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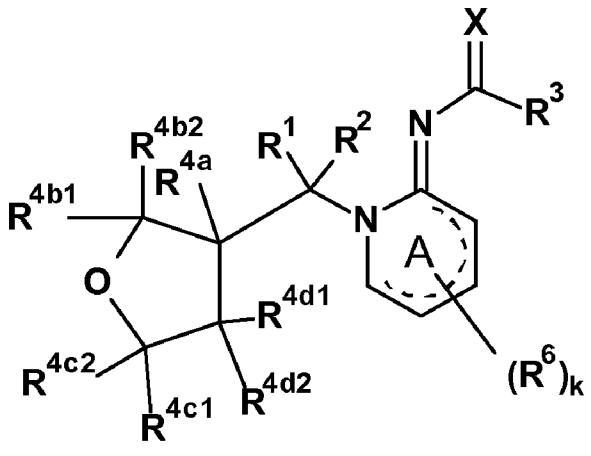
(54) Title: N-SUBSTITUTED PYRIDYLIDENE COMPOUNDS AND DERIVATIVES FOR COMBATING ANIMAL PESTS



(I)

(57) Abstract: The invention relates to pyridylidene compounds of formula (I), to the enantiomers, diastereomers and salts thereof and to compositions comprising such compounds. The invention also relates to methods and uses of these N-substituted pyridylidene compounds,and of compositions comprising thereof, for combating and controlling animal pests. Furthermore the invention relates also to pesticidal methods of applying such N-substituted pyridylidene compounds. The N-substituted pyridylidene compounds of the present invention are defined by the following formula (I), wherein k, X, R^1, R^2, R^3, R^{4a}, R^{4b1}, R^{4b2}, R^{4c1}, R^{c2}, R^{4d1}, R^{4d2} and R^6 are defined as in the claims and description.

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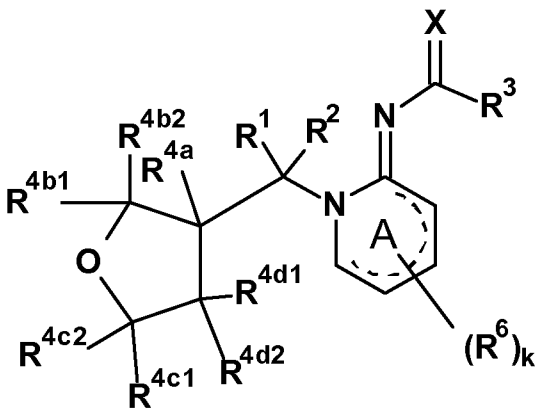
N-substituted pyridylidene compounds and derivatives for combating animal pests

The present invention relates to N-substituted pyridylidene compounds, to the enantiomers, diastereomers, derivatives and salts thereof and to compositions comprising such compounds. The invention also relates to the use of the N-substituted pyridylidene compounds, of their salts or of compositions comprising them for combating animal pests. Furthermore the invention relates also to methods of applying such compounds.

Animal pests destroy growing and harvested crops and attack wooden dwelling and commercial structures, causing large economic loss to the food supply and to property. While a large number of pesticidal agents are known, due to the ability of target pests to develop resistance to said agents, there is an ongoing need for new agents for combating animal pests. In particular, animal pests such as insects and acaridae are difficult to be effectively controlled.

It is therefore an object of the present invention to provide compounds having a good pesticidal activity, especially against difficult to control insects and acaridae.

It has been found that these objects are solved by N-substituted pyridylidene compounds of the general formula (I):



(I)

wherein

A is a 6-membered saturated, partially or fully unsaturated N-heterocyclic ring;

k is an integer selected from 0, 1, 2, 3 or 4;

X is selected from O and S;

R^1, R^2 are independently from each other selected from the group consisting of C_1-C_6-alkyl, C_3-C_6-cycloalkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, C_1-C_6-alkoxy, C_1-C_6-alkylthio, wherein each of the aforementioned radicals are unsubstituted, partly or completely halogenated or may carry any combination of one or more radicals R^7;
hydrogen, halogen, cyano, nitro, -SCN, $Si(R^{11})_2R^{12}$, OR^{16}, OSO_2R^{16}, $S(O)_nR^{16}$, $S(O)_nNR^{17a}R^{17b}$, $NR^{17a}R^{17b}$, $C(=O)NR^{17a}R^{17b}$, $C(=S)NR^{17a}R^{17b}$, $C(=O)OR^{16}$, $C(=O)R^{15}$, $C(=S)R^{15}$,
phenyl, optionally substituted with 1, 2, 3, 4 or 5 substituents R^{18}, which are independently selected from one another,
a 3-, 4-, 5-, 6- or 7- membered saturated, partly saturated or unsaturated aromatic heterocyclic ring comprising 1, 2 or 3 heteroatoms selected from oxygen, nitrogen and/or sulfur, optionally substituted with 1, 2, 3 or 4, substituents R^{18}, selected independently from one another, and wherein the nitrogen and/or the sulfur atom(s) of the heterocyclic ring may optionally be oxidized,
or
R^1 and R^2 from, together with the carbon atom, which they attached to, a 3-, 4, 5- or 6-membered saturated or partly unsaturated carbocyclic or heterocyclic ring, wherein each of the carbon atoms of said cycle are unsubstituted or may carry any combination of 1 or 2 radicals R^7,
or
R^1 and R^2 may together be =O, $=CR^{13}R^{14}$; =S; $=S(O)_nR^{16}$; $=S(O)_nNR^{17a}R^{17b}$, $=NR^{17a}$, $=NOR^{16}$;$=NNR^{17a}$;

R^3 is selected from phenyl and Het, wherein

Het is a 3-, 4-, 5-, 6- or 7- membered saturated, partly saturated or unsaturated or aromatic heterocyclic ring comprising 1, 2, 3 or 4 heteroatoms selected from oxygen, nitrogen and/or sulfur, wherein the nitrogen and/or the sulfur atom(s) of the heterocyclic ring may optionally be oxidized, and wherein the Het ring may be attached by a carbon or a nitrogen bond;

wherein the phenyl or the Het may optionally be substituted with q substituents selected from R^y, wherein

q is an integer selected from 1, 2, 3, 4 or 5;

and

R^y is selected each independently from one another and from the value of q from the group consisting of hydrogen, halogen, cyano, azido, nitro, SCN, SF_5, C_1-C_{10}-alkyl, C_3-C_8-cycloalkyl, C_2-C_{10}-alkenyl, C_2-C_{10}-alkynyl, wherein the carbon atoms of the aforementioned aliphatic and cyclo-aliphatic radicals may optionally be substituted with one or more R^7, which are selected independently from one another,

$Si(R^{11})_2R^{12}$, OR^8, $OS(O)_nR^8$, $-S(O)_nR^8$, $S(O)_nNR^{9a}R^{9b}$, $NR^{9a}R^{9b}$, $C(=O)R^7$, $C(=S)R^7$, $C(=O)OR^7$,$-C(=NR^{9a})R^7$, $C(=N\text{-}NR^{9a}R^{9b})R^7$, $C(=NOR^8)R^7$, $C(=O)NR^{9a}R^{9b}$, $C(=S)NR^{9a}R^{9b}$,

Y-Ar or Y-Cy,

Wherein

Y is a single bond, CH_2, NR^5, O or S;

Ar is phenyl, naphthyl or

a mono- or bicyclic 5 to 10- membered heteroaromatic ring comprising 1, 2, 3 or 4 heteroatoms selected from oxygen, nitrogen and/or sulfur, wherein the nitrogen and/or the sulfur atom(s) of the heterocyclic ring may optionally be oxidized;

wherein Ar is optionally substituted with 1, 2, 3, 4 or 5 substituents selected independently from one another from hydrogen, halogen, CN, NO_2, OH, SH, NH_2, CO_2H or $S(O)_n$-C_1-C_6-alkyl, $(C=NR^{17a})R^{15}$, $C(=NOR^{16})R^{15}$, C1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkinyl or C_1-C_6-alkoxy, and wherein the carbon atoms of the aforementioned aliphatic radicals may be partially or fully halogenated;

and

Cy is a C_3-C_{12} cycloalkyl or C_3-C_{12} cycloalkenyl, which is unsubstituted or substituted with 1 to 5 radicals selected independently of one another from the group consisting of hydrogen, halogen, CN, NO_2, OH, SH,NH_2, CO_2H, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 alkoxy, C_2-C_6 alkenyloxy, C_2-C_6 alkynyloxy, C_1-C_6 haloalkoxy and C_1-C_6 alkylthio;

or wherein

two R^y present together on one atom of a saturated or partly saturated heterocyclic may be =O, $=CR^{13}R^{14}$; =S, $=S(O)_nR^{16}$; $=S(O)_nNR^{17a}R^{17b}$, $=NR^{17a}$, $=NOR^{16}$ or $=NNR^{17a}$;

or

two R^y on adjacent carbon atoms of the phenyl or heterocyclic ring Het may be a bridge selected from $CH_2CH_2CH_2CH_2$, CH=CH-CH=CH, N=CH-CH=CH,

CH=N-CH=CH, N=CH-N=CH, $OCH_2CH_2CH_2$, $OCH=CHCH_2$, $CH_2OCH_2CH_2$, OCH_2CH_2O, OCH_2OCH_2, $CH_2CH_2CH_2$, $CH=CHCH_2$, CH_2CH_2O, CH=CHO, CH_2OCH_2, $CH_2C(=O)O$, $C(=O)OCH_2$, $O(CH_2)O$, $SCH_2CH_2CH_2$, $SCH=CHCH_2$, $CH_2SCH_2CH_2$, SCH_2CH_2S, SCH_2SCH_2, CH_2CH_2S, CH=CHS, CH_2SCH_2, $CH_2C(=S)S$, $C(=S)SCH_2$, $S(CH_2)S$, $CH_2CH_2NR^{17a}$, $CH_2CH=N$, $CH=CH-NR^{17a}$, OCH=N, SCH=N and form together with the carbon atoms to which the two R^y are bonded to a 5-membered or 6-membered partly saturated or unsaturated, aromatic carbocyclic or heteocyclic ring, wherein the ring may optionally be substituted with one or two substituents selected from =O, OH, CH_3, NO_2, halogen, cyano, C_1-C_6 alkyl, C_1-C_6 alkenyl, C_1-C_6 alkynyl, C_3-C_6 cycloalkyl, C_1-C_6 alkoxy, $S(O)_nR^{16}$ or, wherein the aliphatic radicals of the last six substituents may be partially or fully halogenated;

R^{4a}, R^{4b1}, R^{4b2}, R^{4c1}, R^{4c2}, R^{4d1} and R^{4d2} are each independently from one another selected from the group consisting of hydrogen, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 alkoxyl, C_1-C_6 alkylamino, C_3-C_6 cycloalkyl, wherein each carbon atom of the carbon chain may be partially or fully halogenated or may be substituted with 1, 2 or 3 radials selected independently from one another from the group consisting of CN, NO_2, CN, OH, SH or NH_2;
or wherein two of R^{4b1} and R^{4b2},
or of R^{4c1} and R^{4c2} or of R^{4d1} and R^{4d2} on the same carbon may together form C=O or C=S;

R^5 is selected from the group consisting of hydrogen, cyano, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylthio, C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, C_3-C_8-cycloalkyl, wherein the four last mentioned aliphatic and cyclo-aliphatic radicals may be unsubstituted, partially or fully halogenated and/or oxygenated and/or may carry 1 or 2 radicals selected from R^7,
phenyl, benzyl, pyridyl, pyrimidyl, wherein the four last mentioned radicals may be unsubstituted, partially or fully halogenated and/or carry 1, 2 or 3 substituents selected from C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6 haloalkoxy or (C_1-C_6-alkoxy)carbonyl;

R^6 is selected each, independently from the value of k and from one another, from the group consisting of halogen, azido, CN, NO_2, SCN, SF_5, C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, and wherein the carbon atoms of the aforementioned aliphatic and cyclo-aliphatic radicals may optionally be further substituted independently from one another with one or more R^7, OR^8, $C(=O)R^7$ or $C(=S)R^7$,
or
two of R^6 present on one ring carbon or sulfur atom may together form =O, $=CR^{13}R^{14}$; =S; $=S(O)_nR^{16}$;, $=NR^{17a}$, $=NOR^{16}$;$=NNR^{17a}$;

R^7 is each independently from one another selected from the group consisting of hydrogen, halogen, cyano, azido, nitro, -SCN, SF_5, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylthio, C_3-C_8-cycloalkyl, C_3-C_8-halocycloalkyl, C_2-C_6-alkenyl, C_2-C_6-haloalkenyl, C_2-C_6-alkynyl, C_2-C_6 haloalkynyl, $Si(R^{11})_2R^{12}$, OR^{16}, OSO_2R^{16}, $S(O)_nR^{16}$, $S(O)_nNR^{17a}R^{17b}$, $NR^{17a}R^{17b}$, $C(=O)NR^{17a}R^{17b}$, $C(=S)NR^{17a}R^{17b}$, $C(=O)OR^{16}$, $C(=O)R^{15}$, $C(=S)R^{15}$, $C(=NR^{17a})R^{15}$, $C(=NOR^{16})R^{15}$,
phenyl, optionally substituted with 1, 2, 3, 4 or 5 substituents R^{10}, which are independently selected from one another,
a 3-, 4-, 5-, 6- or 7- membered saturated, partly saturated or unsaturated aromatic heterocyclic ring comprising 1, 2 or 3 heteroatoms selected from oxygen, nitrogen and sulfur, optionally substituted with 1, 2, 3 or 4 substituents R^{10}, selected independently from one another, and wherein the nitrogen and/or the sulfur atom(s) of the heterocyclic ring may optionally be oxidized,
or
two R^7 present on one carbon atom may together form =O, $=CR^{13}R^{14}$; =S; $=S(O)_nR^{16}$; $=S(O)_nNR^{17a}R^{17b}$, $=NR^{17a}$, $=NOR^{16}$;$=NNR^{17a}$;
or
two R^7 may form a 3-, 4-, 5-, 6-, 7- or 8-membered saturated or partly unsaturated carbocyclic or heterocyclic ring together with the carbon atoms to which the two R^7 are bonded to;

R^8 is each independently from one another selected from the group consisting of hydrogen, cyano, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkoxy-C_1-C_6-alkyl, C_1-C_6-alkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylthio, C_3-C_8-cycloalkyl, C_3-C_8-cycloalkyl-C_1-C_4-alkyl, C_3-C_8-halocycloalkyl,

C_2-C_6-alkenyl, C_2-C_6-haloalkenyl, C_2-C_6-alkynyl, C_2-C_6 haloalkynyl, -Si(R^{11})$_2R^{12}$, $S(O)_nR^{16}$, $S(O)_nNR^{17a}R^{17b}$, $NR^{17a}R^{17b}$, -N=$CR^{13}R^{14}$, -C(=O)R^{15}, $C(=O)NR^{17a}R^{17b}$, $C(=S)NR^{17a}R^{17b}$, $C(=O)OR^{16}$,

phenyl, phenyl-C_1-C_4-alkyl, wherein the phenyl moiety of the last two aforementioned radicals is optionally substituted with one or more substituents R^{10}; which are selected independently from one another,

a 3-, 4-, 5-, 6- or 7- membered saturated, partly saturated or unsaturated aromatic heterocyclic ring comprising 1, 2 or 3 heteroatoms selected from oxygen, nitrogen and sulfur, optionally substituted with 1, 2, 3 or 4 substituents R^{10}, selected independently from one another, and wherein the nitrogen and/or the sulfur atom(s) of the heterocyclic ring may optionally be oxidized;

R^{9a}, R^{9b} are each independently from one another selected from the group consisting of hydrogen, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkylthio, C_1-C_6-haloalkylthio, C_3-C_8-cycloalkyl, C_3-C_8-halocycloalkyl, C_2-C_6-alkenyl, C_2-C_6-haloalkenyl, C_2-C_6-alkynyl, C_2-C_6 haloalkynyl, $S(O)_nR^{16}$, -$S(O)_nNR^{17a}R^{17b}$, C(=O)R^{15}, $C(=O)OR^{16}$, $C(=O)NR^{17a}R^{17b}$, C(=S)R^{15}, $C(=S)SR^{16}$, $C(=S)NR^{17a}R^{17b}$, $C(=NR^{17a})R^{15}$; $NR^{17a}R^{17b}$, $P(=O)(R^{19})_2$,

phenyl, optionally substituted with 1, 2, 3 or 4 substituents R^{10}, which are selected independently from one another;

a 3-, 4-, 5-, 6- or 7- membered saturated, partly saturated or unsaturated aromatic heterocyclic ring comprising 1, 2, 3 or 4 heteroatoms selected from oxygen, nitrogen and sulfur, optionally substituted with 1, 2, 3 or 4 substituents R^{10}, selected independently from one another, and wherein the nitrogen and/or the sulfur atom(s) of the heterocyclic ring may optionally be oxidized;

or,

R^{9a} and R^{9b} are together a C_2-C_7 alkylene chain and form a 3-, 4-, 5-, 6-, 7- or 8-membered saturated, partly saturated or unsaturated aromatic ring together with the nitrogen atom they are bonded to, wherein the alkylene chain may contain one or two heteratoms or heteroatom groups selected from oxygen, sulfur, nitrogen, SO, SO_2 and NO, and may optionally be substituted with halogen, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkylthio, C_1-C_6-haloalkylthio, C_3-C_8-cycloalkyl, C_3-C_8-halocycloalkyl, C_2-C_6-alkenyl, C_2-C_6-haloalkenyl, C_2-C_6-alkynyl, C_2-C_6 haloalkynyl,

phenyl, optionally substituted with 1, 2, 3, 4 or 5 substituents R^{10}; which are selected independently from one another,
a 3-, 4-, 5-, 6,- or 7-membered saturated, partly saturated or unsaturated aromatic heterocyclic ring comprising 1, 2 or 3 heteroatoms selected from oxygen, nitrogen and/or sulfur, optionally substituted with one or more substituents R^{10}, selected independently from one another, and wherein the nitrogen and/or the sulfur atom(s) of the heterocyclic ring may optionally be oxidized;

or

R^{9a} and R^{9b} together may form a $=CR^{13}R^{14}$, $=S(O)_nR^{16}$, $=S(O)_nNR^{17}R^{17}$, $=NR^{17}$ or $=NOR^{16}$ radical;

R^{10} is each independently from one another selected from the group consisting of hydrogen, halogen, cyano, azido, nitro, SCN, SF_5, C_1-C_{10}-alkyl, C_3-C_8-cycloalkyl, C_2-C_{10}-alkenyl, C_2-C_{10}-alkynyl, wherein the carbon atoms of the aforementioned aliphatic and cyclo-aliphatic radicals may optionally be substituted with one or more R^{15}, which are selected independently from one another,
$Si(R^{11})_2R^{12}$, OR^{16}, $OS(O)_nR^{16}$, $-S(O)_nR^{16}$, $S(O)_nNR^{17a}R^{17b}$, $NR^{17a}R^{17b}$, $C(=O)R^{15}$, $C(=S)R^{15}$, $C(=O)OR^{16}$, $-C(=NR^{17a})R^{15}$, $C(=O)NR^{17a}R^{17b}$, $C(=S)NR^{17a}R^{17b}$,
phenyl, optionally substituted with halogen, cyano, nitro, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy or C_1-C_6-haloalkoxy,
a 3-, 4-, 5-, 6- or 7- membered saturated, partly saturated or unsaturated aromatic heterocyclic ring comprising 1, 2 or 3 heteroatoms selected from oxygen, nitrogen and sulfur, optionally substituted with one or more substituents selected independently from one another from halogen, cyano, NO_2, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy or C_1-C_6-haloalkoxy, and wherein the nitrogen and/or the sulfur atom(s) of the heterocyclic ring may optionally be oxidized;
or
two R^{10} present together on one atom of a partly saturated heterocyclic may be =O, $=CR^{13}R^{14}$; $=S(O)_nR^{16}$; $=S(O)_nNR^{17a}R^{17b}$, $=NR^{17a}$, $=NOR^{16}$ or $=NNR^{17a}$;
or,
two R^{10} on adjacent carbon atoms may be a bridge selected from $CH_2CH_2CH_2CH_2$, CH=CH-CH=CH, N=CH-CH=CH, CH=N-CH=CH, N=CH-N=CH, $OCH_2CH_2CH_2$, $OCH=CHCH_2$, $CH_2OCH_2CH_2$, OCH_2CH_2O, OCH_2OCH_2, $CH_2CH_2CH_2$, $CH=CHCH_2$, CH_2CH_2O, CH=CHO, CH_2OCH_2, $CH_2C(=O)O$, $C(=O)OCH_2$, $O(CH_2)O$, $SCH_2CH_2CH_2$,

$SCH=CHCH_2$, $CH_2SCH_2CH_2$, SCH_2CH_2S, SCH_2SCH_2, CH_2CH_2S, CH=CHS, CH_2SCH_2, $CH_2C(=S)S$, $C(=S)SCH_2$, $S(CH_2)S$, $CH_2CH_2NR^{17a}$, $CH_2CH=N$, $CH=CH-NR^{17a}$, OCH=N, SCH=N and form together with the carbon atoms to which the two R^{10} are bonded to a 5-membered or 6-membered partly saturated or unsaturated, aromatic carbocyclic or heteocyclic ring, wherein the ring may optionally be substituted with one or two substituents selected from =O, OH, CH_3, OCH_3, halogen, cyano, halomethyl or halomethoxy;

R^{11}, R^{12} are each independently from one another selected from the group consisting of hydrogen, halogen, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 alkoxy, C_1-C_6 haloalkoxyl, C_2-C_6 alkenyl, C_2-C_6 haloalkenyl, C_2-C_6 alkynyl, C_2-C_6 haloalkynyl, C_3-C_8 cycloalkyl, C_3-C_8 halocycloalkyl, C_1-C_6-alkoxy-C_1-C_6-alkyl, C_1-C_6-haloalkoxy-C_1-C_6-alkyl,
phenyl and benzyl, wherein the last two aromatic radicals may optionally substituted with 1, 2, 3, 4 or 5 substituents R^{18}; which are selected independently from one another;

R^{13}, R^{14} are each independently from one another selected from the group consisting of hydrogen, C_1-C_4 alkyl, C_3-C_6 cycloalkyl, C_1-C_4-alkoxy-C_1-C_4-alkyl, $N(CH_3)_2$, phenyl and benzyl;

R^{15} is each independently from one another selected from the group consisting of hydrogen, halogen, cyano, nitro, OH, SH, SCN, SF_5, $C(=O)NR^{17a}R^{17b}$, C_1-C_6-alkoxy, (C_1-C_6-alkoxy)carbonyl, C_1-C_6-haloalkoxy, C_1-C_6-alkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylthio, trimethylsilyl, triethylsilyl, *tert*butyldimethylsilyl, C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, C_3-C_8-cycloalkyl, wherein the four last mentioned aliphatic and cyclo-aliphatic radicals may be unsubstituted, partially or fully halogenated and/or oxgenated and/or may carry 1 or 2 radicals selected from C_1-C_4 alkoxy;
phenyl, benzyl, pyridyl, phenoxy, wherein the last four radicals may be unsubstituted, partially or fully halogenated and/or to carry 1, 2 or 3 substituents selected from C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6 haloalkoxy, (C_1-C_6-alkoxy)carbonyl, (C_1-C_6-alkyl)amino or di-(C_1-C_6-alkyl)amino,
or
two R^{15} present on the same carbon atom may together be =O, =CH(C_1-C_4-alkyl), =C(C_1-C_4-alkyl)C_1-C_4-alkyl, =N(C_1-C_6-alkyl) or =NO(C_1-C_6-alkyl);

R^{16} is each independently from one another selected from the group consisting of hydrogen, cyano, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylthio, trimethylsilyl, triethylsilyl, *tert*butyldimethylsilyl,
C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, C_3-C_8-cycloalkyl, wherein the four last mentioned radicals may be unsubstituted, partially or fully halogenated and/or oxygenated and/or may carry 1 or 2 radicals selected from C_1-C_4 alkoxy,
phenyl, benzyl, pyridyl, phenoxy, wherein the last four radicals may be unsubstituted, partially or fully halogenated and/or carry 1, 2 or 3 substituents selected from C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6 haloalkoxy or (C_1-C_6-alkoxy)carbonyl;

R^{17a}, R^{17b} are each independently from one another selected from the group consisting of hydrogen, cyano, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylthio, trimethylsilyl, triethylsilyl, *tert*butyldimethylsilyl,
C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, C_3-C_8-cycloalkyl, wherein the four last mentioned aliphatic and cyclo-aliphatic radicals may be unsubstituted, partially or fully halogenated and/or oxygenated and/or may carry 1 or 2 radicals selected from C_1-C_4-alkoxy,
phenyl, benzyl, pyridyl, phenoxy, wherein the four last mentioned radicals may be unsubstituted, partially or fully halogenated and/or carry 1, 2 or 3 substituents selected from C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6 haloalkoxy or (C_1-C_6-alkoxy)carbonyl,
or,
R^{17a} and R^{17b} may together be a C_2-C_6-alkylene or -alkenylene chain forming a 3- to 7-membered saturated, partly saturated or unsaturated ring together with the nitrogen atom R^{17a} and R^{17b} are bonded to, wherein the alkylene or alkenylene chain may contain 1 or 2 heteroatoms selected from oxygen, sulfur or nitrogen, and may optionally be substituted with halogen, C_1-C_4-haloalkyl, C_1-C_4-alkoxy or C_1-C_4-haloalkoxy, and wherein the nitrogen and/or the sulfur atom(s) of the heterocyclic ring may optionally be oxidized;

R^{18} is selected, independently from one another and independently from thenumber present in the molecule, from the group consisting of hydrogen, halogen, cyano, C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, C_3-C_8-cycloalkyl, wherein the four last men-

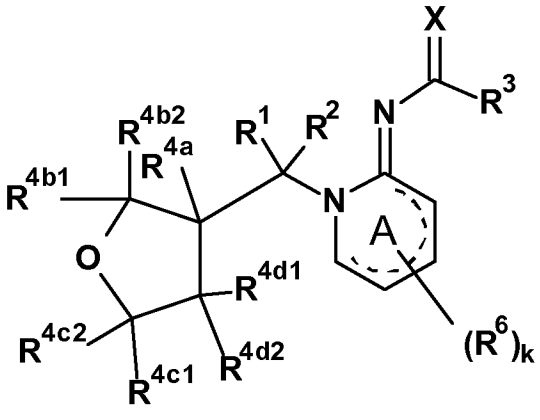
tioned aliphatic radicals may be unsubstituted, partially or fully halogenated and/or oxygenated and/or may carry 1-2 radicals selected from C_1-C_4 alkoxy; C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, (C_1-C_6-alkoxy)carbonyl, C_1 C_6-alkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylthio, trimethylsilyl, triethylsilyl, tertbutyldimethylsilyl, phenyl, benzyl, pyridyl, phenoxy, wherein it being possible for phenyl, benzyl, pyridyl and phenoxy to be unsubstituted, partially or fully halogenated and/or to carry 1, 2 or 3 substituents selected from the group consisting of C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6 haloalkoxy;
or two R^{18} together on one carbon atom may form =C(C_1-C_4-alkyl)$_2$, =N(C_1-C_6-alkyl), =NO(C_1-C_6-alkyl) or =O;
or, when two R^{18} are on adjacent carbon atoms, the two adjacent R^{18}s may form a 3-, 4-, 5-, 6- or 7-membered saturated, partly saturated or unsaturated ring together with the atom bearing them by forming a C_2-C_6 alkylene chain; in this case, the alkylene chain may contain 1 or 2 oxygen atoms, sulfur atoms or nitrogen atoms, and may be arbitrarily substituted with halogen atoms, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-haloalkoxy;

R^{19} is each independently from one another selected from the group consisting of hydrogen, C_1-C_6 alkyl, C_1-C_6 alkoxy, C_3-C_6 cycloalkyl, C_3-C_6 cycloalkoxy and phenyl;

n is an integer selected independently from one another from 0, 1 or 2;

and an enantiomer, diastereomer, E/Z-isomer or agriculturally or veterinarily acceptable salts thereof.

In a specific embodiment the invention relates to pesticidal-N-substituted pyridylidene compounds of formula (I),



(I)

wherein

A is a 6-membered saturated, partially or fully unsaturated N-heterocyclic ring;

k is an integer selected from 0, 1, 2, 3 or 4;

X is selected from O or S;

R^1, R^2 are independently from each other selected from the group consisting of C_1-C_6-alkyl, C_3-C_6-cycloalkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, C_1-C_6-alkoxy, C_1-C_6-alkylthio, wherein each of the aforementioned radicals are unsubstituted, partly or completely halogenated or may carry any combination of one or more radicals R^7;
hydrogen, halogen, cyano, nitro, -SCN, $Si(R^{11})_2R^{12}$, OR^{16}, OSO_2R^{16}, $S(O)_nR^{16}$, $S(O)_nNR^{17a}R^{17b}$, $NR^{17a}R^{17b}$, $C(=O)NR^{17a}R^{17b}$, $C(=S)NR^{17a}R^{17b}$, $C(=O)OR^{16}$, $C(=O)R^{15}$, $C(=S)R^{15}$,
phenyl, optionally substituted with one or more, e.g. 1, 2, 3, 4 or 5 sub-stituents R^{18}, which are independently selected from one another,
a 3-, 4-, 5-, 6- or 7- membered saturated, partly saturated or unsaturated aromatic heterocyclic ring comprising 1, 2 or 3 heteroatoms selected from oxygen, nitrogen and/or sulfur, optionally substituted with 1, 2, 3 or 4, substituents R^{18}, selected independently from one another, and wherein the nitrogen and/or the sulfur atom(s) of the heterocyclic ring may optionally be oxidized,
or
R^1 and R^2 from, together with the carbon atom, which they attached to, a 3- to 6-membered saturated or partly unsaturated carbocyclic or heterocyclic ring, wherein each of the carbon atoms of said cycle are unsubstituted or may carry any combination of 1 or 2 radicals R^7,
or
R^1 and R^2 may together be =O, $=CR^{13}R^{14}$; =S; $=S(O)_nR^{16}$; $=S(O)_nNR^{17a}R^{17b}$, $=NR^{17a}$, $=NOR^{16}$;$=NNR^{17a}$;

R^3 is selected from phenyl or Het, wherein
Het is a 3-, 4-, 5-, 6- or 7- membered saturated, partly saturated or unsaturated or aromatic heterocyclic ring comprising 1, 2, 3 or 4 heteroatoms selected from oxygen, nitrogen and/or sulfur, wherein the nitrogen and/or the sulfur atom(s)

of the heterocyclic ring may optionally be oxidized, and wherein the Het ring may be attached by a carbon or a nitrogen bond;

wherein the phenyl or the Het may optionally be substituted with q substituents selected from R^y, wherein

q is an integer selected from 1, 2, 3, 4 or 5;

and

R^y is selected each independently from one another and from the value of q from the group consisting of hydrogen, halogen, cyano, azido, nitro, SCN, SF_5, C_1-C_{10}-alkyl, C_3-C_8-cycloalkyl, C_2-C_{10}-alkenyl, C_2-C_{10}-alkinyl, wherein the carbon atoms of the aforementioned aliphatic and cyclo-aliphatic radicals may optionally be substituted with one or more R^7, which are selected independently from one another,

$Si(R^{11})_2R^{12}$, OR^8, $OS(O)_nR^8$, $-S(O)_nR^8$, $S(O)_nNR^{9a}R^{9b}$, $NR^{9a}R^{9b}$, $C(=O)R^7$, $C(=S)R^7$, $C(=O)OR^7$,$-C(=NR^{9a})R^7$, $C(=N\text{-}NR^{9a}R^{9b})R^7$, $C(=NOR^8)R^7$, $C(=O)NR^{9a}R^{9b}$, $C(=S)NR^{9a}R^{9b}$,

Y-Ar or Y-Cy,

Wherein

Y is a single bond, CH_2, NR^5, O or S;

Ar is phenyl, naphtyl or

a mono- or bicyclic 5 to 10- membered heteroaromatic ring comprising 1, 2, 3 or 4 heteroatoms selected from oxygen, nitrogen and/or sulfur, wherein the nitrogen and/or the sulfur atom(s) of the heterocyclic ring may optionally be oxidized;

wherein Ar is optionally substituted with 1, 2, 3, 4 or 5 substituents selected independently from one another from hydrogen, halogen, CN, NO_2, OH, SH, NH_2, CO_2H or $S(O)_n$-C_1-C_6-alkyl, $(C=NR^{17a})R^{15}$, $C(=NOR^{16})R^{15}$, C1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkinyl or C_1-C_6-alkoxy, and wherein the carbon atoms of the aforementioned aliphatic radicals may be partially or fully halogenated;

and

Cy is a C_3-C_{12} cycloalkyl, which is unsubstituted or substituted with 1 to 5 radicals selected independently of one another from the group consisting of hydrogen, halogen, CN, NO_2, OH, SH,NH_2, CO_2H, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 alkoxy, C_2-C_6 alkenyloxy, C_2-C_6 alkynyloxy, C_1-C_6 haloalkoxy, C_1-C_6 alkylthio;

or wherein

two R^y present together on one atom of a partly saturated heterocyclic may be =O, $=CR^{13}R^{14}$; $=S(O)_nR^{16}$; $=S(O)_nNR^{17a}R^{17b}$, $=NR^{17a}$, $=NOR^{16}$ or $=NNR^{17a}$;
or
two R^y on adjacent carbon atoms of the phenyl or heterocyclic ring may be a bridge selected from $CH_2CH_2CH_2CH_2$, CH=CH-CH=CH, N=CH-CH=CH, CH=N-CH=CH, N=CH-N=CH, $OCH_2CH_2CH_2$, $OCH=CHCH_2$, $CH_2OCH_2CH_2$, OCH_2CH_2O, OCH_2OCH_2, $CH_2CH_2CH_2$, $CH=CHCH_2$, CH_2CH_2O, CH=CHO, CH_2OCH_2, $CH_2C(=O)O$, $C(=O)OCH_2$, $O(CH_2)O$, $SCH_2CH_2CH_2$, $SCH=CHCH_2$, $CH_2SCH_2CH_2$, SCH_2CH_2S, SCH_2SCH_2, CH_2CH_2S, CH=CHS, CH_2SCH_2, $CH_2C(=S)S$, $C(=S)SCH_2$, $S(CH_2)S$, $CH_2CH_2NR^{17a}$, $CH_2CH=N$, $CH=CH-NR^{17a}$, OCH=N, SCH=N and form together with the carbon atoms to which the two R^y are bonded to a 5-membered or 6-membered partly saturated or unsaturated, aromatic carbocyclic or heteocyclic ring, wherein the ring may optionally be substituted with one or two substituents selected from =O, OH, CH_3, NO_2, , halogen, cyano, C_1-C_6 alkyl, C_1-C_6 alkenyl, C_1-C_6 alkynyl, C_3-C_6 cycloalkyl, C_1-C_6 alkoxy, $S(O)_nR^{16}$ or, wherein the aliphatic radicals of the last six substituents may be partially or fully halogenated;

R^{4a}, R^{4b1}, R^{4b2}, R^{4c1}, R^{4c2}, R^{4d1} and R^{4d2} are each independently from one another selected from the group consisting of hydrogen, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 alkoxyl, C_1-C_6 alkylamino, C_3-C_6 cycloalkyl, wherein each carbon atom of the carbon chain may be partially or fully halogenated or may be substituted with 1, 2 or 3 radials selected independently from one another from the group consisting of CN, NO_2, CN, OH, SH or NH_2;
or wherein two of R^{4b1} and R^{4b2} ,
or of R^{4c1} and R^{4c2} or of R^{4d1} and R^{4d2} on the same carbon may together form C=O or C=S;

R^5 is selected from the group consisting of hydrogen, cyano, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylthio, C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkinyl, C_3-C_8-cycloalkyl, wherein the four last mentioned aliphatic and cyclo-aliphatic radicals may be unsubstituted, partially or fully halogenated and/or oxygenated and/or may carry 1 or 2 radicals selected from R^7,
phenyl, benzyl, pyridyl, pyrimidyl, wherein the four last mentioned radicals may be unsubstituted, partially or fully halogenated and/or carry 1, 2 or 3 substitu-

ents selected from C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6 haloalkoxy or (C_1-C_6-alkoxy)carbonyl;

R^6 is selected each, independently from the value of k and from one another, from the group consisting of hydrogen, halogen, azido, CN, NO_2, SCN, SF_5, C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_2-C_6-alkenyl, C_2-C_6-alkinyl, and wherein the carbon atoms of the aforementioned aliphatic and cyclo-aliphatic radicals may optionally be further substituted independently from one another with one or more R^7,
OR^8, $C(=O)R^7$ or $C(=S)R^7$,
or
two of R^6 present on one ring carbon or sulfur atom may together form =O, $=CR^{13}R^{14}$; =S; $=S(O)_nR^{16}$;, $=NR^{17a}$, $=NOR^{16}$;$=NNR^{17a}$;

R^7 is each independently from one another selected from the group consisting of hydrogen, halogen, cyano, azido, nitro, -SCN, SF_5, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylthio, C_3-C_8-cycloalkyl, C_3-C_8-halocycloalkyl, C_2-C_6-alkenyl, C_2-C_6-haloalkenyl, C_2-C_6-alkinyl, C_2-C_6 haloalkinyl, $Si(R^{11})_2R^{12}$, OR^{16}, OSO_2R^{16}, $S(O)_nR^{16}$, $S(O)_nNR^{17a}R^{17b}$, $NR^{17a}R^{17b}$, $C(=O)NR^{17a}R^{17b}$, $C(=S)NR^{17a}R^{17b}$, $C(=O)OR^{16}$, $C(=O)R^{15}$, $C(=S)R^{15}$, $C(=NR^{17a})R^{15}$, $C(=NOR^{16})R^{15}$,
phenyl, optionally substituted with 1, 2, 3, 4 or 5 substituents R^{10}, which are independently selected from one another,
a 3-, 4-, 5-, 6- or 7- membered saturated, partly saturated or unsaturated aromatic heterocyclic ring comprising 1, 2 or 3 heteroatoms selected from oxygen, nitrogen and/or sulfur, optionally substituted with 1, 2, 3 or 4 substituents R^{10}, selected independently from one another, and wherein the nitrogen and/or the sulfur atom(s) of the heterocyclic ring may optionally be oxidized,
or
two R^7 present on one carbon atom may together form =O, $=CR^{13}R^{14}$; =S; $=S(O)_nR^{16}$; $=S(O)_nNR^{17a}R^{17b}$, $=NR^{17a}$, $=NOR^{16}$;$=NNR^{17a}$;
or
two R^7 may form a 3-, 4-, 5-, 6-, 7- or 8-membered saturated or partly unsaturated carbocyclic or heterocyclic ring together with the carbon atoms to which the two R^7 are bonded to;

R^8 is each independently from one another selected from the group consisting of hydrogen, cyano, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylthio, C_3-C_8-cycloalkyl, C_4-C_8-alkylcycloalkyl, C_3-C_8-halocycloalkyl, C_2-C_6-alkenyl, C_2-C_6-haloalkenyl, C_2-C_6-alkinyl, C_2-C_6 haloalkinyl, $-Si(R^{11})_2R^{12}$, $S(O)_nR^{16}$, $S(O)_nNR^{17a}R^{17b}$, $NR^{17a}R^{17b}$, $-N=CR^{13}R^{14}$, $-C(=O)R^{15}$, $C(=O)NR^{17a}R^{17b}$, $C(=S)NR^{17a}R^{17b}$, $C(=O)OR^{16}$, phenyl, optionally substituted with one or more substituents R^{10}; which are selected independently from one another,
a 3-, 4-, 5-, 6- or 7- membered saturated, partly saturated or unsaturated aromatic heterocyclic ring comprising 1, 2 or 3 heteroatoms selected from oxygen, nitrogen and/or sulfur, optionally substituted with 1, 2, 3 or 4 substituents R^{10}, selected independently from one another, and wherein the nitrogen and/or the sulfur atom(s) of the heterocyclic ring may optionally be oxidized;

R^{9a}, R^{9b} are each independently from one another selected from the group consisting of hydrogen, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkylthio, C_1-C_6-haloalkylthio, C_3-C_8-cycloalkyl, C_3-C_8-halocycloalkyl, C_2-C_6-alkenyl, C_2-C_6-haloalkenyl, C_2-C_6-alkinyl, C_2-C_6 haloalkinyl, $S(O)_nR^{16}$, $-S(O)_nNR^{17a}R^{17b}$, $C(=O)R^{15}$, $C(=O)OR^{16}$, $C(=O)NR^{17a}R^{17b}$, $C(=S)R^{15}$, $C(=S)SR^{16}$, $C(=S)NR^{17a}R^{17b}$, $C(=NR^{17a})R^{15}$; $NR^{17a}R^{17b}$, $P(=O)(R^{19})_2$,
phenyl, optionally substituted with one or more, e.g. 1, 2, 3 or 4, substituents R^{10}, which are selected independently from one another;
a 3-, 4-, 5-, 6- or 7- membered saturated, partly saturated or unsaturated aromatic heterocyclic ring comprising 1, 2, 3 or 4 heteroatoms selected from oxygen, nitrogen and/or sulfur, optionally substituted with 1, 2, 3 or 4 substituents R^{10}, selected independently from one another, and wherein the nitrogen and/or the sulfur atom(s) of the heterocyclic ring may optionally be oxidized;
or,
R^{9a} and R^{9b} are together a C_2-C_7 alkylene chain and form a 3-, 4-, 5-, 6-, 7- or 8-membered saturated, partly saturated or unsaturated aromatic ring together with the nitrogen atom they are bonded to, wherein the alkylene chain may contain one or two heteratoms selected from oxygen, sulfur or nitrogen, and may optionally be substituted with halogen, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkylthio, C_1-C_6-haloalkylthio, C_3-C_8-cycloalkyl, C_3-C_8-halocycloalkyl,

C_2-C_6-alkenyl, C_2-C_6-haloalkenyl, C_2-C_6-alkinyl, C_2-C_6 haloalkinyl,
phenyl, optionally substituted with one or more substituents R^{10}; which are selected independently from one another,
a 3-, 4-, 5-, 6,- or 7-membered saturated, partly saturated or unsaturated aromatic heterocyclic ring comprising 1, 2 or 3 heteroatoms selected from oxygen, nitrogen and/or sulfur, optionally substituted with one or more substituents R^{10}, selected independently from one another, and wherein the nitrogen and/or the sulfur atom(s) of the heterocyclic ring may optionally be oxidized;

or

R^{9a} and R^{9b} together may form a $=CR^{13}R^{14}$, $=S(O)_nR^{16}$, $=S(O)_nNR^{17}R^{17}$, $=NR^{17}$ or $=NOR^{16}$ radical;

R^{10} is each independently from one another selected from the group consisting of hydrogen, halogen, cyano, azido, nitro, SCN, SF_5, C_1-C_{10}-alkyl, C_3-C_8-cycloalkyl, C_2-C_{10}-alkenyl, C_2-C_{10}-alkinyl, wherein the carbon atoms of the aforementioned aliphatic and cyclo-aliphatic radicals may optionally be substituted with one or more R^{15}, which are selected independently from one another,
$Si(R^{11})_2R^{12}$, OR^{16}, $OS(O)_nR^{16}$, $-S(O)_nR^{16}$, $S(O)_nNR^{17a}R^{17b}$, $NR^{17a}R^{17b}$, $C(=O)R^{15}$, $C(=S)R^{15}$, $C(=O)OR^{16}$, $-C(=NR^{17a})R^{15}$, $C(=O)NR^{17a}R^{17b}$, $C(=S)NR^{17a}R^{17b}$,
phenyl, optionally substituted with halogen, cyano, nitro, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy or C_1-C_6-haloalkoxy,
a 3-, 4-, 5-, 6- or 7- membered saturated, partly saturated or unsaturated aromatic heterocyclic ring comprising 1, 2 or 3 heteroatoms selected from oxygen, nitrogen and/or sulfur, optionally substituted with one or more substituents selected independently from one another from halogen, cyano, NO_2, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy or C_1-C_6-haloalkoxy, and wherein the nitrogen and/or the sulfur atom(s) of the heterocyclic ring may optionally be oxidized;
or
two R^{10} present together on one atom of a partly saturated heterocyclic may be =O, $=CR^{13}R^{14}$; $=S(O)_nR^{16}$; $=S(O)_nNR^{17a}R^{17b}$, $=NR^{17a}$, $=NOR^{16}$ or $=NNR^{17a}$;
or,
two R^{10} on adjacent carbon atoms may be a bridge selected from $CH_2CH_2CH_2CH_2$, CH=CH-CH=CH, N=CH-CH=CH, CH=N-CH=CH, N=CH-N=CH, $OCH_2CH_2CH_2$,

$OCH=CHCH_2$, $CH_2OCH_2CH_2$, OCH_2CH_2O, OCH_2OCH_2, $CH_2CH_2CH_2$, $CH=CHCH_2$, CH_2CH_2O, $CH=CHO$, CH_2OCH_2, $CH_2C(=O)O$, $C(=O)OCH_2$, $O(CH_2)O$, $SCH_2CH_2CH_2$, $SCH=CHCH_2$, $CH_2SCH_2CH_2$, SCH_2CH_2S, SCH_2SCH_2, CH_2CH_2S, $CH=CHS$, CH_2SCH_2, $CH_2C(=S)S$, $C(=S)SCH_2$, $S(CH_2)S$, $CH_2CH_2NR^{17a}$, $CH_2CH=N$, $CH=CH-NR^{17a}$, $OCH=N$, $SCH=N$ and form together with the carbon atoms to which the two R^{10} are bonded to a 5-membered or 6-membered partly saturated or unsaturated, aromatic carbocyclic or heteocyclic ring, wherein the ring may optionally be substituted with one or two substituents selected from =O, OH, CH_3, OCH_3, halogen, cyano, halomethyl or halomethoxy;

R^{11}, R^{12} (are each independently from one another selected from the group consisting of hydrogen, halogen, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 alkoxy, C_1-C_6 haloalkoxyl, C_2-C_6 alkenyl, C_2-C_6 haloalkenyl, C_2-C_6 alkinyl, C_2-C_6 haloalkinyl, C_3-C_8 cycloalkyl, C_3-C_8 halocycloalkyl, C_1-C_6 alkoxyalkyl, C_1-C_6 haloalkoxyalkyl, Phenyl and benzyl, wherein the last two aromatic radicals may optionally substituted with one or more substituents R^{18}; which are selected independently from one another;

R^{13}, R^{14} are each independently from one another selected from the group consisting of hydrogen, C_1-C_4 alkyl, C_1-C_6 cycloalkyl, C_1-C_4 alkoxyalkyl, $N(CH_3)_2$, phenyl and benzyl;

R^{15} is each independently from one another selected from the group consisting of hydrogen, halogen, cyano, nitro, OH, SH, SCN, SF_5, $C(=O)NR^{17a}R^{17b}$, C_1-C_6-alkoxy, (C_1-C_6-alkoxy)carbonyl, C_1-C_6-haloalkoxy, C_1-C_6-alkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylthio, trimethylsilyl, triethylsilyl, *tert*butyldimethylsilyl, C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkinyl, C_3-C_8-cycloalkyl, wherein the four last mentioned aliphatic and cyclo-aliphatic radicals may be unsubstituted, partially or fully halogenated and/or oxgenated and/or may carry 1 or 2 radicals selected from C_1-C_4 alkoxy;
phenyl, benzyl, pyridyl, phenoxy, wherein the last four radicals may be unsubstituted, partially or fully halogenated and/or to carry 1, 2 or 3 substituents selected from C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6 haloalkoxy, (C_1-C_6-alkoxy)carbonyl, (C_1-C_6-alkyl)amino or di-(C_1-C_6-alkyl)amino,
or

two R^{15} present on the same carbon atom may together be =O, =CH(C_1-C_4), =C(C_1-C_4-alkyl)C_1-C_4-alkyl, =N(C_1-C_6-alkyl) or =NO(C_1-C_6-alkyl);

R^{16} is each independently from one another selected from the group consisting of hydrogen, cyano, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylthio, trimethylsilyl, triethylsilyl, *tert*butyldimethylsilyl,
C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkinyl, C_3-C_8-cycloalkyl, wherein the four last mentioned radicals may be unsubstituted, partially or fully halogenated and/or oxygenated and/or may carry 1 or 2 radicals selected from C_1-C_4 alkoxy,
phenyl, benzyl, pyridyl, phenoxy, wherein the last four radicals may be unsubstituted, partially or fully halogenated and/or carry 1, 2 or 3 substituents selected from C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6 haloalkoxy or (C_1-C_6-alkoxy)carbonyl;

R^{17a}, R^{17b} are each independently from one another selected from the group consisting of hydrogen, cyano, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylthio, trimethylsilyl, triethylsilyl, *tert*butyldimethylsilyl,
C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkinyl, C_3-C_8-cycloalkyl, wherein the four last mentioned aliphatic and cyclo-aliphatic radicals may be unsubstituted, partially or fully halogenated and/or oxygenated and/or may carry 1 or 2 radicals selected from C_1-C_4-alkoxy,
phenyl, benzyl, pyridyl, phenoxy, wherein the four last mentioned radicals may be unsubstituted, partially or fully halogenated and/or carry 1, 2 or 3 substituents selected from C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6 haloalkoxy or (C_1-C_6-alkoxy)carbonyl,
or,
R^{17a} and R^{17b} may together be a C_2-C_6-alkyl or alkylen chain forming a 3- to 7-membered saturated, partly saturated or unsaturated ring together with the nitrogen atom R^{17a} and R^{17b} are bonded to, wherein the alkylene chain may contain 1 or 2 heteroatoms selected from oxygen, sulfur or nitrogen, and may optionally be substituted with halogen, C_1-C_4-haloalkyl, C_1-C_4-alkoxy or C_1-C_4-haloalkoxy, and wherein the nitrogen and/or the sulfur atom(s) of the heterocyclic ring may optionally be oxidized;

R^{18} is selected, independently from one another and independently from thenumber present in the molecule, from the group consisting of hydrogen, halogen, cyano, C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkinyl, C_3-C_8-cycloalkyl, wherein the four last mentioned aliphatic radicals may be unsubstituted, partially or fully halogenated and/or oxygenated and/or may carry 1-2 radicals selected from C_1-C_4 alkoxy; C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, (C_1-C_6-alkoxy)carbonyl, C_1 C_6-alkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylthio, trimethylsilyl, triethylsilyl, tertbutyldimethylsilyl, phenyl, benzyl, pyridyl, phenoxy, wherein it being possible for phenyl, benzyl, pyridyl and phenoxy to be unsubstituted, partially or fully halogenated and/or to carry 1-3 substituents selected from the group consisting of C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6 haloalkoxy;
or two R^{18} together on one carbon atom may form $=C(C_1\text{-}C_4\text{-alkyl})_2$, $=N(C_1\text{-}C_6\text{-alkyl})$, $=NO(C_1\text{-}C_6\text{-alkyl})$ or =O;
or, when two R^{18} are on adjacent carbon atoms, the two adjacent R^{17}s may form a 3- to 7-membered saturated, partly saturated or unsaturated ring together with the atom bearing them by forming a C_2-C_6 alkylene chain; in this case, the alkylene chain may contain 1-2 oxygen atoms, sulfur atoms or nitrogen atoms, and may be arbitrarily substituted with halogen atoms, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-haloalkoxy;

R^{19} is each independently from one another selected from the group consisting of hydrogen, C_1-C_6 alkyl, C_1-C_6 alkoxy, C_3-C_6 cycloalkyl, C_3-C_6 cycloalkoxy and phenyl;

n is an integer selected independently from one another from 0, 1 or 2;

and/or an enantiomer, diastereomer, E/Z-isomer or agriculturally or veterinarily acceptable salts thereof.

N-substituted pyridylidene compounds of the general formula I of the present invention have not been described previously. Similar compounds are known for pharmaceutical pruposes. WO 2009/048936 and WO 2010/111572 describe related acyl imino-pyridines as ligands for the Cannabinoid Receptor. EP 1820504 also describes related acyl imino-pyridines as ligands for the Cannabinoid Receptor.
For agricultural purposes, US 5250498 describes related acyl imino-pyridines as herbicides, and WO 2012/029672 show related compounds as insecticides.

The N-substituted pyridylidene compounds of the formula I, and their agriculturally or veterinarily acceptable salts are highly active against animal pest, i.e. harmful arthropodes and nematodes, especially against difficult to control insects and acaridae.

Accordingly, the present invention relates to N-substituted pyridylidene compounds of the general formula I, to their agriculturally or veterinarily useful salts, their enantiomers or diastereomers.

Moreover, the present invention relates to and includes the following embodiments:

- agricultural and veterinary compositions comprising an amount of at least one compound of the formula I or an enantiomer, diasteromer or salt thereof;
- the use of a compound of formula I or an enantiomer, diasteromer or salt thereof for combating animal pests;
- a method of combating animal pests which comprises contacting the animal pests, their habit, breeding ground, food supply, plant, seed, soil, area, material or environment in which the animal pests are growing or may grow, or the materials, plants, seeds, soils, surfaces or spaces to be protected from animal attack or infestation with a pesticidally effective amount of at least one compound of the formula I or an enantiomer, diasteromer or salt thereof;
- a method for protecting crops from attack or infestation by animal pests, which comprises contacting a crop with a pesticidally effective amount of at least one compound of the formula I or an enantiomer, diasteromer or salt thereof;
- a method for the protection of plant propagation, especially seeds, from soil insects and of the seedlings' roots and shoots from soil and foliar insects comprising contacting the seeds before sowing and/or after pregermination with at least one compound of the formula I, or the enantiomers, diastereomers or salts thereof;
- seeds comprising a compound of the formula I or an enantiomer, diasteromer or salt thereof;
- the use of compounds of formula I or the enantiomers, diastereomers or veterinary acceptable salts thereof for combating parasites in and on animals.
- a method for treating, controlling, preventing or protecting animals against infestation or infection by parasites which comprises orally, topically or parenterally administering or applying to the animals a parasiticidally effective amount of an compound of formula I or the enantiomers, diastereomers and/or veterinary acceptable salt thereof;
- a process for the preparation of a veterinary composition for treating, controlling, preventing or protecting animals against infestation or infection by parasites which comprises

adding a parasiticidally effective amount of an compound of formula I or the enantiomers, diastereomers and/or veterinary acceptable salt thereof to a carrier composition suitable for veterinary use;

- the use of a compound of formula I or the enantiomers, diastereomers and/or veterinary acceptable salt thereof for the preparation of a medicament for treating, controlling, preventing or protecting animals against infestation or infection by parasites;

The present invention especially relates to plant propagation materials, in particular as mentioned above to seeds, comprising at least one compound of formula I and/or an agriculturally acceptable salt thereof.

The present invention relates to every possible stereoisomer of the compounds of formula I, i.e. to single enantiomers or diastereomers, as well as to mixtures thereof.

The present invention relates to each isomer alone, or mixtures or combinations of the isomers in any proportion to each other.

The compounds of the present invention may be amorphous or may exist in one ore more different crystalline states (polymorphs) or modifications which may have a different macroscopic properties such as stability or show different biological properties such as activities. The present invention includes both amorphous and crystalline compounds of the formula I, mixtures of different crystalline states or modifications of the respective compound I, as well as amorphous or crystalline salts thereof.

Salts of the compounds of the formula I are preferably agriculturally and/or veterinary acceptable salts. They can be formed in a customary method, e.g. by reacting the compound with an acid of the anion in question if the compound of formula I has a basic functionality or by reacting an acidic compound of formula I with a suitable base.

Suitable agriculturally or veterinary useful salts are especially the salts of those cations or the acid addition salts of those acids whose cations and anions, respectively, do not have any adverse effect on the action of the compounds according to the present invention. Suitable cations are in particular the ions of the alkali metals, preferably lithium, sodium and potassium, of the alkaline earth metals, preferably calcium, magnesium and barium, and of the transition metals, preferably manganese, copper, zinc and iron, and also ammonium (NH_4^+) and substituted ammonium in which one to four of the hydrogen atoms are replaced by C_1-C_4-alkyl, C_1-C_4-

hydroxyalkyl, C_1-C_4-alkoxy, C_1-C_4-alkoxy-C_1-C_4-alkyl, hydroxy-C_1-C_4-alkoxy-C_1-C_4-alkyl, phenyl or benzyl. Examples of substituted ammonium ions comprise methylammonium, isopropylammonium, dimethylammonium, diisopropylammonium, trimethylammonium, tetramethylammonium, tetraethylammonium, tetrabutylammonium, 2-hydroxyethylammonium, 2-(2-hydroxyethoxy)ethyl-ammonium, bis(2-hydroxyethyl)ammonium, benzyltrimethylammonium and benzyltriethylammonium, furthermore phosphonium ions, sulfonium ions, preferably tri(C_1-C_4-alkyl)sulfonium, and sulfoxonium ions, preferably tri(C_1-C_4-alkyl)sulfoxonium.

Anions of useful acid addition salts are primarily chloride, bromide, fluoride, hydrogen sulfate, sulfate, dihydrogen phosphate, hydrogen phosphate, phosphate, nitrate, hydrogen carbonate, carbonate, hexafluorosilicate, hexafluorophosphate, benzoate, and the anions of C_1-C_4-alkanoic acids, preferably formate, acetate, propionate and butyrate. They can be formed by reacting the compounds of the formulae I with an acid of the corresponding anion, preferably of hydrochloric acid, hydrobromic acid, sulfuric acid, phosphoric acid or nitric acid.

The organic moieties mentioned in the above definitions of the variables are - like the term halogen - collective terms for individual listings of the individual group members. The prefix C_n-C_m indicates in each case the possible number of carbon atoms in the group.

"Halogen" will be taken to mean fluoro, chloro, bromo and iodo.

The term "partially or fully halogenated" will be taken to mean that 1 or more, e.g. 1, 2, 3, 4 or 5 or all of the hydrogen atoms of a given radical have been replaced by a halogen atom, in particular by fluorine or chlorine.

The term "one or more substituents" will be taken to mean that one or more, e.g. 1, 2, 3 etc. or all of the hydrogen atoms of a given radical have been replaced by the substituent.

The term "C_n-C_m-alkyl" as used herein (and also in C_n-C_m-alkylamino, di-C_n-C_m-alkylamino, C_n-C_m-alkylaminocarbonyl, di-(C_n-C_m-alkyl)-aminocarbonyl, C_n-C_m-alkylthio, C_n-C_m-alkylsulfinyl, C_n-C_m-alkylsulfonyl etc.) refers to a branched or unbranched saturated hydrocarbon group having n to m, e.g. 1 to 10 carbon atoms, preferably 1 to 6 or 1 to 4 or 1 to 3 carbon atoms, for example methyl, ethyl, propyl, 1-methylethyl, butyl, 1-methylpropyl, 2-methylpropyl, 1,1-dimethylethyl, pentyl, 1-methylbutyl, 2-methylbutyl, 3-methylbutyl, 2,2-dimethylpropyl, 1-ethylpropyl, hexyl, 1,1-dimethylpropyl, 1,2-dimethylpropyl, 1-methylpentyl, 2-methylpentyl, 3-methylpentyl, 4-methylpentyl, 1,1-dimethylbutyl, 1,2-dimethylbutyl, 1,3-dimethylbutyl, 2,2-dimethylbutyl, 2,3-

dimethylbutyl, 3,3-dimethylbutyl, 1-ethylbutyl, 2-ethylbutyl, 1,1,2-trimethylpropyl, 1,2,2-trimethylpropyl, 1-ethyl-1-methylpropyl, 1-ethyl-2-methylpropyl, heptyl, octyl, 2-ethylhexyl, nonyl and decyl and their isomers. C_1-C_4-alkyl means for example methyl, ethyl, propyl, 1-methylethyl, butyl, 1-methylpropyl, 2-methylpropyl or 1,1-dimethylethyl. C_1-C_3-alkyl means for example methyl, ethyl, propyl or 1-methylethyl (isopropyl)

"Halomethyl" is methyl in which 1, 2 or 3 of the hydrogen atoms are replaced by halo-gen atoms. Examples are bromomethyl, chloromethyl, fluoromethyl, dichloromethyl, trichloromethyl, difluoromethyl, trifluoromethyl, chlorofluoromethyl, dichlorofluoromethyl, chlorodifluoromethyl and the like.

The term "C_n-C_m-haloalkyl" as used herein (and also in C_n-C_m-haloalkylsulfinyl, C_n-C_m-haloalkylsulfonyl etc.) refers to a straight-chain or branched alkyl group having n to m carbon atoms, e.g. 1 to 10 in particular 1 to 6 carbon atoms (as mentioned above), where some or all of the hydrogen atoms in these groups may be replaced by halogen atoms as mentioned above, for example C_1-C_4-haloalkyl, such as chloromethyl, bromomethyl, dichloromethyl, trichloromethyl, fluoromethyl, difluoromethyl, trifluoromethyl, chlorofluoromethyl, dichlorofluoromethyl, chlorodifluoromethyl, 1-chloroethyl, 1-bromoethyl, 1-fluoroethyl, 2-fluoroethyl, 2,2-difluoroethyl, 2,2,2-trifluoroethyl, 2-chloro-2-fluoroethyl, 2-chloro-2,2-difluoroethyl, 2,2-dichloro-2-fluoroethyl, 2,2,2-trichloroethyl, pentafluoroethyl and the like. The term C_1-C_{10}-haloalkyl in particular comprises C_1-C_2-fluoroalkyl, which is synonym with methyl or ethyl, wherein 1, 2, 3, 4 or 5 hydrogen atoms are substituted by fluorine atoms, such as fluoromethyl, difluoromethyl, trifluoromethyl, 1-fluoroethyl, 2-fluoroethyl, 2,2-difluoroethyl, 2,2,2-trifluoroethyl and pentafluoromethyl.

Similarly, "C_n-C_m-alkoxy" and "C_n-C_m-alkylthio" (or C_n-C_m-alkylsulfenyl, respectively) refer to straight-chain or branched alkyl groups having n to m carbon atoms, e.g. 1 to 10, in particular 1 to 6 or 1 to 4 carbon atoms (as mentioned above) bonded through oxygen or sulfur linkages, respectively, at any bond in the alkyl group. Examples include C_1-C_4-alkoxy such as methoxy, ethoxy, propoxy, isopropoxy, butoxy, sec-butoxy, isobutoxy and tert-butoxy, futher C_1-C_4-alkylthio such as methylthio, ethylthio, propylthio, isopropylthio, and n-butylthio.

Accordingly, the terms "C_n-C_m-haloalkoxy" and "C_n-C_m-haloalkylthio" (or C_n-C_m-haloalkylsulfenyl, respectively) refer to straight-chain or branched alkyl groups having n to m carbon atoms, e.g. 1 to 10, in particular 1 to 6 or 1 to 4 carbon atoms (as mentioned above) bonded through oxygen or sulfur linkages, respectively, at any bond in the alkyl group, where some or all of the hydrogen atoms in these groups may be replaced by halogen atoms as mentioned above, for example C_1-C_2-haloalkoxy, such as chloromethoxy, bromomethoxy, dichloromethoxy, trichlorometh-

oxy, fluoromethoxy, difluoromethoxy, trifluoromethoxy, chlorofluoromethoxy, dichlorofluoromethoxy, chlorodifluoromethoxy, 1-chloroethoxy, 1-bromoethoxy, 1-fluoroethoxy, 2-fluoroethoxy, 2,2-difluoroethoxy, 2,2,2-trifluoroethoxy, 2-chloro-2-fluoroethoxy, 2-chloro-2,2-difluoroethoxy, 2,2-dichloro-2-fluoroethoxy, 2,2,2-trichloroethoxy and pentafluoroethoxy, further C_1-C_2-haloalkylthio, such as chloromethylthio, bromomethylthio, dichloromethylthio, trichloromethylthio, fluoromethylthio, difluoromethylthio, trifluoromethylthio, chlorofluoromethylthio, dichlorofluoromethylthio, chlorodifluoromethylthio, 1-chloroethylthio, 1-bromoethylthio, 1-fluoroethylthio, 2-fluoroethylthio, 2,2-difluoroethylthio, 2,2,2-trifluoroethylthio, 2-chloro-2-fluoroethylthio, 2-chloro-2,2-difluoroethylthio, 2,2-dichloro-2-fluoroethylthio, 2,2,2-trichloroethylthio and pentafluoroethylthio and the like. Similarly the terms C_1-C_2-fluoroalkoxy and C_1-C_2-fluoroalkylthio refer to C_1-C_2-fluoroalkyl which is bound to the remainder of the molecule via an oxygen atom or a sulfur atom, respectively.

The term "C_2-C_m-alkenyl" as used herein refers to a branched or unbranched unsaturated hydrocarbon group having 2 to m, e.g. 2 to 10 or 2 to 6 carbon atoms and a double bond in any position, such as ethenyl, 1-propenyl, 2-propenyl, 1-methyl-ethenyl, 1-butenyl, 2-butenyl, 3-butenyl, 1-methyl-1-propenyl, 2-methyl-1-propenyl, 1-methyl-2-propenyl, 2-methyl-2-propenyl, 1-pentenyl, 2-pentenyl, 3-pentenyl, 4-pentenyl, 1-methyl-1-butenyl, 2-methyl-1-butenyl, 3-methyl-1-butenyl, 1-methyl-2-butenyl, 2-methyl-2-butenyl, 3-methyl-2-butenyl, 1-methyl-3-butenyl, 2-methyl-3-butenyl, 3-methyl-3-butenyl, 1,1-dimethyl-2-propenyl, 1,2-dimethyl-1-propenyl, 1,2-dimethyl-2-propenyl, 1-ethyl-1-propenyl, 1-ethyl-2-propenyl, 1-hexenyl, 2-hexenyl, 3-hexenyl, 4-hexenyl, 5-hexenyl, 1-methyl-1-pentenyl, 2-methyl-1-pentenyl, 3-methyl-1-pentenyl, 4-methyl-1-pentenyl, 1-methyl-2-pentenyl, 2-methyl-2-pentenyl, 3-methyl-2-pentenyl, 4-methyl-2-pentenyl, 1-methyl-3-pentenyl, 2-methyl-3-pentenyl, 3-methyl-3-pentenyl, 4-methyl-3-pentenyl, 1-methyl-4-pentenyl, 2-methyl-4-pentenyl, 3-methyl-4-pentenyl, 4-methyl-4-pentenyl, 1,1-dimethyl-2-butenyl, 1,1-dimethyl-3-butenyl, 1,2-dimethyl-1-butenyl, 1,2-dimethyl-2-butenyl, 1,2-dimethyl-3-butenyl, 1,3-dimethyl-1-butenyl, 1,3-dimethyl-2-butenyl, 1,3-dimethyl-3-butenyl, 2,2-dimethyl-3-butenyl, 2,3-dimethyl-1-butenyl, 2,3-dimethyl-2-butenyl, 2,3-dimethyl-3-butenyl, 3,3-dimethyl-1-butenyl, 3,3-dimethyl-2-butenyl, 1-ethyl-1-butenyl, 1-ethyl-2-butenyl, 1-ethyl-3-butenyl, 2-ethyl-1-butenyl, 2-ethyl-2-butenyl, 2-ethyl-3-butenyl, 1,1,2-trimethyl-2-propenyl, 1-ethyl-1-methyl-2-propenyl, 1-ethyl-2-methyl-1-propenyl and 1-ethyl-2-methyl-2-propenyl.

The term "haloalkenyl" as used herein, which is also expressed as "alkenyl which is partially or fully halogenated", refers to unsaturated straight-chain or branched hydrocarbon radicals having 2 to 3 ("C_2-C_3-haloalkenyl"), 2 to 4 ("C_2-C_4-haloalkenyl"), 2 to 6 ("C_2-C_6-haloalkenyl"), 2 to 8 ("C_2-C_6-haloalkenyl") or 2 to 10 ("C_2-C_{10}-haloalkenyl") carbon atoms and a double bond in any position (as mentioned above), where some or all of the hydrogen atoms in these groups are re-

placed by halogen atoms as mentioned above, in particular fluorine, chlorine and bromine, for example chlorovinyl, chloroallyl and the like.

The term "C_2-C_m-alkynyl" as used herein refers to a branched or unbranched unsaturated hydrocarbon group having 2 to m, e.g. 2 to 10 or 2 to 6 carbon atoms and containing one triple bond, such as ethynyl, propynyl, 1-butynyl, 2-butynyl, and the like.

The term "haloalkynyl" as used herein, which is also expressed as "alkynyl which is partially or fully halogenated", refers to unsaturated straight-chain or branched hydrocarbon radicals having 2 to 3 ("C_2-C_3-haloalkynyl"), 2 to 4 ("C_2-C_4-haloalkynyl"), 3 to 4 ("C_3-C_4-haloalkynyl"), 2 to 6 ("C_2-C_6-haloalkynyl"), 2 to 8 ("C_2-C_8-haloalkynyl") or 2 to 10 ("C_2-C_{10}-haloalkynyl") carbon atoms and one or two triple bonds in any position (as mentioned above), where some or all of the hydrogen atoms in these groups are replaced by halogen atoms as mentioned above, in particular fluorine, chlorine and bromine.

"C_2-C_6-alkenyloxy" relates to a C_2-C_6-alkenyl group, as defined above, bound via an oxygen atom. Examples are ethenyloxy, prop-1-enyloxy, prop-2-enyloxy, prop-1-en-2-yloxy and the like.

"C_2-C_6-alkynyloxy" relates to a C_2-C_6-alkynyl group, as defined above, bound via an oxygen atom. Examples are ethynyloxy, prop-1-ynyloxy, prop-2-ynyloxy, and the like.

The term "C_1-C_4-alkoxy-C_1-C_4-alkyl" as used herein refers to alkyl having 1 to 4 carbon atoms, e.g. like specific examples mentioned above, wherein one hydrogen atom of the alkyl radical is replaced by an C_1-C_4-alkoxy group. Analogously, C_1-C_6-alkoxy-C_1-C_6-alkyl refers to alkyl having 1 to 6 carbon atoms, e.g. like specific examples mentioned above, wherein one hydrogen atom of the alkyl radical is replaced by an C_1-C_6-alkoxy group. Examples are methoxymethyl, ethoxymethyl, propoxymethyl, isopropoxymethyl, n-butoxymethyl, sec-butoxymethyl, isobutoxymethyl, tert-butoxymethyl, 1-methoxyethyl, 1-ethoxyethyl, 1-propoxyethyl, 1-isopropoxyethyl, 1-n-butoxyethyl, 1-sec-butoxyethyl, 1-isobutoxyethyl, 1-tert-butoxyethyl, 2-methoxyethyl, 2-ethoxyethyl, 2-propoxyethyl, 2-isopropoxyethyl, 2-n-butoxyethyl, 2-sec-butoxyethyl, 2-isobutoxyethyl, 2-tert-butoxyethyl, 1-methoxypropyl, 1-ethoxypropyl, 1-propoxypropyl, 1-isopropoxypropyl, 1-n-butoxypropyl, 1-sec-butoxypropyl, 1-isobutoxypropyl, 1-tert-butoxypropyl, 2-methoxypropyl, 2-ethoxypropyl, 2-propoxypropyl, 2-isopropoxypropyl, 2-n-butoxypropyl, 2-sec-butoxypropyl, 2-isobutoxypropyl, 2-tert-butoxypropyl, 3-methoxypropyl, 3-ethoxypropyl, 3-propoxypropyl, 3-isopropoxypropyl, 3-n-butoxypropyl, 3-sec-butoxypropyl, 3-isobutoxypropyl, 3-tert-butoxypropyl and the like.

The term "C_1-C_4-alkoxy-C_1-C_4-alkoxy" as used herein refers to alkoxy having 1 to 4 carbon atoms, e.g. like specific examples mentioned above, wherein one hydrogen atom of the alkyl radical is replaced by an C_1-C_4-alkoxy group. Examples are methoxymethoxy, ethoxymethoxy, propoxymethoxy, isopropoxymethoxy, n-butoxymethoxy, sec-butoxymethoxy, isobutoxymethoxy, tert-butoxymethoxy, 1-methoxyethoxy, 1-ethoxyethoxy, 1-propoxyethoxy, 1-isopropoxyethoxy, 1-n-butoxyethoxy, 1-sec-butoxyethoxy, 1-isobutoxyethoxy, 1-tert-butoxyethoxy, 2-methoxyethoxy, 2-ethoxyethoxy, 2-propoxyethoxy, 2-isopropoxyethoxy, 2-n-butoxyethoxy, 2-sec-butoxyethoxy, 2-isobutoxyethoxy, 2-tert-butoxyethoxy, 1-methoxypropoxy, 1-ethoxypropoxy, 1-propoxypropoxy, 1-isopropoxypropoxy, 1-n-butoxypropoxy, 1-sec-butoxypropoxy, 1-isobutoxypropoxy, 1-tert-butoxypropoxy, 2-methoxypropoxy, 2-ethoxypropoxy, 2-propoxypropoxy, 2-isopropoxypropoxy, 2-n-butoxypropoxy, 2-sec-butoxypropoxy, 2-isobutoxypropoxy, 2-tert-butoxypropoxy, 3-methoxypropoxy, 3-ethoxypropoxy, 3-propoxypropoxy, 3-isopropoxypropoxy, 3-n-butoxypropoxy, 3-sec-butoxypropoxy, 3-isobutoxypropoxy, 3-tert-butoxypropoxy and the like.

The term "C_3-C_m-cycloalkyl" as used herein refers to a monocyclic 3- to m-membered saturated cycloaliphatic radicals, in particular to a 3- to 12- ("C_3-C_{12}-cycloalkyl") or 3- to 8- ("C_3-C_8-cycloalkyl") or 3- to 7- ("C_3-C_7-cycloalkyl") or 3- to 6- ("C_3-C_6-cycloalkyl") or 3- to 5- ("C_3-C_5-cycloalkyl") or 3- to 4- ("C_3-C_4-cycloalkyl") membered saturated cycloaliphatic radical. Examples of monocyclic radicals having 3 to 4 carbon atoms comprise cyclopropyl and cyclobutyl. Examples of monocyclic radicals having 3 to 5 carbon atoms comprise cyclopropyl, cyclobutyl and cyclopentyl. Examples of monocyclic radicals having 3 to 6 carbon atoms comprise cyclopropyl, cyclobutyl, cyclopentyl and cyclohexyl. Examples of monocyclic radicals having 3 to 7 carbon atoms comprise cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl and cycloheptyl. Examples of monocyclic radicals having 3 to 8 carbon atoms comprise cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cycloheptyl and cyclooctyl. Examples of monocyclic radicals having 3 to 12 carbon atoms comprise cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cycloheptyl, cyclooctyl, cyclononyl, cyclodecyl, cycloundecyl and cyclododecyl.

The term "halocycloalkyl" as used herein, which is also expressed as "cycloalkyl which is partially or fully halogenated", refers to monocyclic saturated hydrocarbon groups having 3 to 8 ("C_3-C_8-halocycloalkyl") or preferably 3 to 6 ("C_3-C_6-halocycloalkyl") or 3 to 5 ("C_3-C_5-halocycloalkyl") or 3 to 4 ("C_3-C_4-halocycloalkyl") carbon ring members (as mentioned above) in which some or all of the hydrogen atoms are replaced by halogen atoms as mentioned above, in particular fluorine, chlorine and bromine.

The term "cycloalkyl-C_1-C_4-alkyl" refers to a C_3-C_8-cycloalkyl group ("C_3-C_8-cycloalkyl-C_1-C_4-alkyl"), preferably a C_3-C_6-cycloalkyl group ("C_3-C_6-cycloalkyl-C_1-C_4-alkyl"), more preferably a C_3-C_4-cycloalkyl group ("C_3-C_4-cycloalkyl-C_1-C_4-alkyl") as defined above (preferably a monocyclic cycloalkyl group) which is bound to the remainder of the molecule via a C_1-C_4-alkyl group, as defined above. Examples for C_3-C_4-cycloalkyl-C_1-C_4-alkyl are cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclobutylmethyl, cyclobutylethyl and cyclobutylpropyl, Examples for C_3-C_6-cycloalkyl-C_1-C_4-alkyl, apart those mentioned for C_3-C_4-cycloalkyl-C_1-C_4-alkyl, are cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclohexylmethyl, cyclohexylethyl and cyclohexylpropyl. Examples for C_3-C_8-cycloalkyl-C_1-C_4-alkyl, apart those mentioned for C_3-C_6-cycloalkyl-C_1-C_4-alkyl, are cycloheptylmethyl, cycloheptylethyl, cyclooctylmethyl and the like.

The term "C_3-C_8-halocycloalkyl-C_1-C_4-alkyl" refers to a C_3-C_8-halocycloalkyl group as defined above which is bound to the remainder of the molecule via a C_1-C_4-alkyl group, as defined above.

The term "cycloalkenyl" as used herein refers to monocyclic hydrocarbon radicals with at least one C-C double bond in the ring, which ring is however not aromatic, the hydrocarbon radicals having 3 to 12 ("C_3-C_{12}-cycloalkenyl) or 3 to 8 ("C_3-C_8-cycloalkenyl) or 3 to 7 ("C_3-C_7-cycloalkenyl) carbon atoms. Examples are cyclopropenyl, such as cycloprop-1-enyl and cycloprop-2-yl, cyclobutenyl, such as cyclobut-1-enyl and cyclobut-2-enyl, cyclopentenyl, such as cyclopent-1-enyl, cyclopent-2-enyl and cyclopent-3-enyl, cyclopentadienyl, such as cyclopenta-1,3-dienyl, cyclpenta-1,4-dienyl and cyclpenta-2,4-dienyl, cyclohexenyl, such as cyclohex-1-enyl, cyclohex-2-enyl and cyclohex-3-enyl, cyclohexadienyl, such as cyclohexa-1,3-dienyl, cyclohexa-1,4-dienyl, cyclohexa-1,5-dienyl and cyclohexa-2,5-dienyl, cycloheptenyl, cycloheptadienyl, cycloheptatrienyl cyclooctenyl, cyclooctadienyl, cyclooctatrienyl and cyclooctatetraenyl.

The term "halocycloalkenyl" as used herein refers to monocyclic hydrocarbon radicals with at least one C-C double bond in the ring, which ring is however not aromatic, the hydrocarbon radicals having 3 to 8 ("C_3-C_8-halocycloalkyl") carbon atoms, and wherein some or all of the hydrogen atoms are replaced by halogen atoms as mentioned above, in particular fluorine, chlorine and bromine.

"C_3-C_6-Cycloalkoxy" is a C_3-C_6-cycloalkyl group, as defined above, bound via an oxygen atom. Examples are cyclopropoxy, cyclobutoxy, cyclopentoxy and cyclohexoxy.

"Phenyl-C_1-C_4-alkyl" is a C_1-C_4-alkyl group, as defined above, in which a hydrogen atom is replaced by a phenyl group. Examples are benzyl, 1-phenylethyl and phenethyl.

"Phenyl-C_1-C_4-alkoxy" is a C_1-C_4-alkoxy group, as defined above, in which a hydrogen atom is replaced by a phenyl group. Examples are benzyloxy, 1-phenylethoxy and 2-phenylethoxy.

The term "C_1-C_2-alkylsulfinyl" is a C_1-C_2-alkyl group, as defined above, attached via a sulfinyl [S(O)] group. The term "C_1-C_4-alkylsulfinyl" is a C_1-C_4-alkyl group, as defined above, attached via a sulfinyl [S(O)] group. The term "C_1-C_6-alkylsulfinyl" is a C_1-C_6-alkyl group, as defined above, attached via a sulfinyl [S(O)] group. The term "C_1-C_{10}-alkylsulfinyl" is a C_1-C_{10}-alkyl group, as defined above, attached via a sulfinyl [S(O)] group. C_1-C_2-Alkylsulfinyl is methylsulfinyl or ethylsulfinyl. C_1-C_4-Alkylsulfinyl is additionally, for example, n-propylsulfinyl, 1-methylethylsulfinyl (isopropylsulfinyl), butylsulfinyl, 1-methylpropylsulfinyl (sec-butylsulfinyl), 2-methylpropylsulfinyl (isobutylsulfinyl) or 1,1-dimethylethylsulfinyl (tert-butylsulfinyl). C_1-C_6-Alkylsulfinyl is additionally, for example, pentylsulfinyl, 1-methylbutylsulfinyl, 2-methylbutylsulfinyl, 3-methylbutylsulfinyl, 1,1-dimethylpropylsulfinyl, 1,2-dimethylpropylsulfinyl, 2,2-dimethylpropylsulfinyl, 1-ethylpropylsulfinyl, hexylsulfinyl, 1-methylpentylsulfinyl, 2-methylpentylsulfinyl, 3-methylpentylsulfinyl, 4-methylpentylsulfinyl, 1,1-dimethylbutylsulfinyl, 1,2-dimethylbutylsulfinyl, 1,3-dimethylbutylsulfinyl, 2,2-dimethylbutylsulfinyl, 2,3-dimethylbutylsulfinyl, 3,3-dimethylbutylsulfinyl, 1-ethylbutylsulfinyl, 2-ethylbutylsulfinyl, 1,1,2-trimethylpropylsulfinyl, 1,2,2-trimethylpropylsulfinyl, 1-ethyl-1-methylpropylsulfinyl or 1-ethyl-2-methylpropylsulfinyl. C_1-C_8-Alkylsulfinyl is additionally, for example, heptylsulfinyl, octylsulfinyl, 2-ethylhexylsulfinyl and positional isomers thereof. C_1-C_{10}-Alkylsulfinyl is additionally, for example, nonylsulfinyl, decylsulfinyl and positional isomers thereof.

The term "C_1-C_2-haloalkylsulfinyl" is a C_1-C_2-haloalkyl group, as defined above, attached via a sulfinyl [S(O)] group. The term "C_1-C_4-haloalkylsulfinyl" is a C_1-C_4-haloalkyl group, as defined above, attached via a sulfinyl [S(O)] group. The term "C_1-C_6-haloalkylsulfinyl" is a C_1-C_6-haloalkyl group, as defined above, attached via a sulfinyl [S(O)] group. The term "C_1-C_{10}-haloalkylsulfinyl" is a C_1-C_{10}-haloalkyl group, as defined above, attached via a sulfinyl [S(O)] group. C_1-C_2-Haloalkylsulfinyl is, for example, $S(O)CH_2F$, $S(O)CHF_2$, $S(O)CF_3$, $S(O)CH_2Cl$, $S(O)CHCl_2$, $S(O)CCl_3$, chlorofluoromethylsulfinyl, dichlorofluoromethylsulfinyl, chlorodifluoromethylsulfinyl, 2-fluoroethylsulfinyl, 2-chloroethylsulfinyl, 2-bromoethylsulfinyl, 2-iodoethylsulfinyl, 2,2-difluoroethylsulfinyl, 2,2,2-trifluoroethylsulfinyl, 2-chloro-2-fluoroethylsulfinyl, 2-chloro-2,2-difluoroethylsulfinyl, 2,2-dichloro-2-fluoroethylsulfinyl, 2,2,2-trichloroethylsulfinyl or $S(O)C_2F_5$. C_1-C_4-Haloalkylsulfinyl is additionally, for example, 2-fluoropropylsulfinyl, 3-fluoropropylsulfinyl, 2,2-

difluoropropylsulfinyl, 2,3-difluoropropylsulfinyl, 2-chloropropylsulfinyl, 3-chloropropylsulfinyl, 2,3-dichloropropylsulfinyl, 2-bromopropylsulfinyl, 3-bromopropylsulfinyl, 3,3,3-trifluoropropylsulfinyl, 3,3,3-trichloropropylsulfinyl, S(O)CH_2-C_2F_5, S(O)CF_2-C_2F_5, 1-(CH_2F)-2-fluoroethylsulfinyl, 1-(CH_2Cl)-2-chloroethylsulfinyl, 1-(CH_2Br)-2-bromoethylsulfinyl, 4-fluorobutylsulfinyl, 4-chlorobutylsulfinyl, 4-bromobutylsulfinyl or nonafluorobutylsulfinyl. C_1-C_6-Haloalkylsulfinyl is additionally, for example, 5-fluoropentylsulfinyl, 5-chloropentylsulfinyl, 5-brompentylsulfinyl, 5-iodopentylsulfinyl, undecafluoropentylsulfinyl, 6-fluorohexylsulfinyl, 6-chlorohexylsulfinyl, 6-bromohexylsulfinyl, 6-iodohexylsulfinyl or dodecafluorohexylsulfinyl.

The term "C_1-C_2-alkylsulfonyl" is a C_1-C_2-alkyl group, as defined above, attached via a sulfonyl [S(O)$_2$] group. The term "C_1-C_3-alkylsulfonyl" is a C_1-C_3-alkyl group, as defined above, attached via a sulfonyl [S(O)$_2$] group. The term "C_1-C_4-alkylsulfonyl" is a C_1-C_4-alkyl group, as defined above, attached via a sulfonyl [S(O)$_2$] group. The term "C_1-C_6-alkylsulfonyl" is a C_1-C_6-alkyl group, as defined above, attached via a sulfonyl [S(O)$_2$] group. The term "C_1-C_{10}-alkylsulfonyl" is a C_1-C_{10}-alkyl group, as defined above, attached via a sulfonyl [S(O)$_2$] group. C_1-C_2-Alkylsulfonyl is methylsulfonyl or ethylsulfonyl. C_1-C_3-Alkylsulfonyl is additionally, for example, n-propylsulfonyl or 1-methylethylsulfonyl (isopropylsulfonyl). C_1-C_4-Alkylsulfonyl is additionally, for example, butylsulfonyl, 1-methylpropylsulfonyl (sec-butylsulfonyl), 2-methylpropylsulfonyl (isobutylsulfonyl) or 1,1-dimethylethylsulfonyl (tert-butylsulfonyl). C_1-C_6-Alkylsulfonyl is additionally, for example, pentylsulfonyl, 1-methylbutylsulfonyl, 2-methylbutylsulfonyl, 3-methylbutylsulfonyl, 1,1-dimethylpropylsulfonyl, 1,2-dimethylpropylsulfonyl, 2,2-dimethylpropylsulfonyl, 1-ethylpropylsulfonyl, hexylsulfonyl, 1-methylpentylsulfonyl, 2-methylpentylsulfonyl, 3-methylpentylsulfonyl, 4-methylpentylsulfonyl, 1,1-dimethylbutylsulfonyl, 1,2-dimethylbutylsulfonyl, 1,3-dimethylbutylsulfonyl, 2,2-dimethylbutylsulfonyl, 2,3-dimethylbutylsulfonyl, 3,3-dimethylbutylsulfonyl, 1-ethylbutylsulfonyl, 2-ethylbutylsulfonyl, 1,1,2-trimethylpropylsulfonyl, 1,2,2-trimethylpropylsulfonyl, 1-ethyl-1-methylpropylsulfonyl or 1-ethyl-2-methylpropylsulfonyl. C_1-C_8-Alkylsulfonyl is additionally, for example, heptylsulfonyl, octylsulfonyl, 2-ethylhexylsulfonyl and positional isomers thereof. C_1-C_{10}-Alkylsulfonyl is additionally, for example, nonylsulfonyl, decylsulfonyl and positional isomers thereof.

The term "C_1-C_2-haloalkylsulfonyl" is a C_1-C_2-haloalkyl group, as defined above, attached via a sulfonyl [S(O)$_2$] group. The term "C_1-C_3-haloalkylsulfonyl" is a C_1-C_3-haloalkyl group, as defined above, attached via a sulfonyl [S(O)$_2$] group. The term "C_1-C_4-haloalkylsulfonyl" is a C_1-C_4-haloalkyl group, as defined above, attached via a sulfonyl [S(O)$_2$] group. The term "C_1-C_6-haloalkylsulfonyl" is a C_1-C_6-haloalkyl group, as defined above, attached via a sulfonyl [S(O)$_2$] group. The term "C_1-C_{10}-haloalkylsulfonyl" is a C_1-C_{10}-haloalkyl group, as defined above, at-

tached via a sulfonyl [$S(O)_2$] group. C_1-C_2-Haloalkylsulfonyl is, for example, $S(O)_2CH_2F$, $S(O)_2CHF_2$, $S(O)_2CF_3$, $S(O)_2CH_2Cl$, $S(O)_2CHCl_2$, $S(O)_2CCl_3$, chlorofluoromethylsulfonyl, dichlorofluoromethylsulfonyl, chlorodifluoromethylsulfonyl, 2-fluoroethylsulfonyl, 2-chloroethylsulfonyl, 2-bromoethylsulfonyl, 2-iodoethylsulfonyl, 2,2-difluoroethylsulfonyl, 2,2,2-trifluoroethylsulfonyl, 2-chloro-2-fluoroethylsulfonyl, 2-chloro-2,2-difluoroethylsulfonyl, 2,2-dichloro-2-fluoroethylsulfonyl, 2,2,2-trichloroethylsulfonyl or $S(O)_2C_2F_5$. C_1-C_3-Haloalkylsulfonyl is additionally, for example, 2-fluoropropylsulfonyl, 3-fluoropropylsulfonyl, 2,2-difluoropropylsulfonyl, 2,3-difluoropropylsulfonyl, 2-chloropropylsulfonyl, 3-chloropropylsulfonyl, 2,3-dichloropropylsulfonyl, 2-bromopropylsulfonyl, 3-bromopropylsulfonyl, 3,3,3-trifluoropropylsulfonyl, 3,3,3-trichloropropylsulfonyl, $S(O)_2CH_2$-C_2F_5, $S(O)_2CF_2$-C_2F_5, 1-(CH_2F)-2-fluoroethylsulfonyl, 1-(CH_2Cl)-2-chloroethylsulfonylor 1-(CH_2Br)-2-bromoethylsulfonyl. C_1-C_4-Haloalkylsulfonyl is additionally, for example, 4-fluorobutylsulfonyl, 4-chlorobutylsulfonyl, 4-bromobutylsulfonyl or nonafluorobutylsulfonyl. C_1-C_6-Haloalkylsulfonyl is additionally, for example, 5-fluoropentylsulfonyl, 5-chloropentylsulfonyl, 5-brompentylsulfonyl, 5-iodopentylsulfonyl, undecafluoropentylsulfonyl, 6-fluorohexylsulfonyl, 6-chlorohexylsulfonyl, 6-bromohexylsulfonyl, 6-iodohexylsulfonyl or dodecafluorohexylsulfonyl.

The substituent "oxo" replaces a CH_2 group by a C(=O) group. The substituent "thioxo" replaces a CH_2 group by a C(=S) group.

The term "alkylcarbonyl" is a C_1-C_6-alkyl ("C_1-C_6-alkylcarbonyl"), preferably a C_1-C_4-alkyl ("C_1-C_4-alkylcarbonyl") group, as defined above, attached via a carbonyl [C(=O)] group. Examples are acetyl (methylcarbonyl), propionyl (ethylcarbonyl), propylcarbonyl, isopropylcarbonyl, n-butylcarbonyl and the like.

The term "haloalkylcarbonyl" is a C_1-C_6-haloalkyl ("C_1-C_6-haloalkylcarbonyl"), preferably a C_1-C_4-haloalkyl ("C_1-C_4-haloalkylcarbonyl") group, as defined above, attached via a carbonyl [C(=O)] group. Examples are trifluoromethylcarbonyl, 2,2,2-trifluoroethylcarbonyl and the like.

The term "alkoxycarbonyl" is a C_1-C_6-alkoxy ("C_1-C_6-alkoxycarbonyl"), preferably a C_1-C_4-alkoxy ("C_1-C_4-alkoxycarbonyl") group, as defined above, attached via a carbonyl [C(=O)] group. Examples are methoxycarbonyl), ethoxycarbonyl, propoxycarbonyl, isopropoxycarbonyl, n-butoxycarbonyl and the like.

The term "haloalkoxycarbonyl" is a C_1-C_6-haloalkoxy ("C_1-C_6-haloalkoxycarbonyl"), preferably a C_1-C_4-haloalkoxy ("C_1-C_4-haloalkoxycarbonyl") group, as defined above, attached via a carbonyl [C(=O)] group. Examples are trifluoromethoxycarbonyl, 2,2,2-trifluoroethoxycarbonyl and the like.

The term "C_1-C_6-alkylamino" is a group -N(H)C_1-C_6-alkyl. Examples are methylamino, ethylamino, propylamino, isopropylamino, butylamino and the like.

The term "di-(C_1-C_6-alkyl)amino" is a group -N(C_1-C_6-alkyl)$_2$. Examples are dimethylamino, diethylamino, ethylmethylamino, dipropylamino, diisopropylamino, methylpropylamino, methylisopropylamino, ethylpropylamino, ethylisopropylamino, dibutylamino and the like.

The term "aminocarbonyl" is a group -C(O)-NH_2.

The term "C_1-C_6-alkylaminocarbonyl" is a group -C(O)-N(H)C_1-C_6-alkyl. Examples are methylaminocarbonyl, ethylaminocarbonyl, propylaminocarbonyl, isopropylaminocarbonyl, butylaminocarbonyl and the like.

The term "di-(C_1-C_6-alkyl)-aminocarbonyl" is a group -C(O)-N(C_1-C_6-alkyl)$_2$. Examples are dimethylaminocarbonyl, diethylaminocarbonyl, ethylmethylaminocarbonyl, dipropylaminocarbonyl, diisopropylaminocarbonyl, methylpropylaminocarbonyl, methylisopropylaminocarbonyl, ethylpropylaminocarbonyl, ethylisopropylaminocarbonyl, dibutylaminocarbonyl and the like.

The term "C_1-C_6-alkylaminosulfonyl" is a C_1-C_6-alkylamino group as mentioned above, which is bound to the remainder of the molecule by a sulfonyl group.

The term "di-(C_1-C_6-alkyl)-aminosulfonyl: is a di-(C_1-C_6-alkyl)-amino group as mentioned above, which is bound to the remainder of the molecule by a sulfonyl group.

The term "C_1-C_6-alkylaminosulfenyl" is a (C_1-C_6-alkyl)amino group as mentioned above, which is bound to the remainder of the molecule by a sulfenyl group.

The term "di-(C_1-C_6-alkyl)-aminosulfenyl: is a di-(C_1-C_6-alkyl)-amino group as mentioned above, which is bound to the remainder of the molecule by a sulfenyl group.

The term "C_1-C_6-alkylaminosulfinyl" is a (C_1-C_6-alkyl)amino group as mentioned above, which is bound to the remainder of the molecule by a sulfinyl group.

The term "di-(C_1-C_6-alkyl)-aminosulfinyl: is a di-(C_1-C_6-alkyl)-amino group as mentioned above, which is bound to the remainder of the molecule by a sulfinyl group.

The term "aryl" as used herein refers to an aromatic hydrocarbon radical such as naphthyl or in particular phenyl.

The term "3- to 6-membered carbocyclic ring" as used herein refers to cyclopropane, cyclobutane, cyclopentane and cyclohexane rings.

The term "3-, 4-, 5-, 6- or 7-membered saturated, partially unsaturated or aromatic heterocyclic ring containing 1, 2 or 3 heteroatoms" or "containing heteroatom groups", wherein those heteroatom(s) (group(s)) are selected from N, O, S, NO, SO and SO_2 and are ring members, as used herein refers to monocyclic radicals, the monocyclic radicals being saturated, partially unsaturated or aromatic. The heterocyclic radical may be attached to the remainder of the molecule via a carbon ring member or via a nitrogen ring member.

Examples of 3-, 4-, 5-, 6- or 7-membered saturated heterocyclyl or heterocyclic rings include: Oxiranyl, aziridinyl, azetidinyl, 2 tetrahydrofuranyl, 3-tetrahydrofuranyl, 2 tetrahydrothienyl, 3 tetrahydrothienyl, 2-pyrrolidinyl, 3-pyrrolidinyl, 3 pyrazolidinyl, 4 pyrazolidinyl, 5-pyrazolidinyl, 2 imidazolidinyl, 4 imidazolidinyl, 2-oxazolidinyl, 4-oxazolidinyl, 5 oxazolidinyl, 3-isoxazolidinyl, 4 isoxazolidinyl, 5 isoxazolidinyl, 2 thiazolidinyl, 4-thiazolidinyl, 5-thiazolidinyl, 3 isothiazolidinyl, 4-isothiazolidinyl, 5 isothiazolidinyl, 1,2,4-oxadiazolidin-3-yl, 1,2,4 oxadiazolidin 5 yl, 1,2,4-thiadiazolidin-3-yl, 1,2,4 thiadiazolidin-5-yl, 1,2,4 triazolidin-3-yl, 1,3,4-oxadiazolidin-2-yl, 1,3,4 thiadiazolidin-2-yl, 1,3,4 triazolidin-2-yl, 2-tetrahydropyranyl, 4 tetrahydropyranyl, 1,3-dioxan-5-yl, 1,4-dioxan-2-yl, 2-piperidinyl, 3-piperidinyl, 4-piperidinyl, 3-hexahydropyridazinyl, 4 hexahydropyridazinyl, 2-hexahydropyrimidinyl, 4-hexahydropyrimidinyl, 5 hexahydropyrimidinyl, 2-piperazinyl, 1,3,5-hexahydrotriazin-2-yl and 1,2,4 hexahydrotriazin-3-yl, 2-morpholinyl, 3-morpholinyl, 2-thiomorpholinyl, 3-thiomorpholinyl, 1-oxothiomorpholin-2-yl, 1-oxothiomorpholin-3-yl, 1,1-dioxothiomorpholin-2-yl, 1,1-dioxothiomorpholin-3-yl, hexahydroazepin-1-, -2-, -3- or -4-yl, hexahydrooxepinyl, hexahydro-1,3-diazepinyl, hexahydro-1,4-diazepinyl, hexahydro-1,3-oxazepinyl, hexahydro-1,4-oxazepinyl, hexahydro-1,3-dioxepinyl, hexahydro-1,4-dioxepinyl and the like.

Examples of 3-, 4-, 5-, 6- or 7-membered partially unsaturated heterocyclyl or heterocyclic rings include: 2,3-dihydrofur-2-yl, 2,3-dihydrofur-3-yl, 2,4-dihydrofur-2-yl, 2,4-dihydrofur-3-yl, 2,3-dihydrothien-2-yl, 2,3 dihydrothien-3-yl, 2,4 dihydrothien-2-yl, 2,4-dihydrothien-3-yl, 2-pyrrolin-2-yl, 2-pyrrolin-3-yl, 3 pyrrolin-2-yl, 3-pyrrolin-3-yl, 2-isoxazolin-3-yl, 3-isoxazolin-3-yl, 4 isoxazolin 3 yl, 2-isoxazolin-4-yl, 3-isoxazolin-4-yl, 4-isoxazolin-4-yl, 2 isoxazolin-5-yl, 3-isoxazolin-5-yl, 4-isoxazolin-5-yl, 2-isothiazolin-3-yl, 3 isothiazolin-3-yl, 4-isothiazolin-3-yl, 2-isothiazolin-4-yl, 3-

isothiazolin-4-yl, 4 isothiazolin-4-yl, 2-isothiazolin-5-yl, 3-isothiazolin-5-yl, 4-isothiazolin-5-yl, 2,3 dihydropyrazol-1-yl, 2,3-dihydropyrazol-2-yl, 2,3-dihydropyrazol-3-yl, 2,3 dihydropyrazol-4-yl, 2,3-dihydropyrazol-5-yl, 3,4-dihydropyrazol-1-yl, 3,4 dihydropyrazol-3-yl, 3,4-dihydropyrazol-4-yl, 3,4-dihydropyrazol-5-yl, 4,5 dihydropyrazol-1-yl, 4,5-dihydropyrazol-3-yl, 4,5-dihydropyrazol-4-yl, 4,5 dihydropyrazol-5-yl, 2,3-dihydrooxazol-2-yl, 2,3-dihydrooxazol-3-yl, 2,3 dihydrooxazol-4-yl, 2,3-dihydrooxazol-5-yl, 3,4-dihydrooxazol-2-yl, 3,4 dihydrooxazol-3-yl, 3,4-dihydrooxazol-4-yl, 3,4-dihydrooxazol-5-yl, 3,4 dihydrooxazol-2-yl, 3,4-dihydrooxazol-3-yl, 3,4-dihydrooxazol-4-yl, 2-, 3-, 4-, 5- or 6-di- or tetrahydropyridinyl, 3-di- or tetrahydropyridazinyl, 4 di- or tetrahydropyridazinyl, 2-di- or tetrahydropyrimidinyl, 4-di- or tetrahydropyrimidinyl, 5 di- or tetrahydropyrimidinyl, di- or tetrahydropyrazinyl, 1,3,5-di- or tetrahydrotriazin-2-yl, 1,2,4-di- or tetrahydrotriazin-3-yl, 2,3,4,5-tetrahydro[1H]azepin-1-, -2-, -3-, -4-, -5-, -6- or -7-yl, 3,4,5,6-tetrahydro[2H]azepin-2-, -3-, -4-, -5-, -6- or -7-yl, 2,3,4,7 tetrahydro[1H]azepin-1-, -2-, -3-, -4-, -5-, -6- or -7-yl, 2,3,6,7 tetrahydro[1H]azepin-1-, -2-, -3-, -4-, -5-, -6- or -7-yl, tetrahydrooxepinyl, such as 2,3,4,5-tetrahydro[1H]oxepin-2-, -3-, -4-, -5-, -6- or -7-yl, 2,3,4,7 tetrahydro[1H]oxepin-2-, -3-, -4-, -5-, -6- or -7-yl, 2,3,6,7 tetrahydro[1H]oxepin-2-, -3-, -4-, -5-, -6- or -7-yl, tetrahydro-1,3-diazepinyl, tetrahydro-1,4-diazepinyl, tetrahydro-1,3-oxazepinyl, tetrahydro-1,4-oxazepinyl, tetrahydro-1,3-dioxepinyl and tetrahydro-1,4-dioxepinyl.

Examples of 5- or 6-membered aromatic heterocyclyl (hetaryl) or heteroaromatic rings are: 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyrrolyl, 3-pyrrolyl, 3-pyrazolyl, 4-pyrazo¬lyl, 5-pyrazolyl, 2-oxazolyl, 4-oxazolyl, 5-oxazolyl, 2-thiazolyl, 4 thiazolyl, 5-thiazo¬lyl, 2-imidazolyl, 4-imidazolyl, 1,3,4-triazol-2-yl, 2-pyridinyl, 3-pyridinyl, 4-pyridinyl, 3-pyridazinyl, 4-pyridazinyl, 2-pyrimidinyl, 4-pyrimidinyl, 5-pyrimidinyl and 2-pyrazinyl.

A "C_2-C_m-alkylene" is divalent branched or preferably unbranched saturated aliphatic chain having 2 to m, e.g. 2 to 7 carbon atoms, for example CH_2CH_2, -$CH(CH_3)$-, $CH_2CH_2CH_2$, $CH(CH_3)CH_2$, $CH_2CH(CH_3)$, $CH_2CH_2CH_2CH_2$, $CH_2CH_2CH_2CH_2CH_2$, $CH_2CH_2CH_2CH_2CH_2CH_2$, and $CH_2CH_2CH_2CH_2CH_2CH_2CH_2$.

A "C_2-C_m-alkenylene" is divalent branched or preferably unbranched mono-, di- or polyunsaturated aliphatic chain having 2 to m, e.g. 2 to 6 carbon atoms, for example -CH=CH-, -$C(=CH_2)$-, -CH=CH-CH_2-, -$C(CH_3)$=CH-, -$C(=CH_2)$-CH_2-, -CH=$C(CH_3)$-, -$CH_2C(=CH_2)$-, -CH=CH-CH_2CH_2-, -CH_2CH=$CHCH_2$-, -CH=CH-CH=CH-, -CH=$CHCH_2CH_2CH_2$-, -CH_2-CH=CH-CH_2CH_2-, -CH=CH-CH=CH-CH_2-, -CH=CH-CH_2-CH=CH-, and $CH_2CH_2CH_2CH_2CH_2CH_2CH_2$.

Embodiments and Preferences

Embodiments and preferred compounds of the present invention are outlined in the following paragraphs.

The remarks made below concerning preferred embodiments of the variables of the compounds of formula I, especially with respect to ring A and the substituents X, R^1 ,R^2, R^3, R^{4a}, R^{4b}, R^{4c}, R^{4d} and R^6 are valid both on their own and, in particular, in every possible combination with each other.
When # appears in a formula showing a preferred substructure of a compound of the present invention, it denotes the attachment bond in the remainder molecule.

One embodiment of the present invention are compounds of formula (I), wherein X is selected from O.

Another embodiment of the present invention are compounds of formula (I), wherein X is selected from S.

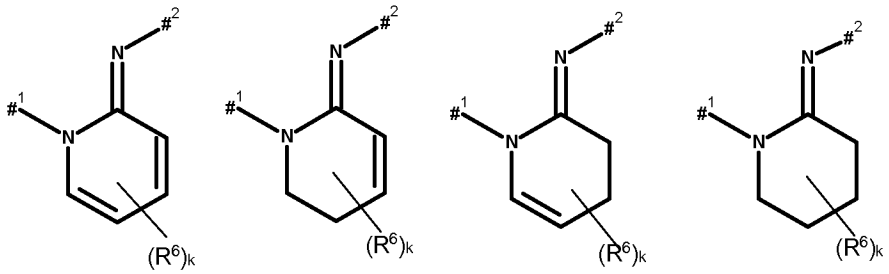
Preferred are compounds of formula (I), wherein R^1 and R^2 are independently from each other selected from the group consisting of hydrogen, halogen, CN, C_1-C_6-alkyl, C_3-C_6-cycloalkyl, C_1-C_6-haloalkyl, C_3-C_6-halocycloalkyl; or
R^1 and R^2 may together be =O, $=CR^{13}R^{14}$ or =S; or
R^1 and R^2 form, together with the carbon atom, which they attached to, a 3- to 5 membered saturated carbocyclic ring;

Especially preferred are compounds of formula (I), wherein R^1 and R^2 are independently from each other selected from the group consisting of hydrogen, halogen, cyano, C_1-C_3-alkyl or C_1-C_3-haloalkyl.
Especially preferred are compounds of formula (I), wherein R^1 and R^2 are independently from each other selected from hydrogen or CH_3.

One embodiment of the present invention are compounds of formula (I),wherein R^1 and R^2 are both hydrogen.
Another embodiment of the present invention are compounds of formula (I),wherein one of R^1 and R^2 is hydrogen, and the other is methyl.

One embodiment of the present invention are compounds of formula (I), wherein one of R^{4a}, R^{4b1}, R^{4b2}, R^{4c1}, R^{4c2}, R^{4d1} and R^{4d2} is methyl and the others are hydrogen.
Another embodiment of the present invention are compounds of formula (I), wherein all of R^{4a}, R^{4b1}, R^{4b2}, R^{4c1}, R^{4c2}, R^{4d1} and R^{4d2} are hydrogen.

One embodiment of the present invention are compounds of formula (I), wherein the N-heterocyclic ring A is selected from one of the followings structures A-1 to A-4:



A-1 A-2 A-3 A-4

and wherein

#1 and #2 denotes the bonds to the remainder of the molecule, and

k is an integer selected from 0 or 1; and

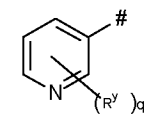
R^6 is selected from the group consisting of halogen, azido, CN, NO_2, SCN, SF_5, C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, and wherein the carbon atoms of the aforementioned aliphatic and cyclo-aliphatic radicals may optionally be further substituted independently from one another with one or more R^7, OR^8, $C(=O)R^7$ or $C(=S)R^7$,
or
two of R^6 present on one ring carbon or sulfur atom may together form =O, $=CR^{13}R^{14}$; =S; $=S(O)_nR^{16}$;, $=NR^{17a}$, $=NOR^{16}$;$=NNR^{17a}$;

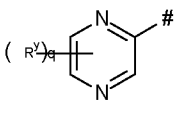
Preferred are compounds of formula (I), wherein the N-heterocyclic ring A is selected from one of the structures A-1 to A-4 described above, k is an integer selected from 0 or 1 and R^6 is selected from halogen, CN, C_1-C_4 alkyl and C_1-C_4-haloalky.

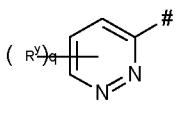
Especially preferred are compounds of formula (I), wherein the N-heterocyclic ring A is of the structure A-1 described above and k is an integer selected from 0, thus the N-heterocyclic ring A is unsubstituted.

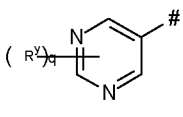
Preferred are compounds of formula (I), wherein R^3 is Het, and

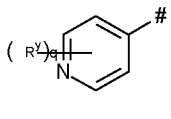
Het is selected from the group consisting of radicals of the following formulae Het-1 to Het-57:


Het-1


Het-2


Het-3


Het-4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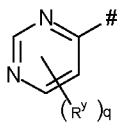
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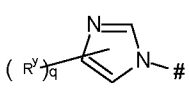
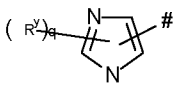

Het-7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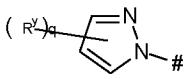
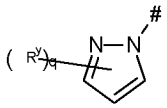
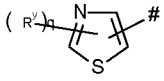

Het-9


Het-10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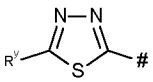
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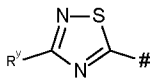
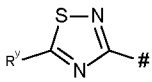
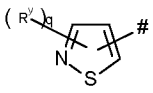
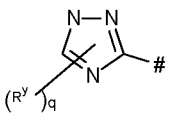

Het-13


Het-14


Het-15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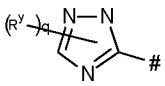
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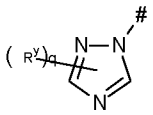
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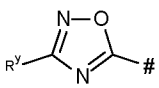
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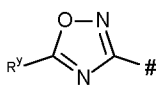
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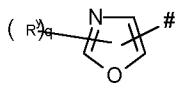
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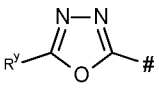
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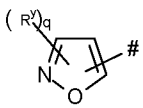
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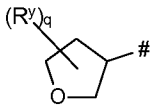
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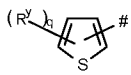
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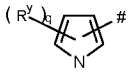
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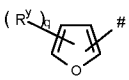
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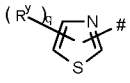
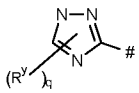

Het-28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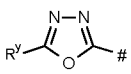
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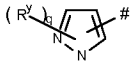
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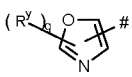
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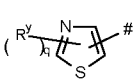
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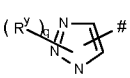
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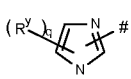
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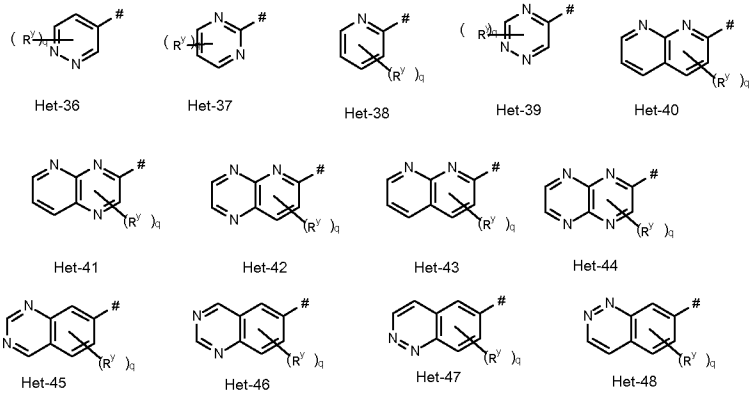
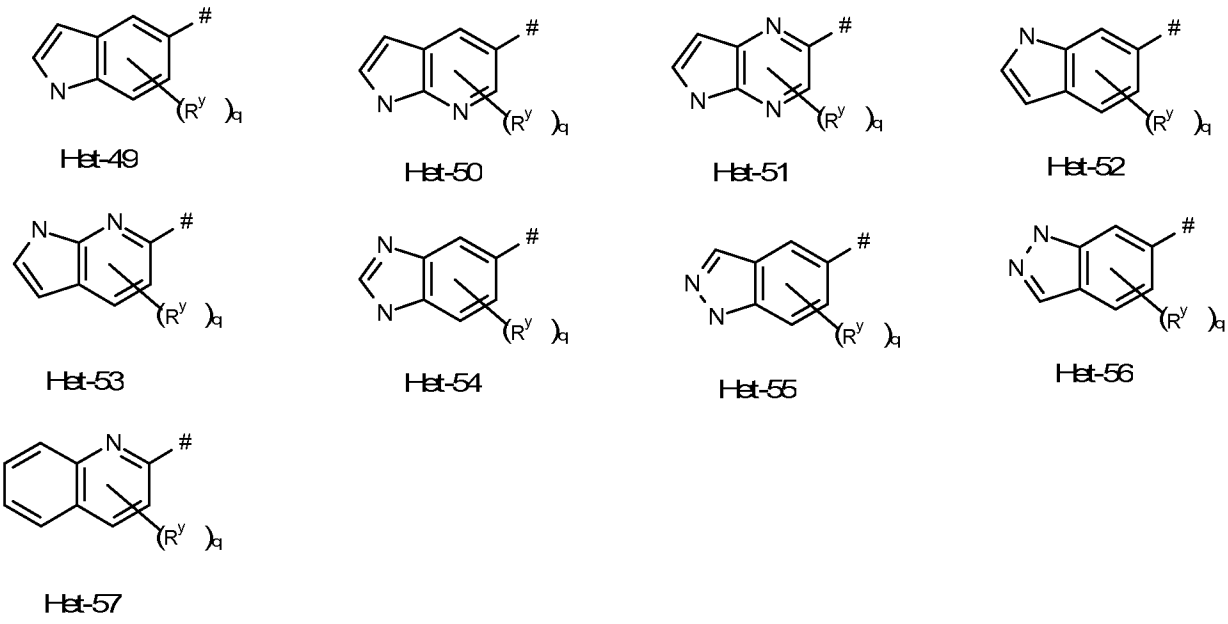




wherein # denotes the bond to the remainder of the molecule in formula (I), and wherein

q is an integer selected from 0, 1 2, 3 or 4;

and

R^y is selected each independently from one another and from the value of q from the group consisting of hydrogen, halogen, cyano, azido, nitro, SCN, C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, wherein the carbon atoms of the aforementioned aliphatic and cyclo-aliphatic radicals may optionally be substituted with one or more R^7, which are selected independently from one another,

$Si(R^{11})_2R^{12}$, OR^8, $OS(O)_nR^8$, $-S(O)_nR^8$, $S(O)_nNR^{9a}R^{9b}$, $NR^{9a}R^{9b}$, $C(=O)R^7$, $C(=S)R^7$, $C(=O)OR^7$,$-C(=NR^{9a})R^7$, $C(=N\text{-}NR^{9a}R^{9b})R^7$, $C(=NOR^8)R^7$, $C(=O)NR^{9a}R^{9b}$, $C(=S)NR^{9a}R^{9b}$, Y-Ar or Y-Cy,

wherein

Y is a single bond, CH_2, O or S;

Ar is phenyl, naphthyl or
a monocyclic 5- or 6- membered heteroaromatic ring comprising 1, 2, 3 or 4 heteroatoms selected from oxygen, nitrogen and/or sulfur, wherein the nitrogen and the sulfur atom(s) of the heterocyclic ring may optionally be oxidized;
wherein Ar is optionally substituted with 1, 2, 3, 4 or 5 substituents selected independently from one another from hydrogen, halogen, CN, NO_2, OH, SH, NH_2, CO_2H, C1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl or C_1-C_6-alkoxy, and wherein the carbon atoms of the aforementioned aliphatic radicals may be partially or fully halogenated; and

Cy is a C_3-C_7 cycloalkyl and C_3-C_7-cycloalkenyl, which is unsubstituted or substituted with 1 to 5 radicals selected independently of one another from the group consisting of hydrogen, halogen, CN, NO_2, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 alkoxy, C_1-C_6 haloalkoxy,

or wherein
two R^y present together on one atom of a partly saturated heterocyclic may be =O, $=CR^{13}R^{14}$, =S, $=NR^{17a}$, $=NOR^{16}$ or $=NNR^{17a}$ or
two R^y on adjacent carbon atoms of the heterocyclic ring Het may form a bridge selected from $CH_2CH_2CH_2$ and $CH_2CH_2CH_2CH_2$.

Alternatively, in the above embodiment

R^y is selected each independently from one another and from the value of q from the group consisting of hydrogen, halogen, cyano, azido, nitro, SCN, C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_2-C_6-alkenyl, C_2-C_6-alkinyl, wherein the carbon atoms of the aforementioned aliphatic and cyclo-aliphatic radicals may optionally be substituted with one or more R^7, which are selected independently from one another,
$Si(R^{11})_2R^{12}$, OR^8, $OS(O)_nR^8$, $-S(O)_nR^8$, $S(O)_nNR^{9a}R^{9b}$, $NR^{9a}R^{9b}$, $C(=O)R^7$, $C(=S)R^7$, $C(=O)OR^7$,$-C(=NR^{9a})R^7$, $C(=N\text{-}NR^{9a}R^{9b})R^7$, $C(=NOR^8)R^7$, $C(=O)NR^{9a}R^{9b}$, $C(=S)NR^{9a}R^{9b}$, Y-Ar or Y-Cy,
wherein

Y is a single bond, CH_2, O or S;

Ar is phenyl, naphtyl or
a mono- or bicyclic 5- or 6- membered heteroaromatic ring comprising 1, 2, 3 or 4 heteroatoms selected from oxygen, nitrogen and/or sulfur, wherein the nitrogen and/or the sulfur atom(s) of the heterocyclic ring may optionally be oxidized;
wherein Ar is optionally substituted with 1, 2, 3, 4 or 5 substituents selected independently from one another from hydrogen, halogen, CN, NO_2, OH, SH, NH_2, CO_2H,

C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl or C_1-C_6-alkoxy, and wherein the carbon atoms of the aforementioned aliphatic radicals may be partially or fully halogenated; and

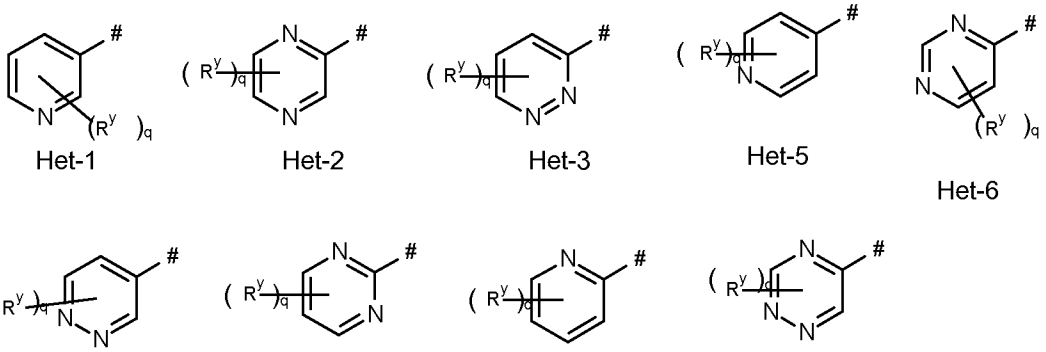
Cy is a C_3-C_7 cycloalkyl, which is unsubstituted or substituted with 1 to 5 radicals selected independently of one another from the group consisting of hydrogen, halogen, CN, NO_2, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 alkoxy, C_1-C_6 haloalkoxy,

or wherein

two R^y present together on one atom of a partly saturated heterocyclic may be =O, $=CR^{13}R^{14}$, $=NR^{17a}$, $=NOR^{16}$ or $=NNR^{17a}$.

Especially preferred are compounds of formula (I), wherein R^3 is Het, and

Het is selected from the group consisting of radicals of the following formulae Het-1, Het-2, Het-3, Het-5, Het-6, Het-37, Het-38, Het-39 and Het-40:



Het-1 Het-2 Het-3 Het-5 Het-6

Het-36 Het-37 Het-38 Het-39

wherein # denotes the bond to the remainder of the molecule in formula (I), and wherein

q is 0, 1 or 2;

R^y is selected each independently from one another and from the value of q from the group consisting of hydrogen, halogen, cyano, nitro, SCN, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_3-C_6-cycloalkyl, C_3-C_6-halocycloalkyl, C_2-C_6-alkenyl, C_1-C_6-haloalkenyl, C_2-C_6-alkynyl, C_2-C_6-haloalkynyl, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, wherein the carbon atoms of the aforementioned aliphatic and cyclo-aliphatic radicals may optionally be substituted with one or more R^{15}, which are selected independently from one another,OR^{16}, $-S(O)_nR^{16}$, $S(O)_nNR^{17a}R^{17b}$, $C(=O)R^{15}$, $C(=O)OR^{15}$,$-C(=NR^{17a})R^{15}$, $C(=N\text{-}NR^{17a}R^{17b})R^{15}$, $C(=NOR^{16})R^{15}$, $C(=O)NR^{17a}R^{17b}$,

Y-Ar or Y-Cy,

wherein

Y is a single bond, CH_2, O or S;

Ar is phenyl, naphthyl or is
a mono- or bicyclic 5- or 6- membered heteroaromatic ring comprising 1 or 2 heteroatoms selected from oxygen, nitrogen and/or sulfur;
wherein Ar is optionally substituted with 1, 2, or 3 substituents selected independently from one another from hydrogen, halogen, CN, NO_2, OH, C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl or C_1-C_6-alkoxy, and wherein the carbon atoms of the aforementioned aliphatic radicals may be partially or fully halogenated;
and
Cy is selected from the group conisiting of cyclopropane or cyclobutane, cyclopentane, cyclohexane and cyclohexene, wherein the aliphatic ring is unsubstituted or partly or fully halogenated;

or wherein
two R^y present together on one atom of a partly saturated heterocyclic may be =O, =S, =NOR^{16} or =NNR^{17a}, or
two R^y on adjacent carbon atoms of the heterocyclic ring Het may form a bridge selected from $CH_2CH_2CH_2$ and $CH_2CH_2CH_2CH_2$.

Alternatively, in the above embodiment
R^y is selected each independently from one another and from the value of q from the group consisting of hydrogen, halogen, cyano, nitro, SCN, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_3-C_6-cycloalkyl, C_3-C_6-cyclohaloalkyl, C_2-C_6-alkenyl, C_1-C_6-haloalkenyl, C_2-C_6-alkinyl, C_2-C_6-haloalkinyl, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, wherein the carbon atoms of the aforementioned aliphatic and cyclo-aliphatic radicals may optionally be substituted with one or more R^{15}, which are selected independently from one another,OR^{16}, -S(O)$_n$R^{16}, S(O)$_n$NR^{17a}R^{17b}, C(=O)R^{15}, C(=O)OR^{15},-C(=NR^{17a})R^{15}, C(=N-NR^{17a}R^{17b})R^{15}, C(=NOR^{16})R^{15}, C(=O)NR^{17a}R^{17b},
Y-Ar or Y-Cy,
wherein
Y is a single bond, CH_2, O or S;
Ar is phenyl, naphtyl or is
a monocyclic 5- or 6- membered heteroaromatic ring comprising 1 or 2 heteroatoms selected from oxygen, nitrogen and/or sulfur;
wherein Ar is optionally substituted with 1, 2, or 3 substituents selected independently from one another from hydrogen, halogen, CN, NO_2, OH, C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl or C_1-C_6-alkoxy, and wherein the carbon atoms of the aforementioned aliphatic radicals may be partially or fully halogenated;

and

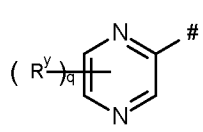
Cy is selected from the group conisiting of cyclopropane or cyclobutan, cyclopentan and cyclohexan, wherein the aliphatic ring is unsubstituted or partly or fully halogenated;

or wherein

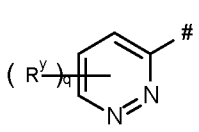
two R^y present together on one atom of a partly saturated heterocyclic may be =O, =NOR^{16} or =NNR^{17a}.

Especially more preferred are the compounds of formula (I), wherein R^3 is Het, and

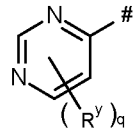
Het is selected from the group consisting of radicals of the following formulae Het-2, Het-3, Het-6, Het-36, Het-37 and Het-39:



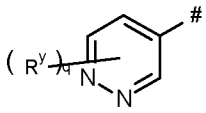
Het-2



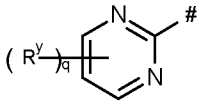
Het-3



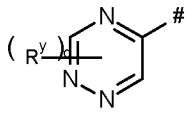
Het-6



Het-36



Het-37



Het-39

wherein # denotes the bond to the remainder of the molecule in formula (I), and wherein

q is 0, 1 or 2;

R^y is selected each independently from one another and from the value of q from the group consisting of hydrogen, halogen, cyano, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_3-C_6-cycloalkyl, C_3-C_6-halocycloalkyl, C_2-C_6-alkenyl, C_2-C_6-haloalkenyl, C_2-C_6-alkynyl, C_2-C_6-haloalkynyl, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_4-alkoxy-C_1-C_4-alkoxy, phenyl-C_1-C_4-alkoxy, where the phenyl ring may carry 1, 2 or 3 substituents selected from halogen, cyano, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and C_1-C_4-haloalkoxy; C_1-C_6-alkylsulfenyl, C_1-C_6-alkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylsulfonyl, C_1-C_6-alkylcarbonyl, C_1-C_6-haloalkylcarbonyl, C_1-C_6-alkoxycarbonyl, C_1-C_6-haloalkoxycarbonyl, C_1-C_6-alkylamino, di-(C_1-C_6-alkyl)-amino, C_1-C_6-alkylaminosulfonyl, di-(C_1-C_6-alkyl)-aminosulfonyl, C_1-C_6-haloalkylaminosulfonyl, C_1-C_6-alkylaminosulfenyl, di-(C_1-C_6-alkyl)-aminosulfenyl, C_1-C_6-alkylaminosulfinyl, di-(C_1-C_6-alkyl)-aminosulfinyl, (C_1-C_6-alkylamino)carbonyl, di-(C_1-C_6-alkyl)aminocarbonyl, , phenyl, unsubstituted or optionally monosubstituted or disubstituted with halogen, CN, NO_2, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-haloalkoxy,

Y-Ar or Y-Cy,

wherein

Y is a single bond or CH_2 or O;

Ar is phenyl or a monocyclic 5- or 6- membered heteroaromatic ring selected from the group consisting of thiazoles, isothiazoles, oxazoles, isoazoles, and pyrazoles, wherein the aromatic or heteroaromatic ring is optionally substituted with 1, 2 or 3 substituents selected independently from one another from halogen, CN, OH, C_1-C_6-alkyl and C_1-C_6-alkoxy, and wherein the carbon atoms of the aforementioned aliphatic radicals may be partially or fully halogenated;

and

Cy is cyclopropane, cyclobutane or cyclohexene, which is unsubstituted or partly or fully halogenated; or

two R^y on adjacent carbon atoms of the heterocyclic ring Het may form a bridge selected from $CH_2CH_2CH_2$ and $CH_2CH_2CH_2CH_2$.

Among the above Het rings of formulae Het-2, Het-3, Het-6, Het-36, Het-37 and Het-39, preference is given to Het-2 and Het-36 and especially to Het-2.

Moreover, preferred are compounds of formula (I), wherein R^3 is Het, and Het is Het-23 (isoxazolyl),

wherein # denotes the bond to the remainder of the molecule in formula (I), and wherein

q is 0, 1 or 2;

R^y is selected each independently from one another and from the value of q from the group consisting of hydrogen, halogen, cyano, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_3-C_6-cycloalkyl, C_3-C_6-halocycloalkyl, C_2-C_6-alkenyl, C_2-C_6-haloalkenyl, C_2-C_6-alkynyl, C_2-C_6-haloalkynyl, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_4-alkoxy-C_1-C_4-alkoxy, phenyl-C_1-C_4-alkoxy, where the phenyl ring may carry 1, 2 or 3 substituents selected from halogen, cyano, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and C_1-C_4-haloalkoxy; C_1-C_6-alkylsulfenyl, C_1-C_6-alkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylsulfonyl, C_1-C_6-alkylcarbonyl, C_1-C_6-haloalkylcarbonyl, C_1-C_6-alkoxycarbonyl, C_1-C_6-haloalkoxycarbonyl, C_1-C_6-alkylamino, di-(C_1-C_6-alkyl)-amino, C_1-C_6-alkylaminosulfonyl, di-(C_1-C_6-alkyl)-aminosulfonyl, C_1-C_6-haloalkylaminosulfonyl, C_1-C_6-alkylaminosulfenyl, di-(C_1-C_6-alkyl)-aminosulfenyl, C_1-C_6-alkylaminosulfinyl, di-(C_1-C_6-alkyl)-aminosulfinyl, (C_1-C_6-alkylamino)carbonyl, di-(C_1-C_6-alkyl)aminocarbonyl, phenyl, unsubstituted or optionally monosubstituted or disubstituted with halogen, CN, NO_2, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-haloalkoxy,

Y-Ar or Y-Cy,

wherein

Y is a single bond or CH_2 or O;

Ar is phenyl or a monocyclic 5- or 6- membered heteroaromatic ring selected from the group consisting of thiazoles, isothiazoles, oxazoles, isoazoles, and pyrazoles, wherein the aromatic or heteroaromatic ring is optionally substituted with 1, 2 or 3 substituents selected independently from one another from halogen, CN, OH, C_1-C_6-alkyl and C_1-C_6-alkoxy, and wherein the carbon atoms of the aforementioned aliphatic radicals may be partially or fully halogenated;

and

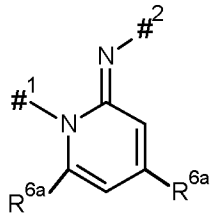
Cy is cyclopropane, cyclobutane or cyclohexene, which is unsubstituted or partly or fully halogenated; or

two R^y on adjacent carbon atoms of the heterocyclic ring Het may form a bridge selected from $CH_2CH_2CH_2$ and $CH_2CH_2CH_2CH_2$.

Specifically, in Het-23 q is 0; i.e. the isoxazoline ring is unsubstituted. Specifically, the isoxazoline ring Het-23 is bound via its 3-position to the remainder of the molecule.

In a specific embodiment, R^3 is Het, and Het is selected from Het-2, Het-23 and Het-36, and is very specifcally Het-2. In these Het rings, q and R^y have one of the above preferred meanings.

One embodiment of the invention are compounds of formula (I), wherein



A-1

A is fully unsaturated ring , wherein

#1 and #2 denotes the bonds to the remainder of the molecule, and

R^{6a} is each independently from one another selected from the group consisting of hydrogen, halogen, CN, C_1-C_4 alkyl, C_1-C_4-alkoxy, C_1-C_4-haloalkoxy and C_1-C_4-haloalky, where at least one R^{6a} is hydrogen;

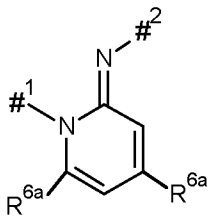
X is selected from O and S;

R^1, R^2 are independently from each other selected from the group consisting of hydrogen, halogen, cyano, C_1-C_3-alkyl, and C_1-C_3-haloalkyl;

R^{4a}, R^{4b1}, R^{4b2}, R^{4c1}, R^{4c2}, R^{4d1} and R^{4d2} is each hydrogen, and

R^3 is defined as above.

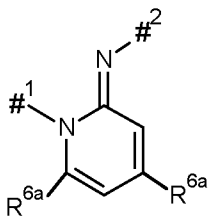
One preferred embodiment of the present invention are compounds of formula (I), wherein



A-1

A is fully unsaturated ring A-1 ,
wherein
#1 and #2 denotes the bonds to the remainder of the molecule, and
R^{6a} is each independently from one another selected from the group consisting of hydrogen, halogen, CN, C_1-C_4 alkyl, C_1-C_4-alkoxy, C_1-C_4-haloalkoxy and C_1-C_4-haloalky, where at least one R^{6a} is hydrogen;
X is selected from O and S;
R^1, R^2 are independently from each other selected from the group consisting of hydrogen, halogen, cyano, C_1-C_3-alkyl, and C_1-C_3-haloalkyl;
R^{4a}, R^{4b1}, R^{4b2}, R^{4c1}, R^{4c2}, R^{4d1} and R^{4d2} is each hydrogen, and
R^3 is defined according to the preferred embodiments described herein above.

One especially preferred embodiment of the present invention are compounds of formula (I), wherein



A-1

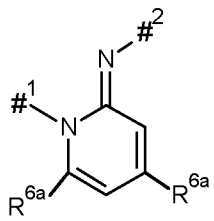
A is fully unsaturated ring A-1 ,
wherein
#1 and #2 denotes the bonds to the remainder of the molecule, and
R^{6a} is each independently from one another selected from the group consisting of hydrogen, halogen, CN, C_1-C_4 alkyl, C_1-C_4-alkoxy, C_1-C_4-haloalkoxy and C_1-C_4-haloalky, where at least one R^{6a} is hydrogen;
X is selected from O or S;

R^1, R^2 are independently from each other selected from the group consisting of hydrogen, halogen, cyano, C_1-C_3-alkyl, and C_1-C_3-haloalkyl;

R^{4a}, R^{4b1}, R^{4b2}, R^{4c1}, R^{4c2}, R^{4d1} and R^{4d2} is each hydrogen, and wherein

R^3 is defined according to the especially preferred embodiments described herein above.

One especially more preferred embodiment of the present invention are compounds of formula (I), wherein



A-1

A is fully unsaturated ring , wherein

#1 and #2 denotes the bonds to the remainder of the molecule, and

R^{6a} is each independently from one another selected from the group consisting of hydrogen, halogen, CN, C_1-C_4 alkyl, C_1-C_4-alkoxy, C_1-C_4-haloalkoxy and C_1-C_4-haloalky, where at least one R^{6a} is hydrogen;

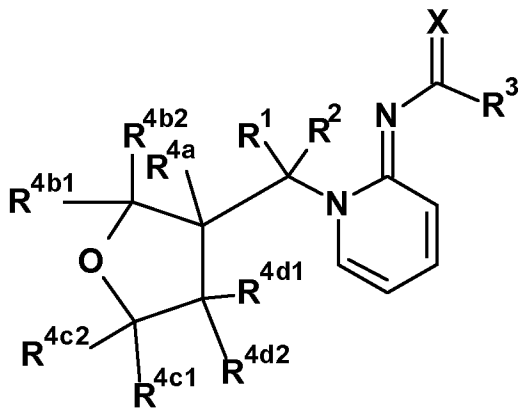
X is selected from O or S;

R^1, R^2 are independently from each other selected from the group consisting of hydrogen, halogen, cyano, C_1-C_3-alkyl, and C_1-C_3-haloalkyl;

R^{4a}, R^{4b1}, R^{4b2}, R^{4c1}, R^{4c2}, R^{4d1} and R^{4d2} is each hydrogen, and

R^3 is defined according to the more especially preferred embodiments described herein above.

One embodiment of the present invention are compounds of formula (II)



(II)

wherein

X is selected from O or S;

R^1, R^2 are both hydrogen, or
one of R^1 or R^2 is methyl and the other is hydrogen;
R^{4a}, R^{4b1}, R^{4b2}, R^{4c1}, R^{4c2}, R^{4d1} and R^{4d2} is each hydrogen;
and
R^3 is defined as herein above.

Preferred are compounds are compounds of formula (II), wherein
R^3 is defined according to the preferred embodiments described herein above.

Especially preferred are compounds are compounds of formula (II), wherein
R^3 is defined according to the especially preferred embodiments described herein above.

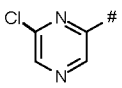
Especially more preferred are compounds are compounds of formula (II), wherein
R^3 is defined according to the especially more preferred embodiments described herein above.

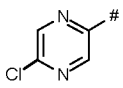
Especially more preferred are compounds are compounds of formula (II), wherein
R^3 is selected from pyrazin-2-yl, 5-chloropyrazin-2-yl, 6-chloropyrazin-2-yl, pyridazin-4-yl, 5-phenylpyrazin-2-yl, isoxazol-3-yl, 5-(2-fluorophenoxy)pyrazin-2-yl, 5-(2,2-difluoroethoxy)pyrazin-2-yl, 5-methoxypyrazin-2-yl, 6-methoxypyrazin-2-yl, 5-[(2,6-dichlorophenyl)methoxy]pyrazin-2-yl 6-(m-tolyl)pyrazin-2-yl, 5-[3-(trifluoromethyl)phenoxy]pyrazin-2-yl, 5-isobutoxypyrazin-2-yl 6-(2,2,2-trifluoroethoxy)pyrazin-2-yl, 5-propoxypyrazin-2-yl, 6-(2-fluorophenyl)pyrazin-2-yl 5-(2,2,2-trifluoroethoxy)pyrazin-2-yl, 5-prop-2-ynoxypyrazin-2-yl, 5-(2-methoxyethoxy)pyrazin-2-yl, 6-(3,4-dimethoxyphenyl)pyrazin-2-yl, 5-isopropenylpyrazin-2-yl, 3,5-dimethoxypyrazin-2-yl 5-(1,1-dioxo-1,4-thiazinan-4-yl)pyrazin-2-yl, 3-chloropyrazin-2-yl, 3,5-dichloropyrazin-2-yl, 6-isopropenylpyrazin-2-yl, 5-isopropylpyrazin-2-yl, 5,6,7,8-tetrahydroquinoxalin-2-yl, 6-methyl-2-oxo-1H-pyrazin-3-yl, 5-methyl-2-oxo-1H-pyrazin-3-yl, 6-isopropylpyrazin-2-yl, 6-bromopyrazin-2-yl, 5-(1,1-difluoroethyl)pyrazin-2-yl, 5-ethylpyrazin-2-yl, 5-methoxy-3-methyl-pyrazin-2-yl, 3,5-dimethylpyrazin-2-yl, 3-methylpyrazin-2-yl, 3-cyanopyrazin-2-yl, 6-chloro-3-methyl-pyrazin-2-yl 5-propylpyrazin-2-yl, 5-cyanopyrazin-2-yl, 6-bromo-5-chloro-pyrazin-2-yl, 6-(trifluoromethyl)pyrazin-2-yl, 5,6-dichloropyrazin-2-yl, 6-ethylpyrazin-2-yl, 3-(trifluoromethyl)pyrazin-2-yl, 5-chloro-6-methyl-pyrazin-2-yl, 3-methylsulfanylpyrazin-2-yl, 2-thioxo-1H-pyrazin-3-yl, 5-(4-fluorocyclohex-3-en-1-yl)pyrazin-2-yl.

Further examples of compounds of formula I representing the different embodiments of the invention are given herein below.

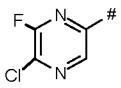
Some preferred embodiments for R^3 being Het are given in tables H2, H3, H6, H36, H37, H39 and H40 herein below, wherein # in the structures denotes the attachment to the remainder of the molecule.

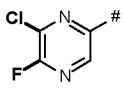
Table H2:

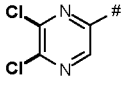

Het-2.1

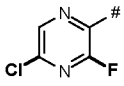

Het-2.2

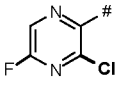

Het-2.3

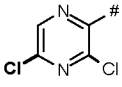

Het-2.4

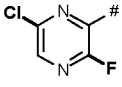

Het-2.5

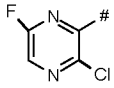

Het-2.6

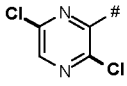

Het-2.7

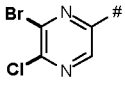

Het-2.8

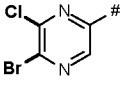

Het-2.9

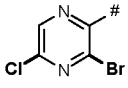

Het-2.10


Het-2.11


Het-2.12


Het-2.13


Het-2.14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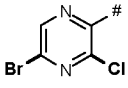
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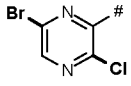
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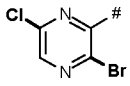
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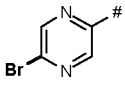
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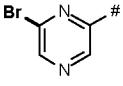
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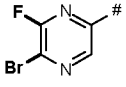
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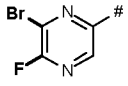
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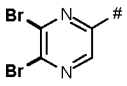
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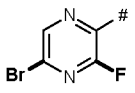
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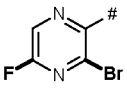
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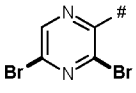
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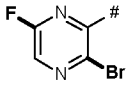
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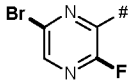
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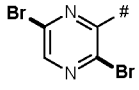
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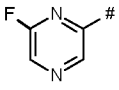
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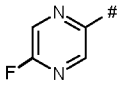
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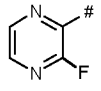
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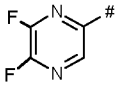
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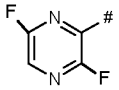
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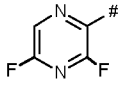
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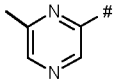
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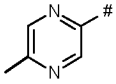
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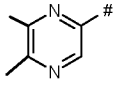
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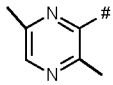
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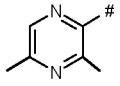
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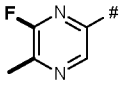
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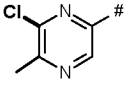
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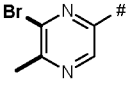
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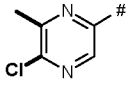
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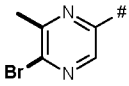
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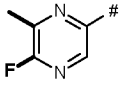
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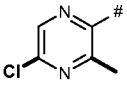
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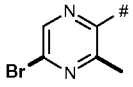
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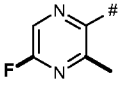
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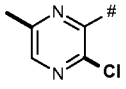
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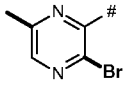
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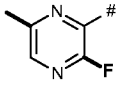
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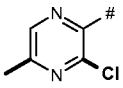
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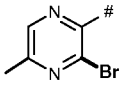
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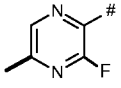
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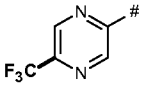
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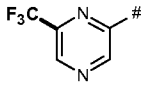
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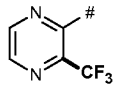
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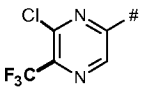
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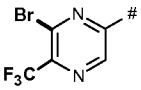
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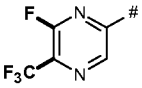
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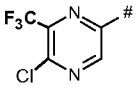
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Het-2.65

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Het-2.69

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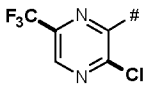
Het-2.71

Het-2.72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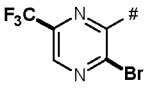
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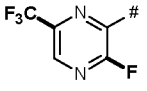
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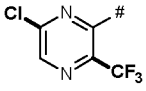
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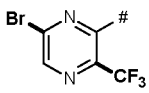
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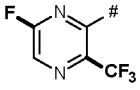
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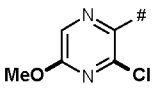
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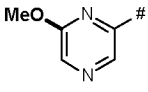
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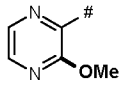
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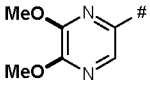
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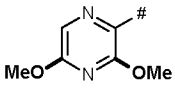
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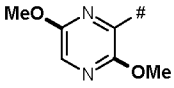
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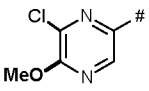
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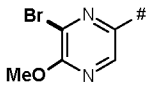
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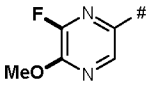
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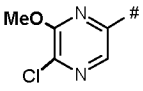
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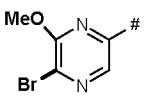
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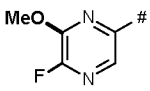
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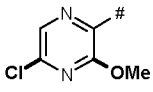
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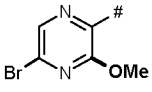
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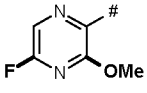
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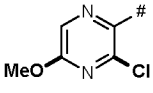
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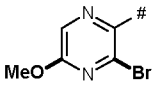
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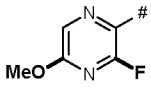
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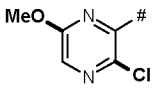
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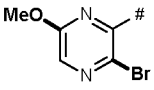
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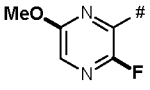
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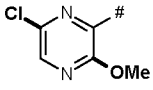
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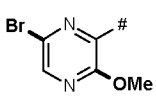
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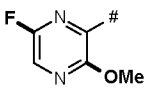
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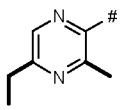
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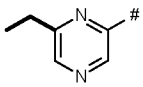
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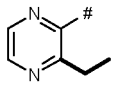
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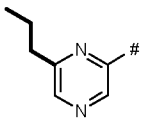
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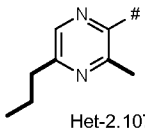
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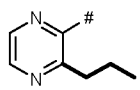
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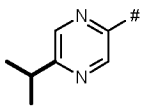
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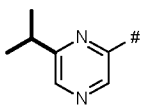
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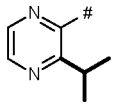
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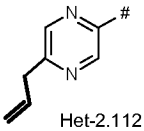
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Het-2.113

Het-2.114

Het-2.115

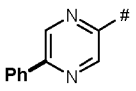
Het-2.116

Het-2.117

Het-2.118

Het-2.119

Het-2.120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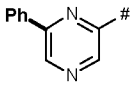
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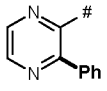
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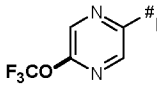
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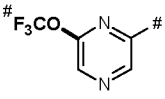
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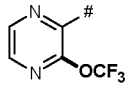
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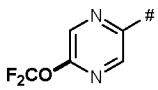
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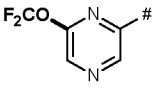
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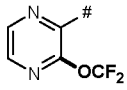
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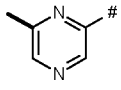
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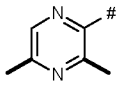
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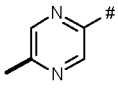
Het-2.132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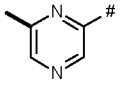
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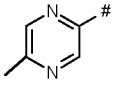
Het-2.135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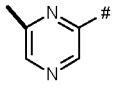
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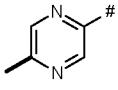
Het-2.138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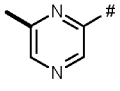
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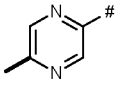
Het-2.141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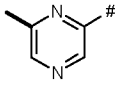
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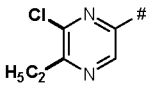
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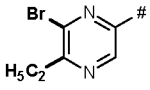
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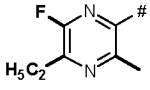
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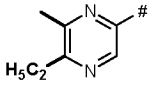
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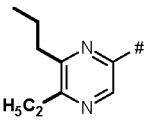
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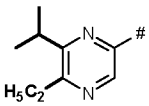
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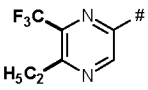
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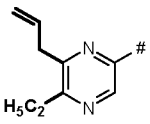
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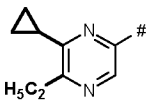
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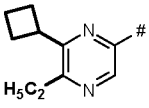
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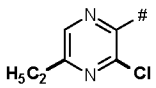
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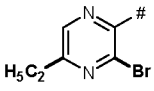
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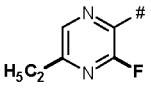
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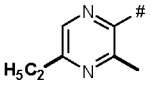
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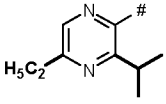
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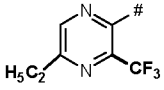
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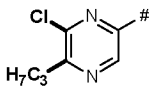
Het-2.161

Het-2.162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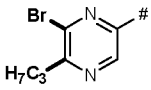
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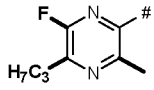
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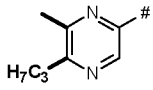
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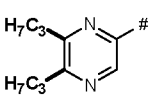
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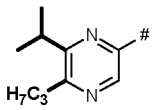
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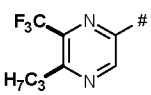
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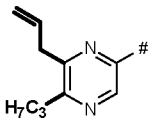
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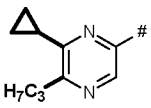
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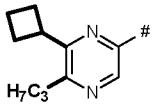
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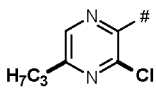
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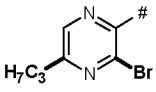
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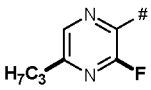
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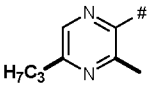
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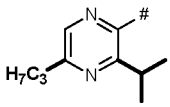
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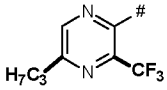
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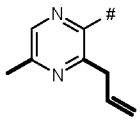
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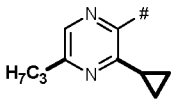
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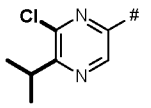
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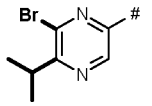
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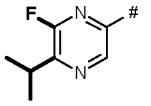
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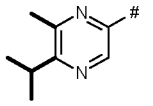
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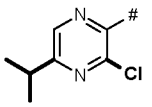
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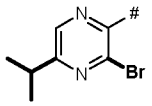
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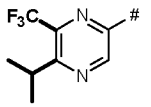
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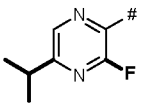
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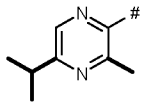
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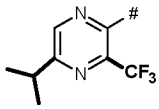
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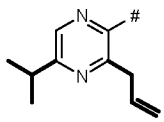
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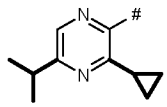
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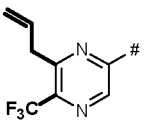
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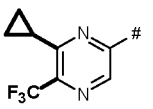
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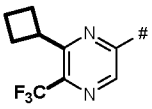
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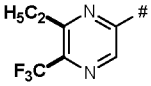
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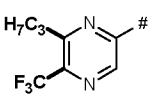
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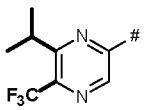
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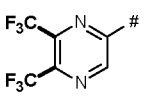
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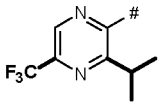
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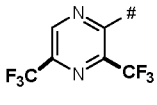
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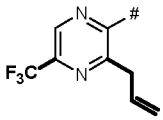
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Het-2.203

Het-2.204

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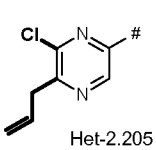
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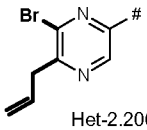
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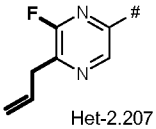
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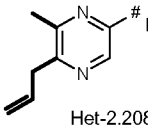
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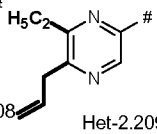
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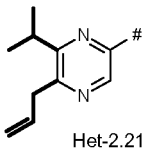
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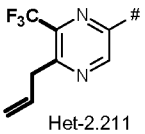
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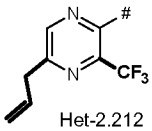
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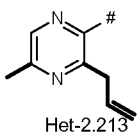
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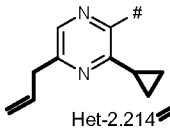
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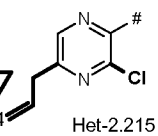
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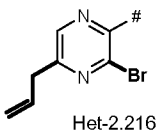
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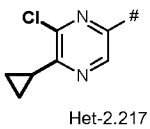
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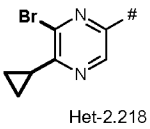
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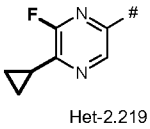
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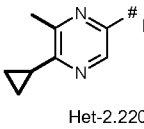
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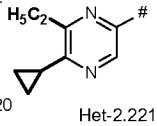
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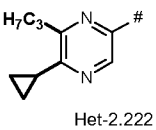
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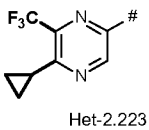
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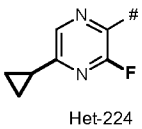
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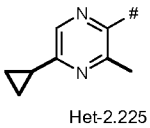
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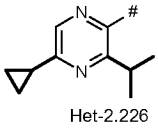
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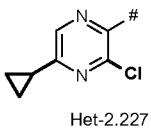
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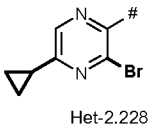
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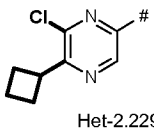
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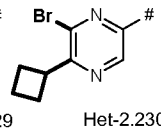
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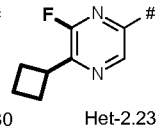
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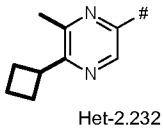
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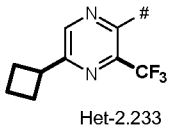
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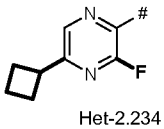
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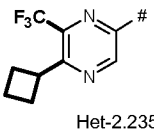
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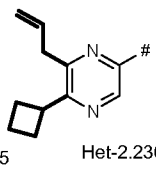
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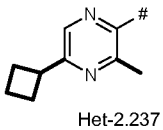
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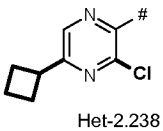
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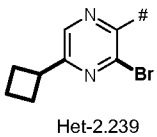
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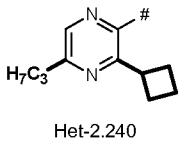
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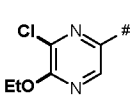
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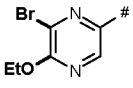
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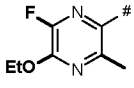
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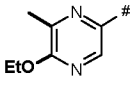
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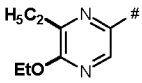
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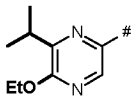
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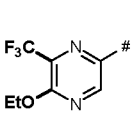
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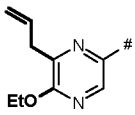
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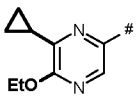
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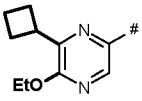
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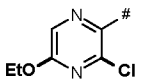
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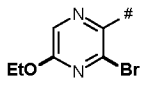
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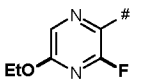
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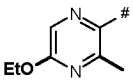
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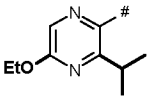
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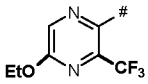
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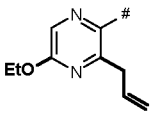
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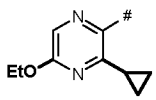
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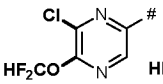
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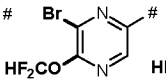
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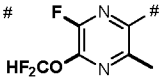
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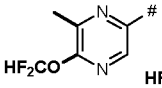
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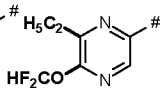
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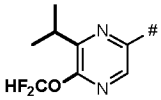
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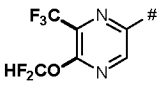
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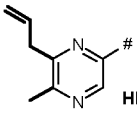
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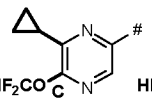
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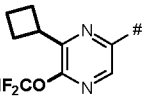
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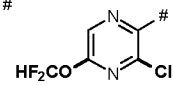
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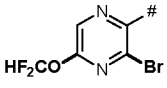
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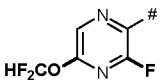
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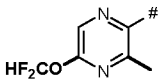
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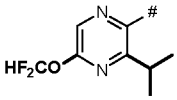
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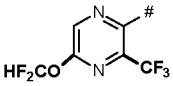
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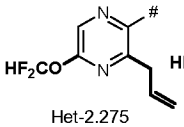
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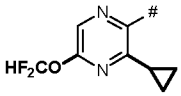
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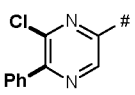
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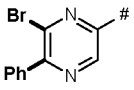
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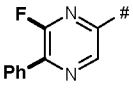
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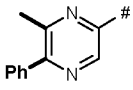
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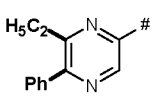
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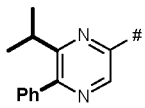
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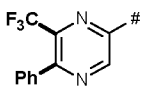
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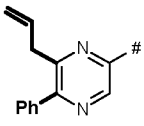
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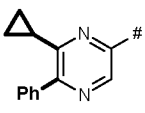
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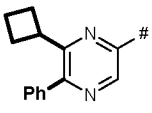
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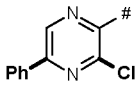
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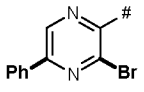
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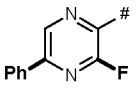
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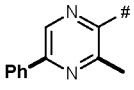
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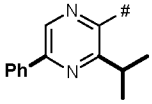
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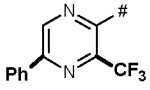
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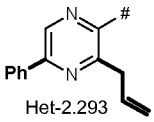
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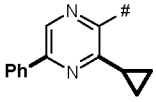
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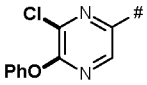
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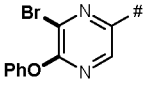
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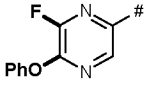
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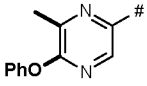
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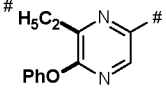
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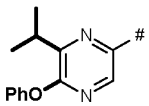
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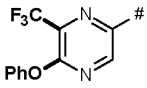
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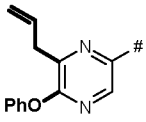
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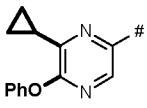
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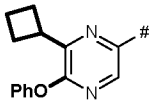
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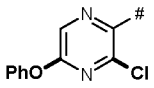
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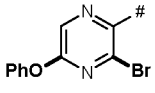
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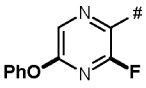
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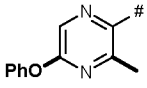
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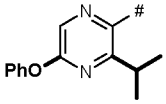
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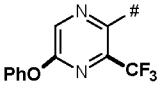
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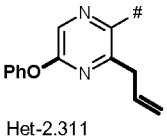
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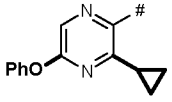
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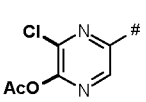
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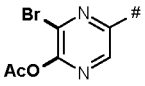
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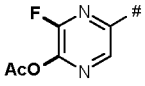
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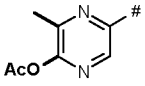
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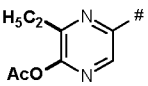
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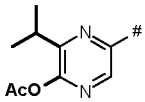
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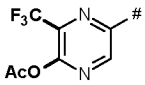
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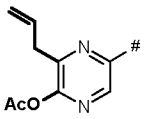
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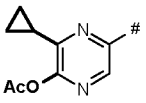
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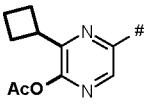
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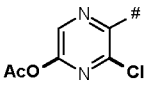
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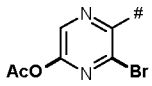
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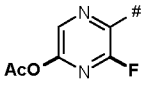
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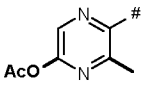
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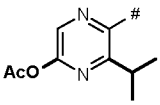
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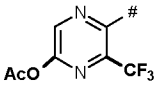
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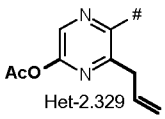
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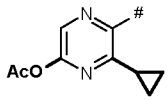
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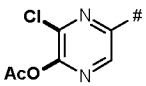
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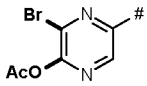
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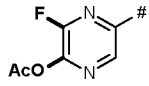
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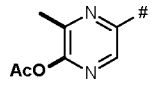
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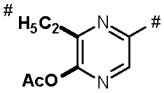
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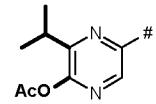
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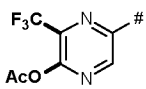
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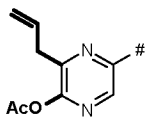
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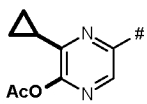
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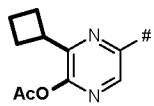
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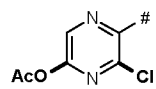
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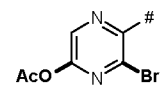
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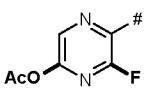
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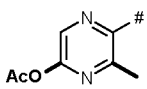
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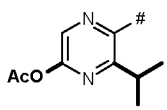
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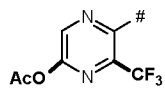
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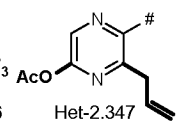
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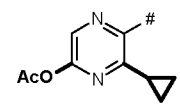
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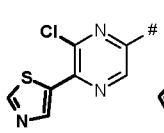
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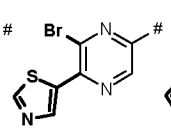
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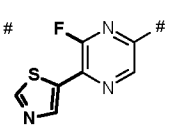
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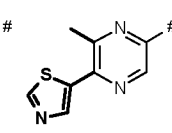
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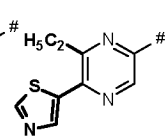
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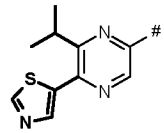
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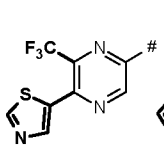
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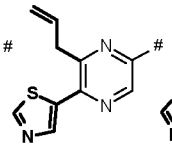
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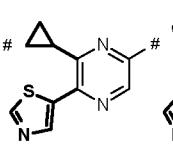
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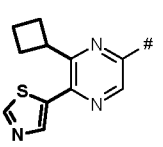
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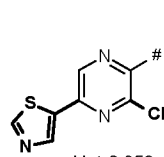
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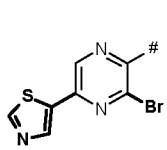
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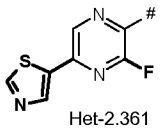
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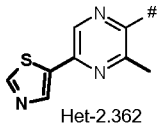
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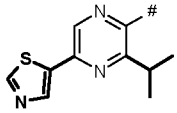
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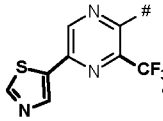
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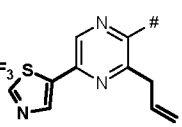
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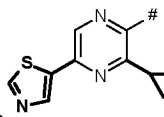
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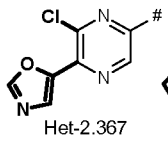
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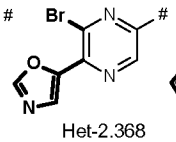
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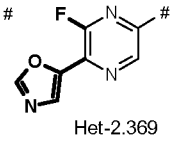
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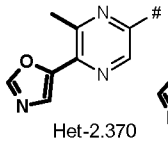
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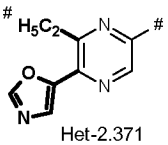
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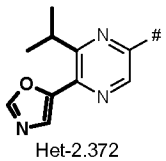
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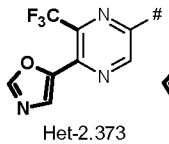
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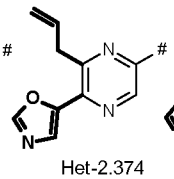
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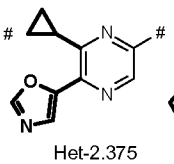
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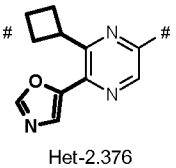
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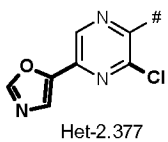
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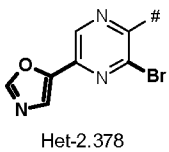
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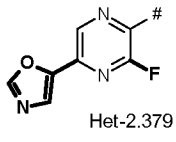
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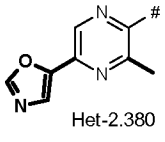
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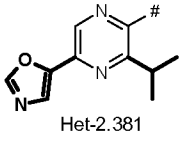
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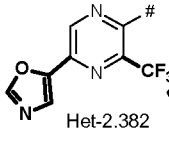
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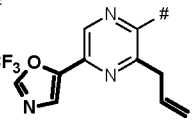
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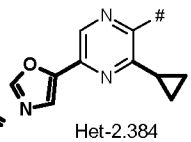
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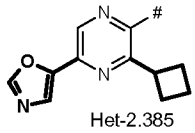
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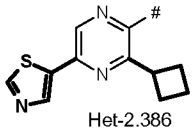
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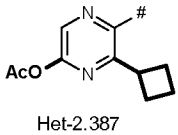
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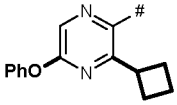
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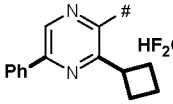
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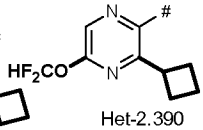
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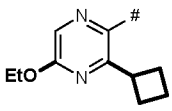
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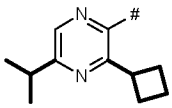
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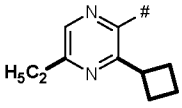
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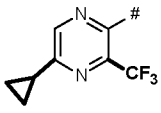
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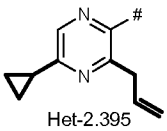
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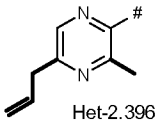
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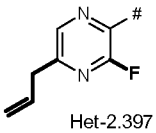
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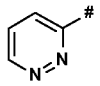

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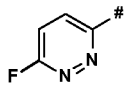

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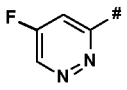

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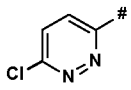

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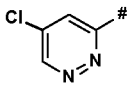

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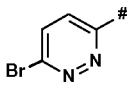

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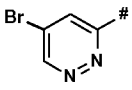

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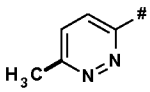

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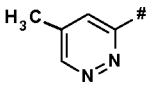

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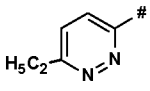

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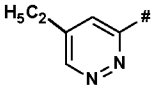

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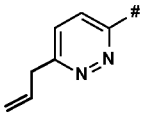

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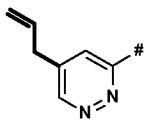

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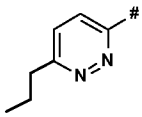

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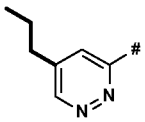

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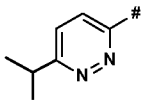

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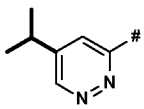

Het-3.17

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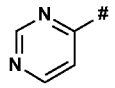
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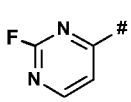
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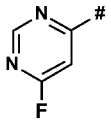
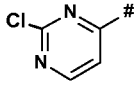

Het-6.3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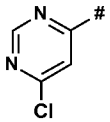
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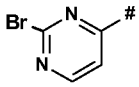
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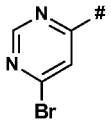
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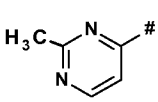
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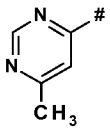
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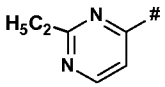
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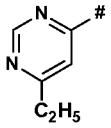
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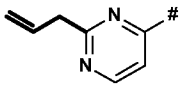
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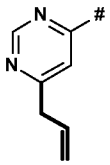
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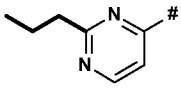
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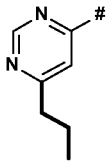
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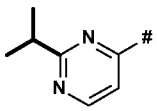
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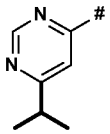
Het-6.17

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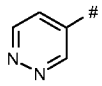
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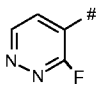
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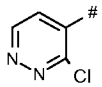
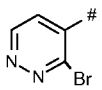

Het-36.3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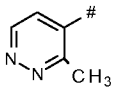
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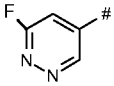
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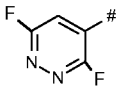
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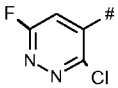
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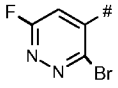
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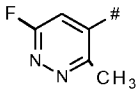
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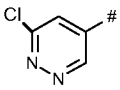
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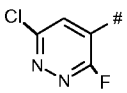
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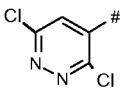
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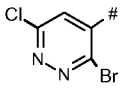
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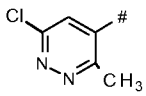
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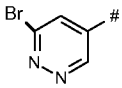
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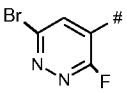
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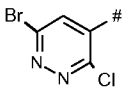
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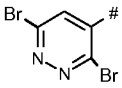
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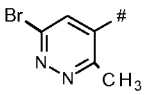
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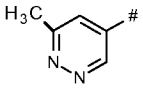
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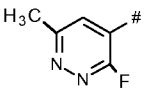
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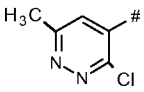
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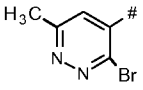
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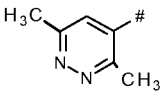
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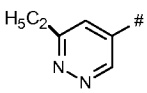
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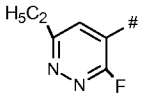
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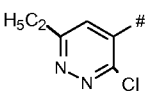
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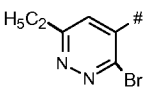
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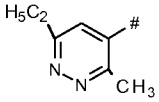
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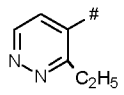
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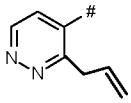
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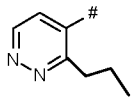
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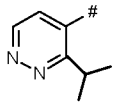
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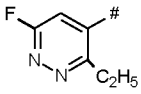
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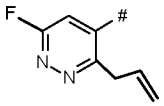
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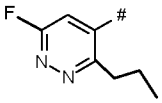
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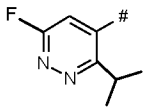
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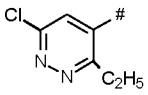
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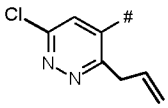
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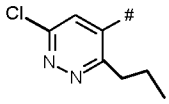
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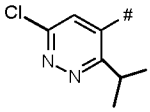
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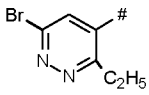
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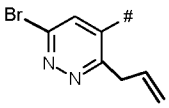
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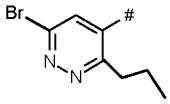
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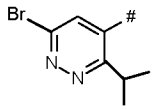
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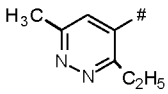
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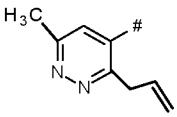
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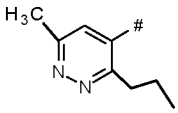
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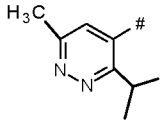
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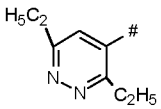
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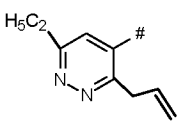
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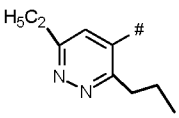
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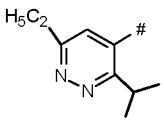
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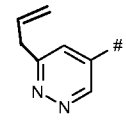
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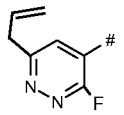
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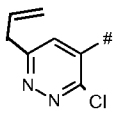
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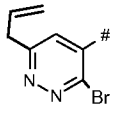
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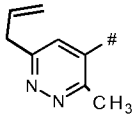
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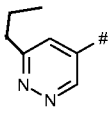
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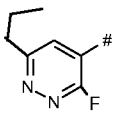
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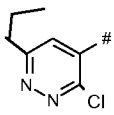
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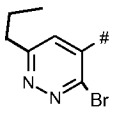
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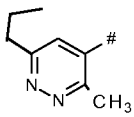
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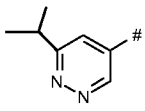
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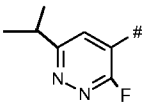
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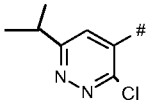
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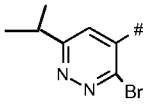
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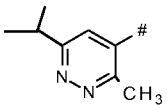
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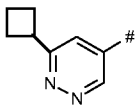
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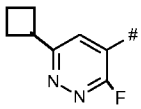
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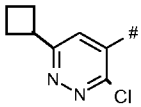
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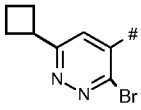
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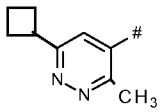
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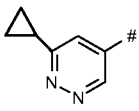
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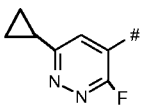
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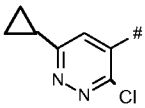
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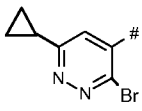
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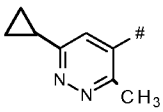
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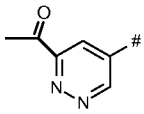
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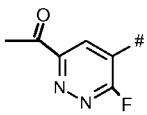
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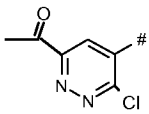
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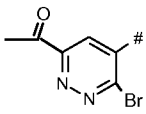
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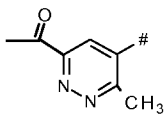
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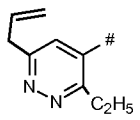
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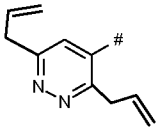
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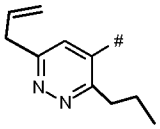
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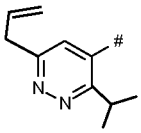
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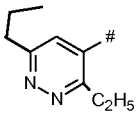
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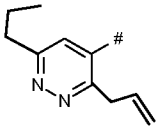
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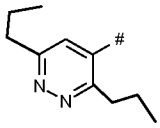
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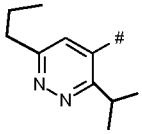
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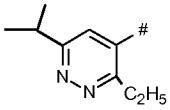
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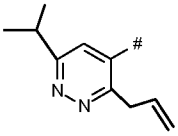
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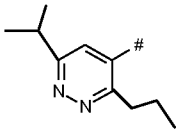
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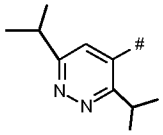
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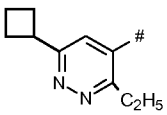
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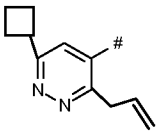
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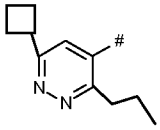
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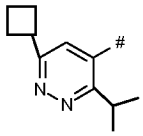
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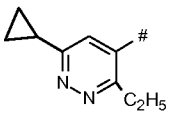
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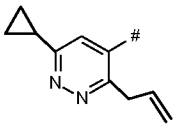
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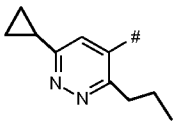
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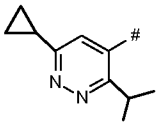
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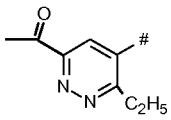
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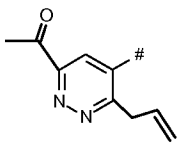
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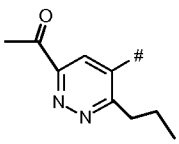
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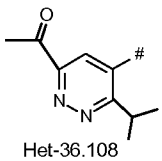
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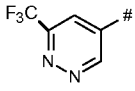

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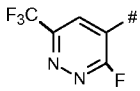

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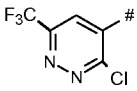

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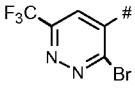

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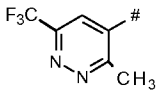

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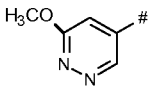

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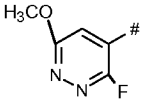

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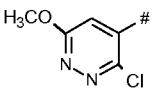

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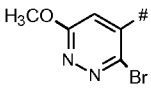

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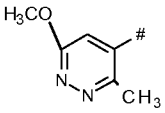

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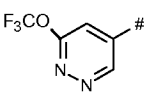

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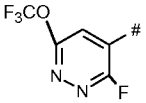

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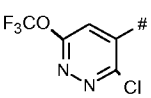

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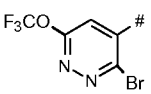

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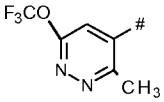

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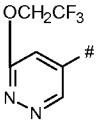

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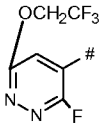

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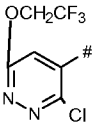

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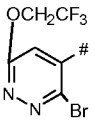

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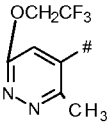

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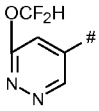

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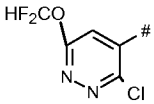

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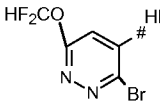

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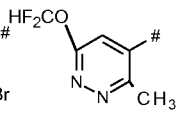

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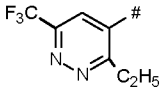
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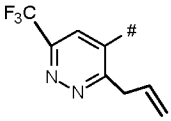
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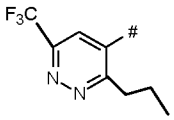
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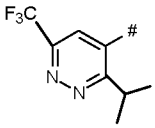
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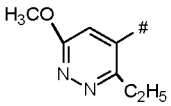
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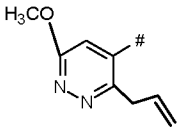
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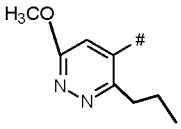
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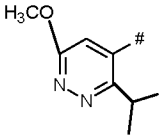
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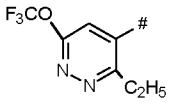
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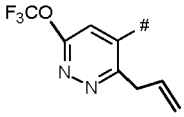
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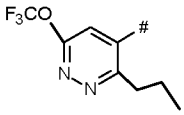
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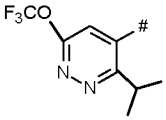
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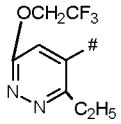
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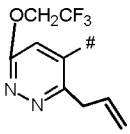
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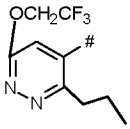
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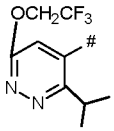
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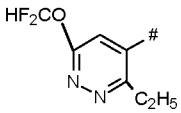
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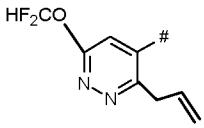
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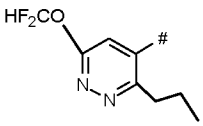
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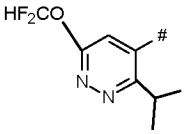
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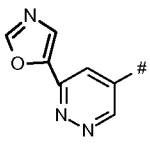

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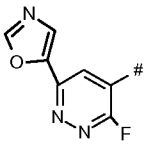

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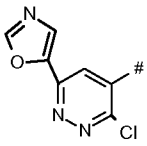

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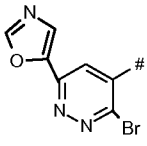

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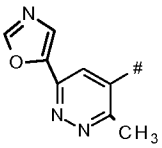

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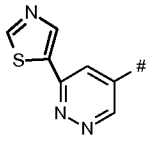

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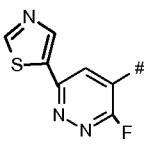

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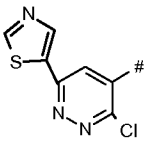

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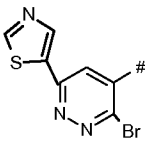

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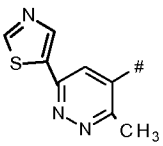

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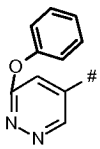

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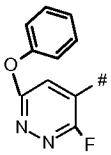

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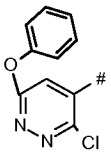

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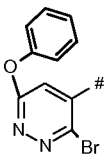

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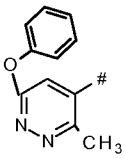

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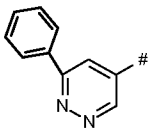

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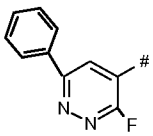

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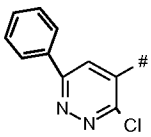

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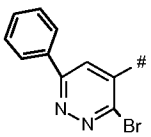

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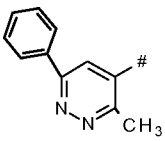

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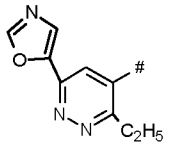

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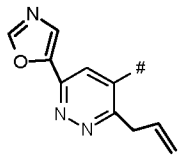

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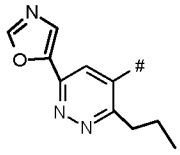

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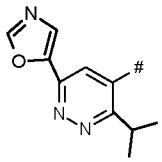

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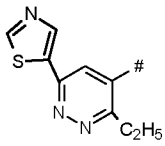

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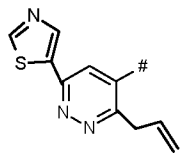

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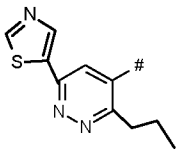

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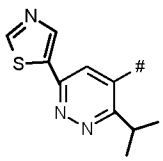

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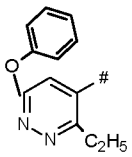

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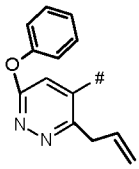

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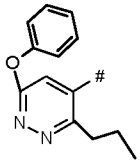

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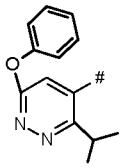

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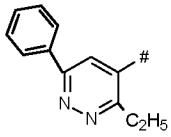

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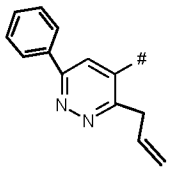

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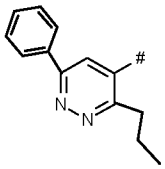

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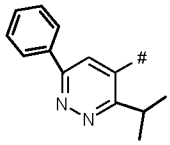

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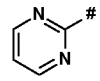
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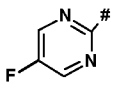
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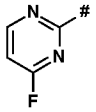
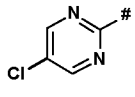
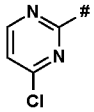
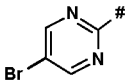
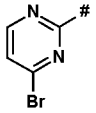
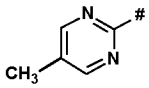

Het-37.3

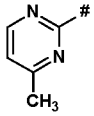

Het-37.4

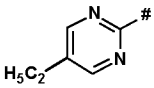

Het-37.5

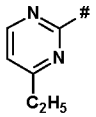

Het-37.6

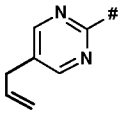

Het-37.7

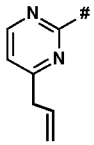

Het-37.8

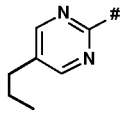

Het-37.9

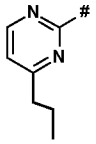

Het-37.10

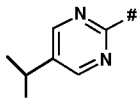

Het-37.11


Het-37.12


Het-37.13


Het-37.14


Het-37.15


Het-37.16

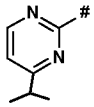
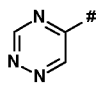
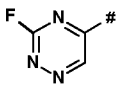
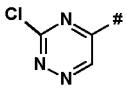
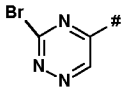

Het-37.17

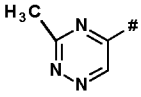
Table H39:

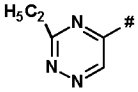

Het-39.1

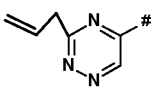

Het-39.2

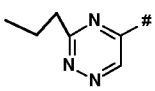

Het-39.3


Het-39.4


Het-39.5


Het-39.6


Het-39.7


Het-39.8

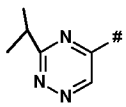

Het-39.9

Table H40

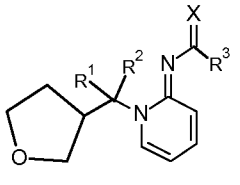
No.	
Het-40.1	pyrazin-2-yl
Het-40.2	isoxazol-3-yl
Het-40.3	5-(2-fluorophenoxy)pyrazin-2-yl
Het-40.4	5-(2,2-difluoroethoxy)pyrazin-2-yl

No.	
Het-40.5	5-methoxypyrazin-2-yl
Het-40.7	6-methoxypyrazin-2-yl
Het-40.8	5-[(2,6-dichlorophenyl)methoxy]-pyrazin-2-yl
Het-40.9	6-(m-tolyl)pyrazin-2-yl

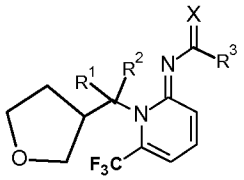
No.	
Het-40.10	5-[3-(trifluoromethyl)phenoxy]-pyrazin-2-yl
Het-40.11	5-isobutoxypyrazin-2-yl
Het-40.12	6-(2,2,2-trifluoroethoxy)pyrazin-2-yl
Het-40.13	5-propoxypyrazin-2-yl
Het-40.14	6-(2-fluorophenyl)pyrazin-2-yl
Het-40.15	5-(2,2,2-trifluoroethoxy)pyrazin-2-yl
Het-40.16	5-prop-2-ynoxypyrazin-2-yl
Het-40.17	5-(2-methoxyethoxy)pyrazin-2-yl
Het-40.18	6-(3,4-dimethoxyphenyl)pyrazin-2-yl
Het-40.19	5-isopropenylpyrazin-2-yl
Het-40.20	5-(1,1-dioxo-1,4-thiazinan-4-yl)-pyrazin-2-yl
Het-40.21	6-isopropenylpyrazin-2-yl

No.	
Het-40.22	5,6,7,8-tetrahydroquinoxalin-2-yl
Het-40.23	6-methyl-2-oxo-1H-pyrazin-3-yl
Het-40.24	5-methyl-2-oxo-1H-pyrazin-3-yl
Het-40.25	5-(1,1-difluoroethyl)pyrazin-2-yl
Het-40.26	5-ethylpyrazin-2-yl
Het-40.27	5-methoxy-3-methyl-pyrazin-2-yl
Het-40.28	3-cyanopyrazin-2-yl
Het-40.29	6-chloro-3-methyl-pyrazin-2-yl
Het-40.30	5-propylpyrazin-2-yl
Het-40.31	5-cyanopyrazin-2-yl
Het-40.32	3-methylsulfanylpyrazin-2-yl
Het-40.33	2-thioxo-1H-pyrazin-3-yl
Het-40.34	5-(4-fluorocyclohex-3-en-1-yl)-pyrazin-2-yl

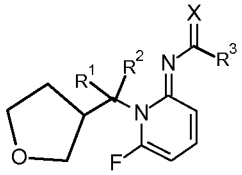
The structures examples I.A-1 to I.A-13 herein below represent further embodiments of compounds of the present invention:



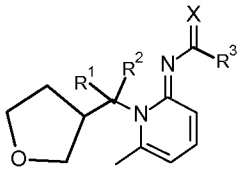
I.A-1



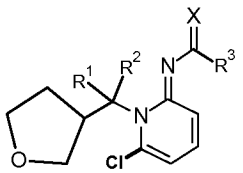
I.A-2



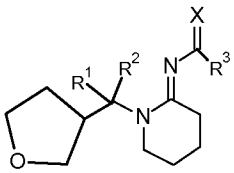
I.A-3



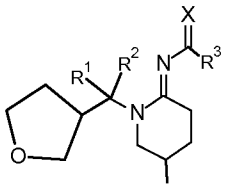
I.A-4



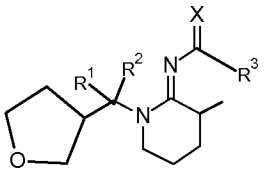
I.A-5



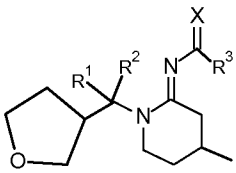
I.A-6



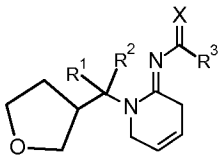
I.A-7



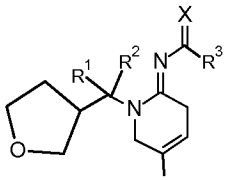
I.A-8



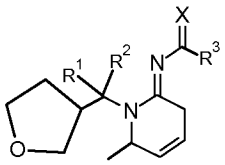
I.A-9



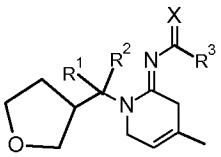
I.A-10



I.A-11



I.A-12



I.A-13

These structure examples I.A-1 to I.A-13 are preferably substituted according to the scheme of table C herein below, wherein the respective R^1, R^2 and X are defined in one line of the table C.

Table C:

Core compound no.	Core structure	R1	R2	X
C.1	I.A.1	H	H	O
C.2	I.A.2	H	H	O
C.3	I.A.3	H	H	O

Core compound no.	Core structure	R1	R2	X
C.4	I.A.4	H	H	O
C.5	I.A.5	H	H	O
C.6	I.A.6	H	H	O
C.7	I.A.7	H	H	O
C.8	I.A.8	H	H	O
C.9	I.A.9	H	H	O
C.10	I.A.10	H	H	O
C.11	I.A.11	H	H	O
C.12	I.A.12	H	H	O
C.13	I.A.13	H	H	O
C.14	I.A.1	H	H	S
C.15	I.A.2	H	H	S
C.16	I.A.3	H	H	S
C.17	I.A.4	H	H	S
C.18	I.A.5	H	H	S
C.19	I.A.6	H	H	S
C.20	I.A.7	H	H	S
C.21	I.A.8	H	H	S
C.22	I.A.9	H	H	S
C.23	I.A.10	H	H	S
C.24	I.A.11	H	H	S
C.25	I.A.12	H	H	S
C.26	I.A.13	H	H	S
C.27	I.A.1	H	CH_3	O
C.28	I.A.2	H	CH_3	O
C.29	I.A.3	H	CH_3	O

Core compound no.	Core structure	R1	R2	X
C.30	I.A.4	H	CH_3	O
C.31	I.A.5	H	CH_3	O
C.32	I.A.6	H	CH_3	O
C.33	I.A.7	H	CH_3	O
C.34	I.A.8	H	CH_3	O
C.35	I.A.9	H	CH_3	O
C.36	I.A.10	H	CH_3	O
C.37	I.A.11	H	CH_3	O
C.38	I.A.12	H	CH_3	O
C.39	I.A.13	H	CH_3	O
C.40	I.A.1	H	CH_3	S
C.41	I.A.2	H	CH_3	S
C.42	I.A.3	H	CH_3	S
C.43	I.A.4	H	CH_3	S
C.44	I.A.5	H	CH_3	S
C.45	I.A.6	H	CH_3	S
C.46	I.A.7	H	CH_3	S
C.47	I.A.8	H	CH_3	S
C.48	I.A.9	H	CH_3	S
C.49	I.A.10	H	CH_3	S
C.50	I.A.11	H	CH_3	S
C.51	I.A.12	H	CH_3	S
C.52	I.A.13	H	CH_3	S
C.53	I.A.1	H	C_2H_5	O
C.54	I.A.2	H	C_2H_5	O
C.55	I.A.3	H	C_2H_5	O

Core compound no.	Core structure	R1	R2	X
C.56	I.A.4	H	C_2H_5	O
C.57	I.A.5	H	C_2H_5	O
C.58	I.A.6	H	C_2H_5	O
C.59	I.A.7	H	C_2H_5	O
C.60	I.A.8	H	C_2H_5	O
C.61	I.A.9	H	C_2H_5	O
C.62	I.A.10	H	C_2H_5	O
C.63	I.A.11	H	C_2H_5	O
C.64	I.A.12	H	C_2H_5	O
C.65	I.A.13	H	C_2H_5	O
C.66	I.A.1	H	C_2H_5	S
C.67	I.A.2	H	C_2H_5	S
C.68	I.A.3	H	C_2H_5	S
C.69	I.A.4	H	C_2H_5	S
C.70	I.A.5	H	C_2H_5	S
C.71	I.A.6	H	C_2H_5	S
C.72	I.A.7	H	C_2H_5	S
C.73	I.A.8	H	C_2H_5	S
C.74	I.A.9	H	C_2H_5	S
C.75	I.A.10	H	C_2H_5	S
C.76	I.A.11	H	C_2H_5	S
C.77	I.A.12	H	C_2H_5	S
C.78	I.A.13	H	C_2H_5	S
C.79	I.A.1	H	CF_3	O
C.80	I.A.2	H	CF_3	O
C.81	I.A.3	H	CF_3	O

Core compound no.	Core structure	R1	R2	X
C.82	I.A.4	H	CF_3	O
C.83	I.A.5	H	CF_3	O
C.84	I.A.6	H	CF_3	O
C.85	I.A.7	H	CF_3	O
C.86	I.A.8	H	CF_3	O
C.87	I.A.9	H	CF_3	O
C.88	I.A.10	H	CF_3	O
C.89	I.A.11	H	CF_3	O
C.90	I.A.12	H	CF_3	O
C.91	I.A.13	H	CF_3	O
C.92	I.A.1	H	CF_3	S
C.93	I.A.2	H	CF_3	S
C.94	I.A.3	H	CF_3	S
C.95	I.A.4	H	CF_3	S
C.96	I.A.5	H	CF_3	S
C.97	I.A.6	H	CF_3	S
C.98	I.A.7	H	CF_3	S
C.99	I.A.8	H	CF_3	S
C.100	I.A.9	H	CF_3	S
C.101	I.A.10	H	CF_3	S
C.102	I.A.11	H	CF_3	S
C.103	I.A.12	H	CF_3	S
C.104	I.A.13	H	CF_3	S

Individual examples of compounds of the present invention are provided herein below.

In this case, the structures I.A-1 to I.A-13 are preferably substituted according to the scheme of table C herein above, and the respective R^3 is selected from the individualized Het-structures of the tables H2, H3, H6, H36, H37,H39 and H40 further above.

Examples of such especially preferred compounds are compounds C.1.C-2.1 to C.1.C-2.397 of core compound C.1 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.2.C-2.1 to C.2.C-2.397 of core compound C.2 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.3.C-2.1 to C.3.C-2.397 of core compound C.3 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.4.C-2.1 to C.4.C-2.397 of core compound C.4 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.5.C-2.1 to C.5.C-2.397 of core compound C.5 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.6.C-2.1 to C.6.C-2.397 of core compound C.6 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.7.C-2.1 to C.7.C-2.397 of core compound C.7 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.8.C-2.1 to C.8.C-2.397 of core compound C.8 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.9.C-2.1 to C.9.C-2.397 of core compound C.9 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.10.C-2.1 to C.10.C-2.397 of core compound C.10 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.11.C-2.1 to C.11.C-2.397 of core compound C.11 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.12.C-2.1 to C.12.C-2.397 of core compound C.12 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.13.C-2.1 to C.13.C-2.397 of core compound C.13 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.14.C-2.1 to C.14.C-2.397 of core compound C.14 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.15.C-2.1 to C.15.C-2.397 of core compound C.15 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.16.C-2.1 to C.16.C-2.397 of core compound C.16 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.17.C-2.1 to C.17.C-2.397 of core compound C.17 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.18.C-2.1 to C.18.C-2.397 of core compound C.18 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.19.C-2.1 to C.19.C-2.397 of core compound C.19 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.20.C-2.1 to C.20.C-2.397 of core compound C.20 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.21.C-2.1 to C.21.C-2.397 of core compound C.21 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.22.C-2.1 to C.22.C-2.397 of core compound C.22 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.23.C-2.1 to C.23.C-2.397 of core compound C.23 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.24.C-2.1 to C.24.C-2.397 of core compound C.24 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.25.C-2.1 to C.25.C-2.397 of core compound C.25 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.26.C-2.1 to C.26.C-2.397 of core compound C.26 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.27.C-2.1 to C.27.C-2.397 of core compound C.27 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.28.C-2.1 to C.28.C-2.397 of core compound C.28 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.29.C-2.1 to C.29.C-2.397 of core compound C.29 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.30.C-2.1 to C.30.C-2.397 of core compound C.30 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.31.C-2.1 to C.31.C-2.397 of core compound C.31 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.32.C-2.1 to C.32.C-2.397 of core compound C.32 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.33.C-2.1 to C.33.C-2.397 of core compound C.33 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.34.C-2.1 to C.34.C-2.397 of core compound C.34 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.35.C-2.1 to C.35.C-2.397 of core compound C.35 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.36.C-2.1 to C.36.C-2.397 of core compound C.36 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.37.C-2.1 to C.37.C-2.397 of core compound C.37 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.38.C-2.1 to C.38.C-2.397 of core compound C.38 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.39.C-2.1 to C.39.C-2.397 of core compound C.39 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.40.C-2.1 to C.40.C-2.397 of core compound C.40 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.41.C-2.1 to C.41.C-2.397 of core compound C.41 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.42.C-2.1 to C.42.C-2.397 of core compound C.42 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.43.C-2.1 to C.43.C-2.397 of core compound C.43 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.44.C-2.1 to C.44.C-2.397 of core compound C.44 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.45.C-2.1 to C.45.C-2.397 of core compound C.45 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.46.C-2.1 to C.46.C-2.397 of core compound C.46 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.47.C-2.1 to C.47.C-2.397 of core compound C.47 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.48.C-2.1 to C.48.C-2.397 of core compound C.48 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.49.C-2.1 to C.49.C-2.397 of core compound C.49 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.50.C-2.1 to C.50.C-2.397 of core compound C.50 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.51.C-2.1 to C.51.C-2.397 of core compound C.51 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.52.C-2.1 to C.52.C-2.397 of core compound C.52 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.53.C-2.1 to C.53.C-2.397 of core compound C.53 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.54.C-2.1 to C.54.C-2.397 of core compound C.54 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.55.C-2.1 to C.55.C-2.397 of core compound C.55 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.56.C-2.1 to C.56.C-2.397 of core compound C.56 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.57.C-2.1 to C.57.C-2.397 of core compound C.57 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.58.C-2.1 to C.58.C-2.397 of core compound C.58 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.59.C-2.1 to C.59.C-2.397 of core compound C.59 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.60.C-2.1 to C.60.C-2.397 of core compound C.60 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.61.C-2.1 to C.61.C-2.397 of core compound C.61 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.62.C-2.1 to C.62.C-2.397 of core compound C.62 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.63.C-2.1 to C.63.C-2.397 of core compound C.63 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.64.C-2.1 to C.64.C-2.397 of core compound C.64 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.65.C-2.1 to C.65.C-2.397 of core compound C.65 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.66.C-2.1 to C.66.C-2.397 of core compound C.66 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.67.C-2.1 to C.67.C-2.397 of core compound C.67 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.68.C-2.1 to C.68.C-2.397 of core compound C.68 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.69.C-2.1 to C.69.C-2.397 of core compound C.69 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.70.C-2.1 to C.70.C-2.397 of core compound C.70 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.71.C-2.1 to C.71.C-2.397 of core compound C.71 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.72.C-2.1 to C.72.C-2.397 of core compound C.72 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.73.C-2.1 to C.73.C-2.397 of core compound C.73 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.74.C-2.1 to C.74.C-2.397 of core compound C.74 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.75.C-2.1 to C.75.C-2.397 of core compound C.75 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.76.C-2.1 to C.76.C-2.397 of core compound C.76 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.77.C-2.1 to C.77.C-2.397 of core compound C.77 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.78.C-2.1 to C.78.C-2.397 of core compound C.78 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.79.C-2.1 to C.79.C-2.397 of core compound C.79 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.80.C-2.1 to C.80.C-2.397 of core compound C.80 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.81.C-2.1 to C.81.C-2.397 of core compound C.81 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.82.C-2.1 to C.82.C-2.397 of core compound C.82 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.83.C-2.1 to C.83.C-2.397 of core compound C.83 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.84.C-2.1 to C.84.C-2.397 of core compound C.84 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.85.C-2.1 to C.85.C-2.397 of core compound C.85 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.86.C-2.1 to C.86.C-2.397 of core compound C.86 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.87.C-2.1 to C.87.C-2.397 of core compound C.87 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.88.C-2.1 to C.88.C-2.397 of core compound C.88 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.89.C-2.1 to C.89.C-2.397 of core compound C.89 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.90.C-2.1 to C.90.C-2.397 of core compound C.90 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.91.C-2.1 to C.91.C-2.397 of core compound C.91 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.92.C-2.1 to C.92.C-2.397 of core compound C.92 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.93.C-2.1 to C.93.C-2.397 of core compound C.93 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.94.C-2.1 to C.94.C-2.397 of core compound C.94 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.95.C-2.1 to C.95.C-2.397 of core compound C.95 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.96.C-2.1 to C.96.C-2.397 of core compound C.96 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.97.C-2.1 to C.97.C-2.397 of core compound C.97 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.98.C-2.1 to C.98.C-2.397 of core compound C.98 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.99.C-2.1 to C.99.C-2.397 of core compound C.99 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.100.C-2.1 to C.100.C-2.397 of core compound C.100 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.101.C-2.1 to C.101.C-2.397 of core compound C.101 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.102.C-2.1 to C.102.C-2.397 of core compound C.102 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.103.C-2.1 to C.103.C-2.397 of core compound C.103 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.104.C-2.1 to C.104.C-2.397 of core compound C.104 defined in table C, wherein the R^3 is selected respectively each from Het-2.1 to Het-2.397 as defined in table H2.

Examples of such especially preferred compounds are compounds C.1.C-3.1 to C.1.C-3.17 of core compound C.1 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.2.C-3.1 to C.2.C-3.17 of core compound C.2 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.3.C-3.1 to C.3.C-3.17 of core compound C.3 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.4.C-3.1 to C.4.C-3.17 of core compound C.4 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.5.C-3.1 to C.5.C-3.17 of core compound C.5 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.6.C-3.1 to C.6.C-3.17 of core compound C.6 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.7.C-3.1 to C.7.C-3.17 of core compound C.7 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.8.C-3.1 to C.8.C-3.17 of core compound C.8 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.9.C-3.1 to C.9.C-3.17 of core compound C.9 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.10.C-3.1 to C.10.C-3.17 of core compound C.10 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.11.C-3.1 to C.11.C-3.17 of core compound C.11 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.12.C-3.1 to C.12.C-3.17 of core compound C.12 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.13.C-3.1 to C.13.C-3.17 of core compound C.13 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.14.C-3.1 to C.14.C-3.17 of core compound C.14 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.15.C-3.1 to C.15.C-3.17 of core compound C.15 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.16.C-3.1 to C.16.C-3.17 of core compound C.16 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.17.C-3.1 to C.17.C-3.17 of core compound C.17 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.18.C-3.1 to C.18.C-3.17 of core compound C.18 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.19.C-3.1 to C.19.C-3.17 of core compound C.19 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.20.C-3.1 to C.20.C-3.17 of core compound C.20 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.21.C-3.1 to C.21.C-3.17 of core compound C.21 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.22.C-3.1 to C.22.C-3.17 of core compound C.22 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.23.C-3.1 to C.23.C-3.17 of core compound C.23 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.24.C-3.1 to C.24.C-3.17 of core compound C.24 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.25.C-3.1 to C.25.C-3.17 of core compound C.25 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.26.C-3.1 to C.26.C-3.17 of core compound C.26 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.27.C-3.1 to C.27.C-3.17 of core compound C.27 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.28.C-3.1 to C.28.C-3.17 of core compound C.28 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.29.C-3.1 to C.29.C-3.17 of core compound C.29 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.30.C-3.1 to C.30.C-3.17 of core compound C.30 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.31.C-3.1 to C.31.C-3.17 of core compound C.31 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.32.C-3.1 to C.32.C-3.17 of core compound C.32 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.33.C-3.1 to C.33.C-3.17 of core compound C.33 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.34.C-3.1 to C.34.C-3.17 of core compound C.34 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.35.C-3.1 to C.35.C-3.17 of core compound C.35 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.36.C-3.1 to C.36.C-3.17 of core compound C.36 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.37.C-3.1 to C.37.C-3.17 of core compound C.37 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.38.C-3.1 to C.38.C-3.17 of core compound C.38 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.39.C-3.1 to C.39.C-3.17 of core compound C.39 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.40.C-3.1 to C.40.C-3.17 of core compound C.40 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.41.C-3.1 to C.41.C-3.17 of core compound C.41 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.42.C-3.1 to C.42.C-3.17 of core compound C.42 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.43.C-3.1 to C.43.C-3.17 of core compound C.43 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.44.C-3.1 to C.44.C-3.17 of core compound C.44 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.45.C-3.1 to C.45.C-3.17 of core compound C.45 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.46.C-3.1 to C.46.C-3.17 of core compound C.46 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.47.C-3.1 to C.47.C-3.17 of core compound C.47 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.48.C-3.1 to C.48.C-3.17 of core compound C.48 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.49.C-3.1 to C.49.C-3.17 of core compound C.49 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.50.C-3.1 to C.50.C-3.17 of core compound C.50 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.51.C-3.1 to C.51.C-3.17 of core compound C.51 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.52.C-3.1 to C.52.C-3.17 of core compound C.52 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.53.C-3.1 to C.53.C-3.17 of core compound C.53 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.54.C-3.1 to C.54.C-3.17 of core compound C.54 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.55.C-3.1 to C.55.C-3.17 of core compound C.55 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.56.C-3.1 to C.56.C-3.17 of core compound C.56 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.57.C-3.1 to C.57.C-3.17 of core compound C.57 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.58.C-3.1 to C.58.C-3.17 of core compound C.58 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.59.C-3.1 to C.59.C-3.17 of core compound C.59 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.60.C-3.1 to C.60.C-3.17 of core compound C.60 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.61.C-3.1 to C.61.C-3.17 of core compound C.61 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.62.C-3.1 to C.62.C-3.17 of core compound C.62 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.63.C-3.1 to C.63.C-3.17 of core compound C.63 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.64.C-3.1 to C.64.C-3.17 of core compound C.64 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.65.C-3.1 to C.65.C-3.17 of core compound C.65 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.66.C-3.1 to C.66.C-3.17 of core compound C.66 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.67.C-3.1 to C.67.C-3.17 of core compound C.67 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.68.C-3.1 to C.68.C-3.17 of core compound C.68 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.69.C-3.1 to C.69.C-3.17 of core compound C.69 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.70.C-3.1 to C.70.C-3.17 of core compound C.70 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.71.C-3.1 to C.71.C-3.17 of core compound C.71 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.72.C-3.1 to C.72.C-3.17 of core compound C.72 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.73.C-3.1 to C.73.C-3.17 of core compound C.73 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.74.C-3.1 to C.74.C-3.17 of core compound C.74 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.75.C-3.1 to C.75.C-3.17 of core compound C.75 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.76.C-3.1 to C.76.C-3.17 of core compound C.76 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.77.C-3.1 to C.77.C-3.17 of core compound C.77 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.78.C-3.1 to C.78.C-3.17 of core compound C.78 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.79.C-3.1 to C.79.C-3.17 of core compound C.79 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.80.C-3.1 to C.80.C-3.17 of core compound C.80 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.81.C-3.1 to C.81.C-3.17 of core compound C.81 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.82.C-3.1 to C.82.C-3.17 of core compound C.82 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.83.C-3.1 to C.83.C-3.17 of core compound C.83 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.84.C-3.1 to C.84.C-3.17 of core compound C.84 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.85.C-3.1 to C.85.C-3.17 of core compound C.85 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.86.C-3.1 to C.86.C-3.17 of core compound C.86 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.87.C-3.1 to C.87.C-3.17 of core compound C.87 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.88.C-3.1 to C.88.C-3.17 of core compound C.88 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.89.C-3.1 to C.89.C-3.17 of core compound C.89 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.90.C-3.1 to C.90.C-3.17 of core compound C.90 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.91.C-3.1 to C.91.C-3.17 of core compound C.91 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.92.C-3.1 to C.92.C-3.17 of core compound C.92 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.93.C-3.1 to C.93.C-3.17 of core compound C.93 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.94.C-3.1 to C.94.C-3.17 of core compound C.94 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.95.C-3.1 to C.95.C-3.17 of core compound C.95 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.96.C-3.1 to C.96.C-3.17 of core compound C.96 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.97.C-3.1 to C.97.C-3.17 of core compound C.97 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.98.C-3.1 to C.98.C-3.17 of core compound C.98 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.99.C-3.1 to C.99.C-3.17 of core compound C.99 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.100.C-3.1 to C.100.C-3.17 of core compound C.100 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.101.C-3.1 to C.101.C-3.17 of core compound C.101 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.102.C-3.1 to C.102.C-3.17 of core compound C.102 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.103.C-3.1 to C.103.C-3.17 of core compound C.103 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.104.C-3.1 to C.104.C-3.17 of core compound C.104 defined in table C, wherein the R^3 is selected respectively each from Het-3.1 to Het-3.17 as defined in table H3.

Examples of such especially preferred compounds are compounds C.1.C-6.1 to C.1.C-6.17 of core compound C.1 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.2.C-6.1 to C.2.C-6.17 of core compound C.2 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.3.C-6.1 to C.3.C-6.17 of core compound C.3 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.4.C-6.1 to C.4.C-6.17 of core compound C.4 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.5.C-6.1 to C.5.C-6.17 of core compound C.5 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.6.C-6.1 to C.6.C-6.17 of core compound C.6 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.7.C-6.1 to C.7.C-6.17 of core compound C.7 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.8.C-6.1 to C.8.C-6.17 of core compound C.8 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.9.C-6.1 to C.9.C-6.17 of core compound C.9 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.10.C-6.1 to C.10.C-6.17 of core compound C.10 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.11.C-6.1 to C.11.C-6.17 of core compound C.11 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.12.C-6.1 to C.12.C-6.17 of core compound C.12 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.13.C-6.1 to C.13.C-6.17 of core compound C.13 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.14.C-6.1 to C.14.C-6.17 of core compound C.14 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.15.C-6.1 to C.15.C-6.17 of core compound C.15 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.16.C-6.1 to C.16.C-6.17 of core compound C.16 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.17.C-6.1 to C.17.C-6.17 of core compound C.17 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.18.C-6.1 to C.18.C-6.17 of core compound C.18 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.19.C-6.1 to C.19.C-6.17 of core compound C.19 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.20.C-6.1 to C.20.C-6.17 of core compound C.20 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.21.C-6.1 to C.21.C-6.17 of core compound C.21 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.22.C-6.1 to C.22.C-6.17 of core compound C.22 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.23.C-6.1 to C.23.C-6.17 of core compound C.23 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.24.C-6.1 to C.24.C-6.17 of core compound C.24 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.25.C-6.1 to C.25.C-6.17 of core compound C.25 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.26.C-6.1 to C.26.C-6.17 of core compound C.26 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.27.C-6.1 to C.27.C-6.17 of core compound C.27 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.28.C-6.1 to C.28.C-6.17 of core compound C.28 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.29.C-6.1 to C.29.C-6.17 of core compound C.29 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.30.C-6.1 to C.30.C-6.17 of core compound C.30 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.31.C-6.1 to C.31.C-6.17 of core compound C.31 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.32.C-6.1 to C.32.C-6.17 of core compound C.32 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.33.C-6.1 to C.33.C-6.17 of core compound C.33 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.34.C-6.1 to C.34.C-6.17 of core compound C.34 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.35.C-6.1 to C.35.C-6.17 of core compound C.35 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.36.C-6.1 to C.36.C-6.17 of core compound C.36 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.37.C-6.1 to C.37.C-6.17 of core compound C.37 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.38.C-6.1 to C.38.C-6.17 of core compound C.38 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.39.C-6.1 to C.39.C-6.17 of core compound C.39 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.40.C-6.1 to C.40.C-6.17 of core compound C.40 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.41.C-6.1 to C.41.C-6.17 of core compound C.41 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.42.C-6.1 to C.42.C-6.17 of core compound C.42 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.43.C-6.1 to C.43.C-6.17 of core compound C.43 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.44.C-6.1 to C.44.C-6.17 of core compound C.44 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.45.C-6.1 to C.45.C-6.17 of core compound C.45 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.46.C-6.1 to C.46.C-6.17 of core compound C.46 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.47.C-6.1 to C.47.C-6.17 of core compound C.47 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.48.C-6.1 to C.48.C-6.17 of core compound C.48 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.49.C-6.1 to C.49.C-6.17 of core compound C.49 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.50.C-6.1 to C.50.C-6.17 of core compound C.50 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.51.C-6.1 to C.51.C-6.17 of core compound C.51 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.52.C-6.1 to C.52.C-6.17 of core compound C.52 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.53.C-6.1 to C.53.C-6.17 of core compound C.53 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.54.C-6.1 to C.54.C-6.17 of core compound C.54 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.55.C-6.1 to C.55.C-6.17 of core compound C.55 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.56.C-6.1 to C.56.C-6.17 of core compound C.56 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.57.C-6.1 to C.57.C-6.17 of core compound C.57 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.58.C-6.1 to C.58.C-6.17 of core compound C.58 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.59.C-6.1 to C.59.C-6.17 of core compound C.59 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.60.C-6.1 to C.60.C-6.17 of core compound C.60 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.61.C-6.1 to C.61.C-6.17 of core compound C.61 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.62.C-6.1 to C.62.C-6.17 of core compound C.62 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.63.C-6.1 to C.63.C-6.17 of core compound C.63 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.64.C-6.1 to C.64.C-6.17 of core compound C.64 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.65.C-6.1 to C.65.C-6.17 of core compound C.65 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.66.C-6.1 to C.66.C-6.17 of core compound C.66 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.67.C-6.1 to C.67.C-6.17 of core compound C.67 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.68.C-6.1 to C.68.C-6.17 of core compound C.68 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.69.C-6.1 to C.69.C-6.17 of core compound C.69 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.70.C-6.1 to C.70.C-6.17 of core compound C.70 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.71.C-6.1 to C.71.C-6.17 of core compound C.71 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.72.C-6.1 to C.72.C-6.17 of core compound C.72 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.73.C-6.1 to C.73.C-6.17 of core compound C.73 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.74.C-6.1 to C.74.C-6.17 of core compound C.74 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.75.C-6.1 to C.75.C-6.17 of core compound C.75 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.76.C-6.1 to C.76.C-6.17 of core compound C.76 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.77.C-6.1 to C.77.C-6.17 of core compound C.77 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.78.C-6.1 to C.78.C-6.17 of core compound C.78 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.79.C-6.1 to C.79.C-6.17 of core compound C.79 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.80.C-6.1 to C.80.C-6.17 of core compound C.80 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.81.C-6.1 to C.81.C-6.17 of core compound C.81 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.82.C-6.1 to C.82.C-6.17 of core compound C.82 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.83.C-6.1 to C.83.C-6.17 of core compound C.83 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.84.C-6.1 to C.84.C-6.17 of core compound C.84 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.85.C-6.1 to C.85.C-6.17 of core compound C.85 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.86.C-6.1 to C.86.C-6.17 of core compound C.86 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.87.C-6.1 to C.87.C-6.17 of core compound C.87 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.88.C-6.1 to C.88.C-6.17 of core compound C.88 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.89.C-6.1 to C.89.C-6.17 of core compound C.89 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.90.C-6.1 to C.90.C-6.17 of core compound C.90 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.91.C-6.1 to C.91.C-6.17 of core compound C.91 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.92.C-6.1 to C.92.C-6.17 of core compound C.92 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.93.C-6.1 to C.93.C-6.17 of core compound C.93 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.94.C-6.1 to C.94.C-6.17 of core compound C.94 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.95.C-6.1 to C.95.C-6.17 of core compound C.95 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.96.C-6.1 to C.96.C-6.17 of core compound C.96 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.97.C-6.1 to C.97.C-6.17 of core compound C.97 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.98.C-6.1 to C.98.C-6.17 of core compound C.98 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.99.C-6.1 to C.99.C-6.17 of core compound C.99 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.100.C-6.1 to C.100.C-6.17 of core compound C.100 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.101.C-6.1 to C.101.C-6.17 of core compound C.101 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.102.C-6.1 to C.102.C-6.17 of core compound C.102 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.103.C-6.1 to C.103.C-6.17 of core compound C.103 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.104.C-6.1 to C.104.C-6.17 of core compound C.104 defined in table C, wherein the R^3 is selected respectively each from Het-6.1 to Het-6.17 as defined in table H6.

Examples of such especially preferred compounds are compounds C.1.C-36.1 to C.1.C-36.147 of core compound C.1 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.2.C-36.1 to C.2.C-36.147 of core compound C.2 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.3.C-36.1 to C.3.C-36.147 of core compound C.3 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.4.C-36.1 to C.4.C-36.147 of core compound C.4 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.5.C-36.1 to C.5.C-36.147 of core compound C.5 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.6.C-36.1 to C.6.C-36.147 of core compound C.6 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.7.C-36.1 to C.7.C-36.147 of core compound C.7 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.8.C-36.1 to C.8.C-36.147 of core compound C.8 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.9.C-36.1 to C.9.C-36.147 of core compound C.9 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.10.C-36.1 to C.10.C-36.147 of core compound C.10 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.11.C-36.1 to C.11.C-36.147 of core compound C.11 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.12.C-36.1 to C.12.C-36.147 of core compound C.12 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.13.C-36.1 to C.13.C-36.147 of core compound C.13 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.14.C-36.1 to C.14.C-36.147 of core compound C.14 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.15.C-36.1 to C.15.C-36.147 of core compound C.15 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.16.C-36.1 to C.16.C-36.147 of core compound C.16 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.17.C-36.1 to C.17.C-36.147 of core compound C.17 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.18.C-36.1 to C.18.C-36.147 of core compound C.18 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.19.C-36.1 to C.19.C-36.147 of core compound C.19 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.20.C-36.1 to C.20.C-36.147 of core compound C.20 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.21.C-36.1 to C.21.C-36.147 of core compound C.21 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.22.C-36.1 to C.22.C-36.147 of core compound C.22 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.23.C-36.1 to C.23.C-36.147 of core compound C.23 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.24.C-36.1 to C.24.C-36.147 of core compound C.24 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.25.C-36.1 to C.25.C-36.147 of core compound C.25 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.26.C-36.1 to C.26.C-36.147 of core compound C.26 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.27.C-36.1 to C.27.C-36.147 of core compound C.27 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.28.C-36.1 to C.28.C-36.147 of core compound C.28 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.29.C-36.1 to C.29.C-36.147 of core compound C.29 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.30.C-36.1 to C.30.C-36.147 of core compound C.30 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.31.C-36.1 to C.31.C-36.147 of core compound C.31 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.32.C-36.1 to C.32.C-36.147 of core compound C.32 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.33.C-36.1 to C.33.C-36.147 of core compound C.33 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.34.C-36.1 to C.34.C-36.147 of core compound C.34 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.35.C-36.1 to C.35.C-36.147 of core compound C.35 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.36.C-36.1 to C.36.C-36.147 of core compound C.36 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.37.C-36.1 to C.37.C-36.147 of core compound C.37 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.38.C-36.1 to C.38.C-36.147 of core compound C.38 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.39.C-36.1 to C.39.C-36.147 of core compound C.39 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.40.C-36.1 to C.40.C-36.147 of core compound C.40 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.41.C-36.1 to C.41.C-36.147 of core compound C.41 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.42.C-36.1 to C.42.C-36.147 of core compound C.42 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.43.C-36.1 to C.43.C-36.147 of core compound C.43 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.44.C-36.1 to C.44.C-36.147 of core compound C.44 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.45.C-36.1 to C.45.C-36.147 of core compound C.45 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.46.C-36.1 to C.46.C-36.147 of core compound C.46 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.47.C-36.1 to C.47.C-36.147 of core compound C.47 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.48.C-36.1 to C.48.C-36.147 of core compound C.48 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.49.C-36.1 to C.49.C-36.147 of core compound C.49 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.50.C-36.1 to C.50.C-36.147 of core compound C.50 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.51.C-36.1 to C.51.C-36.147 of core compound C.51 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.52.C-36.1 to C.52.C-36.147 of core compound C.52 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.53.C-36.1 to C.53.C-36.147 of core compound C.53 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.54.C-36.1 to C.54.C-36.147 of core compound C.54 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.55.C-36.1 to C.55.C-36.147 of core compound C.55 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.56.C-36.1 to C.56.C-36.147 of core compound C.56 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.57.C-36.1 to C.57.C-36.147 of core compound C.57 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.58.C-36.1 to C.58.C-36.147 of core compound C.58 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.59.C-36.1 to C.59.C-36.147 of core compound C.59 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.60.C-36.1 to C.60.C-36.147 of core compound C.60 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.61.C-36.1 to C.61.C-36.147 of core compound C.61 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.62.C-36.1 to C.62.C-36.147 of core compound C.62 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.63.C-36.1 to C.63.C-36.147 of core compound C.63 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.64.C-36.1 to C.64.C-36.147 of core compound C.64 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.65.C-36.1 to C.65.C-36.147 of core compound C.65 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.66.C-36.1 to C.66.C-36.147 of core compound C.66 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.67.C-36.1 to C.67.C-36.147 of core compound C.67 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.68.C-36.1 to C.68.C-36.147 of core compound C.68 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.69.C-36.1 to C.69.C-36.147 of core compound C.69 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.70.C-36.1 to C.70.C-36.147 of core compound C.70 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.71.C-36.1 to C.71.C-36.147 of core compound C.71 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.72.C-36.1 to C.72.C-36.147 of core compound C.72 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.73.C-36.1 to C.73.C-36.147 of core compound C.73 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.74.C-36.1 to C.74.C-36.147 of core compound C.74 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.75.C-36.1 to C.75.C-36.147 of core compound C.75 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.76.C-36.1 to C.76.C-36.147 of core compound C.76 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.77.C-36.1 to C.77.C-36.147 of core compound C.77 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.78.C-36.1 to C.78.C-36.147 of core compound C.78 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.79.C-36.1 to C.79.C-36.147 of core compound C.79 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.80.C-36.1 to C.80.C-36.147 of core compound C.80 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.81.C-36.1 to C.81.C-36.147 of core compound C.81 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.82.C-36.1 to C.82.C-36.147 of core compound C.82 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.83.C-36.1 to C.83.C-36.147 of core compound C.83 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.84.C-36.1 to C.84.C-36.147 of core compound C.84 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.85.C-36.1 to C.85.C-36.147 of core compound C.85 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.86.C-36.1 to C.86.C-36.147 of core compound C.86 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.87.C-36.1 to C.87.C-36.147 of core compound C.87 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.88.C-36.1 to C.88.C-36.147 of core compound C.88 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.89.C-36.1 to C.89.C-36.147 of core compound C.89 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.90.C-36.1 to C.90.C-36.147 of core compound C.90 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.91.C-36.1 to C.91.C-36.147 of core compound C.91 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.92.C-36.1 to C.92.C-36.147 of core compound C.92 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.93.C-36.1 to C.93.C-36.147 of core compound C.93 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.94.C-36.1 to C.94.C-36.147 of core compound C.94 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.95.C-36.1 to C.95.C-36.147 of core compound C.95 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.96.C-36.1 to C.96.C-36.147 of core compound C.96 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.97.C-36.1 to C.97.C-36.147 of core compound C.97 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.98.C-36.1 to C.98.C-36.147 of core compound C.98 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.99.C-36.1 to C.99.C-36.147 of core compound C.99 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.100.C-36.1 to C.100.C-36.147 of core compound C.100 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.101.C-36.1 to C.101.C-36.147 of core compound C.101 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.102.C-36.1 to C.102.C-36.147 of core compound C.102 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.103.C-36.1 to C.103.C-36.147 of core compound C.103 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.104.C-36.1 to C.104.C-36.147 of core compound C.104 defined in table C, wherein the R^3 is selected respectively each from Het-36.1 to Het-36.147 as defined in table H36.

Examples of such especially preferred compounds are compounds C.1.C-37.1 to C.1.C-37.17 of core compound C.1 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.2.C-37.1 to C.2.C-37.17 of core compound C.2 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.3.C-37.1 to C.3.C-37.17 of core compound C.3 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.4.C-37.1 to C.4.C-37.17 of core compound C.4 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.5.C-37.1 to C.5.C-37.17 of core compound C.5 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.6.C-37.1 to C.6.C-37.17 of core compound C.6 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.7.C-37.1 to C.7.C-37.17 of core compound C.7 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.8.C-37.1 to C.8.C-37.17 of core compound C.8 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.9.C-37.1 to C.9.C-37.17 of core compound C.9 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.10.C-37.1 to C.10.C-37.17 of core compound C.10 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.11.C-37.1 to C.11.C-37.17 of core compound C.11 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.12.C-37.1 to C.12.C-37.17 of core compound C.12 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.13.C-37.1 to C.13.C-37.17 of core compound C.13 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.14.C-37.1 to C.14.C-37.17 of core compound C.14 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.15.C-37.1 to C.15.C-37.17 of core compound C.15 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.16.C-37.1 to C.16.C-37.17 of core compound C.16 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.17.C-37.1 to C.17.C-37.17 of core compound C.17 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.18.C-37.1 to C.18.C-37.17 of core compound C.18 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.19.C-37.1 to C.19.C-37.17 of core compound C.19 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.20.C-37.1 to C.20.C-37.17 of core compound C.20 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.21.C-37.1 to C.21.C-37.17 of core compound C.21 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.22.C-37.1 to C.22.C-37.17 of core compound C.22 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.23.C-37.1 to C.23.C-37.17 of core compound C.23 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.24.C-37.1 to C.24.C-37.17 of core compound C.24 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.25.C-37.1 to C.25.C-37.17 of core compound C.25 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.26.C-37.1 to C.26.C-37.17 of core compound C.26 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.27.C-37.1 to C.27.C-37.17 of core compound C.27 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.28.C-37.1 to C.28.C-37.17 of core compound C.28 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.29.C-37.1 to C.29.C-37.17 of core compound C.29 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.30.C-37.1 to C.30.C-37.17 of core compound C.30 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.31.C-37.1 to C.31.C-37.17 of core compound C.31 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.32.C-37.1 to C.32.C-37.17 of core compound C.32 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.33.C-37.1 to C.33.C-37.17 of core compound C.33 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.34.C-37.1 to C.34.C-37.17 of core compound C.34 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.35.C-37.1 to C.35.C-37.17 of core compound C.35 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.36.C-37.1 to C.36.C-37.17 of core compound C.36 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.37.C-37.1 to C.37.C-37.17 of core compound C.37 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.38.C-37.1 to C.38.C-37.17 of core compound C.38 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.39.C-37.1 to C.39.C-37.17 of core compound C.39 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.40.C-37.1 to C.40.C-37.17 of core compound C.40 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.41.C-37.1 to C.41.C-37.17 of core compound C.41 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.42.C-37.1 to C.42.C-37.17 of core compound C.42 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.43.C-37.1 to C.43.C-37.17 of core compound C.43 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.44.C-37.1 to C.44.C-37.17 of core compound C.44 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.45.C-37.1 to C.45.C-37.17 of core compound C.45 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.46.C-37.1 to C.46.C-37.17 of core compound C.46 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.47.C-37.1 to C.47.C-37.17 of core compound C.47 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.48.C-37.1 to C.48.C-37.17 of core compound C.48 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.49.C-37.1 to C.49.C-37.17 of core compound C.49 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.50.C-37.1 to C.50.C-37.17 of core compound C.50 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.51.C-37.1 to C.51.C-37.17 of core compound C.51 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.52.C-37.1 to C.52.C-37.17 of core compound C.52 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.53.C-37.1 to C.53.C-37.17 of core compound C.53 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.54.C-37.1 to C.54.C-37.17 of core compound C.54 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.55.C-37.1 to C.55.C-37.17 of core compound C.55 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.56.C-37.1 to C.56.C-37.17 of core compound C.56 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.57.C-37.1 to C.57.C-37.17 of core compound C.57 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.58.C-37.1 to C.58.C-37.17 of core compound C.58 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.59.C-37.1 to C.59.C-37.17 of core compound C.59 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.60.C-37.1 to C.60.C-37.17 of core compound C.60 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.61.C-37.1 to C.61.C-37.17 of core compound C.61 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.62.C-37.1 to C.62.C-37.17 of core compound C.62 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.63.C-37.1 to C.63.C-37.17 of core compound C.63 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.64.C-37.1 to C.64.C-37.17 of core compound C.64 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.65.C-37.1 to C.65.C-37.17 of core compound C.65 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.66.C-37.1 to C.66.C-37.17 of core compound C.66 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.67.C-37.1 to C.67.C-37.17 of core compound C.67 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.68.C-37.1 to C.68.C-37.17 of core compound C.68 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.69.C-37.1 to C.69.C-37.17 of core compound C.69 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.70.C-37.1 to C.70.C-37.17 of core compound C.70 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.71.C-37.1 to C.71.C-37.17 of core compound C.71 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.72.C-37.1 to C.72.C-37.17 of core compound C.72 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.73.C-37.1 to C.73.C-37.17 of core compound C.73 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.74.C-37.1 to C.74.C-37.17 of core compound C.74 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.75.C-37.1 to C.75.C-37.17 of core compound C.75 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.76.C-37.1 to C.76.C-37.17 of core compound C.76 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.77.C-37.1 to C.77.C-37.17 of core compound C.77 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.78.C-37.1 to C.78.C-37.17 of core compound C.78 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.79.C-37.1 to C.79.C-37.17 of core compound C.79 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.80.C-37.1 to C.80.C-37.17 of core compound C.80 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.81.C-37.1 to C.81.C-37.17 of core compound C.81 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.82.C-37.1 to C.82.C-37.17 of core compound C.82 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.83.C-37.1 to C.83.C-37.17 of core compound C.83 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.84.C-37.1 to C.84.C-37.17 of core compound C.84 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.85.C-37.1 to C.85.C-37.17 of core compound C.85 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.86.C-37.1 to C.86.C-37.17 of core compound C.86 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.87.C-37.1 to C.87.C-37.17 of core compound C.87 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.88.C-37.1 to C.88.C-37.17 of core compound C.88 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.89.C-37.1 to C.89.C-37.17 of core compound C.89 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.90.C-37.1 to C.90.C-37.17 of core compound C.90 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.91.C-37.1 to C.91.C-37.17 of core compound C.91 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.92.C-37.1 to C.92.C-37.17 of core compound C.92 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.93.C-37.1 to C.93.C-37.17 of core compound C.93 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.94.C-37.1 to C.94.C-37.17 of core compound C.94 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.95.C-37.1 to C.95.C-37.17 of core compound C.95 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.96.C-37.1 to C.96.C-37.17 of core compound C.96 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.97.C-37.1 to C.97.C-37.17 of core compound C.97 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.98.C-37.1 to C.98.C-37.17 of core compound C.98 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.99.C-37.1 to C.99.C-37.17 of core compound C.99 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.100.C-37.1 to C.100.C-37.17 of core compound C.100 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.101.C-37.1 to C.101.C-37.17 of core compound C.101 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.102.C-37.1 to C.102.C-37.17 of core compound C.102 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.103.C-37.1 to C.103.C-37.17 of core compound C.103 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.104.C-37.1 to C.104.C-37.17 of core compound C.104 defined in table C, wherein the R^3 is selected respectively each from Het-37.1 to Het-37.17 as defined in table H37.

Examples of such especially preferred compounds are compounds C.1.C-39.1 to C.1.C-39.9 of core compound C.1 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.2.C-39.1 to C.2.C-39.9 of core compound C.2 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.3.C-39.1 to C.3.C-39.9 of core compound C.3 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.4.C-39.1 to C.4.C-39.9 of core compound C.4 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.5.C-39.1 to C.5.C-39.9 of core compound C.5 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.6.C-39.1 to C.6.C-39.9 of core compound C.6 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.7.C-39.1 to C.7.C-39.9 of core compound C.7 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.8.C-39.1 to C.8.C-39.9 of core compound C.8 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.9.C-39.1 to C.9.C-39.9 of core compound C.9 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.10.C-39.1 to C.10.C-39.9 of core compound C.10 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.11.C-39.1 to C.11.C-39.9 of core compound C.11 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.12.C-39.1 to C.12.C-39.9 of core compound C.12 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.13.C-39.1 to C.13.C-39.9 of core compound C.13 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.14.C-39.1 to C.14.C-39.9 of core compound C.14 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.15.C-39.1 to C.15.C-39.9 of core compound C.15 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.16.C-39.1 to C.16.C-39.9 of core compound C.16 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.17.C-39.1 to C.17.C-39.9 of core compound C.17 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.18.C-39.1 to C.18.C-39.9 of core compound C.18 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.19.C-39.1 to C.19.C-39.9 of core compound C.19 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.20.C-39.1 to C.20.C-39.9 of core compound C.20 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.21.C-39.1 to C.21.C-39.9 of core compound C.21 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.22.C-39.1 to C.22.C-39.9 of core compound C.22 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.23.C-39.1 to C.23.C-39.9 of core compound C.23 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.24.C-39.1 to C.24.C-39.9 of core compound C.24 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.25.C-39.1 to C.25.C-39.9 of core compound C.25 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.26.C-39.1 to C.26.C-39.9 of core compound C.26 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.27.C-39.1 to C.27.C-39.9 of core compound C.27 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.28.C-39.1 to C.28.C-39.9 of core compound C.28 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.29.C-39.1 to C.29.C-39.9 of core compound C.29 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.30.C-39.1 to C.30.C-39.9 of core compound C.30 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.31.C-39.1 to C.31.C-39.9 of core compound C.31 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.32.C-39.1 to C.32.C-39.9 of core compound C.32 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.33.C-39.1 to C.33.C-39.9 of core compound C.33 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.34.C-39.1 to C.34.C-39.9 of core compound C.34 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.35.C-39.1 to C.35.C-39.9 of core compound C.35 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.36.C-39.1 to C.36.C-39.9 of core compound C.36 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.37.C-39.1 to C.37.C-39.9 of core compound C.37 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.38.C-39.1 to C.38.C-39.9 of core compound C.38 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.39.C-39.1 to C.39.C-39.9 of core compound C.39 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.40.C-39.1 to C.40.C-39.9 of core compound C.40 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.41.C-39.1 to C.41.C-39.9 of core compound C.41 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.42.C-39.1 to C.42.C-39.9 of core compound C.42 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.43.C-39.1 to C.43.C-39.9 of core compound C.43 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.44.C-39.1 to C.44.C-39.9 of core compound C.44 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.45.C-39.1 to C.45.C-39.9 of core compound C.45 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.46.C-39.1 to C.46.C-39.9 of core compound C.46 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.47.C-39.1 to C.47.C-39.9 of core compound C.47 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.48.C-39.1 to C.48.C-39.9 of core compound C.48 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.49.C-39.1 to C.49.C-39.9 of core compound C.49 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.50.C-39.1 to C.50.C-39.9 of core compound C.50 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.51.C-39.1 to C.51.C-39.9 of core compound C.51 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.52.C-39.1 to C.52.C-39.9 of core compound C.52 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.53.C-39.1 to C.53.C-39.9 of core compound C.53 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.54.C-39.1 to C.54.C-39.9 of core compound C.54 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.55.C-39.1 to C.55.C-39.9 of core compound C.55 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.56.C-39.1 to C.56.C-39.9 of core compound C.56 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.57.C-39.1 to C.57.C-39.9 of core compound C.57 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.58.C-39.1 to C.58.C-39.9 of core compound C.58 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.59.C-39.1 to C.59.C-39.9 of core compound C.59 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.60.C-39.1 to C.60.C-39.9 of core compound C.60 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.61.C-39.1 to C.61.C-39.9 of core compound C.61 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.62.C-39.1 to C.62.C-39.9 of core compound C.62 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.63.C-39.1 to C.63.C-39.9 of core compound C.63 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.64.C-39.1 to C.64.C-39.9 of core compound C.64 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.65.C-39.1 to C.65.C-39.9 of core compound C.65 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.66.C-39.1 to C.66.C-39.9 of core compound C.66 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.67.C-39.1 to C.67.C-39.9 of core compound C.67 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.68.C-39.1 to C.68.C-39.9 of core compound C.68 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.69.C-39.1 to C.69.C-39.9 of core compound C.69 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.70.C-39.1 to C.70.C-39.9 of core compound C.70 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.71.C-39.1 to C.71.C-39.9 of core compound C.71 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.72.C-39.1 to C.72.C-39.9 of core compound C.72 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.73.C-39.1 to C.73.C-39.9 of core compound C.73 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.74.C-39.1 to C.74.C-39.9 of core compound C.74 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.75.C-39.1 to C.75.C-39.9 of core compound C.75 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.76.C-39.1 to C.76.C-39.9 of core compound C.76 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.77.C-39.1 to C.77.C-39.9 of core compound C.77 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.78.C-39.1 to C.78.C-39.9 of core compound C.78 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.79.C-39.1 to C.79.C-39.9 of core compound C.79 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.80.C-39.1 to C.80.C-39.9 of core compound C.80 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.81.C-39.1 to C.81.C-39.9 of core compound C.81 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.82.C-39.1 to C.82.C-39.9 of core compound C.82 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.83.C-39.1 to C.83.C-39.9 of core compound C.83 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.84.C-39.1 to C.84.C-39.9 of core compound C.84 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.85.C-39.1 to C.85.C-39.9 of core compound C.85 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.86.C-39.1 to C.86.C-39.9 of core compound C.86 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.87.C-39.1 to C.87.C-39.9 of core compound C.87 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.88.C-39.1 to C.88.C-39.9 of core compound C.88 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.89.C-39.1 to C.89.C-39.9 of core compound C.89 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.90.C-39.1 to C.90.C-39.9 of core compound C.90 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.91.C-39.1 to C.91.C-39.9 of core compound C.91 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.92.C-39.1 to C.92.C-39.9 of core compound C.92 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.93.C-39.1 to C.93.C-39.9 of core compound C.93 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.94.C-39.1 to C.94.C-39.9 of core compound C.94 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.95.C-39.1 to C.95.C-39.9 of core compound C.95 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.96.C-39.1 to C.96.C-39.9 of core compound C.96 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.97.C-39.1 to C.97.C-39.9 of core compound C.97 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.98.C-39.1 to C.98.C-39.9 of core compound C.98 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.99.C-39.1 to C.99.C-39.9 of core compound C.99 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.100.C-39.1 to C.100.C-39.9 of core compound C.100 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.101.C-39.1 to C.101.C-39.9 of core compound C.101 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.102.C-39.1 to C.102.C-39.9 of core compound C.102 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.103.C-39.1 to C.103.C-39.9 of core compound C.103 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.104.C-39.1 to C.104.C-39.9 of core compound C.104 defined in table C, wherein the R^3 is selected respectively each from Het-39.1 to Het-39.9 as defined in table H39.

Examples of such especially preferred compounds are compounds C.1.C-40.1 to C.1.C-40.34 of core compound C.1 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.2.C-40.1 to C.2.C-40.34 of core compound C.2 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.3.C-40.1 to C.3.C-40.34 of core compound C.3 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.4.C-40.1 to C.4.C-40.34 of core compound C.4 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.5.C-40.1 to C.5.C-40.34 of core compound C.5 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.6.C-40.1 to C.6.C-40.34 of core compound C.6 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.7.C-40.1 to C.7.C-40.34 of core compound C.7 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.8.C-40.1 to C.8.C-40.34 of core compound C.8 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.9.C-40.1 to C.9.C-40.34 of core compound C.9 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.10.C-40.1 to C.10.C-40.34 of core compound C.10 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.11.C-40.1 to C.11.C-40.34 of core compound C.11 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.12.C-40.1 to C.12.C-40.34 of core compound C.12 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.13.C-40.1 to C.13.C-40.34 of core compound C.13 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.14.C-40.1 to C.14.C-40.34 of core compound C.14 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.15.C-40.1 to C.15.C-40.34 of core compound C.15 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.16.C-40.1 to C.16.C-40.34 of core compound C.16 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.17.C-40.1 to C.17.C-40.34 of core compound C.17 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.18.C-40.1 to C.18.C-40.34 of core compound C.18 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.19.C-40.1 to C.19.C-40.34 of core compound C.19 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.20.C-40.1 to C.20.C-40.34 of core compound C.20 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.21.C-40.1 to C.21.C-40.34 of core compound C.21 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.22.C-40.1 to C.22.C-40.34 of core compound C.22 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.23.C-40.1 to C.23.C-40.34 of core compound C.23 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.24.C-40.1 to C.24.C-40.34 of core compound C.24 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.25.C-40.1 to C.25.C-40.34 of core compound C.25 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.26.C-40.1 to C.26.C-40.34 of core compound C.26 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.27.C-40.1 to C.27.C-40.34 of core compound C.27 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.28.C-40.1 to C.28.C-40.34 of core compound C.28 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.29.C-40.1 to C.29.C-40.34 of core compound C.29 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.30.C-40.1 to C.30.C-40.34 of core compound C.30 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.31.C-40.1 to C.31.C-40.34 of core compound C.31 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.32.C-40.1 to C.32.C-40.34 of core compound C.32 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.33.C-40.1 to C.33.C-40.34 of core compound C.33 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.34.C-40.1 to C.34.C-40.34 of core compound C.34 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.35.C-40.1 to C.35.C-40.34 of core compound C.35 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.36.C-40.1 to C.36.C-40.34 of core compound C.36 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.37.C-40.1 to C.37.C-40.34 of core compound C.37 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.38.C-40.1 to C.38.C-40.34 of core compound C.38 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.39.C-40.1 to C.39.C-40.34 of core compound C.39 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.40.C-40.1 to C.40.C-40.34 of core compound C.40 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.41.C-40.1 to C.41.C-40.34 of core compound C.41 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.42.C-40.1 to C.42.C-40.34 of core compound C.42 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.43.C-40.1 to C.43.C-40.34 of core compound C.43 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.44.C-40.1 to C.44.C-40.34 of core compound C.44 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.45.C-40.1 to C.45.C-40.34 of core compound C.45 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.46.C-40.1 to C.46.C-40.34 of core compound C.46 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.47.C-40.1 to C.47.C-40.34 of core compound C.47 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.48.C-40.1 to C.48.C-40.34 of core compound C.48 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.49.C-40.1 to C.49.C-40.34 of core compound C.49 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.50.C-40.1 to C.50.C-40.34 of core compound C.50 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.51.C-40.1 to C.51.C-40.34 of core compound C.51 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.52.C-40.1 to C.52.C-40.34 of core compound C.52 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.53.C-40.1 to C.53.C-40.34 of core compound C.53 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.54.C-40.1 to C.54.C-40.34 of core compound C.54 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.55.C-40.1 to C.55.C-40.34 of core compound C.55 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.56.C-40.1 to C.56.C-40.34 of core compound C.56 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.57.C-40.1 to C.57.C-40.34 of core compound C.57 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.58.C-40.1 to C.58.C-40.34 of core compound C.58 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.59.C-40.1 to C.59.C-40.34 of core compound C.59 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.60.C-40.1 to C.60.C-40.34 of core compound C.60 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.61.C-40.1 to C.61.C-40.34 of core compound C.61 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.62.C-40.1 to C.62.C-40.34 of core compound C.62 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.63.C-40.1 to C.63.C-40.34 of core compound C.63 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.64.C-40.1 to C.64.C-40.34 of core compound C.64 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.65.C-40.1 to C.65.C-40.34 of core compound C.65 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.66.C-40.1 to C.66.C-40.34 of core compound C.66 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.67.C-40.1 to C.67.C-40.34 of core compound C.67 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.68.C-40.1 to C.68.C-40.34 of core compound C.68 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.69.C-40.1 to C.69.C-40.34 of core compound C.69 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.70.C-40.1 to C.70.C-40.34 of core compound C.70 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.71.C-40.1 to C.71.C-40.34 of core compound C.71 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.72.C-40.1 to C.72.C-40.34 of core compound C.72 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.73.C-40.1 to C.73.C-40.34 of core compound C.73 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.74.C-40.1 to C.74.C-40.34 of core compound C.74 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.75.C-40.1 to C.75.C-40.34 of core compound C.75 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.76.C-40.1 to C.76.C-40.34 of core compound C.76 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.77.C-40.1 to C.77.C-40.34 of core compound C.77 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.78.C-40.1 to C.78.C-40.34 of core compound C.78 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.79.C-40.1 to C.79.C-40.34 of core compound C.79 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.80.C-40.1 to C.80.C-40.34 of core compound C.80 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.81.C-40.1 to C.81.C-40.34 of core compound C.81 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.82.C-40.1 to C.82.C-40.34 of core compound C.82 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.83.C-40.1 to C.83.C-40.34 of core compound C.83 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.84.C-40.1 to C.84.C-40.34 of core compound C.84 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.85.C-40.1 to C.85.C-40.34 of core compound C.85 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.86.C-40.1 to C.86.C-40.34 of core compound C.86 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.87.C-40.1 to C.87.C-40.34 of core compound C.87 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.88.C-40.1 to C.88.C-40.34 of core compound C.88 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.89.C-40.1 to C.89.C-40.34 of core compound C.89 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.90.C-40.1 to C.90.C-40.34 of core compound C.90 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.91.C-40.1 to C.91.C-40.34 of core compound C.91 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.92.C-40.1 to C.92.C-40.34 of core compound C.92 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.93.C-40.1 to C.93.C-40.34 of core compound C.93 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.94.C-40.1 to C.94.C-40.34 of core compound C.94 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.95.C-40.1 to C.95.C-40.34 of core compound C.95 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.96.C-40.1 to C.96.C-40.34 of core compound C.96 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.97.C-40.1 to C.97.C-40.34 of core compound C.97 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.98.C-40.1 to C.98.C-40.34 of core compound C.98 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.99.C-40.1 to C.99.C-40.34 of core compound C.99 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.100.C-40.1 to C.100.C-40.34 of core compound C.100 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

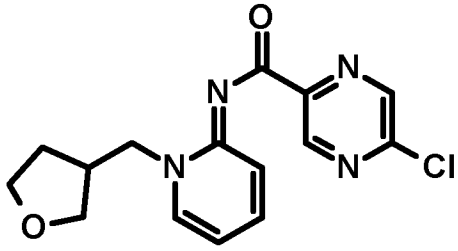
Examples of such especially preferred compounds are compounds C.101.C-40.1 to C.101.C-40.34 of core compound C.101 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.102.C-40.1 to C.102.C-40.34 of core compound C.102 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.103.C-40.1 to C.103.C-40.34 of core compound C.103 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Examples of such especially preferred compounds are compounds C.104.C-40.1 to C.104.C-40.34 of core compound C.104 defined in table C, wherein the R^3 is selected respectively each from Het-40.1 to Het-40.34 as defined in table H40.

Thus, for illustration purpose, one of the above individually described especially preferred compounds, namely compound C.1.C-2.1 of core compound C.1, shown herein above, is represented by the following structure



C.1.C-2.2

wherein in first line of table C the core structure is defined as I.A-1, R^2 and R^3 are both hydrogen and X is oxygen, and the respective selected R^3 is Het-2.2.

Moreover, the meanings mentioned for those individual variables in the tables and further above are per se, independently of the combination in which they are mentioned, a particularly preferred embodiment of the substituents in question.

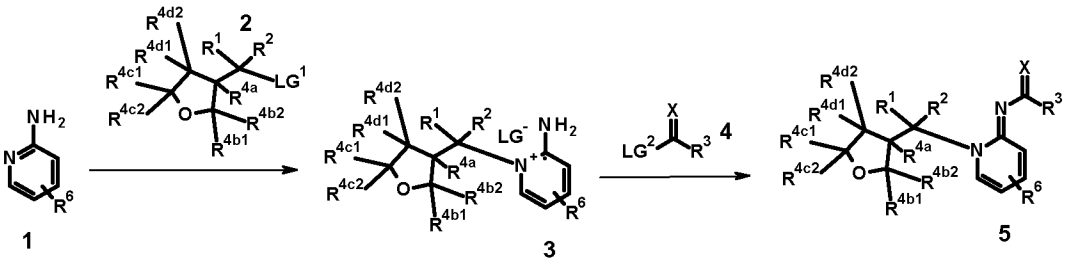
Preparation methods

Compounds of formula (I) according to the present invention can be prepared by standard methods of organic chemistry e.g. by the preparation methods and preparation schemes as described below. The definitions of X, R^1, R^2, R^3, R^{4a}, R^{4b1}, R^{4b2}, R^{4c1}, R^{4c2}, R^{4d1}, R^{4d2}, and R^6 of the molecular structures given in the schemes are as defined above. Room temperature means a temperature range between about 20 and 25 °C.

An example of a general method for the preparation of compounds of formula (I) is shown below in Scheme A. Thus, construction of pyridine element of **5** present in compounds of formula (I) can be achieved, for example, by alkylation of the appropriate 2-amino pyridyl precursor **1** with the appropriate reagent of formula **2**. The transformation is preferably carried out without solvent or in polar solvents such as, N,N-dimethylformamide, N,N-dimethylacetamide, N-methylpyrolidinone, sulfoxolane, or a C_1-C_6 alcohol at temperatures ranging between room temperature and the reflux temperature of the solvent. Examples of suitable leaving groups (**LG^1**) in formulae **2** include, but are not limited to: halogen, alkyl sulfonate or haloalkyl sulfonate, alkyl phosphoante, acetate, and substituted acetate. Representative reaction conditions for the alkylation of pyridine precursors analogous to formula 1 are given in Chem. Commun., 2013, 49, 3905-3907. The synthesis of compounds of formula **5** can then be achieved from intermediate **3** by acylation of the pyridine nitrogen in compounds of formula **3** using acylation reagents **4** which may or may not be activated *in situ*. The transformation is preferably carried out in polar solvents such as acetonitrile, acetone, tetrahydrofuran, N,N-dimethylformamide, or in an inert solvent such as dichloromethane, 1,2-dichloroethane, or 1,2-dimethoxyethane at temperatures

ranging between room temperature and the reflux temperature of the solvent. Examples of suitable leaving groups (LG_2) in formulae **4** include, but are not limited to, halogen, alkyl sulfonate or haloalkyl sulfonate, alkyl phosphoante, and various activated esters derived from

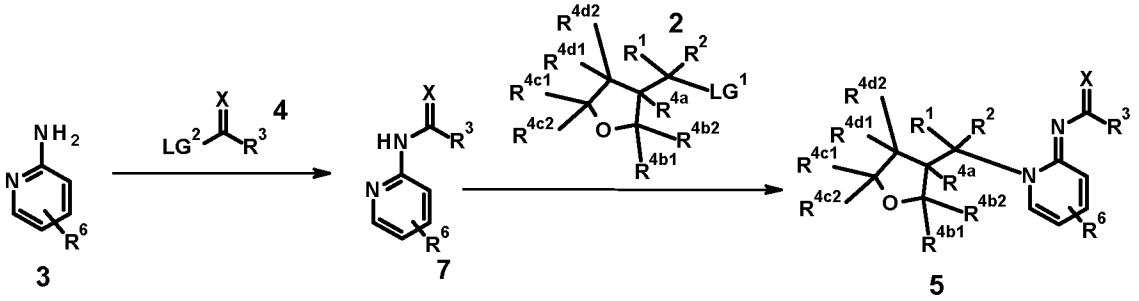
Scheme A:



the reaction of the free carbonic acid with a peptide coupling reagent (Chem. Rev., 2011, 111 (11), pp 6557-6602). A representative reaction conditions for the acylation of 2-substituted pyridines are given in Journal of Medicinal Chemistry, 1988, 31, 4, 807-814.

A reversal of the order of these two steps would also result in an acceptable synthesis of the desired compounds and is described in Scheme B.

Scheme B:

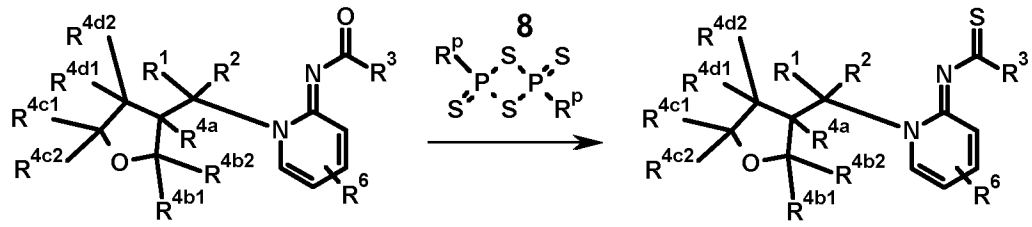


Thus, construction of pyridine element **5** present in compounds of formula (I) can be achieved, for example, by acylation of the appropriate 2-amino pyridyl precursor **1** with the appropriate reagent of formula **4** to form an intermediate of formula **7**. Examples of suitable leaving groups (**LG^2**) in formulae **4** include, but are not limited to, halogen, alkyl sulfonate or haloalkyl sulfonate, alkyl phosphoante, and various activated esters derived from the reaction of the free carbonic acid with a peptide coupling reagent (Chem. Rev., 2011, 111 (11), pp 6557-6602). The subsequent alkylation reaction from **7** to **5** can be achieved through the use of alkylating reagent **2**. The transformation is preferably in polar solvents such as, N,N-dimethylformamide, N,N-dimethylacetamide, N-methylpyrolidinone, sulfoxolane, THF or a C_1-C_6 alcohol at temperatures ranging between room temperature and the reflux temperature of the solvent, with or without the

use of a suitable organic or inorganic base. Suitable bases include but are not limited to NaH, KH, Et_3N, DIEA, K_2CO_4, Na_2CO_3, $NaHCO_3$, tetrabutylammonium carbonate. Examples of suitable leaving groups (**LG**^{1}) in formulae **2** include, but are not limited to: halogen, alkyl sulfonate or haloalkyl sulfonate, alkyl phosphoante, acetate, and substituted acetate.Representative reaction conditions for the alkylation of pyridine precursors analogous to formula 1 are given in Chemische Berichte, 1955 , 88, 1103 and 1107.

In cases where **X** is a sulfur atom, the sulfur atom is best installed in a subsequent step from the compound where **X** is an oxygen atom as detailed in scheme C.

Scheme C.



The transformation is preferably using a reagent of substructure **8** in polar solvents such as acetonitrile, acetone, tetrahydrofuran, N,N-dimethylformamide, or in an inert solvent such as dichloromethane, 1,2-dichloroethane, or 1,2-dimethoxyethane at temperatures ranging between room temperature and the reflux temperature of the solvent. Suitable **R**^{p} groups for **8** are: thio, alkyl, aryl or substituted aryl. Representative reaction conditions for the alkylation of pyridine precursors analogous to formula 1 are given in Tetrahedron,1997, 53, 9, 3223-3230.

If individual compounds cannot be prepared via the above-described routes, they can be prepared by derivatization of other compounds (I) or by customary modifications of the synthesis routes described.

The reaction mixtures are worked up in the customary manner, for example by mixing with water, separating the phases, and, if appropriate, purifying the crude products by chromatography, for example on alumina or silica gel. Some of the intermediates and end products may be obtained in the form of colorless or pale brown viscous oils, which are freed or purified from volatile components under reduced pressure and at moderately elevated temperature. If the intermediates and end products are obtained as solids, they may be purified by recrystallization or digestion.

Pests

The compounds of the formula I, and their salts are in particular suitable for efficiently controlling arthropodal pests such as arachnids, myriapedes and insects as well as nematodes.

The compounds of the formula I are especially suitable for efficiently combating the following pests:

insects from the order of the **lepidopterans** (***Lepidoptera***), for example *Acronicta major, Adoxophyes orana, Aedia leucomelas,* Agrotis spp. such as *Agrotis fucosa, Agrotis segetum, Agrotis ypsilon; Alabama argillacea, Anticarsia gemmatalis, Anticarsia spp., Argyresthia conjugella, Autographa gamma, Barathra brassicae, Bucculatrix thurberiella, Bupalus piniarius, Cacoecia murinana, Cacoecia podana, Capua reticulana, Carpocapsa pomonella, Cheimatobia brumata,* Chilo spp. such as *Chilo suppressalis; Choristoneura fumiferana, Choristoneura occidentalis, Cirphis unipuncta, Clysia ambiguella, Cnaphalocerus spp., Cydia pomonella, Dendrolimus pini, Diaphania nitidalis, Diatraea grandiosella, Earias insulana, Elasmopalpus lignosellus, Ephestia cautella, Ephestia kuehniella, Eupoecilia ambiguella, Euproctis chrysorrhoea, Euxoa spp., Evetria bouliana,* Feltia spp. such as *Feltia subterranean; Galleria mellonella, Grapholitha funebrana, Grapholitha molesta,* Helicoverpa spp. such as *Helicoverpa armigera, Helicoverpa zea;* Heliothis spp. such as *Heliothis armigera, Heliothis virescens, Heliothis zea; Hellula undalis, Hibernia defoliaria, Hofmannophila pseudospretella, Homona magnanima, Hyphantria cunea, Hyponomeuta padella, Hyponomeuta malinellus, Keiferia lycopersicella, Lambdina fiscellaria,* Laphygma spp. such as *Laphygma exigua; Leucoptera coffeella, Leucoptera scitella, Lithocolletis blancardella, Lithophane antennata, Lobesia botrana, Loxagrotis albicosta, Loxostege sticticalis,* Lymantria spp. such as *Lymantria dispar, Lymantria monacha; Lyonetia clerkella, Malacosoma neustria,* Mamestra spp. such as *Mamestra brassicae; Mocis repanda, Mythimna separata, Orgyia pseudotsugata, Oria spp.,* Ostrinia spp. such as *Ostrinia nubilalis; Oulema oryzae, Panolis flammea,* Pectinophora spp. such as *Pectinophora gossypiella; Peridroma saucia, Phalera bucephala,* Phthorimaea spp. such as *Phthorimaea operculella; Phyllocnistis citrella,* Pieris spp. such as *Pieris brassicae, Pieris rapae; Plathypena scabra, Plutella maculipennis, Plutella xylostella, Prodenia spp., Pseudaletia spp., Pseudoplusia includens, Pyrausta nubilalis, Rhyacionia frustrana, Scrobipalpula absoluta, Sitotroga cerealella, Sparganothis pilleriana,* Spodoptera spp. such as *Spodoptera frugiperda, Spodoptera littoralis, Spodoptera litura; Thaumatopoea pityocampa, Thermesia gemmatalis, Tinea pellionella, Tineola bisselliella, Tortrix viridana,* Trichoplusia spp. such as *Trichoplusia ni; Tuta absoluta, and Zeiraphera canadensis,*

beetles (***Coleoptera***), for example *Acanthoscehdes obtectus, Adoretus spp., Agelastica alni, Agrilus sinuatus,* Agriotes spp. such as *Agriotes fuscicollis, Agriotes lineatus, Agriotes obscurus; Amphimallus solstitialis, Anisandrus dispar, Anobium punctatum, Anomala rufocuprea,* Anoplophora spp. such as *Anoplophora glabripennis;* Anthonomus spp. such as *Anthonomus grandis, Anthonomus pomorum; Anthrenus spp., Aphthona euphoridae, Apogonia spp., Athous haemorrhoidalis,* Atomaria spp. such as *Atomaria linearis; Attagenus spp., Aulacophora femoralis, Blastophagus piniperda, Blitophaga undata, Bruchidius obtectus,* Bruchus spp. such as *Bruchus lentis, Bruchus pisorum, Bruchus rufimanus; Byctiscus betulae, Callosobruchus chinensis, Cassida nebulosa, Cerotoma trifurcata, Cetonia aurata,* Ceuthorhynchus spp. such as *Ceuthorrhynchus assimilis, Ceuthorrhynchus napi; Chaetocnema tibialis, Cleonus mendicus,* Conoderus spp. such as *Conoderus vespertinus; Cosmopolites spp., Costelytra zealandica, Crioceris asparagi, Cryptorhynchus lapathi,* Ctenicera ssp. such as *Ctenicera destructor; Curculio spp., Dectes texanus, Dermestes spp.,* Diabrotica spp. such as *Diabrotica 12-punctata Diabrotica speciosa, Diabrotica longicornis, Diabrotica semipunctata, Diabrotica virgifera;* Epilachna spp. such as *Epilachna varivestis, Epilachna vigintioctomaculata;* Epitrix spp. such as *Epitrix hirtipennis; Eutinobothrus brasiliensis, Faustinus cubae, Gibbium psylloides, Heteronychus arator, Hylamorpha elegans, Hylobius abietis, Hylotrupes bajulus, Hypera brunneipennis, Hypera postica, Hypothenemus spp., Ips typographus, Lachnosterna consanguinea, Lema bilineata, Lema melanopus,* Leptinotarsa spp. such as *Leptinotarsa decemlineata; Limonius californicus, Lissorhoptrus oryzophilus, Lissorhoptrus oryzophilus, Lixus spp.,* Lyctus spp. such as *Lyctus bruneus; Melanotus communis,* Meligethes spp. such as *Meligethes aeneus; Melolontha hippocastani, Melolontha melolontha, Migdolus spp.,* Monochamus spp. such as *Monochamus alternatus; Naupactus xanthographus, Niptus hololeucus, Oryctes rhinoceros, Oryzaephilus surinamensis, Otiorrhynchus sulcatus, Otiorrhynchus ovatus, Otiorrhynchus sulcatus, Oulema oryzae, Oxycetonia jucunda, Phaedon cochleariae, Phyllobius pyri, Phyllopertha horticola, Phyllophaga spp.,* Phyllotreta spp. such as *Phyllotreta chrysocephala, Phyllotreta nemorum, Phyllotreta striolata; Phyllophaga spp., Phyllopertha horticola, Popillia japonica, Premnotrypes spp., Psylliodes chrysocephala, Ptinus spp., Rhizobius ventralis , Rhizopertha dominica, Sitona lineatus,* Sitophilus spp. such as *Sitophilus granaria, Sitophilus zeamais;* Sphenophorus spp. such as *Sphenophorus levis;* Sternechus spp. such as *Sternechus subsignatus; Symphyletes spp., Tenebrio molitor,* Tribolium spp. such as *Tribolium castaneum; Trogoderma spp., Tychius spp., Xylotrechus spp., and Zabrus spp. such as Zabrus tenebrioides,*

flies, mosquitoes (***Diptera***), e.g. Aedes spp. such as *Aedes aegypti, Aedes albopictus, Aedes vexans; Anastrepha ludens,* Anopheles spp. such as *Anopheles albimanus, Anopheles crucians, Anopheles freeborni, Anopheles gambiae, Anopheles leucosphyrus, Anopheles maculipennis, Anopheles minimus, Anopheles quadrimaculatus, Anopheles sinensis; Bibio hortulanus, Calliphora erythrocephala, Calliphora vicina, Cerafitis capitata, Ceratitis capitata,* Chrysomyia spp. such as *Chrysomya bezziana, Chrysomya hominivorax, Chrysomya macellaria; Chrysops atlanticus, Chrysops discalis, Chrysops silacea,* Cochliomyia spp. such as *Cochliomyia hominivorax;* Contarinia spp. such as *Contarinia sorghicola; Cordylobia anthropophaga,* Culex spp. such as *Culex nigripalpus, Culex pipiens, Culex quinquefasciatus, Culex tarsalis, Culex tritaeniorhynchus; Culicoides furens, Culiseta inornata, Culiseta melanura, Cuterebra spp., Dacus cucurbitae, Dacus oleae, Dasineura brassicae,* Delia spp. such as *Delia antique, Delia coarctata, Delia platura, Delia radicum; Dermatobia hominis, Drosophila spp.,* Fannia spp. such as *Fannia canicularis;* Gastraphilus spp. such as *Gasterophilus intestinalis; Geomyza Tripunctata, Glossina fuscipes, Glossina morsitans, Glossina palpalis, Glossina tachinoides, Haematobia irritans, Haplodiplosis equestris, Hippelates spp.,* Hylemyia spp. such as *Hylemyia platura;* Hypoderma spp. such as *Hypoderma lineata; Hyppobosca spp., Leptoconops torrens,* Liriomyza spp. such as *Liriomyza sativae, Liriomyza trifolii;* Lucilia spp. such as *Lucilia caprina, Lucilia cuprina, Lucilia sericata; Lycoria pectoralis, Mansonia titillanus,* Mayetiola spp. such as *Mayetiola destructor;* Musca spp. such as *Musca autumnalis, Musca domestica; Muscina stabulans,* Oestrus spp. such as *Oestrus ovis; Opomyza florum,* Oscinella spp. such as *Oscinella frit; Pegomya hysocyami, Phlebotomus argentipes,* Phorbia spp. such as *Phorbia antiqua, Phorbia brassicae, Phorbia coarctata; Prosimulium mixtum, Psila rosae, Psorophora columbiae, Psorophora discolor, Rhagoletis cerasi, Rhagoletis pomonella,* Sarcophaga spp. such as *Sarcophaga haemorrhoidalis; Simulium vittatum,* Stomoxys spp. such as *Stomoxys calcitrans;* Tabanus spp. such as *Tabanus atratus, Tabanus bovinus, Tabanus lineola, Tabanus similis; Tannia spp., Tipula oleracea, Tipula paludosa, and Wohlfahrtia spp.,*

thrips (***Thysanoptera***), e.g. *Baliothrips biformis, Dichromothrips corbetti, Dichromothrips ssp., Enneothrips flavens,* Frankliniella spp. such as *Frankliniella fusca, Frankliniella occidentalis, Frankliniella tritici; Heliothrips spp., Hercinothrips femoralis, Kakothrips spp., Rhipiphorothrips cruentatus,* Scirtothrips spp. such as *Scirtothrips citri; Taeniothrips cardamoni,* Thrips spp. such as *Thrips oryzae, Thrips palmi, Thrips tabaci;*

termites (**Isoptera**), e.g. *Calotermes flavicollis, Coptotermes formosanus, Heterotermes aureus, Heterotermes longiceps, Heterotermes tenuis, Leucotermes flavipes, Odontotermes spp.,* Reticulitermes spp. such as *Reticulitermes speratus, Reticulitermes flavipes, Reticulitermes grassei,*

Reticulitermes lucifugus, Reticulitermes santonensis, Reticulitermes virginicus; Termes natalensis,

cockroaches (**Blattaria - Blattodea**), e.g. *Acheta domesticus, Blatta orientalis, Blattella asahinae, Blattella germanica, Gryllotalpa spp., Leucophaea maderae, Locusta spp., Melanoplus spp., Periplaneta americana, Periplaneta australasiae, Periplaneta brunnea, Periplaneta fuligginosa, Periplaneta japonica,*

bugs, aphids, leafhoppers, whiteflies, scale insects, cicadas (***Hemiptera***), e.g. Acrosternum spp. such as *Acrosternum hilare;* Acyrthosipon spp. such as *Acyrthosiphon onobrychis, Acyrthosiphon pisum; Adelges laricis, Aeneolamia spp., Agonoscena spp., Aleurodes spp., Aleurolobus barodensis, Aleurothrixus spp., Amrasca spp., Anasa tristis, Antestiopsis spp., Anuraphis cardui, Aonidiella spp., Aphanostigma piri, Aphidula nasturtii,* Aphis spp. such as *Aphis fabae, Aphis forbesi, Aphis gossypii, Aphis grossulariae, Aphis pomi, Aphis sambuci, Aphis schneideri, Aphis spiraecola; Arboridia apicalis, Arilus critatus, Aspidiella spp., Aspidiotus spp., Atanus spp., Aulacorthum solani,* Bemisia spp. such as *Bemisia argentifolii, Bemisia tabaci;* Blissus spp. such as *Blissus leucopterus; Brachycaudus cardui, Brachycaudus helichrysi, Brachycaudus persicae, Brachycaudus prunicola, Brachycolus spp., Brevicoryne brassicae, Calligypona marginata, Calocoris spp., Campylomma livida, Capitophorus horni, Carneocephala fulgida, Cavelerius spp., Ceraplastes spp., Ceratovacuna lanigera, Cercopidae, Cerosipha gossypii, Chaetosiphon fragaefolii, Chionaspis tegalensis, Chlorita onukii, Chromaphis juglandicola, Chrysomphalus ficus, Cicadulina mbila,* Cimex spp. such as *Cimex hemipterus, Cimex lectularius; Coccomytilus halli, Coccus spp., Creontiades dilutus, Cryptomyzus ribis, Cryptomyzus ribis, Cyrtopeltis notatus, Dalbulus spp., Dasynus piperis, Dialeurades spp., Diaphorina spp., Diaspis spp., Dichelops furcatus, Diconocoris hewetti, Doralis spp., Dreyfusia nordmannianae, Dreyfusia piceae, Drosicha spp.,* Dysaphis spp. such as *Dysaphis plantaginea, Dysaphis pyri, Dysaphis radicola; Dysaulacorthum pseudosolani,* Dysdercus spp. such as *Dysdercus cingulatus, Dysdercus intermedius; Dysmicoccus spp.,* Empoasca spp. such as *Empoasca fabae, Empoasca solana; Eriosoma spp., Erythroneura spp.,* Eurygaster spp. such as *Eurygaster integriceps; Euscelis bilobatus, Euschistus spp. such as Euschistuos heros, Euschistus impictiventris, Euschistus servus; Geococcus coffeae,* Halyomorpha spp. such as *Halyomorpha halys; Heliopeltis spp., Homalodisca coagulata, Horcias nobilellus, Hyalopterus pruni, Hyperomyzus lactucae, Icerya spp., Idiocerus spp., Idioscopus spp., Laodelphax striatellus, Lecanium spp., Lepidosaphes spp., Leptocorisa spp., Leptoglossus phyllopus, Lipaphis erysimi,* Lygus spp. such as *Lygus hesperus, Lygus lineolaris, Lygus pratensis; Macropes excavatus,* Macrosiphum spp. such as *Macrosiphum rosae, Macrosiphum avenae, Macrosiphum euphorbiae; Mahanarva fimbriolata, Megacopta cri-*

braria, Megoura viciae, Melanaphis pyrarius, Melanaphis sacchari, Metcafiella spp., Metopolophium dirhodum, Miridae spp., Monellia costalis, Monelliopsis pecanis, Myzus spp. such as *Myzus ascalonicus, Myzus cerasi, Myzus persicae, Myzus varians; Nasonovia ribis-nigri,* Nephotettix spp. such as *Nephotettix malayanus, Nephotettix nigropictus, Nephotettix parvus, Nephotettix virescens;* Nezara spp. such as *Nezara viridula; Nilaparvata lugens, Oebalus spp., Oncometopia spp., Orthezia praelonga, Parabemisia myricae, Paratrioza spp., Parlatoria spp.,* Pemphigus spp. such as *Pemphigus bursarius; Pentomidae, Peregrinus maidis, Perkinsiella saccharicida, Phenacoccus spp., Phloeomyzus passerinii, Phorodon humuli, Phylloxera spp., Piesma quadrata,* Piezodorus spp. such as *Piezodorus guildinii, Pinnaspis aspidistrae, Planococcus spp., Protopulvinaria pyriformis, Psallus seriatus, Pseudacysta persea, Pseudaulacaspis pentagona,* Pseudococcus spp. such as *Pseudococcus comstocki;* Psylla spp. such as *Psylla mali, Psylla piri; Pteromalus spp., Pyrilla spp., Quadraspidiotus spp., Quesada gigas, Rastrococcus spp., Reduvius senilis, Rhodnius spp., Rhopalomyzus ascalonicus,* Rhopalosiphum spp. such as *Rhopalosiphum pseudobrassicas, Rhopalosiphum insertum, Rhopalosiphum maidis, Rhopalosiphum padi; Sagatodes spp., Sahlbergella singularis, Saissetia spp., Sappaphis mala, Sappaphis mali, Scaphoides titanus, Schizaphis graminum, Schizoneura lanuginosa, Scotinophora spp., Selenaspidus articulatus, Sitobion avenae, Sogata spp., Sogatella furcifera, Solubea insularis , Stephanitis nashi, Stictocephala festina, Tenalaphara malayensis,* Thyanta spp. such as *Thyanta perditor; Tibraca spp., Tinocallis caryaefoliae, Tomaspis spp.,* Toxoptera spp. such as *Toxoptera aurantii;* Trialeurodes spp. such as *Trialeurodes vaporariorum; Triatoma spp., Trioza spp., Typhlocyba spp.,* Unaspis spp. such as *Unaspis yanonensis; and Viteus vitifolii,*

ants, bees, wasps, sawflies (**Hymenoptera**), e.g. *Athalia rosae, Atta capiguara, Atta cephalotes, Atta cephalotes, Atta laevigata, Atta robusta, Atta sexdens, Atta texana, Bombus spp., Camponotus floridanus, Crematogaster spp., Dasymutilla occidentalis, Diprion spp., Dolichovespula maculata,* Hoplocampa spp. such as *Hoplocampa minuta, Hoplocampa testudinea;* Lasius spp. such as *Lasius niger, Linepithema humile, Monomorium pharaonis, Paravespula germanica, Paravespula pennsylvanica, Paravespula vulgaris, Pheidole megacephala, Pogonomyrmex barbatus, Pogonomyrmex californicus, Polistes rubiginosa, Solenopsis geminata, Solenopsis invicta, Solenopsis richteri, Solenopsis xyloni,* Vespa spp. such as *Vespa crabro, and Vespula squamosa,*

crickets, grasshoppers, locusts (**Orthoptera**), e.g. *Acheta domestica, Calliptamus italicus, Chortoicetes terminifera, Dociostaurus maroccanus, Gryllotalpa africana, Gryllotalpa gryllotalpa, Hieroglyphus daganensis, Kraussaria angulifera, Locusta migratoria, Locustana pardalina, Melanoplus bivittatus, Melanoplus femurrubrum, Melanoplus mexicanus, Melanoplus sanguinipes,*

Melanoplus spretus, Nomadacris septemfasciata, Oedaleus senegalensis, Schistocerca americana, Schistocerca gregaria, Tachycines asynamorus, and Zonozerus variegatus,

arachnids (***Arachnida***), such as acari,e.g. of the families Argasidae, Ixodidae and Sarcoptidae, such as Amblyomma spp. (e.g. *Amblyomma americanum, Amblyomma variegatum, Amblyomma maculatum*), Argas spp. (e.g. *Argas persicus*), Boophilus spp. (e.g. *Boophilus annulatus, Boophilus decoloratus, Boophilus microplus*), *Dermacentor silvarum, Dermacentor andersoni, Dermacentor variabilis,* Hyalomma spp. (e.g. *Hyalomma truncatum*), Ixodes spp. (e.g. *Ixodes ricinus, Ixodes rubicundus, Ixodes scapularis, Ixodes holocyclus, Ixodes pacificus*), Ornithodorus spp. (e.g. *Ornithodorus moubata, Ornithodorus hermsi, Ornithodorus turicata*), *Ornithonyssus bacoti, Otobius megnini, Dermanyssus gallinae,* Psoroptes spp. (e.g. *Psoroptes ovis*), Rhipicephalus spp. (e.g. *Rhipicephalus sanguineus, Rhipicephalus appendiculatus, Rhipicephalus evertsi), Rhizoglyphus spp.,* Sarcoptes spp. (e.g. *Sarcoptes scabiei*), and **Eriophyidae** spp. such as *Acaria sheldoni*, Aculops spp. (e.g. *Aculops pelekassi*) Aculus spp. (e.g. *Aculus schlechtendali*), *Epitrimerus pyri, Phyllocoptruta oleivora* and Eriophyes spp. (e.g. *Eriophyes sheldoni*); Tarsonemidae spp. such as *Hemitarsonemus spp.*, *Phytonemus pallidus and Polyphagotarsonemus latus, Stenotarsonemus spp.*; Tenuipalpidae spp. such as Brevipalpus spp. (e.g. *Brevipalpus phoenicis*); Tetranychidae spp. such as *Eotetranychus spp.*, *Eutetranychus spp.*, *Oligonychus spp., Tetranychus cinnabarinus, Tetranychus kanzawai, Tetranychus pacificus, Tetranychus telarius* and *Tetranychus* urticae; *Bryobia praetiosa*, Panonychus spp. (e.g. *Panonychus ulmi*, *Panonychus citri*), *Metatetranychus spp.* and Oligonychus spp. (e.g. *Oligonychus pratensis*), *Vasates lycopersici*; Araneida, e.g. *Latrodectus mactans*, and *Loxosceles reclusa*. And *Acarus siro, Chorioptes spp.*, *Scorpio maurus*

fleas (***Siphonaptera***), e.g. *Ceratophyllus spp., Ctenocephalides felis*, *Ctenocephalides canis, Xenopsylla cheopis*, *Pulex irritans*, *Tunga penetrans*, and *Nosopsyllus fasciatus,*

silverfish, firebrat (***Thysanura***), e.g. *Lepisma saccharina* and *Thermobia domestica,*

centipedes (***Chilopoda***), e.g. *Geophilus spp.,* Scutigera spp. such as *Scutigera coleoptrata*;

millipedes (***Diplopoda***), e.g. *Blaniulus guttulatus*, *Narceus spp.*,

Earwigs (***Dermaptera***), e.g. *forficula auricularia*,

lice (***Phthiraptera***), e.g. *Damalinia spp.*, Pediculus spp. such as *Pediculus humanus capitis, Pediculus humanus corporis; Pthirus pubis*, Haematopinus spp. such as *Haematopinus eurysternus*, *Haematopinus suis*; Linognathus spp. such as *Linognathus vituli; Bovicola bovis, Menopon gallinae, Menacanthus stramineus* and *Solenopotes capillatus, Trichodectes spp.,*

springtails (*Collembola*), *e.g.* Onychiurus ssp. such as *Onychiurus armatus,*

They are also suitable for controlling **nematodes**: plant parasitic nematodes such as root knot nematodes, *Meloidogyne hapla, Meloidogyne incognita, Meloidogyne javanica*, and other Meloidogyne species; cyst-forming nematodes, *Globodera rostochiensis* and other Globodera species; *Heterodera avenae, Heterodera glycines, Heterodera schachtii, Heterodera trifolii*, and other Heterodera species; Seed gall nematodes, Anguina species; Stem and foliar nematodes, Aphelenchoides species such as *Aphelenchoides besseyi* ; Sting nematodes, *Belonolaimus longicaudatus* and other Belonolaimus species; Pine nematodes, *Bursaphelenchus lignicolus Mamiya et Kiyohara, Bursaphelenchus xylophilus* and other Bursaphelenchus species; Ring nematodes, Criconema species, Criconemella species, Criconemoides species, Mesocriconema species; Stem and bulb nematodes, *Ditylenchus destructor, Ditylenchus dipsaci* and other Ditylenchus species; Awl nematodes, Dolichodorus species; Spiral nematodes, *Heliocotylenchus multicinctus* and other Helicotylenchus species; Sheath and sheathoid nematodes, Hemicycliophora species and Hemicriconemoides species; Hirshmanniella species; Lance nematodes, Hoploaimus species; false rootknot nematodes, Nacobbus species; Needle nematodes, *Longidorus elongatus* and other Longidorus species; Lesion nematodes, *Pratylenchus brachyurus, Pratylenchus neglectus, Pratylenchus penetrans, Pratylenchus curvitatus, Pratylenchus goodeyi* and other Pratylenchus species; Burrowing nematodes, *Radopholus similis* and other Radopholus species; Reniform nematodes, *Rotylenchus robustus, Rotylenchus reniformis* and other Rotylenchus species; Scutellonema species; Stubby root nematodes, *Trichodorus primitivus* and other Trichodorus species, Paratrichodorus species; Stunt nematodes, *Tylenchorhynchus claytoni*, *Tylenchorhynchus dubius* and other Tylenchorhynchus species; Citrus nematodes, Tylenchulus species such as T*ylenchulus semipenetrans*; Dagger nematodes, Xiphinema species; and other plant parasitic nematode species.

Examples of further pest species which may be controlled by compounds of fomula (I) include: from the class of the *Bivalva*, for example, *Dreissena spp.*; from the class of the *Gastropoda,* for example, *Arion spp., Biomphalaria spp., Bulinus spp., Deroceras spp., Galba spp., Lymnaea spp., Oncomelania spp., Succinea spp.;* from the class of the *helminths,* for example, *Ancylostoma duodenale, Ancylostoma ceylanicum, Acylostoma braziliensis, Ancylostoma spp., Asca-*

ris lubricoides, Ascaris spp., Brugia malayi, Brugia timori, Bunostomum spp., Chabertia spp., Clonorchis spp., Cooperia spp., Dicrocoelium spp., Dictyocaulus filaria, Diphyllobothrium latum, Dracunculus medinensis, Echinococcus granulosus, Echinococcus multilocularis, Enterobius vermicularis, Faciola spp., Haemonchus spp. such as *Haemonchus contortus; Heterakis spp., Hymenolepis nana, Hyostrongulus spp., Loa Loa, Nematodirus spp., Oesophagostomum spp., Opisthorchis spp., Onchocerca volvulus, Ostertagia spp., Paragonimus spp., Schistosomen spp., Strongyloides fuelleborni, Strongyloides stercora lis, Stronyloides spp., Taenia saginata, Taenia solium, Trichinella spiralis, Trichinella nativa, Trichinella britovi, Trichinella nelsoni, Trichinella pseudopsiralis, Trichostrongulus spp., Trichuris trichuria, Wuchereria bancrofti;* from the order of the *Isopoda,* for example, *Armadillidium vulgare, Oniscus asellus, Porcellio scaber;* from the order of the *Symphyla,* for example, *Scutigerella immaculata.*

Further examples of pest species which may be controlled by compounds of formula (I) include: *Anisoplia austriaca, Apamea spp., Austroasca viridigrisea, Baliothrips biformis, Caenorhabditis elegans, Cephus spp., Ceutorhynchus napi, Chaetocnema aridula, Chilo auricilius, Chilo indicus , Chilo polychrysus, Chortiocetes terminifera, Cnaphalocroci medinalis, Cnaphalocrosis spp., Colias eurytheme, Collops spp., Cornitermes cumulans, Creontiades spp., Cyclocephala spp., Dalbulus maidis, Deraceras reticulatum , Diatrea saccharalis, Dichelops furcatus, Dicladispa armigera ,* Diloboderus spp. such as *Diloboderus abderus; Edessa spp., Epinotia spp., Formicidae, Geocoris spp., Globitermes sulfureus, Gryllotalpidae, Halotydeus destructor, Hipnodes bicolor, Hydrellia philippina, Julus spp., Laodelphax spp., Leptocorsia acuta , Leptocorsia oratorius , Liogenys fuscus, Lucillia spp., Lyogenys fuscus, Mahanarva spp., Maladera matrida, Marasmia spp., Mastotermes spp., Mealybugs, Megascelis ssp, Metamasius hemipterus, Microtheca spp., Mocis latipes, Murgantia spp., Mythemina separata , Neocapritermes opacus, Neocapritermes parvus, Neomegalotomus spp., Neotermes spp., Nymphula depunctalis, Oebalus pugnax,* Orseolia spp. such as *Orseolia oryzae; Oxycaraenus hyalinipennis, Plusia spp., Pomacea canaliculata, Procornitermes ssp, Procornitermes triacifer , Psylloides spp., Rachiplusia spp., Rhodopholus spp., Scaptocoris castanea, Scaptocoris spp.,* Scirpophaga spp. such as *Scirpophaga incertulas , Scirpophaga innotata;* Scotinophara spp. such as *Scotinophara coarctata;* Sesamia spp. such as *Sesamia inferens, Sogaella frucifera, Solenapsis geminata, Spissistilus spp., Stalk borer, Stenchaetothrips biformis, Steneotarsonemus spinki, Sylepta derogata, Telehin licus, Trichostrongylus spp..*

Formulations

The invention also relates to agrochemical compositions comprising an auxiliary and at least

one compound I according to the invention.

An agrochemical composition comprises a pesticidally effective amount of a compound I. The term "effective amount" denotes an amount of the composition or of the compounds I, which is sufficient for controlling harmful pests on cultivated plants, plant propagation material or crops or in the protection of materials and which does not result in a substantial damage to the treated plants. Such an amount can vary in a broad range and is dependent on various factors, such as the pest species to be controlled, the treated cultivated plant or material, the climatic conditions and the specific compound I used.

The compounds I, their N-oxides and salts can be converted into customary types of agrochemical compositions, e. g. solutions, emulsions, suspensions, dusts, powders, pastes, granules, pressings, capsules, and mixtures thereof. Examples for composition types are suspensions (e.g. SC, OD, FS), emulsifiable concentrates (e.g. EC), emulsions (e.g. EW, EO, ES, ME), capsules (e.g. CS, ZC), pastes, pastilles, wettable powders or dusts (e.g. WP, SP, WS, DP, DS), pressings (e.g. BR, TB, DT), granules (e.g. WG, SG, GR, FG, GG, MG), insecticidal articles (e.g. LN), as well as gel formulations for the treatment of plant propagation materials such as seeds (e.g. GF). These and further compositions types are defined in the " Catalogue of pesticide formulation types and international coding system" , Technical Monograph No. 2, 6th Ed. May 2008, CropLife International.

The compositions are prepared in a known manner, such as described by Mollet and Grubemann, Formulation technology, Wiley VCH, Weinheim, 2001; or Knowles, New developments in crop protection product formulation, Agrow Reports DS243, T&F Informa, London, 2005.

Examples for suitable auxiliaries are solvents, liquid carriers, solid carriers or fillers, surfactants, dispersants, emulsifiers, wetters, adjuvants, solubilizers, penetration enhancers, protective colloids, adhesion agents, thickeners, humectants, repellents, attractants, feeding stimulants, compatibilizers, bactericides, anti-freezing agents, anti-foaming agents, colorants, tackifiers and binders.

Suitable solvents and liquid carriers are water and organic solvents, such as mineral oil fractions of medium to high boiling point, e.g. kerosene, diesel oil; oils of vegetable or animal origin; aliphatic, cyclic and aromatic hydrocarbons, e. g. toluene, paraffin, tetrahydronaphthalene, alkylated naphthalenes; alcohols, e.g. ethanol, propanol, butanol, benzylalcohol, cyclohexanol; glycols; DMSO; ketones, e.g. cyclohexanone; esters, e.g. lactates, carbonates, fatty acid esters,

gamma-butyrolactone; fatty acids; phosphonates; amines; amides, e.g. N-methylpyrrolidone, fatty acid dimethylamides; and mixtures thereof.

Suitable solid carriers or fillers are mineral earths, e.g. silicates, silica gels, talc, kaolins, limestone, lime, chalk, clays, dolomite, diatomaceous earth, bentonite, calcium sulfate, magnesium sulfate, magnesium oxide; polysaccharide powders, e.g. cellulose, starch; fertilizers, e.g. ammonium sulfate, ammonium phosphate, ammonium nitrate, ureas; products of vegetable origin, e.g. cereal meal, tree bark meal, wood meal, nutshell meal, and mixtures thereof.

Suitable surfactants are surface-active compounds, such as anionic, cationic, nonionic and amphoteric surfactants, block polymers, polyelectrolytes, and mixtures thereof. Such surfactants can be used as emusifier, dispersant, solubilizer, wetter, penetration enhancer, protective colloid, or adjuvant. Examples of surfactants are listed in McCutcheon' s, Vol.1: Emulsifiers & Detergents, McCutcheon' s Directories, Glen Rock, USA, 2008 (International Ed. or North American Ed.).

Suitable anionic surfactants are alkali, alkaline earth or ammonium salts of sulfonates, sulfates, phosphates, carboxylates, and mixtures thereof. Examples of sulfonates are alkylarylsulfonates, diphenylsulfonates, alpha-olefin sulfonates, lignine sulfonates, sulfonates of fatty acids and oils, sulfonates of ethoxylated alkylphenols, sulfonates of alkoxylated arylphenols, sulfonates of condensed naphthalenes, sulfonates of dodecyl- and tridecylbenzenes, sulfonates of naphthalenes and alkylnaphthalenes, sulfosuccinates or sulfosuccinamates. Examples of sulfates are sulfates of fatty acids and oils, of ethoxylated alkylphenols, of alcohols, of ethoxylated alcohols, or of fatty acid esters. Examples of phosphates are phosphate esters. Examples of carboxylates are alkyl carboxylates, and carboxylated alcohol or alkylphenol ethoxylates.

Suitable nonionic surfactants are alkoxylates, N-subsituted fatty acid amides, amine oxides, esters, sugar-based surfactants, polymeric surfactants, and mixtures thereof. Examples of alkoxylates are compounds such as alcohols, alkylphenols, amines, amides, arylphenols, fatty acids or fatty acid esters which have been alkoxylated with 1 to 50 equivalents. Ethylene oxide and/or propylene oxide may be employed for the alkoxylation, preferably ethylene oxide. Examples of N-subsititued fatty acid amides are fatty acid glucamides or fatty acid alkanolamides. Examples of esters are fatty acid esters, glycerol esters or monoglycerides. Examples of sugar-based surfactants are sorbitans, ethoxylated sorbitans, sucrose and glucose esters or alkylpolyglucosides. Examples of polymeric surfactants are home- or copolymers of vinylpyrrolidone, vinylalcohols, or vinylacetate.

Suitable cationic surfactants are quaternary surfactants, for example quaternary ammonium compounds with one or two hydrophobic groups, or salts of long-chain primary amines. Suitable amphoteric surfactants are alkylbetains and imidazolines. Suitable block polymers are block polymers of the A-B or A-B-A type comprising blocks of polyethylene oxide and polypropylene oxide, or of the A-B-C type comprising alkanol, polyethylene oxide and polypropylene oxide. Suitable polyelectrolytes are polyacids or polybases. Examples of polyacids are alkali salts of polyacrylic acid or polyacid comb polymers. Examples of polybases are polyvinylamines or polyethyleneamines.

Suitable adjuvants are compounds, which have a neglectable or even no pesticidal activity themselves, and which improve the biological performance of the compound I on the target. Examples are surfactants, mineral or vegetable oils, and other auxilaries. Further examples are listed by Knowles, Adjuvants and additives, Agrow Reports DS256, T&F Informa UK, 2006, chapter 5.

Suitable thickeners are polysaccharides (e.g. xanthan gum, carboxymethylcellulose), anorganic clays (organically modified or unmodified), polycarboxylates, and silicates.

Suitable bactericides are bronopol and isothiazolinone derivatives such as alkylisothiazolinones and benzisothiazolinones.

Suitable anti-freezing agents are ethylene glycol, propylene glycol, urea and glycerin.

Suitable anti-foaming agents are silicones, long chain alcohols, and salts of fatty acids.

Suitable colorants (e.g. in red, blue, or green) are pigments of low water solubility and water-soluble dyes. Examples are inorganic colorants (e.g. iron oxide, titan oxide, iron hexacyanoferrate) and organic colorants (e.g. alizarin-, azo- and phthalocyanine colorants).

Suitable tackifiers or binders are polyvinylpyrrolidons, polyvinylacetates, polyvinyl alcohols, polyacrylates, biological or synthetic waxes, and cellulose ethers.

Examples for composition types and their preparation are:

i) Water-soluble concentrates (SL, LS)

10-60 wt% of a compound I according to the invention and 5-15 wt% wetting agent (e.g. alcohol alkoxylates) are dissolved in water and/or in a water-soluble solvent (e.g. alcohols) up to 100 wt%. The active substance dissolves upon dilution with water.

ii) Dispersible concentrates (DC)
5-25 wt% of a compound I according to the invention and 1-10 wt% dispersant (e. g. polyvinylpyrrolidone) are dissolved in up to 100 wt% organic solvent (e.g. cyclohexanone). Dilution with water gives a dispersion.

iii) Emulsifiable concentrates (EC)
15-70 wt% of a compound I according to the invention and 5-10 wt% emulsifiers (e.g. calcium dodecylbenzenesulfonate and castor oil ethoxylate) are dissolved in up to 100 wt% water-insoluble organic solvent (e.g. aromatic hydrocarbon). Dilution with water gives an emulsion.

iv) Emulsions (EW, EO, ES)
5-40 wt% of a compound I according to the invention and 1-10 wt% emulsifiers (e.g. calcium dodecylbenzenesulfonate and castor oil ethoxylate) are dissolved in 20-40 wt% water-insoluble organic solvent (e.g. aromatic hydrocarbon). This mixture is introduced into up to 100 wt% water by means of an emulsifying machine and made into a homogeneous emulsion. Dilution with water gives an emulsion.

v) Suspensions (SC, OD, FS)
In an agitated ball mill, 20-60 wt% of a compound I according to the invention are comminuted with addition of 2-10 wt% dispersants and wetting agents (e.g. sodium lignosulfonate and alcohol ethoxylate), 0,1-2 wt% thickener (e.g. xanthan gum) and up to 100 wt% water to give a fine active substance suspension. Dilution with water gives a stable suspension of the active substance. For FS type composition up to 40 wt% binder (e.g. polyvinylalcohol) is added.

vi) Water-dispersible granules and water-soluble granules (WG, SG)
50-80 wt% of a compound I according to the invention are ground finely with addition of up to 100 wt% dispersants and wetting agents (e.g. sodium lignosulfonate and alcohol ethoxylate) and prepared as water-dispersible or water-soluble granules by means of technical appliances (e. g. extrusion, spray tower, fluidized bed). Dilution with water gives a stable dispersion or solution of the active substance.

vii) Water-dispersible powders and water-soluble powders (WP, SP, WS)

50-80 wt% of a compound I according to the invention are ground in a rotor-stator mill with addition of 1-5 wt% dispersants (e.g. sodium lignosulfonate), 1-3 wt% wetting agents (e.g. alcohol ethoxylate) and up to 100 wt% solid carrier, e.g. silica gel. Dilution with water gives a stable dispersion or solution of the active substance.

viii) Gel (GW, GF)

In an agitated ball mill, 5-25 wt% of a compound I according to the invention are comminuted with addition of 3-10 wt% dispersants (e.g. sodium lignosulfonate), 1-5 wt% thickener (e.g. carboxymethylcellulose) and up to 100 wt% water to give a fine suspension of the active substance. Dilution with water gives a stable suspension of the active substance.

ix) Microemulsion (ME)

5-20 wt% of a compound I according to the invention are added to 5-30 wt% organic solvent blend (e.g. fatty acid dimethylamide and cyclohexanone), 10-25 wt% surfactant blend (e.g. alkohol ethoxylate and arylphenol ethoxylate), and water up to 100 %. This mixture is stirred for 1 h to produce spontaneously a thermodynamically stable microemulsion.

x) Microcapsules (CS)

An oil phase comprising 5-50 wt% of a compound I according to the invention, 0-40 wt% water insoluble organic solvent (e.g. aromatic hydrocarbon), 2-15 wt% acrylic monomers (e.g. methylmethacrylate, methacrylic acid and a di- or triacrylate) are dispersed into an aqueous solution of a protective colloid (e.g. polyvinyl alcohol). Radical polymerization initiated by a radical initiator results in the formation of poly(meth)acrylate microcapsules. Alternatively, an oil phase comprising 5-50 wt% of a compound I according to the invention, 0-40 wt% water insoluble organic solvent (e.g. aromatic hydrocarbon), and an isocyanate monomer (e.g. diphenylmethene-4,4' -diisocyanatae) are dispersed into an aqueous solution of a protective colloid (e.g. polyvinyl alcohol). The addition of a polyamine (e.g. hexamethylenediamine) results in the formation of a polyurea microcapsules. The monomers amount to 1-10 wt%. The wt% relate to the total CS composition.

xi) Dustable powders (DP, DS)

1-10 wt% of a compound I according to the invention are ground finely and mixed intimately with up to 100 wt% solid carrier, e.g. finely divided kaolin.

xii) Granules (GR, FG)

0.5-30 wt% of a compound I according to the invention is ground finely and associated with up

to 100 wt% solid carrier (e.g. silicate). Granulation is achieved by extrusion, spray-drying or the fluidized bed.

xiii) Ultra-low volume liquids (UL)
1-50 wt% of a compound I according to the invention are dissolved in up to 100 wt% organic solvent, e.g. aromatic hydrocarbon.

The compositions types i) to xi) may optionally comprise further auxiliaries, such as 0,1-1 wt% bactericides, 5-15 wt% anti-freezing agents, 0,1-1 wt% anti-foaming agents, and 0,1-1 wt% colorants.

The agrochemical compositions generally comprise between 0.01 and 95%, preferably between 0.1 and 90%, and most preferably between 0.5 and 75%, by weight of active substance. The active substances are employed in a purity of from 90% to 100%, preferably from 95% to 100% (according to NMR spectrum).

Water-soluble concentrates (LS), Suspoemulsions (SE), flowable concentrates (FS), powders for dry treatment (DS), water-dispersible powders for slurry treatment (WS), water-soluble powders (SS), emulsions (ES), emulsifiable concentrates (EC) and gels (GF) are usually employed for the purposes of treatment of plant propagation materials, particularly seeds. The compositions in question give, after two-to-tenfold dilution, active substance concentrations of from 0.01 to 60% by weight, preferably from 0.1 to 40% by weight, in the ready-to-use preparations. Application can be carried out before or during sowing. Methods for applying or treating compound I and compositions thereof, respectively, on to plant propagation material, especially seeds include dressing, coating, pelleting, dusting, soaking and in-furrow application methods of the propagation material. Preferably, compound I or the compositions thereof, respectively, are applied on to the plant propagation material by a method such that germination is not induced, e. g. by seed dressing, pelleting, coating and dusting.

When employed in plant protection, the amounts of active substances applied are, depending on the kind of effect desired, from 0.001 to 2 kg per ha, preferably from 0.005 to 2 kg per ha, more preferably from 0.05 to 0.9 kg per ha, in particular from 0.1 to 0.75 kg per ha.
In treatment of plant propagation materials such as seeds, e. g. by dusting, coating or drenching seed, amounts of active substance of from 0.1 to 1000 g, preferably from 1 to 1000 g, more preferably from 1 to 100 g and most preferably from 5 to 100 g, per 100 kilogram of plant propagation material (preferably seed) are generally required.

When used in the protection of materials or stored products, the amount of active substance applied depends on the kind of application area and on the desired effect. Amounts customarily applied in the protection of materials are 0.001 g to 2 kg, preferably 0.005 g to 1 kg, of active substance per cubic meter of treated material.

Various types of oils, wetters, adjuvants, fertilizer, or micronutrients, and other pesticides (e.g. herbicides, insecticides, fungicides, growth regulators, safeners) may be added to the active substances or the compositions comprising them as premix or, if appropriate not until immediately prior to use (tank mix). These agents can be admixed with the compositions according to the invention in a weight ratio of 1:100 to 100:1, preferably 1:10 to 10:1.

The user applies the composition according to the invention usually from a predosage device, a knapsack sprayer, a spray tank, a spray plane, or an irrigation system. Usually, the agrochemical composition is made up with water, buffer, and/or further auxiliaries to the desired application concentration and the ready-to-use spray liquor or the agrochemical composition according to the invention is thus obtained. Usually, 20 to 2000 liters, preferably 50 to 400 liters, of the ready-to-use spray liquor are applied per hectare of agricultural useful area.

According to one embodiment, individual components of the composition according to the invention such as parts of a kit or parts of a binary or ternary mixture may be mixed by the user himself in a spray tank and further auxiliaries may be added, if appropriate.

In a further embodiment, either individual components of the composition according to the invention or partially premixed components, e. g. components comprising compounds I and/or active substances from the groups described herein further below, may be mixed by the user in a spray tank and further auxiliaries and additives may be added, if appropriate.

In a further embodiment, either individual components of the composition according to the invention or partially premixed components, e. g. components comprising compounds I and/or active substances from the groups described herein further below, can be applied jointly (e.g. after tank mix) or consecutively.

As mentioned above, in the method of this invention compounds I may be applied with other active ingredients, for example as mixtures with other pesticides, insecticides, herbicides, fertilizers such as ammonium nitrate, urea, potash, and superphosphate, phytotoxicants and plant growth regulators, safeners and nematicides.

Mixtures

The following list M of pesticides, grouped and numbered according the Mode of Action Classification of the Insecticide Resistance Action Committee (IRAC), together with which the compounds according to the invention can be used and with which potential synergistic effects might be produced, is intended to illustrate the possible combinations, but not to impose any limitation:

M.1 Acetylcholine esterase (AChE) inhibitors from the class of
M.1A carbamates, for example aldicarb, alanycarb, bendiocarb, benfuracarb, butocarboxim, butoxycarboxim, carbaryl, carbofuran, carbosulfan, ethiofencarb, fenobucarb, formetanate, furathiocarb, isoprocarb, methiocarb, methomyl, metolcarb, oxamyl, pirimicarb, propoxur, thiodicarb, thiofanox, trimethacarb, XMC, xylylcarb and triazamate; or from the class of
M.1B organophosphates, for example acephate, azamethiphos, azinphos-ethyl, azinphosmethyl, cadusafos, chlorethoxyfos, chlorfenvinphos, chlormephos, chlorpyrifos, chlorpyrifos-methyl, coumaphos, cyanophos, demeton-S-methyl, diazinon, dichlorvos/ DDVP, dicrotophos, dimethoate, dimethylvinphos, disulfoton, EPN, ethion, ethoprophos, famphur, fenamiphos, fenitrothion, fenthion, fosthiazate, heptenophos, imicyafos, isofenphos, isopropyl O- (methoxyaminothiophosphoryl) salicylate, isoxathion, malathion, mecarbam, methamidophos, methidathion, mevinphos, monocrotophos, naled, omethoate, oxydemeton-methyl, parathion, parathion-methyl, phenthoate, phorate, phosalone, phosmet, phosphamidon, phoxim, pirimiphos- methyl, profenofos, propetamphos, prothiofos, pyraclofos, pyridaphenthion, quinalphos, sulfotep, tebupirimfos, temephos, terbufos, tetrachlorvinphos, thiometon, triazophos, trichlorfon and vamidothion;

M.2. GABA-gated chloride channel antagonists such as:
M.2A cyclodiene organochlorine compounds, as for example endosulfan or chlordane; or
M.2B fiproles (phenylpyrazoles), as for example ethiprole, fipronil, flufiprole, pyrafluprole and pyriprole;

M.3 Sodium channel modulators from the class of
M.3A pyrethroids, for example acrinathrin, allethrin, d-cis-trans allethrin, d-trans allethrin, bifenthrin, bioallethrin, bioallethrin S-cylclopentenyl, bioresmethrin, cycloprothrin, cyfluthrin, beta-cyfluthrin, cyhalothrin, lambda-cyhalothrin, gamma-cyhalothrin, cypermethrin, alpha-cypermethrin, beta-cypermethrin, theta-cypermethrin, zeta-cypermethrin, cyphenothrin, del-

tamethrin, empenthrin, esfenvalerate, etofenprox, fenpropathrin, fenvalerate, flucythrinate, flumethrin, tau-fluvalinate, halfenprox, imiprothrin, meperfluthrin,metofluthrin, momfluorothrin, permethrin, phenothrin, prallethrin, profluthrin, pyrethrin (pyrethrum), resmethrin, silafluofen, tefluthrin, tetramethylfluthrin, tetramethrin, tralomethrin and transfluthrin; or

M.3B sodium channel modulators such as DDT or methoxychlor;

M.4 Nicotinic acetylcholine receptor agonists (nAChR) from the class of

M.4A neonicotinoids, for example acteamiprid, chlothianidin, dinotefuran, imidacloprid, nitenpyram, thiacloprid and thiamethoxam; or the compounds

M.4A.1: 1-[(6-chloro-3-pyridinyl)methyl]-2,3,5,6,7,8-hexahydro-9-nitro-(5S,8R)-5,8-Epoxy-1H-imidazo[1,2-a]azepine; or

M.4A.2: 1-[(6-chloro-3-pyridyl)methyl]-2-nitro-1-[(E)-pentylideneamino]guanidine; or

M4.A.3: 1-[(6-chloro-3-pyridyl)methyl]-7-methyl-8-nitro-5-propoxy-3,5,6,7-tetrahydro-2H-imidazo[1,2-a]pyridine;

or M.4B nicotine.

M.5 Nicotinic acetylcholine receptor allosteric activators from the class of spinosyns, for example spinosad or spinetoram;

M.6 Chloride channel activators from the class of avermectins and milbemycins, for example abamectin, emamectin benzoate, ivermectin, lepimectin or milbemectin;

M.7 Juvenile hormone mimics, such as

M.7A juvenile hormone analogues as hydroprene, kinoprene and methoprene; or others as

M.7B fenoxycarb or M.7C pyriproxyfen;

M.8 miscellaneous non-specific (multi-site) inhibitors, for example

M.8A alkyl halides as methyl bromide and other alkyl halides, or

M.8B chloropicrin, or M.8C sulfuryl fluoride, or M.8D borax, or M.8E tartar emetic;

M.9 Selective homopteran feeding blockers, for example

M.9B pymetrozine, or M.9C flonicamid;

M.10 Mite growth inhibitors, for example

M.10A clofentezine, hexythiazox and diflovidazin, or M.10B etoxazole;

M.11 Microbial disruptors of insect midgut membranes, for example *bacillus thuringiensis* or *bacillus sphaericus* and the insecticdal proteins they produce such as *bacillus thuringiensis subsp. israelensis*, *bacillus sphaericus*, *bacillus thuringiensis subsp. aizawai*, *bacillus thuringiensis subsp. kurstaki* and *bacillus thuringiensis subsp. tenebrionis*, or the Bt crop proteins: Cry1Ab, Cry1Ac, Cry1Fa, Cry2Ab, mCry3A, Cry3Ab, Cry3Bb and Cry34/35Ab1;

M.12 Inhibitors of mitochondrial ATP synthase, for example
M.12A diafenthiuron, or
M.12B organotin miticides such as azocyclotin, cyhexatin or fenbutatin oxide, or M.12C propargite, or M.12D tetradifon;

M.13 Uncouplers of oxidative phosphorylation via disruption of the proton gradient, for example chlorfenapyr, DNOC or sulfluramid;

M.14 Nicotinic acetylcholine receptor (nAChR) channel blockers, for example nereistoxin analogues as bensultap, cartap hydrochloride, thiocyclam or thiosultap sodium;

M.15 Inhibitors of the chitin biosynthesis type 0, such as benzoylureas as for example bistrifluron, chlorfluazuron, diflubenzuron, flucycloxuron, flufenoxuron, hexaflumuron, lufenuron, novaluron, noviflumuron, teflubenzuron or triflumuron;

M.16 Inhibitors of the chitin biosynthesis type 1, as for example buprofezin;

M.17 Moulting disruptors, Dipteran, as for example cyromazine;

M.18 Ecdyson receptor agonists such as diacylhydrazines, for example methoxyfenozide, tebufenozide, halofenozide, fufenozide or chromafenozide;

M.19 Octopamin receptor agonists, as for example amitraz;

M.20 Mitochondrial complex III electron transport inhibitors, for example
M.20A hydramethylnon, or M.20B acequinocyl, or M.20C fluacrypyrim;

M.21 Mitochondrial complex I electron transport inhibitors, for example
M.21A METI acaricides and insecticides such as fenazaquin, fenpyroximate, pyrimidifen, pyridaben, tebufenpyrad or tolfenpyrad, or M.21B rotenone;

M.22 Voltage-dependent sodium channel blockers, for example
M.22A indoxacarb, or M.22B metaflumizone, or M.22C 1-[(E)-[2-(4-cyanophenyl)-1-[3-(trifluoromethyl)phenyl]ethylidene]amino]-3-[4-(difluoromethoxy)phenyl]urea;

M.23 Inhibitors of the of acetyl CoA carboxylase, such as Tetronic and Tetramic acid derivatives, for example spirodiclofen, spiromesifen or spirotetramat;

M.24 Mitochondrial complex IV electron transport inhibitors, for example
M.24A phosphine such as aluminium phosphide, calcium phosphide, phosphine or zinc phosphide, or M.24B cyanide.

M.25 Mitochondrial complex II electron transport inhibitors, such as beta-ketonitrile derivatives, for example cyenopyrafen or cyflumetofen;

M.28 Ryanodine receptor-modulators from the class of diamides, as for example flubendiamide, chlorantraniliprole (rynaxypyr®), cyantraniliprole (cyazypyr®), or the phthalamide compounds
M.28.1: (R)-3-Chlor-N1-{2-methyl-4-[1,2,2,2 – tetrafluor-1-(trifluormethyl)ethyl]phenyl}-N2-(1-methyl-2-methylsulfonylethyl)phthalamid and
M.28.2: (S)-3-Chlor-N1-{2-methyl-4-[1,2,2,2 – tetrafluor-1-(trifluormethyl)ethyl]phenyl}-N2-(1-methyl-2-methylsulfonylethyl)phthalamid, or the compound
M.28.3: 3-bromo-N-{2-bromo-4-chloro-6-[(1-cyclopropylethyl)carbamoyl]phenyl}-1-(3-chlorpyridin-2-yl)-1H-pyrazole-5-carboxamide (proposed ISO name: cyclaniliprole), or the compound
M.28.4: methyl-2-[3,5-dibromo-2-({[3-bromo-1-(3-chlorpyridin-2-yl)-1H-pyrazol-5-yl]carbonyl}amino)benzoyl]-1,2-dimethylhydrazinecarboxylate; or a compound selected from M.28.5a) to M.28.5l):
M.28.5a) N-[4,6-dichloro-2-[(diethyl-lambda-4-sulfanylidene)carbamoyl]-phenyl]-2-(3-chloro-2-pyridyl)-5-(trifluoromethyl)pyrazole-3-carboxamide;
M.28.5b) N-[4-chloro-2-[(diethyl-lambda-4-sulfanylidene)carbamoyl]-6-methyl-phenyl]-2-(3-chloro-2-pyridyl)-5-(trifluoromethyl)pyrazole-3-carboxamide;
M.28.5c) N-[4-chloro-2-[(di-2-propyl-lambda-4-sulfanylidene)carbamoyl]-6-methyl-phenyl]-2-(3-chloro-2-pyridyl)-5-(trifluoromethyl)pyrazole-3-carboxamide;
M.28.5d) N-[4,6-dichloro-2-[(di-2-propyl-lambda-4-sulfanylidene)carbamoyl]-phenyl]-2-(3-chloro-2-pyridyl)-5-(trifluoromethyl)pyrazole-3-carboxamide;

M.28.5e) N-[4,6-dichloro-2-[(diethyl-lambda-4-sulfanylidene)carbamoyl]-phenyl]-2-(3-chloro-2-pyridyl)-5-(difluoromethyl)pyrazole-3-carboxamide;
M.28.5f) N-[4,6-dibromo-2-[(di-2-propyl-lambda-4-sulfanylidene)carbamoyl]-phenyl]-2-(3-chloro-2-pyridyl)-5-(trifluoromethyl)pyrazole-3-carboxamide;
M.28.5g) N-[4-chloro-2-[(di-2-propyl-lambda-4-sulfanylidene)carbamoyl]-6-cyano-phenyl]-2-(3-chloro-2-pyridyl)-5-(trifluoromethyl)pyrazole-3-carboxamide;
M.28.5h) N-[4,6-dibromo-2-[(diethyl-lambda-4-sulfanylidene)carbamoyl]-phenyl]-2-(3-chloro-2-pyridyl)-5-(trifluoromethyl)pyrazole-3-carboxamide;
M.28.5i) N-[2-(5-amino-1,3,4-thiadiazol-2-yl)-4-chloro-6-methyl-phenyl]-5-bromo-2-(3-chloro-2-pyridyl)pyrazole-3-carboxamide;
M.28.5j) 5-chloro-2-(3-chloro-2-pyridyl)-N-[2,4-dichloro-6-[(1-cyano-1-methyl-ethyl)carbamoyl]phenyl]pyrazole-3-carboxamide;
M.28.5k) 5-bromo-N-[2,4-dichloro-6-(methylcarbamoyl)phenyl]-2-(3,5-dichloro-2-pyridyl)pyrazole-3-carboxamide;
M.28.5l) N-[2-(tert-butylcarbamoyl)-4-chloro-6-methyl-phenyl]-2-(3-chloro-2-pyridyl)-5-(fluoromethoxy)pyrazole-3-carboxamide; or a compound selected from
M.28.6 N2-(1-cyano-1-methyl-ethyl)-N1-(2,4-dimethylphenyl)-3-iodo-phthalamide; or
M.28.7 3-chloro-N2-(1-cyano-1-methyl-ethyl)-N1-(2,4-dimethylphenyl)phthalamide;

M.UN.X insecticidal active compounds of unknown or uncertain mode of action, as for example afidopyropen, azadirachtin, amidoflumet, benzoximate, bifenazate, bromopropylate, chinomethionat, cryolite, dicofol, flufenerim, flometoquin, fluensulfone, flupyradifurone, piperonyl butoxide, pyridalyl, pyrifluquinazon, sulfoxaflor, triflumezopyrim, pyflubumide or the compounds
M.UN.X.1: 4-[5-(3,5-Dichloro-phenyl)-5-trifluoromethyl-4,5-dihydro-isoxazol-3-yl]-2-methyl-N-[(2,2,2-trifluoro-ethylcarbamoyl)-methyl]-benzamide, or the compound
M.UN.X.2: 4-[5-[3-chloro-5-(trifluoromethyl)phenyl]-5-(trifluoromethyl)-4H-isoxazol-3-yl]-N-[2-oxo-2-(2,2,2-trifluoroethylamino)ethyl]naphthalene-1-carboxamide, or the compound
M.UN.X.3: 11-(4-chloro-2,6-dimethylphenyl)-12-hydroxy-1,4-dioxa-9-azadispiro[4.2.4.2]-tetradec-11-en-10-one, or the compound
M.UN.X.4: 3-(4' -fluoro-2,4-dimethylbiphenyl-3-yl)-4-hydroxy-8-oxa-1-azaspiro[4.5]dec-3-en-2-one, or the compound
M.UN.X.5: 1-[2-fluoro-4-methyl-5-[(2,2,2-trifluoroethyl)sulfinyl]phenyl]-3-(trifluoromethyl)-1H-1,2,4-triazole-5-amine, or actives on basis of *bacillus firmus* (Votivo, I-1582); or
M.UN.X.6; a compound selected from the group of
M.UN.X.6a) (E/Z)-N-[1-[(6-chloro-3-pyridyl)methyl]-2-pyridylidene]-2,2,2-trifluoro-acetamide;

M.UN.X.6b) (E/Z)-N-[1-[(6-chloro-5-fluoro-3-pyridyl)methyl]-2-pyridylidene]-2,2,2-trifluoro-acetamide;
M.UN.X.6c) (E/Z)-2,2,2-trifluoro-N-[1-[(6-fluoro-3-pyridyl)methyl]-2-pyridylidene]acetamide;
M.UN.X.6d) (E/Z)-N-[1-[(6-bromo-3-pyridyl)methyl]-2-pyridylidene]-2,2,2-trifluoro-acetamide;
M.UN.X.6e) (E/Z)-N-[1-[1-(6-chloro-3-pyridyl)ethyl]-2-pyridylidene]-2,2,2-trifluoro-acetamide;
M.UN.X.6f) (E/Z)-N-[1-[(6-chloro-3-pyridyl)methyl]-2-pyridylidene]-2,2-difluoro-acetamide;
M.UN.X.6g) (E/Z)-2-chloro-N-[1-[(6-chloro-3-pyridyl)methyl]-2-pyridylidene]-2,2-difluoro-acetamide;
M.UN.X.6h) (E/Z)-N-[1-[(2-chloropyrimidin-5-yl)methyl]-2-pyridylidene]-2,2,2-trifluoro-acetamide and
M.UN.X.6i) (E/Z)-N-[1-[(6-chloro-3-pyridyl)methyl]-2-pyridylidene]-2,2,3,3,3-pentafluoro-propanamide.); or of the compounds; or
M.UN.X.8: 8-chloro-N-[2-chloro-5-methoxyphenyl)sulfonyl]-6-trifluoromethyl)-imidazo[1,2-a]pyridine-2-carboxamide; or
M.UN.X.9: 4-[5-(3,5-dichlorophenyl)-5-(trifluoromethyl)-4H-isoxazol-3-yl]-2-methyl-N-(1-oxothietan-3-yl)benzamide; or
M.UN.X.10: 5-[3-[2,6-dichloro-4-(3,3-dichloroallyloxy)phenoxy]propoxy]-1H-pyrazole.

The commercially available compounds of the group M listed above may be found in The Pesticide Manual, 15th Edition, C. D. S. Tomlin, British Crop Protection Council (2011) among other publications.

The quinoline derivative flometoquin is shown in WO2006/013896. The aminofuranone compounds flupyradifurone is known from WO 2007/115644. The sulfoximine compound sulfoxaflor is known from WO2007/149134. The pyrethroid momfluorothrin is known from US6908945. The pyrazole acaricide pyflubumide is known from WO2007/020986. The isoxazoline compounds have been described likewise M.UN.X.1 in WO2005/085216, M.UN.X2. in WO2009/002809 and in WO2011/149749 and the isoxazoline M.UN.X.9 in WO2013/050317. The pyripyropene derivative afidopyropen has been described in WO 2006/129714. The spiroketal-substituted cyclic ketoenol derivative M.UN.X.3 is known from WO2006/089633 and the biphenyl-substituted spirocyclic ketoenol derivative M.UN.X.4 from WO2008/067911. Finally triazoylphenylsulfide like M.UN.X.5 have been described in WO2006/043635 and biological control agents on basis of *bacillus firmus* in WO2009/124707. The neonicotionids 4A.1 is known from WO20120/069266 and WO2011/06946, the M.4.A.2 from WO2013/003977, the M4.A.3.from WO2010/069266.

The Metaflumizone analogue M.22C is described in CN 10171577. The phthalamides M.28.1 and M.28.2 are both known from WO 2007/101540. The anthranilamide M.28.3 has been described in WO2005/077934. The hydrazide compound M.28.4 has been described in WO 2007/043677. The anthranilamides M.28.5a) to M.28.5h) can be prepared as described in WO 2007/006670, WO2013/024009 and WO2013/024010, the anthranilamide M.28.5i) is described in WO2011/085575, the M.28.5j) in WO2008/134969, the M.28.5k) in US2011/046186 and the M.28.5l) in WO2012/034403. The diamide compounds M.28.6 and M.28.7 can be found in CN102613183.

The compounds M.UN.X.6a) to M.UN.X.6i) listed in M.UN.X.6 have been described in WO2012/029672. The mesoionic antagonist compound triflumezopyrim was described in WO2012/092115 , the nematicide M.UN.X.8 in WO2013/055584 and the Pyridalyl-type analogue M.UN.X.10 in WO2010/060379.

The following list of active fungicidal substances, in conjunction with which the compounds according to the invention can be used, is intended to illustrate the possible combinations but does not limit them:

F.I) Respiration Inhibitors

F.I-1) Inhibitors of complex III at Qo site (e.g. strobilurins)

strobilurins: azoxystrobin, dimoxystrobin, enestroburin, fluoxastrobin, kresoxim-methyl, metominostrobin, orysastrobin, picoxystrobin, pyraclostrobin, pyrametostrobin, pyraoxystrobin, pyribencarb, trifloxystrobin, methyl (2-chloro-5 [1-(3-methylbenzyloxyimino)ethyl]benzyl)carbamate and 2 (2-(3-(2,6-dichlorophenyl)-1-methyl-allylideneaminooxymethyl)-phenyl)-2-methoxyimino-N methyl-acetamide;

oxazolidinediones and imidazolinones: famoxadone, fenamidone;

F.I-2) Inhibitors of complex II (e.g. carboxamides):

carboxanilides: benodanil, bixafen, boscalid, carboxin, fenfuram, fenhexamid, fluopyram, flutolanil, furametpyr, isopyrazam, isotianil, mepronil, oxycarboxin, penflufen, penthiopyrad, sedaxane, tecloftalam, thifluzamide, tiadinil, 2-amino-4 methyl-thiazole-5-carboxanilide, N-(3',4',5' trifluorobiphenyl-2 yl)-3-difluoromethyl-1-methyl-1H-pyrazole-4 carboxamide, N-(4'-trifluoromethylthiobiphenyl-2-yl)-3 difluoromethyl-1-methyl-1H pyrazole-4-carboxamide and N-(2-(1,3,3-trimethyl-butyl)-phenyl)-1,3-dimethyl-5 fluoro-1H-pyrazole-4 carboxamide;

F.I-3) Inhibitors of complex III at Qi site: cyazofamid, amisulbrom;

F.I-4) Other respiration inhibitors (complex I, uncouplers)

diflumetorim; tecnazen; ferimzone; ametoctradin; silthiofam;

nitrophenyl derivates: binapacryl, dinobuton, dinocap, fluazinam, nitrthal-isopropyl,

organometal compounds: fentin salts, such as fentin-acetate, fentin chloride or fentin hydroxide;

F.II) Sterol biosynthesis inhibitors (SBI fungicides)

F.II-1) C14 demethylase inhibitors (DMI fungicides, e.g. triazoles, imidazoles)

triazoles: azaconazole, bitertanol, bromuconazole, cyproconazole, difenoconazole, diniconazole, diniconazole-M, epoxiconazole, fenbuconazole, fluquinconazole, flusilazole, flutriafol, hexaconazole, imibenconazole, ipconazole, metconazole, myclobutanil, paclobutrazole, penconazole, propiconazole, prothioconazole, simeconazole, tebuconazole, tetraconazole, triadimefon, triadimenol, triticonazole, uniconazole;

imidazoles: imazalil, pefurazoate, oxpoconazole, prochloraz, triflumizole;

pyrimidines, pyridines and piperazines: fenarimol, nuarimol, pyrifenox, triforine;

F.II-2) Delta14-reductase inhitors (Amines, e.g. morpholines, piperidines)

morpholines: aldimorph, dodemorph, dodemorph-acetate, fenpropimorph, tridemorph;

piperidines: fenpropidin, piperalin;

spiroketalamines: spiroxamine;

F.II-3) Inhibitors of 3-keto reductase: hydroxyanilides: fenhexamid;

F.III) Nucleic acid synthesis inhibitors

F.III-1) RNA, DNA synthesis

phenylamides or acyl amino acid fungicides: benalaxyl, benalaxyl-M, kiralaxyl, metalaxyl, metalaxyl-M (mefenoxam), ofurace, oxadixyl;

isoxazoles and iosothiazolones: hymexazole, octhilinone;

F.III-2) DNA topisomerase inhibitors: oxolinic acid;

F.III-3) Nucleotide metabolism (e.g. adenosin-deaminase)

hydroxy (2-amino)-pyrimidines: bupirimate;

F.IV) Inhibitors of cell division and or cytoskeleton

F.IV-1) Tubulin inhibitors: benzimidazoles and thiophanates: benomyl, carbendazim, fuberidazole, thiabendazole, thiophanate-methyl;

triazolopyrimidines: 5-chloro-7 (4-methylpiperidin-1-yl)-6-(2,4,6-trifluorophenyl)-[1,2,4]triazolo[1,5 a]pyrimidine

F.IV-2) Other cell division inhibitors

benzamides and phenyl acetamides: diethofencarb, ethaboxam, pencycuron, fluopicolide, zoxamide;

F.IV-3) Actin inhibitors: benzophenones: metrafenone;

F.V) Inhibitors of amino acid and protein synthesis

F.V-1) Mmethionine synthesis inhibitors (anilino-pyrimidines)
anilino-pyrimidines: cyprodinil, mepanipyrim, nitrapyrin, pyrimethanil;
F.V-2) Protein synthesis inhibitors (anilino-pyrimidines)
antibiotics: blasticidin-S, kasugamycin, kasugamycin hydrochloride-hydrate, mildiomycin, streptomycin, oxytetracyclin, polyoxine, validamycin A;

F.VI) Signal transduction inhibitors
F.VI-1) MAP / Histidine kinase inhibitors (e.g. anilino-pyrimidines)
dicarboximides: fluoroimid, iprodione, procymidone, vinclozolin;
phenylpyrroles: fenpiclonil, fludioxonil;
F.VI-2) G protein inhibitors: quinolines: quinoxyfen;

F.VII) Lipid and membrane synthesis inhibitors
F.VII-1) Phospholipid biosynthesis inhibitors
organophosphorus compounds: edifenphos, iprobenfos, pyrazophos;
dithiolanes: isoprothiolane;
F.VII-2) Lipid peroxidation
aromatic hydrocarbons: dicloran, quintozene, tecnazene, tolclofos-methyl, biphenyl, chloroneb, etridiazole;
F.VII-3) Carboxyl acid amides (CAA fungicides)
cinnamic or mandelic acid amides: dimethomorph, flumorph, mandiproamid, pyrimorph;
valinamide carbamates: benthiavalicarb, iprovalicarb, pyribencarb, valifenalate and N-(1-(1-(4-cyano-phenyl)ethanesulfonyl)-but-2-yl) carbamic acid-(4-fluorophenyl) ester;
F.VII-4) Compounds affecting cell membrane permeability and fatty acids
carbamates: propamocarb, propamocarb-hydrochlorid

F.VIII) Inhibitors with Multi Site Action
F.VIII-1) Inorganic active substances: Bordeaux mixture, copper acetate, copper hydroxide, copper oxychloride, basic copper sulfate, sulfur;
F.VIII-2) Thio- and dithiocarbamates: ferbam, mancozeb, maneb, metam, methasulphocarb, metiram, propineb, thiram, zineb, ziram;
F.VIII-3) Organochlorine compounds (e.g. phthalimides, sulfamides, chloronitriles):
anilazine, chlorothalonil, captafol, captan, folpet, dichlofluanid, dichlorophen, flusulfamide, hexachlorobenzene, pentachlorphenole and its salts, phthalide, tolylfluanid, N-(4-chloro-2-nitro-phenyl)-N-ethyl-4-methyl-benzenesulfonamide;

F.VIII-4) Guanidines: guanidine, dodine, dodine free base, guazatine, guazatine-acetate, iminoctadine, iminoctadine-triacetate, iminoctadine-tris(albesilate);
F.VIII-5) Ahtraquinones: dithianon;

F.IX) Cell wall synthesis inhibitors
F.IX-1) Inhibitors of glucan synthesis: validamycin, polyoxin B;
F.IX-2) Melanin synthesis inhibitors: pyroquilon, tricyclazole, carpropamide, dicyclomet, fenoxanil;

F.X) Plant defence inducers
F.X-1) Salicylic acid pathway: acibenzolar-S-methyl;
F.X-2) Others: probenazole, isotianil, tiadinil, prohexadione-calcium;
phosphonates: fosetyl, fosetyl-aluminum, phosphorous acid and its salts;

F.XI) Unknown mode of action:
bronopol, chinomethionat, cyflufenamid, cymoxanil, dazomet, debacarb, diclomezine, difenzoquat, difenzoquat-methylsulfate, diphenylamin, flumetover, flusulfamide, flutianil, methasulfocarb, oxin-copper, proquinazid, tebufloquin, tecloftalam, triazoxide, 2-butoxy-6-iodo-3-propylchromen-4-one, N-(cyclopropylmethoxyimino-(6-difluoro-methoxy-2,3-difluoro-phenyl)-methyl)-2-phenyl acetamide, N'-(4-(4-chloro-3-trifluoromethyl-phenoxy)-2,5-dimethyl-phenyl)-N-ethyl-N methyl formamidine, N' (4-(4-fluoro-3-trifluoromethyl-phenoxy)-2,5-dimethyl-phenyl)-N-ethyl-N-methyl formamidine, N'-(2-methyl-5-trifluoromethyl-4-(3-trimethylsilanyl-propoxy)-phenyl)-N-ethyl-N-methyl formamidine, N'-(5-difluoromethyl-2 methyl-4-(3-trimethylsilanyl-propoxy)-phenyl)-N-ethyl-N-methyl formamidine, 2-{1-[2-(5-methyl-3-trifluoromethyl-pyrazole-1-yl)-acetyl]-piperidin-4-yl}-thiazole-4-carboxylic acid methyl-(1,2,3,4-tetrahydro-naphthalen-1-yl)-amide, 2-{1-[2-(5-methyl-3-trifluoromethyl-pyrazole-1-yl)-acetyl]-piperidin-4-yl}-thiazole-4-carboxylic acid methyl-(R)-1,2,3,4-tetrahydro-naphthalen-1-yl-amide, methoxy-acetic acid 6-tert-butyl-8-fluoro-2,3-dimethyl-quinolin-4-yl ester and N-Methyl-2-{1-[(5-methyl-3-trifluoromethyl-1H-pyrazol-1-yl)-acetyl]-piperidin-4-yl}-N-[(1R)-1,2,3,4-tetrahydronaphthalen-1-yl]-4-thiazolecarboxamide, 3-[5-(4-chloro-phenyl)-2,3-dimethyl-isoxazolidin-3 yl]-pyridine, 3-[5-(4-methyl-phenyl)-2,3-dimethyl-isoxazolidin-3-yl]-pyridine, 5-amino-2-isopropyl-3-oxo-4-ortho-tolyl-2,3-dihydro-pyrazole-1 carbothioic acid S-allyl ester, N-(6-methoxy-pyridin-3-yl) cyclopropane-carboxylic acid amide, 5-chloro-1 (4,6-dimethoxy-pyrimidin-2-yl)-2-methyl-1H-benzoimidazole, 2-(4-chloro-phenyl)-N-[4-(3,4-dimethoxy-phenyl)-isoxazol-5-yl]-2-prop-2-ynyloxy-acetamide;

F.XI) Growth regulators:

abscisic acid, amidochlor, ancymidol, 6-benzylaminopurine, brassinolide, butralin, chlormequat (chlormequat chloride), choline chloride, cyclanilide, daminozide, dikegulac, dimethipin, 2,6-dimethylpuridine, ethephon, flumetralin, flurprimidol, fluthiacet, forchlorfenuron, gibberellic acid, inabenfide, indole-3-acetic acid , maleic hydrazide, mefluidide, mepiquat (mepiquat chloride), naphthaleneacetic acid, N 6 benzyladenine, paclobutrazol, prohexadione (prohexadione-calcium), prohydrojasmon, thidiazuron, triapenthenol, tributyl phosphorotrithioate, 2,3,5 tri iodo-benzoic acid , trinexapac-ethyl and uniconazole;

F.XII) Biological control agents

antifungal biocontrol agents: Bacillus substilis strain with NRRL No. B-21661 (e.g. RHAPSODY®, SERENADE® MAX and SERENADE® ASO from AgraQuest, Inc., USA.), Bacillus pumilus strain with NRRL No. B-30087 (e.g. SONATA® and BALLAD® Plus from AgraQuest, Inc., USA), Ulocladium oudemansii (e.g. the product BOTRY-ZEN from BotriZen Ltd., New Zealand), Chitosan (e.g. ARMOUR-ZEN from BotriZen Ltd., New Zealand).

Applications

The animal pest, i.e. the insects, arachnids and nematodes, the plant, soil or water in which the plant is growing can be contacted with the present compounds of formula I or composition(s) containing them by any application method known in the art. As such, "contacting" includes both direct contact (applying the compounds/compositions directly on the animal pest or plant - typically to the foliage, stem or roots of the plant) and indirect contact (applying the compounds/compositions to the locus of the animal pest or plant).

The compounds of formula I or the pesticidal compositions comprising them may be used to protect growing plants and crops from attack or infestation by animal pests, especially insects, acaridae or arachnids by contacting the plant/crop with a pesticidally effective amount of compounds of formula I. The term "crop" refers both to growing and harvested crops.

The compounds of the present invention and the compositions comprising them are particularly important in the control of a multitude of insects on various cultivated plants, such as cereal, root crops, oil crops, vegetables, spices, ornamentals, for example seed of durum and other wheat, barley, oats, rye, maize (fodder maize and sugar maize / sweet and field corn), soybeans, oil crops, crucifers, cotton, sunflowers, bananas, rice, oilseed rape, turnip rape, sugarbeet, fodder beet, eggplants, potatoes, grass, lawn, turf, fodder grass, tomatoes, leeks, pumpkin/squash, cabbage, iceberg lettuce, pepper, cucumbers, melons, Brassica species, melons,

beans, peas, garlic, onions, carrots, tuberous plants such as potatoes, sugar cane, tobacco, grapes, petunias, geranium/pelargoniums, pansies and impatiens.

The compounds of the present invention are employed as such or in form of compositions by treating the insects or the plants, plant propagation materials, such as seeds, soil, surfaces, materials or rooms to be protected from insecticidal attack with a insecticidally effective amount of the active compounds. The application can be carried out both before and after the infection of the plants, plant propagation materials, such as seeds, soil, surfaces, materials or rooms by the insects.

The present invention also includes a method of combating animal pests which comprises contacting the animal pests, their habit, breeding ground, food supply, cultivated plants, seed, soil, area, material or environment in which the animal pests are growing or may grow, or the materials, plants, seeds, soils, surfaces or spaces to be protected from animal attack or infestation with a pesticidally effective amount of a mixture of at least one active compound I.

Moreover, animal pests may be controlled by contacting the target pest, its food supply, habitat, breeding ground or its locus with a pesticidally effective amount of compounds of formula I. As such, the application may be carried out before or after the infection of the locus, growing crops, or harvested crops by the pest.

The compounds of the invention can also be applied preventively to places at which occurrence of the pests is expected.

The compounds of formula I may be also used to protect growing plants from attack or infestation by pests by contacting the plant with a pesticidally effective amount of compounds of formula I. As such, "contacting" includes both direct contact (applying the compounds/compositions directly on the pest and/or plant - typically to the foliage, stem or roots of the plant) and indirect contact (applying the compounds/compositions to the locus of the pest and/or plant).

"Locus" means a habitat, breeding ground, plant, seed, soil, area, material or environment in which a pest or parasite is growing or may grow.

The term "plant propagation material" is to be understood to denote all the generative parts of the plant such as seeds and vegetative plant material such as cuttings and tubers (e. g. potatoes), which can be used for the multiplication of the plant. This includes seeds, roots, fruits,

tubers, bulbs, rhizomes, shoots, sprouts and other parts of plants. Seedlings and young plants, which are to be transplanted after germination or after emergence from soil, may also be included. These plant propagation materials may be treated prophylactically with a plant protection compound either at or before planting or transplanting.

The term "cultivated plants" is to be understood as including plants which have been modified by breeding, mutagenesis or genetic engineering, including but not limiting to agricultural biotech products on the market or in development (cf. http://cera-gmc.org/, see GM crop database therein). Genetically modified plants are plants, which genetic material has been so modified by the use of recombinant DNA techniques that under natural circumstances cannot readily be obtained by cross breeding, mutations or natural recombination. Typically, one or more genes have been integrated into the genetic material of a genetically modified plant in order to improve certain properties of the plant. Such genetic modifications also include but are not limited to targeted post-transtional modification of protein(s) (oligo- or polypeptides) poly for example by glycosylation or polymer additions such as prenylated, acetylated or farnesylated moieties or PEG moieties(e.g. as disclosed in Biotechnol Prog. 2001 Jul-Aug;17(4):720-8., Protein Eng Des Sel. 2004 Jan;17(1):57-66, Nat Protoc. 2007;2(5):1225-35., Curr Opin Chem Biol. 2006 Oct;10(5):487-91. Epub 2006 Aug 28., Biomaterials. 2001 Mar;22(5):405-17, Bioconjug Chem. 2005 Jan-Feb;16(1):113-21).

The term "cultivated plants" is to be understood also including plants that have been rendered tolerant to applications of specific classes of herbicides, such as hydroxy-phenylpyruvate dioxygenase (HPPD) inhibitors; acetolactate synthase (ALS) inhibitors, such as sulfonyl ureas (see e. g. US 6,222,100, WO 01/82685, WO 00/26390, WO 97/41218, WO 98/02526, WO 98/02527, WO 04/106529, WO 05/20673, WO 03/14357, WO 03/13225, WO 03/14356, WO 04/16073) or imidazolinones (see e. g. US 6,222,100, WO 01/82685, WO 00/26390, WO 97/41218, WO 98/02526, WO 98/02527, WO 04/106529, WO 05/20673, WO 03/14357, WO 03/13225, WO 03/14356, WO 04/16073); enolpyruvylshikimate-3-phosphate synthase (EPSPS) inhibitors, such as glyphosate (see e. g. WO 92/00377); glutamine synthetase (GS) inhibitors, such as glufosinate (see e. g. EP-A-0242236, EP-A-242246) or oxynil herbicides (see e. g. US 5,559,024) as a result of conventional methods of breeding or genetic engineering. Several cultivated plants have been rendered tolerant to herbicides by conventional methods of breeding (mutagenesis), for example Clearfield® summer rape (Canola) being tolerant to imidazolinones, e. g. imazamox. Genetic engineering methods have been used to render cultivated plants, such as soybean, cotton, corn, beets and rape, tolerant to herbicides, such as glyphosate and

glufosinate, some of which are commercially available under the trade names RoundupReady® (glyphosate) and LibertyLink® (glufosinate).

The term "cultivated plants" is to be understood also including plants that are by the use of recombinant DNA techniques capable to synthesize one or more insecticidal proteins, especially those known from the bacterial genus Bacillus, particularly from Bacillus thuringiensis, such as ä-endotoxins, e. g. CryIA(b), CryIA(c), CryIF, CryIF(a2), CryIIA(b), CryIIIA, CryIIIB(b1) or Cry9c; vegetative insecticidal proteins (VIP), e. g. VIP1, VIP2, VIP3 or VIP3A; insecticidal proteins of bacteria colonizing nematodes, for example Photorhabdus spp. or Xenorhabdus spp.; toxins produced by animals, such as scorpion toxins, arachnid toxins, wasp toxins, or other insect-specific neurotoxins; toxins produced by fungi, such Streptomycetes toxins, plant lectins, such as pea or barley lectins; agglutinins; proteinase inhibitors, such as trypsin inhibitors, serine protease inhibitors, patatin, cystatin or papain inhibitors; ribosome-inactivating proteins (RIP), such as ricin, maize-RIP, abrin, luffin, saporin or bryodin; steroid metabolism enzymes, such as 3-hydroxysteroid oxidase, ecdysteroid-IDP-glycosyl-transferase, cholesterol oxidases, ecdysone inhibitors or HMG-CoA-reductase; ion channel blockers, such as blockers of sodium or calcium channels; juvenile hormone esterase; diuretic hormone receptors (helicokinin receptors); stilben synthase, bibenzyl synthase, chitinases or glucanases. In the context of the present invention these insecticidal proteins or toxins are to be understood expressly also as pre-toxins, hybrid proteins, truncated or otherwise modified proteins. Hybrid proteins are characterized by a new combination of protein domains, (see, for example WO 02/015701). Further examples of such toxins or genetically-modified plants capable of synthesizing such toxins are dis-closed, for example, in EP-A 374 753, WO 93/007278, WO 95/34656, EP-A 427 529, EP-A 451 878, WO 03/018810 und WO 03/052073. The methods for producing such genetically modified plants are generally known to the person skilled in the art and are described, for example, in the publications mentioned above. These insecticidal proteins contained in the genetically modified plants impart to the plants producing these proteins protection from harmful pests from certain taxonomic groups of arthropods, particularly to beetles (Coleoptera), flies (Diptera), and butterflies and moths (Lepidoptera) and to plant parasitic nematodes (Nematoda).

The term "cultivated plants" is to be understood also including plants that are by the use of recombinant DNA techniques capable to synthesize one or more proteins to increase the resistance or tolerance of those plants to bacterial, viral or fungal pathogens. Examples of such proteins are the so-called " pathogenesis-related proteins" (PR proteins, see, for example EP-A 0 392 225), plant disease resistance genes (for example potato cultivars, which express resistance genes acting against Phytophthora infestans derived from the mexican wild potato So-

lanum bulbocastanum) or T4-lyso-zym (e. g. potato cultivars capable of synthesizing these proteins with increased resistance against bacteria such as Erwinia amylvora). The methods for producing such genetically modified plants are generally known to the person skilled in the art and are described, for example, in the publications mentioned above.

The term "cultivated plants" is to be understood also including plants that are by the use of recombinant DNA techniques capable to synthesize one or more proteins to increase the productivity (e. g. bio mass production, grain yield, starch content, oil content or protein content), tolerance to drought, salinity or other growth-limiting environ-mental factors or tolerance to pests and fungal, bacterial or viral pathogens of those plants.

The term "cultivated plants" is to be understood also including plants that contain by the use of recombinant DNA techniques a modified amount of substances of content or new substances of content, specifically to improve human or animal nutrition, for ex-ample oil crops that produce health-promoting long-chain omega-3 fatty acids or unsaturated omega-9 fatty acids (e. g. Nexera® rape).

The term "cultivated plants" is to be understood also including plants that contain by the use of recombinant DNA techniques a modified amount of substances of content or new substances of content, specifically to improve raw material production, for example potatoes that produce increased amounts of amylopectin (e. g. Amflora® potato).

In general, "pesticidally effective amount" means the amount of active ingredient needed to achieve an observable effect on growth, including the effects of necrosis, death, retardation, prevention, and removal, destruction, or otherwise diminishing the occurrence and activity of the target organism. The pesticidally effective amount can vary for the various compounds/compositions used in the invention. A pesticidally effective amount of the compositions will also vary according to the prevailing conditions such as desired pesticidal effect and duration, weather, target species, locus, mode of application, and the like.

In the case of soil treatment or of application to the pests dwelling place or nest, the quantity of active ingredient ranges from 0.0001 to 500 g per 100 m^2, preferably from 0.001 to 20 g per 100 m^2.

Customary application rates in the protection of materials are, for example, from 0.01 g to 1000 g of active compound per m^2 treated material, desirably from 0.1 g to 50 g per m^2.

Insecticidal compositions for use in the impregnation of materials typically contain from 0.001 to 95 weight %, preferably from 0.1 to 45 weight %, and more preferably from 1 to 25 weight % of at least one repellent and/or insecticide.

For use in treating crop plants, the rate of application of the active ingredients of this invention may be in the range of 0.1 g to 4000 g per hectare, desirably from 25 g to 600 g per hectare, more desirably from 50 g to 500 g per hectare.

The compounds of formula I are effective through both contact (via soil, glass, wall, bed net, carpet, plant parts or animal parts), and ingestion (bait, or plant part).

The compounds of the invention may also be applied against non-crop insect pests, such as ants, termites, wasps, flies, mosquitos, crickets, or cockroaches. For use against said non-crop pests, compounds of formula I are preferably used in a bait composition.

The bait can be a liquid, a solid or a semisolid preparation (e.g. a gel). Solid baits can be formed into various shapes and forms suitable to the respective application e.g. granules, blocks, sticks, disks. Liquid baits can be filled into various devices to ensure proper application, e.g. open containers, spray devices, droplet sources, or evaporation sources. Gels can be based on aqueous or oily matrices and can be formulated to particular necessities in terms of stickyness, moisture retention or aging characteristics.

The bait employed in the composition is a product, which is sufficiently attractive to incite insects such as ants, termites, wasps, flies, mosquitos, crickets etc. or cockroaches to eat it. The attractiveness can be manipulated by using feeding stimulants or sex pheromones. Food stimulants are chosen, for example, but not exclusively, from animal and/or plant proteins (meat-, fish- or blood meal, insect parts, egg yolk), from fats and oils of animal and/or plant origin, or mono-, oligo- or polyorganosaccharides, especially from sucrose, lactose, fructose, dextrose, glucose, starch, pectin or even molasses or honey. Fresh or decaying parts of fruits, crops, plants, animals, insects or specific parts thereof can also serve as a feeding stimulant. Sex pheromones are known to be more insect specific. Specific pheromones are described in the literature and are known to those skilled in the art.

For use in bait compositions, the typical content of active ingredient is from 0.001 weight % to 15 weight %, desirably from 0.001 weight % to 5% weight % of active compound.

Formulations of compounds of formula I as aerosols (e.g in spray cans), oil sprays or pump sprays are highly suitable for the non-professional user for controlling pests such as flies, fleas, ticks, mosquitos or cockroaches. Aerosol recipes are preferably composed of the active compound, solvents such as lower alcohols (e.g. methanol, ethanol, propanol, butanol), ketones (e.g. acetone, methyl ethyl ketone), paraffin hydrocarbons (e.g. kerosenes) having boiling ranges of approximately 50 to 250 °C, dimethylformamide, N-methylpyrrolidone, dimethyl sulfoxide, aromatic hydrocarbons such as toluene, xylene, water, furthermore auxiliaries such as emulsifiers such as sorbitol monooleate, oleyl ethoxylate having 3-7 mol of ethylene oxide, fatty alcohol ethoxylate, perfume oils such as ethereal oils, esters of medium fatty acids with lower alcohols, aromatic carbonyl compounds, if appropriate stabilizers such as sodium benzoate, amphoteric surfactants, lower epoxides, triethyl orthoformate and, if required, propellants such as propane, butane, nitrogen, compressed air, dimethyl ether, carbon dioxide, nitrous oxide, or mixtures of these gases.

The oil spray formulations differ from the aerosol recipes in that no propellants are used.

For use in spray compositions, the content of active ingredient is from 0.001 to 80 weights %, preferably from 0.01 to 50 weight % and most preferably from 0.01 to 15 weight %.

The compounds of formula I and its respective compositions can also be used in mosquito and fumigating coils, smoke cartridges, vaporizer plates or long-term vaporizers and also in moth papers, moth pads or other heat-independent vaporizer systems.

Methods to control infectious diseases transmitted by insects (e.g. malaria, dengue and yellow fever, lymphatic filariasis, and leishmaniasis) with compounds of formula I and its respective compositions also comprise treating surfaces of huts and houses, air spraying and impregnation of curtains, tents, clothing items, bed nets, tsetse-fly trap or the like. Insecticidal compositions for application to fibers, fabric, knitgoods, nonwovens, netting material or foils and tarpaulins preferably comprise a mixture including the insecticide, optionally a repellent and at least one binder. Suitable repellents for example are N,N-Diethyl-meta-toluamide (DEET), N,N-diethylphenylacetamide (DEPA), 1-(3-cyclohexane-1-yl-carbonyl)-2-methylpiperine, (2-hydroxymethylcyclohexyl) acetic acid lactone, 2-ethyl-1,3-hexandiol, indalone, Methyl-neodecanamide (MNDA), a pyrethroid not used for insect control such as {(+/-)-3-allyl-2-methyl-4-oxocyclopent-2-(+)-enyl-(+)-trans-chrysantemate (Esbiothrin), a repellent derived from or identical with plant extracts like limonene, eugenol, (+)-Eucamalol (1), (-)-1-epi-eucamalol or crude

plant extracts from plants like Eucalyptus maculata, Vitex rotundifolia, Cymbopogan martinii, Cymbopogan citratus (lemon grass), Cymopogan nartdus (citronella). Suitable binders are selected for example from polymers and copolymers of vinyl esters of aliphatic acids (such as such as vinyl acetate and vinyl versatate), acrylic and methacrylic esters of alcohols, such as butyl acrylate, 2-ethylhexylacrylate, and methyl acrylate, mono- and di-ethylenically unsaturated hydrocarbons, such as styrene, and aliphatic diens, such as butadiene.

The impregnation of curtains and bednets is done in general by dipping the textile material into emulsions or dispersions of the insecticide or spraying them onto the nets.

The compounds of formula I and its compositions can be used for protecting wooden materials such as trees, board fences, sleepers, etc. and buildings such as houses, outhouses, factories, but also construction materials, furniture, leathers, fibers, vinyl articles, electric wires and cables etc. from ants and/or termites, and for controlling ants and termites from doing harm to crops or human being (e.g. when the pests invade into houses and public facilities). The compounds of formula I are applied not only to the surrounding soil surface or into the under-floor soil in order to protect wooden materials but it can also be applied to lumbered articles such as surfaces of the under-floor concrete, alcove posts, beams, plywoods, furniture, etc., wooden articles such as particle boards, half boards, etc. and vinyl articles such as coated electric wires, vinyl sheets, heat insulating material such as styrene foams, etc. In case of application against ants doing harm to crops or human beings, the ant controller of the present invention is applied to the crops or the surrounding soil, or is directly applied to the nest of ants or the like.

Seed treatment

The compounds of formula I are also suitable for the treatment of seeds in order to protect the seed from insect pest, in particular from soil-living insect pests and the resulting plant' s roots and shoots against soil pests and foliar insects.

The compounds of formula I are particularly useful for the protection of the seed from soil pests and the resulting plant's roots and shoots against soil pests and foliar insects. The protection of the resulting plant's roots and shoots is preferred. More preferred is the protection of resulting plant's shoots from piercing and sucking insects, wherein the protection from aphids is most preferred.

The present invention therefore comprises a method for the protection of seeds from insects, in particular from soil insects and of the seedling's roots and shoots from insects, in particular from soil and foliar insects, said method comprising contacting the seeds before sowing and/or after pregermination with a compound of the general formula I or a salt thereof. Particularly preferred is a method, wherein the plant's roots and shoots are protected, more preferably a method, wherein the plants shoots are protected form piercing and sucking insects, most preferably aa method, wherein the plants shoots are protected from aphids.

The term seed embraces seeds and plant propagules of all kinds including but not limited to true seeds, seed pieces, suckers, corms, bulbs, fruit, tubers, grains, cuttings, cut shoots and the like and means in a preferred embodiment true seeds.

The term seed treatment comprises all suitable seed treatment techniques known in the art, such as seed dressing, seed coating, seed dusting, seed soaking and seed pelleting.
The present invention also comprises seeds coated with or containing the active compound.

The term "coated with and/or containing" generally signifies that the active ingredient is for the most part on the surface of the propagation product at the time of application, although a greater or lesser part of the ingredient may penetrate into the propagation product, depending on the method of application. When the said propagation product is (re)planted, it may absorb the active ingredient.
Suitable seed is seed of cereals, root crops, oil crops, vegetables, spices, ornamentals, for example seed of durum and other wheat, barley, oats, rye, maize (fodder maize and sugar maize / sweet and field corn), soybeans, oil crops, crucifers, cotton, sunflowers, bananas, rice, oilseed rape, turnip rape, sugarbeet, fodder beet, eggplants, potatoes, grass, lawn, turf, fodder grass, tomatoes, leeks, pumpkin/squash, cabbage, iceberg lettuce, pepper, cucumbers, melons, Brassica species, melons, beans, peas, garlic, onions, carrots, tuberous plants such as potatoes, sugar cane, tobacco, grapes, petunias, geranium/pelargoniums, pansies and impatiens.

In addition, the active compound may also be used for the treatment seeds from plants, which tolerate the action of herbicides or fungicides or insecticides owing to breeding, including genetic engineering methods.

For example, the active compound can be employed in treatment of seeds from plants, which are resistant to herbicides from the group consisting of the sulfonylureas, imidazolinones, glufosinate-ammonium or glyphosate-isopropylammonium and analogous active substances

(see for example, EP-A-0242236, EP-A-242246) (WO 92/00377) (EP-A-0257993, U.S. Pat. No. 5,013,659) or in transgenic crop plants, for example cotton, with the capability of producing Bacillus thuringiensis toxins (Bt toxins) which make the plants resistant to certain pests (EP-A-0142924, EP-A-0193259),

Furthermore, the active compound can be used also for the treatment of seeds from plants, which have modified characteristics in comparison with existing plants consist, which can be generated for example by traditional breeding methods and/or the generation of mutants, or by recombinant procedures). For example, a number of cases have been described of recombinant modifications of crop plants for the purpose of modifying the starch synthesized in the plants (e.g. WO 92/11376, WO 92/14827, WO 91/19806) or of transgenic crop plants having a modified fatty acid composition (WO 91/13972).

The seed treatment application of the active compound is carried out by spraying or by dusting the seeds before sowing of the plants and before emergence of the plants.

Compositions which are especially useful for seed treatment are e.g.:

A Soluble concentrates (SL, LS)
D Emulsions (EW, EO, ES)
E Suspensions (SC, OD, FS)
F Water-dispersible granules and water-soluble granules (WG, SG)
G Water-dispersible powders and water-soluble powders (WP, SP, WS)
H Gel-Formulations (GF)
I Dustable powders (DP, DS)

Conventional seed treatment formulations include for example flowable concentrates FS, solutions LS, powders for dry treatment DS, water dispersible powders for slurry treatment WS, water-soluble powders SS and emulsion ES and EC and gel formulation GF. These formulations can be applied to the seed diluted or undiluted. Application to the seeds is carried out before sowing, either directly on the seeds or after having pregerminated the latter

In a preferred embodiment a FS formulation is used for seed treatment. Typcially, a FS formulation may comprise 1-800 g/l of active ingredient, 1-200 g/l Surfactant, 0 to 200 g/l antifreezing agent, 0 to 400 g/l of binder, 0 to 200 g/l of a pigment and up to 1 liter of a solvent, preferably water.

Especially preferred FS formulations of compounds of formula I for seed treatment usually comprise from 0.1 to 80% by weight (1 to 800 g/l) of the active ingredient, from 0.1 to 20 % by weight (1 to 200 g/l) of at least one surfactant, e.g. 0.05 to 5 % by weight of a wetter and from 0.5 to 15 % by weight of a dispersing agent, up to 20 % by weight, e.g. from 5 to 20 % of an anti-freeze agent, from 0 to 15 % by weight, e.g. 1 to 15 % by weight of a pigment and/or a dye, from 0 to 40 % by weight, e.g. 1 to 40 % by weight of a binder (sticker /adhesion agent), optionally up to 5 % by weight, e.g. from 0.1 to 5 % by weight of a thickener, optionally from 0.1 to 2 % of an anti-foam agent, and optionally a preservative such as a biocide, antioxidant or the like, e.g. in an amount from 0.01 to 1 % by weight and a filler/vehicle up to 100 % by weight.

Seed Treatment formulations may additionally also comprise binders and optionally colorants.

Binders can be added to improve the adhesion of the active materials on the seeds after treatment. Suitable binders are homo- and copolymers from alkylene oxides like ethylene oxide or propylene oxide, polyvinylacetate, polyvinylalcohols, polyvinylpyrrolidones, and copolymers thereof, ethylene-vinyl acetate copolymers, acrylic homo- and copolymers, polyethyleneamines, polyethyleneamides and polyethyleneimines, polysaccharides like celluloses, tylose and starch, polyolefin homo- and copolymers like olefin/maleic anhydride copolymers, polyurethanes, polyesters, polystyrene homo and copolymers

Optionally, also colorants can be included in the formulation. Suitable colorants or dyes for seed treatment formulations are Rhodamin B, C.I. Pigment Red 112, C.I. Solvent Red 1, pigment blue 15:4, pigment blue 15:3, pigment blue 15:2, pigment blue 15:1, pigment blue 80, pigment yellow 1, pigment yellow 13, pigment red 112, pigment red 48:2, pigment red 48:1, pigment red 57:1, pigment red 53:1, pigment orange 43, pigment orange 34, pigment orange 5, pigment green 36, pigment green 7, pigment white 6, pigment brown 25, basic violet 10, basic violet 49, acid red 51, acid red 52, acid red 14, acid blue 9, acid yellow 23, basic red 10, basic red 108.

Examples of a gelling agent is carrageen (Satiagel®)

In the treatment of seed, the application rates of the compounds I are generally from 0.1 g to 10 kg per 100 kg of seed, preferably from 1 g to 5 kg per 100 kg of seed, more preferably from 1 g to 1000 g per 100 kg of seed and in particular from 1 g to 200 g per 100 kg of seed.

The invention therefore also relates to seed comprising a compound of the formula I, or an agriculturally useful salt of I, as defined herein. The amount of the compound I or the agriculturally useful salt thereof will in general vary from 0.1 g to 10 kg per 100 kg of seed, preferably from 1 g to 5 kg per 100 kg of seed, in particular from 1 g to 1000 g per 100 kg of seed. For specific crops such as lettuce the rate can be higher.

Animal health

The compounds of formula I or the enantiomers or veterinarily acceptable salts thereof are in particular also suitable for being used for combating parasites in and on animals.

An object of the present invention is therfore also to provide new methods to control parasites in and on animals. Another object of the invention is to provide safer pesticides for animals. Another object of the invention is further to provide pesticides for animals that may be used in lower doses than existing pesticides. And another object of the invention is to provide pesticides for animals, which provide a long residual control of the parasites.

The invention also relates to compositions containing a parasiticidally effective amount of compounds of formula I or the enantiomers or veterinarily acceptable salts thereof and an acceptable carrier, for combating parasites in and on animals.

The present invention also provides a method for treating, controlling, preventing and protecting animals against infestation and infection by parasites, which comprises orally, topically or parenterally administering or applying to the animals a parasiticidally effective amount of a compound of formula I or the enantiomers or veterinarily acceptable salts thereof or a composition comprising it.

The invention also provides a process for the preparation of a composition for treating, controlling, preventing or protecting animals against infestation or infection by parasites which comprises a parasiticidally effective amount of a compound of formula I or the enantiomers or veterinarily acceptable salts thereof or a composition comprising it.

Activity of compounds against agricultural pests does not suggest their suitability for control of endo- and ectoparasites in and on animals which requires, for example, low, non-emetic dosages in the case of oral application, metabolic compatibility with the animal, low toxicity, and a safe handling.

Surprisingly it has now been found that compounds of formula I are suitable for combating endo- and ectoparasites in and on animals.

Compounds of formula I or the enantiomers or veterinarily acceptable salts thereof and compositions comprising them are preferably used for controlling and preventing infestations and infections animals including warm-blooded animals (including humans) and fish. They are for example suitable for controlling and preventing infestations and infections in mammals such as cattle, sheep, swine, camels, deer, horses, pigs, poultry, rabbits, goats, dogs and cats, water buffalo, donkeys, fallow deer and reindeer, and also in fur-bearing animals such as mink, chinchilla and raccoon, birds such as hens, geese, turkeys and ducks and fish such as fresh- and salt-water fish such as trout, carp and eels.

Compounds of formula I or the enantiomers or veterinarily acceptable salts thereof and compositions comprising them are preferably used for controlling and preventing infestations and infections in domestic animals, such as dogs or cats.

Infestations in warm-blooded animals and fish include, but are not limited to, lice, biting lice, ticks, nasal bots, keds, biting flies, muscoid flies, flies, myiasitic fly larvae, chiggers, gnats, mosquitoes and fleas.

The compounds of formula I or the enantiomers or veterinarily acceptable salts thereof and compositions comprising them are suitable for systemic and/or non-systemic control of ecto- and/or endoparasites. They are active against all or some stages of development.

The compounds of formula I are especially useful for combating ectoparasites.

The compounds of formula I are especially useful for combating parasites of the following orders and species, respectively:

fleas (Siphonaptera), e.g. *Ctenocephalides felis*, *Ctenocephalides canis, Xenopsylla cheopis*, *Pulex irritans*, *Tunga penetrans*, and *Nosopsyllus fasciatus,*

cockroaches (Blattaria - Blattodea), e.g. *Blattella germanica, Blattella asahinae, Periplaneta americana, Periplaneta japonica, Periplaneta brunnea, Periplaneta fuligginosa*, *Periplaneta australasiae*, and *Blatta orientalis,*

flies, mosquitoes (Diptera), e.g. *Aedes aegypti, Aedes albopictus, Aedes vexans, Anastrepha ludens, Anopheles maculipennis, Anopheles crucians, Anopheles albimanus, Anopheles gambiae, Anopheles freeborni, Anopheles leucosphyrus, Anopheles minimus, Anopheles quadrimaculatus, Calliphora vicina, Chrysomya bezziana, Chrysomya hominivorax, Chrysomya macellaria, Chrysops discalis, Chrysops silacea, Chrysops atlanticus, Cochliomyia hominivorax, Cordylobia anthropophaga, Culicoides furens, Culex pipiens, Culex nigripalpus, Culex quinquefasciatus, Culex tarsalis, Culiseta inornata, Culiseta melanura, Dermatobia hominis, Fannia canicularis, Gasterophilus intestinalis, Glossina morsitans, Glossina palpalis, Glossina fuscipes, Glossina tachinoides, Haematobia irritans, Haplodiplosis equestris, Hippelates spp., Hypoderma lineata, Leptoconops torrens, Lucilia caprina, Lucilia cuprina, Lucilia sericata, Lycoria pectoralis, Mansonia spp., Musca domestica, Muscina stabulans, Oestrus ovis, Phlebotomus argentipes, Psorophora columbiae, Psorophora discolor, Prosimulium mixtum, Sarcophaga haemorrhoidalis, Sarcophaga sp., Simulium vittatum, Stomoxys calcitrans, Tabanus bovinus, Tabanus atratus, Tabanus lineola,* and *Tabanus similis,*

lice (Phthiraptera), e.g. *Pediculus humanus capitis, Pediculus humanus corporis, Pthirus pubis, Haematopinus eurysternus, Haematopinus suis, Linognathus vituli, Bovicola bovis, Menopon gallinae, Menacanthus stramineus* and *Solenopotes capillatus.*

ticks and parasitic mites (Parasitiformes): ticks (Ixodida), e.g. *Ixodes scapularis, Ixodes holocyclus, Ixodes pacificus, Rhiphicephalus sanguineus, Dermacentor andersoni, Dermacentor variabilis, Amblyomma americanum, Ambryomma maculatum, Ornithodorus hermsi, Ornithodorus turicata* and parasitic mites (Mesostigmata), e.g. *Ornithonyssus bacoti* and *Dermanyssus gallinae,*

Actinedida (Prostigmata) und Acaridida (Astigmata) e.g. *Acarapis spp., Cheyletiella spp., Ornithocheyletia spp., Myobia spp., Psorergates spp., Demodex spp., Trombicula spp., Listrophorus spp., Acarus spp., Tyrophagus spp., Caloglyphus spp., Hypodectes spp., Pterolichus spp., Psoroptes spp., Chorioptes spp., Otodectes spp., Sarcoptes spp., Notoedres spp.,Knemidocoptes spp., Cytodites spp.,* and *Laminosioptes spp,*

Bugs (Heteropterida): *Cimex lectularius, Cimex hemipterus, Reduvius senilis, Triatoma spp., Rhodnius ssp., Panstrongylus ssp.* and *Arilus critatus,*

Anoplurida, e.g. *Haematopinus spp., Linognathus spp., Pediculus spp., Phtirus spp.,* and *Solenopotes spp,*

Mallophagida (suborders Arnblycerina and Ischnocerina), e.g. *Trimenopon spp., Menopon spp., Trinoton spp., Bovicola spp., Werneckiella spp., Lepikentron spp., Trichodectes spp.,* and *Felicola spp,*

Roundworms Nematoda:

Wipeworms and Trichinosis (Trichosyringida), e.g. Trichinellidae *(Trichinella spp.), (*Trichuridae*) Trichuris spp., Capillaria spp,*

Rhabditida, e.g. *Rhabditis spp, Strongyloides spp., Helicephalobus spp,*

Strongylida, e.g. *Strongylus spp., Ancylostoma spp., Necator americanus, Bunostomum spp. (Hookworm), Trichostrongylus spp., Haemonchus contortus., Ostertagia spp. , Cooperia spp., Nematodirus spp., Dictyocaulus spp., Cyathostoma spp., Oesophagostomum spp., Stephanurus dentatus, Ollulanus spp., Chabertia spp., Stephanurus dentatus , Syngamus trachea, Ancylostoma spp., Uncinaria spp., Globocephalus spp., Necator spp., Metastrongylus spp., Muellerius capillaris, Protostrongylus spp., Angiostrongylus spp., Parelaphostrongylus spp. Aleurostrongylus abstrusus,* and *Dioctophyma renale,*

Intestinal roundworms (Ascaridida), e.g. *Ascaris lumbricoides, Ascaris suum, Ascaridia galli, Parascaris equorum, Enterobius vermicularis (Threadworm), Toxocara canis, Toxascaris leonine, Skrjabinema spp.,* and *Oxyuris equi,*

Camallanida, e.g. *Dracunculus medinensis* (guinea worm)

Spirurida, e.g. *Thelazia spp. Wuchereria spp., Brugia spp., Onchocerca spp., Dirofilari spp.a, Dipetalonema spp., Setaria spp., Elaeophora spp., Spirocerca lupi,* and *Habronema spp.,*

Thorny headed worms (Acanthocephala), e.g. *Acanthocephalus spp., Macracanthorhynchus hirudinaceus* and *Oncicola spp,*

Planarians (Plathelminthes):

Flukes (Trematoda), e.g. *Faciola spp., Fascioloides magna, Paragonimus spp., Dicrocoelium spp., Fasciolopsis buski, Clonorchis sinensis, Schistosoma spp., Trichobilharzia spp., Alaria alata, Paragonimus spp.,* and *Nanocyetes spp*,

Cercomeromorpha, in particular Cestoda (Tapeworms), e.g. *Diphyllobothrium spp., Tenia spp., Echinococcus spp., Dipylidium caninum, Multiceps spp., Hymenolepis spp., Mesocestoides spp., Vampirolepis spp., Moniezia spp., Anoplocephala spp., Sirometra spp., Anoplocephala spp.,* and *Hymenolepis spp.*

The compounds of formula I and compositions containing them are particularly useful for the control of pests from the orders Diptera, Siphonaptera and Ixodida.

Moreover, the use of the compounds of formula I and compositions containing them for combating mosquitoes is especially preferred.

The use of the compounds of formula I and compositions containing them for combating flies is a further preferred embodiment of the present invention.

Furthermore, the use of the compounds of formula I and compositions containing them for combating fleas is especially preferred.

The use of the compounds of formula I and compositions containing them for combating ticks is a further preferred embodiment of the present invention.

The compounds of formula I also are especially useful for combating endoparasites (roundworms nematoda, thorny headed worms and planarians).

Administration can be carried out both prophylactically and therapeutically.

Administration of the active compounds is carried out directly or in the form of suitable preparations, orally, topically/dermally or parenterally.

For oral administration to warm-blooded animals, the formula I compounds may be formulated as animal feeds, animal feed premixes, animal feed concentrates, pills, solutions, pastes, suspensions, drenches, gels, tablets, boluses and capsules. In addition, the formula I compounds may be administered to the animals in their drinking water. For oral administration, the dosage

form chosen should provide the animal with 0.01 mg/kg to 100 mg/kg of animal body weight per day of the formula I compound, preferably with 0.5 mg/kg to 100 mg/kg of animal body weight per day.

Alternatively, the formula I compounds may be administered to animals parenterally, for example, by intraruminal, intramuscular, intravenous or subcutaneous injection. The formula I compounds may be dispersed or dissolved in a physiologically acceptable carrier for subcutaneous injection. Alternatively, the formula I compounds may be formulated into an implant for subcutaneous administration. In addition the formula I compound may be transdermally administered to animals. For parenteral administration, the dosage form chosen should provide the animal with 0.01 mg/kg to 100 mg/kg of animal body weight per day of the formula I compound.

The formula I compounds may also be applied topically to the animals in the form of dips, dusts, powders, collars, medallions, sprays, shampoos, spot-on and pour-on formulations and in ointments or oil-in-water or water-in-oil emulsions. For topical application, dips and sprays usually contain 0.5 ppm to 5,000 ppm and preferably 1 ppm to 3,000 ppm of the formula I compound. In addition, the formula I compounds may be formulated as ear tags for animals, particularly quadrupeds such as cattle and sheep.

Suitable preparations are:

- Solutions such as oral solutions, concentrates for oral administration after dilution, solutions for use on the skin or in body cavities, pouring-on formulations, gels;

- Emulsions and suspensions for oral or dermal administration; semi-solid preparations;

- Formulations in which the active compound is processed in an ointment base or in an oil-in-water or water-in-oil emulsion base;

- Solid preparations such as powders, premixes or concentrates, granules, pellets, tablets, boluses, capsules; aerosols and inhalants, and active compound-containing shaped articles.

Compositions suitable for injection are prepared by dissolving the active ingredient in a suitable solvent and optionally adding further ingredients such as acids, bases, buffer salts, preservatives, and solubilizers. The solutions are filtered and filled sterile.

Suitable solvents are physiologically tolerable solvents such as water, alkanols such as ethanol, butanol, benzyl alcohol, glycerol, propylene glycol, polyethylene glycols, N-methyl-pyrrolidone, 2-pyrrolidone, and mixtures thereof.

The active compounds can optionally be dissolved in physiologically tolerable vegetable or synthetic oils which are suitable for injection.

Suitable solubilizers are solvents which promote the dissolution of the active compound in the main solvent or prevent its precipitation. Examples are polyvinylpyrrolidone, polyvinyl alcohol, polyoxyethylated castor oil, and polyoxyethylated sorbitan ester.

Suitable preservatives are benzyl alcohol, trichlorobutanol, p-hydroxybenzoic acid esters, and n-butanol.

Oral solutions are administered directly. Concentrates are administered orally after prior dilution to the use concentration. Oral solutions and concentrates are prepared according to the state of the art and as described above for injection solutions, sterile procedures not being necessary.

Solutions for use on the skin are trickled on, spread on, rubbed in, sprinkled on or sprayed on.

Solutions for use on the skin are prepared according to the state of the art and according to what is described above for injection solutions, sterile procedures not being necessary.

Further suitable solvents are polypropylene glycol, phenyl ethanol, phenoxy ethanol, ester such as ethyl or butyl acetate, benzyl benzoate, ethers such as alkyleneglycol alkylether, e.g. dipropylenglycol monomethylether, ketons such as acetone, methylethylketone, aromatic hydrocarbons, vegetable and synthetic oils, dimethylformamide, dimethylacetamide, transcutol, solketal, propylencarbonate, and mixtures thereof.

It may be advantageous to add thickeners during preparation. Suitable thickeners are inorganic thickeners such as bentonites, colloidal silicic acid, aluminium monostearate, organic thickeners such as cellulose derivatives, polyvinyl alcohols and their copolymers, acrylates and methacrylates.

Gels are applied to or spread on the skin or introduced into body cavities. Gels are prepared by

treating solutions which have been prepared as described in the case of the injection solutions with sufficient thickener that a clear material having an ointment-like consistency results. The thickeners employed are the thickeners given above.

Pour-on formulations are poured or sprayed onto limited areas of the skin, the active compound penetrating the skin and acting systemically.

Pour-on formulations are prepared by dissolving, suspending or emulsifying the active compound in suitable skin-compatible solvents or solvent mixtures. If appropriate, other auxiliaries such as colorants, bioabsorption-promoting substances, antioxidants, light stabilizers, adhesives are added.

Suitable solvents which are: water, alkanols, glycols, polyethylene glycols, polypropylene glycols, glycerol, aromatic alcohols such as benzyl alcohol, phenylethanol, phenoxyethanol, esters such as ethyl acetate, butyl acetate, benzyl benzoate, ethers such as alkylene glycol alkyl ethers such as dipropylene glycol monomethyl ether, diethylene glycol mono-butyl ether, ketones such as acetone, methyl ethyl ketone, cyclic carbonates such as propylene carbonate, ethylene carbonate, aromatic and/or aliphatic hydrocarbons, vegetable or synthetic oils, DMF, dimethylacetamide, n-alkylpyrrolidones such as methylpyrrolidone, n-butylpyrrolidone or n-octylpyrrolidone, N-methylpyrrolidone, 2-pyrrolidone, 2,2-dimethyl-4-oxy-methylene-1,3-dioxolane and glycerol formal.

Suitable colorants are all colorants permitted for use on animals and which can be dissolved or suspended.

Suitable absorption-promoting substances are, for example, DMSO, spreading oils such as isopropyl myristate, dipropylene glycol pelargonate, silicone oils and copolymers thereof with polyethers, fatty acid esters, triglycerides, fatty alcohols.

Suitable antioxidants are sulfites or metabisulfites such as potassium metabisulfite, ascorbic acid, butylhydroxytoluene, butylhydroxyanisole, tocopherol.

Suitable light stabilizers are, for example, novantisolic acid.

Suitable adhesives are, for example, cellulose derivatives, starch derivatives, polyacrylates, natural polymers such as alginates, gelatin.

Emulsions can be administered orally, dermally or as injections.

Emulsions are either of the water-in-oil type or of the oil-in-water type.

They are prepared by dissolving the active compound either in the hydrophobic or in the hydrophilic phase and homogenizing this with the solvent of the other phase with the aid of suitable emulsifiers and, if appropriate, other auxiliaries such as colorants, absorption-promoting substances, preservatives, antioxidants, light stabilizers, viscosity-enhancing substances.

Suitable hydrophobic phases (oils) are:
liquid paraffins, silicone oils, natural vegetable oils such as sesame oil, almond oil, castor oil, synthetic triglycerides such as caprylic/capric biglyceride, triglyceride mixture with vegetable fatty acids of the chain length C_8-C_{12} or other specially selected natural fatty acids, partial glyceride mixtures of saturated or unsaturated fatty acids possibly also containing hydroxyl groups, mono- and diglycerides of the C_8-C_{10} fatty acids,
fatty acid esters such as ethyl stearate, di-n-butyryl adipate, hexyl laurate, dipropylene glycol perlargonate, esters of a branched fatty acid of medium chain length with saturated fatty alcohols of chain length C_{16}-C_{18}, isopropyl myristate, isopropyl palmitate, caprylic/capric acid esters of saturated fatty alcohols of chain length C_{12}-C_{18}, isopropyl stearate, oleyl oleate, decyl oleate, ethyl oleate, ethyl lactate, waxy fatty acid esters such as synthetic duck coccygeal gland fat, dibutyl phthalate, diisopropyl adipate, and ester mixtures related to the latter, fatty alcohols such as isotridecyl alcohol, 2-octyldodecanol, cetylstearyl alcohol, oleyl alcohol, and fatty acids such as oleic acid and mixtures thereof.

Suitable hydrophilic phases are: water, alcohols such as propylene glycol, glycerol, sorbitol and mixtures thereof.

Suitable emulsifiers are:
non-ionic surfactants, e.g. polyethoxylated castor oil, polyethoxylated sorbitan monooleate, sorbitan monostearate, glycerol monostearate, polyoxyethyl stearate, alkylphenol polyglycol ether;
ampholytic surfactants such as di-sodium N-lauryl-p-iminodipropionate or lecithin;
anionic surfactants, such as sodium lauryl sulfate, fatty alcohol ether sulfates, mono/dialkyl polyglycol ether orthophosphoric acid ester monoethanolamine salt;
cation-active surfactants, such as cetyltrimethylammonium chloride.

Suitable further auxiliaries are: substances which enhance the viscosity and stabilize the emulsion, such as carboxymethylcellulose, methylcellulose and other cellulose and starch derivatives, polyacrylates, alginates, gelatin, gum arabic, polyvinylpyrrolidone, polyvinyl alcohol, copolymers of methyl vinyl ether and maleic anhydride, polyethylene glycols, waxes, colloidal silicic acid or mixtures of the substances mentioned.

Suspensions can be administered orally or topically/dermally. They are prepared by suspending the active compound in a suspending agent, if appropriate with addition of other auxiliaries such as wetting agents, colorants, bioabsorption-promoting substances, preservatives, antioxidants, light stabilizers.

Liquid suspending agents are all homogeneous solvents and solvent mixtures.

Suitable wetting agents (dispersants) are the emulsifiers given above.

Other auxiliaries which may be mentioned are those given above.

Semi-solid preparations can be administered orally or topically/dermally. They differ from the suspensions and emulsions described above only by their higher viscosity.

For the production of solid preparations, the active compound is mixed with suitable excipients, if appropriate with addition of auxiliaries, and brought into the desired form.

Suitable excipients are all physiologically tolerable solid inert substances. Those used are inorganic and organic substances. Inorganic substances are, for example, sodium chloride, carbonates such as calcium carbonate, hydrogencarbonates, aluminium oxides, titanium oxide, silicic acids, argillaceous earths, precipitated or colloidal silica, or phosphates. Organic substances are, for example, sugar, cellulose, foodstuffs and feeds such as milk powder, animal meal, grain meals and shreds, starches.

Suitable auxiliaries are preservatives, antioxidants, and/or colorants which have been mentioned above.
Other suitable auxiliaries are lubricants and glidants such as magnesium stearate, stearic acid, talc, bentonites, disintegration-promoting substances such as starch or crosslinked polyvinylpyrrolidone, binders such as starch, gelatin or linear polyvinylpyrrolidone, and dry binders such as microcrystalline cellulose.

In general, "parasiticidally effective amount" means the amount of active ingredient needed to achieve an observable effect on growth, including the effects of necrosis, death, retardation, prevention, and removal, destruction, or otherwise diminishing the occurrence and activity of the target organism. The parasiticidally effective amount can vary for the various compounds/compositions used in the invention. A parasiticidally effective amount of the compositions will also vary according to the prevailing conditions such as desired parasiticidal effect and duration, target species, mode of application, and the like.

The compositions which can be used in the invention can comprise generally from about 0.001 to 95% of the compound of formula I.

Generally it is favorable to apply the compounds of formula I in total amounts of 0.5 mg/kg to 100 mg/kg per day, preferably 1 mg/kg to 50 mg/kg per day.

Ready-to-use preparations contain the compounds acting against parasites, preferably ectoparasites, in concentrations of 10 ppm to 80 per cent by weight, preferably from 0.1 to 65 per cent by weight, more preferably from 1 to 50 per cent by weight, most preferably from 5 to 40 per cent by weight.

Preparations which are diluted before use contain the compounds acting against ectoparasites in concentrations of 0.5 to 90 per cent by weight, preferably of 1 to 50 per cent by weight.

Furthermore, the preparations comprise the compounds of formula I against endoparasites in concentrations of 10 ppm to 2 per cent by weight, preferably of 0.05 to 0.9 per cent by weight, very particularly preferably of 0.005 to 0.25 per cent by weight.

In a preferred embodiment of the present invention, the compositions comprising the compounds of formula I them are applied dermally / topically.

In a further preferred embodiment, the topical application is conducted in the form of compound-containing shaped articles such as collars, medallions, ear tags, bands for fixing at body parts, and adhesive strips and foils.

Generally it is favorable to apply solid formulations which release compounds of formula I in total amounts of 10 mg/kg to 300 mg/kg, preferably 20 mg/kg to 200 mg/kg, most preferably 25 mg/kg to 160 mg/kg body weight of the treated animal in the course of three weeks.

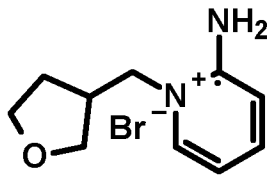
For the preparation of the shaped articles, thermoplastic and flexible plastics as well as elastomers and thermoplastic elastomers are used. Suitable plastics and elastomers are polyvinyl resins, polyurethane, polyacrylate, epoxy resins, cellulose, cellulose derivatives, polyamides and polyester which are sufficiently compatible with the compounds of formula I. A detailed list of plastics and elastomers as well as preparation procedures for the shaped articles is given e.g. in WO 03/086075.

Examples

The present invention is now illustrated in further details by the following examples, without imposing any limitation thereto.

S. Synthesis Examples

Step 1: Synthesis of 1-(tetrahydrofuran-3-ylmethyl)pyridin-1-ium-2-amine bromide salt (intermediate compound E-0.1)



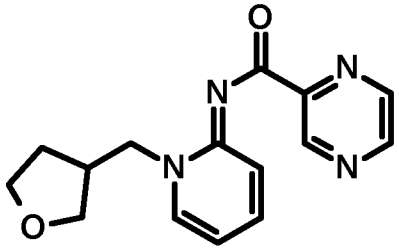
(E-0.1)

A solution of 3-(bromomethyl)tetrahydrofuran (8.00g, 48.48 mmol) and 2-amino pyridine (9.12g, 97.02 mmol) in sulfolane (250 mL) was heated to 80 °C for 70 hours. The reaction was then cooled to room temperature and then diluted with 5 L of CH_2Cl_2, and twice extracted with 500 mL of water. The aqueous phase was concentrated *in vacuo*. To the residue was then added CH_2Cl_2 (100 mL) and a thick orange oil precipitated. The CH_2Cl_2 was decanted and the oil dried *in vacuo* to afford the desired salt as a wax contaminated with a trace amount of sulfolane (1.1g, 9% yield).

LC-MS: mass calc'd. for $C_{10}H_{15}N_2O$ $[M]^+$ 179.1, found 179.3; RT = 0.326 min.

S.1 Synthesis (NE)-N-[1-(tetrahydrofuran-3-ylmethyl)-2-pyridylidene]pyrazine-2-carboxamide (Compound E-1.1):

Step 2: (NE)-N-[1-(tetrahydrofuran-3-ylmethyl)-2-pyridylidene]pyrazine-2-carboxamide (Compound E-1.1):



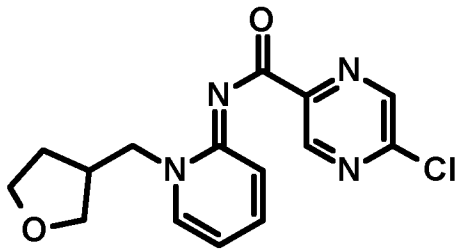
(E.1.1)

To a suspension of amine salt E-0.1 (0.500g, 1.93 mmol) in dichloroethene (DCE) (6 mL) at room temperature was sequentially added pyrazine-2-carboxylic acid (0.311g, 2.50 mmol), triethylamine (0.527g, 5.21 mmol), and propylphosphonic anhydride (0.318g, 3.08 mmol) as a 50% solution in ethyl acetate. The reaction was then heated in a microwave at 90 °C for 3 hours. The reaction was then diluted with EtOAc (100 mL), washed with saturated aqueous $NaHCO_3$, dried over Na_2SO_4 and concentrated *in vacuo* to afford a residue. The residue was purified using silica gel chromatography eluting with 5-20% MeOH/EtOAc to afford the desired compound as an off-white solid (0.134g, 24% yield).

LC-MS: mass calc'd. for $C_{15}H_{17}N_4O_2$ $[M]^+$ 285.1, found 285.4; RT = 0.521 min.

S.2 Synthesis of (NE)-5-chloro-N-[1-(tetrahydrofuran-3-ylmethyl)-2-pyridylidene]pyrazine-2-carboxamide (Compound E-1.2)

Step 3: (NE)-5-chloro-N-[1-(tetrahydrofuran-3-ylmethyl)-2-pyridylidene]pyrazine-2-carboxamide (Compound E-1.2)



(E-1.2)

To a suspension of amine salt **E-0.1** (0.500g, 1.93 mmol) in dichloroethene (DCE) (6 mL) at room temperature was sequentially added pyrazine-2-carboxylic acid (0.397g, 2.50 mmol), triethylamine (0.527g, 5.21 mmol), and propylphosphonic anhydride (0.318g, 3.08 mmol) as a 50% solution in ethyl acetate. The reaction was then heated in a microwave at 90 C for 3 hours. The reaction was then diluted with EtOAc (100 mL), washed with saturated aqueous $NaHCO_3$, dried over Na_2SO_4 and concentrated *in vacuo* to afford a residue. The residue was purified using silica gel chromatography eluting with 30-60% MeOH/EtOAc to afford the desired compound as an off-white solid (0.134g, 33% yield).

LC-MS: mass calc'd. for $C_{15}H_{17}ClN_4O_2$ $[M]^+$ 318.1, found 318.8; RT = 0.643 min.

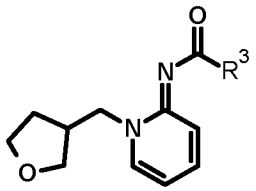
The compound examples can be characterized by their physico-chemical data*), e.g. by coupled High Performance Liquid Chromatography, by mass spectrometry (HPLC/MS) or by their melting point.

Analytical HPLC column: RP-18 column Chromolith Speed ROD from Merck KgaA, Germany). Elution: acetonitrile + 0.1% trifluoroacetic acid (TFA) / water + 0.1% trifluoroacetic acid (TFA) in a ratio of from 5:95 to 95:5 in 5 minutes at 40 °C.

*) Analytical UPLC column: Phenomenex Kinetex 1.7 µm XB-C18 100A; 50 x 2.1 mm; mobile phase: A: water + 0.1% trifluoroacetic acid (TFA); B: acetonitrile + 0.1% TFA; gradient: 5-100% B in 1.50 minutes; 100% B 0.20 min; flow: 0.8-1.0mL/min in 1.50 minutes at 60°C. MS-method: ESI positive.

Further examples E1.3 to E1.51 of compounds of formula I according to the present invention wherein R^1, R^2, R^{4a}, R^{4b1}, R^{4b2}, R^{4c1}, R^{4c2}, R^{4d1}, R^{4d2} are Hydrogen, k is 0 and X is oxygen, are given in table E-1 below. The compounds E1.3 to E1.51 listed below in table 1 have been prepared by analogy to the examples E1.1 and E1.2 mentioned above.

Table E-1 Examples of compounds according to formula E-1:



(E-1)

No.	R^3	RT [min]$^{a)*)}$	m/z $[M+H]^+$
E1.3	6-chloropyrazin-2-yl	0.617	319.4
E1.4	pyridazin-4-yl	0.571	285.4
E1.5	5-phenylpyrazin-2-yl	0.820	361.6

No.	R^3	RT [min][a)*)]	m/z $[M+H]^+$
E1.6	isoxazol-3-yl	0.505	274.4
E1.7	5-(2-fluorophenoxy)pyrazin-2-yl	0.829	395.0
E1.8	5-(2,2-difluoroethoxy)pyrazin-2-yl	0.721	365.0
E1.9	5-methoxypyrazin-2-yl	0.657	315.0
E1.10	6-methoxypyrazin-2-yl	0.623	315.0
E1.11	5-[(2,6-dichlorophenyl)methoxy]pyrazin-2-yl	0.978	458.9
E1.12	6-(m-tolyl)pyrazin-2-yl	0.827	375.1
E1.13	5-[3-(trifluoromethyl)phenoxy]pyrazin-2-yl	0.924	445.0
E1.14	5-isobutoxypyrazin-2-yl	0.873	0.891
E1.15	6-(2,2,2-trifluoroethoxy)pyrazin-2-yl	0.742	382.9
E1.16	5-propoxypyrazin-2-yl	0.804	343.1
E1.17	6-(2-fluorophenyl)pyrazin-2-yl	0.788	379.0
E1.18	5-(2,2,2-trifluoroethoxy)pyrazin-2-yl	0.785	382.9
E1.19	5-prop-2-ynoxypyrazin-2-yl	0.706	339.0
E1.20	5-(2-methoxyethoxy)pyrazin-2-yl	0.683	359.0
E1.21	6-(3,4-dimethoxyphenyl)pyrazin-2-yl	0.763	421.0
E1.22	5-isopropenylpyrazin-2-yl	0.747	325.0
E1.23	3,5-dimethoxypyrazin-2-yl	0.695	345.0
E1.24	5-(1,1-dioxo-1,4-thiazinan-4-yl)pyrazin-2-yl	0.632	418.0
E1.25	3-chloropyrazin-2-yl	0.618	318.9
E1.26	3,5-dichloropyrazin-2-yl	0.729	352.9
E1.27	6-isopropenylpyrazin-2-yl	0.669	325.0
E1.28	5-isopropylpyrazin-2-yl	0.741	327.0
E1.29	5,6,7,8-tetrahydroquinoxalin-2-yl	0.720	339.0
E1.30	6-methyl-2-oxo-1H-pyrazin-3-yl	0.533	315.0
E1.31	5-methyl-2-oxo-1H-pyrazin-3-yl	0.544	315.0
E1.32	6-isopropylpyrazin-2-yl	0.710	327.0
E1.33	6-bromopyrazin-2-yl	0.640	364.8
E1.34	5-(1,1-difluoroethyl)pyrazin-2-yl	0.705	349.3
E1.35	5-ethylpyrazin-2-yl	0.672	313.0
E1.36	5-methoxy-3-methyl-pyrazin-2-yl	0.747	328.9
E1.37	3,5-dimethylpyrazin-2-yl	0.662	313.0
E1.38	3-methylpyrazin-2-yl	0.614	299.0
E1.39	3-cyanopyrazin-2-yl	0.591	310.0
E1.40	6-chloro-3-methyl-pyrazin-2-yl	0.689	332.9
E1.41	5-propylpyrazin-2-yl	0.735	326.9
E1.42	5-cyanopyrazin-2-yl	0.622	310.0
E1.43	6-bromo-5-chloro-pyrazin-2-yl	0.754	398.8
E1.44	6-(trifluoromethyl)pyrazin-2-yl	0.683	352.9
E1.45	5,6-dichloropyrazin-2-yl	0.740	352.9
E1.46	6-ethylpyrazin-2-yl	0.656	313.0
E1.47	3-(trifluoromethyl)pyrazin-2-yl	0.698	353.0
E1.48	5-chloro-6-methyl-pyrazin-2-yl	0.706	332.9
E1.49	3-methylsulfanylpyrazin-2-yl	0.710	331.0
E1.50	2-thioxo-1H-pyrazin-3-yl	0.682	316.1
E1.51	5-(4-fluorocyclohex-3-en-1-yl)pyrazin-2-yl	0.831	383.0

b) RT = HPLC retention time; m/z of the $[M+H]^+$, $[M+Na]^+$ or $[M+K]^+$ peaks.

*) analytical UPLC column (see above)

B. Biological examples

The biological activity of the compounds of formula (I) of the present invention may be evaluated in biological tests as described in the following.

General conditions: If not otherwise specified, most test solutions are to be prepared as follows: The active compound is to be dissolved at the desired concentration in a mixture of 1:1 (vol:vol) distilled water:acteon. Further, the test solutions are to be prepared at the day of use (and, if not otherwised specified, in general at concentrations wt/vol).

B.1 Green Peach Aphid (*Myzus persicae*)

For evaluating control of green peach aphid (*Myzus persicae*) through systemic means, the test unit consists of 96-well-microtiter plates containing liquid artificial diet under an artificial membrane.

The compounds are formulated using a solution containing 75% v/v water and 25% v/v DMSO. Different concentrations of formulated compounds are pipetted into the aphid diet, using a custom built pipetter, at two replications.

After application, 5 - 8 adult aphids are placed on the artificial membrane inside the microtiter plate wells. The aphids are then allowed to suck on the treated aphid diet and incubated at about 23 + 1°C and about 50 + 5% relative humidity for 3 days. Aphid mortality and fecundity is then visually assessed.

In this test, compound E1.1, E1.6, E1.14, E1.2, E1.19, E1.20, E1.3, E1.26, E1.28, E1.30, E1.31, E1.35, E1.4, E1.37, E1.38, E1.41, E1.42, E1.44, and E1.49 at 2500 ppm showed at least 75% mortality in comparison with untreated controls.

B.2 Vetch aphid (*Megoura viciae*)

For evaluating control of vetch aphid (*Megoura viciae*) through contact or systemic means the test unit consisted of 24-well-microtiter plates containing broad bean leaf disks.

The compounds were formulated using a solution containing 75% v/v water and 25% v/v DMSO. Different concentrations of formulated compounds were sprayed onto the leaf disks at 2.5 µl, using a custom built micro atomizer, at two replications.

After application, the leaf disks were air-dried and 5 – 8 adult aphids were placed on the leaf disks inside the microtiter plate wells. The aphids were then allowed to suck on the treated leaf disks and were incubated at about 23 ± 1°C and about 50 ± 5% relative humidity for 5 days. Aphid mortality and fecundity was then visually assessed.

In this test, compound E1.1, E1.13, E1.3, E1.29, E1.30, E1.35, E1.4, E1.37, E1.38, E1.45, and E1.46 at 2500 ppm showed at least 75% mortality in comparison with untreated controls.

B.4 Cowpea aphid (*Aphis craccivora*)

The active compound is dissolved at the desired concentration in a mixture of 1:1 (vol:vol) distilled water : acetone. Surfactant (Alkamuls® EL 620) is added at a rate of 0.1% (vol/vol). The test solution is prepared at the day of use.

Potted cowpea plants are colonized with approximately 50 - 100 aphids of various stages by manually transferring a leaf tissue cut from infested plant 24 hours before application. Plants are sprayed after the pest population has been recorded. Treated plants are maintained on light carts at about 28°C. Percent mortality is assessed after 72 hours.

In this test, compounds E1.1, E1.20, E1.28, E1.35, E1.3, E1.41, and E1.6 at 500 ppm showed at least 75% mortality in comparison with untreated controls.

B.5 Orchid thrips (dichromothrips corbetti)

Dichromothrips corbetti adults used for bioassay are obtained from a colony maintained continuously under laboratory conditions. For testing purposes, the test compound is diluted in a 1:1 mixture of acetone:water (vol:vol), plus 0.01% vol/vol Alkamuls® EL 620 surfactant.

Thrips potency of each compound is evaluated by using a floral-immersion technique. Plastic petri dishes are used as test arenas. All petals of individual, intact orchid flowers are dipped into treatment solution and allowed to dry. Treated flowers are placed into individual petri dishes along with about 20 adult thrips. The petri dishes are then covered with lids. All test arenas are held under continuous light and a temperature of about 28°C for duration of the assay. After 3 days, the numbers of live thrips are counted on each flower, and along inner walls of each petri dish. The percent mortality is recorded 72 hours after treatment.

In this test, compounds E1.23, E1.30, and E1.49 at 500 ppm showed at least 75% mortality in comparison with untreated controls.

B.6 Rice green leafhopper (*Nephotettix virescens*)

Rice seedlings are cleaned and washed 24 hours before spraying. The active compounds are formulated in 50:50 acetone:water (vol:vol), and 0.1% vol/vol surfactant (EL 620) is added. Potted rice seedlings are sprayed with 5 ml test solution, air dried, placed in cages and inoculated with 10 adults. Treated rice plants are kept at about 28-29°C and relative humidity of about 50-60%. Percent mortality is recorded after 72 hours.

In this test, compounds E1.1, E1.26, E1.30, and E1.48 at 500 ppm showed at least 75% mortality in comparison with untreated controls.

B.8 Boll weevil (*Anthonomus grandis*)

For evaluating control of boll weevil (*Anthonomus grandis*) the test unit consisted of 96-well-microtiter plates containing an insect diet and 5-10 *A. grandis* eggs.

The compounds were formulated using a solution containing 75% v/v water and 25% v/v DMSO. Different concentrations of formulated compounds were sprayed onto the insect diet at 5 µl, using a custom built micro atomizer, at two replications.

After application, microtiter plates were incubated at about 25 ± 1°C and about 75 ± 5 % relative humidity for 5 days. Egg and larval mortality was then visually assessed.

In this test, compounds E1.1, E1.16, E1.17, E1.25, E1.28, E1.29, E1.30, E1.32, E1.37, and E1.38 at 2500 ppm showed at least 75% mortality in comparison with untreated controls.

B.9 Mediterranean fruitfly (*Ceratitis capitata*)

For evaluating control of Mediterranean fruitfly (*Ceratitis capitata*) the test unit consisted of microtiter plates containing an insect diet and 50-80 *C. capitata* eggs.

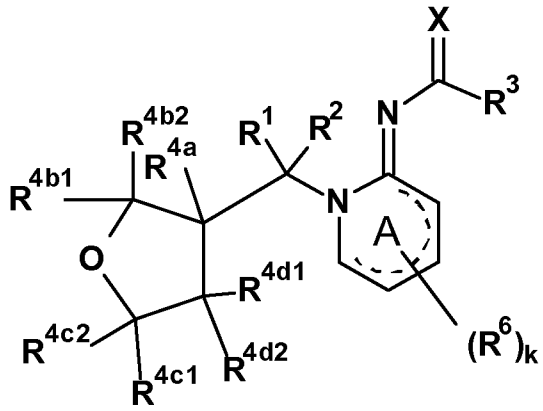
The compounds were formulated using a solution containing 75% v/v water and 25% v/v DMSO. Different concentrations of formulated compounds were sprayed onto the insect diet at 5 µl, using a custom built micro atomizer, at two replications.

After application, microtiter plates were incubated at about 28 ± 1°C and about 80 ± 5 % relative humidity for 5 days. Egg and larval mortality was then visually assessed.

In this test, compounds E1.2, E1.19, E1.37, and E1.47 at 2500 ppm showed at least 75% mortality in comparison with untreated controls.

Claims

1. Pesticidal N-substituted pyridylidene compounds of formula (I):



(I)

wherein

A is a 6-membered saturated, partially or fully unsaturated N-heterocyclic ring;

k is an integer selected from 0, 1, 2, 3 or 4;

X is selected from O and S;

R^1, R^2 are independently from each other selected from the group consisting of C_1-C_6-alkyl, C_3-C_6-cycloalkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, C_1-C_6-alkoxy, C_1-C_6-alkylthio, wherein each of the aforementioned radicals are unsubstituted, partly or completely halogenated or may carry any combination of one or more radicals R^7;
hydrogen, halogen, cyano, nitro, SCN, $Si(R^{11})_2R^{12}$, OR^{16}, OSO_2R^{16}, $S(O)_nR^{16}$, $S(O)_nNR^{17a}R^{17b}$, $NR^{17a}R^{17b}$, $C(=O)NR^{17a}R^{17b}$, $C(=S)NR^{17a}R^{17b}$, $C(=O)OR^{16}$, $C(=O)R^{15}$, $C(=S)R^{15}$,
phenyl, optionally substituted with 1, 2, 3, 4 or 5 sub-stituents R^{18}, which are independently selected from one another,
a 3-, 4-, 5-, 6- or 7- membered saturated, partly saturated or unsaturated aromatic heterocyclic ring comprising 1, 2 or 3 heteroatoms selected

from oxygen, nitrogen and sulfur, optionally substituted with 1, 2, 3 or 4, substituents R^{18}, selected independently from one another, and wherein the nitrogen and the sulfur atom(s) of the heterocyclic ring may optionally be oxidized,

or

R^1 and R^2 form, together with the carbon atom, which they attached to, a 3-, 4-, 5-,or 6-membered saturated or partly unsaturated carbocyclic or heterocyclic ring, wherein each of the carbon atoms of said cycle is unsubstituted or may carry any combination of 1 or 2 radicals R^7,

or

R^1 and R^2 may together be =O, $=CR^{13}R^{14}$; =S; $=S(O)_nR^{16}$; $=S(O)_nNR^{17a}R^{17b}$, $=NR^{17a}$, $=NOR^{16}$;$=NNR^{17a}$;

R^3 is selected from phenyl and Het, wherein

Het is a 3-, 4-, 5-, 6- or 7- membered saturated, partly saturated or unsaturated or aromatic heterocyclic ring comprising 1, 2, 3 or 4 heteroatoms selected from oxygen, nitrogen and sulfur, wherein the nitrogen and the sulfur atom(s) of the heterocyclic ring may optionally be oxidized, and wherein the Het ring may be attached by a carbon or a nitrogen bond;

wherein the phenyl or the Het may optionally be substituted with q substituents selected from R^y, wherein

q is an integer selected from 1, 2, 3, 4 or 5;

and

R^y is selected each independently from one another and from the value of q from the group consisting of hydrogen, halogen, cyano, azido, nitro, SCN, SF_5, C_1-C_{10}-alkyl, C_3-C_8-cycloalkyl, C_2-C_{10}-alkenyl, C_2-C_{10}-alkynyl, wherein the carbon atoms of the aforementioned aliphatic and cyclo-aliphatic radicals may optionally be substituted with one or more R^7, which are selected independently from one another, $Si(R^{11})_2R^{12}$, OR^8, $OS(O)_nR^8$, $S(O)_nR^8$, $S(O)_nNR^{9a}R^{9b}$, $NR^{9a}R^{9b}$, $C(=O)R^7$, $C(=S)R^7$, $C(=O)OR^7$,$C(=NR^{9a})R^7$, $C(=N\text{-}NR^{9a}R^{9b})R^7$, $C(=NOR^8)R^7$, $C(=O)NR^{9a}R^{9b}$, $C(=S)NR^{9a}R^{9b}$,

Y-Ar or Y-Cy,

wherein

Y is a single bond, CH_2, NR^5, O or S;

Ar is phenyl, naphthyl or

a mono- or bicyclic 5 to 10- membered heteroaromatic ring comprising 1, 2, 3 or 4 heteroatoms selected from oxygen, nitrogen and sulfur, wherein the nitrogen and the sulfur atom(s) of the heterocyclic ring may optionally be oxidized;

wherein Ar is optionally substituted with 1, 2, 3, 4 or 5 substituents selected independently from one another from halogen, CN, NO_2, OH, SH, NH_2, CO_2H or $S(O)_n$-C_1-C_6-alkyl, $(C=NR^{17a})R^{15}$, $C(=NOR^{16})R^{15}$, C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl or C_1-C_6-alkoxy, and wherein the carbon atoms of the aforementioned aliphatic radicals may be partially or fully halogenated;

and

Cy is a C_3-C_{12} cycloalkyl or C_3-C_{12} cycloalkenyl, which are unsubstituted or substituted with 1 to 5 radicals selected independently of one another from the group consisting of halogen, CN, NO_2, OH, SH,NH_2, CO_2H, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 alkoxy, C_2-C_6 alkenyloxy, C_2-C_6 alkynyloxy, C_1-C_6 haloalkoxy and C_1-C_6 alkylthio;

or wherein

two R^y present together on one atom of a saturated or partly saturated heterocyclic may be =O, $=CR^{13}R^{14}$; =S; $=S(O)_nR^{16}$; $=S(O)_nNR^{17a}R^{17b}$, $=NR^{17a}$, $=NOR^{16}$ or $=NNR^{17a}$;

or

two R^y on adjacent carbon atoms of the phenyl or heterocyclic ring Het may be a bridge selected from $CH_2CH_2CH_2CH_2$, CH=CH-CH=CH, N=CH-CH=CH, CH=N-CH=CH, N=CH-N=CH, $OCH_2CH_2CH_2$, $OCH=CHCH_2$, $CH_2OCH_2CH_2$, OCH_2CH_2O, OCH_2OCH_2, $CH_2CH_2CH_2$, $CH=CHCH_2$, CH_2CH_2O, CH=CHO, CH_2OCH_2, $CH_2C(=O)O$, $C(=O)OCH_2$, $O(CH_2)O$, $SCH_2CH_2CH_2$, $SCH=CHCH_2$, $CH_2SCH_2CH_2$, SCH_2CH_2S, SCH_2SCH_2, CH_2CH_2S, CH=CHS, CH_2SCH_2, $CH_2C(=S)S$, $C(=S)SCH_2$, $S(CH_2)S$, $CH_2CH_2NR^{17a}$, $CH_2CH=N$, $CH=CH-NR^{17a}$,

OCH=N, SCH=N and form together with the carbon atoms to which the two R^y are bonded a 5-membered or 6-membered partly saturated or unsaturated, aromatic carbocyclic or heteocyclic ring, wherein the ring may optionally be substituted with one or two substituents selected from =O, OH, CH_3, NO_2, halogen, cyano, C_1-C_6 alkyl, C_1-C_6 alkenyl, C_1-C_6 alkynyl, C_3-C_6 cycloalkyl, C_1-C_6 alkoxy, $S(O)_nR^{16}$ or, wherein the aliphatic radicals of the last six substituents may be partially or fully halogenated;

R^{4a}, R^{4b1}, R^{4b2}, R^{4c1}, R^{4c2}, R^{4d1} and R^{4d2} are each independently from one another selected from the group consisting of hydrogen, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 alkoxyl, C_1-C_6 alkylamino, C_3-C_6 cycloalkyl, wherein each carbon atom of the carbon chain may be partially or fully halogenated or may be substituted with 1, 2 or 3 radials selected independently from one another from the group consisting of CN, NO_2, CN, OH, SH or NH_2;
or wherein two of R^{4b1} and R^{4b2},
or of R^{4c1} and R^{4c2} or of R^{4d1} and R^{4d2} on the same carbon may together form C=O or C=S;

R^5 is selected from the group consisting of hydrogen, cyano, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylthio, C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, C_3-C_8-cycloalkyl, wherein the four last mentioned aliphatic and cyclo-aliphatic radicals may be unsubstituted, partially or fully halogenated and/or oxygenated and/or may carry 1 or 2 radicals selected from R^7,
phenyl, benzyl, pyridyl, pyrimidyl, wherein the four last mentioned radicals may be unsubstituted, partially or fully halogenated and/or carry 1, 2 or 3 substituents selected from C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6 haloalkoxy or (C_1-C_6-alkoxy)carbonyl;

R^6 is selected each, independently from the value of k and from one another, from the group consisting of, halogen, azido, CN, NO_2, SCN, SF_5, C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, and

wherein the carbon atoms of the aforementioned aliphatic and cycloaliphatic radicals may optionally be further substituted independently from one another with one or more R^7,
OR^8, $C(=O)R^7$ or $C(=S)R^7$,
or
two of R^6 present on one ring carbon or sulfur atom may together form =O, $=CR^{13}R^{14}$; =S; $=S(O)_nR^{16}$;, $=NR^{17a}$, $=NOR^{16}$;$=NNR^{17a}$;

R^7 is each independently from one another selected from the group consisting of hydrogen, halogen, cyano, azido, nitro, -SCN, SF_5, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylthio, C_3-C_8-cycloalkyl, C_3-C_8-halocycloalkyl, C_2-C_6-alkenyl, C_2-C_6-haloalkenyl, C_2-C_6-alkynyl, C_2-C_6 haloalkynyl, $Si(R^{11})_2R^{12}$, OR^{16}, OSO_2R^{16}, $S(O)_nR^{16}$, $S(O)_nNR^{17a}R^{17b}$, $NR^{17a}R^{17b}$, $C(=O)NR^{17a}R^{17b}$, $C(=S)NR^{17a}R^{17b}$, $C(=O)OR^{16}$, $C(=O)R^{15}$, $C(=S)R^{15}$, $C(=NR^{17a})R^{15}$, $C(=NOR^{16})R^{15}$,
phenyl, optionally substituted with 1, 2, 3, 4 or 5 substituents R^{10}, which are independently selected from one another,
a 3-, 4-, 5-, 6- or 7- membered saturated, partly saturated or unsaturated aromatic heterocyclic ring comprising 1, 2 or 3 heteroatoms selected from oxygen, nitrogen and sulfur, optionally substituted with 1, 2, 3 or 4 substituents R^{10}, selected independently from one another, and wherein the nitrogen and the sulfur atom(s) of the heterocyclic ring may optionally be oxidized,
or
two R^7 present on one carbon atom may together form =O, $=CR^{13}R^{14}$; =S; $=S(O)_nR^{16}$; $=S(O)_nNR^{17a}R^{17b}$, $=NR^{17a}$, $=NOR^{16}$;$=NNR^{17a}$;
or
two R^7 may form a 3-, 4-, 5-, 6-, 7- or 8-membered saturated or partly unsaturated carbocyclic or heterocyclic ring together with the carbon atoms to which the two R^7 are bonded to;

R^8 is each independently from one another selected from the group consisting of hydrogen, cyano, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6-

haloalkoxy, C_1-C_6-alkoxy-C_1-C_6-alkyl, C_1-C_6-alkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylthio, C_3-C_8-cycloalkyl, C_3-C_8-cycloalkyl-C_1-C_4-alkyl-, C_3-C_8-halocycloalkyl, C_2-C_6-alkenyl, C_2-C_6-haloalkenyl, C_2-C_6-alkynyl, C_2-C_6 haloalkynyl, $Si(R^{11})_2R^{12}$, $S(O)_nR^{16}$, $S(O)_nNR^{17a}R^{17b}$, $NR^{17a}R^{17b}$, $-N=CR^{13}R^{14}$, $-C(=O)R^{15}$, $C(=O)NR^{17a}R^{17b}$, $C(=S)NR^{17a}R^{17b}$, $C(=O)OR^{16}$,

phenyl, phenyl-C_1-C_4-alkyl, wherein the phenyl moiety of the last two aforementioned radicals is optionally substituted with one or more substituents R^{10}; which are selected independently from one another,

a 3-, 4-, 5-, 6- or 7- membered saturated, partly saturated or unsaturated aromatic heterocyclic ring comprising 1, 2 or 3 heteroatoms selected from oxygen, nitrogen and sulfur, optionally substituted with 1, 2, 3 or 4 substituents R^{10}, selected independently from one another, and wherein the nitrogen and the sulfur atom(s) of the heterocyclic ring may optionally be oxidized;

R^{9a}, R^{9b} are each independently from one another selected from the group consisting of hydrogen, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkylthio, C_1-C_6-haloalkylthio, C_3-C_8-cycloalkyl, C_3-C_8-halocycloalkyl, C_2-C_6-alkenyl, C_2-C_6-haloalkenyl, C_2-C_6-alkynyl, C_2-C_6 haloalkynyl,

$S(O)_nR^{16}$, $S(O)_nNR^{17a}R^{17b}$, $C(=O)R^{15}$, $C(=O)OR^{16}$, $C(=O)NR^{17a}R^{17b}$, $C(=S)R^{15}$, $C(=S)SR^{16}$, $C(=S)NR^{17a}R^{17b}$, $C(=NR^{17a})R^{15}$; $NR^{17a}R^{17b}$, $P(=O)(R^{19})_2$,

phenyl, optionally substituted with 1, 2, 3 or 4, substituents R^{10}, which are selected independently from one another;

a 3-, 4-, 5-, 6- or 7- membered saturated, partly saturated or unsaturated aromatic heterocyclic ring comprising 1, 2, 3 or 4 heteroatoms selected from oxygen, nitrogen and sulfur, optionally substituted with 1, 2, 3 or 4 substituents R^{10}, selected independently from one another, and wherein the nitrogen and the sulfur atom(s) of the heterocyclic ring may optionally be oxidized;

or,

R^{9a} and R^{9b} are together a C_2-C_7 alkylene chain and form a 3-, 4-, 5-, 6-, 7- or 8-membered saturated, partly saturated or unsaturated aromatic ring together with the nitrogen atom they are bonded to, wherein the alkylene chain may contain one or two heteratoms or heteroatom groups selected from oxygen, sulfur, nitrogen, SO, SO_2 and NO, and may optionally be substituted with halogen, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkylthio, C_1-C_6-haloalkylthio, C_3-C_8-cycloalkyl, C_3-C_8-halocycloalkyl, C_2-C_6-alkenyl, C_2-C_6-haloalkenyl, C_2-C_6-alkynyl, C_2-C_6 haloalkynyl,
phenyl, optionally substituted with 1, 2, 3, 4 or 5substituents R^{10}; which are selected independently from one another,
a 3-, 4-, 5-, 6,- or 7-membered saturated, partly saturated or unsaturated aromatic heterocyclic ring comprising 1, 2 or 3 heteroatoms selected from oxygen, nitrogen and/or sulfur, optionally substituted with one or more substituents R^{10}, selected independently from one another, and wherein the nitrogen and/or the sulfur atom(s) of the heterocyclic ring may optionally be oxidized;

or

R^{9a} and R^{9b} together may form a $=CR^{13}R^{14}$, $=S(O)_nR^{16}$, $=S(O)_nNR^{17}R^{17}$, $=NR^{17}$ or $=NOR^{16}$ radical;

R^{10} is each independently from one another selected from the group consisting of halogen, cyano, azido, nitro, SCN, SF_5, C_1-C_{10}-alkyl, C_3-C_8-cycloalkyl, C_2-C_{10}-alkenyl, C_2-C_{10}-alkynyl, wherein the carbon atoms of the aforementioned aliphatic and cyclo-aliphatic radicals may optionally be substituted with one or more R^{15}, which are selected independently from one another,

$Si(R^{11})_2R^{12}$, OR^{16}, $OS(O)_nR^{16}$, $S(O)_nR^{16}$, $S(O)_nNR^{17a}R^{17b}$, $NR^{17a}R^{17b}$, $C(=O)R^{15}$, $C(=S)R^{15}$, $C(=O)OR^{16}$, $C(=NR^{17a})R^{15}$, $C(=O)NR^{17a}R^{17b}$, $C(=S)NR^{17a}R^{17b}$,

phenyl, optionally substituted with halogen, cyano, nitro, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy or C_1-C_6-haloalkoxy,

a 3-, 4-, 5-, 6- or 7- membered saturated, partly saturated or unsaturated aromatic heterocyclic ring comprising 1, 2 or 3 heteroatoms selected from oxygen, nitrogen and sulfur, optionally substituted with one or more substituents selected independently from one another from halogen, cyano, NO_2, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy or C_1-C_6-haloalkoxy, and wherein the nitrogen and the sulfur atom(s) of the heterocyclic ring may optionally be oxidized;

or

two R^{10} present together on one atom of a partly saturated heterocyclic may be =O, $=CR^{13}R^{14}$; $=S(O)_nR^{16}$; $=S(O)_nNR^{17a}R^{17b}$, $=NR^{17a}$, $=NOR^{16}$ or $=NNR^{17a}$;

or,

two R^{10} on adjacent carbon atoms may be a bridge selected from $CH_2CH_2CH_2CH_2$, CH=CH-CH=CH, N=CH-CH=CH, CH=N-CH=CH, N=CH-N=CH, $OCH_2CH_2CH_2$, $OCH=CHCH_2$, $CH_2OCH_2CH_2$, OCH_2CH_2O, OCH_2OCH_2, $CH_2CH_2CH_2$, $CH=CHCH_2$, CH_2CH_2O, CH=CHO, CH_2OCH_2, $CH_2C(=O)O$, $C(=O)OCH_2$, $O(CH_2)O$, $SCH_2CH_2CH_2$, $SCH=CHCH_2$, $CH_2SCH_2CH_2$, SCH_2CH_2S, SCH_2SCH_2, CH_2CH_2S, CH=CHS, CH_2SCH_2, $CH_2C(=S)S$, $C(=S)SCH_2$, $S(CH_2)S$, $CH_2CH_2NR^{17a}$, $CH_2CH=N$, CH=CH-NR^{17a}, OCH=N, SCH=N and form together with the carbon atoms to which the two R^{10} are bonded to a 5-membered or 6-membered partly saturated or unsaturated, aromatic carbocyclic or heteocyclic ring, wherein the ring may optionally be substituted with one or two substituents selected from =O, OH, CH_3, OCH_3, halogen, cyano, halomethyl or halomethoxy;

R^{11}, R^{12} are each independently from one another selected from the group consisting of hydrogen, halogen, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 alkoxy, C_1-C_6 haloalkoxyl, C_2-C_6 alkenyl, C_2-C_6 haloalkenyl, C_2-C_6 al-

kynyl, C_2-C_6 haloalkynyl, C_3-C_8 cycloalkyl, C_3-C_8 halocycloalkyl, C_1-C_6-alkoxy-C_1-C_6-alkyl, C_1-C_6-haloalkoxy-C_1-C_6-alkyl,
phenyl and benzyl, wherein the last two aromatic radicals may optionally substituted with 1, 2, 3, 4 or 5 substituents R^{18}; which are selected independently from one another;

R^{13}, R^{14} are each independently from one another selected from the group consisting of hydrogen, C_1-C_4 alkyl, C_3-C_6 cycloalkyl, C_1-C_4-alkoxy-C_1-C_4-alkyl, $N(CH_3)_2$, phenyl and benzyl;

R^{15} is each independently from one another selected from the group consisting of hydrogen, halogen, cyano, nitro, OH, SH, SCN, SF_5, $C(=O)NR^{17a}R^{17b}$, C_1-C_6-alkoxy, (C_1-C_6-alkoxy)carbonyl, C_1-C_6-haloalkoxy, C_1-C_6-alkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylthio, trimethylsilyl, triethylsilyl, *tert*butyldimethylsilyl,
C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, C_3-C_8-cycloalkyl, wherein the four last mentioned aliphatic and cyclo-aliphatic radicals may be unsubstituted, partially or fully halogenated and/or oxgenated and/or may carry 1 or 2 radicals selected from C_1-C_4 alkoxy;
phenyl, benzyl, pyridyl, phenoxy, wherein the last four radicals may be unsubstituted, partially or fully halogenated and/or to carry 1, 2 or 3 substituents selected from C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6 haloalkoxy, (C_1-C_6-alkoxy)carbonyl, (C_1-C_6-alkyl)amino or di-(C_1-C_6-alkyl)-amino, or
two R^{15} present on the same carbon atom may together be =O, =CH(C_1-C_4-alkyl), =C(C_1-C_4-alkyl)C_1-C_4-alkyl, =N(C_1-C_6-alkyl) or =NO(C_1-C_6-alkyl);

R^{16} is each independently from one another selected from the group consisting of hydrogen, cyano, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylthio, trimethylsilyl, triethylsilyl, *tert*butyldimethylsilyl,
C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, C_3-C_8-cycloalkyl, wherein the four last mentioned radicals may be unsubstituted, partially or fully halogenated

and/or oxygenated and/or may carry 1 or 2 radicals selected from C_1-C_4 alkoxy,
phenyl, benzyl, pyridyl, phenoxy, wherein the last four radicals may be unsubstituted, partially or fully halogenated and/or carry 1, 2 or 3 substituents selected from C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6 haloalkoxy or (C_1-C_6-alkoxy)carbonyl;

R^{17a}, R^{17b} are each independently from one another selected from the group consisting of hydrogen, cyano, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylthio, trimethylsilyl, triethylsilyl, *tert*butyldimethylsilyl,
C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, C_3-C_8-cycloalkyl, wherein the four last mentioned aliphatic and cyclo-aliphatic radicals may be unsubstituted, partially or fully halogenated and/or oxygenated and/or may carry 1 or 2 radicals selected from C_1-C_4-alkoxy,
phenyl, benzyl, pyridyl, phenoxy, wherein the four last mentioned radicals may be unsubstituted, partially or fully halogenated and/or carry 1, 2 or 3 substituents selected from C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6 haloalkoxy or (C_1-C_6-alkoxy)carbonyl,
or,
R^{17a} and R^{17b} may together be a C_2-C_6-alkylene or -alkenylene chain forming a 3- to 7-membered saturated, partly saturated or unsaturated ring together with the nitrogen atom R^{17a} and R^{17b} are bonded to, wherein the alkylene or alkenylene chain may contain 1 or 2 heteroatoms selected from oxygen, sulfur or nitrogen, and may optionally be substituted with halogen, C_1-C_4-haloalkyl, C_1-C_4-alkoxy or C_1-C_4-haloalkoxy, and wherein the nitrogen and/or the sulfur atom(s) of the heterocyclic ring may optionally be oxidized;

R^{18} is selected, independently from one another and independently from the number present in the molecule, from the group consisting of hydrogen, halogen, cyano, C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, C_3-C_8-cycloalkyl, wherein the four last mentioned aliphatic radicals may be unsubstituted,

partially or fully halogenated and/or oxygenated and/or may carry 1-2 radicals selected from C_1-C_4 alkoxy;
C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, (C_1-C_6-alkoxy)carbonyl, C_1 C_6-alkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylthio, trimethylsilyl, triethylsilyl, tertbutyldimethylsilyl, phenyl, benzyl, pyridyl, phenoxy, wherein it being possible for phenyl, benzyl, pyridyl and phenoxy to be unsubstituted, partially or fully halogenated and/or to carry 1, 2 or 3 substituents selected from the group consisting of C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6 haloalkoxy;
or two R^{18} together on one carbon atom may form =C(C_1-C_4-alkyl)$_2$, =N(C_1-C_6-alkyl), =NO(C_1-C_6-alkyl) or =O;
or, when two R^{18} are on adjacent carbon atoms, the two adjacent R^{18} may form a 3-, 4-, 5-, 6- or 7-membered saturated, partly saturated or unsaturated ring together with the atom bearing them by forming a C_2-C_6 alkylene chain; in this case, the alkylene chain may contain 1or 2 oxygen atoms, sulfur atoms or nitrogen atoms, and may be arbitrarily substituted with halogen atoms, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-haloalkoxy;

R^{19} is each independently from one another selected from the group consisting of hydrogen, C_1-C_6 alkyl, C_1-C_6 alkoxy, C_3-C_6 cycloalkyl, C_3-C_6 cycloalkoxy and phenyl;

n is an integer selected independently from one another from 0, 1 or 2;

and an enantiomer, diastereomer, E/Z-isomer or agriculturally or veterinarily acceptable salts thereof.

2. The compounds of formula (I) according to claim 1, wherein each of R^{4a}, R^{4b1}, R^{4b2}, R^{4c1}, R^{4c2}, R^{4d1} and R^{4d2} is hydrogen.

3. The compounds of formula (I) according to claim 1 or 2, wherein
R^1 and R^2 are independently from each other selected from the group consisting of hydrogen, halogen, CN, C_1-C_6-alkyl, C_3-C_6-cycloalkyl, C_1-C_6-haloalkyl and C_3-C_6-halocycloalkyl; or

form together =O, =$CR^{13}R^{14}$ or =S; or
form together with the carbon atom, which they attached to, a 3- to 5-membered saturated carbocyclic ring.

4. The compounds of formula (I) according to claim 1 or 2, wherein
R^1, R^2 are independently from each other selected from the group consisting of hydrogen, halogen, CN, C_1-C_6-alkyl, C_3-C_6-cycloalkyl, C_1-C_6-haloalkyl and C_3-C_6-halocycloalkyl.

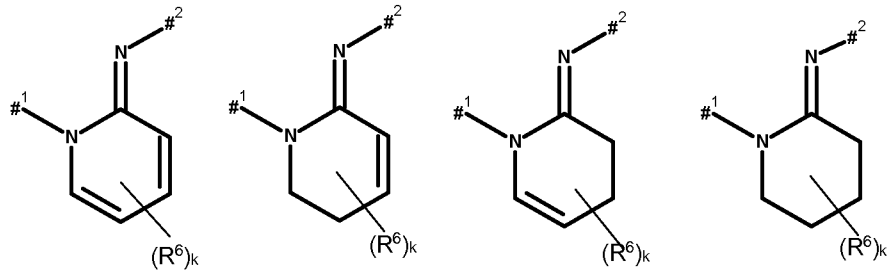
5. The compounds of formula (I) according to claim 1 or 2, wherein
R^1, R^2 are independently from one another hydrogen or CH_3.

6. The compounds of formula (I) according to claim 1 or 2, wherein
R and R^2 are both hydrogen.

7. The compounds of formula (I) according to any of the preceding claims, wherein
X is sulphur.

8. The compounds of formula (I) according to any of claims 1 to 6, wherein
X is oxygen.

9. The compounds of formula (I) according to any of the preceding claims, wherein the N-heterocyclic ring A is selected from one of the followings structures A-1 to A-4:



A-1 A-2 A-3 A-4

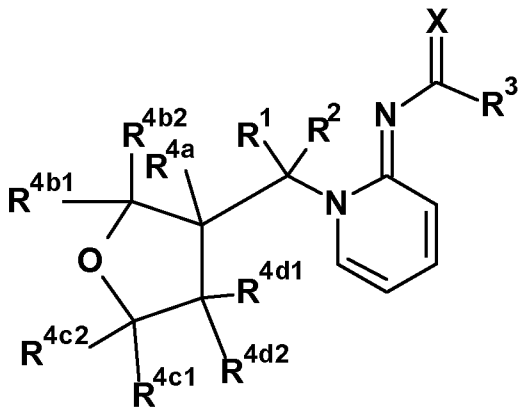
and wherein

#1 and #2 denotes the bonds to the remainder of the molecule, and

k is an integer selected from 0 or 1; and

R^6 is selected from halogen, CN, C_1-C_4 alkyl and C_1-C_4-haloalky.

10. The compounds of formula (I) according to claim 9, which corresponds to compounds of formula (II)

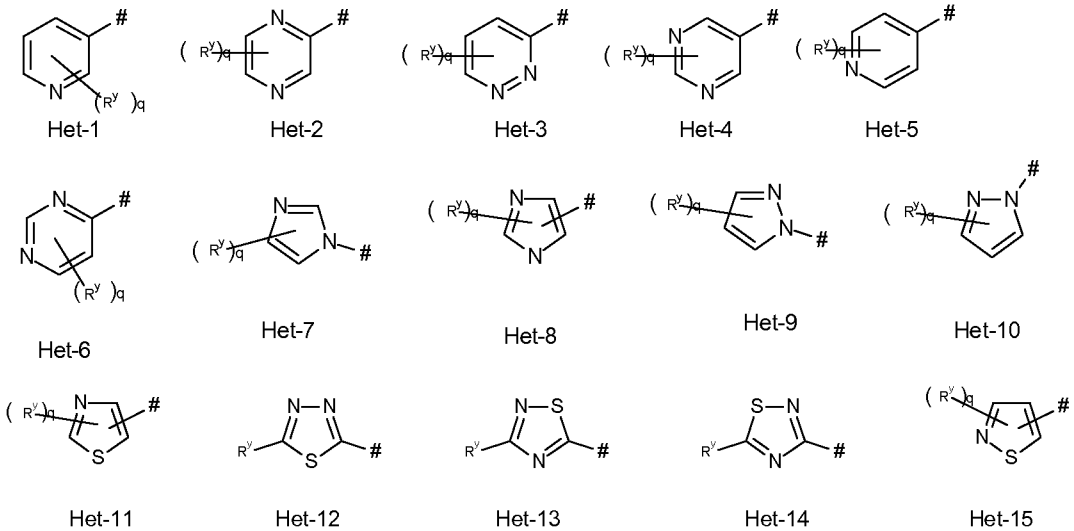


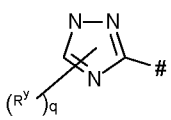
(II)

wherein the N-heterocyclic ring A is fully unsaturated and unsubstituted.

11. The compounds of formula (I) according to claim 1, wherein R^3 is Het, and

Het is selected from the group consisting of radicals of the following formulae Het-1 to Het-57:

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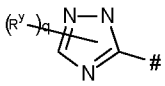
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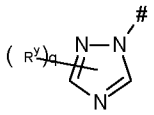
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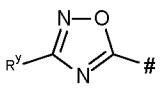
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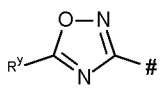
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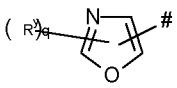
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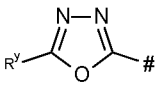
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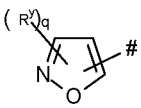
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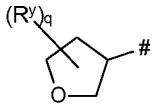
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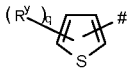
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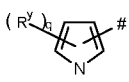
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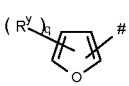
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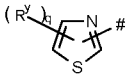
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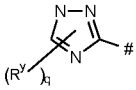
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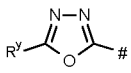
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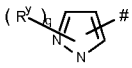
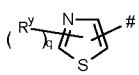

Het-31


Het-32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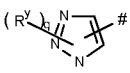
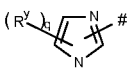

Het-34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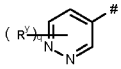
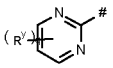
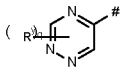

Het-36


Het-37


Het-38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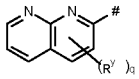
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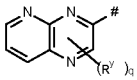
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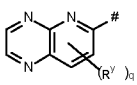
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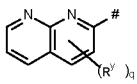
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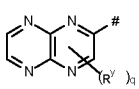
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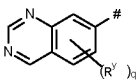
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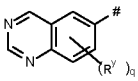
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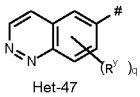
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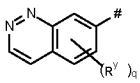
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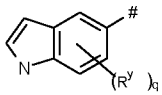
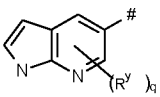
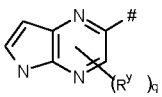
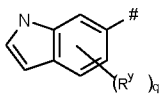

Het-49


Het-50


Het-51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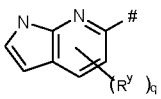
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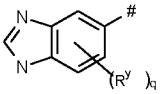
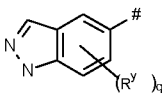

Het-54


Het-55

Het-56

Het-57

wherein # denotes the bond to the remainder of the molecule, and wherein

q is an integer selected from 0, 1, 2, 3 or 4;

and

R^y is selected each independently from one another and from the value of q from the group consisting of hydrogen, halogen, cyano, azido, nitro, SCN, C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, wherein the carbon atoms of the aforementioned aliphatic and cycloaliphatic radicals may optionally be substituted with one or more R^7, which are selected independently from one another, $Si(R^{11})_2R^{12}$, OR^8, $OS(O)_nR^8$, $-S(O)_nR^8$, $S(O)_nNR^{9a}R^{9b}$, $NR^{9a}R^{9b}$, $C(=O)R^7$, $C(=S)R^7$, $C(=O)OR^7$,$-C(=NR^{9a})R^7$, $C(=N\text{-}NR^{9a}R^{9b})R^7$, $C(=NOR^8)R^7$, $C(=O)NR^{9a}R^{9b}$, $C(=S)NR^{9a}R^{9b}$,

Y-Ar or Y-Cy,

wherein

Y is a single bond, CH_2, O or S;

Ar is phenyl, naphthyl or

a monocyclic 5- or 6- membered heteroaromatic ring comprising 1, 2, 3 or 4 heteroatoms selected from oxygen, nitrogen and/or sulfur, wherein the nitrogen and/or the sulfur atom(s) of the heterocyclic ring may optionally be oxidized;

wherein Ar is optionally substituted with 1, 2, 3, 4 or 5 substituents selected independently from one another from hydrogen, halogen, CN, NO_2, OH, SH, NH_2, CO_2H, C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl or C_1-C_6-alkoxy, and wherein the carbon atoms of the aforementioned aliphatic radicals may be partially or fully halogenated;

and

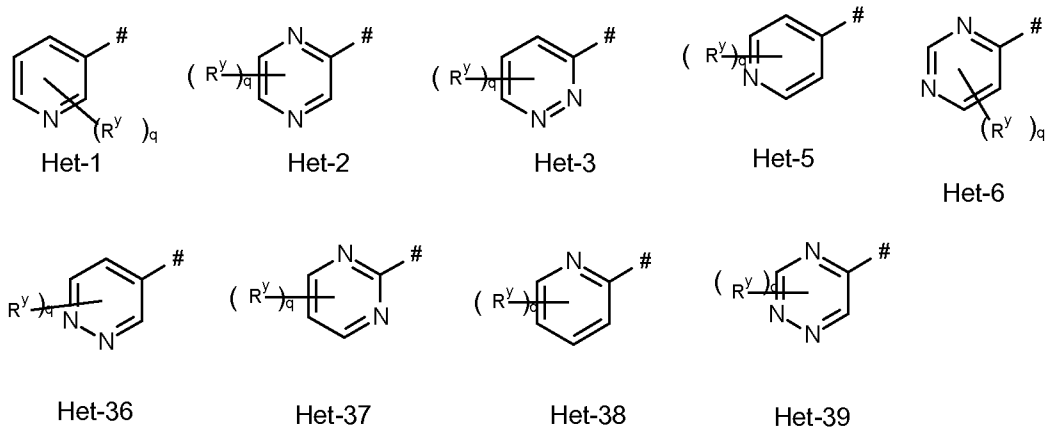
Cy is a C_3-C_7 cycloalkyl or C_3-C_7-cycloalkenyl, which is unsubstituted or substituted with 1 to 5 radicals selected independently of one another from the group consisting of hydrogen, halogen, CN, NO_2, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 alkoxy, C_1-C_6 haloalkoxy,

or wherein

two R^y present together on one atom of a partly saturated heterocyclic may be =O, =S, $=CR^{13}R^{14}$, $=NR^{17a}$, $=NOR^{16}$ or $=NNR^{17a}$; or
two R^y on adjacent carbon atoms of the heterocyclic ring Het may form a bridge selected from $CH_2CH_2CH_2$ and $CH_2CH_2CH_2CH_2$.

12. The compounds of formula (I) according to claim 11, wherein R^3 is Het, and

Het is selected from the group consisting of radicals of the following formulae Het-1, Het-2, Het-3, Het-5, Het-6, Het-37, Het-38, Het-39 and Het-40:



wherein # denotes the bond to the remainder of the molecule, and wherein

q is 0, 1 or 2;

R^y is selected each independently from one another and from the value of q from the group consisting of halogen, cyano, nitro, SCN, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_3-C_6-cycloalkyl, C_3-C_6-alocyclohalkyl, C_2-C_6-alkenyl, C_1-C_6-haloalkenyl, C_2-C_6-alkynyl, C_2-C_6-haloalkynyl, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, wherein the carbon atoms of the aforementioned aliphatic and cyclo-aliphatic radicals may optionally be substituted with one or more R^{15}, which are selected independently from one another, OR^{16}, $-S(O)_nR^{16}$, $S(O)_nNR^{17a}R^{17b}$, $C(=O)R^{15}$, $C(=O)OR^{15}$,$-C(=NR^{17a})R^{15}$, $C(=N\text{-}NR^{17a}R^{17b})R^{15}$, $C(=NOR^{16})R^{15}$, $C(=O)NR^{17a}R^{17b}$,

Y-Ar or Y-Cy,

wherein

Y is a single bond, CH_2, O or S;

Ar is phenyl, naphthyl or is

a monocyclic 5- or 6- membered heteroaromatic ring comprising 1 or 2 heteroatoms selected from oxygen, nitrogen and sulfur;

wherein Ar is optionally substituted with 1, 2, or 3 substituents selected independently from one another from hydrogen, halogen, CN, NO_2, OH, C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl or C_1-C_6-alkoxy, and wherein the carbon atoms of the aforementioned aliphatic radicals may be partially or fully halogenated;

and

Cy is selected from the group conisiting of cyclopropane, cyclobutane, cyclopentane, cyclohexane and cyclohexene, wherein the aliphatic ring is unsubstituted or partly or fully halogenated;

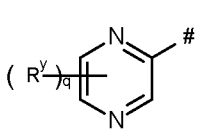
or wherein

two R^y present together on one atom of a partly saturated heterocyclic may be =O, =S, =NOR^{16} or =NNR^{17a}; or

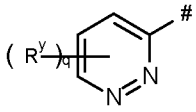
two R^y on adjacent carbon atoms of the heterocyclic ring Het may form a bridge selected from $CH_2CH_2CH_2$ and $CH_2CH_2CH_2CH_2$.

13. The compounds of formula (I) according to claim 12, wherein R^3 is Het, and

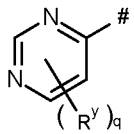
Het is selected from the group consisting of radicals of the following formulae Het-2, Het-3, Het-6, Het-36, Het-37 and Het-39:



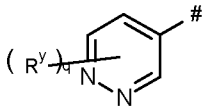
Het-2



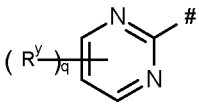
Het-3



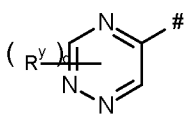
Het-6



Het-36



Het-37



Het-39

wherein # denotes the bond to the remainder of the molecule, and wherein

q is 0, 1 or 2;

R^y is selected each independently from one another and from the value of q from the group consisting of hydrogen, halogen, cyano, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_3-C_6-cycloalkyl, C_3-C_6-halocycloalkyl, C_2-C_6-alkenyl, C_2-C_6-haloalkenyl, C_2-C_6-alkynyl, C_2-C_6-haloalkynyl, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_4-alkoxy-C_1-C_4-alkoxy, phenyl-C_1-C_4-alkoxy, where the phenyl ring may carry 1, 2 or 3 substituents selected from halogen, cyano, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and C_1-C_4-haloalkoxy; C_1-C_6-alkylsulfenyl, C_1-C_6-alkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylsulfonyl, C_1-C_6-alkylcarbonyl, C_1-C_6-haloalkylcarbonyl, C_1-C_6-alkoxycarbonyl, C_1-C_6-haloalkoxycarbonyl, C_1-C_6-alkylamino, di-(C_1-C_6-alkyl)-amino, C_1-C_6-alkylaminosulfonyl, di-(C_1-C_6-alkyl)-aminosulfonyl, C_1-C_6-haloalkylaminosulfonyl, C_1-C_6-alkylaminosulfenyl, di-(C_1-C_6-alkyl)-aminosulfenyl, C_1-C_6-alkylaminosulfinyl, di-(C_1-C_6-alkyl)-aminosulfinyl, C_1-C_6-alkylaminocarbonyl, di-(C_1-C_6-alkyl)-aminocarbonyl,,
phenyl, unsubstituted or optionally monosubstituted or disubstituted with halogen, CN, NO_2, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-haloalkoxy,
Y-Ar or Y-Cy,
wherein

Y is a single bond or CH_2 or O;

Ar is phenyl or a mono 5- or 6- membered heteroaromatic ring selected from the group consisting of thiazoles, isothiazoles, oxazoles, isoazoles, and pyrazoles, wherein the aromatic or heteroaromatic ring is optionally substituted with 1, 2 or 3 substituents selected independently from one another from halogen, CN, OH, C_1-C_6-alkyl and C_1-C_6-alkoxy, and wherein the carbon atoms of the aforementioned aliphatic radicals may be partially or fully halogenated;

and

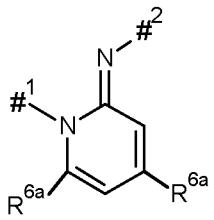
Cy is cyclopropane, cyclobutane or cyclohexene, which is unsubstituted or partly or fully halogenated; or

two R^y on adjacent carbon atoms of the heterocyclic ring Het may form a bridge selected from $CH_2CH_2CH_2$ and $CH_2CH_2CH_2CH_2$.

14. The compounds of formula (I) according to claim 1, wherein R^3 is Het, and Het is Het-23, wherein q is 0, 1 or 2 and R^y is as defined in any one of claims 11 to 13,

and where preferably q is 0.

15. The compounds of formula (I) according to claim 1, wherein



A-1

A is fully unsaturated ring , which is unsubstituted or monosubstituted with R^{6a}, wherein

#1 and #2 denotes the bonds to the remainder of the molecule, and

R^{6a} is each independently from one another selected from the group consisting of hydrogen, halogen, CN, C_1-C_4 alkyl, C_1-C_4-alkoxy, C_1-C_4-haloalkoxy and C_1-C_4-haloalky, where at least one R^{6a} is hydrogen;

X is selected from O and S;

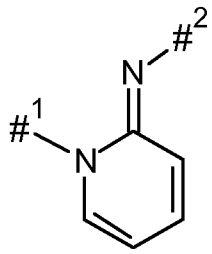
R^1, R^2 are independently from each other selected from the group consisting of hydrogen, halogen, cyano, C_1-C_3-alkyl, or C_1-C_3-haloalkyl;

R^{4a}, R^{4b1}, R^{4b2}, R^{4c1}, R^{4c2}, R^{4d1} and R^{4d2} is each hydrogen;

and

R^3 is defined as in claim 13.

16. The compounds of formula (I) according to claim 15, wherein



A-1

A is fully unsaturated ring , which is unsubstituted, and

wherein #1 and #2 denotes the bonds to the remainder of the molecule;

X is selected from O and S;

R^1, R^2 are both hydrogen or one of R^1 or R^2 is methyl and the other is hydrogen;

R^{4a}, R^{4b1}, R^{4b2}, R^{4c1}, R^{4c2}, R^{4d1} and R^{4d2} is each hydrogen;

and

R^3 is defined as in claim 13.

17. An agricultural or veterinary composition for combating animal pests comprising at least one compound as defined in any of claims 1 to 16 and at least one inert liquid and/or solid acceptable carrier and optionally, if desired, at least one surfactant.

18. A method for combating or controlling invertebrate pests of the group of insects, arachnids or nematodes, which method comprises contacting said pest or its food supply, habitat or breeding grounds with a pesticidally effective amount of at least one compound as defined in any one of claims 1 to 16.

19. A method for protecting growing plants from attack or infestation by invertebrate pests of the group of insects, arachnids or nematodes, which method comprises contacting a plant, or soil or water in which the plant is growing, with a pesticidally effective amount of at least one compound as defined in any of claims 1 to 16.

20. A method for the protection of plant proparagation material, especially seeds, from soil insects and of the seedlings roots and shoots from soil and foliar insects comprising contacting the plant proparagtion material before sowing and/or after pregermination with at least one compound as defined in any one of claims 1 to 16.

21. A method for treating animals infested or infected by parasites or preventing animals of getting infected or infested by parasites or protecting animals against infestation or infection by parasites which comprises orally, topically or parenterally

administering or applying to the animals a parasiticidally effective amount of a compound as defined in any of claims 1 to 16.

22. The use of a compound as defined in any of claims 1 to 16 for the preparation of a veterinary composition for treating animals infested or infected by parasites, for preventing animals of getting infected or infested by parasites or protecting animals against infestation or infection by parasites.

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2014/068415

A. CLASSIFICATION OF SUBJECT MATTER
INV. C07D405/14 C07D413/14 A01N43/58 A01N43/60 A01N43/80
C07D417/14
ADD.
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
C07D A01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, EMBASE, WPI Data, BEILSTEIN Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 2 628 389 A1 (MEIJI SEIKA PHARMA CO LTD [JP]) 21 August 2013 (2013-08-21) claims 1, 4, 21	1-22
X,P	EP 2 634 174 A2 (MEIJI SEIKA PHARMA CO LTD [JP]) 4 September 2013 (2013-09-04) paragraphs [0039], [0074]; claims 1, 3, 8, 9, 14	1-22

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
17 October 2014	24/10/2014

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Moriggi, J

1

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/EP2014/068415

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 2628389 A1	21-08-2013	AU 2011297160 A1	28-03-2013
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