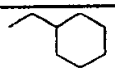
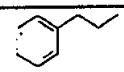
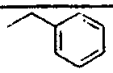
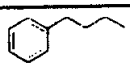
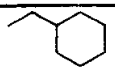
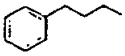
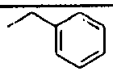
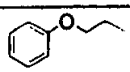
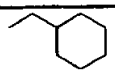
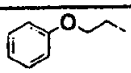
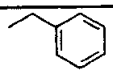
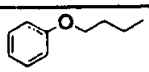
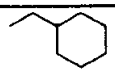
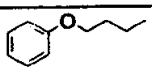
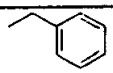
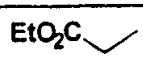
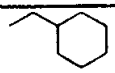
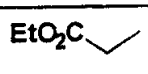
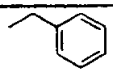
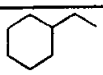
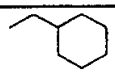
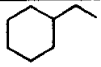
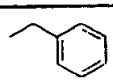
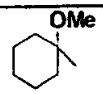
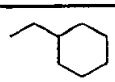
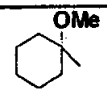
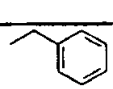
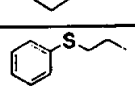
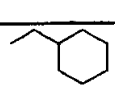
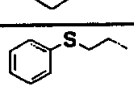
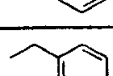
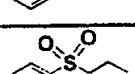
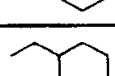
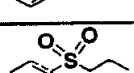
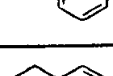
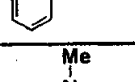
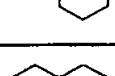
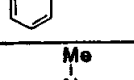
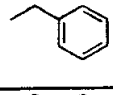
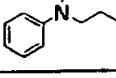
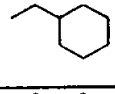
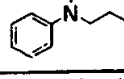
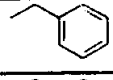
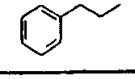
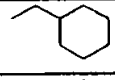
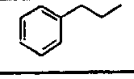
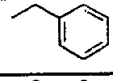
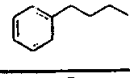
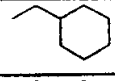
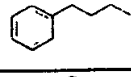
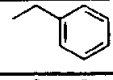
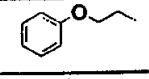
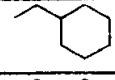
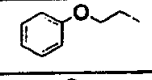
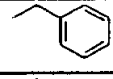
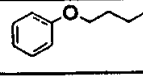
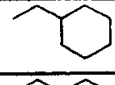
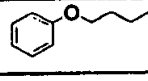
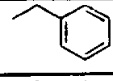
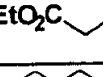
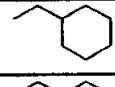
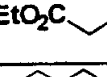
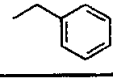
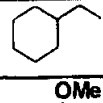
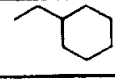
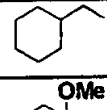
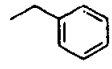
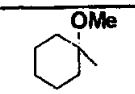
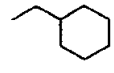
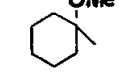
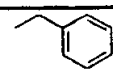
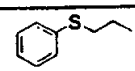
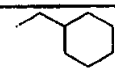
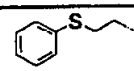
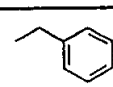
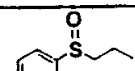
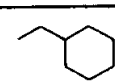
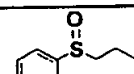
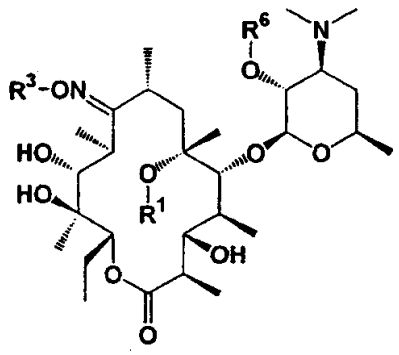
405	Me			425	Me		
406	Me			426	Me		
407	Me			427	Me		
408	Me			428	Me		
409	Me			429	Me		
410	Me			430	Me		
411	Me			431	Me		
412	Me			432	Me		
413	Me			433	Me		
414	Me			434	Me		
415	Et			435	Et		
416	Et			436	Et		
417	Et			437	Et		
418	Et			438	Et		
419	Et			439	Et		
420	Et			440	Et		
421	Et			441	Et		
422	Et			442	Et		
423	Et			443	Et		
424	Et			444	Et		

本发明的前述通式（I）所示的新的红霉素衍生物，例如，可按照下述方法制备，但本发明化合物的制备方法并不限于此。

如果按照本发明的第一种制备方法，制备前述通式（I）所示化合物，可将下面通式（II）所示化合物：



（II）

（式中，R^1和R^3定义同前，R^6表示氢原子或羟基保护基。）

与下面通式（III）所示的羧酸衍生物

$$R^2-CO_2H \quad (III)$$

（式中R^2定义同前。）和缩合剂在有或无碱存在下，在有或无溶剂条件下反应，进一步根据需要进行脱保护，制备通式（I）所示化合物，或者，与下面通式（IV）所示的酸酐：

$$R^2-CO_2U \quad (IV)$$

（式中，R^2定义同前，U表示酸酐残基。）

或者，与下面通式（V）所示的酰卤化物或卤化碳酸酯衍生物：

$$R^2-COW \quad (V)$$

（式中，R^2定义同前，W表示卤素原子。）

或者，与下面通式（VI）所示的异氰酸酯衍生物：

$$R^4-N=C=O \quad (VI)$$

（式中，R^4定义同前。）在有或无碱存在下，在有或无溶剂条件下反应，进一步根据需要进行脱保护，制备通式（I）所示化合物。

作为本制备方法中使用的缩合剂，可列举的有，例如，1，3－二环己氧碳化二亚胺，1－乙基－3－（3－二甲基氨基丙基）碳化二亚胺盐酸盐，1，1'－羰基二咪唑，伍德沃德试剂K（2－乙基－5－苯基异噁唑－3'－磺酸）等，作为使用的碱，可列举的有，例如，三乙胺，吡啶，二异丙基乙胺，4－二甲基氨基吡啶，1，8－二氮杂双环

[5,4,0]－7－十一碳烯，1，2，2，6，6－五甲基哌啶等有机碱，或碳酸钠，碳酸钾，碳酸氢钠，碳酸氢钾等无机碱。在本发明制造方法中使用的溶剂，可以是任何在该反应中是惰性，且不阻害反应的溶剂，可列举的有，例如，二氯甲烷，1，2－二氯乙烷，氯仿等卤代烃溶剂，苯，甲苯等芳香烃溶剂，丙酮，乙腈，N，N－二甲基甲酰胺，N－甲基－2－吡咯烷酮，二甲基亚砜，环丁砜，四亚甲基亚砜，六亚甲基磷酰三胺（ホスホリックトリアミド）等非质子极性溶剂，乙酸甲酯，乙酸乙酯，等酯类溶剂，四氢呋喃，乙醚，1，4－二噁烷等醚类溶剂，吡啶，甲基吡啶，二甲基吡啶，三甲基吡啶等有机碱类溶剂或这些溶剂的混合物。另外，反应可在冰冷却下至200℃的温度范围内进行。

本发明制备方法中的脱保护反应，可根据羟基保护基R^6的种类用各种方法进行脱保护。

例如，R^6是烷酰基，卤代烷酰基，芳基羰基等形成酯的保护基时，可在有或无溶剂存在下，在有或无酸或碱存在下，水解脱保护。酯的水解是公知的方法，在酸性水解时，例如，可使用盐酸，硫酸等酸，在碱性水解时，例如可使用碳酸氢钠，碳酸钠，氢氧化钠，氢氧化锂，氢氧化钡，甲醇钠，乙醇钠，叔丁醇钠，叔丁醇钾等碱。可使用这些酸或碱的水溶液，也可使用甲醇，乙醇，正丙醇，异丙醇，正丁醇，仲丁醇，叔丁醇等醇类溶剂，丙酮，乙腈，N，N－二甲基甲酰胺，二甲基亚砜，环丁砜，四亚甲基亚砜，六亚甲基磷酰三胺（ホスホリックトリアミド）等非质子极性溶剂，四氢呋喃，1，4－二噁烷等醚类溶剂或这些溶剂的含水溶剂。另外，反应可在冰冷却下至200℃的温度范围内进行。

另外，羟基保护基R^6是烷氧羰基，芳氧羰基，芳烷氧羰基等形成碳酸酯的保护基时，可在有或无溶剂存在下，在有或无阳离子清除剂存在下，使酸作用，或在溶剂中存在催化剂的条件下加氢分解，进行脱保护制备。

所使用的溶剂，可以是任何在该反应中是惰性，且不阻害反应的溶剂，可列举的有，例如，水，乙酸，甲醇，乙醇，正丙醇，异丙醇，正丁醇，仲丁醇，叔丁醇等醇类溶剂，二氯甲烷，1，2－二氯乙烷，氯仿等卤代烃类溶剂，苯，甲苯等芳香烃溶剂，丙酮，乙腈，N，N－

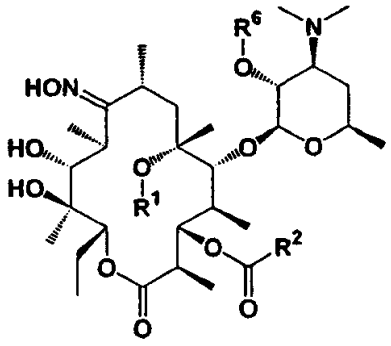
二甲基甲酰胺，N－甲基－2－吡咯烷酮，二甲基亚砜，环丁砜，四亚甲基亚砜，六亚甲基磷酰三胺（ホスホリックトリアミド）等非质子极性溶剂，乙酸甲酯，乙酸乙酯等酯类溶剂，四氢呋喃，乙醚，1，4－二噁烷等醚类溶剂或这些溶剂的混合溶剂等。作为阳离子清除剂，可列举的有，例如，苯甲醚，苯甲硫醚，硫代乙醇等。另外，作为可使用的酸，可列举的有，例如，盐酸，氢溴酸，三氟乙酸，乙酸，硫酸等。另外，反应可在冰冷却下至200℃的温度范围内进行。

另外，作为水解时使用的催化剂，可列举的有，5％钯/炭，10％钯/炭，20％氢氧化钯/炭等钯类催化剂或氧化铂等。作为氢的来源，除了氢气外，还可使用环己烯，1，3－环己二烯，甲酸，甲酸铵等。作为所使用的溶剂，可以是任何在该反应中是惰性，且不阻害反应的溶剂，可列举的有，例如，水，乙酸，甲醇，乙醇，正丙醇，异丙醇，正丁醇，仲丁醇，叔丁醇等醇类溶剂，二氯甲烷，1，2－二氯乙烷，氯仿等卤代烃类溶剂，苯，甲苯等芳香烃溶剂，丙酮，乙腈，N，N－二甲基甲酰胺，N－甲基－2－吡咯烷酮，二甲基亚砜，环丁砜，四亚甲基亚砜，六亚甲基磷酰三胺（ホスホリックトリアミド）等非质子极性溶剂，乙酸甲酯，乙酸乙酯等酯类溶剂，四氢呋喃，乙醚，1，4－二噁烷等醚类溶剂或这些溶剂的混合溶剂等。另外，反应可在室温至200℃的温度范围内进行，氢气压力为常压至200 kgf/cm^2范围。

另外，羟基保护基R^6是三烷基甲硅烷基型的保护基时，可在有或无溶剂存在下，与酸或氟化四丁基铵作用，进行脱保护制备。

所使用的溶剂，可以是任何在该反应中是惰性，且不阻害反应的溶剂，可列举的有，例如，水，乙酸，甲醇，乙醇，正丙醇，异丙醇，正丁醇，仲丁醇，叔丁醇等醇类溶剂，二氯甲烷，1，2－二氯乙烷，氯仿等卤代烃类溶剂，苯，甲苯等芳香烃溶剂，丙酮，乙腈，N，N－二甲基甲酰胺，N－甲基－2－吡咯烷酮，二甲基亚砜，环丁砜，四亚甲基亚砜，六亚甲基磷酰三胺（ホスホリックトリアミド）等非质子极性溶剂，乙酸甲酯，乙酸乙酯等酯类溶剂，四氢呋喃，乙醚，1，4－二噁烷等醚类溶剂或这些溶剂的混合溶剂等。作为可使用的酸，可列举的有，例如，氢氟酸，盐酸，氢溴酸，硫酸等无机酸，三氟乙酸，乙酸，对甲苯磺酸，柠檬酸，草酸等有机酸。另外，反应可在冰冷却下至200℃的温度范围内进行。

如果按照本发明的第二种制备方法，制备前述通式（I）所示化合物，可将下面通式（VII）所示化合物：



（VII）

（式中，R^1，R^2和R^6定义同前。）

与下面通式（VIII）所示的化合物

$$R^3-Z \quad (VIII)$$

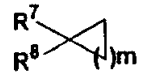
（式中R^3定义同前，Z代表卤原子，甲磺酰氧基或对甲苯磺酰氧基。）和碘化四丁基铵，在有或无碘化钠或碱存在下，在有或无溶剂条件下反应，进一步根据需要进行脱保护，制备通式（I）所示化合物。

作为在本制备方法中使用的碱，可列举的有，例如，三乙胺，二异丙基乙胺，4-二甲基氨基吡啶，1，8-二氮杂双环[5,4,0]-7-十一碳烯，1，2，2，6，6-五甲基哌啶等有机碱，或碳酸钠，碳酸钾，碳酸氢钠，碳酸氢钾，氢化钠，氢氧化钾，氢氧化钾等无机碱。所使用的溶剂，可以是任何在该反应中是惰性，且不阻害反应的溶剂。可列举的有，例如，二氯甲烷，1，2-二氯乙烷，氯仿等卤代烃溶剂，苯，甲苯等芳香烃溶剂，丙酮，乙腈，N，N-二甲基甲酰胺，N-甲基-2-吡咯烷酮，二甲基亚砜，环丁砜，四亚甲基亚砜，六亚甲基磷酰三胺（ホスホリックトリアミド）等非质子极性溶剂，乙酸甲酯，乙酸乙酯等酯类溶剂，四氢呋喃，乙醚，1，4-二噁烷等醚类溶剂，吡啶，甲基吡啶，二甲基吡啶，三甲基吡啶等有机碱类溶剂或这些溶剂的混合溶剂。另外，反应可在冰冷却下至200℃的温度范围内进行。

本制备方法中的脱保护反应，可根据羟基保护基R^6的种类用各种方法进行脱保护，可以按照前述第一种制备方法中记载的方法进行。

如果按照本发明的第三种制备方法，制备前述通式（I）所示化

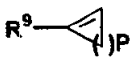
合物中 R^3 是可有取代基取代的环烷基的化合物，可将前述通式（VII）所示化合物与下面通式（IX）所示环烷化合物：



（IX）

（式中，R^7 和 R^8 表示烷氧基，m 表示 1～5 的整数。）

或与下面通式（X）所示环烯化合物：



（X）

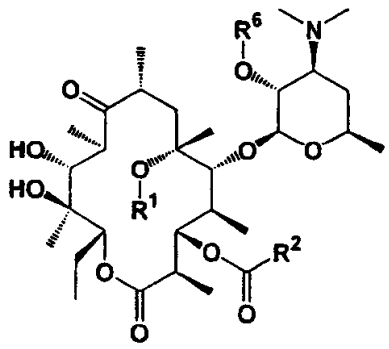
（式中，R^9 表示烷氧基，p 表示 1～5 的整数。）

在有或无酸催化剂存在下，在有或无溶剂条件下反应，进一步根据需要进行脱保护，制备化合物。

作为在本制备方法中使用的酸，可列举的有，例如，吡啶盐酸盐，吡啶三氟乙酸盐，吡啶对甲苯磺酸盐等。所使用的溶剂，可以是任何在该反应中是惰性，且不阻害反应的溶剂，可列举的有，例如，二氯甲烷，1，2－二氯乙烷，氯仿等卤代烃溶剂，苯，甲苯等芳香烃溶剂，丙酮，乙腈，N，N－二甲基甲酰胺，N－甲基－2－吡咯烷酮，二甲基亚砜，环丁砜，四亚甲基亚砜，六亚甲基磷酰三胺（ホスホリックトリアミド）等非质子极性溶剂，乙酸甲酯，乙酸乙酯等酯类溶剂，四氢呋喃，乙醚，1，4－二噁烷等醚类溶剂或这些溶剂的混合溶剂。另外，反应可在冰冷却下至 200℃ 的温度范围内进行。

本制备方法中的脱保护反应，可根据羟基保护基 R^6 的种类用各种方法进行脱保护，可以按照前述第一种制备方法中记载的方法进行。

如果按照本发明的第四种制备方法，制备前述通式（I）所示化合物，可将下面通式（XI）所示化合物：



（XI）

（式中，R^1，R^2和R^6定义同前。）

与下面通式（XII）所示羟胺衍生物或其盐:

$$R^3-O-NH_2 \qquad (XII)$$

（式中，R^3定义同前。）

在有或无碱存在下，在有或无溶剂条件下反应，进一步根据需要进行脱保护，制备化合物。

作为在本制备方法中使用的碱，可列举的有，例如，三乙胺，吡啶，咪唑，二异丙基乙胺，4－二甲基氨基吡啶，1，8－二氮杂双环[5,4,0]－7－十一碳烯，1，2，2，6，6－五甲基哌啶等有机碱，或碳酸钠，碳酸钾，碳酸氢钠，碳酸氢钾等无机碱。所使用的溶剂，可以是任何在该反应中是惰性，且不阻害反应的溶剂。可列举的有，例如，甲醇，乙醇，正丙醇，异丙醇，正丁醇，仲丁醇，叔丁醇等醇类溶剂，二氯甲烷，1，2－二氯乙烷，氯仿等卤代烃溶剂，苯，甲苯等芳香烃溶剂，丙酮，乙腈，N，N－二甲基甲酰胺，N－甲基－2－吡咯烷酮，二甲基亚砜，环丁砜，四亚甲基亚砜，六亚甲基磷酰三胺（ホスホリックトリアミド）等非质子极性溶剂，乙酸甲酯，乙酸乙酯等酯类溶剂，四氢呋喃，乙醚，1，4－二噁烷等醚类溶剂，吡啶，甲基吡啶，二甲基吡啶，三甲基吡啶等有机碱类溶剂或这些溶剂的混合溶剂。另外，反应可在冰冷却下至200℃的温度范围内进行。

本制备方法中的脱保护反应，可根据羟基保护基R^6的种类用各种方法进行脱保护，可以按照前述第一种制备方法中记载的方法进行。

如果按照本发明的第五种制备方法，制备前述通式（I）中R^2是$-X-R^4$所示化合物，其中X是氧原子，R^4是可有取代基取代的烷基的

化合物，可按照第一种方法制备 X 是氧原子，R^4是可有取代基取代的芳基的化合物，然后将其与下面通式（XIII）所示醇衍生物：

$$R^{10}-OH \qquad (XIII)$$

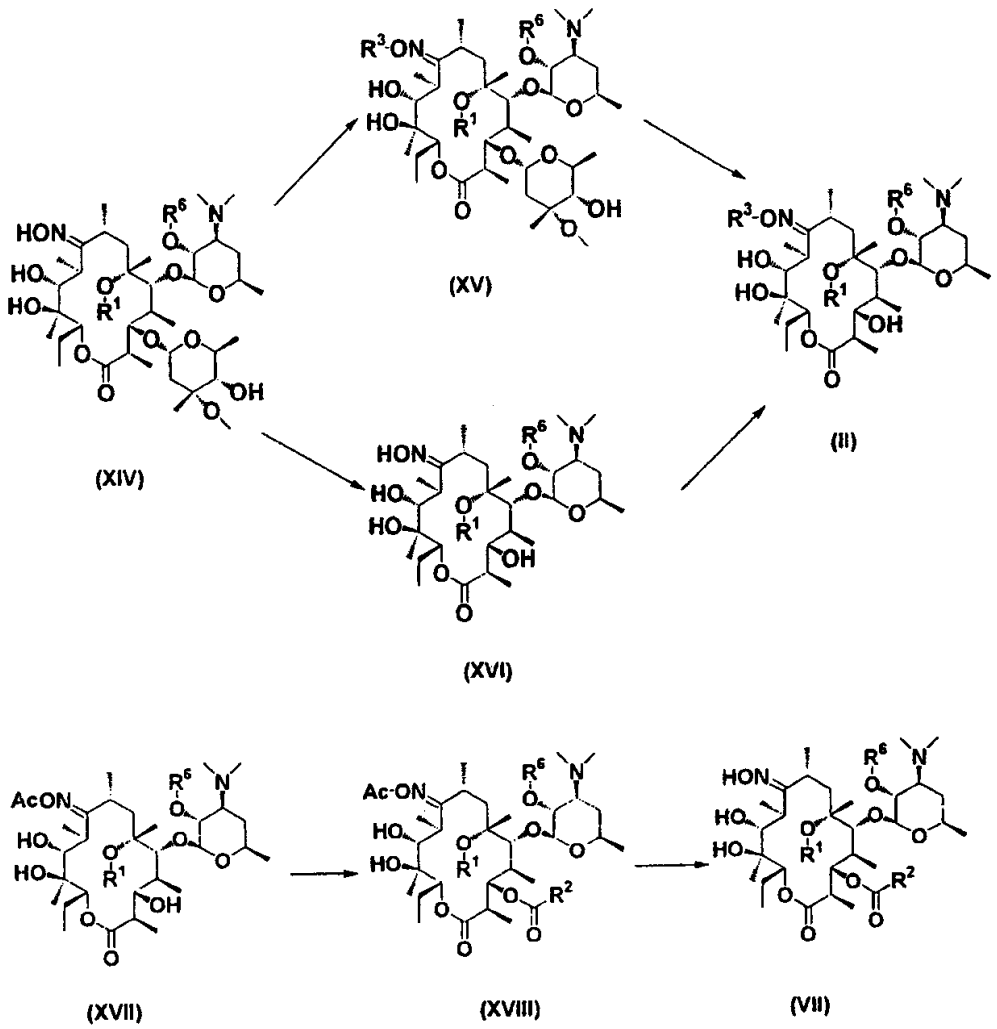
（式中，R^{10}表示可有取代基取代的烷基。）

在有或无溶剂条件下反应，进一步根据需要进行脱保护，制备化合物。

作为在本制备方法中使用的溶剂，可以是任何在该反应中是惰性，且不阻害反应的溶剂，可列举的有，例如，二氯甲烷，1，2－二氯乙烷，氯仿等卤代烃溶剂，苯，甲苯等芳香烃溶剂，丙酮，乙腈，N，N－二甲基甲酰胺，N－甲基－2－吡咯烷酮，二甲基亚砜，环丁砜，四亚甲基亚砜，六亚甲基磷酰三胺（ホスホリックトリアミド）等非质子极性溶剂，乙酸甲酯，乙酸乙酯等酯类溶剂，四氢呋喃，乙醚，1，4－二噁烷等醚类溶剂，吡啶，甲基吡啶，二甲基吡啶，三甲基吡啶等有机碱类溶剂或这些溶剂的混合溶剂。另外，反应可在冰冷却下至 200℃的温度范围内进行。

本制备方法中的脱保护反应，可根据羟基保护基 R^6的种类用各种方法进行脱保护，可以按照前述第一种制备方法中记载的方法进行。

另外，作为本发明制备方法中的起始原料，前述通式（II）和（VII）所示的化合物，一部分是日本专利公开昭和 63－264495 号，日本专利公开平成 8－104640 号或国际公开 WO93/13116 号等中公开的已知化合物，例如，可按照如下方式制备。另外，在下面的制备过程中，前述通式（II）和（VII）所示化合物中，R^6是羟基保护基的化合物，可通过向 R^6是氢原子的化合物中进一步导入保护基来制备。这其中，关于新的化合物，详细记载于参考例中。



（式中，Ac 表示乙酰基，R^1，R^2，R^3和 R^6定义同前．）

含有如此制备的前述通式（Ⅰ）所示的新的红霉素衍生物或其盐中至少一种作为有效成分的药物，可用于感染症的治疗，优选非典型耐酸细菌感染症，特别优选用于鸟分支杆菌复合体(MAC)感染症的治疗。上述药物也可用于这些感染症的预防。上述药物通常制备成胶囊，片剂，细粒剂，颗粒剂，散剂，糖浆剂等口服药剂，或注射剂，栓剂，滴眼剂，眼用软膏，滴耳剂，或皮肤外用剂型等给药。作为有效成分，可使用上述红霉素衍生物或其盐的水合物或溶剂化物。这些药剂，可加入药理学，制剂学上允许的添加剂，按照常规方法制备。在口服药剂和栓剂的制备中，可使用赋形剂（乳糖，D－甘露糖醇，玉米淀粉，结晶纤维素等），崩解剂（羧甲基纤维素，羧甲基纤维素钙等），粘合剂（羟丙基纤维素，羟丙基甲基纤维素，聚乙烯吡咯烷酮等），润滑剂（硬脂酸镁，滑石粉等），包衣剂（羟丙基甲基纤维

素，白糖，氧化钛等），增塑剂（聚乙二醇等），基质（聚乙二醇，硬脂等）等制剂用成分。在注射剂，或滴眼剂，滴耳剂等制备中，可使用水性或做成即用即溶型剂型的溶解剂或溶解辅助剂（注射用蒸馏水，生理盐水，丙二醇等），pH 调节剂（无机或有机酸或碱等），等渗剂（食盐，葡萄糖，甘油等），稳定剂等制剂用成分。另外，在眼用软膏，外用药剂的制备中，可使用作为软膏剂，乳油剂，贴剂适用的制剂成分（白色凡士林，聚乙二醇，甘油，液体石蜡，棉布等）。

对本发明的药物给药量没有特别的限制，通常是，成人口服日给药量约为 10～2000mg，非口服给药约 1～1000mg，可以 1 日 1 次或分多次给药。不过，可根据治疗或预防的目的，感染的部位或病原菌的种类，患者的年龄或症状等，适当增减上述给药量。

实施例

下面，用参考例和实施例对本发明进行说明，但本发明的范围并不限于这些参考例和实施例。表中，Me 代表甲基，Et 代表乙基，n-Pr 代表正丙基，i-Pr 代表异丙基，n-Bu 代表正丁基，n-Pent 代表正戊基，n-Hept 代表正庚基，n-Non 代表正壬基，Bn 代表苄基，Ac 代表乙酰基，HR-MS 表示高分辨质谱，Anal. Calcd.表示元素分析。

参考例 1

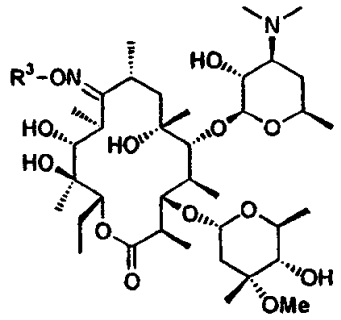
红霉素 A 9－[O-（苯乙基）肟]

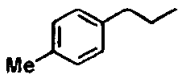
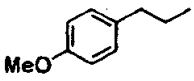
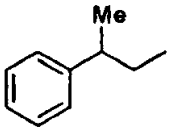
将红霉素 A 9－肟 5.00g，碘化四丁基铵 0.13g 和（2－溴乙基）苯 1.49g 的四氢呋喃 30ml 混合液在室温下搅拌，向其中加入粉末状氢氧化钾 0.53g，将混合物在室温搅拌 3.5 小时．再加入（2－溴乙基）苯 1.49g，粉末状氢氧化钾 0.50g，在室温搅拌 2.5 小时．将反应液倒入冰水中，用饱和碳酸氢钠水溶液使之成碱性后，用乙酸乙酯萃取。萃取液用水洗涤，硫酸钠干燥后，减压蒸除溶剂。向残渣中加入异丙醚使之固化，得到黄褐色固体 5.30g。

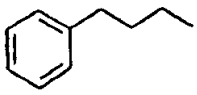
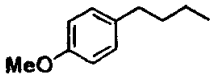
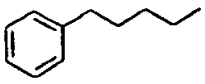
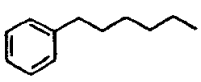
00.08.10

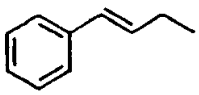
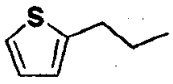
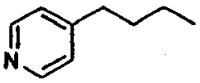
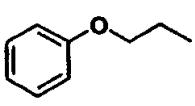
NMR谱 δ ($CDCl_3$) ppm: 0.85 (3H, t, J=7.5Hz), 0.98-1.70 (34H, m), 1.88-2.00 (2H, m), 2.20 (1H, d, J=10.5Hz), 2.28 (6H, s), 2.37 (1H, d, J=16Hz), 2.37-2.46 (1H, m), 2.60-2.69 (1H, m), 2.85-2.99 (3H, m), 3.03 (1H, t, J=10Hz), 3.12 (1H, s), 3.20 (1H, dd, J=10.5, 7.5Hz), 3.32 (3H, s), 3.37 (1H, s), 3.42-3.53 (2H, m), 3.54-3.63 (1H, m), 3.71 (1H, s), 3.95-4.05 (2H, m), 4.28 (2H, t, J=6.5Hz), 4.39 (1H, d, J=7.5Hz), 4.46 (1H, s), 4.93 (1H, d, J=5Hz), 5.14 (1H, dd, J=11, 2.5Hz), 7.17-7.34 (5H, m)

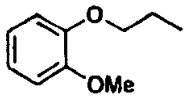
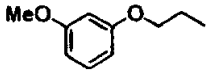
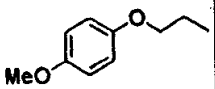
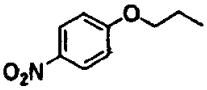
按照参考例 1 同样的方法，得到参考例 2～参考例 37 的化合物。

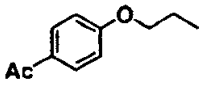
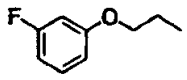
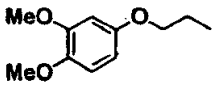
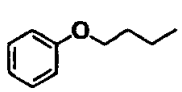


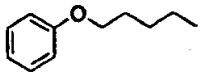
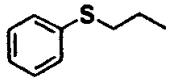
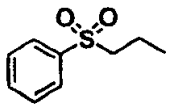
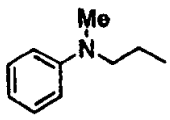
参考例	R^3	性状和物理性质
2		无色针状晶体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.91-1.72(34H,m),1.87-2.04(2H,m),2.21(1H,d,J=10.5Hz),2.28(6H,s),2.32(3H,s),2.37(1H,d,J=15.5Hz),2.37-2.46(1H,m),2.60-2.69(1H,m),2.86-2.97(3H,m),3.03(1H,t,J=10Hz),3.12(1H,s),3.21(1H,dd,J=10,7.5Hz),3.32(3H,s),3.40(1H,brs),3.43-3.51(1H,m),3.53(1H,d,J=7.5Hz),3.57-3.68(1H,m),3.71(1H,s),3.93-4.07(2H,m),4.19-4.27(2H,m),4.40(1H,d,J=7.5Hz),4.44(1H,s),4.92(1H,d,J=4.5Hz),5.13(1H,dd,J=11,2.5Hz),7.04-7.15(4H,m)
3		无色固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.95-1.72(34H,m),1.87-2.04(2H,m),2.21(1H,d,J=10.5Hz),2.28(6H,s),2.36(1H,d,J=15.5Hz),2.37-2.48(1H,m),2.62-2.70(1H,m),2.83-2.95(3H,m),3.02(1H,t,J=10Hz),3.12(1H,s),3.21(1H,dd,J=10.5,7.5Hz),3.32(3H,s),3.39(1H,brs),3.43-3.52(1H,m),3.55(1H,d,J=7.5Hz),3.58-3.68(1H,m),3.70(1H,s),3.79(3H,s),3.98-4.08(2H,m),4.21(2H,t,J=7Hz),4.41(1H,d,J=7.5Hz),4.44(1H,s),4.92(1H,d,J=5Hz),5.12(1H,dd,J=11,2Hz),6.84(2H,d,J=9Hz),7.12(2H,d,J=9Hz)
4		淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84,0.86(total 3H,each t,J=7Hz),0.89-1.77(37H,m),1.87-1.99(2H,m),2.21,2.23(total 1H,each d,J=10Hz),2.29(6H,s),2.33-2.48(1H,m),2.36,2.37(total 1H,each d,J=15Hz),2.56-2.65(1H,m),2.84-2.95(1H,m),3.00-3.23(4H,m),3.27-3.56(4H,m),3.30,3.31(total 3H,each s),3.66,3.71(total 1H,each s),3.94-4.03(2H,m),4.10-4.18(2H,m),4.36,4.39(total 1H,each d,J=7.5Hz),4.39,4.55(total 1H,each s),4.91,4.95(total 1H,each d,J=4.5Hz),5.08-5.18(1H,m),7.16-7.36(5H,m)

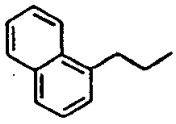
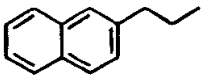
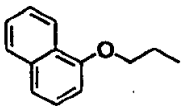
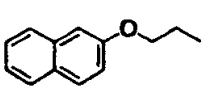
参考例	R^3	性状和物理性质
5		无色固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),1.04-1.70(33H,m),1.78(1H,brs),1.87-2.06(4H,m),2.21(1H,d,J=10.5Hz),2.28(6H,s),2.36(1H,d,J=15.5Hz),2.39-2.48(1H,m),2.62-2.73(3H,m),2.86-2.95(1H,m),3.02(1H,t,J=10Hz),3.10(1H,s),3.22(1H,dd,J=10.5,7.5Hz),3.32(3H,s),3.41(1H,brs),3.44-3.53(1H,m),3.59(1H,d,J=8Hz),3.67-3.78(2H,m),3.97-4.09(4H,m),4.41(1H,s),4.43(1H,d,J=7.5Hz),4.92(1H,d,J=5Hz),5.11(1H,dd,J=11,2.5Hz),7.13-7.32(5H,m)
6		无色固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),1.00-1.70(33H,m),1.85-2.09(4H,m),2.20(1H,d,J=10.5Hz),2.28(6H,s),2.36(1H,d,J=15.5Hz),2.38-2.47(1H,m),2.57-2.74(3H,m),2.86-2.96(1H,m),2.99(1H,s),3.02(1H,t,J=10Hz),3.10(1H,s),3.22(1H,dd,J=10,7.5Hz),3.32(3H,s),3.41(1H,brs),3.44-3.53(1H,m),3.60(1H,d,J=7.5Hz),3.65-3.75(2H,m),3.79(3H,s),3.97-4.10(4H,m),4.41(1H,s),4.43(1H,d,J=7.5Hz),4.92(1H,d,J=5Hz),5.11(1H,dd,J=11,2Hz),6.84(2H,d,J=8.5Hz),7.10(2H,d,J=8.5Hz)
7		无色固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.98-1.76(38H,m),1.87-2.04(2H,m),2.21(1H,d,J=10.5Hz),2.29(6H,s),2.36(1H,d,J=15.5Hz),2.39-2.46(1H,m),2.60-2.68(3H,m),2.86-2.95(1H,m),3.03(1H,t,J=10Hz),3.10(1H,s),3.22(1H,dd,J=10,7Hz),3.32(3H,s),3.41(1H,brs),3.45-3.53(1H,m),3.58(1H,d,J=7.5Hz),3.63-3.73(2H,m),3.97-4.07(4H,m),4.42(1H,s),4.43(1H,d,J=7.5Hz),4.92(1H,d,J=5Hz),5.11(1H,dd,J=11,2Hz),7.14-7.20(3H,m),7.24-7.30(2H,m)
8		无色固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.95-1.81(40H,m),1.87-2.04(2H,m),2.21(1H,d,J=10Hz),2.29(6H,s),2.36(1H,d,J=15.5Hz),2.40-2.48(1H,m),2.59-2.68(3H,m),2.86-2.94(1H,m),3.02(1H,t,J=10Hz),3.10(1H,s),3.22(1H,dd,J=10,7.5Hz),3.32(3H,s),3.41(1H,brs),3.45-3.53(1H,m),3.59(1H,d,J=7.5Hz),3.64-3.72(2H,m),3.97-4.07(4H,m),4.43(1H,d,J=7.5Hz),4.44(1H,s),4.91(1H,d,J=5Hz),5.11(1H,dd,J=11,2.5Hz),7.13-7.20(3H,m),7.23-7.30(2H,m)

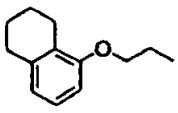
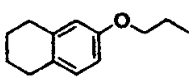
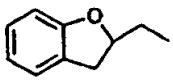
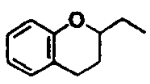
参考例	R^3	性状和物理性质
9		无色固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),1.00-1.82(34H,m),1.87-1.97(1H,m),1.98-2.06(1H,m),2.21(1H,d,J=10Hz),2.30-2.40(1H,m),2.37(6H,s),2.47-2.57(1H,m),2.65-2.72(1H,m),2.86-2.94(1H,m),3.02(1H,t,J=10Hz),3.11(1H,s),3.21-3.31(1H,m),3.32(3H,s),3.37(1H,brs),3.46-3.54(1H,m),3.59(1H,d,J=7.5Hz),3.70-3.79(2H,m),3.96-4.05(2H,m),4.42(1H,s),4.44(1H,d,J=7.5Hz),4.68(2H,d,J=6.5Hz),4.90(1H,d,J=4.5Hz),5.13(1H,dd,J=11,2.5Hz),6.31(1H,dt,J=16,6.5Hz),6.63(1H,d,J=16Hz),7.20-7.27(1H,m),7.33(2H,t,J=7.5Hz),7.41(2H,d,J=7.5Hz)
10		淡褐色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.97-1.70(34H,m),1.87-2.01(2H,m),2.20(1H,d,J=10.5Hz),2.28(6H,s),2.37(1H,d,J=15.5Hz),2.37-2.46(1H,m),2.61-2.70(1H,m),2.86-2.96(1H,m),3.03(1H,t,J=10Hz),3.08-3.25(4H,m),3.32(3H,s),3.40(1H,s),3.43-3.54(2H,m),3.61-3.70(1H,m),3.72(1H,s),3.96-4.06(2H,m),4.28(2H,t,J=6.5Hz),4.36-4.42(2H,m),4.93(1H,d,J=5Hz),5.13(1H,dd,J=11,2Hz),6.85(1H,d,J=2.5Hz),6.94(1H,dd,J=5.3.5Hz),7.15(1H,dd,J=5,1Hz)
11		无色固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),1.01-1.70(33H,m),1.78(1H,brs),1.87-2.04(4H,m),2.20(1H,d,J=10.5Hz),2.29(6H,s),2.36(1H,d,J=15.5Hz),2.39-2.46(1H,m),2.64-2.72(3H,m),2.87-2.95(1H,m),3.02(1H,t,J=10Hz),3.08(1H,s),3.22(1H,dd,J=10.5,7.5Hz),3.32(3H,s),3.43(1H,brs),3.45-3.53(1H,m),3.60(1H,d,J=8Hz),3.63-3.72(2H,m),3.97-4.09(4H,m),4.35(1H,s),4.43(1H,d,J=7.5Hz),4.91(1H,d,J=5Hz),5.10(1H,dd,J=11,2.5Hz),7.10-7.15(2H,m),8.47-8.52(2H,m)
12		淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.97-1.75(33H,m),1.86-2.03(3H,m),2.22(1H,d,J=10.5Hz),2.28(6H,s),2.34(1H,d,J=14.5Hz),2.38-2.47(1H,m),2.64-2.74(1H,m),2.83-2.93(1H,m),3.00(1H,t,J=10Hz),3.09(1H,s),3.21(1H,dd,J=10,7.5Hz),3.30(3H,s),3.37(1H,brs),3.42-3.57(2H,m),3.66-3.80(2H,m),3.87-4.04(2H,m),4.08-4.24(2H,m),4.33-4.44(4H,m),4.77(1H,d,J=4.5Hz),5.10(1H,dd,J=11,2.5Hz),6.84-6.99(3H,m),7.22-7.33(2H,m)

参考例	R^3	性状和物理性质
13		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.96-1.70(33H,m),1.86-2.02(3H,m),2.22(1H,d,J=10.5Hz),2.28(6H,s),2.34(1H,d,J=15.5Hz),2.38-2.46(1H,m),2.64-2.71(1H,m),2.84-2.92(1H,m),3.00(1H,t,J=10Hz),3.11(1H,s),3.21(1H,dd,J=10,7Hz),3.30(3H,s),3.36(1H,brs),3.42-3.53(2H,m),3.67-3.77(2H,m),3.87(3H,s),3.92(1H,d,J=10Hz),3.94-4.02(1H,m),4.11-4.17(1H,m),4.21-4.27(1H,m),4.35-4.45(4H,m),4.75(1H,d,J=5Hz),5.11(1H,dd,J=11,2.5Hz),6.85-6.99(4H,m)
14		无色固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.94-1.70(33H,m),1.83-2.04(3H,m),2.21(1H,d,J=10.5Hz),2.28(6H,s),2.34(1H,d,J=15.5Hz),2.37-2.47(1H,m),2.64-2.73(1H,m),2.83-2.93(1H,m),2.99(1H,t,J=10Hz),3.10(1H,s),3.21(1H,dd,J=10,7.5Hz),3.30(3H,s),3.38(1H,brs),3.43-3.50(1H,m),3.52(1H,d,J=8Hz),3.67-3.82(2H,m),3.79(3H,s),3.90-4.00(2H,m),4.08-4.19(2H,m),4.32-4.44(4H,m),4.75(1H,d,J=4.5Hz),5.06-5.15(1H,m),6.45-6.58(3H,m),7.18(1H,t,J=8Hz)
15		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.98-1.70(33H,m),1.87-2.02(2H,m),2.06(1H,s),2.21(1H,d,J=10.5Hz),2.28(6H,s),2.33(1H,d,J=15.5Hz),2.37-2.46(1H,m),2.64-2.72(1H,m),2.83-2.91(1H,m),2.99(1H,t,J=10Hz),3.09(1H,s),3.21(1H,dd,J=10.5,7.5Hz),3.30(3H,s),3.37(1H,brs),3.42-3.53(2H,m),3.67-3.80(2H,m),3.76(3H,s),3.88(1H,d,J=10Hz),3.92-3.99(1H,m),4.00-4.06(1H,m),4.11-4.17(1H,m),4.33-4.39(3H,m),4.41(1H,s),4.74(1H,d,J=4.5Hz),5.10(1H,dd,J=11,2.5Hz),6.83(2H,d,J=9Hz),6.89(2H,d,J=9Hz)
16		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.97-1.75(34H,m),1.83-1.97(2H,m),2.12(1H,d,J=10.5Hz),2.23-2.45(2H,m),2.27(6H,s),2.64-2.73(1H,m),2.78-2.90(1H,m),2.95(1H,t,J=10Hz),3.07(1H,s),3.17(1H,dd,J=10.5,7.5Hz),3.26(3H,s),3.30-3.53(4H,m),3.63-3.90(3H,m),4.06-4.15(1H,m),4.26-4.37(1H,m),4.32(1H,d,J=7.5Hz),4.42-4.54(2H,m),4.44(1H,s),4.58(1H,d,J=5Hz),5.05-5.12(1H,m),7.04(2H,d,J=9Hz),8.24(2H,d,J=9Hz)

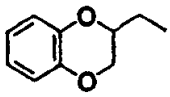
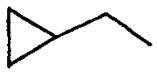
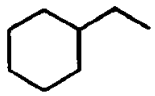
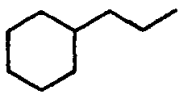
参考例	R^3	性状和物理性质
17		淡黄色固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.97-1.70(33H,m),1.85(1H,s),1.87-1.97(2H,m),2.19(1H,d,J=10.5Hz),2.25-2.33(1H,m),2.28(6H,s),2.37-2.45(1H,m),2.54(3H,s),2.65-2.72(1H,m),2.80-2.88(1H,m),2.97(1H,t,J=10Hz),3.07(1H,s),3.20(1H,dd,J=10.5,7.5Hz),3.28(3H,s),3.38(1H,s),3.41-3.51(2H,m),3.65-3.76(3H,m),3.87-3.96(1H,m),4.11-4.16(1H,m),4.23-4.28(1H,m),4.35(1H,d,J=7.5Hz),4.39(1H,s),4.39-4.46(2H,m),4.64(1H,d,J=5Hz),5.08(1H,dd,J=11,2.5Hz),6.99(2H,d,J=8.5Hz),7.95(2H,d,J=8.5Hz)
18		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.95-1.78(33H,m),1.86-2.02(3H,m),2.20(1H,d,J=10.5Hz),2.23-2.57(2H,m),2.34(6H,s),2.64-2.73(1H,m),2.82-2.92(1H,m),3.00(1H,t,J=10Hz),3.08(1H,s),3.17-3.40(2H,m),3.30(3H,s),3.42-3.56(2H,m),3.65-3.78(2H,m),3.86-4.00(2H,m),4.05-4.20(2H,m),4.30-4.43(4H,m),4.76(1H,d,J=4.5Hz),5.10(1H,dd,J=11,2Hz),6.61-6.70(2H,m),6.74(1H,dd,J=8,2.5Hz),7.17-7.28(1H,m)
19		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.97-1.75(33H,m),1.86-2.00(3H,m),2.21(1H,d,J=10.5Hz),2.28(6H,s),2.32(1H,d,J=14.5Hz),2.37-2.45(1H,m),2.64-2.72(1H,m),2.83-2.91(1H,m),2.98(1H,t,J=10Hz),3.10(1H,s),3.21(1H,dd,J=10,7Hz),3.29(3H,s),3.38(1H,brs),3.42-3.52(2H,m),3.68-3.77(2H,m),3.82(3H,s),3.83-3.89(1H,m),3.87(3H,s),3.90-3.97(1H,m),4.01-4.07(1H,m),4.10-4.17(1H,m),4.32-4.40(3H,m),4.46(1H,s),4.66(1H,d,J=4.5Hz),5.10(1H,dd,J=11,2Hz),6.46(1H,dd,J=8.5,3Hz),6.56(1H,d,J=3Hz),6.78(1H,d,J=8.5Hz)
20		无色固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),1.02(3H,d,J=6.5Hz),1.08-1.80(31H,m),1.87-2.05(2H,m),2.08-2.18(2H,m),2.21(1H,d,J=10.5Hz),2.29(6H,s),2.33-2.48(1H,m),2.36(1H,d,J=15.5Hz),2.63-2.72(1H,m),2.85-2.96(1H,m),3.02(1H,t,J=10Hz),3.10(1H,s),3.22(1H,dd,J=10,7.5Hz),3.32(3H,s),3.41(1H,s),3.44-3.53(1H,m),3.57(1H,d,J=7.5Hz),3.64-3.76(2H,m),3.96-4.10(4H,m),4.16-4.27(2H,m),4.38(1H,s),4.42(1H,d,J=7.5Hz),4.92(1H,d,J=5Hz),5.12(1H,dd,J=11,2Hz),6.84-6.96(3H,m),7.21-7.32(2H,m)

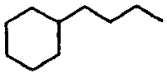
参考例	R^3	性状和物理性质
21		无色固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.96-2.05(40H,m),2.21(1H,d,J=10.5Hz),2.25-2.40(1H,m),2.32(6H,s),2.40-2.55(1H,m),2.60-2.70(1H,m),2.85-2.95(1H,m),3.02(1H,t,J=9.5Hz),3.10(1H,s),3.20-3.27(1H,m),3.32(3H,s),3.40(1H,s),3.45-3.55(1H,m),3.59(1H,d,J=7.5Hz),3.65-3.75(2H,m),3.95-4.15(6H,m),4.41(1H,s),4.43(1H,d,J=7.5Hz),4.90(1H,d,J=5Hz),5.11(1H,dd,J=11,2Hz),6.90-7.00(3H,m),7.20-7.30(2H,m)
22		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.98-1.70(33H,m),1.85-2.05(3H,m),2.20(1H,d,J=10.5Hz),2.29(6H,s),2.35(1H,d,J=15.5Hz),2.40-2.48(1H,m),2.65-2.72(1H,m),2.85-2.93(1H,m),3.01(1H,t,J=10Hz),3.08(1H,s),3.09-3.18(2H,m),3.22(1H,dd,J=10.5,7.5Hz),3.32(3H,s),3.39(1H,brs),3.45-3.53(1H,m),3.59(1H,d,J=3.5Hz),3.65-3.75(2H,m),3.98-4.07(2H,m),4.14-4.25(3H,m),4.42(1H,d,J=6.5Hz),4.89(1H,d,J=5Hz),5.11(1H,dd,J=11,2.5Hz),7.18-7.42(5H,m)
23		无色固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.95(3H,d,J=6.5Hz),1.06-1.70(30H,m),1.86-2.02(3H,m),2.19(1H,d,J=10.5Hz),2.29(6H,s),2.36(1H,d,J=15.5Hz),2.39-2.47(1H,m),2.62-2.68(1H,m),2.86-2.95(1H,m),3.01(1H,t,J=10Hz),3.02(1H,s),3.22(1H,dd,J=10,7.5Hz),3.32(3H,s),3.35-3.54(5H,m),3.56(1H,d,J=7.5Hz),3.68(1H,s),3.98-4.05(2H,m),4.08(1H,s),4.31-4.38(1H,m),4.41(1H,d,J=7.5Hz),4.43-4.50(1H,m),4.91(1H,d,J=5Hz),5.07(1H,dd,J=11,2Hz),7.56-7.70(3H,m),7.90-7.96(2H,m)
24		褐色固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.92-1.70(33H,m),1.80-2.01(3H,m),2.21(1H,d,J=10Hz),2.28(6H,s),2.36(1H,d,J=14.5Hz),2.37-2.45(1H,m),2.60-2.70(1H,m),2.85-2.98(1H,m),2.95(3H,s),3.02(1H,t,J=10Hz),3.09(1H,s),3.21(1H,dd,J=10,7.5Hz),3.32(3H,s),3.39(1H,brs),3.43-3.58(4H,m),3.60-3.75(2H,m),3.95-4.05(2H,m),4.17-4.23(2H,m),4.35(1H,s),4.41(1H,d,J=6.5Hz),4.90(1H,d,J=4.5Hz),5.11(1H,dd,J=11,2Hz),6.68-6.77(3H,m),7.20-7.30(2H,m)

参考例	R^3	性状和物理性质
25		无色固体 NMR 谱 δ ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.93-1.75(34H,m),1.87-2.03(2H,m),2.20(1H,d,J=10Hz),2.29(6H,s),2.37(1H,d,J=15.5Hz),2.38-2.48(1H,m),2.63-2.71(1H,m),2.86-2.96(1H,m),3.03(1H,t,J=9.5Hz),3.13(1H,s),3.21(1H,dd,J=10.5,7.5Hz),3.32(3H,s),3.36-3.52(4H,m),3.52-3.67(2H,m),3.73(1H,s),3.95-4.10(2H,m),4.28-4.48(4H,m),4.93(1H,d,J=5Hz),5.14(1H,dd,J=11,2.5Hz),7.32-7.59(4H,m),7.74(1H,d,J=8Hz),7.85(1H,d,J=8Hz),8.06(1H,d,J=8.5Hz)
26		无色非晶形固体 NMR 谱 δ ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.94-1.80(34H,m),1.86-2.06(2H,m),2.20(1H,d,J=10.5Hz),2.30(6H,s),2.36(1H,d,J=15.5Hz),2.37-2.50(1H,m),2.60-2.67(1H,m),2.83-2.92(1H,m),3.02(1H,t,J=10Hz),3.04-3.15(3H,m),3.20(1H,dd,J=10.5,7.5Hz),3.31(3H,s),3.38(1H,brs),3.41-3.53(2H,m),3.55-3.65(1H,m),3.71(1H,s),3.93-4.03(2H,m),4.28-4.35(2H,m),4.38(1H,d,J=7.5Hz),4.44(1H,s),4.91(1H,d,J=5Hz),5.13(1H,dd,J=11,2Hz),7.35(1H,dd,J=8.5,1Hz),7.38-7.50(2H,m),7.65(1H,s),7.73-7.83(3H,m)
27		无色固体 NMR 谱 δ ($CDCl_3$)ppm:0.86(3H,t,J=7.5Hz),0.93-1.80(34H,m),1.88-2.01(2H,m),2.17(1H,d,J=10.5Hz),2.27(6H,s),2.31(1H,d,J=15.5Hz),2.35-2.43(1H,m),2.65-2.73(1H,m),2.83-2.98(2H,m),3.10(1H,s),3.18(1H,dd,J=10,7Hz),3.28(3H,s),3.32-3.38(1H,brs),3.38-3.47(2H,m),3.70-3.78(2H,m),3.84-3.93(2H,m),4.26-4.40(3H,m),4.42(1H,s),4.49-4.54(2H,m),4.68(1H,d,J=4.5Hz),5.13(1H,dd,J=11.5,2Hz),6.89(1H,d,J=7.5Hz),7.32-7.53(4H,m),7.73-7.79(1H,m),8.24-8.32(1H,m)
28		无色固体 NMR 谱 δ ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.97-1.73(33H,m),1.87-2.00(3H,m),2.17(1H,d,J=10.5Hz),2.19(1H,d,J=15.5Hz),2.29(6H,s),2.37-2.50(1H,m),2.65-2.73(1H,m),2.76-2.85(1H,m),2.90(1H,t,J=10Hz),3.11(1H,s),3.15-3.26(1H,m),3.24(3H,s),3.34(1H,brs),3.39-3.50(2H,m),3.68-3.79(3H,m),3.81-3.89(1H,m),4.16-4.23(1H,m),4.26-4.34(3H,m),4.42-4.48(2H,m),4.50(1H,s),5.11(1H,dd,J=11,2.5Hz),7.16-7.21(2H,m),7.28-7.33(1H,m),7.37-7.42(1H,m),7.70-7.80(3H,m)

参考例	R^3	性状和物理性质
29		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.97-1.83(38H,m),1.87-2.02(2H,m),2.20(1H,d,J=10.5Hz),2.28(6H,s),2.33(1H,d,J=15.5Hz),2.38-2.46(1H,m),2.60-2.79(5H,m),2.84-2.94(1H,m),2.98(1H,t,J=10Hz),3.09(1H,s),3.21(1H,dd,J=10.5,7.5Hz),3.30(3H,s),3.37(1H,brs),3.42-3.55(2H,m),3.66-3.79(2H,m),3.91-4.01(2H,m),4.07-4.20(3H,m),4.32-4.42(3H,m),4.73(1H,d,J=4.5Hz),5.11(1H,dd,J=11,2.5Hz),6.65-6.72(2H,m),7.04(1H,t,J=8Hz)
30		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.97-1.81(37H,m),1.87-2.02(3H,m),2.21(1H,d,J=10.5Hz),2.28(6H,s),2.34(1H,d,J=15.5Hz),2.38-2.46(1H,m),2.63-2.78(5H,m),2.83-2.92(1H,m),2.99(1H,t,J=10Hz),3.10(1H,s),3.21(1H,dd,J=10,7.5Hz),3.30(3H,s),3.35(1H,brs),3.42-3.54(2H,m),3.68-3.78(2H,m),3.87-4.00(2H,m),4.03-4.17(3H,m),4.32-4.39(2H,m),4.43(1H,s),4.73(1H,d,J=4.5Hz),5.11(1H,dd,J=11,2.5Hz),6.63(1H,d,J=2.5Hz),6.71(1H,dd,J=8.5,2.5Hz),6.96(1H,d,J=8Hz)
31		淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84,0.85(total 3H,each t,J=7.5Hz),0.93-1.70(32H,m),1.86-2.05(3H,m),2.19-2.25(1H,m),2.29(6H,s),2.36,2.37(total 1H,each d,J=15Hz),2.39-2.47(1H,m),2.61-2.70(1H,m),2.85-3.12(4H,m),3.22(1H,dd,J=10.5,7.5Hz),3.23-3.34(1H,m),3.32(3H,s),3.36(1H,brs),3.43-3.60(2H,m),3.48(1H,brs),3.63-3.75(1H,m),3.79,3.80(total 1H,each s),3.96-4.35(5H,m),4.40(1H,d,J=7.5Hz),4.88,4.91(total 1H,each d,J=4.5Hz),4.93-5.03(1H,m),5.07-5.16(1H,m),6.79-6.92(2H,m),7.07-7.18(2H,m)
32		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82,0.85(total 3H,each t,J=7.5Hz),1.00-1.83(35H,m),1.85-2.07(3H,m),2.18-2.25(1H,m),2.29(6H,s),2.35,2.36(total 1H,each d,J=15Hz),2.38-2.47(1H,m),2.64-2.74(1H,m),2.75-2.96(3H,m),2.98-3.01(2H,m),3.22(1H,dd,J=10,7.5Hz),3.31,3.32(total 3H,each s),3.39(1H,brs),3.43-3.54(1H,m),3.60,3.61(total 1H,each d,J=7.5Hz),3.71-3.83(2H,m),3.96-4.01(2H,m),4.07-4.24(4H,m),4.43(1H,d,J=10Hz),4.83,4.88(total 1H,each d,J=4.5Hz),5.06,5.13(total 1H,each dd,J=11,2Hz),6.77-6.85(1H,m),6.88-6.94(1H,m),6.98-7.05(1H,m),7.06-7.14(1H,m)

00.08.10

参考例	R^3	性状和物理性质
33		无色固体 NMR 谱 δ($CDCl_3$)ppm:0.84,0.85(total 3H,each t,J=7Hz),1.00-1.70(33H,m),1.85-2.05(3H,m),2.20,2.21(total 1H,each d,J=10.5Hz),2.29(6H,s),2.36,2.37(total 1H,each d,J=15.5Hz),2.38-2.47(1H,m),2.66-2.74(1H,m),2.85-2.93(1H,m),2.97-3.08(2H,m),3.22(1H,dd,J=10,7.5Hz),3.30,3.32(total 3H,each s),3.40(1H,brs),3.44-3.53(1H,m),3.58,3.60(total 1H,each d,J=7.5Hz),3.67-3.79(2H,m),3.97-4.32(7H,m),4.37-4.48(2H,m),4.87,4.90(total 1H,each d,J=4.5Hz),5.08,5.11(total 1H,each dd,J=11,2.5Hz),6.79-6.90(3H,m),6.93-6.99(1H,m)
34		无色固体 NMR 谱 δ($CDCl_3$)ppm:0.24-0.30(2H,m),0.52-0.59(2H,m),0.84(3H,t,J=7.5Hz),1.04-1.69(34H,m),1.82(1H,brs),1.87-1.95(1H,m),1.96-2.05(1H,m),2.21(1H,d,J=10Hz),2.29(6H,s),2.36(1H,d,J=14.5Hz),2.39-2.47(1H,m),2.62-2.71(1H,m),2.85-2.94(1H,m),3.02(1H,t,J=10Hz),3.11(1H,s),3.23(1H,dd,J=10.5,7.5Hz),3.32(3H,s),3.39(1H,s),3.45-3.53(1H,m),3.59(1H,d,J=7.5Hz),3.70-3.77(2H,m),3.80(1H,dd,J=11.5,7Hz),3.89(1H,dd,J=11.5,7Hz),4.00-4.05(1H,m),4.07(1H,d,J=8.5Hz),4.43(1H,d,J=7.5Hz),4.47(1H,s),4.92(1H,d,J=5Hz),5.11(1H,d,J=9Hz)
35		无色固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.92-1.80(45H,m),1.87-2.04(2H,m),2.21(1H,d,J=10.5Hz),2.29(6H,s),2.36(1H,d,J=14.5Hz),2.39-2.47(1H,m),2.62-2.68(1H,m),2.86-2.95(1H,m),3.02(1H,t,J=10Hz),3.11(1H,s),3.22(1H,dd,J=10.5,7.5Hz),3.32(3H,s),3.39(1H,brs),3.45-3.54(1H,m),3.59(1H,d,J=8Hz),3.65-3.75(2H,m),3.77-3.87(2H,m),3.98-4.07(2H,m),4.43(1H,d,J=7.5Hz),4.46(1H,s),4.92(1H,d,J=4.5Hz),5.11(1H,dd,J=11,2Hz)
36		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.88-1.78(47H,m),1.86-2.06(2H,m),2.20(1H,d,J=10.5Hz),2.29(6H,s),2.36(1H,d,J=14.5Hz),2.38-2.47(1H,m),2.62-2.69(1H,m),2.86-2.96(1H,m),3.02(1H,t,J=10Hz),3.10(1H,s),3.22(1H,dd,J=10,7.5Hz),3.32(3H,s),3.40(1H,s),3.44-3.54(1H,m),3.59(1H,d,J=7.5Hz),3.64-3.74(2H,m),3.96-4.09(4H,m),4.43(1H,d,J=7.5Hz),4.45(1H,s),4.91(1H,d,J=5Hz),5.12(1H,dd,J=11,2Hz)

参考例	R^3	性状和物理性质
37		淡褐色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.80-1.81(49H,m),0.84(3H,t,J=7.5Hz),1.86-2.06(2H,m),2.21(1H,d,J=10.5Hz),2.29(6H,s),2.36(1H,d,J=15.5Hz),2.39-2.48(1H,m),2.60-2.70(1H,m),2.85-2.96(1H,m),3.02(1H,t,J=9.5Hz),3.11(1H,s),3.22(1H,dd,J=10.5,7.5Hz),3.32(3H,s),3.40(1H,s),3.44-3.54(1H,m),3.59(1H,d,J=7.5Hz),3.63-3.75(2H,m),3.92-4.09(4H,m),4.43(1H,d,J=7.5Hz),4.46(1H,s),4.92(1H,d,J=4.5Hz),5.12(1H,dd,J=11,2.5Hz)

参考例 38

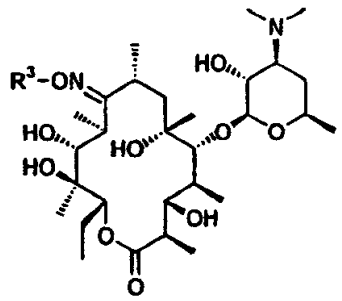
5-O-德糖胺基（デソサミニル）红霉素（エリスロノライド）A 9-[O-（苯乙基）肟]

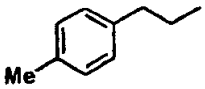
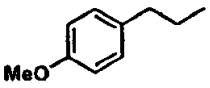
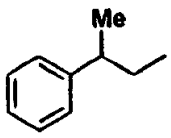
向红霉素 A 9-[O-（苯乙基）肟]4.80g 的 1N 盐酸 40ml 悬浮液中，在室温搅拌下加入甲醇 50ml，将混合物在室温搅拌 3.5 小时．将反应液减压浓缩，向残渣中加入冰水，再用 10% 氢氧化钠水溶液使之成碱性后，用乙醚萃取。萃取液用水洗涤，硫酸钠干燥后，减压蒸除溶剂。残渣用柱色谱纯化（硅胶，二氯甲烷:甲醇 = 50:1→25:1），得到淡黄褐色非晶型固体 3.43g。

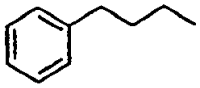
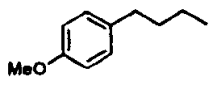
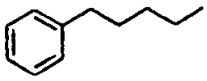
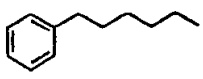
NMR谱 δ ($CDCl_3$)ppm: 0.85(3H, t, J=7.5Hz), 1.01(3H, d, J=6.5Hz), 1.08(3H, d, J=7.5Hz), 1.10-1.75(20H, m), 1.88-1.99(1H, m), 2.01-2.11(2H, m), 2.25(6H, s), 2.42-2.52(1H, m), 2.59-2.71(2H, m), 2.90-3.00(2H, m), 3.18(1H, s), 3.23(1H, dd, J=10.5, 7.5Hz), 3.40-3.70(6H, m), 3.83(1H, brs), 4.21-4.31(2H, m), 4.38(1H, d, J=7.5Hz), 4.38(1H, s), 5.23(1H, dd, J=11, 2.5Hz), 7.16-7.31(5H, m)

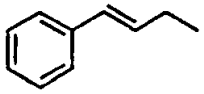
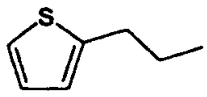
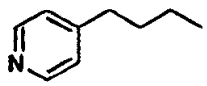
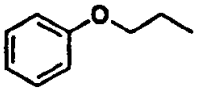
HR-MS m/z 694.43983 [Calcd. for $C_{37}H_{62}N_2O_{10}$ (M^+) :694.44045]

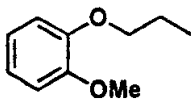
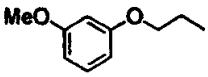
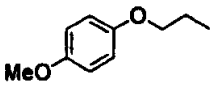
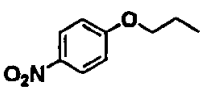
按照参考例 38 同样的方法，得到参考例 39～参考例 76 的化合物。

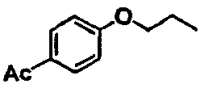
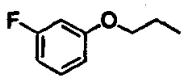
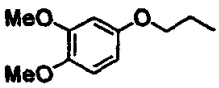
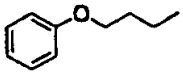


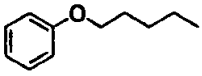
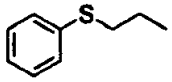
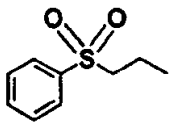
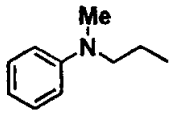
参考例	R^3	性状和物理性质
39		无色非晶形晶体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),1.02(3H,d,J=6.5Hz),1.08(3H,d,J=7.5Hz),1.15-1.75(20H,m),1.88-2.00(1H,m),2.03-2.14(2H,m),2.25(6H,s),2.32(3H,s),2.43-2.53(1H,m),2.60-2.72(2H,m),2.86-2.96(2H,m),3.18(1H,s),3.23(1H,dd,J=10,7.5Hz),3.43-3.70(6H,m),3.82(1H,brs),4.19-4.31(2H,m),4.34-4.43(2H,m),5.23(1H,dd,J=11,2.5Hz),7.08(2H,d,J=8Hz),7.10(2H,d,J=8Hz) HR-MS m/z 708.45691 [Calcd.for $C_{38}H_{64}N_2O_{10}$(M^+):708.45610]
40		无色非晶形晶体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),1.02(3H,d,J=7.5Hz),1.08(3H,d,J=8Hz),1.13-1.74(20H,m),1.89-1.99(1H,m),2.03-2.12(2H,m),2.26(6H,s),2.43-2.53(1H,m),2.60-2.72(2H,m),2.85-2.92(2H,m),3.18(1H,s),3.24(1H,dd,J=10.5,7.5Hz),3.40-3.70(6H,m),3.79(3H,s),3.83(1H,brs),4.17-4.28(2H,m),4.38(1H,d,J=6.5Hz),4.39(1H,s),5.23(1H,dd,J=11,2.5Hz),6.84(2H,d,J=8.5Hz),7.11(2H,d,J=8.5Hz) HR-MS m/z 724.45260 [Calcd.for $C_{38}H_{64}N_2O_{11}$(M^+):724.45101]
41		无色非晶形晶体 NMR 谱 δ($CDCl_3$)ppm:0.84,0.85(total 3H,each t,J=7.5Hz),0.94,0.98(total 3H,each d,J=6.5Hz),1.06,1.07(total 3H,each d,J=7.5Hz),1.10-1.80(23H,m),1.83-2.00(2H,m),2.02-2.12(1H,m),2.26,2.27(total 6H,each s),2.44-2.55(1H,m),2.57-2.69(2H,m),3.07-3.28(3H,m),3.33-3.70(6H,m),3.82(1H,brs),4.03-4.22(2H,m),4.30-4.44(2H,m),5.18-5.27(1H,m),7.17-7.34(5H,m) HR-MS m/z 708.45672 [Calcd.for $C_{38}H_{64}N_2O_{10}$(M^+):708.45610]

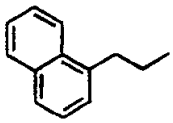
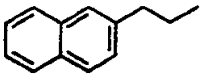
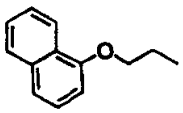
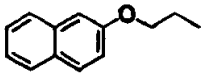
参考例	R^3	性状和物理性质
42		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),1.02-1.70(20H,m),1.06(3H,d,J=6.5Hz),1.10(3H,d,J=7.5Hz),1.88-2.03(3H,m),2.05-2.14(1H,m),2.25(6H,s),2.35(1H,brs),2.42-2.53(1H,m),2.60-2.73(4H,m),3.17(1H,s),3.24(1H,dd,J=10,7.5Hz),3.42-3.64(4H,m),3.69(1H,s),3.70-3.79(1H,m),3.82(1H,brs),4.00-4.10(2H,m),4.37(1H,s),4.39(1H,d,J=7.5Hz),5.23(1H,dd,J=11.5,2Hz),7.13-7.33(5H,m) HR-MS m/z 708.45746 [Calcd.for $C_{38}H_{64}N_2O_{10}$(M^+):708.45610]
43		无色固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),1.03-1.75(26H,m),1.87-2.00(3H,m),2.06-2.14(1H,m),2.26(6H,s),2.35(1H,s),2.44-2.53(1H,m),2.58-2.73(4H,m),3.16(1H,s),3.24(1H,dd,J=10.5,7.5Hz),3.44(1H,brs),3.49-3.64(3H,m),3.66-3.90(3H,m),3.79(3H,s),4.00-4.10(2H,m),4.38(1H,s),4.39(1H,d,J=8Hz),5.23(1H,dd,J=11.5,2Hz),6.84(2H,d,J=8.5Hz),7.09(2H,d,J=8.5Hz) HR-MS m/z 738.46546 [Calcd.for $C_{39}H_{66}N_2O_{11}$(M^+):738.46666]
44		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),1.04(3H,d,J=6.5Hz),1.09(3H,d,J=7.5Hz),1.15-1.80(27H,m),1.90-2.00(1H,m),2.08-2.15(1H,m),2.25(6H,s),2.29(1H,s),2.40-2.55(1H,m),2.60-2.75(4H,m),3.17(1H,s),3.24(1H,dd,J=10.5,7.5Hz),3.40-3.61(4H,m),3.65-3.75(2H,m),4.00-4.10(2H,m),4.39(1H,d,J=6.5Hz),4.39(1H,s),5.23(1H,dd,J=11,2.5Hz),7.10-7.30(5H,m) HR-MS m/z 722.47175 [Calcd.for $C_{39}H_{66}N_2O_{10}$(M^+):722.47175]
45		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),1.03(3H,d,J=7.5Hz),1.09(3H,d,J=8Hz),1.15-1.80(26H,m),1.90-1.98(1H,m),2.06-2.13(1H,m),2.26(6H,s),2.28(1H,s),2.45-2.53(1H,m),2.59-2.70(4H,m),3.16(1H,s),3.24(1H,dd,J=10.5,7.5Hz),3.45(1H,brs),3.50-3.72(5H,m),3.84(1H,brs),3.96-4.06(2H,m),4.40(1H,d,J=6.5Hz),4.40(1H,s),5.23(1H,dd,J=11,2.5Hz),7.13-7.20(3H,m),7.24-7.30(2H,m) HR-MS m/z 736.48631 [Calcd.for $C_{40}H_{68}N_2O_{10}$(M^+):736.48740]

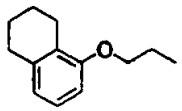
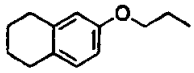
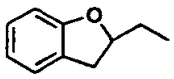
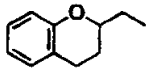
参考例	R^3	性状和物理性质
46		淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),1.07(3H,d,J=6.5Hz),1.10(3H,d,J=7.5Hz),1.16-1.73(20H,m),1.90-1.99(1H,m),2.06-2.14(1H,m),2.25(6H,s),2.33(1H,s),2.43-2.51(1H,m),2.61-2.74(2H,m),3.17(1H,s),3.24(1H,dd,J=10.5,7.5Hz),3.45(1H,brs),3.49-3.56(2H,m),3.56-3.63(1H,m),3.71(1H,s),3.73-3.87(2H,m),4.38(1H,d,J=7.5Hz),4.38(1H,s),4.69(2H,d,J=6.5Hz),5.24(1H,dd,J=11,2.5Hz),6.29(1H,dt,J=16,6.5Hz),6.62(1H,d,J=16Hz),7.22-7.28(1H,m),7.34(2H,t,J=7.5Hz),7.40(2H,d,J=7.5Hz) HR-MS m/z 706.44045 [Calcd.for $C_{38}H_{62}N_2O_{10}(M^+)$]:706.44045]
47		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),1.04(3H,d,J=6.5Hz),1.09(3H,d,J=7.5Hz),1.15-1.72(20H,m),1.88-2.00(1H,m),2.04-2.15(2H,m),2.25(6H,s),2.43-2.52(1H,m),2.60-2.73(2H,m),3.10-3.25(3H,m),3.23(1H,dd,J=10.5,7.5Hz),3.41-3.62(4H,m),3.64-3.75(2H,m),3.83(1H,brs),4.22-4.34(3H,m),4.38(1H,d,J=7.5Hz),5.23(1H,dd,J=11,2.5Hz),6.84(1H,d,J=3.5Hz),6.93(1H,dd,J=5.5,3.5Hz),7.15(1H,dd,J=5.5,1Hz) HR-MS m/z 700.39679 [Calcd.for $C_{35}H_{60}N_2O_{10}S(M^+)$:700.39687]
48		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),1.07(3H,d,J=7.5Hz),1.09(3H,d,J=7.5Hz),1.15-1.75(21H,m),1.88-2.03(3H,m),2.04-2.12(1H,m),2.25(6H,s),2.37(1H,s),2.43-2.51(1H,m),2.60-2.74(4H,m),3.15(1H,s),3.24(1H,dd,J=10.5,7.5Hz),3.47-3.62(3H,m),3.67-3.76(2H,m),3.83(1H,brs),4.01-4.11(2H,m),4.30(1H,s),4.39(1H,d,J=7.5Hz),5.22(1H,dd,J=11,2.5Hz),7.08-7.15(2H,m),8.47-8.54(2H,m) HR-MS m/z 709.44918 [Calcd.for $C_{37}H_{63}N_3O_{10}(M^+)$:709.45135]
49		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),1.03(3H,d,J=6.5Hz),1.08(3H,d,J=7.5Hz),1.15-1.71(20H,m),1.88-2.00(1H,m),2.08-2.16(1H,m),2.25(6H,s),2.34(1H,s),2.42-2.50(1H,m),2.59-2.73(2H,m),3.16(1H,s),3.22(1H,dd,J=10.5,7.5Hz),3.38(1H,brs),3.43(1H,d,J=2.5Hz),3.47-3.60(2H,m),3.69-3.85(3H,m),4.15(2H,t,J=4.5Hz),4.33(1H,s),4.35(1H,d,J=7.5Hz),4.36-4.44(2H,m),5.24(1H,dd,J=11,2.5Hz),6.84-7.00(3H,m),7.26-7.36(2H,m) HR-MS m/z 710.43442 [Calcd.for $C_{37}H_{62}N_2O_{11}(M^+)$:710.43536]

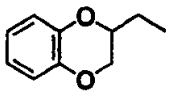
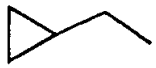
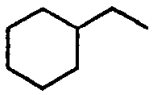
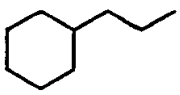
参考例	R^3	性状和物理性质
50		无色非晶形固体 NMR 谱 δ ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),1.02(3H,d,J=6.5Hz),1.09(3H,d,J=7.5Hz),1.15-1.75(20H,m),1.89-1.99(1H,m),2.10-2.18(1H,m),2.25(6H,s),2.42-2.50(2H,m),2.60-2.73(2H,m),3.17(1H,s),3.23(1H,dd,J=10.5,7.5Hz),3.38-3.45(2H,m),3.47-3.58(2H,m),3.72-3.88(3H,m),3.85(3H,s),4.14-4.28(2H,m),4.34(1H,s),4.35-4.45(2H,m),4.36(1H,d,J=8Hz),5.24(1H,dd,J=11,2.5Hz),6.86-6.99(4H,m) HR-MS m/z 740.44436 [Calcd.for $C_{38}H_{64}N_2O_{12}$(M^+):740.44593]
51		无色非晶形固体 NMR 谱 δ ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),1.03(3H,d,J=6.5Hz),1.08(3H,d,J=7.5Hz),1.14-1.75(20H,m),1.87-2.00(1H,m),2.06-2.15(1H,m),2.24(6H,s),2.36(1H,s),2.42-2.50(1H,m),2.60-2.74(2H,m),3.17(1H,s),3.22(1H,dd,J=10.5,7.5Hz),3.40-3.58(4H,m),3.70-3.86(3H,m),3.80(3H,s),4.09-4.18(2H,m),4.30-4.43(4H,m),5.23(1H,dd,J=11,2.5Hz),6.44-6.57(3H,m),7.20(1H,t,J=8Hz) HR-MS m/z 740.44573 [Calcd.for $C_{38}H_{64}N_2O_{12}$(M^+):740.44593]
52		无色非晶形固体 NMR 谱 δ ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),1.03(3H,d,J=6.5Hz),1.09(3H,d,J=7.5Hz),1.15-1.75(20H,m),1.90-1.99(1H,m),2.09-2.17(1H,m),2.25(6H,s),2.40-2.50(2H,m),2.60-2.73(2H,m),3.17(1H,s),3.22(1H,dd,J=10,7.5Hz),3.39(1H,brs),3.43(1H,d,J=2.5Hz),3.46-3.57(2H,m),3.72-3.85(3H,m),3.78(3H,s),4.02-4.15(2H,m),4.31-4.40(4H,m),5.25(1H,dd,J=11.5,2Hz),6.86(2H,d,J=9.5Hz),6.89(2H,d,J=9.5Hz) HR-MS m/z 740.44627 [Calcd.for $C_{38}H_{64}N_2O_{12}$(M^+):740.44593]
53		无色非晶形固体 NMR 谱 δ ($CDCl_3$)ppm:0.86(3H,t,J=7.5Hz),1.04(3H,d,J=6.5Hz),1.07(3H,d,J=7.5Hz),1.15-1.74(21H,m),1.89-2.00(1H,m),2.03-2.11(1H,m),2.24(6H,s),2.42-2.50(1H,m),2.58-2.75(2H,m),3.13(1H,s),3.22(1H,dd,J=10.5,7.5Hz),3.39(1H,brs),3.40(1H,d,J=2.5Hz),3.45-3.57(2H,m),3.67-3.77(2H,m),3.81(1H,brs),4.20-4.32(3H,m),4.35(1H,d,J=7.5Hz),4.38-4.53(2H,m),5.23(1H,dd,J=11.5,2Hz),7.01(2H,d,J=9Hz),8.24(2H,d,J=9Hz) HR-MS m/z 755.42020 [Calcd.for $C_{37}H_{61}N_3O_{13}$(M^+):755.42044]

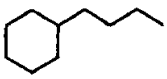
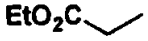
参考例	R^3	性状和物理性质
54		淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.86(3H,t,J=7.5Hz),1.03(3H,d,J=7.5Hz),1.07(3H,d,J=7.5Hz),1.15-1.75(20H,m),1.88-1.99(1H,m),2.04-2.12(1H,m),2.25(6H,s),2.27(1H,s),2.42-2.51(1H,m),2.57(3H,s),2.59-2.73(2H,m),3.15(1H,s),3.22(1H,dd,J=10,7.5Hz),3.37-3.43(2H,m),3.46-3.57(2H,m),3.68-3.78(2H,m),3.81(1H,brs),4.17-4.25(2H,m),4.27(1H,s),4.33(1H,d,J=7.5Hz),4.35-4.48(2H,m),5.24(1H,dd,J=11,2.5Hz),6.97(2H,d,J=9Hz),7.96(2H,d,J=9Hz) HR-MS m/z 752.44624 [Calcd.for $C_{39}H_{64}N_2O_{12}$(M^+):752.44593]
55		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),1.03(3H,d,J=6.5Hz),1.08(3H,d,J=7.5Hz),1.13-1.82(20H,m),1.88-2.00(1H,m),2.05-2.15(1H,m),2.27(6H,s),2.30(1H,s),2.45-2.54(1H,m),2.58-2.74(2H,m),3.15(1H,s),3.23(1H,dd,J=10.5,7.5Hz),3.35(1H,brs),3.44(1H,d,J=2.5Hz),3.46-3.57(2H,m),3.68-3.86(3H,m),4.09-4.20(2H,m),4.28(1H,s),4.31-4.44(3H,m),5.23(1H,dd,J=11,2.5Hz),6.60-6.75(3H,m),7.18-7.28(1H,m) HR-MS m/z 728.42674 [Calcd.for $C_{37}H_{61}FN_2O_{11}$(M^+):728.42594]
56		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),1.04(3H,d,J=7.5Hz),1.09(3H,d,J=7.5Hz),1.16-1.75(20H,m),1.87-2.00(1H,m),2.02(1H,s),2.07-2.16(1H,m),2.24(6H,s),2.40-2.50(2H,m),2.57-2.74(2H,m),3.18(1H,s),3.22(1H,dd,J=10.5,7.5Hz),3.38-3.57(4H,m),3.70-3.92(2H,m),3.85(3H,s),3.88(3H,s),4.06-4.16(2H,m),4.34-4.42(4H,m),5.24(1H,dd,J=11,2.5Hz),6.43(1H,dd,J=9,3Hz),6.57(1H,d,J=3Hz),6.81(1H,d,J=9Hz) HR-MS m/z 770.45834 [Calcd.for $C_{39}H_{66}N_2O_{13}$(M^+):770.45649]
57		淡褐色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),1.04(3H,d,J=6.5Hz),1.09(3H,d,J=7.5Hz),1.14-1.83(21H,m),1.87-1.99(1H,m),2.04-2.18(3H,m),2.25(6H,s),2.28(1H,s),2.43-2.52(1H,m),2.60-2.74(2H,m),3.16(1H,s),3.24(1H,dd,J=10.5,7.5Hz),3.40-3.95(6H,m),4.05(2H,t,J=6.5Hz),4.16-4.29(2H,m),4.34(1H,s),4.38(1H,d,J=7.5Hz),5.23(1H,dd,J=11,2Hz),6.84-6.95(3H,m),7.22-7.32(2H,m) HR-MS m/z 724.45457 [Calcd.for $C_{38}H_{64}N_2O_{11}$(M^+):724.45101]

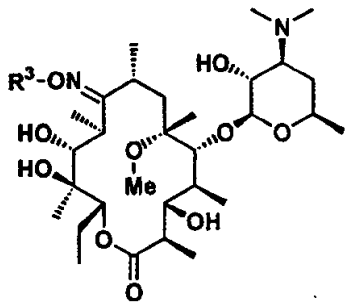
参考例	R^3	性状和物理性质
58		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),1.04(3H,d,J=6.5Hz),1.09(3H,d,J=7.5Hz),1.15-2.00(25H,m),2.06-2.13(1H,m),2.26(6H,s),2.33(1H,s),2.45-2.53(1H,m),2.60-2.73(2H,m),3.17(1H,s),3.24(1H,dd,J=10,7.5Hz),3.40-3.61(4H,m),3.68-3.77(2H,m),3.82(1H,brs),3.95-4.02(2H,m),4.11(2H,t,J=6Hz),4.38(1H,s),4.39(1H,d,J=6.5Hz),5.23(1H,dd,J=11,2.5Hz),6.80-7.00(3H,m),7.20-7.30(2H,m) HR-MS m/z 738.46452 [Calcd.for $C_{39}H_{66}N_2O_{11}$(M^+):738.46666]
59		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),1.04(3H,d,J=6.5Hz),1.09(3H,d,J=7.5Hz),1.10-1.80(20H,m),1.90-2.00(1H,m),2.05-2.18(1H,m),2.26(6H,s),2.40-2.50(2H,m),2.60-2.75(2H,m),3.10-3.20(3H,m),3.24(1H,dd,J=10.5,7.5Hz),3.41(1H,brs),3.45-3.62(3H,m),3.65-3.90(3H,m),4.10-4.24(3H,m),4.39(1H,d,J=7.5Hz),5.23(1H,dd,J=11,2.5Hz),7.18-7.42(5H,m) HR-MS m/z 726.41315 [Calcd.for $C_{37}H_{62}N_2O_{10}S$(M^+):726.41252]
60		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),1.00(3H,d,J=7.5Hz),1.09(3H,d,J=7.5Hz),1.12-1.73(20H,m),1.88-1.98(1H,m),2.07-2.14(1H,m),2.26(6H,s),2.44-2.52(1H,m),2.62-2.73(3H,m),3.11(1H,s),3.24(1H,dd,J=10.5,7.5Hz),3.32-3.39(1H,m),3.43-3.64(6H,m),3.74(1H,s),3.83(1H,brs),4.13(1H,s),4.32-4.40(2H,m),4.50-4.56(1H,m),5.19(1H,dd,J=11.5,2Hz),7.61-7.70(3H,m),7.90-7.94(2H,m) HR-MS m/z 758.40365 [Calcd.for $C_{37}H_{62}N_2O_{12}S$(M^+):758.40235]
61		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.99(3H,d,J=7.5Hz),1.08(3H,d,J=7.5Hz),1.15-1.75(20H,m),1.85-2.00(1H,m),2.02-2.11(1H,m),2.26(6H,s),2.41(1H,s),2.45-2.52(1H,m),2.60-2.72(2H,m),2.94(3H,s),3.16(1H,s),3.24(1H,dd,J=10.5,7.5Hz),3.38-3.60(6H,m),3.62-3.71(2H,m),3.81(1H,brs),4.22(2H,t,J=6Hz),4.29(1H,s),4.37(1H,d,J=7.5Hz),5.23(1H,dd,J=11,2.5Hz),6.69-6.76(3H,m),7.20-7.28(2H,m) HR-MS m/z 723.46848 [Calcd.for $C_{38}H_{65}N_3O_{10}$(M^+):723.46700]

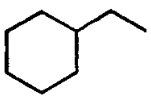
参考例	R^3	性状和物理性质
62		无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.85(3H,t,J=7.5Hz),1.00(3H,d,J=7.5Hz),1.08(3H,d,J=7.5Hz),1.13-1.74(20H,m),1.88-2.00(1H,m),2.03-2.12(1H,m),2.19(1H,s),2.26(6H,s),2.45-2.53(1H,m),2.59-2.73(2H,m),3.18(1H,s),3.24(1H,dd,J=10.5,7.5Hz),3.37-3.72(8H,m),3.83(1H,brs),4.31-4.46(4H,m),5.24(1H,dd,J=11,2.5Hz),7.31-7.56(4H,m),7.74(1H,d,J=8Hz),7.85(1H,d,J=8Hz),8.05(1H,d,J=8.5Hz) HR-MS m/z 744.45572 [Calcd.for $C_{41}H_{64}N_2O_{10}$(M$^+$):744.45610]
63		无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.85(3H,t,J=7.5Hz),0.99(3H,d,J=6.5Hz),1.06(3H,d,J=7.5Hz),1.10-1.78(20H,m),1.88-2.10(3H,m),2.26(6H,s),2.42-2.53(1H,m),2.59-2.70(2H,m),3.06-3.13(2H,m),3.18(1H,s),3.22(1H,dd,J=10.5,7.5Hz),3.34-3.41(2H,m),3.43-3.62(3H,m),3.69(1H,s),3.82(1H,brs),4.31(1H,d,J=7.5Hz),4.34-4.42(2H,m),4.42(1H,s),5.24(1H,dd,J=11,2.5Hz),7.34(1H,dd,J=8.5,2Hz),7.40-7.47(2H,m),7.63(1H,s),7.73-7.81(3H,m) HR-MS m/z 570.34210 [Calcd.for $C_{33}H_{48}NO_7$(M$^+$-$C_8H_{16}NO_3$):570.34308]
64		淡褐色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.86(3H,t,J=7.5Hz),0.98(3H,d,J=6.5Hz),1.06(3H,d,J=7.5Hz),1.14-1.77(21H,m),1.90-2.00(1H,m),2.04-2.12(1H,m),2.23(6H,s),2.30(1H,s),2.39-2.47(1H,m),2.59-2.75(2H,m),3.16(1H,s),3.19(1H,dd,J=10.5,7.5Hz),3.30-3.39(2H,m),3.40-3.55(2H,m),3.70-3.82(2H,m),4.27(1H,d,J=7.5Hz),4.30-4.40(3H,m),4.48-4.57(2H,m),5.25(1H,dd,J=11,2.5Hz),6.85(1H,d,J=7.5Hz),7.32-7.52(4H,m),7.75-7.82(1H,m),8.27-8.33(1H,m) HR-MS m/z 760.45071 [Calcd.for $C_{41}H_{64}N_2O_{11}$(M$^+$):760.45101]
65		无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.87(3H,t,J=7.5Hz),1.02(3H,d,J=7.5Hz),1.08(3H,d,J=7.5Hz),1.15-1.80(20H,m),1.90-2.00(1H,m),2.08-2.16(1H,m),2.24(6H,s),2.38(1H,s),2.40-2.48(1H,m),2.58-2.74(2H,m),3.18(1H,s),3.21(1H,dd,J=10,7.5Hz),3.35-3.41(2H,m),3.42-3.56(2H,m),3.71-3.85(3H,m),4.22-4.33(3H,m),4.37(1H,s),4.40-4.53(2H,m),5.27(1H,dd,J=11,2.5Hz),7.16(1H,d,J=2.5Hz),7.20(1H,dd,J=8.5,2.5Hz),7.34(1H,td,J=8,1Hz),7.44(1H,td,J=8,1Hz),7.71-7.80(3H,m) HR-MS m/z 760.45020 [Calcd.for $C_{41}H_{64}N_2O_{11}$(M$^+$):760.45101]

参考例	R^3	性状和物理性质
66		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),1.01(3H,d,J=7.5Hz),1.08(3H,d,J=8Hz),1.15-1.84(25H,m),1.87-2.00(1H,m),2.05-2.15(1H,m),2.24(6H,s),2.43-2.51(1H,m),2.60-2.80(6H,m),3.16(1H,s),3.22(1H,dd,J=10.5,7.5Hz),3.34-3.40(1H,m),3.40-3.58(3H,m),3.69-3.87(3H,m),4.09-4.20(2H,m),4.32(1H,s),4.34-4.44(2H,m),4.36(1H,d,J=7.5Hz),5.24(1H,dd,J=11,2.5Hz),6.66(1H,d,J=8Hz),6.71(1H,d,J=8Hz),7.06(1H,t,J=8Hz) HR-MS m/z 764.48230 [Calcd.for $C_{41}H_{68}N_2O_{11}$(M^+):764.48231]
67		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.86(3H,t,J=7.5Hz),1.03(3H,d,J=6.5Hz),1.09(3H,d,J=7.5Hz),1.16-1.82(24H,m),1.87-2.00(1H,m),2.08-2.17(1H,m),2.25(6H,s),2.36(1H,s),2.43-2.50(1H,m),2.58-2.81(6H,m),3.17(1H,s),3.23(1H,dd,J=10.5,7.5Hz),3.39(1H,d,J=4.5Hz),3.45(1H,d,J=2.5Hz),3.47-3.59(2H,m),3.70-3.86(3H,m),4.06-4.15(2H,m),4.30-4.43(4H,m),5.25(1H,dd,J=11,2.5Hz),6.64(1H,d,J=2.5Hz),6.69(1H,dd,J=8.5,2.5Hz),6.99(1H,d,J=8.5Hz) HR-MS m/z 764.48142 [Calcd.for $C_{41}H_{68}N_2O_{11}$(M^+):764.48231]
68		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84,0.85(total 3H,each t,J=7.5Hz),0.99,1.00(total 3H,each d,J=6.5Hz),1.08,1.09(total 3H,each d,J=7.5Hz),1.14-1.73(19H,m),1.90-2.00(1H,m),2.09-2.20(1H,m),2.20-2.40(1H,m),2.25(6H,s),2.38(1H,s),2.43-2.53(1H,m),2.59-2.73(2H,m),2.90-3.00(1H,m),3.15,3.17(total 1H,each s),3.20-3.34(2H,m),3.35-3.64(4H,m),3.68-3.87(3H,m),4.11-4.32(3H,m),4.39(1H,d,J=7.5Hz),4.90-5.07(1H,m),5.20-5.30(1H,m),6.73-6.89(2H,m),7.05-7.20(2H,m) HR-MS m/z 723.44292 [Calcd.for $C_{38}H_{63}N_2O_{11}$(M^++1):723.44319]
69		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84,0.86(total 3H,each t,J=7Hz),1.05,1.06(total 3H,each d,J=6.5Hz),1.09,1.11(total 3H,each d,J=7.5Hz),1.16-2.07(23H,m),2.09-2.33(1H,m),2.25(6H,s),2.36-2.53(2H,m),2.58-2.95(4H,m),3.15,3.16(total 1H,each s),3.20-3.28(1H,m),3.35-3.46(1H,m),3.46-3.67(3H,m),3.72-3.91(3H,m),4.17-4.34(4H,m),4.38(1H,d,J=7.5Hz),5.22,5.28(total 1H,each dd,J=11,2.5Hz),6.80-6.94(2H,m),7.00-7.19(2H,m) HR-MS m/z 736.45127 [Calcd.for $C_{39}H_{64}N_2O_{11}$(M^+):736.45101]

参考例	R^3	性状和物理性质
70		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),1.05,1.06(total 3H,each d,J=7Hz),1.08,1.09(total 3H,each d,J=7.5Hz),1.15-1.75(21H,m),1.87-2.00(1H,m),2.04-2.16(1H,m),2.25(6H,s),2.35-2.40(1H,m),2.43-2.52(1H,m),2.60-2.76(2H,m),3.13(1H,s),3.20-3.28(1H,m),3.42-3.64(4H,m),3.70-3.90(2H,m),3.96-4.46(7H,m),5.18-5.27(1H,m),6.80-7.00(4H,m) HR-MS m/z 739.43839 [Calcd.for $C_{38}H_{62}N_2O_{12}$(M^+):739.43810]
71		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.20-0.30(2H,m),0.51-0.60(2H,m),0.84(3H,t,J=7.5Hz),1.00-1.72(21H,m),1.06(3H,d,J=6.5Hz),1.10(3H,d,J=7.5Hz),1.88-2.00(1H,m),2.08-2.16(1H,m),2.25(6H,s),2.33(1H,s),2.43-2.52(1H,m),2.60-2.73(2H,m),3.17(1H,s),3.24(1H,dd,J=10.5,7.5Hz),3.41(1H,d,J=5Hz),3.44-3.64(3H,m),3.70-3.92(5H,m),4.40(1H,d,J=7.5Hz),4.42(1H,s),5.23(1H,dd,J=11,2.5Hz) HR-MS m/z 644.42528 [Calcd.for $C_{33}H_{60}N_2O_{10}$(M^+):644.42480]
72		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.94-1.77(30H,m),1.05(3H,d,J=6.5Hz),1.10(3H,d,J=7.5Hz),1.88-1.98(1H,m),2.07-2.13(1H,m),2.25(6H,s),2.30(1H,s),2.44-2.50(1H,m),2.60-2.71(2H,m),3.17(1H,s),3.24(1H,dd,J=10.5,7.5Hz),3.43(1H,d,J=4.5Hz),3.50-3.62(3H,m),3.67(1H,s),3.68-3.75(1H,m),3.78-3.90(4H,m),4.40(1H,d,J=7.5Hz),4.43(1H,s),5.23(1H,dd,J=11,2.5Hz) HR-MS m/z 686.47084 [Calcd.for $C_{36}H_{66}N_2O_{10}$(M^+):686.47175]
73		淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.87-1.75(33H,m),1.05(3H,d,J=6.5Hz),1.10(3H,d,J=7.5Hz),1.89-1.99(1H,m),2.07-2.14(1H,m),2.25(6H,s),2.32(1H,s),2.44-2.52(1H,m),2.60-2.72(2H,m),3.18(1H,s),3.24(1H,dd,J=10,7.5Hz),3.43-3.48(1H,m),3.50-3.62(3H,m),3.65-3.75(2H,m),3.83(1H,brs),4.04-4.10(2H,m),4.40(1H,d,J=7.5Hz),4.42(1H,s),5.23(1H,dd,J=11,2.5Hz) HR-MS m/z 700.48745 [Calcd.for $C_{37}H_{68}N_2O_{10}$(M^+):700.48740]

参考例	R^3	性状和物理性质
74		淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.80-1.80(35H,m),0.85(3H,t,J=7.5Hz),1.05(3H,d,J=6.5Hz),1.10(3H,d,J=7.5Hz),1.88-2.00(1H,m),2.06-2.15(1H,m),2.25(6H,s),2.33(1H,s),2.43-2.53(1H,m),2.58-2.72(2H,m),3.17(1H,s),3.24(1H,dd,J=10,7.5Hz),3.40-3.76(6H,m),3.82(1H,brs),3.92-4.07(2H,m),4.40(1H,d,J=7.5Hz),4.42(1H,s),5.23(1H,dd,J=11,2.5Hz) HR-MS m/z 714.50347 [Calcd.for $C_{38}H_{70}N_2O_{10}$(M^+):714.50305]
75		淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),1.00-1.80(24H,m),1.05(3H,d,J=6.5Hz),1.10(3H,d,J=7.5Hz),1.88-2.00(1H,m),2.16-2.33(2H,m),2.25(6H,s),2.42-2.52(1H,m),2.58-2.75(2H,m),3.08(1H,s),3.24(1H,dd,J=10.5,7.5Hz),3.35(1H,s),3.46-3.72(3H,m),3.76-3.98(3H,m),4.18-4.30(2H,m),4.40(1H,d,J=7.5Hz),4.56(1H,d,J=17Hz),4.66(1H,d,J=17Hz),5.24(1H,dd,J=11,2.5Hz) HR-MS m/z 676.41267 [Calcd.for $C_{33}H_{60}N_2O_{12}$(M^+):676.41463]



参考例	R^3	性状和物理性质
76		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.96(3H,d,J=6.5Hz),1.09(3H,d,J=7.5Hz),1.11-1.83(31H,m),1.90-2.02(1H,m),2.09-2.18(1H,m),2.25(6H,s),2.41-2.50(1H,m),2.52-2.60(1H,m),2.61-2.71(1H,m),2.97(3H,s),3.24(1H,dd,J=10,7Hz),3.30(1H,s),3.45-3.59(3H,m),3.63-3.92(6H,m),4.37(1H,d,J=7.5Hz),4.68(1H,s),5.22(1H,dd,J=11,2.5Hz) HR-MS m/z 700.48766 [Calcd.for $C_{37}H_{68}N_2O_{10}$(M^+):700.48740]

00.08.10

参考例 77

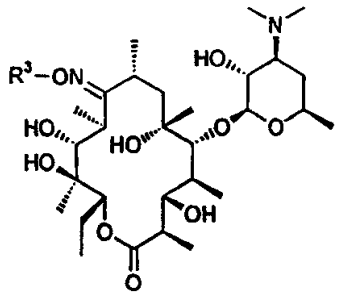
5－O－德糖胺基－6－O－甲基红霉素（エリスロノライド）A9－[O－（1－甲氧环己基）肟]

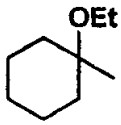
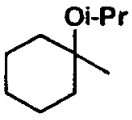
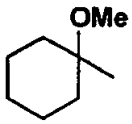
向 5－O－德糖胺基－6－O－甲基红霉素（エリスロノライド）A9－肟 1.10g 和吡啶盐酸盐 0.32g 的二氯甲烷 11ml 混合液中，在室温搅拌下滴加入 1,1－二甲基环己烷 1.4ml 的二氯甲烷 4ml 溶液，将混合物在室温搅拌 19 小时，然后再加热回流 18 小时。向反应液中加入水，用饱和碳酸氢钠水溶液使之成碱性后，用乙醚萃取。萃取液用饱和食盐水洗涤，硫酸钠干燥后，减压蒸除溶剂。残渣用柱色谱纯化（硅胶，乙酸乙酯:甲醇:氨水 = 20:1:0.1→10:1:0.1），所得固体用异丙醚洗净，得到无色非晶型固体 0.37g。

NMR谱　　δ ($CDCl_3$) ppm:0.84(3H, t, J=7.5Hz), 0.99(3H, d, J=7.5Hz), 1.10 (3H, d, J=7.5Hz), 1.07-2.02(31H, m), 2.09-2.20(1H, m), 2.25(6H, s), 2.43-2.52(1H, m), 2.57-2.72(2H, m), 3.00(3H, s), 3.21(3H, s), 3.24(1H, dd, J=10.5, 7.5Hz), 3.33(1H, s), 3.48-3.60(3H, m), 3.68-3.93(4H, m), 4.38(1H, d, J=7.5Hz), 4.54(1H, s), 5.23(1H, dd, J=11, 2.5Hz)

HR-MS　m/z　716.47970 [Calcd. for $C_{37}H_{68}N_2O_{11}$ (M^+) :716.48231]

按照参考例 77 同样的方法，得到参考例 78～参考例 80 的化合物。



参考例	R^3	性状和物理性质
78		无色非晶形固体 NMR 谱 δ ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),1.00-2.00(34H,m),1.06(3H,d,J=6.5Hz),1.10(3H,d,J=7.5Hz),2.08-2.15(1H,m),2.29(6H,s),2.32(1H,s),2.48-2.55(1H,m),2.60-2.68(1H,m),2.68-2.74(1H,m),3.23(1H,s),3.25(1H,dd,J=10.5,7.5Hz),3.35(1H,brs),3.45(2H,qd,J=7.5,2Hz),3.50-3.62(3H,m),3.67(1H,s),3.71-3.89(1H,m),3.83(1H,brs),4.41(1H,d,J=7.5Hz),4.54(1H,s),5.24(1H,dd,J=11,2.5Hz) HR-MS m/z 716.48180 [Calcd.for $C_{37}H_{68}N_2O_{11}$(M^+):716.48231]
79		无色非晶形固体 NMR 谱 δ ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),1.02-2.05(38H,m),1.06(3H,d,J=6.5Hz),1.10(3H,d,J=7.5Hz),2.06-2.18(1H,m),2.30(6H,s),2.32(1H,s),2.50-2.77(3H,m),3.21(1H,brs),3.26(1H,dd,J=10,7.5Hz),3.35(1H,brs),3.50-3.70(4H,m),3.72-3.80(1H,m),4.00-4.09(1H,m),4.42(1H,d,J=7.5Hz),4.45(1H,s),5.23(1H,dd,J=11.5,2Hz) HR-MS m/z 730.49242 [Calcd.for $C_{38}H_{70}N_2O_{11}$(M^+):730.49796]
80		淡黄色非晶形固体 NMR 谱 δ ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),1.00-2.00(31H,m),1.07(3H,d,J=7.5Hz),1.10(3H,d,J=7.5Hz),2.08-2.13(1H,m),2.26(6H,s),2.31(1H,s),2.44-2.52(1H,m),2.60-2.68(1H,m),2.69-2.75(1H,m),3.20(3H,s),3.22(1H,s),3.25(1H,dd,J=10,7.5Hz),3.42(1H,d,J=5Hz),3.49-3.64(3H,m),3.67(1H,s),3.70-3.81(1H,m),3.83(1H,brs),4.41(1H,d,J=8Hz),4.50(1H,s),5.23(1H,dd,J=11,2.5Hz) HR-MS m/z 702.46524 [Calcd.for $C_{36}H_{66}N_2O_{11}$(M^+):702.46666]

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参考例 81

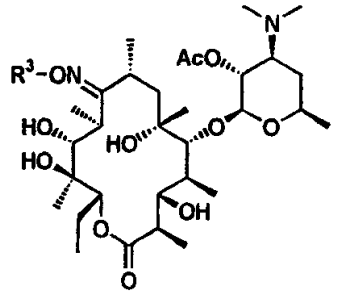
2'－O－乙酰基－5－O－德糖胺基红霉素（エリスロノライド）A9－[O－（苯乙基）肟]

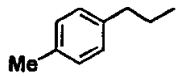
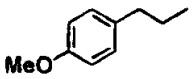
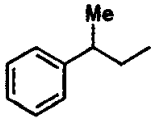
向 5－O－德糖胺基红霉素（エリスロノライド）A9－[O－（苯乙基）肟]3.25g 的丙酮 40ml 溶液中，在室温搅拌下加入乙酸酐 0.53ml，将混合物在室温搅拌 4 小时。将反应液减压浓缩，向残渣中加入水，用饱和碳酸氢钠水溶液使之成碱性后，用二氯甲烷萃取。萃取液用水洗涤，硫酸钠干燥后，减压蒸除溶剂。得到淡黄色非晶形固体 3.45g。

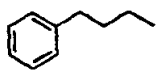
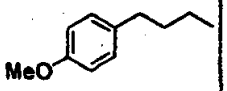
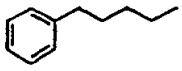
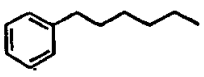
NMR谱 δ ($CDCl_3$) ppm: 0.84 (3H, t, J=7.5Hz), 0.91 (3H, d, J=7.5Hz), 0.99 (3H, d, J=6.5Hz), 1.12-1.52 (19H, m), 1.70-1.76 (2H, m), 1.90-2.00 (1H, m), 2.06 (3H, s), 2.05-2.14 (1H, m), 2.28 (6H, s), 2.61-2.68 (2H, m), 2.73-2.83 (1H, m), 2.94 (2H, t, J=6.5Hz), 3.16 (1H, brs), 3.42-3.60 (5H, m), 3.68 (1H, s), 4.26 (2H, m), 4.46 (1H, brs), 4.56 (1H, d, J=7.5Hz), 4.77 (1H, dd, J=10.5, 8Hz), 5.24 (1H, dd, J=11, 2.5Hz), 7.17-7.31 (5H, m)

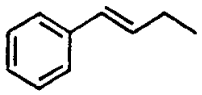
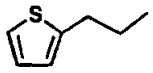
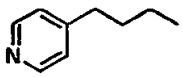
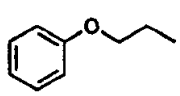
HR-MS m/z 736.45008 [Calcd. for $C_{39}H_{64}N_2O_{11}$ (M^+) :736.45101]

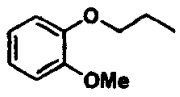
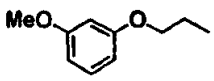
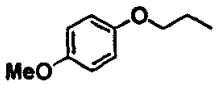
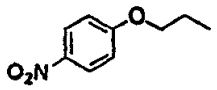
按照参考例 81 同样的方法，得到参考例 82～参考例 123 的化合物。

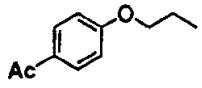
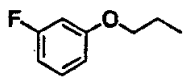
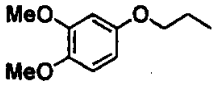
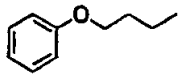


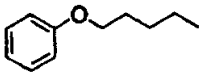
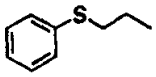
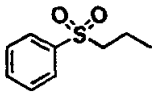
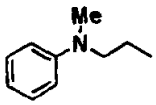
参考例	R^3	性状和物理性质
82		无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.84(3H,t,J=7.5Hz),0.92(3H,d,J=7.5Hz),0.99(3H,d,J=6.5Hz),1.13-1.76(22H,m),1.88-2.00(1H,m),2.03-2.15(1H,m),2.06(3H,s),2.25(6H,s),2.32(3H,s),2.60-2.74(3H,m),2.86-2.95(2H,m),3.16(1H,s),3.43-3.60(4H,m),3.68(1H,s),4.18-4.28(2H,m),4.47(1H,brs),4.56(1H,d,J=8Hz),4.75(1H,dd,J=10.5,8Hz),5.24(1H,dd,J=11,2Hz),7.07(2H,d,J=8Hz),7.10(2H,d,J=8Hz) HR-MS m/z 750.46681 [Calcd.for $C_{40}H_{66}N_2O_{11}$(M$^+$):750.46666]
83		无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.84(3H,t,J=7.5Hz),0.92(3H,d,J=7.5Hz),1.00(3H,d,J=7.5Hz),1.10-1.78(22H,m),1.89-2.00(1H,m),2.06(3H,s),2.06-2.14(1H,m),2.26(6H,s),2.60-2.75(3H,m),2.88(2H,t,J=7Hz),3.15(1H,s),3.41-3.61(4H,m),3.68(1H,s),3.79(3H,s),4.15-4.27(2H,m),4.47(1H,s),4.56(1H,d,J=7.5Hz),4.75(1H,dd,J=10.5,8Hz),5.24(1H,dd,J=11.5,2Hz),6.84(2H,d,J=8.5Hz),7.10(2H,d,J=8.5Hz) HR-MS m/z 766.46244 [Calcd.for $C_{40}H_{66}N_2O_{12}$(M$^+$):766.46158]
84		无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.84,0.85(total 3H,each t,J=7.5Hz),0.90,0.91(total 3H,each d,J=7.5Hz),0.92,0.96(total 3H,each d,J=7.5Hz),1.05-1.85(25H,m),1.88-2.00(1H,m),2.00-2.17(1H,m),2.05,2.06(total 3H,each s),2.25,2.26(total 6H,each s),2.56-2.78(3H,m),3.06-3.20(2H,m),3.36-3.60(4H,m),3.65,3.67(total 1H,each s),4.03-4.20(2H,m),4.43,4.49(total 1H,each s),4.55(1H,d,J=8Hz),4.74,4.75(total 1H,each dd,J=10.5,8Hz),5.23,5.24(total 1H,each dd,J=11,2.5Hz),7.16-7.33(5H,m) HR-MS m/z 750.46653 [Calcd.for $C_{40}H_{66}N_2O_{11}$(M$^+$):750.46666]

参考例	R^3	性状和物理性质
85		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.93(3H,d,J=7.5Hz),1.04(3H,d,J=7.5Hz),1.10-1.89(21H,m),1.90-2.00(3H,m),2.01-2.08(1H,m),2.06(3H,s),2.09-2.18(1H,m),2.26(6H,s),2.60-2.77(5H,m),3.15(1H,brs),3.42-3.59(3H,m),3.61-3.70(2H,m),4.00-4.10(2H,m),4.47(1H,s),4.58(1H,d,J=8Hz),4.77(1H,dd,J=10.5,7.5Hz),5.24(1H,dd,J=11,2.5Hz),7.13-7.33(5H,m) HR-MS m/z 750.46426 [Calcd.for $C_{40}H_{66}N_2O_{11}$(M^+):750.46666]
86		淡褐色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.93(3H,d,J=7.5Hz),1.04(3H,d,J=7.5Hz),1.13-1.75(21H,m),1.87-2.00(3H,m),2.03(1H,s),2.06(3H,s),2.10-2.18(1H,m),2.26(6H,s),2.54-2.77(5H,m),3.14(1H,s),3.43-3.60(3H,m),3.61-3.72(2H,m),3.79(3H,s),4.00-4.09(2H,m),4.46(1H,s),4.57(1H,d,J=7.5Hz),4.76(1H,dd,J=10.5,8Hz),5.24(1H,dd,J=11,2.5Hz),6.84(2H,d,J=8.5Hz),7.09(2H,d,J=8.5Hz) HR-MS m/z 780.47994 [Calcd.for $C_{41}H_{68}N_2O_{12}$(M^+):780.47723]
87		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.93(3H,d,J=7.5Hz),1.02(3H,d,J=6.5Hz),1.10-1.80(25H,m),1.90-2.00(2H,m),2.06(3H,s),2.10-2.15(1H,m),2.26(6H,s),2.60-2.75(5H,m),3.14(1H,s),3.40-3.58(3H,m),3.60-3.70(2H,m),3.95-4.10(2H,m),4.47(1H,s),4.57(1H,d,J=8Hz),4.76(1H,dd,J=10.5,7.5Hz),5.23(1H,dd,J=11,2Hz),7.10-7.30(5H,m) HR-MS m/z 764.48182 [Calcd.for $C_{41}H_{68}N_2O_{11}$(M^+):764.48231]
88		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.93(3H,d,J=7.5Hz),1.01(3H,d,J=6.5Hz),1.12-1.74(27H,m),1.90-1.98(1H,m),2.00(1H,s),2.06(3H,s),2.08-2.15(1H,m),2.26(6H,s),2.58-2.74(5H,m),3.15(1H,s),3.43-3.67(5H,m),3.96-4.05(2H,m),4.48(1H,s),4.58(1H,d,J=8Hz),4.76(1H,dd,J=10.5,8Hz),5.23(1H,dd,J=11,2.5Hz),7.13-7.20(3H,m),7.24-7.30(2H,m) HR-MS m/z 778.49789 [Calcd.for $C_{42}H_{70}N_2O_{11}$(M^+):778.49796]

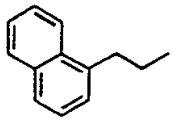
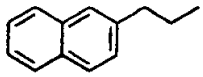
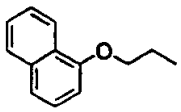
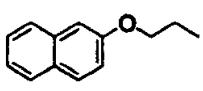
参考例	R^3	性状和物理性质
89		淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.93(3H,d,J=7.5Hz),1.05(3H,d,J=6.5Hz),1.11-1.81(21H,m),1.90-1.99(2H,m),2.06(3H,s),2.10-2.18(1H,m),2.26(6H,s),2.62-2.75(3H,m),3.16(1H,s),3.42-3.56(3H,m),3.65-3.73(2H,m),4.49(1H,s),4.57(1H,d,J=8Hz),4.63-4.73(2H,m),4.76(1H,dd,J=10.5,7.5Hz),5.25(1H,dd,J=11,2.5Hz),6.28(1H,dt,J=16,6Hz),6.62(1H,d,J=16Hz),7.23-7.28(1H,m),7.34(2H,t,J=7.5Hz),7.40(2H,d,J=7.5Hz) HR-MS m/z 748.45012 [Calcd.for $C_{40}H_{64}N_2O_{11}$(M^+):748.45101]
90		淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.92(3H,d,J=7.5Hz),1.02(3H,d,J=6.5Hz),1.12-1.80(21H,m),1.90-2.16(3H,m),2.06(3H,s),2.26(6H,s),2.60-2.77(3H,m),3.09-3.24(3H,m),3.41-3.55(3H,m),3.58-3.72(2H,m),4.18-4.32(2H,m),4.41(1H,s),4.56(1H,d,J=7.5Hz),4.76(1H,dd,J=10.5,7.5Hz),5.24(1H,dd,J=11,2.5Hz),6.83(1H,d,J=2.5Hz),6.93(1H,dd,J=5.5,3.5Hz),7.15(1H,dd,J=5.5,1Hz) HR-MS m/z 742.40582 [Calcd.for $C_{37}H_{62}N_2O_{11}S$(M^+):742.40743]
91		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.94(3H,d,J=7.5Hz),1.05(3H,d,J=7.5Hz),1.10-1.75(21H,m),1.87-2.01(4H,m),2.06(3H,s),2.07-2.16(1H,m),2.26(6H,s),2.61-2.75(5H,m),3.13(1H,s),3.42-3.57(3H,m),3.58-3.70(2H,m),4.00-4.10(2H,m),4.39(1H,s),4.58(1H,d,J=7.5Hz),4.76(1H,dd,J=10.5,7.5Hz),5.23(1H,dd,J=11,2.5Hz),7.07-7.15(2H,m),8.46-8.54(2H,m) HR-MS m/z 751.46166 [Calcd.for $C_{39}H_{65}N_3O_{11}$(M^+):751.46191]
92		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.92(3H,d,J=7.5Hz),1.01(3H,d,J=7.5Hz),1.14-1.73(21H,m),1.90-2.01(1H,m),2.05(3H,s),2.08(1H,s),2.09-2.17(1H,m),2.25(6H,s),2.60-2.74(3H,m),3.14(1H,s),3.40-3.54(3H,m),3.64-3.75(1H,m),3.77(1H,s),4.09-4.20(2H,m),4.35-4.44(3H,m),4.53(1H,d,J=8Hz),4.74(1H,dd,J=10.5,7.5Hz),5.25(1H,dd,J=11,2.5Hz),6.93(2H,d,J=8Hz),6.97(1H,t,J=7.5Hz),7.30(2H,dd,J=8,7.5Hz) HR-MS m/z 752.44287 [Calcd.for $C_{39}H_{64}N_2O_{12}$(M^+):752.44593]

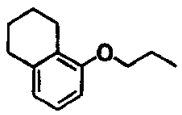
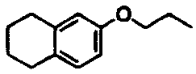
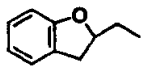
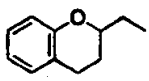
参考例	R^3	性状和物理性质
93		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.92(3H,d,J=7.5Hz),1.00(3H,d,J=7.5Hz),1.10-1.85(21H,m),1.90-1.99(1H,m),2.05(3H,s),2.10-2.18(2H,m),2.25(6H,s),2.60-2.73(3H,m),3.15(1H,s),3.38-3.51(3H,m),3.65-3.74(1H,m),3.76(1H,s),3.84(3H,s),4.13-4.23(2H,m),4.34-4.44(3H,m),4.54(1H,d,J=7.5Hz),4.75(1H,dd,J=10.5,8Hz),5.24(1H,dd,J=11.5,2Hz),6.86-6.99(4H,m) HR-MS m/z 782.45772 [Calcd.for $C_{40}H_{66}N_2O_{13}$(M^+):782.45649]
94		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.92(3H,d,J=7.5Hz),1.01(3H,d,J=7.5Hz),1.10-1.87(22H,m),1.89-2.00(1H,m),2.06(3H,s),2.08-2.17(1H,m),2.25(6H,s),2.60-2.75(3H,m),3.15(1H,s),3.40-3.50(3H,m),3.63-3.73(1H,m),3.75(1H,s),3.80(3H,s),4.07-4.18(2H,m),4.33-4.43(3H,m),4.54(1H,d,J=7.5Hz),4.75(1H,dd,J=10.5,8Hz),5.23(1H,dd,J=11,2Hz),6.45-6.56(3H,m),7.20(1H,t,J=8Hz) HR-MS m/z 782.45422 [Calcd.for $C_{40}H_{66}N_2O_{13}$(M^+):782.45649]
95		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.92(3H,d,J=7.5Hz),1.02(3H,d,J=7.5Hz),1.08-1.76(21H,m),1.90-2.00(1H,m),2.05(3H,s),2.11-2.20(2H,m),2.26(6H,s),2.60-2.76(3H,m),3.14(1H,s),3.40-3.52(3H,m),3.64-3.75(1H,m),3.77(3H,s),3.79(1H,s),4.00-4.06(1H,m),4.08-4.14(1H,m),4.32-4.38(2H,m),4.42(1H,s),4.53(1H,d,J=8Hz),4.75(1H,dd,J=10.5,7.5Hz),5.26(1H,dd,J=11,2.5Hz),6.86(2H,d,J=9Hz),6.89(2H,d,J=9Hz) HR-MS m/z 782.45786 [Calcd.for $C_{40}H_{66}N_2O_{13}$(M^+):782.45649]
96		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.91(3H,d,J=7.5Hz),1.02(3H,d,J=6.5Hz),1.13-1.80(21H,m),1.85(1H,s),1.90-2.00(1H,m),2.03-2.13(1H,m),2.05(3H,s),2.25(6H,s),2.59-2.75(3H,m),3.11(1H,s),3.27-3.53(3H,m),3.60-3.70(1H,m),3.76(1H,s),4.15-4.30(2H,m),4.35(1H,s),4.38-4.60(2H,m),4.52(1H,d,J=8Hz),4.73(1H,dd,J=10.5,7.5Hz),5.24(1H,dd,J=11.5,2Hz),7.01(2H,d,J=9Hz),8.24(2H,d,J=9Hz) HR-MS m/z 797.43345 [Calcd.for $C_{39}H_{63}N_3O_{14}$(M^+):797.43101]

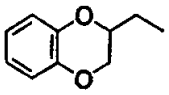
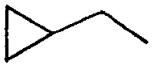
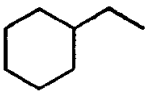
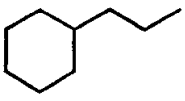
参考例	R^3	性状和物理性质
97		淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.91(3H,d,J=7.5Hz),1.01(3H,d,J=6.5Hz),1.10-1.76(21H,m),1.88-2.00(2H,m),2.05-2.14(1H,m),2.05(3H,s),2.25(6H,s),2.57(3H,s),2.60-2.73(3H,m),3.12(1H,s),3.32-3.50(3H,m),3.62-3.72(1H,m),3.75(1H,s),4.16-4.28(2H,m),4.36(1H,s),4.37-4.48(2H,m),4.52(1H,d,J=8Hz),4.74(1H,dd,J=10.5,8Hz),5.24(1H,dd,J=11.5,2Hz),6.97(2H,d,J=9Hz),7.96(2H,d,J=9Hz) HR-MS m/z 794.45599 [Calcd.for $C_{41}H_{66}N_2O_{13}(M^+)$:794.45649]
98		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.92(3H,d,J=8Hz),1.01(3H,d,J=6.5Hz),1.08-1.80(21H,m),1.90-2.00(1H,m),2.02(1H,s),2.06(3H,s),2.07-2.17(1H,m),2.27(6H,s),2.60-2.78(3H,m),3.13(1H,s),3.36-3.54(3H,m),3.62-3.72(1H,m),3.75(1H,s),4.07-4.19(2H,m),4.27-4.44(3H,m),4.54(1H,d,J=7.5Hz),4.75(1H,dd,J=10.5,8Hz),5.24(1H,dd,J=11,2.5Hz),6.60-6.74(3H,m),7.18-7.28(1H,m) HR-MS m/z 770.43722 [Calcd.for $C_{39}H_{63}FN_2O_{12}(M^+)$:770.43651]
99		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.91(3H,d,J=7.5Hz),1.02(3H,d,J=6.5Hz),1.13-1.80(21H,m),1.90-2.00(1H,m),2.05(3H,s),2.08-2.16(2H,m),2.25(6H,s),2.60-2.74(3H,m),3.16(1H,s),3.35-3.53(3H,m),3.65-3.74(1H,m),3.76(1H,s),3.84(3H,s),3.87(3H,s),4.03-4.17(2H,m),4.31-4.41(2H,m),4.46(1H,s),4.53(1H,d,J=8Hz),4.74(1H,dd,J=10.5,7.5Hz),5.23(1H,dd,J=11.5,2Hz),6.43(1H,dd,J=9,3Hz),6.55(1H,d,J=3Hz),6.81(1H,d,J=9Hz) HR-MS m/z 596.34328 [Calcd.for $C_{31}H_{50}NO_{10}(M^+-C_{10}H_{18}NO_4)$:596.34347]
100		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.93(3H,d,J=7.5Hz),1.02(3H,d,J=6.5Hz),1.13-1.75(21H,m),1.90-2.00(1H,m),1.91(1H,s),2.06(3H,s),2.08-2.17(3H,m),2.26(6H,s),2.60-2.76(3H,m),3.14(1H,s),3.41-3.55(3H,m),3.60-3.74(2H,m),4.04(2H,t,J=6.5Hz),4.18-4.28(2H,m),4.43(1H,s),4.56(1H,d,J=8Hz),4.76(1H,dd,J=10.5,7.5Hz),5.23(1H,dd,J=11,2.5Hz),6.90(2H,d,J=8Hz),6.94(1H,t,J=7.5Hz),7.28(2H,dd,J=8,7.5Hz) HR-MS m/z 766.46398 [Calcd.for $C_{40}H_{66}N_2O_{12}(M^+)$:766.46158]

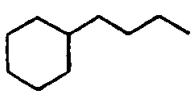
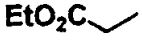
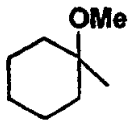
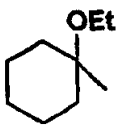
参考例	R^3	性状和物理性质
101		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.93(3H,d,J=7.5Hz),1.03(3H,d,J=7.5Hz),1.10-2.00(26H,m),2.02(1H,s),2.06(3H,s),2.07-2.15(1H,m),2.27(6H,s),2.60-2.75(3H,m),3.15(1H,s),3.42-3.51(2H,m),3.54(1H,d,J=3Hz),3.60-3.70(2H,m),3.95-4.05(2H,m),4.11(2H,t,J=6Hz),4.47(1H,s),4.57(1H,d,J=7.5Hz),4.76(1H,dd,J=10.5,8Hz),5.24(1H,dd,J=11,2.5Hz),6.85-7.00(3H,m),7.20-7.35(2H,m) HR-MS m/z 780.47729 [Calcd.for $C_{41}H_{68}N_2O_{12}(M^+)$:780.47723]
102		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.93(3H,d,J=7.5Hz),1.02(3H,d,J=6.5Hz),1.10-1.80(21H,m),1.90-2.00(1H,m),2.06(3H,s),2.10-2.23(2H,m),2.26(6H,s),2.60-2.75(3H,m),3.05-3.23(3H,m),3.40-3.57(3H,m),3.60-3.70(1H,m),3.74(1H,s),4.10-4.25(2H,m),4.32(1H,s),4.56(1H,d,J=8Hz),4.76(1H,dd,J=10.5,7.5Hz),5.24(1H,dd,J=11,2.5Hz),7.18-7.42(5H,m) HR-MS m/z 768.42186 [Calcd.for $C_{39}H_{64}N_2O_{11}S(M^+)$:768.42308]
103		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.93(3H,d,J=8Hz),0.97(3H,d,J=7.5Hz),1.10-1.80(21H,m),1.89-1.98(1H,m),2.06(3H,s),2.11-2.18(1H,m),2.26(6H,s),2.37(1H,s),2.63-2.74(3H,m),3.09(1H,s),3.31-3.37(1H,m),3.42-3.57(5H,m),3.75(1H,s),4.20(1H,s),4.28-4.35(1H,m),4.48-4.57(2H,m),4.76(1H,dd,J=10.5,7.5Hz),5.21(1H,dd,J=11.5,2Hz),7.61-7.71(3H,m),7.89-7.93(2H,m) HR-MS m/z 599.36715 [Calcd.for $C_{31}H_{53}NO_{10}(M^+-C_8H_{11}NO_3S)$:599.36695]
104		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.92(3H,d,J=7.5Hz),0.97(3H,d,J=6.5Hz),1.10-1.80(21H,m),1.90-2.00(1H,m),2.04(1H,s),2.06(3H,s),2.06-2.15(1H,s),2.26(6H,s),2.60-2.75(3H,m),2.94(3H,s),3.14(1H,s),3.40-3.65(6H,m),3.71(1H,s),4.22(2H,t,J=5.5Hz),4.41(1H,s),4.55(1H,d,J=8Hz),4.75(1H,dd,J=10.5,8Hz),5.24(1H,dd,J=11,2Hz),6.70-6.80(3H,m),7.20-7.30(2H,m) HR-MS m/z 765.47899 [Calcd.for $C_{40}H_{67}N_3O_{11}(M^+)$:765.47756]

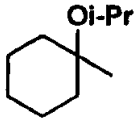
00.08.10

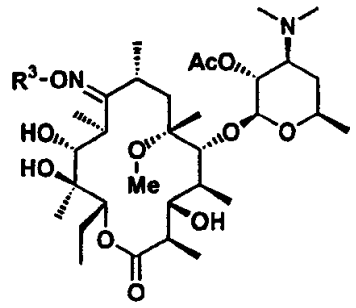
参考例	R^3	性状和物理性质
105		无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.84(3H,t,J=7.5Hz),0.92(3H,d,J=7.5Hz),0.98(3H,d,J=6.5Hz),1.12-1.85(22H,m),1.90-2.00(1H,m),2.06(3H,s),2.08-2.15(1H,m),2.27(6H,s),2.60-2.80(3H,m),3.16(1H,s),3.37-3.62(6H,m),3.70(1H,s),4.31-4.46(2H,m),4.46(1H,s),4.56(1H,d,J=7.5Hz),4.76(1H,dd,J=10.5,8Hz),5.24(1H,dd,J=11.5,2Hz),7.34(1H,d,J=6.5Hz),7.40(1H,t,J=7.5Hz),7.44-7.57(2H,m),7.74(1H,d,J=8Hz),7.86(1H,d,J=7.5Hz),8.04(1H,d,J=8.5Hz) HR-MS m/z 786.46419 [Calcd.for $C_{43}H_{66}N_2O_{11}$(M$^+$):786.46666]
106		无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.85(3H,t,J=7.5Hz),0.89(3H,d,J=8Hz),0.97(3H,d,J=7.5Hz),1.04-1.78(22H,m),1.89-2.00(1H,m),2.01-2.12(1H,m),2.04(3H,s),2.26(6H,s),2.60-2.75(3H,m),3.11(2H,t,J=7Hz),3.16(1H,s),3.38(1H,d,J=3.5Hz),3.40-3.60(3H,m),3.69(1H,s),4.30-4.40(2H,m),4.49(1H,s),4.52(1H,d,J=8Hz),4.73(1H,dd,J=10,8Hz),5.25(1H,dd,J=11.5,2Hz),7.34(1H,dd,J=8,1.5Hz),7.40-7.50(2H,m),7.63(1H,s),7.74-7.82(3H,m) HR-MS m/z 570.34164 [Calcd.for $C_{33}H_{48}NO_7$(M$^+$-$C_{10}H_{18}NO_4$):570.37468]
107		淡褐色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.85(3H,t,J=7.5Hz),0.89(3H,d,J=8Hz),0.96(3H,d,J=6.5Hz),1.10-1.78(21H,m),1.85-2.00(1H,m),2.01(1H,s),2.04(3H,s),2.04-2.14(1H,m),2.24(6H,s),2.57-2.75(3H,m),3.15(1H,s),3.30-3.45(3H,m),3.64-3.77(2H,m),4.27-4.40(2H,m),4.42-4.58(4H,m),4.71(1H,dd,J=10.5,7.5Hz),5.24(1H,dd,J=11,2.5Hz),6.86(1H,d,J=7.5Hz),7.35-7.53(4H,m),7.75-7.83(1H,m),8.25-8.32(1H,m) HR-MS m/z 802.46379 [Calcd.for $C_{43}H_{66}N_2O_{12}$(M$^+$):802.46158]
108		无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.86(3H,t,J=7.5Hz),0.90(3H,d,J=8Hz),1.01(3H,d,J=6.5Hz),1.09-1.80(21H,m),1.91-2.01(1H,m),2.05(3H,s),2.07(1H,s),2.09-2.17(1H,m),2.25(6H,s),2.59-2.73(3H,m),3.15(1H,s),3.33-3.47(3H,m),3.66-3.75(1H,m),3.80(1H,s),4.21-4.32(2H,m),4.41-4.53(4H,m),4.73(1H,dd,J=10.5,8Hz),5.27(1H,dd,J=11,2Hz),7.17(1H,d,J=2.5Hz),7.20(1H,dd,J=8.5,2.5Hz),7.31-7.36(1H,m),7.40-7.46(1H,m),7.72-7.80(3H,m) HR-MS m/z 802.45977 [Calcd.for $C_{43}H_{66}N_2O_{12}$(M$^+$):802.46158]

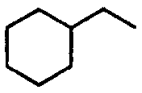
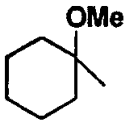
参考例	R^3	性状和物理性质
109		无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.85(3H,t,J=7.5Hz),0.91(3H,d,J=7.5Hz),0.99(3H,d,J=6.5Hz),1.13-1.83(25H,m),1.90-2.00(2H,m),2.05(3H,s),2.08-2.16(1H,m),2.25(6H,s),2.59-2.82(7H,m),3.14(1H,s),3.40-3.53(3H,m),3.62-3.77(2H,m),4.08-4.19(2H,m),4.33-4.42(2H,m),4.43(1H,s),4.53(1H,d,J=7.5Hz),4.74(1H,dd,J=10.5,7.5Hz),5.24(1H,dd,J=11.5,2Hz),6.66(1H,d,J=7.5Hz),6.71(1H,d,J=7.5Hz),7.06(1H,t,J=7.5Hz) HR-MS m/z 806.49277 [Calcd.for $C_{43}H_{70}N_2O_{12}$(M^+):806.49288]
110		淡黄色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.85(3H,t,J=7.5Hz),0.92(3H,d,J=7.5Hz),1.01(3H,d,J=6.5Hz),1.13-1.82(24H,m),1.88-2.01(2H,m),2.06(3H,s),2.09(1H,s),2.10-2.18(1H,m),2.26(6H,s),2.60-2.81(7H,m),3.15(1H,s),3.40-3.52(3H,m),3.63-3.74(1H,m),3.76(1H,s),4.05-4.16(2H,m),4.30-4.39(2H,m),4.42(1H,s),4.54(1H,d,J=8Hz),4.75(1H,dd,J=10.5,7.5Hz),5.24(1H,dd,J=11,2.5Hz),6.63(1H,d,J=2.5Hz),6.69(1H,dd,J=8.5,2.5Hz),6.98(1H,d,J=8.5Hz) HR-MS m/z 590.37072 [Calcd.for $C_{33}H_{52}NO_8$(M^+-$C_{10}H_{18}NO_4$):590.36929]
111		无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.84,0.85(total 3H,each t,J=7.5Hz),0.92,0.93(total 3H,each d,J=7.5Hz),0.95-1.02(3H,m),1.13-1.77(21H,m),1.90-2.00(1H,m),2.06(3H,s),2.11-2.23(2H,m),2.26(6H,s),2.60-2.75(3H,m),2.87-2.97(1H,m),3.12,3.16(total 1H,each s),3.24-3.35(1H,m),3.43-3.58(3H,m),3.61-3.73(1H,m),3.78,3.82(total 1H,each s),4.10-4.42(3H,m),4.56(1H,d,J=8Hz),4.73-4.81(1H,m),4.90-5.03(1H,m),5.20-5.30(1H,m),6.74-6.90(2H,m),7.06-7.18(2H,m) HR-MS m/z 765.45230 [Calcd.for $C_{40}H_{65}N_2O_{12}$(M^++1):765.45375]
112		无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.84,0.85(total 3H,each t,J=7.5Hz),0.93,0.94(total 3H,each d,J=7.5Hz),1.00-1.06(3H,m),1.15-1.85(24H,m),1.90-2.03(2H,m),2.06,2.07(total 3H,each s),2.26(6H,s),2.60-2.94(5H,m),3.13(1H,s),3.40-3.57(3H,m),3.67-3.88(2H,m),4.17-4.38(4H,m),4.56,4.57(total 1H,each d,J=8Hz),4.71-4.80(1H,m),5.19-5.32(1H,m),6.79-6.93(2H,m),6.99-7.20(2H,m) HR-MS m/z 778.46089 [Calcd.for $C_{41}H_{66}N_2O_{12}$(M^+):778.46158]

参考例	R^3	性状和物理性质
113		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84,0.85(total 3H,each t,J=7.5Hz),0.90-0.97(3H,m),1.03,1.04(total 3H,each d,J=7Hz),1.13-1.80(21H,m),1.90-2.00(2H,m),2.06(3H,s),2.10-2.22(1H,m),2.26(6H,s),2.60-2.76(3H,m),3.10,3.11(total 1H,each s),3.42-3.58(3H,m),3.63-3.82(2H,m),3.97-4.35(5H,m),4.36-4.43(1H,m),4.56,4.57(total 1H,each d,J=8Hz),4.72-4.80(1H,m),5.23,5.26(total 1H,each dd,J=11,2.5Hz),6.80-6.98(4H,m) HR-MS m/z 781.44770 [Calcd.for $C_{40}H_{65}N_2O_{13}$(M^++1):781.44867]
114		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.20-0.30(2H,m),0.50-0.60(2H,m),0.84(3H,t,J=7.5Hz),0.93(3H,d,J=7.5Hz),1.00-1.80(22H,m),1.04(3H,d,J=6.5Hz),1.89-2.00(1H,m),2.06(3H,s),2.08(1H,s),2.09-2.20(1H,m),2.26(6H,s),2.60-2.75(3H,m),3.15(1H,s),3.43-3.58(3H,m),3.63-3.75(2H,m),3.79-3.91(2H,m),4.49(1H,s),4.58(1H,d,J=8Hz),4.76(1H,dd,J=10.5,7.5Hz),5.23(1H,dd,J=11.5,2Hz) HR-MS m/z 686.43686 [Calcd.for $C_{35}H_{62}N_2O_{11}$(M^+):686.43536]
115		淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.93(3H,d,J=8Hz),1.03(3H,d,J=7.5Hz),0.79-1.83(31H,m),1.89-2.00(1H,m),2.00-2.18(1H,m),2.08(3H,s),2.23-2.38(1H,m),2.30(6H,s),2.60-2.70(2H,m),2.74-2.85(2H,m),3.16(1H,brs),3.43-3.71(5H,m),3.75-3.92(2H,m),4.51(1H,brs),4.60(1H,d,J=8Hz),4.78(1H,dd,J=10.5,8Hz),5.23(1H,dd,J=11.5,2Hz) HR-MS m/z 728.48093 [Calcd.for $C_{38}H_{68}N_2O_{11}$(M^+):728.48231]
116		淡褐色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.93(3H,d,J=8Hz),1.03(3H,d,J=6.5Hz),1.10-1.77(33H,m),1.89-2.00(2H,m),2.02(1H,s),2.06(3H,s),2.10-2.17(1H,m),2.26(6H,s),2.60-2.77(3H,m),3.15(1H,s),3.43-3.58(3H,m),3.60-3.70(2H,m),4.02-4.10(2H,m),4.50(1H,s),4.58(1H,d,J=7.5Hz),4.76(1H,dd,J=10.5,7.5Hz),5.24(1H,dd,J=11.5,2Hz) HR-MS m/z 742.49867 [Calcd.for $C_{39}H_{70}N_2O_{11}$(M^+):742.49796]

参考例	R^3	性状和物理性质
117		淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.80-1.86(36H,m),0.84(3H,t,J=7.5Hz),0.93(3H,d,J=7.5Hz),1.03(3H,d,J=6.5Hz),1.89-1.99(1H,m),2.04(1H,s),2.06(3H,s),2.08-2.17(1H,m),2.26(6H,s),2.58-2.77(3H,m),3.15(1H,s),3.41-3.58(3H,m),3.59-3.71(2H,m),3.89-4.07(2H,m),4.49(1H,s),4.58(1H,d,J=7.5Hz),4.76(1H,dd,J=10.5,8Hz),5.23(1H,dd,J=11,2.5Hz) HR-MS m/z 756.51445 [Calcd.for $C_{40}H_{72}N_2O_{11}$(M^+):756.51361]
118		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.92(3H,d,J=8Hz),1.04(3H,d,J=6.5Hz),1.09-2.00(25H,m),2.07(3H,s),2.15-2.26(1H,m),2.28(6H,s),2.60-2.71(2H,m),2.72-2.83(1H,m),3.07(1H,brs),3.36(1H,s),3.42-3.62(3H,m),3.69-3.80(1H,m),3.83(1H,brs),3.88(1H,s),4.20-4.51(2H,m),4.56(1H,d,J=17Hz),4.65(1H,d,J=17Hz),4.59(1H,d,J=8Hz),4.79(1H,dd,J=10.5,8Hz),5.23(1H,dd,J=10.5,2Hz) HR-MS m/z 718.42543 [Calcd.for $C_{35}H_{62}N_2O_{13}$(M^+):718.42519]
119		淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.93(3H,d,J=7.5Hz),1.05(3H,d,J=7.5Hz),1.16-1.98(31H,m),2.06(3H,s),2.10-2.20(1H,m),2.26(6H,s),2.62-2.75(4H,m),3.19(3H,s),3.20(1H,s),3.44-3.53(2H,m),3.58(1H,d,J=3Hz),3.65-3.80(3H,m),4.58(1H,s),4.59(1H,d,J=6.5Hz),4.77(1H,dd,J=10.5,7.5Hz),5.23(1H,dd,J=11,2Hz) HR-MS m/z 744.47526 [Calcd.for $C_{38}H_{68}N_2O_{12}$(M^+):744.47723]
120		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.93(3H,d,J=7.5Hz),1.04(3H,d,J=6.5Hz),1.08-1.84(34H,m),1.90-2.00(1H,m),2.06(3H,s),2.08-2.18(2H,m),2.26(6H,s),2.61-2.75(3H,m),3.21(1H,s),3.38-3.54(4H,m),3.58(1H,d,J=3.5Hz),3.60-3.72(2H,m),4.58(1H,d,J=7.5Hz),4.62(1H,s),4.77(1H,dd,J=10.5,8Hz),5.24(1H,dd,J=11.5,2Hz) HR-MS m/z 631.37918 [Calcd.for $C_{31}H_{55}N_2O_{11}$(M^+-$C_8H_{15}O$):631.38059]

参考例	R^3	性状和物理性质
121		淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.94(3H,d,J=7.5Hz),1.00-2.00(38H,m),1.05(3H,d,J=6.5Hz),2.07(3H,s),2.10-2.18(1H,m),2.22-2.32(1H,m),2.26(6H,s),2.60-2.77(3H,m),3.20(1H,s),3.41-3.55(2H,m),3.58(1H,d,J=3Hz),3.63-3.75(2H,m),4.00-4.08(1H,m),4.52(1H,s),4.59(1H,d,J=7.5Hz),4.77(1H,dd,J=10.5,8Hz),5.24(1H,dd,J=11.5,2Hz) HR-MS m/z 632.38805 [Calcd.for $C_{31}H_{58}N_2O_{11}$(M^++1-$C_9H_{17}O$):632.38841]



参考例	R^3	性状和物理性质
122		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.91(3H,d,J=7.5Hz),0.95(3H,d,J=7.5Hz),1.10-2.02(32H,m),2.05(3H,s),2.08-2.15(1H,m),2.26(6H,s),2.49-2.58(1H,m),2.61-2.74(2H,m),2.95(3H,s),3.30(1H,s),3.40-3.52(2H,m),3.60-3.86(6H,m),4.59(1H,d,J=8Hz),4.72(1H,s),4.75(1H,dd,J=10.5,7.5Hz),5.21(1H,dd,J=11,2.5Hz) HR-MS m/z 742.49972 [Calcd.for $C_{39}H_{70}N_2O_{11}$(M^+):742.49796]
123		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.92(3H,d,J=7.5Hz),0.98(3H,d,J=7.5Hz),1.13-2.00(32H,m),2.06(3H,s),2.07-2.16(1H,m),2.26(6H,s),2.55-2.75(3H,m),2.97(3H,s),3.21(3H,s),3.32(1H,s),3.42-3.53(2H,m),3.68-3.82(3H,m),4.58(1H,s),4.60(1H,d,J=8Hz),4.76(1H,dd,J=10.5,8Hz),5.22(1H,dd,J=11,2.5Hz) HR-MS m/z 758.49189 [Calcd.for $C_{39}H_{70}N_2O_{12}$(M^+):758.49288]

00·08·10

实施例 1

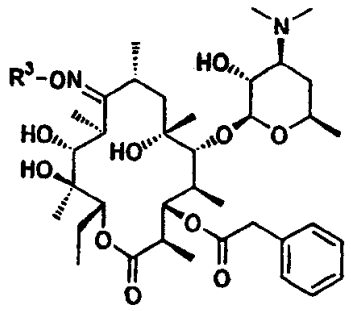
5－O－德糖胺基－3－O－苯乙酰基红霉素（エリスロノライド）A 9－[O－（1－甲氧环己基）肟]

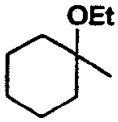
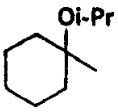
向乙酸苯酯 1.11g 和三乙胺 1.2ml 的二氯甲烷 40ml 溶液中，在冰冷却下，滴加入三甲基乙酰氯 1.0ml 后，在相同温度下，搅拌 1 小时。在冰冷却并搅拌下，向该反应液中，依次滴加入吡啶 2.2ml 和 2'－O－乙酰基－5－O－德糖胺基红霉素（エリスロノライド）A 9－[O－（1－甲氧环己基）肟]2.00g 的二氯甲烷 15ml 溶液，将混合物在室温搅拌 1 天。向反应液中加入冰水，用饱和碳酸氢钠水溶液使之成碱性后，用二氯甲烷萃取。萃取液用水洗涤，硫酸钠干燥后，减压蒸除溶剂。残渣用柱色谱纯化（硅胶，二氯甲烷:甲醇 = 33:1），得到黄褐色粘性液体 1.38g。将该黄褐色粘性液体 1.20g 的甲醇 50ml 溶液在室温搅拌 1 天。将反应液减压浓缩，残渣用柱色谱纯化（硅胶，二氯甲烷:甲醇 = 100:1→50:3），得到无色非晶型固体 0.72g。

NMR谱　　δ ($CDCl_3$) ppm:0.80(3H, t, J=7.5Hz), 0.86(3H, d, J=6.5Hz), 1.03 (3H, d, J=6.5Hz), 1.12-1.98(32H, m), 2.22-2.31(1H, m), 2.30(6H, s), 2.33-2.42(1H, m), 2.60(1H, brs), 2.64-2.72(1H, m), 2.75-2.85(1H, m), 3.04-3.21(3H, m), 3.19(3H, s), 3.50(1H, d, J=4.5Hz), 3.64-3.78(2H, m), 3.65(1H, d, J=14.5Hz), 3.71(1H, d, J=14.5Hz), 3.96(1H, d, J=7.5Hz), 4.57(1H, s), 5.14(1H, d, J=10.5Hz), 5.20(1H, dd, J=11, 2.5Hz), 7.24-7.38(5H, m)

HR-MS　m/z　820.50550 [Calcd. for $C_{44}H_{72}N_2O_{12}$ (M^+) :820.50853]

按照实施例 1 同样的方法，得到实施例 2～实施例 3 的化合物。



实施例	R^3	性状和物理性质
2		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.80(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),1.02(3H,d,J=7.5Hz),1.11-1.96(35H,m),2.22-2.40(2H,m),2.28(6H,s),2.64-2.70(1H,m),2.76-2.84(1H,m),3.06-3.13(1H,m),3.14-3.20(2H,m),3.28(1H,brs),3.41-3.48(3H,m),3.65(1H,d,J=15Hz),3.66-3.73(2H,m),3.71(1H,d,J=15Hz),3.97(1H,d,J=7.5Hz),4.61(1H,s),5.15(1H,d,J=11Hz),5.21(1H,dd,J=11.5,2Hz),7.23-7.39(5H,m) HR-MS m/z 707.40590 [Calcd.for $C_{37}H_{59}N_2O_{11}$($M^+-C_8H_{15}O$):707.41189]
3		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.79(3H,t,J=7.5Hz),0.85(3H,d,J=7.5Hz),1.03(3H,d,J=6.5Hz),1.08-1.98(38H,m),2.22-2.36(1H,m),2.32(6H,s),2.41-2.50(1H,m),2.64-2.86(2H,m),3.04-3.14(1H,m),3.21(1H,dd,J=10.5,7.5Hz),3.50(1H,d,J=4.5Hz),3.66(1H,d,J=15.5Hz),3.63-3.77(3H,m),3.71(1H,d,J=15.5Hz),3.98(1H,d,J=7.5Hz),4.00-4.09(1H,m),4.51(1H,s),4.90(1H,brs),5.14(1H,d,J=11Hz),5.21(1H,dd,J=11,2.5Hz),7.22-7.39(5H,m) HR-MS m/z 707.41310 [Calcd.for $C_{37}H_{59}N_2O_{11}$($M^+-C_9H_{17}O$):707.41189]

实施例 4

5－O－德糖胺基－3－O－苯乙酰基－6－O－甲基红霉素（エリスロノライド）A 9－[O－（1－甲氧环己基）肟]

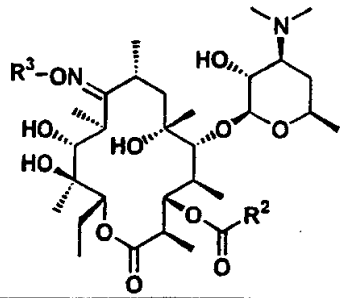
向乙酸苯酯 0.05g 和草酰氯 0.03ml 的二氯甲烷 0.6ml 溶液中，在室温搅拌下，加入 N，N－二甲基甲酰胺 1 滴，在室温搅拌 30 分钟后，将反应液减压浓缩。在室温搅拌下，向残渣的二氯甲烷 2.5ml 溶液中，滴加入 2'－O－乙酰基－5－O－德糖胺基－6－O－甲基红霉素（エリスロノライド）A 9－[O－（1－甲氧环己基）肟]0.10g 和吡啶 0.09ml 的二氯甲烷 0.8ml 溶液，将混合物在室温搅拌 1 小时。向反应液中加入冰水，用饱和碳酸氢钠水溶液使之成碱性后，用乙醚萃取。萃取液用水洗涤，硫酸钠干燥后，减压蒸除溶剂。将所得残渣的甲醇 4ml 溶液在室温搅拌 20 小时。将反应液减压浓缩，向残渣中加入冰水，用饱和碳酸氢钠水溶液使之成碱性后，用乙醚萃取。萃取液用水洗涤，硫酸钠干燥后，减压蒸除溶剂。残渣用柱色谱纯化（硅胶，二氯甲烷:甲醇 = 20:1），得到无色非晶形固体 0.05g。

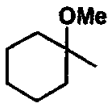
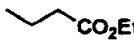
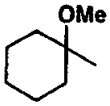
NMR谱　δ ($CDCl_3$) ppm: 0.80 (3H, t, J=7.5Hz), 0.89 (3H, d, J=6.5Hz), 0.97 (3H, d, J=7.5Hz), 1.00-2.00 (31H, m), 2.10-2.39 (2H, m), 2.28 (6H, s), 2.52-2.64 (1H, m), 2.76-2.88 (1H, m), 2.90-3.35 (4H, m), 3.07 (3H, s), 3.21 (3H, s), 3.37-3.50 (1H, m), 3.67 (1H, d, J=15Hz), 3.73 (1H, d, J=15Hz), 3.68-3.82 (2H, m), 3.90 (1H, d, J=7.5Hz), 4.58 (1H, s), 5.07 (1H, d, J=11Hz), 5.20 (1H, dd, J=11, 2Hz), 7.17-7.40 (5H, m)

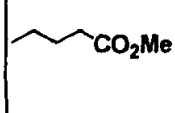
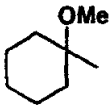
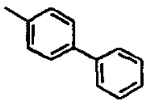
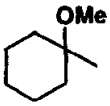
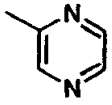
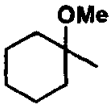
HR-MS　m/z　721.42800

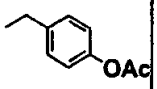
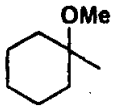
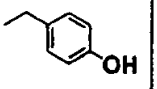
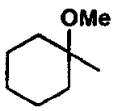
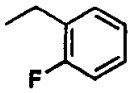
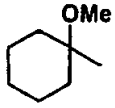
[Calcd. for $C_{38}H_{61}N_2O_{11}$ ($M^+ - C_7H_{13}O$) :721.42754]

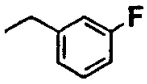
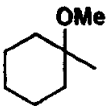
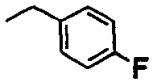
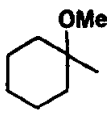
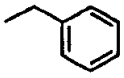
按照实施例 4 同样的方法，得到实施例 5～实施例 22 的化合物。

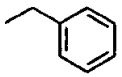
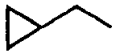
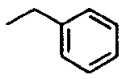
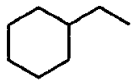
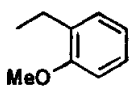
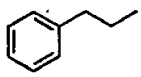


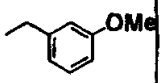
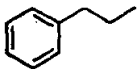
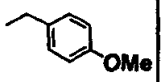
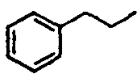
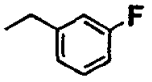
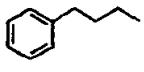
实施例	R^2	R^3	性状和物理性质
5	Me		淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),1.04(3H,d,J=7.5Hz),1.07(3H,d,J=7Hz),1.08-2.00(33H,m),2.12(3H,s),2.20-2.30(1H,m),2.28(6H,s),2.39-2.44(1H,m),2.65-2.72(1H,m),2.80-2.86(1H,m),3.17-3.40(3H,m),3.20(3H,s),3.47(1H,d,J=4.5Hz),3.67-3.77(2H,m),4.05(1H,d,J=7.5Hz),4.59(1H,s),5.12(1H,d,J=11Hz),5.24(1H,dd,J=11,2Hz) HR-MS m/z 744.47504 [Calcd.for $C_{38}H_{68}N_2O_{12}(M^+)$:744.47723]
6			淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),1.04(3H,d,J=6.5Hz),1.06(3H,d,J=6.5Hz),1.10-1.98(35H,m),2.10-2.36(1H,m),2.38-2.50(1H,m),2.40(6H,s),2.58-2.78(6H,m),2.82-2.89(1H,m),3.17-3.30(2H,m),3.20(3H,s),3.43(1H,d,J=4.5Hz),3.44-3.50(1H,m),3.67-3.76(2H,m),4.07(1H,d,J=7.5Hz),4.08-4.20(2H,m),4.58(1H,s),5.16(1H,d,J=11Hz),5.22(1H,dd,J=11,2.5Hz) HR-MS m/z 717.41938 [Calcd.for $C_{35}H_{61}N_2O_{13}(M^+-C_7H_{13}O)$:717.41737]

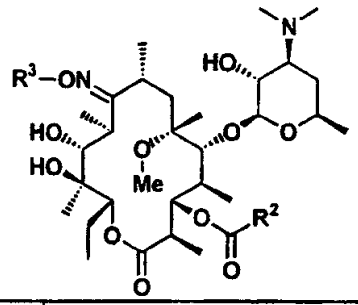
实施例	R^2	R^3	性状和物理性质
7			淡黄色非晶形固体 NMR 谱 δ ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),1.03(3H,d,J=7.5Hz),1.05(3H,d,J=6.5Hz),1.10-2.04(34H,m),2.22-2.33(1H,m),2.29(6H,s),2.34-2.52(5H,m),2.66-2.72(1H,m),2.80-2.88(1H,m),3.17-3.22(2H,m),3.20(3H,s),3.34-3.41(1H,m),3.45(1H,d,J=4.5Hz),3.62-3.76(3H,m),3.67(3H,s),4.02(1H,d,J=7.5Hz),4.59(1H,s),5.16(1H,d,J=11Hz),5.23(1H,dd,J=11,2Hz) HR-MS m/z 717.41800 [Calcd.for $C_{35}H_{61}N_2O_{13}$(M^+-$C_7H_{13}O$):717.41737]
8			无色非晶形固体 NMR 谱 δ ($CDCl_3$)ppm:0.80(3H,t,J=7.5Hz),0.92(3H,d,J=6.5Hz),1.03(3H,d,J=6.5Hz),1.08-1.97(32H,m),2.18-2.29(1H,m),2.23(6H,s),2.30-2.40(1H,m),2.64-2.71(1H,m),2.78-2.87(1H,m),3.02-3.12(1H,m),3.13-3.22(1H,m),3.17(3H,s),3.33(1H,brs),3.45-3.52(1H,m),3.50(1H,d,J=5Hz),3.65-3.77(2H,m),3.97(1H,d,J=7.5Hz),4.58(1H,s),5.18(1H,d,J=11Hz),5.20(1H,dd,J=11.5,2.5Hz),7.34(1H,t,J=7.5Hz),7.40-7.47(4H,m),7.52-7.60(4H,m) HR-MS m/z 590.37892 [Calcd.for $C_{29}H_{54}N_2O_{10}$(M^+-$C_{20}H_{20}O_2$):590.37785]
9			淡橙色非晶形固体 NMR 谱 δ ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),1.00(3H,d,J=6Hz),1.05(3H,d,J=7.5Hz),1.12-2.01(32H,m),2.15(6H,s),2.40-2.48(1H,m),2.49-2.57(1H,m),2.68-2.74(1H,m),3.02-3.10(2H,m),3.17(1H,s),3.18-3.24(2H,m),3.22(3H,s),3.54(1H,d,J=3.5Hz),3.68-3.78(2H,m),3.94(1H,d,J=7.5Hz),4.64(1H,s),5.28(1H,dd,J=11,2.5Hz),5.50(1H,d,J=11Hz),8.77-8.80(2H,m),9.39(1H,d,J=1Hz) HR-MS m/z 695.38690 [Calcd.for $C_{34}H_{55}N_4O_{11}$(M^+-$C_7H_{13}O$):695.38674]

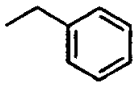
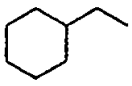
实施例	R^2	R^3	性状和物理性质
10			黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.80(3H,t,J=7.5Hz),0.88(3H,d,J=6Hz),1.03(3H,d,J=6.5Hz),1.07-2.03(32H,m),2.15-2.38(2H,m),2.28(6H,s),2.29(3H,s),2.60-2.71(1H,m),2.71-2.88(1H,m),3.04-3.23(3H,m),3.20(3H,s),3.30(1H,brs),3.49(1H,d,J=3.5Hz),3.60-3.78(2H,m),3.65(1H,d,J=14.5Hz),3.71(1H,d,J=14.5Hz),3.97(1H,d,J=8Hz),4.58(1H,s),5.15(1H,d,J=11Hz),5.20(1H,d,J=10Hz),7.05(2H,d,J=8Hz),7.37(2H,d,J=8Hz) HR-MS m/z 766.42066 [Calcd.for $C_{39}H_{62}N_2O_{13}$(M^++1-$C_7H_{13}O$):766.42519]
11			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.91(3H,d,J=6.5Hz),1.03(3H,d,J=6.5Hz),1.06-2.15(33H,m),2.20-2.43(2H,m),2.34(6H,s),2.61-2.72(1H,m),2.77-2.88(1H,m),3.00-3.08(1H,m),3.13-3.26(3H,m),3.19(3H,s),3.48(1H,d,J=4.5Hz),3.60(2H,s),3.67-3.77(2H,m),3.83(1H,d,J=7.5Hz),4.58(1H,s),5.13(1H,d,J=11Hz),5.20(1H,d,J=9Hz),6.81(2H,d,J=8.5Hz),7.22(2H,d,J=8.5Hz) HR-MS m/z 724.41888 [Calcd.for $C_{37}H_{60}N_2O_{12}$(M^++1-$C_7H_{13}O$):724.41463]
12			无色针状结晶(重结晶溶剂:i-Pr_2O) m.p. 212.5-213℃ NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.97(3H,d,J=6.5Hz),1.04(3H,d,J=6.5Hz),1.09-1.98(32H,m),2.22-2.34(1H,m),2.29(6H,s),2.40-2.50(1H,m),2.63-2.72(1H,m),2.77-2.86(1H,m),3.13-3.23(2H,m),3.19(3H,s),3.28-3.37(2H,m),3.49(1H,d,J=4.5Hz),3.67-3.78(2H,m),3.75(2H,s),4.06(1H,d,J=7.5Hz),4.58(1H,s),5.18(1H,d,J=11.5Hz),5.21(1H,dd,J=11,2Hz),7.02-7.14(2H,m),7.22-7.36(2H,m) Anal.Calcd.for $C_{44}H_{71}FN_2O_{12}$ (Calcd.) :C,62.99;H,8.53;N,3.34 (Found) :C,62.91;H,8.52;N,3.23

实施例	R^2	R^3	性状和物理性质
13			无色针状结晶(重结晶溶剂：AcOEt-i-Pr_2O) m.p. 208.5-209.5℃ NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.90(3H,d,J=6.5Hz),1.04(3H,d,J=7.5Hz),1.10-1.98(32H,m),2.22-2.39(2H,m),2.27(6H,s),2.63-2.72(1H,m),2.77-2.87(1H,m),3.07-3.22(3H,m),3.20(3H,s),3.29(1H,brs),3.48(1H,d,J=5Hz),3.63-3.77(2H,m),3.65(1H,d,J=15.5Hz),3.71(1H,d,J=15.5Hz),3.95(1H,d,J=7.5Hz),4.58(1H,s),5.16(1H,d,J=11Hz),5.21(1H,d,J=8.5Hz),6.97(1H,t,J=8Hz),7.09(1H,d,J=10Hz),7.13(1H,d,J=8Hz),7.29(1H,dd,J=10,8Hz) Anal.Calcd.for $C_{44}H_{71}FN_2O_{12}$ (Calcd.) :C,62.99;H,8.53;N,3.34 (Found) :C,62.72;H,8.40;N,3.19
14			淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.80(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),1.04(3H,d,J=6.5Hz),1.08-1.97(32H,m),2.18-2.40(3H,m),2.28(6H,s),2.63-2.72(1H,m),2.76-2.85(1H,m),3.07-3.23(3H,m),3.20(3H,s),3.48(1H,d,J=4.5Hz),3.59-3.77(4H,m),3.95(1H,d,J=7.5Hz),4.57(1H,s),5.15(1H,d,J=11Hz),5.21(1H,dd,J=11,2Hz),7.01(2H,t,J=9Hz),7.32(2H,dd,J=9,5Hz) HR-MS m/z 726.41328 [Calcd.for $C_{37}H_{59}FN_2O_{11}$(M^++1-$C_7H_{13}O$):726.41029]
15			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),1.02(3H,d,J=6.5Hz),1.10-1.80(21H,m),1.88-1.99(1H,m),2.17-2.35(1H,m),2.35(6H,s),2.48-2.71(2H,m),2.77-2.87(1H,m),3.00-3.25(3H,m),3.48(1H,d,J=4.5Hz),3.61(1H,s),3.62-3.75(4H,m),3.95(1H,d,J=6.5Hz),4.40(1H,brs),4.52(2H,d,J=6Hz),5.13(1H,d,J=11.5Hz),5.16-5.30(3H,m),5.86-5.99(1H,m),7.13-7.40(5H,m) HR-MS m/z 748.45473 [Calcd.for $C_{41}H_{64}N_2O_{11}$(M^+):748.45101]

实施例	R^2	R^3	性状和物理性质
16			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.21-0.28(2H,m),0.53-0.60(2H,m),0.81(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),1.02(3H,d,J=6.5Hz),1.04-1.65(21H,m),1.87-1.98(2H,m),2.20-2.40(2H,m),2.28(6H,s),2.62-2.70(1H,m),2.76-2.85(1H,m),3.06-3.14(2H,m),3.17(1H,dd,J=10.5,7.5Hz),3.27(1H,brs),3.48(1H,d,J=4.5Hz),3.64-3.77(2H,m),3.65(1H,d,J=15Hz),3.70(1H,d,J=15Hz),3.81(1H,dd,J=11,7.5Hz),3.89(1H,dd,J=11,7.5Hz),3.97(1H,d,J=7.5Hz),4.49(1H,s),5.16(1H,d,J=11Hz),5.20(1H,dd,J=11,2Hz),7.22-7.38(5H,m) HR-MS m/z 762.46563 [Calcd.for $C_{41}H_{66}N_2O_{11}$(M^+):762.46666]
17			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),0.91-1.99(33H,m),1.01(3H,d,J=6.5Hz),2.22-2.31(1H,m),2.40(6H,s),2.57-2.68(2H,m),2.77-2.85(1H,m),3.00-3.09(1H,m),3.24(1H,dd,J=10.5,7.5Hz),3.48(1H,d,J=5Hz),3.59-3.73(5H,m),3.76-3.90(3H,m),3.96(1H,d,J=7.5Hz),4.49(1H,brs),5.12(1H,d,J=11Hz),5.20(1H,dd,J=11,2Hz),7.16-7.40(5H,m) HR-MS m/z 804.51532 [Calcd.for $C_{44}H_{72}N_2O_{11}$(M^+):804.51361]
18			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.97(3H,d,J=6.5Hz),0.99(3H,d,J=6.5Hz),1.04-1.69(21H,m),1.88-1.98(1H,m),2.19-2.29(1H,m),2.29(6H,s),2.41-2.50(1H,m),2.60-2.68(1H,m),2.73-2.83(1H,m),2.94(2H,t,J=6.5Hz),3.14(1H,s),3.18(1H,dd,J=10,7.5Hz),3.27(1H,brs),3.33-3.42(1H,m),3.41(1H,d,J=5Hz),3.55-3.59(1H,m),3.62(1H,d,J=16Hz),3.73(1H,s),3.77(1H,d,J=16Hz),3.82(3H,s),4.08(1H,d,J=7.5Hz),4.23-4.30(2H,m),4.47(1H,s),5.11(1H,d,J=10.5Hz),5.22(1H,d,J=9Hz),6.85-6.93(2H,m),7.15-7.33(7H,m) HR-MS m/z 684.37266 [Calcd.for $C_{38}H_{54}NO_{10}$(M^+-$C_8H_{16}NO_2$):684.37477]

实施例	R^2	R^3	性状和物理性质
19			无色非晶形固体 NMR 谱 δ ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.91(3H,d,J=6.5Hz),0.97(3H,d,J=7.5Hz),1.02-1.99(22H,m),2.18-2.40(2H,m),2.27(6H,s),2.58-2.69(1H,m),2.77-2.88(1H,m),2.95(2H,t,J=7Hz),3.00-3.19(3H,m),3.39(1H,d,J=5Hz),3.50-3.61(1H,m),3.63(1H,d,J=14.5Hz),3.64-3.83(2H,m),3.67(1H,d,J=14.5Hz),3.80(3H,s),3.91(1H,d,J=6.5Hz),4.28(2H,td,J=6.5,2Hz),4.48(1H,s),5.13(1H,d,J=11Hz),5.21(1H,dd,J=11,2Hz),6.80(1H,dd,J=9,2Hz),6.89-6.97(2H,m),7.17-7.35(6H,m) HR-MS m/z 706.42547 [Calcd.for $C_{38}H_{60}NO_{11}$(M^++1-$C_8H_{11}NO$):706.41664]
20			无色非晶形固体 NMR 谱 δ ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.89(3H,d,J=6.5Hz),0.97(3H,d,J=7.5Hz),1.00-1.60(22H,m),1.85-2.00(1H,m),2.12-2.40(2H,m),2.27(6H,s),2.57-2.70(1H,m),2.75-2.90(1H,m),2.95(2H,t,J=6.5Hz),3.04-3.21(3H,m),3.38(1H,d,J=4.5Hz),3.51-3.86(4H,m),3.79(3H,s),3.93(1H,d,J=6.5Hz),4.18-4.35(2H,m),4.47(1H,s),5.12(1H,d,J=10.5Hz),5.22(1H,dd,J=11.5,2Hz),6.86(2H,d,J=8.5Hz),7.15-7.36(7H,m) HR-MS m/z 684.37499 [Calcd.for $C_{38}H_{54}NO_{10}$(M^+-$C_8H_{16}NO_2$):684.37477]
21			无色非晶形固体 NMR 谱 δ ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.91(3H,d,J=6.5Hz),1.03(3H,d,J=6.5Hz),1.06-1.68(20H,m),1.85(1H,brs),1.86-2.01(3H,m),2.23-2.32(2H,m),2.47(6H,s),2.62-2.90(5H,m),2.99-3.06(1H,m),3.06(1H,brs),3.28(1H,dd,J=10.5,7.5Hz),3.47(1H,d,J=4.5Hz),3.61-3.74(4H,m),3.94(1H,d,J=7.5Hz),4.00-4.10(2H,m),4.62(1H,brs),5.13(1H,d,J=11Hz),5.21(1H,dd,J=11.5,2Hz),6.88-7.34(9H,m), HR-MS m/z 671.38336 [Calcd.for $C_{38}H_{54}FNO_9$(M^+-$C_6H_{15}NO_3$):671.38335]



实施例	R^2	R^3	性状和物理性质
22			无色非晶形固体 NMR谱 δ ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz), 0.89(3H,d,J=6.5Hz),0.95(3H,d,J=6.5Hz),1.00-1.81(31H,m),1.89-2.00(1H,m),2.17-2.37(2H,m),2.28(6H,s), 2.48-2.57(1H,m),2.78-2.89(1H,m),3.00-3.11(1H,m), 3.05(3H,s),3.15(1H,dd,J=10.5,7.5Hz),3.24(1H,brs), 3.28(1H,s),3.61-3.88(7H,m),3.90(1H,d,J=7.5Hz),4.71(1H,s),5.06(1H,d,J=11Hz),5.19(1H,dd,J=11.5,2Hz), 7.18-7.38(5H,m) HR-MS m/z 699.47798 [Calcd.for $C_{37}H_{67}N_2O_{10}$(M^+-C_8H_7O):699.47957]

00.08.10

实施例 23

5－O－德糖胺基－3－O－苯乙酰基红霉素（エリスロノライド）A 9－[O－（苯乙基）肟]

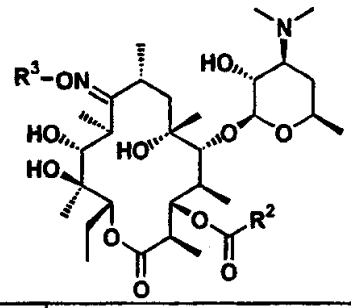
将 2’－O－乙酰基－5－O－德糖胺基红霉素（エリスロノライド）A 9－[O－（苯乙基）肟]0.5g，乙酸苯酯 0.28g，1－乙基－3－（3－二甲基氨基丙基）碳二亚胺盐酸盐 0.40g 和 4－二甲基氨基吡啶 0.11g 的二氯甲烷 5ml 混合液，在室温下搅拌 4 小时．向反应液中加入水，用饱和碳酸氢钠水溶液使之成碱性后，用二氯甲烷萃取．萃取液用水洗涤，硫酸钠干燥后，减压蒸除溶剂．将所得残渣的甲醇 40ml 溶液在室温搅拌 2.5 天．将反应液减压浓缩，残渣用柱色谱纯化（硅胶，二氯甲烷:甲醇 = 50:1→25:1），得到淡黄色非晶形固体 0.32g．

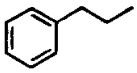
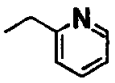
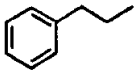
NMR谱　δ ($CDCl_3$) ppm:0.81(3H, t, J=7.5Hz), 0.88(3H, d, J=6.5Hz), 0.97(3H, d, J=7.5Hz), 1.05-1.65(21H, m), 1.87-1.97(1H, m), 2.19-2.39(2H, m), 2.27(6H, s), 2.60-2.68(1H, m), 2.76-2.85(1H, m), 2.95(2H, t, J=7Hz), 3.06-3.19(3H, m), 3.26(1H, brs), 3.39(1H, d, J=4.5Hz), 3.52-3.61(1H, m), 3.65(1H, d, J=14.5Hz), 3.70(1H, d, J=14.5Hz), 3.72(1H, s), 3.94(1H, d, J=7.5Hz), 4.27(2H, td, J=7, 2Hz), 4.47(1H, s), 5.13(1H, d, J=11Hz), 5.22(1H, dd, J=11, 2Hz), 7.14-7.38(10H, m)

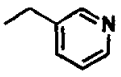
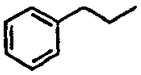
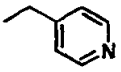
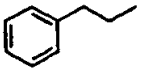
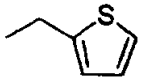
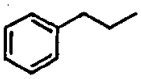
HR-MS　m/z　675.40315

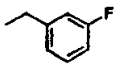
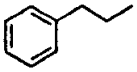
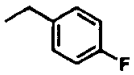
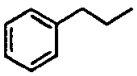
[Calcd. for $C_{37}H_{57}NO_{10}$ ($M^+ - C_8H_{11}NO$) :675.39825]

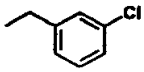
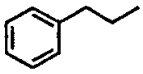
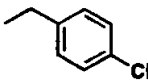
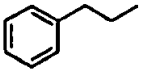
按照实施例 23 同样的方法，得到实施例 24～实施例 202 的化合物。

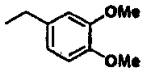
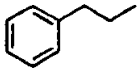
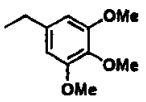
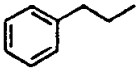
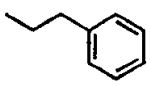
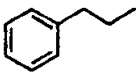


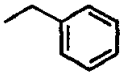
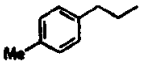
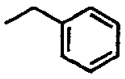
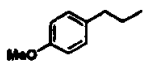
实施例	R^2	R^3	性状和物理性质
24			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.86(3H,t,J=7.5Hz),0.93(3H,d,J=6Hz),0.97(3H,d,J=7.5Hz),1.12-1.63(22H,m),1.68-1.77(1H,m),1.93-2.03(1H,m),2.11(6H,s),2.23-2.33(1H,m),2.35-2.43(1H,m),2.63-2.72(1H,m),2.90-3.06(4H,m),3.17(1H,s),3.41(1H,d,J=3.5Hz),3.53-3.63(1H,m),3.77(1H,s),3.86(1H,d,J=7.5Hz),4.22-4.34(2H,m),4.51(1H,s),5.30(1H,dd,J=11,2.5Hz),5.37(1H,d,J=11Hz),7.21(2H,d,J=7.5Hz),7.24(1H,t,J=7.5Hz),7.32(2H,t,J=7.5Hz),7.47(2H,t,J=7.5Hz),7.58(1H,t,J=7.5Hz),8.15(2H,d,J=7.5Hz) HR-MS m/z 624.35121 [Calcd.for $C_{36}H_{50}NO_8(M^+-C_8H_{16}NO_3)$:624.35364]
25			淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.97(3H,d,J=6.5Hz),1.00(3H,d,J=6.5Hz),1.04-1.67(21H,m),1.87-1.98(1H,m),2.20-2.33(1H,m),2.29(6H,s),2.56-2.68(2H,m),2.77-2.88(1H,m),2.95(2H,t,J=6.5Hz),3.15(1H,s),3.18(1H,dd,J=10.5,7.5Hz),3.36-3.48(3H,m),3.53-3.61(1H,m),3.72(1H,s),3.90(1H,d,J=16Hz),3.94(1H,d,J=16Hz),4.11(1H,d,J=7.5Hz),4.23-4.31(2H,m),4.49(1H,s),5.16(1H,d,J=11Hz),5.22(1H,dd,J=11.5,2Hz),7.17-7.33(6H,m),7.38(1H,d,J=8Hz),7.67(1H,td,J=8,2Hz),8.52(1H,d,J=4.5Hz) HR-MS m/z 655.35798 [Calcd.for $C_{36}H_{51}N_2O_9(M^+-C_8H_{16}NO_2)$:655.35946]

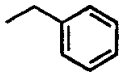
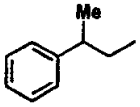
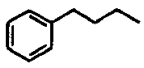
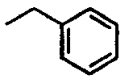
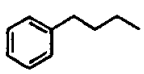
实施例	R^2	R^3	性状和物理性质
26			淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.92(3H,d,J=6.5Hz),0.97(3H,d,J=6.5Hz),1.08-1.69(21H,m),1.87-2.00(1H,m),2.20-2.40(2H,m),2.27(6H,s),2.59-2.68(1H,m),2.77-2.87(1H,m),2.95(2H,t,J=7Hz),3.10-3.20(3H,m),3.32(1H,brs),3.37(1H,d,J=5Hz),3.50-3.61(1H,m),3.68(1H,d,J=16Hz),3.71(1H,s),3.73(1H,d,J=16Hz),3.93(1H,d,J=7.5Hz),4.20-4.33(2H,m),4.48(1H,s),5.15(1H,d,J=11Hz),5.22(1H,dd,J=11.5,2Hz),7.15-7.33(6H,m),7.75(1H,d,J=8Hz),8.54(1H,dd,J=5,2Hz),8.55(1H,d,J=2Hz) HR-MS m/z 655.35793 [Calcd.for $C_{36}H_{51}N_2O_8$(M^+-$C_8H_{16}NO_2$):655.35946]
27			淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.92(3H,d,J=6.5Hz),0.97(3H,d,J=7.5Hz),1.07-1.77(21H,m),1.89-2.00(1H,m),2.18-2.33(2H,m),2.26(6H,s),2.60-2.70(1H,m),2.78-2.89(1H,m),2.95(2H,t,J=6.5Hz),3.06-3.20(3H,m),3.30(1H,brs),3.36(1H,d,J=5Hz),3.52-3.60(1H,m),3.67(1H,d,J=15.5Hz),3.71(1H,s),3.72(1H,d,J=15.5Hz),3.91(1H,d,J=7.5Hz),4.21-4.31(2H,m),4.48(1H,s),5.16(1H,d,J=11Hz),5.22(1H,dd,J=11.5,2Hz),7.13-7.36(7H,m),8.57(1H,d,J=4.5Hz),8.58(1H,d,J=4.5Hz) HR-MS m/z 676.39392 [Calcd.for $C_{36}H_{56}N_2O_{10}$(M^+-$C_8H_{11}NO$):676.39350]
28			淡褐色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.97(3H,d,J=6.5Hz),1.00(3H,d,J=6.5Hz),1.03-1.78(22H,m),1.80-1.99(1H,m),2.21-2.38(2H,m),2.27(6H,s),2.61-2.68(1H,m),2.82-2.92(1H,m),2.95(2H,t,J=7Hz),3.07-3.18(3H,m),3.39(1H,d,J=4.5Hz),3.53-3.63(1H,m),3.72(1H,s),3.87-3.96(3H,m),4.23-4.33(2H,m),4.48(1H,s),5.16(1H,d,J=11Hz),5.23(1H,dd,J=11,2.5Hz),6.94-6.98(1H,m),6.99-7.01(1H,m),7.16-7.35(6H,m) HR-MS m/z 660.31897 [Calcd.for $C_{35}H_{50}NO_9S$(M^+-$C_8H_{16}NO_3$):660.32063]

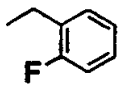
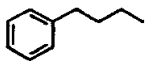
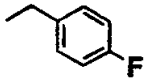
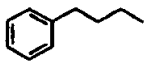
实施例	R^2	R^3	性状和物理性质
29			淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.91(3H,d,J=6.5Hz),0.97(3H,d,J=7.5Hz),1.05-1.70(21H,m),1.88-1.98(1H,m),2.18-2.38(2H,m),2.27(6H,s),2.60-2.68(1H,m),2.78-2.87(1H,m),2.95(2H,t,J=6.5Hz),3.07-3.18(3H,m),3.29(1H,brs),3.38(1H,d,J=5Hz),3.52-3.61(1H,m),3.66(1H,d,J=15.5Hz),3.70(1H,d,J=15.5Hz),3.72(1H,s),3.92(1H,d,J=7.5Hz),4.23-4.30(2H,m),4.48(1H,s),5.14(1H,d,J=11.5Hz),5.22(1H,dd,J=11.5,2Hz),6.97(1H,td,J=8,2Hz),7.08(1H,d,J=10Hz),7.13(1H,d,J=8Hz),7.16-7.34(6H,m) HR-MS m/z 672.35402 [Calcd.for $C_{37}H_{51}FNO_9(M^+-C_8H_{16}NO_2)$:672.35479]
30			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.89(3H,d,J=6.5Hz),0.97(3H,d,J=7.5Hz),1.07-1.65(21H,m),1.87-1.98(1H,m),2.20-2.40(2H,m),2.29(6H,s),2.60-2.69(1H,m),2.76-2.86(1H,m),2.91-2.99(2H,m),3.06-3.20(2H,m),3.16(1H,dd,J=10.5,7.5Hz),3.30(1H,s),3.37(1H,d,J=4.5Hz),3.52-3.61(1H,m),3.63(1H,d,J=15Hz),3.67(1H,d,J=15Hz),3.72(1H,s),3.91(1H,d,J=7.5Hz),4.22-4.32(2H,m),4.47(1H,s),5.13(1H,d,J=11Hz),5.22(1H,dd,J=11.5,2Hz),6.97-7.06(2H,m),7.17-7.36(7H,m) HR-MS m/z 656.36110 [Calcd.for $C_{37}H_{51}FNO_8(M^+-C_8H_{16}NO_3)$:656.35987]

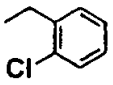
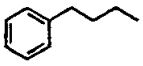
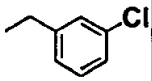
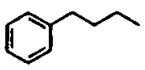
实施例	R^2	R^3	性状和物理性质
31			淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.94(3H,d,J=6.5Hz),0.97(3H,d,J=6.5Hz),1.10-1.67(21H,m),1.88-1.99(1H,m),2.20-2.38(2H,m),2.27(6H,s),2.59-2.70(1H,m),2.78-2.88(1H,m),2.92-3.00(2H,m),3.05-3.19(3H,m),3.28(1H,s),3.37(1H,d,J=4.5Hz),3.50-3.62(1H,m),3.64(1H,d,J=15.5Hz),3.68(1H,d,J=15.5Hz),3.72(1H,s),3.90(1H,d,J=7.5Hz),4.22-4.32(2H,m),4.47(1H,s),5.15(1H,d,J=11Hz),5.22(1H,dd,J=11.5,2Hz),7.15-7.38(9H,m) HR-MS m/z 672.33032 [Calcd.for $C_{37}H_{51}{}^{35}ClNO_8(M^+-C_8H_{16}NO_3)$:672.33032] HR-MS m/z 674.32699 [Calcd.for $C_{37}H_{51}{}^{37}ClNO_8(M^+-C_8H_{16}NO_3)$:674.32737]
32			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.90(3H,d,J=6.5Hz),0.97(3H,d,J=7.5Hz),1.07-1.65(21H,m),1.88-1.98(1H,m),2.20-2.36(2H,m),2.27(6H,s),2.60-2.67(1H,m),2.77-2.87(1H,m),2.92-2.97(2H,m),2.99-3.07(1H,m),3.12-3.17(2H,m),3.28(1H,brs),3.36(1H,d,J=5Hz),3.52-3.61(1H,m),3.62(1H,d,J=15.5Hz),3.67(1H,d,J=15.5Hz),3.72(1H,s),3.89(1H,d,J=7.5Hz),4.21-4.31(2H,m),4.47(1H,s),5.14(1H,d,J=11.5Hz),5.22(1H,dd,J=11,2.5Hz),7.15-7.35(9H,m) HR-MS m/z 672.32911 [Calcd.for $C_{37}H_{51}{}^{35}ClNO_8(M^+-C_8H_{16}NO_3)$:672.33032] HR-MS m/z 674.32798 [Calcd.for $C_{37}H_{51}{}^{37}ClNO_8(M^+-C_8H_{16}NO_3)$:674.32737]

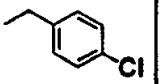
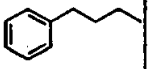
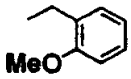
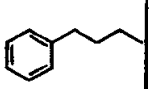
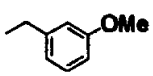
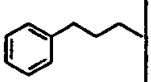
实施例	R^2	R^3	性状和物理性质
33			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.82(3H,t,J=7.5Hz),0.89(3H,d,J=6.5Hz),0.97(3H,d,J=7.5Hz),1.05-1.72(21H,m),1.87-1.97(1H,m),2.17-2.37(2H,m),2.27(6H,s),2.60-2.69(1H,m),2.76-2.85(1H,m),2.95(2H,t,J=7Hz),3.02-3.10(1H,m),3.11-3.19(2H,m),3.27(1H,brs),3.39(1H,d,J=5Hz),3.52-3.68(1H,m),3.59(1H,d,J=14.5Hz),3.63(1H,d,J=14.5Hz),3.72(1H,s),3.86(3H,s),3.88(3H,s),3.92(1H,d,J=6.5Hz),4.23-4.30(2H,m),4.47(1H,s),5.13(1H,d,J=11Hz),5.22(1H,dd,J=11,2Hz),6.80(1H,d,J=8.5Hz),6.87(1H,dd,J=8,2Hz),6.93(1H,d,J=2Hz),7.13-7.33(5H,m) HR-MS m/z 714.38516 [Calcd.for $C_{39}H_{58}NO_{11}$(M^+-$C_8H_{16}NO_2$):714.38534)
34			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.82(3H,t,J=7.5Hz),0.92(3H,d,J=6.5Hz),0.97(3H,d,J=6.5Hz),1.09-1.80(21H,m),1.87-2.00(1H,m),2.17-2.36(2H,m),2.26(6H,s),2.60-2.70(1H,m),2.77-2.88(1H,m),2.95(2H,t,J=6.5Hz),3.00-3.08(1H,m),3.10-3.20(2H,m),3.29(1H,brs),3.38(1H,d,J=5Hz),3.52-3.65(3H,m),3.72(1H,s),3.82(3H,s),3.85(6H,s),3.88(1H,d,J=7.5Hz),4.27(2H,td,J=6.5,2Hz),4.48(1H,s),5.15(1H,d,J=11Hz),5.22(1H,dd,J=11.5,2Hz),6.60(2H,s),7.18-7.24(3H,m),7.28-7.34(2H,m) HR-MS m/z 728.40166 [Calcd.for $C_{40}H_{58}NO_{11}$(M^+-$C_8H_{16}NO_3$):728.40099)
35			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.83(3H,t,J=7.5Hz),0.96(3H,d,J=7.5Hz),0.97(3H,d,J=8Hz),1.09-1.80(22H,m),1.88-2.00(1H,m),2.18-2.28(1H,m),2.24(6H,s),2.31-2.38(1H,m),2.60-2.75(3H,m),2.77-2.86(1H,m),2.90-3.08(4H,m),3.15(1H,s),3.16(1H,dd,J=10.5,7.5Hz),3.22-3.30(1H,m),3.35(1H,d,J=4.5Hz),3.53-3.63(1H,m),3.73(1H,s),3.98(1H,d,J=7.5Hz),4.23-4.33(2H,m),4.49(1H,s),5.14(1H,d,J=11Hz),5.24(1H,dd,J=11.5,2Hz),7.14-7.35(10H,m) HR-MS m/z 668.37951 [Calcd.for $C_{38}H_{54}NO_9$(M^+-$C_8H_{16}NO_2$):668.37986)

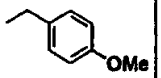
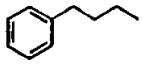
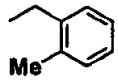
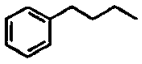
实施例	R^2	R^3	性状和物理性质
36			淡黄色非晶形固体 NMR 谱 $\delta(CDCl_3)$ppm:0.81(3H,t,J=7.5Hz),0.88(3H,d,J=6.5Hz),0.97(3H,d,J=6.5Hz),1.09-1.71(21H,m),1.87-1.97(1H,m),2.20-2.40(2H,m),2.27(6H,s),2.33(3H,s),2.60-2.68(1H,m),2.77-2.85(1H,m),2.90(2H,t,J=6.5Hz),3.04-3.20(3H,m),3.28(1H,brs),3.40(1H,d,J=4.5Hz),3.52-3.63(1H,m),3.65(1H,d,J=14.5Hz),3.70(1H,d,J=14.5Hz),3.72(1H,s),3.94(1H,d,J=7.5Hz),4.20-4.32(2H,m),4.49(1H,s),5.12(1H,d,J=11Hz),5.21(1H,dd,J=11,2Hz),7.09(2H,d,J=8Hz),7.12(2H,d,J=8Hz)7.22-7.39(5H,m) HR-MS m/z 668.37731 [Calcd.for $C_{38}H_{54}NO_9(M^+-C_8H_{16}NO_2)$:668.37986]
37			无色非晶形固体 NMR 谱 $\delta(CDCl_3)$ppm:0.82(3H,t,J=7.5Hz),0.88(3H,d,J=6.5Hz),0.98(3H,d,J=7.5Hz),1.05-1.75(21H,m),1.87-1.99(1H,m),2.18-2.38(2H,m),2.27(6H,s),2.58-2.67(1H,m),2.76-2.86(1H,m),2.89(2H,t,J=6.5Hz),3.04-3.18(3H,m),3.27(1H,brs),3.41(1H,d,J=4.5Hz),3.52-3.62(1H,m),3.65(1H,d,J=14.5Hz),3.70(1H,d,J=14.5Hz),3.73(1H,s),3.79(3H,s),3.94(1H,d,J=7.5Hz),4.17-4.26(2H,m),4.49(1H,s),5.14(1H,d,J=11Hz),5.22(1H,dd,J=11,2.5Hz),6.86(2H,d,J=8.5Hz),7.11(2H,d,J=8.5Hz),7.20-7.38(5H,m) HR-MS m/z 676.40387 [Calcd.for $C_{37}H_{58}NO_{10}(M^++1-C_9H_{13}NO_2)$:676.40607]

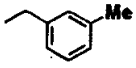
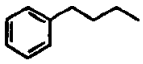
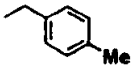
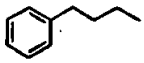
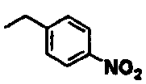
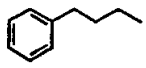
实施例	R^2	R^3	性状和物理性质
38			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81,0.82(total 3H,each t,J=7.5Hz),0.87,0.90(total 3H,each d,J=6.5Hz),0.90,0.93(total 3H,each d,J=7Hz),1.00-1.80(25H,m),1.86-1.98(1H,m),2.15-2.40(2H,m),2.28(6H,s),2.55-2.66(1H,m),2.74-2.85(1H,m),3.03-3.20(3H,m),3.26(1H,brs),3.31,3.38(total 1H,each d,J=4.5Hz),3.40-3.56(1H,m),3.60-3.74(3H,m),3.92,3.93(total 1H,each d,J=7Hz),4.07-4.20(2H,m),4.42,4.52(total 1H,each s),5.10,5.11(total 1H,each d,J=10.5Hz),5.20,5.22(total 1H,each dd,J=11,2.5Hz),7.17-7.38(10H,m) HR-MS m/z 826.49594 [Calcd.for $C_{46}H_{70}N_2O_{11}$(M^+):826.49796]
39			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.86(3H,t,J=7.5Hz),0.93(3H,d,J=6Hz),1.03(3H,d,J=6.5Hz),1.12-1.68(20H,m),1.77-1.86(1H,m),1.93-2.03(4H,m),2.17(6H,s),2.23-2.32(1H,m),2.38-2.46(1H,m),2.63-2.93(4H,m),2.97-3.10(1H,m),3.06(1H,dd,J=10.5,7.5Hz),3.15(1H,brs),3.48(1H,d,J=4.5Hz),3.64-3.74(1H,m),3.77(1H,s),3.90(1H,d,J=7.5Hz),4.02-4.13(2H,m),4.49(1H,brs),5.29(1H,dd,J=11.5,2Hz),5.39(1H,dd,J=11,1Hz),7.14-7.32(5H,m),7.47(2H,t,J=7.5Hz),7.58(1H,t,J=7.5Hz),8.16(2H,d,J=7.5Hz) HR-MS m/z 638.37014 [Calcd.for $C_{37}H_{52}NO_8$(M^+-$C_8H_{16}NO_3$):638.36929]
40			淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),1.02(3H,d,J=6.5Hz),1.09-1.70(20H,m),1.80-2.00(4H,m),2.20-2.40(2H,m),2.27(6H,s),2.61-2.73(3H,m),2.76-2.87(1H,m),3.05-3.20(3H,m),3.29(1H,s),3.48(1H,d,J=4.5Hz),3.64-3.77(2H,m),3.66(1H,d,J=15Hz),3.70(1H,d,J=15Hz),3.97(1H,d,J=7.5Hz),4.05(2H,t,J=6.5Hz),4.44(1H,s),5.15(1H,d,J=11Hz),5.21(1H,dd,J=11,2Hz),7.15-7.40(10H,m) HR-MS m/z 668.38178 [Calcd.for $C_{38}H_{54}NO_9$(M^+-$C_8H_{16}NO_2$):668.37986]

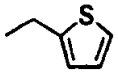
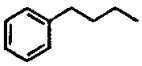
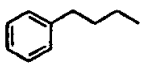
实施例	R^2	R^3	性状和物理性质
41			无色非晶形固体 NMR 谱 δ ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.98(3H,d,J=6.5Hz),1.02(3H,d,J=6.5Hz),1.07-1.70(20H,m),1.82(1H,s),1.88-2.02(3H,m),2.23-2.38(1H,m),2.31(6H,s),2.43-2.53(1H,m),2.62-2.74(3H,m),2.78-2.89(1H,m),3.12(1H,s),3.20(1H,dd,J=10,7.5Hz),3.25-3.38(2H,m),3.48(1H,d,J=5Hz),3.63-3.80(2H,m),3.75(2H,s),3.99-4.10(3H,m),4.43(1H,s),5.18(1H,d,J=11Hz),5.22(1H,dd,J=11,2Hz),7.03-7.14(2H,m),7.15-7.21(3H,m),7.22-7.35(4H,m) HR-MS m/z 844.49017 [Calcd.for $C_{46}H_{69}FN_2O_{11}$(M^+):844.48854]
42			无色非晶形固体 NMR 谱 δ ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.88(3H,d,J=6.5Hz),1.02(3H,d,J=6.5Hz),1.07-1.66(20H,m),1.85(1H,s),1.88-2.01(3H,m),2.20-2.38(2H,m),2.27(6H,s),2.62-2.74(3H,m),2.77-2.86(1H,m),3.07-3.20(2H,m),3.17(1H,dd,J=10,7.5Hz),3.30(1H,brs),3.46(1H,d,J=4.5Hz),3.62-3.73(2H,m),3.63(1H,d,J=14.5Hz),3.67(1H,d,J=14.5Hz),3.95(1H,d,J=7.5Hz),4.05(2H,t,J=6.5Hz),4.44(1H,s),5.15(1H,d,J=11Hz),5.21(1H,dd,J=11.5,2Hz),7.01(2H,t,J=8.5Hz),7.16-7.22(3H,m),7.26-7.35(4H,m) HR-MS m/z 686.37071 [Calcd.for $C_{38}H_{53}FNO_9$(M^+-$C_8H_{16}NO_2$):686.37044]

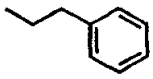
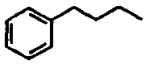
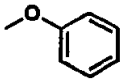
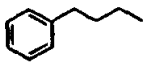
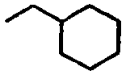
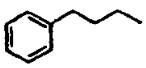
实施例	R^2	R^3	性状和物理性质
43			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.97(3H,d,J=6.5Hz),1.03(3H,d,J=6.5Hz),1.08-1.73(20H,m),1.82(1H,s),1.88-2.02(3H,m),2.21-2.37(1H,m),2.30(6H,s),2.42-2.53(1H,m),2.60-2.74(3H,m),2.78-2.88(1H,m),3.12(1H,s),3.20(1H,dd,J=10,7Hz),3.26-3.39(2H,m),3.49(1H,d,J=5Hz),3.63-3.75(2H,m),3.83(1H,d,J=16Hz),3.90(1H,d,J=16Hz),3.96-4.15(2H,m),4.09(1H,d,J=7.5Hz),4.43(1H,s),5.18(1H,d,J=11Hz),5.21(1H,dd,J=11.5,2Hz),7.15-7.32(7H,m),7.35-7.41(2H,m) HR-MS m/z 686.34335 [Calcd.for $C_{38}H_{53}{}^{35}ClNO_8(M^+-C_8H_{16}NO_3)$:686.34597] HR-MS m/z 688.34518 [Calcd.for $C_{38}H_{53}{}^{37}ClNO_8(M^+-C_8H_{16}NO_3)$:688.34302]
44			淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.93(3H,d,J=6.5Hz),1.02(3H,d,J=6.5Hz),1.07-1.72(20H,m),1.85(1H,s),1.88-2.02(3H,m),2.20-2.38(2H,m),2.27(6H,s),2.61-2.74(3H,m),2.78-2.88(1H,m),3.05-3.20(2H,m),3.17(1H,dd,J=10,7Hz),3.30(1H,s),3.46(1H,d,J=5Hz),3.62-3.74(2H,m),3.64(1H,d,J=15.5Hz),3.69(1H,d,J=15.5Hz),3.93(1H,d,J=7.5Hz),4.05(2H,t,J=6.5Hz),4.44(1H,s),5.17(1H,d,J=11Hz),5.22(1H,dd,J=11.5,2Hz),7.16-7.36(9H,m) HR-MS m/z 702.33925 [Calcd.for $C_{38}H_{53}{}^{35}ClNO_9(M^+-C_8H_{16}NO_2)$:702.34089] HR-MS m/z 704.33663 [Calcd.for $C_{38}H_{53}{}^{37}ClNO_9(M^+-C_8H_{16}NO_2)$:704.33793]

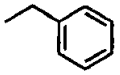
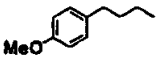
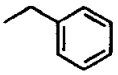
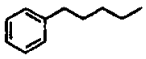
实施例	R^2	R^3	性状和物理性质
45			淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.90(3H,d,J=6.5Hz),1.02(3H,d,J=6.5Hz),1.07-1.68(20H,m),1.84(1H,s),1.88-2.01(3H,m),2.20-2.38(2H,m),2.27(6H,s),2.61-2.74(3H,m),2.78-2.87(1H,m),2.98-3.08(1H,m),3.12(1H,s),3.16(1H,dd,J=10.5,7.5Hz),3.29(1H,brs),3.45(1H,d,J=4.5Hz),3.62(1H,d,J=15.5Hz),3.62-3.75(2H,m),3.68(1H,d,J=15.5Hz),3.92(1H,d,J=7.5Hz),4.05(2H,t,J=6.5Hz),4.44(1H,s),5.16(1H,d,J=11Hz),5.21(1H,dd,J=11.5,2Hz),7.16-7.21(3H,m),7.25-7.32(6H,m) HR-MS m/z 702.34371 [Calcd.for $C_{38}H_{53}{}^{35}ClNO_9(M^+-C_8H_{16}NO_2)$:702.34089] HR-MS m/z 704.34055 [Calcd.for $C_{38}H_{53}{}^{37}ClNO_9(M^+-C_8H_{16}NO_2)$:704.33793]
46			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.98(3H,d,J=7.5Hz),1.02(3H,d,J=6.5Hz),1.07-1.70(20H,m),1.82(1H,s),1.88-2.01(3H,m),2.21-2.35(1H,m),2.30(6H,s),2.43-2.52(1H,m),2.61-2.74(3H,m),2.75-2.85(1H,m),3.12(1H,s),3.20(1H,dd,J=10.5,7.5Hz),3.28(1H,brs),3.32-3.42(1H,m),3.50(1H,d,J=4.5Hz),3.58-3.86(2H,m),3.62(1H,d,J=16Hz),3.78(1H,d,J=16Hz),3.81(3H,s),3.99-4.15(2H,m),4.10(1H,d,J=7.5Hz),4.44(1H,s),5.13(1H,d,J=11Hz),5.21(1H,dd,J=11.5,2Hz),6.85-6.94(2H,m),7.15-7.31(7H,m) HR-MS m/z 698.39138 [Calcd.for $C_{39}H_{56}NO_{10}(M^+-C_8H_{16}NO_2)$:698.39042]
47			淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.91(3H,d,J=6.5Hz),1.02(3H,d,J=6.5Hz),1.08-1.62(21H,m),1.82(1H,s),1.87-2.00(3H,m),2.20-2.39(2H,m),2.28(6H,s),2.61-2.73(3H,m),2.76-2.85(1H,m),3.00-3.20(2H,m),3.16(1H,dd,J=10.5,7.5Hz),3.48(1H,d,J=4.5Hz),3.60-3.77(2H,m),3.63(1H,d,J=14.5Hz),3.67(1H,d,J=14.5Hz),3.80(3H,s),3.94(1H,d,J=7.5Hz),4.01-4.08(2H,m),4.44(1H,s),5.15(1H,d,J=10.5Hz),5.21(1H,dd,J=11,2Hz),6.76-6.84(1H,m),6.90-6.98(2H,m),7.14-7.34(6H,m) HR-MS m/z 682.39485 [Calcd.for $C_{39}H_{56}NO_9(M^+-C_8H_{16}NO_3)$:682.39551]

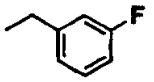
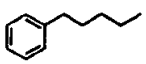
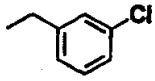
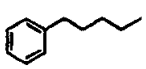
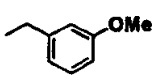
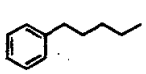
实施例	R^2	R^3	性状和物理性质
48			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.81(3H,t,J=7.5Hz),0.88(3H,d,J=6.5Hz),1.02(3H,d,J=7.5Hz),1.07-1.62(21H,m),1.82(1H,s),1.84-2.00(3H,m),2.21-2.43(2H,m),2.29(6H,s),2.60-2.72(3H,m),2.77-2.87(1H,m),3.05-3.20(2H,m),3.17(1H,dd,J=10.5,7.5Hz),3.47(1H,d,J=4.5Hz),3.57-3.75(2H,m),3.59(1H,d,J=15Hz),3.63(1H,d,J=15Hz),3.79(3H,s),3.95(1H,d,J=7.5Hz),4.01-4.10(2H,m),4.43(1H,s),5.14(1H,d,J=10.5Hz),5.21(1H,dd,J=11,2Hz),6.85(2H,d,J=8Hz),7.17-7.32(5H,m),7.18(2H,d,J=8Hz) HR-MS m/z 683.40421 [Calcd.for $C_{39}H_{57}NO_9$(M^++1-$C_8H_{16}NO_3$) :683.40333]
49			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.81(3H,t,J=7.5Hz),0.84(3H,d,J=6.5Hz),1.02(3H,d,J=7.5Hz),1.10-1.67(20H,m),1.82(1H,s),1.87-2.00(3H,m),2.22-2.47(2H,m),2.31(6H,s),2.38(3H,s),2.61-2.74(3H,m),2.76-2.85(1H,m),3.12(1H,s),3.14-3.25(2H,m),3.30(1H,s),3.49(1H,d,J=4.5Hz),3.61-3.76(2H,m),3.65(1H,d,J=14.5Hz),3.72(1H,d,J=14.5Hz),3.99(1H,d,J=6.5Hz),4.05(2H,t,J=6.5Hz),4.42(1H,s),5.14(1H,d,J=11Hz),5.20(1H,dd,J=11.5,2Hz),7.12-7.21(5H,m),7.24-7.31(4H,m) HR-MS m/z 840.51484 [Calcd.for $C_{47}H_{72}N_2O_{11}$(M^+):840.51361]

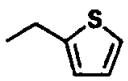
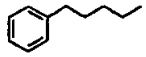
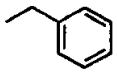
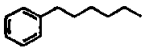
实施例	R^2	R^3	性状和物理性质
50			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.90(3H,d,J=6.5Hz),1.02(3H,d,J=7.5Hz),1.07-1.75(20H,m),1.83(1H,s),1.88-2.02(3H,m),2.22-2.39(2H,m),2.28(6H,s),2.34(3H,s),2.62-2.74(3H,m),2.77-2.87(1H,m),3.05-3.20(2H,m),3.16(1H,dd,J=10,7.5Hz),3.27(1H,brs),3.48(1H,d,J=4.5Hz),3.58-3.74(2H,m),3.62(1H,d,J=14.5Hz),3.66(1H,d,J=14.5Hz),3.95(1H,d,J=7.5Hz),4.05(2H,t,J=6.5Hz),4.43(1H,s),5.15(1H,d,J=11Hz),5.21(1H,dd,J=11.5,2Hz),7.05-7.23(7H,m),7.24-7.31(2H,m) HR-MS m/z 840.51489 [Calcd.for $C_{47}H_{72}N_2O_{11}$(M^+):840.51361]
51			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.89(3H,d,J=6.5Hz),1.02(3H,d,J=6.5Hz),1.07-1.68(20H,m),1.82(1H,s),1.88-2.03(3H,m),2.22-2.43(2H,m),2.30(6H,s),2.32(3H,s),2.60-2.74(3H,m),2.76-2.87(1H,m),3.02-3.21(3H,m),3.28(1H,brs),3.48(1H,d,J=4.5Hz),3.57-3.75(2H,m),3.60(1H,d,J=15Hz),3.66(1H,d,J=15Hz),3.97(1H,d,J=7.5Hz),4.05(2H,t,J=6.5Hz),4.43(1H,s),5.14(1H,d,J=11Hz),5.21(1H,dd,J=11,2.5Hz),7.10-7.31(9H,m) HR-MS m/z 840.51207 [Calcd.for $C_{47}H_{72}N_2O_{11}$(M^+):840.51361]
52			淡褐色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.89(3H,d,J=6.5Hz),1.03(3H,d,J=6.5Hz),1.07-1.73(20H,m),1.85-2.02(4H,m),2.23-2.45(2H,m),2.31(6H,s),2.60-2.74(3H,m),2.76-2.88(1H,m),3.09-3.25(2H,m),3.12(1H,s),3.38(1H,brs),3.46(1H,d,J=4.5Hz),3.62-3.73(2H,m),3.77(1H,d,J=15.5Hz),3.83(1H,d,J=15.5Hz),3.98(1H,d,J=7.5Hz),4.00-4.09(2H,m),4.43(1H,s),5.13-5.27(2H,m),7.13-7.33(5H,m),7.54(2H,d,J=9Hz),8.20(2H,d,J=9Hz) HR-MS m/z 698.37981 [Calcd.for $C_{38}H_{54}N_2O_{10}$(M^++1-$C_8H_{16}NO_3$):698.37785]

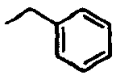
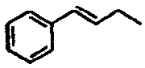
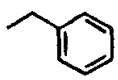
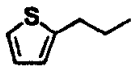
实施例	R^2	R^3	性状和物理性质
53			淡黄褐色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.99(3H,d,J=6.5Hz),1.02(3H,d,J=6.5Hz),1.07-1.67(20H,m),1.85(1H,s),1.88-2.02(3H,m),2.20-2.37(2H,m),2.26(6H,s),2.62-2.74(3H,m),2.82-2.91(1H,m),3.07-3.18(2H,m),3.15(1H,dd,J=10.5,7.5Hz),3.28(1H,brs),3.48(1H,d,J=5.5Hz),3.64-3.74(2H,m),3.92(2H,s),3.95(1H,d,J=7.5Hz),4.05(2H,t,J=6.5Hz),4.45(1H,s),5.19(1H,d,J=11Hz),5.23(1H,dd,J=11,2Hz),6.95(1H,dd,J=5.5,3.5Hz),6.99(1H,dd,J=3.5,1Hz),7.15-7.32(6H,m) HR-MS m/z 674.33470 [Calcd.for $C_{36}H_{52}NO_9S(M^+-C_8H_{16}NO_2)$:674.33628]
54	Me		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),1.03(3H,d,J=7.5Hz),1.08(3H,d,J=6.5Hz),1.12-1.70(20H,m),1.87-2.02(4H,m),2.12(3H,s),2.22-2.33(1H,m),2.28(6H,s),2.38-2.42(1H,m),2.60-2.75(3H,m),2.79-2.90(1H,m),3.13(1H,s),3.19(1H,dd,J=10.5,7.5Hz),3.28(1H,brs),3.31-3.43(1H,m),3.46(1H,d,J=4.5Hz),3.63-3.77(2H,m),3.99-4.10(3H,m),4.45(1H,s),5.14(1H,d,J=11Hz),5.24(1H,dd,J=11,2.5Hz),7.16-7.21(3H,m),7.25-7.32(2H,m) HR-MS m/z 750.46652 [Calcd.for $C_{40}H_{66}N_2O_{11}(M^+)$:750.46666]

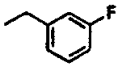
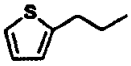
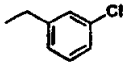
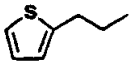
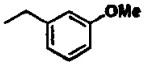
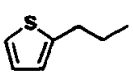
实施例	R^2	R^3	性状和物理性质
55			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.95(3H,d,J=6.5Hz),1.03(3H,d,J=7.5Hz),1.08-1.70(21H,m),1.87(1H,s),1.89-2.02(3H,m),2.19-2.39(2H,m),2.25(6H,s),2.60-2.78(5H,m),2.78-2.87(1H,m),2.90-3.07(2H,m),3.13(1H,s),3.18(1H,dd,J=10.5,7.5Hz),3.21-3.33(1H,m),3.44(1H,d,J=4.5Hz),3.62-3.76(2H,m),3.96-4.10(2H,m),4.01(1H,d,J=7.5Hz),4.45(1H,s),5.17(1H,d,J=11Hz),5.23(1H,dd,J=11.5,2Hz),7.16-7.23(6H,m),7.25-7.32(4H,m) HR-MS m/z 840.51434 [Calcd.for $C_{47}H_{72}N_2O_{11}$(M^+):840.51361]
56			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.86(3H,t,J=7.5Hz),1.05(3H,d,J=6.5Hz),1.08-1.80(20H,m),1.13(3H,d,J=6Hz),1.88-2.05(4H,m),2.20-2.50(7H,m),2.51-2.75(4H,m),2.95-3.05(1H,m),3.12(1H,s),3.20-3.43(3H,m),3.59(1H,d,J=4.5Hz),3.65-3.75(2H,m),4.07(2H,t,J=6.5Hz),4.30(1H,d,J=7.5Hz),4.44(1H,s),5.01(1H,d,J=11Hz),5.27(1H,dd,J=11.5,2Hz),7.10-7.42(10H,m) HR-MS m/z 828.47775 [Calcd.for $C_{45}H_{68}N_2O_{12}$(M^+):828.47723]
57			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.91-1.87(38H,m),1.88-2.02(3H,m),2.15-2.37(3H,m),2.33(6H,s),2.48-2.57(1H,m),2.60-2.74(3H,m),2.80-3.17(3H,m),3.22(1H,dd,J=10,7.5Hz),3.30-3.40(1H,m),3.43(1H,d,J=4.5Hz),3.62-3.75(2H,m),3.98-4.10(3H,m),4.43(1H,brs),5.16(1H,d,J=11Hz),5.23(1H,dd,J=11.5,2Hz),7.16-7.22(3H,m),7.24-7.32(2H,m) HR-MS m/z 832.54501 [Calcd.for $C_{46}H_{76}N_2O_{11}$(M^+):832.54491]

实施例	R^2	R^3	性状和物理性质
58			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.81(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),1.02(3H,d,J=6.5Hz),1.05-1.75(20H,m),1.84(1H,s),1.85-1.98(3H,m),2.22-2.38(2H,m),2.28(6H,s),2.55-2.70(3H,m),2.75-2.88(1H,m),3.03-3.20(2H,m),3.17(1H,dd,J=10,7Hz),3.29(1H,brs),3.48(1H,d,J=4.5Hz),3.60-3.75(2H,m),3.65(1H,d,J=15.5Hz),3.70(1H,d,J=15.5Hz),3.79(3H,s),3.97(1H,d,J=7.5Hz),4.03(2H,t,J=6.5Hz),4.44(1H,s),5.15(1H,d,J=11Hz),5.21(1H,dd,J=11.5,2Hz),6.84(2H,d,J=8.5Hz),7.10(2H,d,J=8.5Hz),7.16-7.40(5H,m) HR-MS m/z 682.39477 [Calcd.for $C_{39}H_{56}NO_9(M^+-C_8H_{16}NO_3)$:682.39551]
59			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.81(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),1.00(3H,d,J=7.5Hz),1.05-1.75(25H,m),1.88-2.00(1H,m),2.20-2.40(2H,m),2.27(6H,s),2.60-2.70(3H,m),2.75-2.85(1H,m),3.05-3.20(2H,m),3.16(1H,dd,J=10,7.5Hz),3.29(1H,brs),3.48(1H,d,J=4.5Hz),3.60-3.75(2H,m),3.66(1H,d,J=15Hz),3.71(1H,d,J=15Hz),3.96(1H,d,J=7.5Hz),4.00-4.07(2H,m),4.46(1H,s),5.15(1H,d,J=11Hz),5.21(1H,dd,J=11,2.5Hz),7.10-7.40(10H,m) HR-MS m/z 682.39507 [Calcd.for $C_{39}H_{56}NO_9(M^+-C_8H_{16}NO_2)$:682.39551]

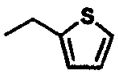
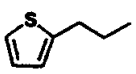
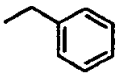
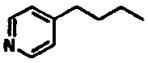
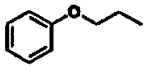
实施例	R^2	R^3	性状和物理性质
60			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.91(3H,d,J=6.5Hz),1.00(3H,d,J=6.5Hz),1.10-1.80(25H,m),1.85-1.98(1H,m),2.20-2.40(2H,m),2.27(6H,s),2.60-2.70(3H,m),2.78-2.85(1H,m),3.05-3.20(2H,m),3.17(1H,dd,J=10.5,7.5Hz),3.29(1H,brs),3.46(1H,d,J=4.5Hz),3.60-3.75(2H,m),3.66(1H,d,J=15Hz),3.71(1H,d,J=15Hz),3.95(1H,d,J=7.5Hz),4.00-4.07(2H,m),4.46(1H,s),5.16(1H,d,J=11Hz),5.21(1H,dd,J=11.5,2Hz),6.90-7.00(1H,m),7.05-7.20(5H,m),7.21-7.33(3H,m) HR-MS m/z 700.38541 [Calcd.for $C_{39}H_{55}FNO_9(M^+-C_8H_{16}NO_2)$:700.38609]
61			淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.93(3H,d,J=6.5Hz),1.00(3H,d,J=7.5Hz),1.10-1.80(25H,m),1.90-1.98(1H,m),2.20-2.40(2H,m),2.27(6H,s),2.60-2.70(3H,m),2.80-2.90(1H,m),3.05-3.20(2H,m),3.16(1H,dd,J=10,7.5Hz),3.28(1H,brs),3.45(1H,d,J=4.5Hz),3.60-3.75(2H,m),3.64(1H,d,J=15.5Hz),3.69(1H,d,J=15.5Hz),3.93(1H,d,J=7.5Hz),4.01-4.06(2H,m),4.46(1H,s),5.16(1H,d,J=11Hz),5.21(1H,dd,J=11.5,2Hz),7.15-7.40(9H,m) HR-MS m/z 716.35475 [Calcd.for $C_{39}H_{55}{}^{35}ClNO_9(M^+-C_8H_{16}NO_2)$:716.35654] HR-MS m/z 718.35339 [Calcd.for $C_{39}H_{55}{}^{37}ClNO_9(M^+-C_8H_{16}NO_2)$:718.35358]
62			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.91(3H,d,J=6.5Hz),1.00(3H,d,J=7.5Hz),1.10-1.80(25H,m),1.85-2.00(1H,m),2.20-2.40(2H,m),2.27(6H,s),2.60-2.70(3H,m),2.78-2.85(1H,m),3.00-3.18(2H,m),3.15(1H,dd,J=10.5,7.5Hz),3.27(1H,brs),3.47(1H,d,J=4.5Hz),3.60-3.75(2H,m),3.63(1H,d,J=14.5Hz),3.68(1H,d,J=14.5Hz),3.80(3H,s),3.94(1H,d,J=6.5Hz),4.00-4.07(2H,m),4.46(1H,s),5.15(1H,d,J=11Hz),5.21(1H,dd,J=11,2.5Hz),6.80(1H,dd,J=8,2Hz),6.90-6.96(2H,m),7.12-7.32(6H,m) HR-MS m/z 712.40680 [Calcd.for $C_{40}H_{58}NO_{10}(M^+-C_8H_{16}NO_2)$:712.40607]

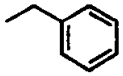
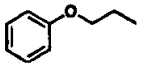
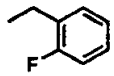
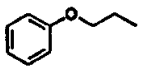
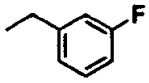
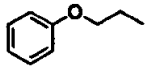
实施例	R^2	R^3	性状和物理性质
63			褐色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.99(3H,d,J=6.5Hz),1.00(3H,d,J=5.5Hz),1.10-1.80(25H,m),1.85-2.00(1H,m),2.20-2.40(2H,m),2.26(6H,s),2.60-2.70(3H,m),2.80-2.90(1H,m),3.05-3.20(2H,m),3.15(1H,dd,J=10,7.5Hz),3.27(1H,brs),3.47(1H,d,J=4.5Hz),3.60-3.70(1H,m),3.72(1H,s),3.93(2H,s),3.94(1H,d,J=6.5Hz),4.01-4.07(2H,m),4.47(1H,s),5.18(1H,d,J=11Hz),5.22(1H,dd,J=11,2.5Hz),6.96(1H,dd,J=5,3.5Hz),6.99-7.01(1H,m),7.15-7.21(3H,m),7.22(1H,dd,J=5.5,1Hz),7.25-7.31(2H,m) HR-MS m/z 688.35249 [Calcd.for $C_{37}H_{54}NO_9S(M^+-C_8H_{16}NO_2)$:688.35193]
64			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),0.99(3H,d,J=6.5Hz),1.06-1.75(25H,m),1.80(1H,s),1.88-1.97(1H,m),2.22-2.39(2H,m),2.28(6H,s),2.59-2.67(3H,m),2.77-2.85(1H,m),3.06-3.20(2H,m),3.17(1H,dd,J=10.5,7.5Hz),3.29(1H,brs),3.48(1H,d,J=4.5Hz),3.60-3.75(2H,m),3.66(1H,d,J=14.5Hz),3.71(1H,d,J=14.5Hz),3.93-4.05(3H,m),4.47(1H,s),5.15(1H,d,J=11Hz),5.21(1H,dd,J=11,2.5Hz),7.13-7.21(3H,m),7.23-7.39(7H,m) HR-MS m/z 696.41023 [Calcd.for $C_{40}H_{58}NO_9(M^+-C_8H_{16}NO_2)$:696.41116]

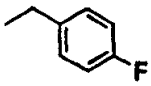
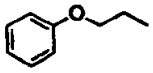
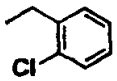
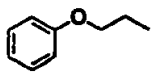
实施例	R^2	R^3	性状和物理性质
65			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.81(3H,t,J=7.5Hz),0.88(3H,d,J=6.5Hz),1.03(3H,d,J=6.5Hz),1.07-1.65(20H,m),1.80(1H,s),1.88-1.98(1H,m),2.22-2.38(2H,m),2.27(6H,s),2.64-2.72(1H,m),2.77-2.86(1H,m),3.05-3.18(2H,m),3.16(1H,dd,J=10.5,7.5Hz),3.29(1H,s),3.47(1H,d,J=4.5Hz),3.65(1H,d,J=14.5Hz),3.66-3.77(2H,m),3.70(1H,d,J=14.5Hz),3.96(1H,d,J=7.5Hz),4.46(1H,s),4.64-4.73(2H,m),5.15(1H,d,J=10.5Hz),5.22(1H,dd,J=11.5,2Hz),6.29(1H,dt,J=16,6.5Hz),6.62(1H,d,J=16Hz),7.23-7.43(10H,m) HR-MS m/z 666.36340 [Calcd.for $C_{38}H_{52}NO_9(M^+-C_8H_{16}NO_2)$:666.36421]
66			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.81(3H,t,J=7.5Hz),0.88(3H,d,J=6.5Hz),0.99(3H,d,J=7.5Hz),1.05-1.60(21H,m),1.90-1.96(1H,m),2.20-2.40(2H,m),2.27(6H,s),2.60-2.70(1H,m),2.78-2.84(1H,m),3.06-3.20(5H,m),3.27(1H,s),3.41(1H,d,J=4.5Hz),3.60-3.74(2H,m),3.65(1H,d,J=14.5Hz),3.70(1H,d,J=14.5Hz),3.94(1H,d,J=7.5Hz),4.27(2H,t,J=6Hz),4.41(1H,s),5.13(1H,d,J=10.5Hz),5.21(1H,dd,J=11.5,2Hz),6.82-6.86(1H,m),6.96(1H,dd,J=5,3.5Hz),7.16(1H,dd,J=5,1Hz),7.23-7.37(5H,m) HR-MS m/z 660.31941 [Calcd.for $C_{35}H_{50}NO_9S(M^+-C_8H_{16}NO_2)$:660.32063]

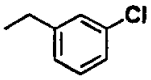
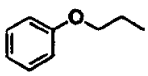
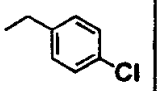
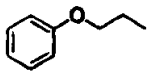
实施例	R^2	R^3	性状和物理性质
67			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.82(3H,t,J=7.5Hz),0.91(3H,d,J=6.5Hz),1.00(3H,d,J=7.5Hz),1.05-1.60(21H,m),1.90-1.98(1H,m),2.20-2.40(2H,m),2.27(6H,s),2.60-2.70(1H,m),2.78-2.85(1H,m),3.05-3.20(5H,m),3.29(1H,brs),3.39(1H,d,J=4.5Hz),3.60-3.75(2H,m),3.65(1H,d,J=15.5Hz),3.70(1H,d,J=15.5Hz),3.93(1H,d,J=7.5Hz),4.28(2H,t,J=6.5Hz),4.41(1H,s),5.15(1H,d,J=11Hz),5.22(1H,dd,J=11.5,2Hz),6.83-6.86(1H,m),6.94-7.00(2H,m),7.06-7.18(3H,m),7.24-7.32(1H,m) HR-MS m/z 678.31185 [Calcd.for $C_{35}H_{49}FNO_9S(M^+-C_8H_{16}NO_2)$:678.31121]
68			淡黄色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.83(3H,t,J=7.5Hz),0.94(3H,d,J=6.5Hz),1.00(3H,d,J=6.5Hz),1.05-1.80(21H,m),1.90-1.99(1H,m),2.20-2.40(2H,m),2.28(6H,s),2.60-2.70(1H,m),2.80-2.90(1H,m),3.05-3.20(5H,m),3.30(1H,brs),3.39(1H,d,J=5Hz),3.60-3.75(2H,m),3.64(1H,d,J=15Hz),3.68(1H,d,J=15Hz),3.91(1H,d,J=7.5Hz),4.22-4.35(2H,m),4.42(1H,s),5.15(1H,d,J=10Hz),5.22(1H,dd,J=11,2Hz),6.83-6.86(1H,m),6.96(1H,dd,J=5,3.5Hz),7.16(1H,dd,J=5,1Hz),7.20-7.40(4H,m) HR-MS m/z 694.28358 [Calcd.for $C_{35}H_{49}{}^{35}ClNO_9S(M^+-C_8H_{16}NO_2)$:694.28166] HR-MS m/z 696.28048 [Calcd.for $C_{35}H_{49}{}^{37}ClNO_9S(M^+-C_8H_{16}NO_2)$:696.27870]
69			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.82(3H,t,J=7.5Hz),0.91(3H,d,J=6.5Hz),0.99(3H,d,J=6.5Hz),1.05-1.65(21H,m),1.86-2.00(1H,m),2.18-2.41(2H,m),2.27(6H,s),2.60-2.71(1H,m),2.77-2.88(1H,m),3.00-3.33(6H,m),3.40(1H,d,J=5Hz),3.58-3.71(1H,m),3.63(1H,d,J=14.5Hz),3.67(1H,d,J=14.5Hz),3.73(1H,s),3.80(3H,s),3.92(1H,d,J=7.5Hz),4.20-4.33(2H,m),4.41(1H,s),5.14(1H,d,J=10.5Hz),5.19-5.25(1H,m),6.78-6.86(2H,m),6.88-6.99(3H,m),7.13-7.18(1H,m),7.19-7.30(1H,m) HR-MS m/z 674.33487 [Calcd.for $C_{36}H_{52}NO_9S(M^+-C_8H_{16}NO_3)$:674.33628]

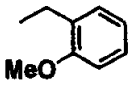
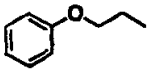
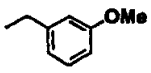
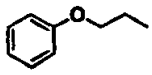
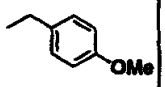
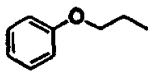
00.08.10

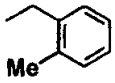
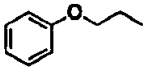
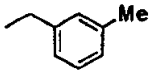
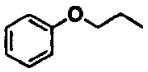
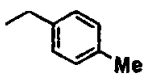
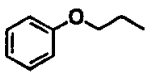
实施例	R^2	R^3	性状和物理性质
70			褐色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),1.00(3H,d,J=7.5Hz),1.00(3H,d,J=7.5Hz),1.06-1.80(22H,m),1.88-2.00(1H,m),2.18-2.40(2H,m),2.26(6H,s),2.60-2.72(1H,m),2.80-2.92(1H,m),3.03-3.28(5H,m),3.41(1H,d,J=4.5Hz),3.60-3.70(1H,m),3.74(1H,s),3.82-3.97(3H,m),4.19-4.32(2H,m),4.42(1H,s),5.16(1H,d,J=11Hz),5.23(1H,dd,J=11,2Hz),6.82-6.87(1H,m),6.90-7.02(3H,m),7.16(1H,dd,J=5,1Hz),7.22(1H,dd,J=5,1Hz) HR-MS m/z 650.28264 [Calcd.for $C_{33}H_{48}NO_8S_2(M^+-C_8H_{16}NO_3)$:650.28213]
71			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.88(3H,d,J=6.5Hz),1.03(3H,d,J=7.5Hz),1.08-1.64(20H,m),1.82(1H,s),1.88-2.01(3H,m),2.20-2.39(2H,m),2.27(6H,s),2.62-2.73(3H,m),2.77-2.86(1H,m),3.06-3.14(2H,m),3.16(1H,dd,J=10.5,7.5Hz),3.29(1H,brs),3.48(1H,d,J=4.5Hz),3.61-3.71(1H,m),3.65(1H,d,J=14.5Hz),3.70(1H,d,J=14.5Hz),3.72(1H,s),3.97(1H,d,J=7.5Hz),4.06(2H,t,J=6.5Hz),4.37(1H,s),5.15(1H,d,J=11Hz),5.20(1H,dd,J=11,2Hz),7.13(2H,dd,J=4.5,1.5Hz),7.22-7.38(5H,m),8.51(2H,dd,J=4.5,1.5Hz) HR-MS m/z 669.37320 [Calcd.for $C_{37}H_{53}N_2O_9(M^+-C_8H_{16}NO_2)$:669.37511]
72			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.86(3H,t,J=7.5Hz),0.91(3H,d,J=6.5Hz),0.99(3H,d,J=7.5Hz),1.02-1.80(22H,m),1.92-2.00(1H,m),2.08(1H,s),2.11(6H,s),2.20-2.30(1H,m),2.40-2.50(1H,m),2.65-2.75(1H,m),2.95-3.07(2H,m),3.16(1H,s),3.42(1H,d,J=4.5Hz),3.65-3.75(1H,m),3.85(1H,s),3.86(1H,d,J=7.5Hz),4.18(2H,t,J=4.5Hz),4.38-4.45(3H,m),5.29(1H,dd,J=11,2.5Hz),5.37(1H,d,J=11Hz),6.90-7.00(3H,m),7.30-7.40(2H,m),7.42-7.52(2H,m),7.55-7.60(1H,m),8.10-8.20(2H,m) HR-MS m/z 814.45946 [Calcd.for $C_{44}H_{66}N_2O_{12}(M^+)$:814.46158]

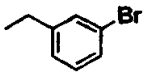
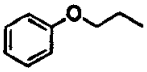
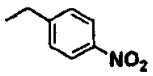
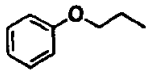
实施例	R^2	R^3	性状和物理性质
73			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),0.99(3H,d,J=7.5Hz),1.08-1.63(20H,m),1.88-2.00(2H,m),2.23-2.38(2H,m),2.27(6H,s),2.65-2.73(1H,m),2.75-2.85(1H,m),3.05-3.22(2H,m),3.08(1H,s),3.14(1H,dd,J=10.5,7.5Hz),3.43(1H,d,J=5Hz),3.65(1H,d,J=14.5Hz),3.66-3.76(1H,m),3.68(1H,d,J=14.5Hz),3.81(1H,s),3.94(1H,d,J=7.5Hz),4.13-4.20(2H,m),4.29(1H,s),4.35-4.43(2H,m),5.12(1H,d,J=11Hz),5.22(1H,dd,J=11,2.5Hz),6.89-6.99(3H,m),7.20-7.36(7H,m) HR-MS m/z 654.36345 [Calcd.for $C_{37}H_{52}NO_9(M^+-C_8H_{16}NO_3)$:654.36421]
74			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.97(3H,d,J=6.5Hz),0.99(3H,d,J=6.5Hz),1.05-1.80(21H,m),1.88-2.01(2H,m),2.20-2.34(1H,m),2.28(6H,s),2.39-2.49(1H,m),2.62-2.73(1H,m),2.76-2.88(1H,m),3.12(1H,s),3.17(1H,dd,J=10.5,7.5Hz),3.24-3.38(1H,m),3.41(1H,d,J=5Hz),3.64-3.83(2H,m),3.74(2H,s),4.04(1H,d,J=7.5Hz),4.08-4.21(2H,m),4.27-4.45(3H,m),5.15(1H,d,J=10.5Hz),5.22(1H,dd,J=11,2.5Hz),6.92-6.98(3H,m),7.03-7.14(2H,m),7.23-7.36(4H,m) HR-MS m/z 672.35504 [Calcd.for $C_{37}H_{51}FNO_9(M^+-C_8H_{16}NO_3)$:672.35479]
75			淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.90(3H,d,J=6.5Hz),0.99(3H,d,J=7.5Hz),1.08-1.72(20H,m),1.88-1.98(1H,m),2.03(1H,s),2.22-2.37(2H,m),2.26(6H,s),2.63-2.73(1H,m),2.76-2.88(1H,m),3.04-3.16(2H,m),3.15(1H,dd,J=10.5,7.5Hz),3.38(1H,brs),3.40(1H,d,J=4.5Hz),3.64-3.77(1H,m),3.65(1H,d,J=15.5Hz),3.70(1H,d,J=15.5Hz),3.80(1H,s),3.92(1H,d,J=7.5Hz),4.11-4.20(2H,m),4.34-4.44(3H,m),5.13(1H,d,J=11Hz),5.22(1H,dd,J=11,2.5Hz),6.92-7.01(4H,m),7.06-7.11(1H,m),7.11-7.15(1H,m),7.24-7.34(3H,m) HR-MS m/z 672.35671 [Calcd.for $C_{37}H_{51}FNO_9(M^+-C_8H_{16}NO_3)$:672.35479]

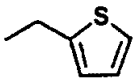
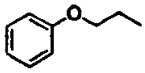
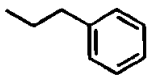
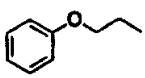
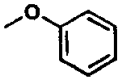
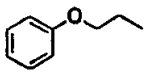
实施例	R^2	R^3	性状和物理性质
76			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),0.99(3H,d,J=7.5Hz),1.08-1.63(20H,m),1.88-1.98(1H,m),2.01(1H,s),2.22-2.38(2H,m),2.28(6H,s),2.63-2.73(1H,m),2.75-2.86(1H,m),3.05-3.15(2H,m),3.16(1H,dd,J=10.5,7.5Hz),3.29(1H,s),3.39(1H,d,J=5Hz),3.62(1H,d,J=15Hz),3.66-3.76(1H,m),3.67(1H,d,J=15Hz),3.79(1H,s),3.91(1H,d,J=7.5Hz),4.11-4.21(2H,m),4.32-4.43(3H,m),5.12(1H,d,J=11Hz),5.21(1H,dd,J=11,2.5Hz),6.90-7.06(5H,m),7.22-7.36(4H,m) HR-MS m/z 672.35472 [Calcd.for $C_{37}H_{51}FNO_9(M^+-C_8H_{16}NO_3)$:672.35479]
77			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.96(3H,d,J=6.5Hz),0.99(3H,d,J=6.5Hz),1.06-1.70(21H,m),1.88-2.01(2H,m),2.22-2.34(1H,m),2.28(6H,s),2.40-2.49(1H,m),2.63-2.73(1H,m),2.76-2.88(1H,m),3.11(1H,s),3.18(1H,dd,J=10.5,7.5Hz),3.22-3.38(1H,m),3.43(1H,d,J=5Hz),3.66-3.77(1H,m),3.80(1H,s),3.83(1H,d,J=16Hz),3.90(1H,d,J=16Hz),4.06(1H,d,J=7.5Hz),4.10-4.21(2H,m),4.28-4.44(3H,m),5.15(1H,d,J=11Hz),5.21(1H,dd,J=11,2.5Hz),6.90-6.99(3H,m),7.20-7.33(4H,m),7.35-7.42(2H,m) HR-MS m/z 688.32411 [Calcd.for $C_{37}H_{51}{}^{35}ClNO_9(M^+-C_8H_{16}NO_3)$:688.32524] HR-MS m/z 690.32091 [Calcd.for $C_{37}H_{51}{}^{37}ClNO_9(M^+-C_8H_{16}NO_3)$:690.32228]

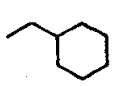
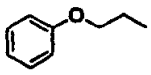
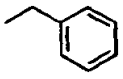
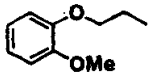
实施例	R^2	R^3	性状和物理性质
78			淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.92(3H,d,J=6.5Hz),0.99(3H,d,J=6.5Hz),1.05-1.75(20H,m),1.88-1.98(1H,m),2.02(1H,s),2.20-2.38(2H,m),2.28(6H,s),2.63-2.72(1H,m),2.78-2.87(1H,m),3.04-3.18(2H,m),3.15(1H,dd,J=10.5,7.5Hz),3.28(1H,brs),3.39(1H,d,J=5Hz),3.64(1H,d,J=15.5Hz),3.67-3.75(1H,m),3.68(1H,d,J=15.5Hz),3.80(1H,s),3.90(1H,d,J=7.5Hz),4.12-4.20(2H,m),4.34-4.42(3H,m),5.14(1H,d,J=10.5Hz),5.22(1H,dd,J=11.5,2Hz),6.91-6.99(3H,m),7.22-7.37(6H,m) HR-MS m/z 704.32078 [Calcd.for $C_{37}H_{51}{}^{35}ClNO_{10}(M^+-C_8H_{16}NO_2)$:704.32015] HR-MS m/z 706.31744 [Calcd.for $C_{37}H_{51}{}^{37}ClNO_{10}(M^+-C_8H_{16}NO_2)$:706.31720]
79			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.89(3H,d,J=6.5Hz),0.99(3H,d,J=6.5Hz),1.05-1.75(20H,m),1.88-1.98(1H,m),2.02(1H,s),2.20-2.37(2H,m),2.28(6H,s),2.63-2.72(1H,m),2.77-2.85(1H,m),2.98-3.06(1H,m),3.12(1H,s),3.16(1H,dd,J=10.5,7.5Hz),3.29(1H,brs),3.38(1H,d,J=5Hz),3.62(1H,d,J=15Hz),3.66-3.75(1H,m),3.67(1H,d,J=15Hz),3.79(1H,s),3.89(1H,d,J=7.5Hz),4.11-4.20(2H,m),4.33-4.42(3H,m),5.13(1H,d,J=11Hz),5.21(1H,dd,J=11,2Hz),6.91-6.99(3H,m),7.27-7.34(6H,m) HR-MS m/z 704.31802 [Calcd.for $C_{37}H_{51}{}^{35}ClNO_{10}(M^+-C_8H_{16}NO_2)$:704.32015] HR-MS m/z 706.31411 [Calcd.for $C_{37}H_{51}{}^{37}ClNO_{10}(M^+-C_8H_{16}NO_2)$:706.31720]

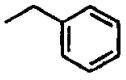
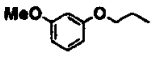
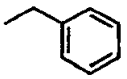
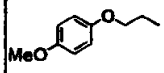
实施例	R^2	R^3	性状和物理性质
80			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.82(3H,t,J=7.5Hz),0.97(3H,d,J=6.5Hz),0.99(3H,d,J=8Hz),1.06-1.70(21H,m),1.87-1.98(2H,m),2.22-2.33(1H,m),2.29(6H,s),2.41-2.50(1H,m),2.61-2.72(1H,m),2.74-2.84(1H,m),3.12(1H,s),3.18(1H,dd,J=10.5,7.5Hz),3.31-3.40(1H,m),3.44(1H,d,J=4.5Hz),3.58-3.87(2H,m),3.62(1H,d,J=16Hz),3.77(1H,d,J=16Hz),3.81(3H,s),4.08(1H,d,J=7.5Hz),4.10-4.20(2H,m),4.31-4.43(3H,m),5.11(1H,d,J=11Hz),5.22(1H,dd,J=11,2Hz),6.85-6.99(6H,m),7.18-7.34(3H,m) HR-MS m/z 684.37342 [Calcd.for $C_{38}H_{54}NO_{10}(M^+-C_8H_{16}NO_3)$:684.37477]
81			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.82(3H,t,J=7.5Hz),0.90(3H,d,J=7.5Hz),0.99(3H,d,J=6.5Hz),1.10-1.80(21H,m),1.88-2.00(2H,m),2.21-2.38(2H,m),2.26(6H,s),2.63-2.71(1H,m),2.77-2.85(1H,m),3.01-3.20(2H,m),3.14(1H,dd,J=10.5,7.5Hz),3.41(1H,d,J=4.5Hz),3.62(1H,d,J=14.5Hz),3.65-3.85(2H,m),3.67(1H,d,J=14.5Hz),3.80(3H,s),3.91(1H,d,J=7.5Hz),4.10-4.21(2H,m),4.32-4.45(3H,m),5.12(1H,d,J=11Hz),5.22(1H,dd,J=11.5,2Hz),6.81(1H,dd,J=8,2Hz),6.86-7.00(5H,m),7.25-7.35(3H,m) HR-MS m/z 700.36985 [Calcd.for $C_{38}H_{54}NO_{11}(M^+-C_8H_{16}NO_2)$:700.36969]
82			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.82(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),0.99(3H,d,J=7.5Hz),1.07-1.68(20H,m),1.88-2.00(2H,m),2.20-2.39(2H,m),2.27(6H,s),2.65-2.72(1H,m),2.74-2.87(1H,m),3.07-3.20(2H,m),3.15(1H,dd,J=10,7.5Hz),3.26(1H,brs),3.41(1H,d,J=4.5Hz),3.58(1H,d,J=15Hz),3.63(1H,d,J=15Hz),3.68-3.82(2H,m),3.79(3H,s),3.93(1H,d,J=7.5Hz),4.15(2H,t,J=4.5Hz),4.37-4.43(3H,m),5.11(1H,d,J=11Hz),5.21(1H,dd,J=11,2Hz),6.80-6.90(2H,m),6.92-7.00(3H,m),7.22-7.33(4H,m) HR-MS m/z 684.37306 [Calcd.for $C_{38}H_{54}NO_{10}(M^+-C_8H_{16}NO_3)$:684.37477]

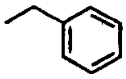
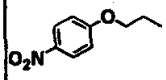
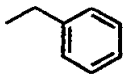
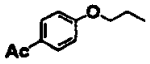
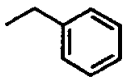
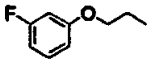
实施例	R^2	R^3	性状和物理性质
83			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.75-0.85(6H,m),0.99(3H,d,J=7.5Hz),1.10-1.60(20H,m),1.85-2.00(2H,m),2.20-2.40(2H,m),2.28(6H,s),2.38(3H,s),2.60-2.70(1H,m),2.75-2.85(1H,m),3.11(1H,s),3.13-3.30(2H,m),3.17(1H,dd,J=10.5,7.5Hz),3.42(1H,d,J=5Hz),3.60-3.75(1H,m),3.65(1H,d,J=14.5Hz),3.72(1H,d,J=14.5Hz),3.79(1H,s),3.98(1H,d,J=7.5Hz),4.15(2H,t,J=4.5Hz),4.35-4.40(3H,m),5.11(1H,d,J=11Hz),5.20(1H,dd,J=11,2.5Hz),6.90-7.00(3H,m),7.11-7.33(6H,m) HR-MS m/z 842.49163 [Calcd.for $C_{46}H_{70}N_2O_{12}$(M$^+$):842.49288]
84			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.82(3H,t,J=7.5Hz),0.89(3H,d,J=6.5Hz),0.99(3H,d,J=6.5Hz),1.04-1.60(20H,m),1.90-2.00(2H,m),2.20-2.40(2H,m),2.26(6H,s),2.34(3H,s),2.62-2.71(1H,m),2.78-2.83(1H,m),3.02-3.20(2H,m),3.14(1H,dd,J=10,7.5Hz),3.24(1H,brs),3.41(1H,d,J=4.5Hz),3.61(1H,d,J=15Hz),3.65(1H,d,J=15Hz),3.68-3.75(1H,m),3.80(1H,s),3.92(1H,d,J=7.5Hz),4.15(2H,t,J=4.5Hz),4.35-4.43(3H,m),5.12(1H,d,J=10.5Hz),5.22(1H,dd,J=11.5,2Hz),6.90-7.00(3H,m),7.03-7.24(4H,m),7.26-7.35(2H,m) HR-MS m/z 842.49284 [Calcd.for $C_{46}H_{70}N_2O_{12}$(M$^+$):842.49288]
85			淡黄色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.82(3H,t,J=7.5Hz),0.88(3H,d,J=6.5Hz),0.99(3H,d,J=6.5Hz),1.05-1.75(20H,m),1.85-2.00(2H,m),2.20-2.40(2H,m),2.27(6H,s),2.28(3H,s),2.63-2.72(1H,m),2.75-2.85(1H,m),3.00-3.18(2H,m),3.15(1H,dd,J=10,7.5Hz),3.25(1H,brs),3.41(1H,d,J=4.5Hz),3.60(1H,d,J=14.5Hz),3.65(1H,d,J=14.5Hz),3.65-3.75(1H,m),3.80(1H,s),3.95(1H,d,J=7.5Hz),4.15(2H,t,J=4.5Hz),4.35-4.40(3H,m),5.11(1H,d,J=10.5Hz),5.21(1H,dd,J=11.5,2Hz),6.90-7.00(3H,m),7.12(2H,d,J=8Hz),7.23(2H,d,J=8Hz),7.26-7.35(2H,m) HR-MS m/z 842.49114 [Calcd.for $C_{46}H_{70}N_2O_{12}$(M$^+$):842.49288]

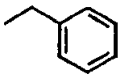
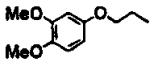
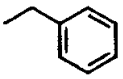
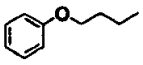
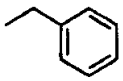
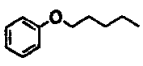
实施例	R^2	R^3	性状和物理性质
86			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.92(3H,d,J=6.5Hz),0.99(3H,d,J=7.5Hz),1.05-1.70(20H,m),1.88-1.98(1H,m),2.02(1H,s),2.20-2.37(2H,m),2.27(6H,s),2.63-2.72(1H,m),2.78-2.88(1H,m),3.05-3.18(2H,m),3.15(1H,dd,J=10.5,7.5Hz),3.27(1H,brs),3.39(1H,d,J=5Hz),3.63(1H,d,J=15.5Hz),3.66-3.76(1H,m),3.67(1H,d,J=15.5Hz),3.80(1H,s),3.90(1H,d,J=7.5Hz),4.11-4.20(2H,m),4.33-4.43(3H,m),5.14(1H,d,J=10.5Hz),5.22(1H,dd,J=11,2.5Hz),6.90-7.00(3H,m),7.21(1H,t,J=8Hz),7.27-7.34(3H,m),7.41(1H,d,J=8Hz),7.51(1H,d,J=2Hz) HR-MS m/z 748.27195 [Calcd.for $C_{37}H_{51}{}^{79}BrNO_{10}(M^+-C_8H_{16}NO_2)$:748.26965] HR-MS m/z 750.26926 [Calcd.for $C_{37}H_{51}{}^{81}BrNO_{10}(M^+-C_8H_{16}NO_2)$:750.26764]
87			褐色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),1.00(3H,d,J=6.5Hz),1.10-1.75(20H,m),1.85-2.00(1H,m),2.07(1H,s),2.20-2.40(2H,m),2.27(6H,s),2.63-2.71(1H,m),2.75-2.85(1H,m),3.10-3.20(2H,m),3.18(1H,dd,J=10,7.5Hz),3.28(1H,brs),3.38(1H,d,J=5Hz),3.67-3.85(2H,m),3.77(1H,d,J=15.5Hz),3.82(1H,d,J=15.5Hz),3.95(1H,d,J=7.5Hz),4.12-4.17(2H,m),4.35-4.43(3H,m),5.15(1H,d,J=11Hz),5.21(1H,dd,J=11.5,2Hz),6.90-7.00(3H,m),7.25-7.32(2H,m),7.53(2H,d,J=8.5Hz),8.20(2H,d,J=8.5Hz) HR-MS m/z 699.34721 [Calcd.for $C_{37}H_{51}N_2O_{11}(M^+-C_8H_{16}NO_3)$:699.34929]

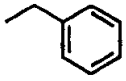
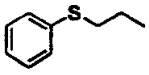
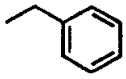
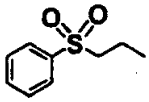
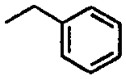
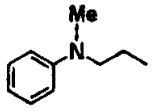
实施例	R^2	R^3	性状和物理性质
88			淡褐色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.98(3H,d,J=6.5Hz),0.99(3H,d,J=7.5Hz),1.07-1.65(20H,m),1.89-1.99(1H,m),2.02(1H,s),2.22-2.40(2H,m),2.28(6H,s),2.64-2.72(1H,m),2.82-2.90(1H,m),3.05-3.18(2H,m),3.15(1H,dd,J=10.5,7.5Hz),3.27(1H,brs),3.41(1H,d,J=4.5Hz),3.67-3.75(1H,m),3.80(1H,s),3.91(1H,d,J=7.5Hz),3.92(2H,s),4.13-4.19(2H,m),4.35-4.43(3H,m),5.15(1H,d,J=11Hz),5.23(1H,dd,J=11,2.5Hz),6.90-7.03(5H,m),7.18-7.36(3H,m) HR-MS m/z 660.31906 [Calcd.for $C_{35}H_{50}NO_9S(M^+-C_8H_{16}NO_3)$:660.32063]
89			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.95(3H,d,J=6.5Hz),0.99(3H,d,J=7.5Hz),1.10-1.70(20H,m),1.89-2.00(1H,m),2.02(1H,s),2.20-2.40(2H,m),2.26(6H,s),2.65-2.73(3H,m),2.75-2.85(1H,m),2.90-3.10(2H,m),3.10-3.30(4H,m),3.37(1H,d,J=4.5Hz),3.65-3.75(1H,m),3.80(1H,s),3.98(1H,d,J=7.5Hz),4.16(2H,t,J=4.5Hz),4.35-4.42(3H,m),5.14(1H,d,J=11Hz),5.24(1H,dd,J=11,2.5Hz),6.90-7.00(3H,m),7.15-7.35(7H,m) HR-MS m/z 684.37390 [Calcd.for $C_{38}H_{54}NO_{10}(M^+-C_8H_{16}NO_2)$:684.37477]
90			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.86(3H,t,J=7.5Hz),1.01(3H,d,J=6.5Hz),1.10(3H,d,J=6Hz),1.13-1.70(20H,m),1.90-2.00(1H,m),2.17(1H,s),2.25(6H,s),2.30-2.41(1H,m),2.41-2.50(1H,m),2.65-2.75(1H,m),2.97-3.03(1H,m),3.13(1H,s),3.18(1H,dd,J=10.5,7.5Hz),3.30-3.40(2H,m),3.52(1H,d,J=4.5Hz),3.67-3.82(2H,m),4.12-4.20(2H,m),4.25(1H,d,J=6.5Hz),4.36-4.45(3H,m),4.98(1H,d,J=11.5Hz),5.27(1H,dd,J=11.5,2Hz),6.87-6.99(3H,m),7.16-7.33(5H,m),7.35-7.42(2H,m) HR-MS m/z 830.45399 [Calcd.for $C_{44}H_{66}N_2O_{13}(M^+)$:830.45649]

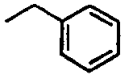
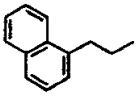
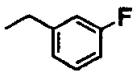
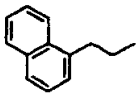
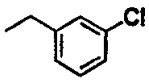
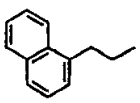
实施例	R^2	R^3	性状和物理性质
91			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.92-1.88(32H,m),0.99(3H,d,J=7.5Hz),1.06(3H,d,J=6.5Hz),1.89-2.03(2H,m),2.15-2.38(3H,m),2.31(6H,s),2.43-2.54(1H,m),2.64-2.73(1H,m),2.80-2.89(1H,m),3.13(1H,brs),3.20(1H,dd,J=10.5,7.5Hz),3.28-3.40(2H,m),3.65-3.76(1H,m),3.80(1H,s),4.02(1H,d,J=6.5Hz),4.11-4.21(2H,m),4.28-4.45(3H,m),5.14(1H,d,J=11Hz),5.23(1H,dd,J=11,2.5Hz),6.92-7.00(3H,m),7.27-7.34(2H,m) HR-MS m/z 834.52338 [Calcd.for $C_{45}H_{74}N_2O_{12}(M^+)$:834.52418]
92			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.85(3H,d,J=6.5Hz),0.98(3H,d,J=7.5Hz),1.05-1.63(20H,m),1.87-1.98(1H,m),2.13(1H,s),2.21-2.37(2H,m),2.26(6H,s),2.60-2.70(1H,m),2.76-2.85(1H,m),3.03-3.18(3H,m),3.24(1H,s),3.42(1H,d,J=4.5Hz),3.65(1H,d,J=14.5Hz),3.67-3.77(1H,m),3.70(1H,d,J=14.5Hz),3.81(1H,s),3.89(3H,s),3.94(1H,d,J=6.5Hz),4.12-4.23(2H,m),4.35-4.45(3H,m),5.09(1H,d,J=11Hz),5.21(1H,dd,J=11,2.5Hz),6.85-6.98(4H,m),7.18-7.41(5H,m) HR-MS m/z 700.37096 [Calcd.for $C_{38}H_{54}NO_{11}(M^+-C_8H_{16}NO_2)$:700.36969]

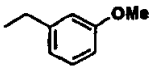
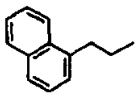
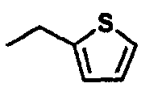
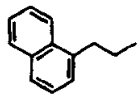
实施例	R^2	R^3	性状和物理性质
93			淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),0.99(3H,d,J=6.5Hz),1.05-1.65(20H,m),1.87-1.99(2H,m),2.22-2.37(2H,m),2.26(6H,s),2.63-2.72(1H,m),2.76-2.87(1H,m),3.03-3.19(2H,m),3.15(1H,dd,J=10.5,7.5Hz),3.27(1H,brs),3.43(1H,d,J=4.5Hz),3.60-3.83(2H,m),3.65(1H,d,J=15Hz),3.70(1H,d,J=15Hz),3.79(3H,s),3.94(1H,d,J=7.5Hz),4.07-4.20(2H,m),4.32-4.41(3H,m),5.12(1H,d,J=11Hz),5.21(1H,dd,J=11.5,2Hz),6.45-6.57(3H,m),7.20(1H,t,J=8Hz),7.23-7.40(5H,m) HR-MS m/z 684.37747 [Calcd.for $C_{38}H_{54}NO_{10}$(M^+-$C_9H_{13}NO_3$):684.37477]
94			淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),1.00(3H,d,J=6.5Hz),1.05-1.63(20H,m),1.87-1.98(1H,m),2.13(1H,s),2.21-2.38(2H,m),2.26(6H,s),2.64-2.71(1H,m),2.77-2.85(1H,m),3.05-3.18(2H,m),3.15(1H,dd,J=10.5,7.5Hz),3.26(1H,s),3.41(1H,d,J=4.5Hz),3.64(1H,d,J=14.5Hz),3.65-3.75(1H,m),3.69(1H,d,J=14.5Hz),3.75(3H,s),3.81(1H,s),3.94(1H,d,J=7.5Hz),4.03-4.15(2H,m),4.33-4.39(2H,m),4.39(1H,s),5.12(1H,d,J=11Hz),5.21(1H,dd,J=11,2.5Hz),6.86(2H,d,J=9.5Hz),6.90(2H,d,J=9.5Hz),7.18-7.40(5H,m) HR-MS m/z 700.36983 [Calcd.for $C_{38}H_{54}NO_{11}$(M^+-$C_8H_{16}NO_2$):700.36969]

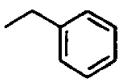
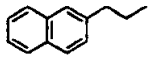
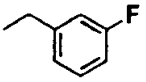
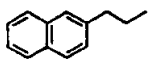
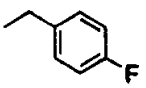
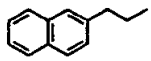
实施例	R^2	R^3	性状和物理性质
95			淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.75-0.85(6H,m),1.01(3H,d,J=7.5Hz),1.05-1.73(20H,m),1.86-1.97(1H,m),1.98(1H,s),2.18-2.37(2H,m),2.26(6H,s),2.63-2.72(1H,m),2.74-2.84(1H,m),3.00-3.08(2H,m),3.12(1H,dd,J=10.5,7.5Hz),3.28(1H,brs),3.35(1H,d,J=5Hz),3.57-3.72(1H,m),3.63(1H,d,J=14.5Hz),3.67(1H,d,J=14.5Hz),3.75(1H,s),3.90(1H,d,J=7.5Hz),4.14-4.23(1H,m),4.24-4.30(1H,m),4.31(1H,s),4.40-4.50(2H,m),4.99(1H,d,J=10.5Hz),5.16(1H,dd,J=11,2Hz),7.05(2H,d,J=9Hz),7.24-7.37(5H,m),8.26(2H,d,J=9Hz) HR-MS m/z 675.39931 [Calcd.for $C_{37}H_{57}NO_{10}$(M^+-$C_8H_{10}N_2O_4$):675.39825]
96			淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.85(3H,d,J=6.5Hz),1.00(3H,d,J=6.5Hz),1.05-1.65(20H,m),1.87-1.97(2H,m),2.20-2.38(2H,m),2.26(6H,s),2.52(3H,s),2.63-2.72(1H,m),2.76-2.84(1H,m),3.03-3.17(2H,m),3.14(1H,dd,J=10,7Hz),3.27(1H,s),3.37(1H,d,J=5Hz),3.63(1H,d,J=14.5Hz),3.63-3.75(1H,m),3.68(1H,d,J=14.5Hz),3.79(1H,s),3.92(1H,d,J=7.5Hz),4.15-4.27(2H,m),4.34(1H,s),4.37-4.47(2H,m),5.05(1H,d,J=11Hz),5.20(1H,dd,J=11,2.5Hz),6.99(2H,d,J=8.5Hz),7.17-7.40(5H,m),7.97(2H,d,J=8.5Hz) HR-MS m/z 712.36975 [Calcd.for $C_{39}H_{54}NO_{11}$(M^+-$C_6H_{16}NO_2$):712.36969]
97			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),0.99(3H,d,J=6.5Hz),1.05-1.73(20H,m),1.87-1.98(2H,m),2.20-2.41(2H,m),2.29(6H,s),2.63-2.72(1H,m),2.76-2.86(1H,m),3.03-3.20(2H,m),3.16(1H,dd,J=10.5,7.5Hz),3.27(1H,brs),3.42(1H,d,J=5Hz),3.60-3.75(1H,m),3.65(1H,d,J=14.5Hz),3.69(1H,d,J=14.5Hz),3.79(1H,s),3.93(1H,d,J=6.5Hz),4.09-4.19(2H,m),4.27-4.43(3H,m),5.11(1H,d,J=11Hz),5.20(1H,dd,J=11,2.5Hz),6.61-6.70(2H,m),6.75(1H,dd,J=8.5,2.5Hz),7.21-7.38(6H,m) HR-MS m/z 846.46834 [Calcd.for $C_{45}H_{67}FN_2O_{12}$(M^+):846.46781]

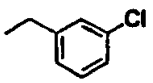
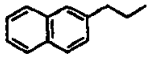
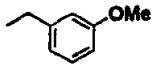
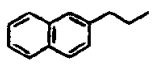
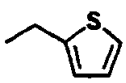
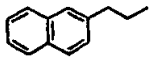
实施例	R^2	R^3	性状和物理性质
98			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),1.00(3H,d,J=7.5Hz),1.07-1.80(20H,m),1.88-1.98(1H,m),2.08(1H,s),2.23-2.38(2H,m),2.26(6H,s),2.65-2.72(1H,m),2.77-2.87(1H,m),3.03-3.12(1H,m),3.13(1H,s),3.15(1H,dd,J=10.5,7.5Hz),3.29(1H,brs),3.43(1H,d,J=4.5Hz),3.63(1H,d,J=15Hz),3.66-3.76(1H,m),3.69(1H,d,J=15Hz),3.79(1H,s),3.82(3H,s),3.86(3H,s),3.94(1H,d,J=7.5Hz),4.05-4.15(2H,m),4.33-4.40(2H,m),4.43(1H,s),5.12(1H,d,J=10.5Hz),5.21(1H,dd,J=11.5,2Hz),6.43(1H,dd,J=8.5,3Hz),6.56(1H,d,J=3Hz),6.79(1H,d,J=8.5Hz),7.22-7.40(5H,m) HR-MS m/z 714.38545 [Calcd.for $C_{39}H_{58}NO_{11}$(M^+-$C_8H_{16}NO_3$):714.38534]
99			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.88(3H,d,J=6.5Hz),1.00(3H,d,J=6.5Hz),1.10-1.80(21H,m),1.87-1.98(1H,m),2.05-2.18(2H,m),2.21-2.30(1H,m),2.27(6H,s),2.30-2.38(1H,m),2.60-2.72(1H,m),2.76-2.87(1H,m),3.03-3.18(1H,m),3.13(1H,s),3.16(1H,dd,J=10.5,7.5Hz),3.29(1H,brs),3.46(1H,d,J=5Hz),3.60-3.75(1H,m),3.66(1H,d,J=15Hz),3.70(1H,d,J=15Hz),3.73(1H,s),3.95(1H,d,J=7.5Hz),4.00-4.10(2H,m),4.15-4.27(2H,m),4.42(1H,s),5.14(1H,d,J=11Hz),5.21(1H,dd,J=11,2.5Hz),6.88-6.97(3H,m),7.23-7.38(7H,m) HR-MS m/z 668.38032 [Calcd.for $C_{38}H_{54}NO_9$(M^+-$C_8H_{16}NO_3$):668.37986]
100			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),1.01(3H,d,J=6.5Hz),1.03-2.00(26H,m),2.22-2.40(2H,m),2.29(6H,s),2.60-2.70(1H,m),2.77-2.85(1H,m),3.05-3.13(2H,m),3.17(1H,dd,J=10,7.5Hz),3.28(1H,brs),3.48(1H,d,J=5Hz),3.61-3.73(4H,m),3.93-4.03(2H,m),3.96(1H,d,J=7.5Hz),4.05-4.13(2H,m),4.45(1H,s),5.14(1H,d,J=11Hz),5.21(1H,dd,J=11,2.5Hz),6.85-7.00(3H,m),7.20-7.40(7H,m) HR-MS m/z 698.39146 [Calcd.for $C_{39}H_{56}NO_{10}$(M^+-$C_8H_{16}NO_2$):698.39042]

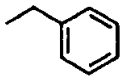
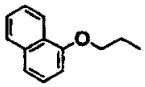
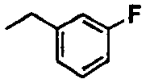
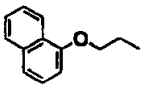
实施例	R^2	R^3	性状和物理性质
101			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.88(3H,d,J=6.5Hz),1.01(3H,d,J=6.5Hz),1.08-1.70(20H,m),1.85-2.00(1H,m),2.03(1H,s),2.25-2.40(2H,m),2.27(6H,s),2.65-2.70(1H,m),2.75-2.85(1H,m),3.05-3.20(4H,m),3.17(1H,dd,J=10.5,7.5Hz),3.28(1H,brs),3.47(1H,d,J=4.5Hz),3.60-3.75(1H,m),3.65(1H,d,J=15Hz),3.70(1H,d,J=15Hz),3.77(1H,s),3.96(1H,d,J=7.5Hz),4.10-4.25(2H,m),4.29(1H,s),5.16(1H,d,J=10.5Hz),5.21(1H,dd,J=11,2Hz),7.10-7.45(10H,m) HR-MS m/z 686.33608 [Calcd.for $C_{37}H_{52}NO_9S(M^+-C_8H_{16}NO_2)$:686.33628]
102			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.80(3H,t,J=7.5Hz),0.90(3H,d,J=6.5Hz),0.97(3H,d,J=7.5Hz),1.05-1.70(20H,m),1.86-1.96(1H,m),2.20-2.40(3H,m),2.27(6H,s),2.63-2.71(1H,m),2.78-2.87(1H,m),3.05-3.20(3H,m),3.28-3.35(2H,m),3.40-3.57(3H,m),3.65(1H,d,J=15Hz),3.70(1H,d,J=15Hz),3.74(1H,s),3.98(1H,d,J=7.5Hz),4.23(1H,s),4.32-4.38(1H,m),4.54-4.62(1H,m),5.15(1H,dd,J=11,2.5Hz),5.19(1H,d,J=11Hz),7.24-7.38(5H,m),7.58-7.69(3H,m),7.90-7.96(2H,m) HR-MS m/z 675.39827 [Calcd.for $C_{37}H_{57}NO_{10}(M^+-C_8H_{11}NO_3S)$:675.39825]
103			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),0.95(3H,d,J=6.5Hz),1.05-1.80(20H,m),1.88-1.97(2H,m),2.20-2.40(2H,m),2.28(6H,s),2.60-2.70(1H,m),2.77-2.85(1H,m),2.94(3H,s),3.05-3.18(2H,m),3.16(1H,dd,J=10.5,7.5Hz),3.27(1H,s),3.40-3.77(5H,m),3.65(1H,d,J=14.5Hz),3.70(1H,d,J=14.5Hz),3.95(1H,d,J=7.5Hz),4.21(2H,t,J=6Hz),4.39(1H,s),5.16(1H,d,J=11Hz),5.21(1H,dd,J=11.5,2Hz),6.65-6.80(3H,m),7.19-7.40(7H,m) HR-MS m/z 683.38970 [Calcd.for $C_{38}H_{55}N_2O_9(M^+-C_8H_{16}NO_3)$:683.39076]

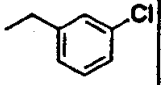
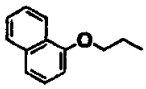
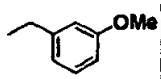
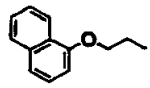
实施例	R^2	R^3	性状和物理性质
104			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.88(3H,d,J=6.5Hz),0.96(3H,d,J=7.5Hz),1.05-1.70(21H,m),1.87-1.99(1H,m),2.19-2.39(2H,m),2.27(6H,s),2.59-2.72(1H,m),2.75-2.89(1H,m),3.03-3.20(2H,m),3.15(1H,dd,J=10,7.5Hz),3.27(1H,brs),3.36-3.50(3H,m),3.52-3.62(1H,m),3.66(1H,d,J=15.5Hz),3.70(1H,d,J=15.5Hz),3.74(1H,s),3.94(1H,d,J=7.5Hz),4.29-4.50(2H,m),4.47(1H,s),5.14(1H,d,J=11Hz),5.22(1H,dd,J=11.5,2Hz),7.19-7.38(6H,m),7.42(1H,t,J=7.5Hz),7.45-7.56(2H,m),7.74(1H,d,J=8.5Hz),7.85(1H,d,J=8Hz),8.05(1H,d,J=8Hz) HR-MS m/z 688.38778 [Calcd.for $C_{41}H_{54}NO_8(M^+-C_8H_{16}NO_3)$:688.38494]
105			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.91(3H,d,J=6.5Hz),0.96(3H,d,J=6.5Hz),1.09-1.75(22H,m),1.90-2.00(1H,m),2.20-2.40(2H,m),2.27(6H,s),2.61-2.71(1H,m),2.79-2.89(1H,m),3.06-3.20(2H,m),3.15(1H,dd,J=10.5,7.5Hz),3.38-3.49(3H,m),3.52-3.63(1H,m),3.65(1H,d,J=15.5Hz),3.70(1H,d,J=15.5Hz),3.74(1H,s),3.93(1H,d,J=7.5Hz),4.32-4.49(3H,m),5.16(1H,d,J=11Hz),5.23(1H,dd,J=11.5,2Hz),6.91-7.17(3H,m),7.22-7.58(5H,m),7.74(1H,d,J=8.5Hz),7.85(1H,d,J=8Hz),8.05(1H,d,J=8.5Hz) HR-MS m/z 706.37457 [Calcd.for $C_{41}H_{53}FNO_8(M^+-C_8H_{16}NO_3)$:706.37552]
106			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.93(3H,d,J=6.5Hz),0.96(3H,d,J=7.5Hz),1.08-1.80(22H,m),1.88-1.99(1H,m),2.20-2.40(2H,m),2.27(6H,s),2.60-2.70(1H,m),2.80-2.90(1H,m),3.05-3.20(2H,m),3.15(1H,dd,J=10,7Hz),3.36-3.48(3H,m),3.52-3.62(1H,m),3.64(1H,d,J=15.5Hz),3.68(1H,d,J=15.5Hz),3.74(1H,s),3.91(1H,d,J=7.5Hz),4.31-4.50(3H,m),5.16(1H,d,J=10.5Hz),5.23(1H,dd,J=11.5,2Hz),7.20-7.60(8H,m),7.74(1H,d,J=7.5Hz),7.85(1H,d,J=8Hz),8.05(1H,d,J=8Hz) HR-MS m/z 722.34775 [Calcd.for $C_{41}H_{53}{}^{35}ClNO_8(M^+-C_8H_{16}NO_3)$:722.34597] HR-MS m/z 724.34617 [Calcd.for $C_{41}H_{53}{}^{37}ClNO_8(M^+-C_8H_{16}NO_3)$:724.34302]

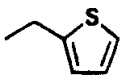
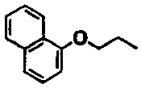
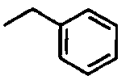
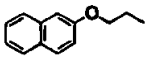
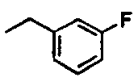
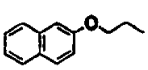
实施例	R^2	R^3	性状和物理性质
107			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.91(3H,d,J=6.5Hz),0.96(3H,d,J=6.5Hz),1.05-1.65(21H,m),1.87-1.99(1H,m),2.17-2.39(2H,m),2.27(6H,s),2.60-2.72(1H,m),2.77-2.90(1H,m),3.01-3.10(1H,m),3.10-3.19(2H,m),3.26(1H,brs),3.35-3.45(3H,m),3.52-3.70(1H,m),3.63(1H,d,J=14.5Hz),3.67(1H,d,J=14.5Hz),3.75(1H,s),3.80(3H,s),3.92(1H,d,J=7.5Hz),4.30-4.50(3H,m),5.15(1H,d,J=10.5Hz),5.23(1H,dd,J=11.5,2Hz),6.78-6.83(1H,m),6.88-6.96(2H,m),7.18-7.27(1H,m),7.35(1H,d,J=7Hz),7.38-7.56(3H,m),7.74(1H,d,J=8Hz),7.85(1H,d,J=8Hz),8.05(1H,d,J=8.5Hz) HR-MS m/z 718.39612 [Calcd.for $C_{42}H_{56}NO_9(M^+-C_8H_{16}NO_3)$:718.39551]
108			淡褐色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.96(3H,d,J=7.5Hz),0.99(3H,d,J=6.5Hz),1.05-1.75(22H,m),1.87-2.00(1H,m),2.17-2.38(2H,m),2.25(6H,s),2.60-2.72(1H,m),2.80-2.92(1H,m),3.04-3.20(3H,m),3.37-3.52(3H,m),3.52-3.63(1H,m),3.75(1H,s),3.85-4.00(1H,m),3.92(2H,s),4.30-4.50(2H,m),4.47(1H,s),5.18(1H,d,J=10.5Hz),5.24(1H,dd,J=11,2.5Hz),6.92-7.04(2H,m),7.22(1H,dd,J=5,1Hz),7.35(1H,d,J=6.5Hz),7.42(1H,t,J=7.5Hz),7.45-7.57(2H,m),7.75(1H,d,J=8Hz),7.85(1H,d,J=8Hz),8.05(1H,d,J=8.5Hz) HR-MS m/z 694.34188 [Calcd.for $C_{39}H_{52}NO_8S(M^+-C_8H_{16}NO_3)$:694.34136]

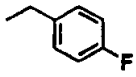
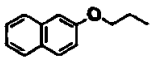
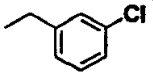
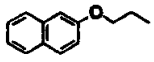
实施例	R^2	R^3	性状和物理性质
109			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.82(3H,t,J=7.5Hz),0.89(3H,d,J=6.5Hz),0.95(3H,d,J=6.5Hz),1.02-1.67(21H,m),1.87-1.98(1H,m),2.18-2.37(2H,m),2.26(6H,s),2.60-2.68(1H,m),2.76-2.85(1H,m),3.03-3.18(5H,m),3.25(1H,brs),3.35(1H,d,J=4.5Hz),3.51-3.60(1H,m),3.65(1H,d,J=15Hz),3.70(1H,d,J=15Hz),3.74(1H,s),3.92(1H,d,J=7.5Hz),4.30-4.39(2H,m),4.49(1H,s),5.12(1H,d,J=11Hz),5.23(1H,dd,J=11.5,2Hz),7.23-7.38(6H,m),7.39-7.49(2H,m),7.64(1H,s),7.77-7.83(3H,m) HR-MS m/z 688.38620 [Calcd.for $C_{41}H_{54}NO_8$(M^+-$C_8H_{16}NO_3$):688.38494]
110			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.83(3H,t,J=7.5Hz),0.92(3H,d,J=6.5Hz),0.95(3H,d,J=6.5Hz),1.06-1.61(21H,m),1.90-1.98(1H,m),2.20-2.34(2H,m),2.26(6H,s),2.63-2.69(1H,m),2.77-2.85(1H,m),3.03-3.15(5H,m),3.25(1H,brs),3.33(1H,d,J=4.5Hz),3.50-3.57(1H,m),3.65(1H,d,J=15.5Hz),3.70(1H,d,J=15.5Hz),3.74(1H,s),3.89(1H,d,J=7.5Hz),4.31-4.38(2H,m),4.49(1H,s),5.14(1H,d,J=11Hz),5.23(1H,dd,J=11,2Hz),6.95-7.01(1H,m),7.06-7.16(2H,m),7.27-7.47(4H,m),7.64(1H,s),7.78-7.82(3H,m) HR-MS m/z 706.37315 [Calcd.for $C_{41}H_{53}FNO_8$(M^+-$C_8H_{16}NO_3$):706.37552]
111			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.82(3H,t,J=7.5Hz),0.89(3H,d,J=6.5Hz),0.95(3H,d,J=6.5Hz),1.03-1.60(22H,m),1.90-2.00(1H,m),2.20-2.40(2H,m),2.26(6H,s),2.60-2.68(1H,m),2.77-2.84(1H,m),3.06-3.20(5H,m),3.33(1H,d,J=4.5Hz),3.50-3.60(1H,m),3.62(1H,d,J=15.5Hz),3.67(1H,d,J=15.5Hz),3.74(1H,s),3.89(1H,d,J=6.5Hz),4.30-4.40(2H,m),4.49(1H,s),5.13(1H,d,J=11Hz),5.23(1H,dd,J=11.5,2Hz),7.02(2H,t,J=9Hz),7.30-7.49(5H,m),7.64(1H,s),7.76-7.84(3H,m) HR-MS m/z 706.37610 [Calcd.for $C_{41}H_{53}FNO_8$(M^+-$C_8H_{16}NO_3$):706.37552]

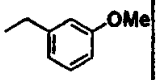
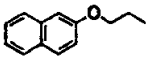
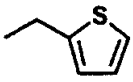
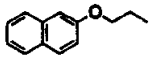
实施例	R^2	R^3	性状和物理性质
112			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.94(3H,d,J=6.5Hz),0.95(3H,d,J=6.5Hz),1.02-1.60(22H,m),1.90-2.00(1H,m),2.20-2.40(2H,m),2.26(6H,s),2.60-2.70(1H,m),2.78-2.87(1H,m),3.02-3.20(5H,m),3.32(1H,d,J=4.5Hz),3.51-3.60(1H,m),3.64(1H,d,J=15.5Hz),3.68(1H,d,J=15.5Hz),3.74(1H,s),3.87(1H,d,J=7Hz),4.32-4.40(2H,m),4.50(1H,s),5.14(1H,d,J=10.5Hz),5.23(1H,dd,J=11.5,2Hz),7.20-7.50(7H,m),7.64(1H,s),7.75-7.82(3H,m) HR-MS m/z 722.34607 [Calcd.for $C_{41}H_{53}{}^{35}ClNO_8(M^+-C_8H_{16}NO_3)$:722.34597] HR-MS m/z 724.34407 [Calcd.for $C_{41}H_{53}{}^{37}ClNO_8(M^+-C_8H_{16}NO_3)$:724.34302]
113			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.92(3H,d,J=6.5Hz),0.95(3H,d,J=6.5Hz),1.00-1.75(22H,m),1.88-1.98(1H,m),2.18-2.36(2H,m),2.26(6H,s),2.60-2.69(1H,m),2.77-2.87(1H,m),2.99-3.17(5H,m),3.34(1H,d,J=5Hz),3.51-3.59(1H,m),3.62(1H,d,J=15Hz),3.67(1H,d,J=15Hz),3.74(1H,s),3.80(3H,s),3.89(1H,d,J=7.5Hz),4.30-4.39(2H,m),4.50(1H,s),5.13(1H,d,J=11Hz),5.23(1H,dd,J=11,2.5Hz),6.81(1H,dd,J=8.5,2Hz),6.89-6.96(2H,m),7.20-7.28(1H,m),7.34(1H,dd,J=8.5,2Hz),7.39-7.49(2H,m),7.64(1H,s),7.75-7.83(3H,m) HR-MS m/z 718.39454 [Calcd.for $C_{42}H_{58}NO_9(M^+-C_8H_{16}NO_3)$:718.39551]
114			淡褐色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.95(3H,d,J=6.5Hz),1.01(3H,d,J=6.5Hz),1.04-1.70(22H,m),1.87-2.00(1H,m),2.17-2.36(2H,m),2.24(6H,s),2.60-2.68(1H,m),2.81-2.90(1H,m),3.03-3.18(5H,m),3.34(1H,d,J=4.5Hz),3.51-3.60(1H,m),3.75(1H,s),3.89(1H,d,J=7.5Hz),3.92(2H,s),4.31-4.41(2H,m),4.50(1H,s),5.16(1H,d,J=11Hz),5.24(1H,dd,J=11.5,2Hz),6.93-6.97(1H,m),6.98-7.02(1H,m),7.23(1H,dd,J=5.5,1Hz),7.34(1H,dd,J=8,1.5Hz),7.39-7.50(2H,m),7.64(1H,s),7.76-7.84(3H,m) HR-MS m/z 694.34085 [Calcd.for $C_{39}H_{52}NO_8S(M^+-C_8H_{16}NO_3)$:694.34136]

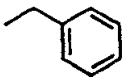
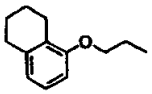
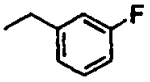
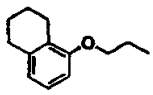
实施例	R^2	R^3	性状和物理性质
115			无色非晶形固体 NMR 谱 $\delta(CDCl_3)$ppm:0.82(3H,t,J=7.5Hz),0.89(3H,d,J=6.5Hz),0.93(3H,d,J=7.5Hz),1.02-1.65(20H,m),1.81(1H,s),1.88-2.00(1H,m),2.17-2.40(2H,m),2.27(6H,s),2.63-2.72(1H,m),2.77-2.86(1H,m),3.00-3.17(3H,m),3.25(1H,s),3.37(1H,d,J=4.5Hz),3.60-3.75(1H,m),3.65(1H,d,J=15Hz),3.70(1H,d,J=15Hz),3.78(1H,s),3.91(1H,d,J=7.5Hz),4.28-4.40(2H,m),4.42(1H,s),4.48-4.56(2H,m),5.12(1H,d,J=10.5Hz),5.20-5.26(1H,m),6.84(1H,d,J=7.5Hz),7.21-7.54(9H,m),7.78(1H,d,J=8Hz),8.29(1H,d,J=8.5Hz) HR-MS m/z 705.38961 [Calcd.for $C_{41}H_{55}NO_9$(M^++1-$C_8H_{16}NO_3$):705.38768]
116			无色非晶形固体 NMR 谱 $\delta(CDCl_3)$ppm:0.83(3H,t,J=7.5Hz),0.92(3H,d,J=6.5Hz),0.93(3H,d,J=6Hz),1.02-1.68(20H,m),1.83(1H,s),1.90-2.00(1H,m),2.20-2.38(2H,m),2.25(6H,s),2.65-2.72(1H,m),2.78-2.88(1H,m),3.00-3.16(2H,m),3.12(1H,dd,J=10.5,7.5Hz),3.25(1H,brs),3.36(1H,d,J=4.5Hz),3.60-3.76(1H,m),3.65(1H,d,J=15Hz),3.70(1H,d,J=15Hz),3.78(1H,s),3.90(1H,d,J=7.5Hz),4.30-4.40(2H,m),4.43(1H,s),4.50-4.59(2H,m),5.13(1H,d,J=11Hz),5.23(1H,dd,J=11,2.5Hz),6.85(1H,d,J=8Hz),6.92-7.16(3H,m),7.21-7.55(5H,m),7.79(1H,d,J=7.5Hz),8.29(1H,d,J=8Hz) HR-MS m/z 722.36943 [Calcd.for $C_{41}H_{53}FNO_9$(M^+-$C_8H_{16}NO_3$):722.37044]

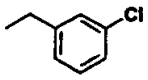
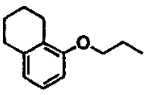
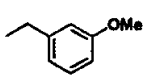
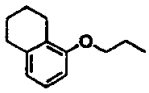
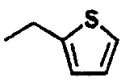
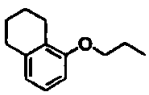
实施例	R^2	R^3	性状和物理性质
117			淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.93(3H,d,J=6.5Hz),0.94(3H,d,J=6.5Hz),1.00-1.68(20H,m),1.82(1H,s),1.90-2.00(1H,m),2.20-2.40(2H,m),2.26(6H,s),2.64-2.72(1H,m),2.79-2.90(1H,m),3.00-3.10(1H,m),3.12(1H,dd,J=10,7.5Hz),3.13(1H,s),3.26(1H,brs),3.35(1H,d,J=5Hz),3.60-3.75(1H,m),3.63(1H,d,J=15.5Hz),3.68(1H,d,J=15.5Hz),3.78(1H,s),3.88(1H,d,J=6.5Hz),4.31-4.39(2H,m),4.43(1H,s),4.49-4.56(2H,m),5.13(1H,d,J=11Hz),5.24(1H,dd,J=11.5,2Hz),6.84(1H,d,J=8Hz),7.20-7.55(8H,m),7.79(1H,d,J=7.5Hz),8.29(1H,d,J=8Hz) HR-MS m/z 738.33841 [Calcd.for $C_{41}H_{53}{}^{35}ClNO_9$($M^+$-$C_8H_{16}NO_3$):738.34089] HR-MS m/z 740.34047 [Calcd.for $C_{41}H_{53}{}^{37}ClNO_9$($M^+$-$C_8H_{16}NO_3$):740.33793]
118			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.92(3H,d,J=6.5Hz),0.93(3H,d,J=7.5Hz),1.00-1.65(20H,m),1.81(1H,s),1.88-1.96(1H,m),2.18-2.38(2H,m),2.26(6H,s),2.63-2.72(1H,m),2.78-2.87(1H,m),2.96-3.06(1H,m),3.11(1H,dd,J=10.5,7.5Hz),3.13(1H,s),3.24(1H,s),3.38(1H,d,J=4.5Hz),3.58-3.74(1H,m),3.62(1H,d,J=14.5Hz),3.67(1H,d,J=14.5Hz),3.78(1H,s),3.81(3H,s),3.89(1H,d,J=7.5Hz),4.30-4.40(2H,m),4.42(1H,s),4.48-4.57(2H,m),5.13(1H,d,J=11Hz),5.23(1H,dd,J=11.5,2Hz),6.81(1H,dd,J=8,1.5Hz),6.85(1H,d,J=6.5Hz),6.89-6.98(2H,m),7.23(1H,t,J=8Hz),7.38(1H,t,J=8Hz),7.42-7.54(3H,m),7.79(1H,d,J=7.5Hz),8.29(1H,d,J=8.5Hz) HR-MS m/z 734.39088 [Calcd.for $C_{42}H_{58}NO_{10}$(M^+-$C_8H_{16}NO_3$):734.39042]

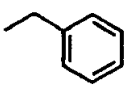
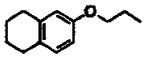
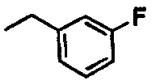
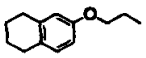
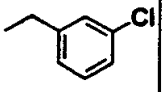
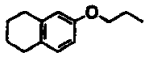
实施例	R^2	R^3	性状和物理性质
119			淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.93(3H,d,J=6.5Hz),0.98-1.70(19H,m),1.01(3H,d,J=6.5Hz),1.82(1H,s),1.89-2.00(1H,m),2.15-2.40(2H,m),2.25(6H,s),2.62-2.75(1H,m),2.80-2.93(1H,m),3.00-3.33(3H,m),3.11(1H,dd,J=10,7.5Hz),3.37(1H,d,J=4.5Hz),3.64-3.76(1H,m),3.78(1H,s),3.85-3.95(3H,m),4.27-4.40(2H,m),4.44(1H,s),4.48-4.57(2H,m),5.16(1H,d,J=11Hz),5.25(1H,dd,J=11.5,2Hz),6.85(1H,d,J=7.5Hz),6.92-7.02(2H,m),7.18-7.28(1H,m),7.32-7.56(4H,m),7.79(1H,d,J=7.5Hz),8.30(1H,d,J=8.5Hz) HR-MS m/z 710.33546 [Calcd.for $C_{39}H_{52}NO_9S(M^+-C_8H_{16}NO_3)$:710.33628]
120			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.86(3H,d,J=6.5Hz),0.99(3H,d,J=6.5Hz),1.02-1.73(20H,m),1.88-1.98(1H,m),2.09(1H,s),2.20-2.38(2H,m),2.27(6H,s),2.63-2.73(1H,m),2.77-2.86(1H,m),3.02-3.18(2H,m),3.14(1H,dd,J=10.5,7.5Hz),3.26(1H,brs),3.43(1H,d,J=4.5Hz),3.65(1H,d,J=15.5Hz),3.67-3.77(1H,m),3.70(1H,d,J=15.5Hz),3.81(1H,s),3.93(1H,d,J=7.5Hz),4.22-4.33(2H,m),4.39(1H,s),4.40-4.50(2H,m),5.15(1H,d,J=11.5Hz),5.23(1H,dd,J=11.5,2Hz),7.15(1H,d,J=2.5Hz),7.20-7.44(8H,m),7.71-7.80(3H,m) HR-MS m/z 720.37571 [Calcd.for $C_{41}H_{54}NO_{10}(M^+-C_8H_{16}NO_2)$:720.37477]
121			淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.89(3H,d,J=6.5Hz),0.99(3H,d,J=7.5Hz),1.02-1.72(20H,m),1.88-1.99(1H,m),2.11(1H,s),2.20-2.37(2H,m),2.25(6H,s),2.65-2.73(1H,m),2.78-2.87(1H,m),3.03-3.18(2H,m),3.14(1H,dd,J=10,7.5Hz),3.26(1H,brs),3.41(1H,d,J=5Hz),3.65-3.77(1H,m),3.65(1H,d,J=15.5Hz),3.69(1H,d,J=15.5Hz),3.82(1H,s),3.92(1H,d,J=7.5Hz),4.22-4.33(2H,m),4.40(1H,s),4.41-4.51(2H,m),5.16(1H,d,J=10.5Hz),5.23(1H,dd,J=11,2Hz),6.98(1H,td,J=8,2.5Hz),7.09(1H,d,J=10Hz),7.13(1H,d,J=8Hz),7.16(1H,d,J=2.5Hz),7.24(1H,dd,J=9,2.5Hz),7.26-7.44(3H,m),7.71-7.81(3H,m) HR-MS m/z 738.36613 [Calcd.for $C_{41}H_{53}FNO_{10}(M^+-C_8H_{16}NO_2)$:738.36535]

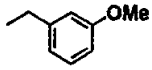
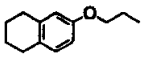
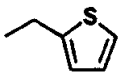
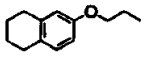
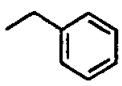
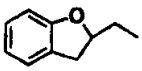
实施例	R^2	R^3	性状和物理性质
122			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.86(3H,d,J=6.5Hz),0.99(3H,d,J=6.5Hz),1.03-1.72(20H,m),1.88-1.98(1H,m),2.09(1H,s),2.20-2.36(2H,m),2.26(6H,s),2.64-2.73(1H,m),2.77-2.86(1H,m),3.04-3.18(2H,m),3.14(1H,dd,J=10.5,7.5Hz),3.26(1H,brs),3.41(1H,d,J=4.5Hz),3.62(1H,d,J=15.5Hz),3.66(1H,d,J=15.5Hz),3.67-3.77(1H,m),3.81(1H,s),3.91(1H,d,J=7.5Hz),4.22-4.33(2H,m),4.39(1H,s),4.40-4.50(2H,m),5.15(1H,d,J=10.5Hz),5.23(1H,dd,J=11,2.5Hz),7.02(2H,t,J=8.5Hz),7.15(1H,d,J=2.5Hz),7.23(1H,dd,J=9,2.5Hz),7.27-7.35(3H,m),7.38-7.44(1H,m),7.71-7.80(3H,m) HR-MS m/z 738.36497 [Calcd.for $C_{41}H_{53}FNO_{10}(M^+-C_8H_{16}NO_2)$:738.36535]
123			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.91(3H,d,J=6.5Hz),0.99(3H,d,J=6.5Hz),1.02-1.77(20H,m),1.89-1.99(1H,m),2.10(1H,s),2.20-2.37(2H,m),2.27(6H,s),2.65-2.73(1H,m),2.78-2.88(1H,m),3.02-3.18(2H,m),3.14(1H,dd,J=10,7.5Hz),3.26(1H,brs),3.41(1H,d,J=4.5Hz),3.63(1H,d,J=15.5Hz),3.67(1H,d,J=15.5Hz),3.68-3.77(1H,m),3.82(1H,s),3.89(1H,d,J=7.5Hz),4.23-4.33(2H,m),4.39(1H,s),4.41-4.50(2H,m),5.16(1H,d,J=11Hz),5.23(1H,dd,J=11.5,2Hz),7.15(1H,d,J=2.5Hz),7.21-7.44(7H,m),7.71-7.80(3H,m) HR-MS m/z 754.33809 [Calcd.for $C_{41}H_{53}{}^{35}ClNO_{10}(M^+-C_8H_{16}NO_2)$:754.33580] HR-MS m/z 756.33135 [Calcd.for $C_{41}H_{53}{}^{37}ClNO_{10}(M^+-C_8H_{16}NO_2)$:756.33285]

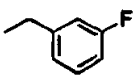
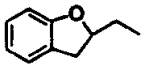
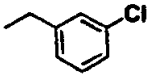
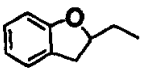
实施例	R^2	R^3	性状和物理性质
124			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.90(3H,d,J=6.5Hz),0.99(3H,d,J=6.5Hz),1.03-1.75(20H,m),1.88-2.00(1H,m),2.08(1H,s),2.20-2.40(2H,m),2.25(6H,s),2.65-2.75(1H,m),2.78-2.88(1H,m),3.00-3.09(1H,m),3.12(1H,s),3.13(1H,dd,J=11,7.5Hz),3.26(1H,brs),3.43(1H,d,J=5Hz),3.60-3.85(2H,m),3.62(1H,d,J=14.5Hz),3.67(1H,d,J=14.5Hz),3.80(3H,s),3.91(1H,d,J=7.5Hz),4.21-4.34(2H,m),4.39(1H,s),4.41-4.51(2H,m),5.16(1H,d,J=11Hz),5.23(1H,dd,J=11,2Hz),6.81(1H,dd,J=8,1.5Hz),6.90-6.97(2H,m),7.11-7.45(5H,m),7.70-7.80(3H,m) HR-MS m/z 734.39212 [Calcd.for $C_{42}H_{56}NO_{10}(M^+-C_6H_{16}NO_3)$:734.39042]
125			淡褐色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),0.98(3H,d,J=6.5Hz),0.99(3H,d,J=6.5Hz),1.02-1.72(20H,m),1.89-1.99(1H,m),2.11(1H,s),2.24(6H,s),2.25-2.36(2H,m),2.65-2.73(1H,m),2.82-2.91(1H,m),3.05-3.16(2H,m),3.13(1H,dd,J=10,8Hz),3.27(1H,brs),3.43(1H,d,J=4.5Hz),3.68-3.77(1H,m),3.82(1H,s),3.91(1H,d,J=7.5Hz),3.92(2H,s),4.22-4.33(2H,m),4.41(1H,s),4.41-4.51(2H,m),5.19(1H,d,J=11.5Hz),5.24(1H,dd,J=11.5,2Hz),6.96(1H,dd,J=5,3.5Hz),7.00(1H,dd,J=3.5,1Hz),7.16(1H,d,J=2.5Hz),7.19-7.27(2H,m),7.33(1H,td,J=7.5,1Hz),7.42(1H,td,J=7.5,1Hz),7.70-7.83(3H,m) HR-MS m/z 726.33411 [Calcd.for $C_{39}H_{52}FNO_{10}S(M^+-C_6H_{16}NO_2)$:726.33120]

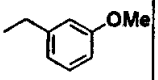
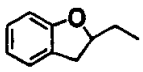
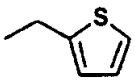
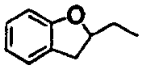
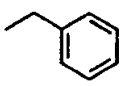
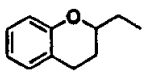
实施例	R^2	R^3	性状和物理性质
126			无色非晶形固体 NMR谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),0.97(3H,d,J=7.5Hz),1.00-1.80(25H,m),1.88-1.98(1H,m),2.20-2.40(2H,m),2.27(6H,s),2.60-2.85(6H,m),3.05-3.20(2H,m),3.15(1H,dd,J=10,7Hz),3.26(1H,brs),3.42(1H,d,J=4.5Hz),3.62-3.78(2H,m),3.65(1H,d,J=14.5Hz),3.69(1H,d,J=14.5Hz),3.94(1H,d,J=7.5Hz),4.10-4.20(2H,m),4.34-4.42(3H,m),5.10(1H,d,J=10.5Hz),5.21(1H,dd,J=11,2.5Hz),6.65(1H,d,J=8Hz),6.71(1H,d,J=7.5Hz),7.05(1H,t,J=8Hz),7.20-7.40(5H,m) HR-MS m/z 724.40608 [Calcd.for $C_{41}H_{58}NO_{10}(M^+-C_8H_{16}NO_2)$:724.40607]
127			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.90(3H,d,J=6.5Hz),0.98(3H,d,J=7.5Hz),1.06-1.83(25H,m),1.88-2.00(1H,m),2.20-2.39(2H,m),2.26(6H,s),2.62-2.88(6H,m),3.05-3.20(2H,m),3.15(1H,dd,J=10.5,7.5Hz),3.28(1H,brs),3.40(1H,d,J=4.5Hz),3.60-3.73(1H,m),3.64(1H,d,J=15Hz),3.69(1H,d,J=15Hz),3.76(1H,s),3.92(1H,d,J=7.5Hz),4.10-4.20(2H,m),4.33-4.43(3H,m),5.11(1H,d,J=11Hz),5.22(1H,dd,J=11.5,2Hz),6.65(1H,d,J=8.5Hz),6.71(1H,d,J=7.5Hz),6.92-7.16(4H,m),7.22-7.32(1H,m) HR-MS m/z 726.39938 [Calcd.for $C_{41}H_{57}FNO_9(M^+-C_8H_{16}NO_3)$:726.40174]

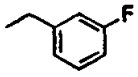
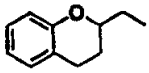
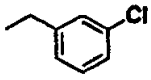
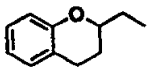
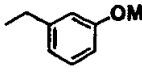
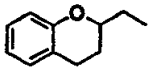
实施例	R^2	R^3	性状和物理性质
128			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.92(3H,d,J=6.5Hz),0.98(3H,d,J=7.5Hz),1.05-1.83(25H,m),1.88-2.00(1H,m),2.20-2.40(2H,m),2.27(6H,s),2.62-2.90(6H,m),3.02-3.20(2H,m),3.15(1H,dd,J=10.5,7.5Hz),3.28(1H,brs),3.39(1H,d,J=4.5Hz),3.60-3.73(1H,m),3.63(1H,d,J=15.5Hz),3.68(1H,d,J=15.5Hz),3.76(1H,s),3.90(1H,d,J=7.5Hz),4.09-4.20(2H,m),4.34-4.43(3H,m),5.11(1H,d,J=11Hz),5.22(1H,dd,J=11,2Hz),6.65(1H,d,J=8.5Hz),6.71(1H,d,J=8Hz),7.05(1H,t,J=8Hz),7.20-7.39(4H,m) HR-MS m/z 742.37428 [Calcd.for $C_{41}H_{57}{}^{35}ClNO_9(M^+-C_8H_{16}NO_3)$:742.37218] HR-MS m/z 744.36812 [Calcd.for $C_{41}H_{57}{}^{37}ClNO_9(M^+-C_8H_{16}NO_3)$:744.36923]
129			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.90(3H,d,J=6.5Hz),0.97(3H,d,J=7.5Hz),1.05-1.83(25H,m),1.86-1.99(1H,m),2.18-2.38(2H,m),2.26(6H,s),2.60-2.87(6H,m),2.98-3.33(4H,m),3.41(1H,d,J=4.5Hz),3.56-3.84(2H,m),3.62(1H,d,J=15Hz),3.66(1H,d,J=15Hz),3.80(3H,s),3.91(1H,d,J=7.5Hz),4.08-4.20(2H,m),4.30-4.44(3H,m),5.10(1H,d,J=11Hz),5.21(1H,dd,J=11,2Hz),6.65(1H,d,J=8.5Hz),6.71(1H,d,J=7.5Hz),6.77-6.85(1H,m),6.89-6.96(2H,m),7.05(1H,t,J=8Hz),7.18-7.28(1H,m) HR-MS m/z 705.40964 [Calcd.for $C_{38}H_{59}NO_{11}(M^+-C_{12}H_{17}NO_2)$:705.40881]
130			淡褐色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.97(3H,d,J=7.5Hz),0.99(3H,d,J=6Hz),1.05-1.83(25H,m),1.78(1H,s),1.88-2.00(1H,m),2.18-2.38(2H,m),2.25(6H,s),2.58-2.92(6H,m),3.01-3.20(3H,m),3.41(1H,d,J=4.5Hz),3.63-3.80(1H,m),3.76(1H,s),3.85-3.99(3H,m),4.05-4.21(2H,m),4.27-4.46(3H,m),5.13(1H,d,J=11Hz),5.23(1H,dd,J=11.5,2Hz),6.65(1H,d,J=8Hz),6.72(1H,d,J=7.5Hz),6.91-7.09(3H,m),7.22(1H,dd,J=5,1Hz), HR-MS m/z 714.36883 [Calcd.for $C_{39}H_{56}NO_8S(M^+-C_8H_{16}NO_3)$:714.36069]

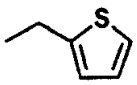
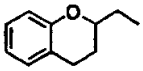
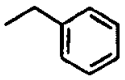
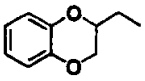
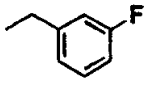
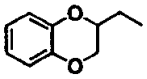
实施例	R^2	R^3	性状和物理性质
131			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.81(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),0.99(3H,d,J=7.5Hz),1.05-1.80(24H,m),1.88-2.00(2H,m),2.20-2.40(2H,m),2.27(6H,s),2.60-2.85(6H,m),3.05-3.18(2H,m),3.15(1H,dd,J=10.5,7.5Hz),3.26(1H,brs),3.43(1H,d,J=5Hz),3.60-3.78(1H,m),3.65(1H,d,J=14.5Hz),3.70(1H,d,J=14.5Hz),3.79(1H,s),3.94(1H,d,J=7.5Hz),4.08-4.15(2H,m),4.32-4.33(2H,m),4.40(1H,s),5.12(1H,d,J=11Hz),5.21(1H,dd,J=11,2.5Hz),6.64(1H,d,J=2.5Hz),6.70(1H,dd,J=8.5,2.5Hz),6.98(1H,d,J=8.5Hz),7.20-7.40(5H,m) HR-MS m/z 724.40385 [Calcd.for $C_{41}H_{58}NO_{10}(M^+-C_8H_{16}NO_2)$:724.40607]
132			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.82(3H,t,J=7.5Hz),0.90(3H,d,J=6.5Hz),0.99(3H,d,J=7.5Hz),1.05-1.80(24H,m),1.90-2.00(1H,m),2.00(1H,s),2.20-2.40(2H,m),2.26(6H,s),2.60-2.85(6H,m),3.05-3.20(2H,m),3.15(1H,dd,J=10,6.5Hz),3.26(1H,brs),3.41(1H,d,J=4.5Hz),3.60-3.75(1H,m),3.64(1H,d,J=15.5Hz),3.70(1H,d,J=15.5Hz),3.79(1H,s),3.92(1H,d,J=7.5Hz),4.07-4.15(2H,m),4.30-4.37(2H,m),4.41(1H,s),5.13(1H,d,J=11Hz),5.22(1H,dd,J=11.5,2Hz),6.64(1H,d,J=2.5Hz),6.70(1H,dd,J=8.5,2.5Hz),6.93-7.00(2H,m),7.05-7.15(2H,m),7.22-7.35(1H,m) HR-MS m/z 742.39624 [Calcd.for $C_{41}H_{57}FNO_{10}(M^+-C_8H_{16}NO_2)$:742.39665]
133			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.83(3H,t,J=7.5Hz),0.92(3H,d,J=6.5Hz),0.99(3H,d,J=6.5Hz),1.05-1.80(24H,m),1.90-2.00(1H,m),2.00(1H,s),2.20-2.40(2H,m),2.27(6H,s),2.60-2.80(6H,m),3.05-3.18(2H,m),3.15(1H,dd,J=10.5,7.5Hz),3.26(1H,brs),3.41(1H,d,J=5Hz),3.60-3.75(1H,m),3.63(1H,d,J=15.5Hz),3.68(1H,d,J=15.5Hz),3.79(1H,s),3.91(1H,d,J=7.5Hz),4.08-4.15(2H,m),4.32-4.38(2H,m),4.41(1H,s),5.13(1H,d,J=11Hz),5.22(1H,dd,J=11,2Hz),6.64(1H,d,J=2.5Hz),6.70(1H,dd,J=8.5,2.5Hz),6.98(1H,d,J=8.5Hz),7.20-7.40(4H,m) HR-MS m/z 742.37291 [Calcd.for $C_{41}H_{57}{}^{35}ClNO_9(M^+-C_8H_{16}NO_3)$:742.37218] HR-MS m/z 744.36812 [Calcd.for $C_{41}H_{57}{}^{37}ClNO_9(M^+-C_8H_{16}NO_3)$:744.36923]

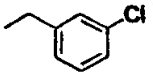
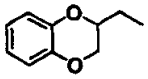
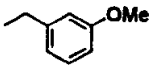
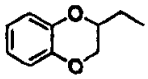
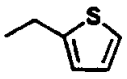
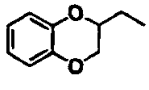
实施例	R^2	R^3	性状和物理性质
134			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.90(3H,d,J=6.5Hz),0.99(3H,d,J=6.5Hz),1.05-1.83(24H,m),1.86-1.99(2H,m),2.18-2.38(2H,m),2.26(6H,s),2.58-2.88(6H,m),2.98-3.33(4H,m),3.43(1H,d,J=4.5Hz),3.55-3.87(2H,m),3.62(1H,d,J=14.5Hz),3.67(1H,d,J=14.5Hz),3.80(3H,s),3.92(1H,d,J=6.5Hz),4.03-4.18(2H,m),4.23-4.46(2H,m),4.40(1H,s),5.12(1H,d,J=11Hz),5.21(1H,dd,J=11,2.5Hz),6.64(1H,d,J=2.5Hz),6.70(1H,dd,J=8.5,2.5Hz),6.80(1H,dd,J=8,2Hz),6.89-6.95(2H,m),6.98(1H,d,J=8.5Hz),7.22(1H,t,J=8Hz) HR-MS m/z 738.41967 [Calcd.for $C_{42}H_{60}NO_{10}(M^+-C_8H_{16}NO_3)$:738.42172]
135			淡褐色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.98(3H,d,J=6.5Hz),0.99(3H,d,J=7.5Hz),1.06-1.82(25H,m),1.88-2.03(2H,m),2.18-2.38(2H,m),2.25(6H,s),2.60-2.91(6H,m),3.03-3.20(3H,m),3.42(1H,d,J=4.5Hz),3.66-3.77(1H,m),3.80(1H,s),3.86-3.98(3H,m),4.06-4.18(2H,m),4.30-4.43(3H,m),5.15(1H,d,J=11Hz),5.23(1H,dd,J=11,2.5Hz),6.61-6.66(1H,m),6.70(1H,dd,J=8,2.5Hz),6.92-7.02(3H,m),7.22(1H,dd,J=5,1Hz) HR-MS m/z 714.36686 [Calcd.for $C_{39}H_{56}NO_9S(M^+-C_8H_{16}NO_3)$:714.36069]
136			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81,0.82(total 3H,each t,J=7.5Hz),0.86,0.89(total 3H,each d,J=6.5Hz),0.95,0.97(total 3H,each t,J=6.5Hz),1.05-1.75(20H,m),1.85,2.02(total 1H,each s),1.87-1.98(1H,m),2.17-2.43(2H,m),2.27(6H,s),2.60-2.72(1H,m),2.75-2.88(1H,m),2.90-3.00(1H,m),3.04-3.20(2H,m),3.16(1H,dd,J=10,7.5Hz),3.21-3.36(2H,m),3.39,3.44(total 1H,each d,J=5Hz),3.60-3.74(1H,m),3.66(1H,d,J=15.5Hz),3.70(1H,d,J=15.5Hz),3.80,3.85(total 1H,each s),3.94,3.95(total 1H,each d,J=7.5Hz),4.07-4.40(3H,m),4.91-5.02(1H,m),5.09-5.26(1H,m),5.11,5.16(total 1H,each d,J=11Hz),6.78-6.93(2H,m),7.06-7.18(2H,m),7.22-7.38(5H,m) HR-MS m/z 666.36451 [Calcd.for $C_{38}H_{52}NO_9(M^+-C_8H_{16}NO_3)$:666.36421]

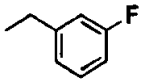
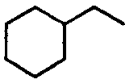
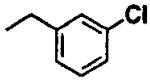
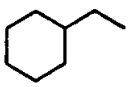
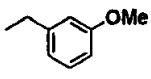
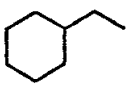
实施例	R^2	R^3	性状和物理性质
137			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81,0.82(total 3H,each t,J=7.5Hz),0.89,0.92(total 3H,each d,J=6.5Hz),0.96,0.97(total 3H,each d,J=6.5Hz),1.10-1.70(20H,m),1.86-2.00(1H,m),1.88,2.05(total 1H,each s),2.22-2.40(2H,m),2.27(6H,s),2.60-2.70(1H,m),2.78-2.89(1H,m),2.91-3.00(1H,m),3.08-3.20(2H,m),3.17(1H,dd,J=10,7Hz),3.22-3.36(2H,m),3.39,3.43(total 1H,each d,J=4.5Hz),3.62-3.76(1H,m),3.66(1H,d,J=15.5Hz),3.71(1H,d,J=15.5Hz),3.80,3.85(total 1H,each s),3.92,3.93(total 1H,each d,J=7Hz),4.10-4.40(3H,m),4.90-5.03(1H,m),5.10-5.28(2H,m),6.78-7.00(3H,m),7.05-7.20(3H,m),7.25-7.32(2H,m) HR-MS m/z 684.35367 [Calcd.for $C_{38}H_{51}FNO_9(M^+-C_8H_{16}NO_3)$:684.35479]
138			淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82,0.83(total 3H,each t,J=7.5Hz),0.91-1.00(6H,m),1.10-1.76(20H,m),1.87-2.00(1H,m),1.88,2.06(total 1H,each s),2.20-2.40(2H,m),2.28(6H,s),2.60-2.72(1H,m),2.79-2.89(1H,m),2.91-3.01(1H,m),3.06-3.20(2H,m),3.16(1H,dd,J=10,7.5Hz),3.21-3.37(2H,m),3.39,3.42(total 1H,each d,J=4.5Hz),3.60-3.73(3H,m),3.80,3.85(total 1H,each s),3.91(1H,d,J=7.5Hz),4.08-4.40(3H,m),4.91-5.03(1H,m),5.10-5.29(2H,m),6.75-6.92(2H,m),7.08-7.40(6H,m) HR-MS m/z 700.32581 [Calcd.for $C_{38}H_{51}{}^{35}ClNO_9(M^+-C_8H_{16}NO_3)$:700.32524] HR-MS m/z 702.32052 [Calcd.for $C_{38}H_{51}{}^{37}ClNO_9(M^+-C_8H_{16}NO_3)$:702.32228]

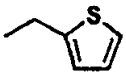
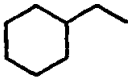
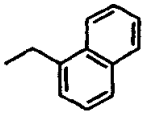
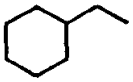
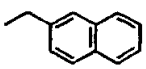
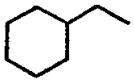
实施例	R^2	R^3	性状和物理性质
139			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81,0.82(total 3H,each t,J=7.5Hz),0.89,0.92(total 3H,each d,J=6.5Hz),0.95,0.96(total 3H,each d,J=6.5Hz),1.05-1.75(21H,m),1.83-2.05(2H,m),2.15-2.39(2H,m),2.27(6H,s),2.57-2.72(1H,m),2.75-2.88(1H,m),2.89-3.00,3.20-3.37(total 2H,each m),3.00-3.20(3H,m),3.40,3.43(total 1H,each d,J=5Hz),3.58-3.73(1H,m),3.63(1H,d,J=14.5Hz),3.68(1H,d,J=14.5Hz),3.75-3.87(1H,m),3.80(3H,s),3.92,3.93(total 1H,each d,J=7.5Hz),4.08-4.39(3H,m),4.90-5.03(1H,m),5.12,5.16(total 1H,each d,J=11Hz),5.19-5.28(1H,m),6.76-6.88(2H,m),6.89-6.96(2H,m),7.10-7.18(2H,m),7.20-7.28(2H,m) HR-MS m/z 696.37596 [Calcd.for $C_{39}H_{54}NO_{10}(M^+-C_8H_{16}NO_3)$:696.37477]
140			淡褐色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82,0.83(total 3H,each t,J=7.5Hz),0.92-1.05(6H,m),1.09-1.75(21H,m),1.87,2.06(total 1H,each s),1.89-1.99(1H,m),2.16-2.38(2H,m),2.26(6H,s),2.60-2.75(1H,m),2.78-2.90(1H,m),2.90-3.01(1H,m),3.04-3.20(3H,m),3.20-3.36(1H,m),3.40,3.44(total 1H,each d,J=4.5Hz),3.60-3.75(1H,m),3.81,3.86(total 1H,each s),3.88-4.00(1H,m),3.93(2H,s),4.10-4.40(3H,m),4.90-5.06(1H,m),5.10-5.30(2H,m),6.78-7.04(4H,m),7.06-7.18(2H,m),7.19-7.30(1H,m) HR-MS m/z 672.32081 [Calcd.for $C_{36}H_{50}NO_9S(M^+-C_8H_{16}NO_3)$:672.32063]
141			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.80,0.81(total 3H,each t,J=7.5Hz),0.84(3H,d,J=6.5Hz),0.89(3H,d,J=6.5Hz),0.97-1.87(21H,m),1.88-2.05(2H,m),2.13,2.20(total 1H,each s),2.17-2.41(2H,m),2.27(6H,s),2.63-2.95(4H,m),3.02-3.38(4H,m),3.40-3.52(1H,m),3.60-3.89(4H,m),3.95,3.96(total 1H,each d,J=7Hz),4.16-4.36(4H,m),5.08-5.31(2H,m),6.79-7.06(3H,m),7.08-7.21(1H,m),7.22-7.40(5H,m) HR-MS m/z 680.37936 [Calcd.for $C_{39}H_{54}NO_9(M^+-C_8H_{16}NO_3)$:680.37986]

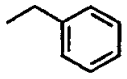
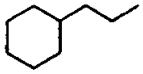
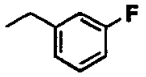
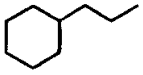
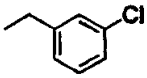
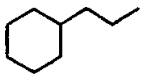
实施例	R^2	R^3	性状和物理性质
142			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82,0.84(total 3H,each t,J=8Hz),0.87,0.92(total 3H,each d,J=6.5Hz),1.02(3H,d,J=7.5Hz),1.08-2.08(23H,m),2.16,2.23(total 1H,each s),2.21-2.40(2H,m),2.28(6H,s),2.63-2.92(4H,m),3.08-3.21(2H,m),3.18(1H,dd,J=10,7Hz),3.32(1H,brs),3.46(1H,d,J=4.5Hz),3.63-3.82(1H,m),3.66(1H,d,J=15.5Hz),3.71(1H,d,J=15.5Hz),3.77,3.86(total 1H,each s),3.94,3.95(total 1H,each d,J=7.5Hz),4.21-4.30(3H,m),4.31,4.32(total 1H,each s),5.13-5.31(2H,m),6.78-7.35(8H,m) HR-MS m/z 698.37285 [Calcd.for $C_{39}H_{53}FNO_9(M^+-C_8H_{16}NO_3)$:698.37042]
143			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81,0.83(total 3H,each t,J=8Hz),0.89,0.94(total 3H,each d,J=6.5Hz),1.02(3H,d,J=6.5Hz),1.08-2.05(23H,m),2.16,2.23(total 1H,each s),2.24-2.40(2H,m),2.28(6H,s),2.65-2.93(4H,m),3.07-3.20(3H,m),3.32(1H,brs),3.45(1H,d,J=4.5Hz),3.60-3.83(3H,m),3.77,3.86(total 1H,each s),3.92,3.93(total 1H,each d,J=7Hz),4.21-4.30(3H,m),4.31,4.32(total 1H,each s),5.13-5.32(2H,m),6.82-7.36(8H,m) HR-MS m/z 714.34241 [Calcd.for $C_{39}H_{53}{}^{35}ClNO_9(M^+-C_8H_{16}NO_3)$:714.34087] HR-MS m/z 716.33558 [Calcd.for $C_{39}H_{53}{}^{37}ClNO_9(M^+-C_8H_{16}NO_3)$:716.33792]
144			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.80,0.82(total 3H,each t,J=8Hz),0.87(3H,d,J=6.5Hz),0.92(3H,d,J=6.5Hz),0.97-2.05(23H,m),2.15,2.21(total 1H,each s),2.18-2.42(2H,m),2.27(6H,s),2.63-2.94(4H,m),3.00-3.20(4H,m),3.46(1H,d,J=5Hz),3.55-3.89(4H,m),3.80(3H,s),3.92,3.93(total 1H,each d,J=7.5Hz),4.18-4.37(4H,m),5.10-5.31(2H,m),6.74-7.06(6H,m),7.08-7.28(2H,m) HR-MS m/z 710.39080 [Calcd.for $C_{40}H_{58}NO_{10}(M^+-C_8H_{16}NO_3)$:710.39042]

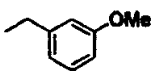
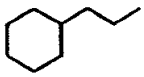
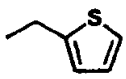
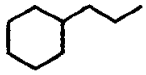
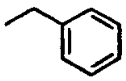
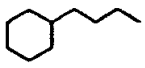
实施例	R^2	R^3	性状和物理性质
145			淡褐色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82,0.83(total 3H,each t,J=8Hz),0.92-2.04(30H,m),2.16,2.23(total 1H,each s),2.18-2.42(2H,m),2.26(6H,s),2.63-2.94(4H,m),3.03-3.20(3H,m),3.47(1H,d,J=4.5Hz),3.68-3.81(1H,m),3.78,3.87(total 1H,each s),3.85-4.00(3H,m),4.17-4.35(3H,m),4.32,4.33(total 1H,each s),5.12-5.33(2H,m),6.78-7.06(5H,m),7.09-7.29(2H,m) HR-MS m/z 686.33492 [Calcd.for $C_{37}H_{52}NO_9S(M^+-C_8H_{16}NO_3)$:686.33628]
146			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81,0.82(total 3H,each t,J=7.5Hz),0.87,0.89(total 3H,each d,J=6.5Hz),1.02(3H,d,J=6.5Hz),1.07-1.75(20H,m),1.87-1.98(2H,m),2.20-2.42(2H,m),2.28(6H,s),2.62-2.73(1H,m),2.76-2.90(1H,m),3.00-3.39(4H,m),3.42-3.52(1H,m),3.60-3.85(1H,m),3.66(1H,d,J=15.5Hz),3.71(1H,d,J=15.5Hz),3.79,3.83(total 1H,each s),3.88-4.34(5H,m),3.96(1H,d,J=7.5Hz),4.35-4.46(1H,m),5.10-5.30(2H,m),6.80-7.02(4H,m),7.22-7.38(5H,m) HR-MS m/z 682.35795 [Calcd.for $C_{38}H_{52}NO_{10}(M^+-C_8H_{16}NO_3)$:682.35912]
147			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81,0.82(total 3H,each t,J=7.5Hz),0.90,0.92(total 3H,each d,J=6.5Hz),1.02(3H,d,J=7Hz),1.08-1.80(20H,m),1.88-2.00(2H,m),2.21-2.41(2H,m),2.27(6H,s),2.63-2.71(1H,m),2.80-2.90(1H,m),3.06-3.21(2H,m),3.17(1H,dd,J=10.5,7.5Hz),3.33(1H,brs),3.46(1H,d,J=4.5Hz),3.62-3.77(1H,m),3.66(1H,d,J=15.5Hz),3.71(1H,d,J=15.5Hz),3.79,3.83(total 1H,each s),3.94(1H,d,J=6.5Hz),3.96-4.36(5H,m),4.38-4.48(1H,m),5.12-5.30(2H,m),6.80-7.18(6H,m),7.22-7.35(2H,m) HR-MS m/z 700.34931 [Calcd.for $C_{38}H_{51}FNO_{10}(M^+-C_8H_{16}NO_3)$:700.34969]

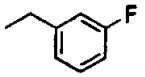
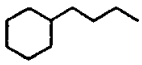
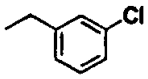
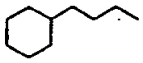
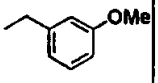
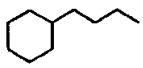
实施例	R^2	R^3	性状和物理性质
148			淡黄色非晶形固体 NMR谱 δ($CDCl_3$)ppm:0.82,0.83(total 3H,each t,J=7.5Hz),0.92,0.94(total 3H,each d,J=7Hz),1.02(3H,d,J=6.5Hz),1.08-1.80(19H,m),1.88-2.00(2H,m),2.20-2.40(2H,m),2.28(6H,s),2.64-2.74(1H,m),2.79-2.90(1H,m),3.06-3.20(2H,m),3.17(1H,dd,J=10.5,7.5Hz),3.45(1H,d,J=4.5Hz),3.60-3.78(1H,m),3.65(1H,d,J=15.5Hz),3.69(1H,d,J=15.5Hz),3.79,3.83(total 1H,each s),3.92(1H,d,J=7.5Hz),3.96-4.33(5H,m),4.38-4.46(3H,m),5.13-5.29(2H,m),6.80-7.04(4H,m),7.20-7.40(4H,m) HR-MS m/z 716.32080 [Calcd.for $C_{38}H_{51}{}^{35}ClNO_{10}(M^+-C_8H_{16}NO_3)$:716.32014] HR-MS m/z 718.32239 [Calcd.for $C_{38}H_{51}{}^{37}ClNO_{10}(M^+-C_8H_{16}NO_3)$:718.31718]
149			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.77-0.86(3H,m),0.87-0.96(3H,m),1.02(3H,d,J=6.5Hz),1.07-1.75(20H,m),1.87-1.99(2H,m),2.18-2.43(2H,m),2.27(6H,s),2.62-2.74(1H,m),2.77-2.90(1H,m),3.00-3.20(3H,m),3.28(1H,brs),3.47(1H,d,J=5Hz),3.58-3.88(2H,m),3.63(1H,d,J=14.5Hz),3.68(1H,d,J=14.5Hz),3.80(3H,s),3.93(1H,d,J=7.5Hz),3.97-4.35(5H,m),4.37-4.46(1H,m),5.10-5.30(2H,m),6.76-7.04(6H,m),7.19-7.29(2H,m) HR-MS m/z 712.36774 [Calcd.for $C_{39}H_{58}NO_{11}(M^+-C_8H_{16}NO_3)$:712.36969]
150			淡褐色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82,0.83(total 3H,each t,J=7.5Hz),0.98,1.00(total 3H,each d,J=6.5Hz),1.02(3H,d,J=6.5Hz),1.08-1.85(21H,m),1.88-2.00(2H,m),2.17-2.38(2H,m),2.26(6H,s),2.63-2.74(1H,m),2.80-2.93(1H,m),3.02-3.20(3H,m),3.42-3.52(1H,m),3.63-3.85(1H,m),3.80,3.84(total 1H,each s),3.87-4.35(6H,m),3.93(2H,s),4.36-4.47(1H,m),5.12-5.30(2H,m),6.79-7.33(6H,m),7.18-7.27(1H,m) HR-MS m/z 688.31365 [Calcd.for $C_{36}H_{50}NO_{10}S(M^+-C_8H_{16}NO_3)$:688.31554]

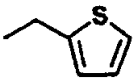
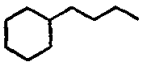
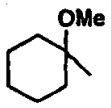
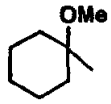
实施例	R^2	R^3	性状和物理性质
151			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.91(3H,d,J=6.5Hz),1.01(3H,d,J=6.5Hz),1.07-1.74(31H,m),1.84(1H,s),1.90-1.96(1H,m),2.27-2.41(2H,m),2.28(6H,s),2.60-2.70(1H,m),2.79-2.86(1H,m),3.10-3.20(2H,m),3.17(1H,dd,J=10,7.5Hz),3.30(1H,brs),3.47(1H,d,J=4.5Hz),3.63-3.73(2H,m),3.65(1H,d,J=15.5Hz),3.70(1H,d,J=15.5Hz),3.80-3.94(2H,m),3.96(1H,d,J=7.5Hz),4.49(1H,s),5.16(1H,d,J=11Hz),5.21(1H,dd,J=11,2.5Hz),6.94-7.00(1H,m),7.06-7.15(2H,m),7.25-7.32(1H,m) HR-MS m/z 664.38586 [Calcd.for $C_{36}H_{55}FNO_9(M^+-C_8H_{16}NO_2)$:664.38609]
152			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.93(3H,d,J=6.5Hz),1.01(3H,d,J=6.5Hz),1.12-1.77(31H,m),1.84(1H,s),1.89-1.96(1H,m),2.25-2.40(2H,m),2.29(6H,s),2.62-2.67(1H,m),2.80-2.87(1H,m),3.07-3.15(2H,m),3.17(1H,dd,J=10,7.5Hz),3.30(1H,brs),3.46(1H,d,J=5Hz),3.62-3.71(2H,m),3.64(1H,d,J=15Hz),3.69(1H,d,J=15Hz),3.79-3.89(2H,m),3.94(1H,d,J=7.5Hz),4.49(1H,s),5.16(1H,d,J=11Hz),5.21(1H,dd,J=11.5,2Hz),7.26-7.40(4H,m) HR-MS m/z 680.35623 [Calcd.for $C_{36}H_{55}{}^{35}ClNO_9(M^+-C_8H_{16}NO_2)$:680.35654] HR-MS m/z 682.35253 [Calcd.for $C_{36}H_{55}{}^{37}ClNO_9(M^+-C_8H_{16}NO_2)$:682.35358]
153			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.89-1.74(31H,m),0.90(3H,d,J=6.5Hz),1.01(3H,d,J=7.5Hz),1.82(1H,s),1.90-1.95(1H,m),2.20-2.37(2H,m),2.27(6H,s),2.62-2.67(1H,m),2.77-2.85(1H,m),3.02-3.10(1H,m),3.13(1H,s),3.15(1H,dd,J=10.5,7.5Hz),3.28(1H,brs),3.47(1H,d,J=4.5Hz),3.60-3.71(2H,m),3.63(1H,d,J=14.5Hz),3.67(1H,d,J=14.5Hz),3.77-3.89(2H,m),3.80(3H,s),3.95(1H,d,J=6.5Hz),4.49(1H,s),5.15(1H,d,J=11Hz),5.21(1H,dd,J=11,2.5Hz),6.79-6.82(1H,m),6.91-6.94(2H,m),7.23(1H,t,J=8Hz) HR-MS m/z 676.40747 [Calcd.for $C_{37}H_{58}NO_{10}(M^+-C_8H_{16}NO_2)$:676.40607]

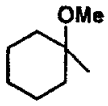
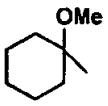
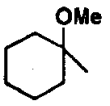
实施例	R^2	R^3	性状和物理性质
154			褐色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.99(3H,d,J=6.5Hz),1.01(3H,d,J=6.5Hz),1.05-1.80(31H,m),1.85(1H,s),1.88-1.98(1H,m),2.21-2.40(2H,m),2.26(6H,s),2.63-2.68(1H,m),2.83-2.90(1H,m),3.08-3.18(2H,m),3.15(1H,dd,J=10,7.5Hz),3.28(1H,brs),3.48(1H,d,J=4.5Hz),3.63-3.73(2H,m),3.78-3.88(2H,m),3.92(2H,s),3.95(1H,d,J=7.5Hz),4.50(1H,s),5.18(1H,d,J=11Hz),5.22(1H,dd,J=11,2Hz),6.95(1H,dd,J=5.5,3.5Hz),6.98-7.01(1H,m),7.22(1H,dd,J=5.5,1Hz) HR-MS m/z 652.34996 [Calcd.for $C_{34}H_{54}NO_9S(M^+-C_8H_{16}NO_2)$:652.35193]
155			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.70(3H,d,J=6.5Hz),0.77(3H,t,J=7.5Hz),0.89-1.96(32H,m),1.00(3H,d,J=6.5Hz),2.19-2.35(2H,m),2.27(6H,s),2.60-2.74(2H,m),2.97-3.05(1H,m),3.12(1H,s),3.17(1H,dd,J=10.5,7.5Hz),3.29(1H,brs),3.49(1H,d,J=5Hz),3.60-3.72(3H,m),3.77-3.88(2H,m),3.97(1H,d,J=7.5Hz),4.09(1H,d,J=14.5Hz),4.17(1H,d,J=14.5Hz),4.48(1H,s),5.14(1H,d,J=11Hz),5.17(1H,dd,J=11,2.5Hz),7.43(1H,t,J=8Hz),7.46-7.59(3H,m),7.79(1H,d,J=8Hz),7.85(1H,d,J=8Hz),8.15(1H,d,J=8Hz) HR-MS m/z 680.41634 [Calcd.for $C_{40}H_{58}NO_8(M^+-C_8H_{16}NO_3)$:680.41624]
156			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.80(3H,t,J=7.5Hz),0.91(3H,d,J=6.5Hz),0.92-1.98(32H,m),1.00(3H,d,J=6Hz),2.14-2.31(2H,m),2.23(6H,s),2.60-2.68(1H,m),2.72-2.88(2H,m),3.07-3.17(2H,m),3.29(1H,brs),3.46(1H,d,J=4.5Hz),3.60-3.72(3H,m),3.77-3.92(5H,m),4.49(1H,s),5.19(1H,d,J=11Hz),5.20(1H,dd,J=11,2.5Hz),7.40-7.50(2H,m),7.53(1H,dd,J=8,1.5Hz),7.75-7.86(4H,m) HR-MS m/z 680.41590 [Calcd.for $C_{40}H_{58}NO_8(M^+-C_8H_{16}NO_3)$:680.41624]

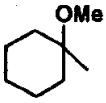
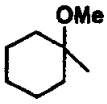
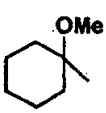
实施例	R^2	R^3	性状和物理性质
157			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),0.92-1.77(33H,m),1.01(3H,d,J=6.5Hz),1.83(1H,s),1.87-1.98(1H,m),2.20-2.40(2H,m),2.27(6H,s),2.62-2.70(1H,m),2.77-2.85(1H,m),3.06-3.20(2H,m),3.16(1H,dd,J=10.5,7.5Hz),3.28(1H,brs),3.48(1H,d,J=5Hz),3.63-3.75(2H,m),3.66(1H,d,J=14.5Hz),3.70(1H,d,J=14.5Hz),3.97(1H,d,J=7.5Hz),4.05(2H,t,J=7Hz),4.48(1H,s),5.15(1H,d,J=11Hz),5.21(1H,dd,J=11,2Hz),7.22-7.40(5H,m) HR-MS m/z 818.53145 [Calcd.for $C_{45}H_{74}N_2O_{11}$(M^+):818.52926]
158			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.90(3H,d,J=6.5Hz),1.01(3H,d,J=6.5Hz),1.05-1.81(33H,m),1.84(1H,s),1.85-2.00(1H,m),2.20-2.40(2H,m),2.27(6H,s),2.60-2.70(1H,m),2.75-2.85(1H,m),3.08-3.20(2H,m),3.17(1H,dd,J=10,7.5Hz),3.29(1H,brs),3.47(1H,d,J=4.5Hz),3.62-3.73(2H,m),3.66(1H,d,J=15.5Hz),3.70(1H,d,J=15.5Hz),3.95(1H,d,J=7.5Hz),4.05(2H,t,J=7Hz),4.49(1H,s),5.15(1H,d,J=11Hz),5.21(1H,dd,J=11,2Hz),6.94-7.00(1H,m),7.06-7.15(2H,m),7.24-7.32(1H,m) HR-MS m/z 836.51824 [Calcd.for $C_{45}H_{73}FN_2O_{11}$(M^+):836.51984]
159			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.90-1.80(33H,m),0.92(3H,d,J=6.5Hz),1.01(3H,d,J=6.5Hz),1.83(1H,s),1.90-2.00(1H,m),2.20-2.40(2H,m),2.27(6H,s),2.60-2.70(1H,m),2.78-2.85(1H,m),3.05-3.20(2H,m),3.16(1H,dd,J=10.5,7.5Hz),3.29(1H,brs),3.46(1H,d,J=5Hz),3.60-3.75(2H,m),3.64(1H,d,J=15.5Hz),3.69(1H,d,J=15.5Hz),3.93(1H,d,J=7.5Hz),4.05(2H,t,J=7Hz),4.49(1H,s),5.16(1H,d,J=11Hz),5.21(1H,dd,J=11,2.5Hz),7.20-7.40(4H,m) HR-MS m/z 694.37478 [Calcd.for $C_{37}H_{57}{}^{35}ClNO_9$($M^+$-$C_8H_{16}NO_2$):694.37219] HR-MS m/z 696.36680 [Calcd.for $C_{37}H_{57}{}^{37}ClNO_9$($M^+$-$C_8H_{16}NO_2$):696.36923]

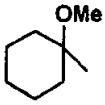
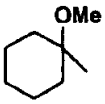
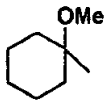
实施例	R^2	R^3	性状和物理性质
160			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.90(3H,d,J=6.5Hz),1.01(3H,d,J=7.5Hz),1.05-1.75(32H,m),1.82(1H,s),1.87-1.98(1H,m),2.20-2.39(2H,m),2.27(6H,s),2.60-2.72(1H,m),2.77-2.87(1H,m),3.01-3.35(3H,m),3.15(1H,dd,J=10.5,7.5Hz),3.47(1H,d,J=4.5Hz),3.59-3.73(2H,m),3.63(1H,d,J=14.5Hz),3.67(1H,d,J=14.5Hz),3.80(3H,s),3.94(1H,d,J=6.5Hz),4.00-4.09(2H,m),4.49(1H,s),5.15(1H,d,J=11Hz),5.21(1H,dd,J=11,2.5Hz),6.77-6.83(1H,m),6.90-6.95(2H,m),7.19-7.28(1H,m) HR-MS m/z 674.42930 [Calcd.for $C_{38}H_{60}NO_9(M^+-C_8H_{16}NO_3)$:674.42681]
161			淡褐色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.99(3H,d,J=6.5Hz),1.01(3H,d,J=6.5Hz),1.05-1.77(34H,m),1.84(1H,s),1.88-1.99(1H,m),2.19-2.38(2H,m),2.28(6H,s),2.60-2.72(1H,m),2.80-2.92(1H,m),3.05-3.20(3H,m),3.43-3.52(1H,m),3.60-3.75(2H,m),3.88-3.98(2H,m),3.95(1H,d,J=7.5Hz),4.00-4.11(2H,m),4.50(1H,s),5.18(1H,d,J=11Hz),5.23(1H,dd,J=11.5,2Hz),6.93-7.01(2H,m),7.19-7.24(1H,m) HR-MS m/z 650.37390 [Calcd.for $C_{35}H_{56}NO_8S(M^+-C_8H_{16}NO_3)$:650.37266]
162			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),1.01(3H,d,J=6.5Hz),1.06-1.75(35H,m),1.84(1H,s),1.88-1.98(1H,m),2.00-2.40(2H,m),2.27(6H,s),2.60-2.72(1H,m),2.76-2.88(1H,m),3.05-3.20(2H,m),3.13(1H,s),3.27(1H,brs),3.48(1H,d,J=4.5Hz),3.60-3.75(4H,m),3.91-4.05(3H,m),4.48(1H,s),5.14(1H,d,J=11Hz),5.18-5.24(1H,m),7.23-7.38(5H,m) HR-MS m/z 658.43238 [Calcd.for $C_{38}H_{60}NO_8(M^+-C_8H_{16}NO_3)$:658.43189]

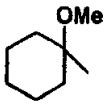
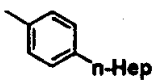
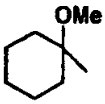
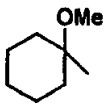
实施例	R^2	R^3	性状和物理性质
163			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.82(3H,t,J=7.5Hz),0.90(3H,d,J=6.5Hz),1.01(3H,d,J=6.5Hz),1.06-1.75(36H,m),1.86(1H,s),1.88-1.99(1H,m),2.20-2.39(2H,m),2.27(6H,s),2.60-2.72(1H,m),2.77-2.88(1H,m),3.05-3.21(2H,m),3.17(1H,dd,J=10,7Hz),3.47(1H,d,J=5Hz),3.61-3.74(2H,m),3.66(1H,d,J=15.5Hz),3.70(1H,d,J=15.5Hz),3.88-4.05(2H,m),3.95(1H,d,J=7.5Hz),4.49(1H,s),5.16(1H,d,J=11Hz),5.21(1H,dd,J=11.5,2Hz),6.93-7.00(1H,m),7.04-7.11(1H,m),7.13(1H,d,J=8Hz),7.21-7.33(1H,m) HR-MS m/z 676.42186 [Calcd.for $C_{38}H_{59}FNO_8(M^+-C_8H_{16}NO_3)$:676.42247]
164			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.82(3H,t,J=7.5Hz),0.92(3H,d,J=6.5Hz),1.01(3H,d,J=7.5Hz),1.07-1.75(35H,m),1.86(1H,s),1.88-1.99(1H,m),2.20-2.39(2H,m),2.27(6H,s),2.60-2.72(1H,m),2.79-2.90(1H,m),3.05-3.40(3H,m),3.17(1H,dd,J=10.5,7.5Hz),3.46(1H,d,J=4.5Hz),3.58-3.75(4H,m),3.93(1H,d,J=6.5Hz),3.96-4.04(2H,m),4.49(1H,s),5.16(1H,d,J=11Hz),5.21(1H,dd,J=11,2Hz),7.21-7.30(3H,m),7.35(1H,s) HR-MS m/z 692.39138 [Calcd.for $C_{38}H_{59}{}^{35}ClNO_8(M^+-C_8H_{16}NO_3)$:692.39292] HR-MS m/z 694.39175 [Calcd.for $C_{38}H_{59}{}^{37}ClNO_8(M^+-C_8H_{16}NO_3)$:694.38997]
165			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.81(3H,t,J=7.5Hz),0.90(3H,d,J=6.5Hz),1.01(3H,d,J=6.5Hz),1.06-1.75(35H,m),1.84(1H,s),1.88-1.98(1H,m),2.21-2.38(2H,m),2.27(6H,s),2.61-2.72(1H,m),2.77-2.88(1H,m),3.02-3.20(2H,m),3.15(1H,dd,J=10.5,7.5Hz),3.30(1H,brs),3.48(1H,d,J=4.5Hz),3.59-3.74(2H,m),3.63(1H,d,J=14.5Hz),3.67(1H,d,J=14.5Hz),3.80(3H,s),3.88-4.05(2H,m),3.94(1H,d,J=7.5Hz),4.49(1H,s),5.15(1H,d,J=11Hz),5.21(1H,dd,J=11.5,2Hz),6.80(1H,dd,J=7.5,2Hz),6.88-6.96(2H,m),7.22(1H,t,J=8Hz) HR-MS m/z 688.43959 [Calcd.for $C_{39}H_{62}NO_9(M^+-C_8H_{16}NO_3)$:688.44246]

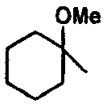
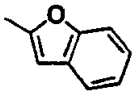
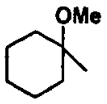
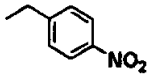
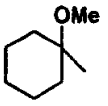
实施例	R^2	R^3	性状和物理性质
166			淡褐色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.99(3H,d,J=6.5Hz),1.01(3H,d,J=6.5Hz),1.06-1.75(36H,m),1.85(1H,s),1.88-1.99(1H,m),2.19-2.38(2H,m),2.26(6H,s),2.60-2.72(1H,m),2.80-2.91(1H,m),3.05-3.20(2H,m),3.15(1H,dd,J=10.5,7.5Hz),3.48(1H,d,J=4.5Hz),3.60-3.75(2H,m),3.87-4.05(4H,m),3.95(1H,d,J=7.5Hz),4.49(1H,s),5.18(1H,d,J=11Hz),5.22(1H,dd,J=11,2.5Hz),6.95(1H,dd,J=5,3.5Hz),6.98-7.01(1H,m),7.22(1H,dd,J=5.5,1Hz) HR-MS m/z 664.38955 [Calcd.for $C_{36}H_{58}NO_8S(M^+-C_8H_{16}NO_3)$:664.38831]
167	Et		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),1.04(3H,d,J=6.5Hz),1.06(3H,d,J=6.5Hz),1.08-1.96(36H,m),2.20-2.30(1H,m),2.28(6H,s),2.34-2.45(3H,m),2.65-2.72(1H,m),2.81-2.89(1H,m),3.17-3.37(3H,m),3.20(3H,s),3.47(1H,d,J=4.5Hz),3.65-3.75(2H,m),4.03(1H,d,J=7.5Hz),4.58(1H,s),5.16(1H,d,J=10.5Hz),5.23(1H,dd,J=11,2Hz) HR-MS m/z 758.49287 [Calcd.for $C_{39}H_{70}N_2O_{12}(M^+)$:758.49288]
168	n-Pr		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.99(3H,t,J=7.5Hz),1.04(3H,d,J=7.5Hz),1.06(3H,d,J=6.5Hz),1.09-1.97(34H,m),2.20-2.43(4H,m),2.28(6H,s),2.64-2.72(1H,m),2.80-2.87(1H,m),3.17-3.37(4H,m),3.20(3H,s),3.45(1H,d,J=4.5Hz),3.64-3.76(2H,m),4.03(1H,d,J=7.5Hz),4.59(1H,s),5.16(1H,d,J=11Hz),5.23(1H,dd,J=11,2Hz) HR-MS m/z 660.42660 [Calcd.for $C_{33}H_{60}N_2O_{11}(M^++1-C_7H_{13}O)$:660.41971]

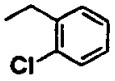
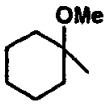
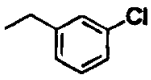
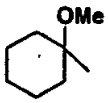
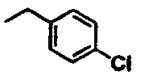
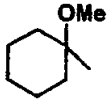
实施例	R^2	R^3	性状和物理性质
169	n-Bu		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.94(3H,t,J=7.5Hz),1.04(3H,d,J=6.5Hz),1.06(3H,d,J=6.5Hz),1.11-2.00(36H,m),2.20-2.44(4H,m),2.28(6H,s),2.64-2.73(1H,m),2.80-2.90(1H,m),3.15-3.39(4H,m),3.20(3H,s),3.45(1H,d,J=5Hz),3.67-3.77(2H,m),4.03(1H,d,J=7.5Hz),4.58(1H,s),5.15(1H,d,J=11Hz),5.23(1H,dd,J=11,2Hz) HR-MS m/z 786.52702 [Calcd.for $C_{41}H_{74}N_2O_{12}(M^+)$:786.52418]
170	n-Pent		无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.86-0.97(3H,m),1.04(3H,d,J=8.5Hz),1.05(3H,d,J=7.5Hz),1.12-1.98(39H,m),2.23-2.42(2H,m),2.33(6H,s),2.46-2.54(1H,m),2.66-2.72(1H,m),2.80-2.88(1H,m),3.14-3.38(4H,m),3.20(3H,s),3.45(1H,d,J=4Hz),3.68-3.76(2H,m),4.04(1H,d,J=7.5Hz),4.59(1H,s),5.14(1H,d,J=11Hz),5.23(1H,dd,J=11,2Hz) HR-MS m/z 687.44184 [Calcd.for $C_{35}H_{63}N_2O_{11}(M^+-C_7H_{13}O)$:687.44319]
171	n-Non		无色粘性液体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),0.88(3H,t,J=7Hz),1.04(3H,d,J=8Hz),1.05(3H,d,J=7Hz),1.10-2.00(48H,m),2.23-2.44(2H,m),2.33(6H,s),2.46-2.54(1H,m),2.65-2.74(1H,m),2.80-3.00(1H,m),3.15-3.40(3H,m),3.20(3H,s),3.45(1H,d,J=4.5Hz),3.61-3.79(2H,m),4.04(1H,d,J=7.5Hz),4.59(1H,s),5.14(1H,d,J=11Hz),5.23(1H,dd,J=11,2Hz) HR-MS m/z 743.50469 [Calcd.for $C_{39}H_{71}N_2O_{11}(M^+-C_7H_{13}O)$:743.50579]

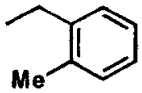
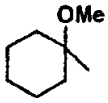
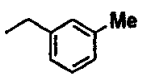
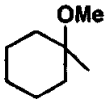
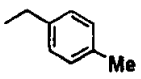
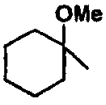
实施例	R^2	R^3	性状和物理性质
172			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.83(3H,t,J=7.5Hz),1.04(3H,d,J=6.5Hz),1.05(3H,d,J=6.5Hz),1.10-1.98(36H,m),2.10-2.20(1H,m),2.27(6H,s),2.34-2.41(1H,m),2.50(2H,t,J=7.5Hz),2.66-2.72(1H,m),2.82-2.90(1H,m),3.16-3.36(4H,m),3.20(3H,s),3.44(1H,d,J=4.5Hz),3.67-3.77(2H,m),4.00(1H,d,J=7.5Hz),4.59(1H,s),5.18(1H,d,J=11Hz),5.23(1H,dd,J=11,2Hz) HR-MS m/z 777.39398 [Calcd.for $C_{35}H_{58}F_5N_2O_{11}$(M$^+$-$C_7H_{13}O$):777.39609]
173			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.83(3H,t,J=7.5Hz),1.04(3H,d,J=7.5Hz),1.08(3H,d,J=6.5Hz),1.11-1.98(32H,m),2.17(3H,s),2.23-2.34(1H,m),2.28(6H,s),2.50-2.58(1H,m),2.64-2.73(1H,m),2.82-2.93(1H,m),3.13-3.25(2H,m),3.20(3H,s),3.32(1H,brs),3.40(1H,d,J=4Hz),3.43-3.53(1H,m),3.66-3.78(2H,m),4.07(1H,d,J=7.5Hz),4.58(1H,d,J=16Hz),4.83(1H,d,J=16Hz),4.59(1H,s),5.17-5.27(2H,m) HR-MS m/z 802.48532 [Calcd.for $C_{40}H_{70}N_2O_{14}$(M$^+$):802.48271]
174			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.83(3H,t,J=7.5Hz),1.04(3H,d,J=6.5Hz),1.07(3H,d,J=6.5Hz),1.12-1.98(33H,m),2.24-2.36(1H,m),2.27(6H,s),2.36-2.45(1H,m),2.66-2.74(1H,m),2.84-2.95(1H,m),3.13-3.25(2H,m),3.21(3H,s),3.33-3.42(2H,m),3.47(1H,d,J=3.5Hz),3.65-3.80(2H,m),3.97(1H,d,J=7.5Hz),4.20(1H,d,J=17Hz),4.24(1H,d,J=17Hz),4.61(1H,s),5.20-5.27(2H,m) HR-MS m/z 760.47471 [Calcd.for $C_{38}H_{68}N_2O_{13}$(M$^+$):760.47214]

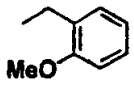
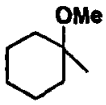
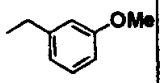
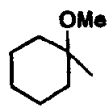
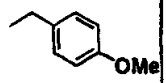
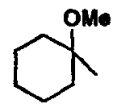
实施例	R^2	R^3	性状和物理性质
175			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),1.03(3H,d,J=6.5Hz),1.07(3H,d,J=6.5Hz),1.13-1.97(32H,m),2.22-2.32(1H,m),2.28(6H,s),2.41-2.49(1H,m),2.64(2H,t,J=5.5Hz),2.66-2.72(1H,m),2.82-2.89(1H,m),3.15-3.32(3H,m),3.20(3H,s),3.34(3H,s),3.34-3.43(1H,m),3.45(1H,d,J=4.5Hz),3.63-3.77(4H,m),4.04(1H,d,J=7.5Hz),4.58(1H,s),5.17(1H,d,J=11Hz),5.23(1H,dd,J=11,2.5Hz) HR-MS m/z 675.40706 [Calcd.for $C_{33}H_{59}N_2O_{12}(M^+-C_7H_{13}O)$:675.40680]
176			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),1.03(3H,d,J=6.5Hz),1.06(3H,d,J=6.5Hz),1.10-2.00(32H,m),2.17-2.34(1H,m),2.25(6H,s),2.36-2.47(1H,m),2.60-2.77(3H,m),2.81-2.88(1H,m),3.10-3.37(4H,m),3.20(3H,s),3.44(1H,d,J=4Hz),3.63-3.84(4H,m),4.02(1H,d,J=7Hz),4.52(1H,d,J=12Hz),4.54(1H,d,J=12Hz),4.58(1H,s),5.17(1H,d,J=10Hz),5.23(1H,d,J=9Hz),7.26-7.36(5H,m) HR-MS m/z 751.43769 [Calcd.for $C_{39}H_{63}N_2O_{12}(M^+-C_7H_{13}O)$:751.43810]
177			淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),1.05(3H,d,J=7.5Hz),1.09(3H,d,J=6.5Hz),1.13-1.98(32H,m),2.23-2.33(1H,m),2.28(6H,s),2.45-2.54(1H,m),2.65-2.73(1H,m),2.87-2.97(1H,m),3.13-3.25(2H,m),3.21(3H,s),3.36-3.50(3H,m),3.49(1H,d,J=19Hz),3.61(1H,d,J=19Hz),3.66-3.80(2H,m),4.05(1H,d,J=7.5Hz),4.60(1H,s),5.18-5.28(2H,m) HR-MS m/z 769.47372 [Calcd.for $C_{39}H_{67}N_3O_{12}(M^+)$:769.47248]

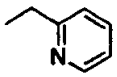
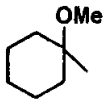
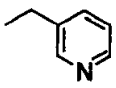
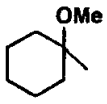
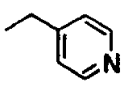
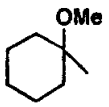
实施例	R^2	R^3	性状和物理性质
178			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.85(3H,t,J=7.5Hz),0.94(3H,d,J=6Hz),1.04(3H,d,J=7.5Hz),1.10-2.02(31H,m),2.06-2.17(1H,m),2.14(6H,s),2.27-2.35(1H,m),2.37-2.45(1H,m),2.68-2.74(1H,m),2.98-3.07(2H,m),3.16-3.26(2H,m),3.19(1H,brs),3.22(3H,s),3.49(1H,d,J=3.5Hz),3.68-3.76(2H,m),3.88(1H,d,J=7.5Hz),4.62(1H,s),5.29(1H,dd,J=11,2.5Hz),5.38(1H,d,J=11Hz),7.48(2H,t,J=7.5Hz),7.59(1H,t,J=7.5Hz),8.15(2H,d,J=7.5Hz) HR-MS m/z 806.49554 [Calcd.for $C_{43}H_{70}N_2O_{12}$(M$^+$):806.49288]
179			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.84(3H,t,J=7.5Hz),0.93(3H,d,J=6Hz),1.04(3H,d,J=7.5Hz),0.82-2.00(46H,m),2.12(6H,s),2.17-2.30(1H,m),2.30-2.47(1H,m),2.53-2.78(3H,m),2.90-3.10(2H,m),3.10-3.30(2H,m),3.21(3H,s),3.48(1H,brs),3.61-3.82(2H,m),3.91(1H,d,J=7.5Hz),4.63(1H,s),5.28(1H,d,J=10.5Hz),5.36(1H,d,J=11Hz),7.27(2H,d,J=8Hz),8.05(2H,d,J=8Hz) HR-MS m/z 791.50662 [Calcd.for $C_{43}H_{71}N_2O_{11}$(M$^+$-$C_7H_{13}O$):791.50579]
180			淡黄色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.85(3H,t,J=7.5Hz),0.88(3H,d,J=7.5Hz),0.98(3H,d,J=6Hz),1.00-2.02(32H,m),2.13(6H,s),2.38-2.48(2H,m),2.68-2.76(1H,m),2.99-3.08(3H,m),3.17-3.23(1H,m),3.22(3H,s),3.50(1H,d,J=4.5Hz),3.68-3.76(3H,m),3.85(1H,d,J=7.5Hz),4.63(1H,s),5.28(1H,dd,J=11.5,2.5Hz),5.43(1H,d,J=11Hz),7.44(1H,dd,J=8,5Hz),8.40(1H,dt,J=8,2Hz),8.82(1H,dd,J=5,2Hz),9.34(1H,d,J=2Hz) HR-MS m/z 694.39418 [Calcd.for $C_{35}H_{56}N_3O_{11}$(M$^+$-$C_7H_{13}O$):694.39149]

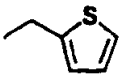
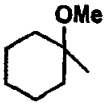
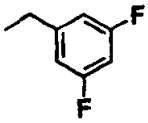
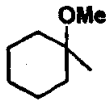
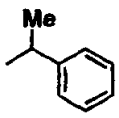
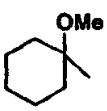
实施例	R^2	R^3	性状和物理性质
181			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.98(3H,d,J=6Hz),1.04(3H,d,J=7.5Hz),1.08-2.03(33H,m),2.13(6H,s),2.35-2.45(2H,m),2.68-2.74(1H,m),2.98-3.07(2H,m),3.18-3.26(2H,m),3.22(3H,s),3.46(1H,d,J=3.5Hz),3.69-3.77(2H,m),3.81(1H,d,J=6.5Hz),4.63(1H,s),5.28(1H,dd,J=11,2Hz),5.41(1H,d,J=11Hz),7.96(2H,dd,J=4.5,1.5Hz),8.83(2H,dd,J=4.5,1.5Hz) HR-MS m/z 694.39254 [Calcd.for $C_{35}H_{56}N_3O_{11}$(M^+-$C_7H_{13}O$):694.39149]
182			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.85(3H,t,J=7.5Hz),0.97(3H,d,J=6Hz),1.05(3H,d,J=6.5Hz),1.12-2.05(34H,m),2.03(6H,s),2.36-2.54(2H,m),2.67-2.74(1H,m),2.98-3.09(2H,m),3.16-3.25(1H,m),3.22(3H,s),3.52(1H,d,J=3.5Hz),3.68-3.78(2H,m),4.03(1H,d,J=7.5Hz),4.64(1H,s),5.29(1H,dd,J=11,2Hz),5.38(1H,d,J=10.5Hz),7.33(1H,t,J=8Hz),7.47(1H,t,J=8Hz),7.63(1H,d,J=8Hz),7.63(1H,s),7.71(1H,d,J=8Hz) HR-MS m/z 734.39833 [Calcd.for $C_{38}H_{58}N_2O_{12}$(M^++1-$C_7H_{13}O$):734.39898]
183			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.80(3H,t,J=7.5Hz),0.88(3H,d,J=6.5Hz),1.04(3H,d,J=7.5Hz),1.12-1.97(32H,m),2.24-2.37(2H,m),2.28(6H,s),2.64-2.72(1H,m),2.77-2.85(1H,m),3.12-3.22(3H,m),3.20(3H,s),3.45-3.51(2H,m),3.64-3.75(2H,m),3.77(1H,d,J=15.5Hz),3.83(1H,d,J=15.5Hz),3.98(1H,d,J=7.5Hz),4.57(1H,s),5.18(1H,d,J=11Hz),5.20(1H,dd,J=11,2.5Hz),7.53(2H,d,J=8.5Hz),8.20(2H,d,J=8.5Hz) HR-MS m/z 753.40556 [Calcd.for $C_{37}H_{59}N_3O_{13}$(M^++1-$C_7H_{13}O$):753.40479]

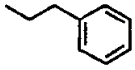
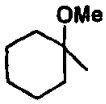
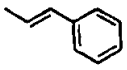
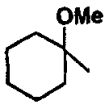
实施例	R^2	R^3	性状和物理性质
184			无色针状结晶(重结晶溶剂：MeOH-i-Pr_2O) m.p. 223.5-224℃ NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.96(3H,d,J=6.5Hz),1.04(3H,d,J=6.5Hz),1.09-1.98(32H,m),2.21-2.34(1H,m),2.29(6H,s),2.40-2.50(1H,m),2.63-2.73(1H,m),2.77-2.87(1H,m),3.12-3.24(2H,m),3.19(3H,s),3.27-3.38(2H,m),3.51(1H,d,J=5Hz),3.67-3.77(2H,m),3.83(1H,d,J=16Hz),3.90(1H,d,J=16Hz),4.09(1H,d,J=7.5Hz),4.57(1H,s),5.18(1H,d,J=10.5Hz),5.20(1H,dd,J=11.5,2Hz),7.17-7.28(2H,m),7.32-7.42(2H,m) Anal.Calcd.for $C_{44}H_{71}ClN_2O_{12}$ (Calcd.) :C,61.77;H,8.37;N,3.27 (Found) :C,61.46;H,8.13;N,3.25
185			无色针状结晶(重结晶溶剂：i-Pr_2O) m.p. 201.5-202.5℃ NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.92(3H,d,J=6.5Hz),1.04(3H,d,J=7.5Hz),1.08-1.99(32H,m),2.21-2.40(2H,m),2.28(6H,s),2.63-2.73(1H,m),2.79-2.88(1H,m),3.05-3.23(3H,m),3.20(3H,s),3.28(1H,brs),3.48(1H,d,J=5Hz),3.63-3.78(2H,m),3.64(1H,d,J=15.5Hz),3.69(1H,d,J=15.5Hz),3.93(1H,d,J=7.5Hz),4.58(1H,s),5.16(1H,d,J=11Hz),5.21(1H,dd,J=11,2Hz),7.20-7.30(3H,m),7.35(1H,s) Anal.Calcd.for $C_{44}H_{71}ClN_2O_{12}$ (Calcd.) :C,61.77;H,8.37;N,3.27 (Found) :C,61.48;H,8.11;N,3.23
186			无色板状结晶(重结晶溶剂：i-Pr_2O) m.p. 197.5-198.5℃ NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.89(3H,d,J=6.5Hz),1.03(3H,d,J=7.5Hz),1.09-1.99(32H,m),2.21-2.38(2H,m),2.28(6H,s),2.63-2.72(1H,m),2.77-2.86(1H,m),2.99-3.09(1H,m),3.13-3.23(2H,m),3.20(3H,s),3.28(1H,brs),3.47(1H,d,J=4.5Hz),3.62(1H,d,J=15Hz),3.62-3.78(2H,m),3.67(1H,d,J=15Hz),3.91(1H,d,J=7.5Hz),4.57(1H,s),5.15(1H,d,J=11Hz),5.20(1H,dd,J=11,2Hz),7.22-7.34(4H,m) Anal.Calcd.for $C_{44}H_{71}ClN_2O_{12}$ (Calcd.) :C,61.77;H,8.37;N,3.27 (Found) :C,61.73;H,8.26;N,3.04

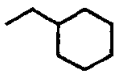
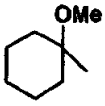
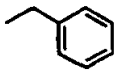
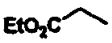
实施例	R^2	R^3	性状和物理性质
187			无色针状结晶(重结晶溶剂:i-Pr_2O) m.p. 222.5-223℃ NMR 谱 δ($CDCl_3$)ppm:0.79(3H,t,J=7.5Hz),0.82(3H,d,J=6.5Hz),1.03(3H,d,J=6.5Hz),1.09-1.98(32H,m),2.21-2.43(2H,m),2.29(6H,s),2.38(3H,s),2.63-2.71(1H,m),2.73-2.82(1H,m),3.13-3.25(3H,m),3.19(3H,s),3.29(1H,s),3.51(1H,d,J=4.5Hz),3.64-3.78(2H,m),3.65(1H,d,J=14.5Hz),3.71(1H,d,J=14.5Hz),4.00(1H,d,J=7.5Hz),4.57(1H,s),5.13(1H,d,J=10.5Hz),5.19(1H,dd,J=11,2Hz),7.10-7.19(3H,m),7.22-7.29(1H,m) Anal.Calcd.for $C_{45}H_{74}N_2O_{12}$ (Calcd.) :C,64.72;H,8.93;N,3.35 (Found) :C,64.45;H,8.66;N,3.36
188			无色粉末(重结晶溶剂: i-Pr_2O)m.p. 207.5-208.5℃ NMR 谱 δ($CDCl_3$)ppm:0.80(3H,t,J=7.5Hz),0.89(3H,d,J=6.5Hz),1.03(3H,d,J=6.5Hz),1.08-1.99(32H,m),2.21-2.40(2H,m),2.28(6H,s),2.34(3H,s),2.64-2.73(1H,m),2.77-2.87(1H,m),3.04-3.22(3H,m),3.19(3H,s),3.26(1H,brs),3.50(1H,d,J=4.5Hz),3.62(1H,d,J=14.5Hz),3.66(1H,d,J=14.5Hz),3.67-3.78(2H,m),3.95(1H,d,J=7.5Hz),4.57(1H,s),5.14(1H,d,J=10.5Hz),5.21(1H,dd,J=11,2Hz),7.07(1H,d,J=7.5Hz),7.13(1H,d,J=7.5Hz),7.17-7.23(2H,m) Anal.Calcd.for $C_{45}H_{74}N_2O_{12}$ (Calcd.) :C,64.72;H,8.93;N,3.35 (Found) :C,64.47;H,8.56;N,3.37
189			无色针状结晶(重结晶溶剂: i-Pr_2O) m.p. 209.5-210.5℃ NMR 谱 δ($CDCl_3$)ppm:0.80(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),1.03(3H,d,J=6.5Hz),1.09-1.98(32H,m),2.22-2.42(2H,m),2.28(6H,s),2.33(3H,s),2.64-2.72(1H,m),2.77-2.85(1H,m),3.02-3.10(1H,m),3.12-3.22(2H,m),3.19(3H,s),3.27(1H,brs),3.49(1H,d,J=4.5Hz),3.60(1H,d,J=15.5Hz),3.64-3.78(2H,m),3.65(1H,d,J=15.5Hz),3.97(1H,d,J=7.5Hz),4.57(1H,s),5.14(1H,d,J=11Hz),5.20(1H,dd,J=11,2Hz),7.12(2H,d,J=8Hz),7.23(2H,d,J=8Hz) Anal.Calcd.for $C_{45}H_{74}N_2O_{12}$ (Calcd.) :C,64.72;H,8.93;N,3.35 (Found) :C,64.52;H,8.54;N,3.29

实施例	R^2	R^3	性状和物理性质
190			无色棱形结晶(重结晶溶剂:i-Pr_2O) m.p. 210.5-211℃ NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.97(3H,d,J=6.5Hz),1.03(3H,d,J=6.5Hz),1.09-1.98(32H,m),2.22-2.34(1H,m),2.30(6H,s),2.43-2.52(1H,m),2.64-2.72(1H,m),2.75-2.83(1H,m),3.15-3.23(2H,m),3.19(3H,s),3.28(1H,brs),3.34-3.42(1H,m),3.52(1H,d,J=4.5Hz),3.62(1H,d,J=16Hz),3.66-3.78(2H,m),3.78(1H,d,J=16Hz),3.81(3H,s),4.10(1H,d,J=6.5Hz),4.57(1H,s),5.13(1H,d,J=11Hz),5.21(1H,dd,J=11,2Hz),6.87(1H,d,J=8Hz),6.91(1H,t,J=8Hz),7.18-7.29(2H,m) Anal.Calcd.for $C_{45}H_{74}N_2O_{13}$ (Calcd.) :C,63.51;H,8.76;N,3.29 (Found) :C,63.33;H,8.48;N,3.22
191			无色棱形结晶(重结晶溶剂:i-Pr_2O) m.p. 184-184.5℃ NMR 谱 δ($CDCl_3$)ppm:0.80(3H,t,J=7.5Hz),0.90(3H,d,J=6.5Hz),1.03(3H,d,J=7.5Hz),1.09-1.98(32H,m),2.22-2.38(2H,m),2.27(6H,s),2.63-2.72(1H,m),2.77-2.86(1H,m),3.01-3.11(1H,m),3.13-3.22(2H,m),3.20(3H,s),3.27(1H,brs),3.49(1H,d,J=4.5Hz),3.63(1H,d,J=14.5Hz),3.68(1H,d,J=14.5Hz),3.68-3.77(2H,m),3.80(3H,s),3.94(1H,d,J=6.5Hz),4.58(1H,s),5.15(1H,d,J=11Hz),5.20(1H,dd,J=11,2.5Hz),6.80(1H,dd,J=8,2Hz),6.93(2H,t,J=2Hz),7.22(1H,t,J=8Hz) Anal.Calcd.for $C_{45}H_{74}N_2O_{13}$ (Calcd.) :C,63.51;H,8.76;N,3.29 (Found) :C,63.22;H,8.82;N,3.26
192			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.80(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),1.03(3H,d,J=6.5Hz),1.08-1.99(32H,m),2.22-2.42(2H,m),2.28(6H,s),2.63-2.73(1H,m),2.77-2.86(1H,m),3.04-3.25(3H,m),3.20(3H,s),3.30(1H,brs),3.49(1H,d,J=5Hz),3.59(1H,d,J=14.5Hz),3.64(1H,d,J=14.5Hz),3.66-3.80(2H,m),3.79(3H,s),3.96(1H,d,J=7.5Hz),4.58(1H,s),5.14(1H,d,J=11Hz),5.20(1H,dd,J=11,2Hz),6.85(2H,d,J=8.5Hz),7.26(2H,d,J=8.5Hz) HR-MS m/z 738.43146 [Calcd.for $C_{38}H_{62}N_2O_{12}(M^+ +1-C_7H_{13}O)$:738.43028]

实施例	R^2	R^3	性状和物理性质
193			黄色针状结晶(重结晶溶剂: i-Pr_2O) mp.183-184℃ NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.99(3H,d,J=6.5Hz),1.03(3H,d,J=6.5Hz),1.08-1.87(31H,m),1.88-1.98(1H,m),2.22-2.33(1H,m),2.30(6H,s),2.55-2.63(1H,m),2.64-2.72(1H,m),2.76-2.85(1H,m),3.15-3.24(2H,m),3.19(3H,s),3.36-3.48(2H,m),3.50(1H,d,J=4.5Hz),3.66-3.77(2H,m),3.93(2H,s),4.13(1H,d,J=7.5Hz),4.58(1H,s),5.18(1H,d,J=11Hz),5.21(1H,dd,J=11,2Hz),7.20(1H,dd,J=7.5,4.5Hz),7.38(1H,d,J=7.5Hz),7.67(1H,td,J=7.5,2Hz),8.52(1H,d,J=4.5Hz) Anal.Calcd.for $C_{43}H_{71}N_3O_{12}$ (Calcd.):C,62.83;H,8.71;N,5.11 (Found) :C,62.93;H,8.55;N,5.13
194			淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.91(3H,d,J=6.5Hz),1.04(3H,d,J=6.5Hz),1.11-1.86(30H,m),1.88-1.97(1H,m),1.90(1H,s),2.23-2.32(1H,m),2.28(6H,s),2.33-2.40(1H,m),2.64-2.73(1H,m),2.78-2.87(1H,m),3.10-3.24(3H,m),3.20(3H,s),3.33(1H,brs),3.48(1H,d,J=4.5Hz),3.64-3.76(1H,m),3.68(1H,d,J=15.5Hz),3.69(1H,s),3.73(1H,d,J=15.5Hz),3.96(1H,d,J=7.5Hz),4.59(1H,s),5.17(1H,d,J=11Hz),5.21(1H,dd,J=11.5,2Hz),7.29(1H,dd,J=8,5Hz),7.75(1H,d,J=8Hz),8.54(1H,dd,J=5,1Hz),8.55(1H,d,J=2Hz) HR-MS m/z 709.41539 [Calcd.for $C_{36}H_{59}N_3O_{11}$(M^++1-$C_7H_{13}O$):709.41496]
195			黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.91(3H,d,J=6.5Hz),1.04(3H,d,J=7.5Hz),1.10-1.85(30H,m),1.88-1.98(1H,m),1.90(1H,s),2.21-2.34(2H,m),2.27(6H,s),2.64-2.72(1H,m),2.77-2.87(1H,m),3.06-3.14(1H,m),3.14-3.26(2H,m),3.20(3H,s),3.30(1H,s),3.47(1H,d,J=4.5Hz),3.61-3.77(2H,m),3.67(1H,d,J=15.5Hz),3.73(1H,d,J=15.5Hz),3.94(1H,d,J=7.5Hz),4.58(1H,s),5.14-5.24(2H,m),7.31(2H,d,J=6Hz),8.57(2H,d,J=6Hz) HR-MS m/z 709.41459 [Calcd.for $C_{36}H_{59}N_3O_{11}$(M^++1-$C_7H_{13}O$):709.41496]

实施例	R^2	R^3	性状和物理性质
196			淡褐色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.82(3H,t,J=7.5Hz),0.98(3H,d,J=6.5Hz),1.03(3H,d,J=7.5Hz),1.10-1.85(30H,m),1.87(1H,s),1.88-1.98(1H,m),2.20-2.37(2H,m),2.26(6H,s),2.65-2.73(1H,m),2.82-2.91(1H,m),3.06-3.21(2H,m),3.16(1H,dd,J=10.5,7.5Hz),3.20(3H,s),3.23(1H,brs),3.49(1H,d,J=4.5Hz),3.67-3.76(2H,m),3.93(2H,s),3.94(1H,d,J=7.5Hz),4.59(1H,s),5.18(1H,d,J=11Hz),5.22(1H,dd,J=11.5,2Hz),6.96(1H,dd,J=5,3.5Hz),7.00(1H,dd,J=3.5,1Hz),7.22(1H,dd,J=5,1Hz) HR-MS m/z 652.35451 [Calcd.for $C_{34}H_{54}NO_9S(M^+-C_8H_{16}NO_3)$:652.35196]
197			无色针状结晶(重结晶溶剂: i-Pr_2O) m.p. 215.5-216℃ NMR 谱 δ(CDCl$_3$)ppm:0.81(3H,t,J=7.5Hz),0.93(3H,d,J=6.5Hz),1.04(3H,d,J=6.5Hz),1.09-1.98(32H,m),2.23-2.39(2H,m),2.27(6H,s),2.63-2.72(1H,m),2.79-2.88(1H,m),3.08-3.22(3H,m),3.20(3H,s),3.30(1H,brs),3.47(1H,d,J=4.5Hz),3.63-3.77(2H,m),3.65(1H,d,J=15.5Hz),3.70(1H,d,J=15.5Hz),3.94(1H,d,J=7.5Hz),4.59(1H,s),5.17(1H,d,J=11Hz),5.21(1H,d,J=10Hz),6.69-6.77(1H,m),6.87-6.93(2H,m) Anal.Calcd.for $C_{44}H_{70}F_2N_2O_{12}$ (Calcd.) :C,61.66;H,8.23;N,3.27 (Found) :C,61.54;H,8.09;N,3.30
198			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.51(3H,d,J=6.5Hz),0.75(3H,t,J=7.5Hz),1.03(3H,d,J=7.5Hz),1.09-1.94(35H,m),2.18-2.33(2H,m),2.30(6H,s),2.39-2.48(1H,m),2.62-2.71(2H,m),3.14-3.24(1H,m),3.20(3H,s),3.30(1H,brs),3.32-3.41(1H,m),3.48(1H,d,J=5Hz),3.65-3.80(2H,m),3.75(1H,q,J=6.5Hz),4.04(1H,d,J=6.5Hz),4.56(1H,s),5.11(1H,d,J=11Hz),5.16(1H,d,J=10Hz),7.20-7.37(5H,m) HR-MS m/z 721.42854 [Calcd.for $C_{38}H_{61}N_2O_{11}(M^+-C_7H_{13}O)$:721.42754]

实施例	R^2	R^3	性状和物理性质
199			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.82(3H,t,J=7.5Hz),0.94(3H,d,J=6.5Hz),1.04(3H,d,J=7.5Hz),1.10-1.99(32H,m),2.22-2.39(2H,m),2.25(6H,s),2.62-2.86(4H,m),2.90-3.08(2H,m),3.13-3.32(4H,m),3.20(3H,s),3.45(1H,d,J=3.5Hz),3.67-3.79(2H,m),4.00(1H,d,J=7.5Hz),4.59(1H,s),5.16(1H,d,J=11Hz),5.23(1H,dd,J=11,2Hz),7.13-7.32(5H,m) HR-MS m/z 722.42499 [Calcd.for $C_{38}H_{62}N_2O_{11}$(M^++1-$C_7H_{13}O$):722.43536]
200			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.84(3H,t,J=7.5Hz),1.04(3H,d,J=7.5Hz),1.08(3H,d,J=6Hz),1.00-2.16(33H,m),2.04(6H,s),2.32-2.40(1H,m),2.67-2.73(1H,m),2.89-2.97(1H,m),3.08-3.25(3H,m),3.21(3H,s),3.28(1H,brs),3.47(1H,d,J=3.5Hz),3.68-3.77(2H,m),4.07(1H,d,J=7.5Hz),4.62(1H,s),5.25(1H,d,J=12Hz),5.27(1H,dd,J=11,2.5Hz),6.51(1H,d,J=16Hz),7.36-7.44(3H,m),7.52-7.58(2H,m),7.76(1H,d,J=16Hz) HR-MS m/z 719.41362 [Calcd.for $C_{38}H_{59}N_2O_{11}$(M^+-$C_7H_{13}O$):719.41189]

实施例	R^2	R^3	性状和物理性质
201			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.83(3H,t,J=7.5Hz),1.04(3H,d,J=6.5Hz),1.06(3H,d,J=6.5Hz),1.09-1.99(44H,m),2.16-2.32(3H,m),2.29(6H,s),2.38-2.47(1H,m),2.65-2.73(1H,m),2.80-2.90(1H,m),3.13-3.23(2H,m),3.20(3H,s),3.31-3.40(1H,m),3.44(1H,d,J=5Hz),3.65-3.77(2H,m),4.04(1H,d,J=7.5Hz),4.58(1H,s),5.16(1H,d,J=11Hz),5.23(1H,dd,J=11,2Hz) HR-MS m/z 826.55299 [Calcd.for $C_{44}H_{78}N_2O_{12}$(M^+):826.55548]
202			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.80(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),1.03(3H,d,J=7.5Hz),1.07-1.72(24H,m),1.85-1.97(1H,m),2.23-2.42(2H,m),2.28(6H,s),2.62-2.71(1H,m),2.77-2.85(1H,m),3.01-3.21(3H,m),3.26(1H,s),3.50(1H,d,J=4.5Hz),3.66(1H,d,J=15Hz),3.69-3.82(1H,m),3.71(1H,d,J=15Hz),3.84-3.93(1H,m),3.96(1H,d,J=7.5Hz),4.20-4.35(3H,m),4.55(1H,d,J=16.5Hz),4.64(1H,d,J=16.5Hz),5.17-5.24(2H,m),7.20-7.40(5H,m) HR-MS m/z 794.45520 [Calcd.for $C_{41}H_{66}N_2O_{13}$(M^+):794.45649]

实施例 203

5－O－德糖胺基－3－O－咪唑基羰基红霉素（エリスロノライド）A 9－[O－（1－甲氧环己基）肟]

向 2’－O－乙酰基－5－O－德糖胺基红霉素（エリスロノライド）A 9－[O－（1－甲氧环己基）肟]2.00g 的二氯甲烷 30ml 溶液中，在室温搅拌下，依次加入 1,1’－羰基二咪唑 2.18g 和 4－二甲基氨基吡啶 0.36g，将混合物加热回流 4 天。将反应液冷却后，向其中加入冰水，用饱和碳酸氢钠水溶液使之成碱性后，用二氯甲烷萃取。萃取液用水洗涤，硫酸钠干燥后，减压蒸除溶剂。残渣用柱色谱纯化（硅胶，二氯甲烷:甲醇 = 33:1），得到淡黄色非晶形固体 2.39g。将该淡黄色非晶型固体 1.32g 的甲醇 50ml 溶液在室温搅拌 1 天。将反应液减压浓缩，得到淡黄色非晶形固体 1.20g。

NMR谱　δ ($CDCl_3$)ppm:0.85(3H, t, J=7.5Hz), 1.05(3H, d, J=7.5Hz), 1.06(3H, d, J=6.5Hz), 1.12-2.00(31H, m), 2.08(1H, s), 2.18(6H, s), 2.37-2.44(1H, m), 2.49-2.58(1H, m), 2.67-2.77(1H, m), 3.00-3.08(2H, m), 3.18-3.24(1H, m), 3.21(3H, s), 3.31(1H, s), 3.53(1H, d, J=3.5Hz), 3.63-3.77(3H, m), 3.80(1H, d, J=6.5Hz), 4.64(1H, s), 5.25-5.33(2H, m), 7.11(1H, s), 7.50(1H, s), 8.22(1H, s)

HR-MS　m/z　684.39400

[Calcd. for $C_{33}H_{56}N_4O_{11}$ (M^++1－$C_7H_{13}O$) :684.39456]

实施例 204

5－O－德糖胺基－3－O－苯乙酰基红霉素（エリスロノライド）A 9－[O－（2－甲氧苯乙基）肟]

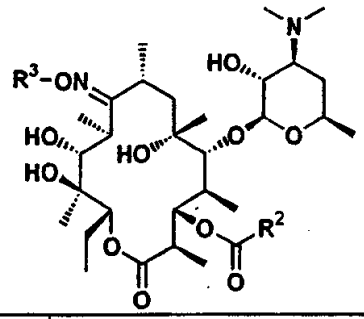
将 5－O－德糖胺基－3－O－苯乙酰基红霉素（エリスロノライド）A 9－肟 0.40g，碘化四丁基铵 11mg，2－甲氧基苯乙基甲磺酸酯 0.20g 和粉末状氢氧化钾 45mg 的四氢呋喃 4ml 混合液在室温搅拌 5 天。向反应液中加入水，用乙醚萃取。萃取液用饱和食盐水洗净，硫酸钠干燥后，减压蒸除溶剂。残渣用柱色谱纯化（硅胶，二氯甲烷:甲醇:氨水 = 100:3:1.5），得到无色非晶形固体 0.50g。

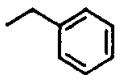
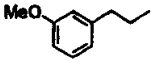
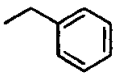
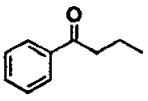
NMR谱 δ ($CDCl_3$) ppm: 0.81 (3H, t, J=7.5Hz), 0.87 (3H, d, J=6.5Hz), 0.97 (3H, d, J=7.5Hz), 1.10-1.67 (21H, m), 1.88-1.99 (1H, m), 2.22-2.30 (1H, m), 2.27 (6H, s), 2.31-2.38 (1H, m), 2.59-2.68 (1H, m), 2.77-2.85 (1H, m), 2.87-3.04 (2H, m), 3.06-3.20 (3H, m), 3.28 (1H, brs), 3.41 (1H, d, J=5Hz), 3.54-3.63 (1H, m), 3.66 (1H, d, J=14.5Hz), 3.70 (1H, d, J=14.5Hz), 3.73 (1H, s), 3.84 (3H, s), 3.95 (1H, d, J=7.5Hz), 4.20-4.28 (2H, m), 4.51 (1H, s), 5.14 (1H, d, J=11Hz), 5.22 (1H, dd, J=11.5, 2Hz), 6.81-6.93 (2H, m), 7.08-7.14 (1H, m), 7.17-7.40 (6H, m)

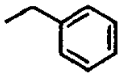
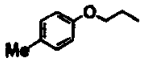
HR-MS m/z 668.38103

[Calcd. for $C_{38}H_{54}NO_9$ (M^++1−$C_8H_{16}NO_3$) :668.37986]

按照实施例 204 同样的方法，得到实施例 205～实施例 207 的化合物。



实施例	R^2	R^3	性状和物理性质
205			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),0.97(3H,d,J=7.5Hz),1.08-1.72(21H,m),1.87-1.98(1H,m),2.20-2.29(1H,m),2.27(6H,s),2.30-2.38(1H,m),2.60-2.70(1H,m),2.76-2.86(1H,m),2.89-2.98(2H,m),3.04-3.17(1H,m),3.14(1H,s),3.15(1H,dd,J=10.5,7.5Hz),3.28(1H,s),3.41(1H,d,J=5Hz),3.53-3.63(1H,m),3.66(1H,d,J=15Hz),3.70(1H,d,J=15Hz),3.73(1H,s),3.81(3H,s),3.94(1H,d,J=7.5Hz),4.21-4.33(2H,m),4.46(1H,s),5.12(1H,d,J=11Hz),5.21(1H,dd,J=11.5,2Hz),6.74-6.81(3H,m),7.20-7.38(6H,m) HR-MS m/z 668.38002 [Calcd.for $C_{38}H_{54}NO_9(M^+-C_8H_{16}NO_3)$:668.37986]
206			淡黄色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),0.93(3H,d,J=7.5Hz),0.99-1.80(23H,m),1.87-1.98(1H,m),2.15-2.40(2H,m),2.27(6H,s),2.60-2.70(1H,m),2.74-2.86(1H,m),3.04-3.37(6H,m),3.41(1H,d,J=4.5Hz),3.50-3.62(1H,m),3.65(1H,d,J=14.5Hz),3.70(1H,d,J=14.5Hz),3.75(1H,s),3.94(1H,d,J=6.5Hz),4.40(1H,s),4.42-4.51(2H,m),5.11(1H,d,J=10.5Hz),5.18-5.25(1H,m),7.10-7.60(6H,m),7.90-8.00(2H,m) HR-MS m/z 668.38238 [Calcd.for $C_{38}H_{54}NO_9(M^+-C_9H_{11}NO_2)$:668.37986]

实施例	R^2	R^3	性状和物理性质
207			无色非晶形固体 NMR 谱 δ($CDCl_3$)ppm:0.81(3H,t,J=7.5Hz),0.87(3H,d,J=6.5Hz),0.99(3H,d,J=6.5Hz),1.05-1.73(19H,m),1.87-1.97(1H,m),2.02(1H,s),2.20-2.38(2H,m),2.26(6H,s),2.28(3H,s),2.63-2.73(1H,m),2.75-2.87(1H,m),3.03-3.19(3H,m),3.15(1H,dd,J=10.5,7.5Hz),3.26(1H,brs),3.42(1H,d,J=5Hz),3.62-3.76(1H,m),3.65(1H,d,J=14.5Hz),3.70(1H,d,J=14.5Hz),3.79(1H,s),3.94(1H,d,J=7.5Hz),4.07-4.18(2H,m),4.32-4.43(3H,m),5.12(1H,d,J=10.5Hz),5.21(1H,d,J=9Hz),6.84(2H,d,J=8.5Hz),7.09(2H,d,J=8.5Hz),7.22-7.40(5H,m) HR-MS m/z 668.38238 [Calcd.for $C_{38}H_{54}NO_9(M^+-C_8H_{16}NO_3)$:668.37986]

实施例 208

5-O-德糖胺基-3-O-甲氧羰基红霉素（エリスロノライド）A 9-[O-（3-苯基丙基）肟]

向 2'-O-乙酰基-5-O-德糖胺基红霉素（エリスロノライド）A 9-[O-（3-苯基丙基）肟]0.80g 的吡啶 8ml 溶液中，滴入氯甲酸苯酯 1.3ml 后，将混合物在室温搅拌 24 小时。向反应液中加入水，用乙醚萃取。萃取液用饱和食盐水洗净，硫酸钠干燥后，减压蒸除溶剂。残渣用柱色谱纯化（硅胶，乙酸乙酯），得到无色非晶形固体 0.38g。将该无色非晶型固体 0.38g 的甲醇 5ml 溶液在室温搅拌 160 小时。将反应液减压浓缩，残渣用柱色谱纯化（硅胶，乙酸乙酯），得到无色非晶型固体 0.22g。

NMR 谱 δ ($CDCl_3$) ppm:0.84(3H, t, J=7.5Hz), 1.04(3H, d, J=6.5Hz), 1.19-1.80(23H, m), 1.90-2.03(4H, m), 2.20-2.40(7H, m), 2.47-2.60(1H, m), 2.60-2.75(3H, m), 2.85-2.95(1H, m), 3.12(1H, s), 3.15-3.30(2H, m), 3.30-3.40(1H, m), 3.52(1H, d, J=3.5Hz), 3.62-3.72(2H, m), 3.80(3H, s), 4.06(2H, t, J=6.5Hz), 4.19(1H, d, J=7.5Hz), 4.45(1H, s), 4.89(1H, d, J=11Hz), 5.26(1H, dd, J=11, 2Hz), 7.10-7.31(5H, m)

HR-MS m/z 766.46354[Calcd. for $C_{40}H_{66}N_2O_{12}$ (M^+) :766.46158]

00.08.10

按照实施例 208 同样的方法，得到实施例 209 的化合物。

实施例 209

5－O－德糖胺基－3－O－甲氧羰基红霉素（エリスロノライド）A 9－[O－（2－苯氧乙基）肟]

性状　无色非晶形固体

NMR 谱　δ ($CDCl_3$) ppm: 0.85 (3H, t, J=7.5Hz), 1.00 (3H, d, J=6.5Hz), 1.05-1.70 (23H, m), 1.90-2.00 (1H, m), 2.12 (1H, s), 2.20-2.35 (1H, m), 2.27 (6H, s), 2.40-2.50 (1H, m), 2.62-2.75 (1H, m), 2.85-2.95 (1H, m), 3.12 (1H, s), 3.15 (1H, dd, J=10.5, 7.5Hz), 3.24 (1H, brs), 3.30-3.40 (1H, m), 3.46 (1H, d, J=4.5Hz), 3.65-3.85 (2H, m), 3.79 (3H, s), 4.13-4.20 (3H, m), 4.37-4.43 (3H, m), 4.87 (1H, d, J=10Hz), 5.26 (1H, dd, J=11, 2.5Hz), 6.90-7.00 (3H, m), 7.25-7.35 (2H, m)

HR-MS　m/z　768.43949 [Calcd. for $C_{39}H_{64}N_2O_{13}$ (M^+) :768.44084]

实施例 210

5－O－德糖胺基－3－O－苯基氨基甲酰基红霉素（エリスロノライド）A 9－[O－（3－苯基丙基）肟]

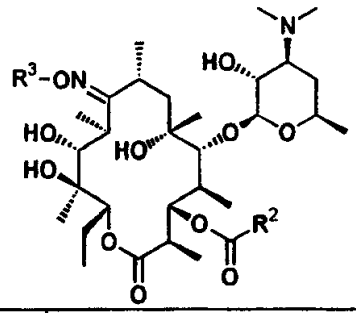
将 2'－O－乙酰基－5－O－德糖胺基红霉素（エリスロノライド）A 9－[O－（3－苯基丙基）肟] 0.40g，异氰酸苯酯 0.34ml 和吡啶 0.12ml 的四氢呋喃 4ml 溶液，在室温搅拌 28 小时。向反应液中加入水，用乙醚萃取。萃取液用饱和食盐水洗净，硫酸钠干燥后，减压蒸除溶剂。将残渣的甲醇 15ml 溶液在室温搅拌 24 小时。将反应液减压浓缩，残渣用柱色谱纯化（硅胶，乙酸乙酯），得到无色非晶形固体 0.31g。

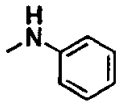
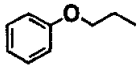
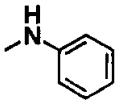
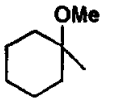
00.08.10

NMR 谱 δ ($CDCl_3$) ppm: 0.85 (3H, t, J=7.5Hz), 0.97-1.68 (27H, m), 1.90-2.03 (4H, m), 2.13-2.38 (2H, m), 2.19 (6H, s), 2.62-2.77 (3H, m), 2.82-2.95 (1H, m), 3.05-3.25 (3H, m), 3.55 (1H, d, J=3.5Hz), 3.63-3.79 (2H, m), 3.98-4.17 (3H, m), 4.48 (1H, s), 5.03 (1H, d, J=10.5Hz), 5.27 (1H, dd, J=11.5, 2Hz), 7.05 (1H, t, J=7.5Hz), 7.11 (1H, brs), 7.16-7.22 (3H, m), 7.25-7.34 (4H, m), 7.40-7.48 (2H, m)

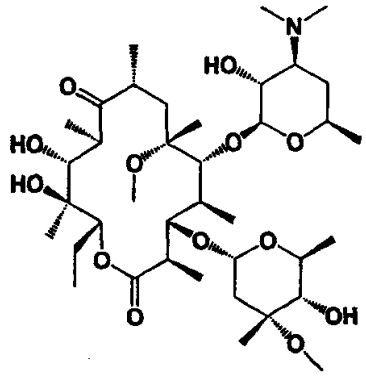
HR-MS m/z 827.49261 [Calcd. for $C_{45}H_{69}N_3O_{11}$ (M^+) :827.49321]

按照实施例 210 同样的方法，得到实施例 211～实施例 212 的化合物。

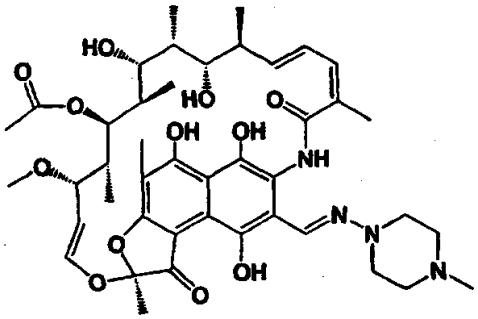


实施例	R^2	R^3	性状和物理性质
211			无色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.85(3H,t,J=7.5Hz),0.92-1.78(27H,m),1.90-2.02(1H,m),2.06(1H,s),2.10-2.26(1H,m),2.17(6H,s),2.27-2.36(1H,m),2.64-2.76(1H,m),2.81-2.95(1H,m),3.02-3.23(3H,m),3.41-3.53(1H,m),3.68-3.79(1H,m),3.82(1H,s),4.04(1H,d,J=7.5Hz),4.09-4.22(2H,m),4.28-4.46(3H,m),5.01(1H,d,J=10.5Hz),5.28(1H,dd,J=11,2.5Hz),6.91-7.14(4H,m),7.10(1H,brs),7.27-7.36(4H,m),7.38-7.50(2H,m) HR-MS m/z 829.47495 [Calcd.for $C_{44}H_{67}N_3O_{12}$(M$^+$):829.47248]
212			淡黄色非晶形固体 NMR 谱 δ(CDCl$_3$)ppm:0.84(3H,t,J=7.5Hz),0.95-2.00(23H,m),2.09-2.35(2H,m),2.19(6H,s),2.64-2.74(1H,m),2.83-2.93(1H,m),3.08-3.39(3H,m),3.20(3H,s),3.57(1H,d,J=3Hz),3.66-3.80(3H,m),4.02-4.11(1H,m),4.62(1H,s),5.04(1H,d,J=10.5Hz),5.26(1H,dd,J=11,2.5Hz),7.00-7.10(2H,m),7.28-7.50(4H,m) HR-MS m/z 709.42217 [Calcd.for $C_{36}H_{59}N_3O_{11}$(M$^+$+1-$C_7H_{13}O$):709.41496]

下面，为确认本发明化合物的优良效果，进行对非典型耐酸细菌（MAC）抗菌谱的测定。另外，作为对照化合物，使用克拉霉素和利福平。



对照化合物1
（克拉霉素）



对照化合物2
（利福平）

对非典型耐酸细菌的抗菌谱

抗菌力（最小生长抑制浓度：MIC）的测定，按照日本化学疗法学会标准法[日本化学疗法学会志，29卷，76页（1981年）]，使用临床分离菌株的非典型耐酸细菌，以活菌数为10^6CFU/ml进行试验。结果列于表126和表127。本发明化合物对包括耐红霉素的非典型耐酸细菌（M.avium 20092等）在内的非典型耐酸细菌，与对照化合物相比，显示出优秀的抗菌力。另外，表中的细菌名如下。

鸟分支杆菌（M.avium）

胞内分支杆菌（M.intracellulare）

抗菌谱（最小生长抑制浓度 μg/ml）

试验菌	实施例23	实施例40	实施例78	对照化合物1	对照化合物2
M.avium 20034	3.13	3.13	3.13	3.13	12.5
M.avium 20045	3.13	3.13	1.56	1.56	3.13
M.avium 20092	6.25	3.13	3.13	>50	50
M.avium 20096	3.13	3.13	1.56	>50	3.13
M.intracellulare 20066	3.13	3.13	0.78	3.13	3.13
M.intracellulare 20067	1.56	1.56	0.78	1.56	1.56
M.intracellulare 20073	3.13	1.56	0.78	1.56	3.13
M.intracellulare 20075	3.13	3.13	0.78	3.13	3.13

敏感性分布（最小生长抑制浓度 μg/ml）

试验菌（菌株数）	化合物	最小生长抑制浓度 μg/ml 范围			50%	80%	90%
M.avium (27)	实施例23	1.56	～	6.25	3.13	3.13	3.13
	实施例40	1.56	～	3.13	3.13	3.13	3.13
	实施例78	1.56	～	3.13	1.56	1.56	3.13
	对照化合物1	0.78	～	>100	3.13	6.25	12.5
	对照化合物2	0.39	～	50	25	50	50

产业上的可利用性

本发明涉及的红霉素衍生物或其盐，对包括对多种药物具有耐受性细菌在内的非典型耐酸细菌具有优秀的抗菌力，作为抗菌剂是极为有用的。