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(54) **BETA-LACTAMS AND THEIR USE AS HERBICIDES**

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CPC ***A01N 43/44*** (2013.01); ***A01P 13/00*** (2021.08); ***C07D 205/08*** (2013.01)

(58) **Field of Classification Search**
CPC C07D 205/04; A01N 43/44
See application file for complete search history.

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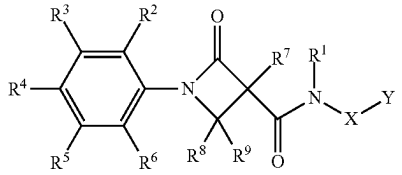
(57) **ABSTRACT**

The invention relates to compounds of formula (I), and their use as herbicides. In said formula, R^1 to R^9 represent groups such as hydrogen, halo-gen or organic groups such as alkyl, alkenyl, alkynyl, or alkoxy; X is a bond or a divalent unit; Y is hydrogen, cyano, hydroxyl or a linear or cyclic organic group. The invention further refers to a composition comprising such compound and to the use thereof for controlling unwanted vegetation.

(I)



14 Claims, No Drawings

BETA-LACTAMS AND THEIR USE AS HERBICIDES

CROSS-REFERENCE TO RELATED APPLICATIONS

This is the U.S. national phase of International Application No. PCT/EP2021/058569, filed Apr. 1, 2021, which claims the benefit of European Patent Application No. 20169421.3, filed on Apr. 14, 2020.

The present invention relates to beta-Lactam compounds and compositions comprising the same. The invention also relates to the use of the beta-Lactam compounds or the corresponding compositions for controlling unwanted vegetation. Furthermore, the invention relates to methods of applying the beta-Lactam compounds or the corresponding compositions. For the purpose of controlling unwanted vegetation, especially in crops, there is an ongoing need for new herbicides that have high activity and selectivity together with a substantial lack of toxicity for humans and animals.

WO12130798, WO14048827, WO14048882, WO18228985, WO18228986, WO19034602, and WO19145245 describe 3-phenylisoxazoline-5-carboxamides and their use as herbicides.

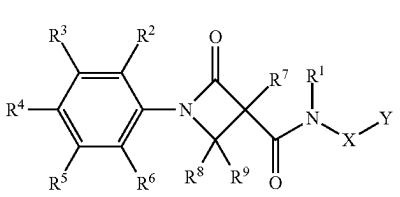
U.S. Pat. No. 3,958,974 discloses N-aryl substituted azetidinones and their use as herbicides.

The compounds of the prior art often suffer from insufficient herbicidal activity, in particular at low application rates, and/or unsatisfactory selectivity resulting in a low compatibility with crop plants.

Accordingly, it is an object of the present invention to provide compounds having a strong herbicidal activity, in particular even at low application rates, a sufficiently low toxicity for humans and animals and/or a high compatibility with crop plants. The beta-Lactam compounds should also show a broad activity spectrum against a large number of different unwanted plants.

These and further objectives are achieved by the compounds of formula (I) defined below including their agriculturally acceptable salts, amides, esters or thioesters.

Accordingly, the present invention provides compounds of formula (I)



(I)

wherein the substituents have the following meanings:

R^1 hydrogen, $(C_1$-$C_3)$-alkyl, $(C_3$-$C_4)$-cycloalkyl, $(C_1$-$C_3)$-haloalkyl, $(C_2$-$C_3)$-alkenyl, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-alkynyl, $(C_2$-$C_3)$-haloalkynyl, $(C_1$-$C_3)$-alkoxy-$(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^2 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^3 hydrogen, halogen, nitro, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, hydroxy-$(C_1$-$C_3)$-alkyl, $(C_3$-$C_5)$-cycloalkyl, $(C_3$-$C_5)$-halocycloalkyl, hydroxy-$(C_3$-$C_5)$-cycloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy, $(C_1$-$C_3)$-alkoxycarbonyl, $(C_2$-$C_3)$ alkenyl, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$ alkynyl, $(C_2$-$C_3)$-haloalkynyl, $(C_1$-$C_3)$-alkylthio, $(C_1$-$C_3)$-alkylsulfinyl, $(C_1$-$C_3)$-alkylsulfonyl;

R^4 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_3$-$C_4)$-halocycloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-haloalkynyl, $(C_1$-$C_3)$-alkylthio;

R^5 hydrogen, halogen, nitro, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, hydroxy-$(C_1$-$C_3)$-alkyl, $(C_3$-$C_5)$-cycloalkyl, $(C_3$-$C_5)$-halocycloalkyl, hydroxy-$(C_3$-$C_5)$-cycloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy, $(C_1$-$C_3)$-alkoxycarbonyl, $(C_2$-$C_3)$ alkenyl, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$ alkynyl, $(C_2$-$C_3)$haloalkynyl, $(C_1$-$C_3)$-alkylthio, $(C_1$-$C_3)$-alkylsulfinyl, $(C_1$-$C_3)$-alkylsulfonyl;

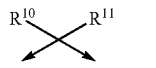
R^6 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^7 hydrogen, fluorine, cyano, or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_3$-$C_6)$-alkenyl, $(C_2$-$C_6)$-alkynyl, $(C_1$-$C_6)$-alkoxy, each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, hydroxyl, cyano and $(C_1$-$C_6)$-alkoxy;

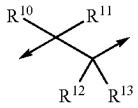
R^8, R^9 each independently hydrogen, halogen, cyano, or $(C_1$-$C_6)$-alkyl, $(C_1$-$C_6)$-alkoxy, each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, and cyano; or

R^8 and R^9 form, together with the carbon atom to which they are bound, a saturated, partially or fully unsaturated three to five-membered ring containing, in addition to this carbon atom, q carbon atoms and n oxygen atoms;

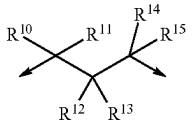
X a bond (X^0) or a divalent unit from the group consisting of (X^1), (X^2), (X^3), (X^4), (X^5), and (X^6):



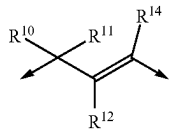
(X^1)



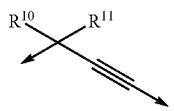
(X^2)



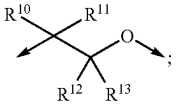
(X^3)



(X^4)



(X^5)



(X^6)

R^{10}-R^{15} each independently hydrogen, fluorine, chlorine, bromine, iodine, hydroxyl, cyano, CO_2R^e, $CONR^bR^d$, $NR^bCO_2R^e$, R^a, or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_5)$-cycloalkyl, $(C_2$-$C_6)$-alkenyl, $(C_2$-$C_6)$-alkynyl, each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, hydroxyl and cyano, or $(C_1$-$C_6)$-alkoxy, $(C_3$-$C_6)$-cycloalkoxy, $(C_3$-$C_6)$-alkenyloxy, $(C_3$-$C_6)$-alkynyloxy, $(C_1$-$C_3)$-alkylthio, $(C_1$-$C_3)$-alkylsulfinyl, $(C_1$-$C_3)$-alkylsulfonyl, each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, cyano and $(C_1$-$C_2)$-alkoxy;

Y hydrogen, cyano, hydroxyl, Z,
or
$(C_1$-$C_{12})$-alkyl, $(C_3$-$C_8)$-cycloalkyl, $(C_2$-$C_{12})$-alkenyl or $(C_2$-$C_{12})$-alkynyl, each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, cyano, hydroxyl, OR^d, Z, OZ, NHZ, $S(O)_nR^a$, $SO_2NR^bR^d$, $SO_2NR^bCOR^e$, CO_2R^e, $CONR^bR^h$, COR^b, $CONR^eSO_2R^a$, NR^bR^e, NR^b-COR^e, $NR^bCONR^eR^e$, $NR^bCO_2R^e$, $NR^bSO_2R^e$ $NR^bSO_2NR^bR^e$, $OCONR^bR^e$, $OCSNR^bR^e$, POR^fR^f and $C(R^b)$=NOR^e;

Z a three-, four-, five- or six-membered saturated, partly unsaturated, fully unsaturated or aromatic ring, except phenyl, which is formed from r carbon atoms, n nitrogen atoms, n sulfur atoms and n oxygen atoms, and which is substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^h$, $S(O)_nR^a$, $SO_2NR^bR^d$, $SO_2NR^bCOR^e$, COR^b, $CONR^eSO_2R^a$, NR^bR^e, NR^b-COR^e, $NR^bCONR^eR^e$, $NR^bCO_2R^e$, $NR^bSO_2R^e$, $NR^bSO_2NR^bR^e$, $OCONR^bR^e$, $OCSNR^bR^e$, POR^fR^f and $C(R^b)$=NOR^e, R^b, R^c, R^e and R^f, and where the sulfur atoms and carbon atoms bear n oxo groups;

R^a $(C_1$-$C_6)$-alkyl or $(C_3$-$C_6)$-cycloalkyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, iodine, cyano, hydroxy, and $(C_1$-$C_3)$-alkoxy;

R^b hydrogen, $(C_1$-$C_3)$-alkoxy or R^a;

R^c fluorine, chlorine, bromine, iodine, cyano, hydroxyl, $S(O)_nR^a$ or $(C_1$-$C_6)$-alkoxy, $(C_3$-$C_6)$-alkenyloxy or $(C_3$-$C_6)$-alkynyloxy, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

R^d hydrogen or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_2$-$C_4)$-alkenyl, $(C_3$-$C_6)$-cycloalkyl-$(C_1$-$C_3)$-alkyl, phenyl-$(C_1$-$C_3)$-alkyl, furanyl-$(C_1$-$C_3)$-alkyl or $(C_2$-$C_4)$-alkynyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano, CO_2R^a, $CONR^bR^h$, $(C_1$-$C_2)$-alkoxy, $(C_1$-$C_3)$-alkylthio, $(C_1$-$C_3)$-alkylsulfinyl, $(C_1$-$C_3)$-alkylsulfonyl, phenylthio, phenylsulfinyl, and phenylsulfonyl;

R^e R^d;

R^f $(C_1$-$C_3)$-alkyl or $(C_1$-$C_3)$-alkoxy;

R^h hydrogen or $(C_1$-$C_6)$-alkyl, $(C_1$-$C_2)$-alkoxy, $(C_3$-$C_6)$-cycloalkyl, $(C_2$-$C_4)$-alkenyl, $(C_1$-$C_6)$-alkoxycarbonyl-$(C_1$-$C_6)$-alkyl, or $(C_2$-$C_4)$-alkynyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano, CO_2R^a and $(C_1$-$C_2)$-alkoxy;

m 0, 1, 2, 3, 4 or 5;

n 0, 1 or 2;

q 1, 2, 3 or 4;

r 1, 2, 3, 4, 5 or 6;

including their agriculturally acceptable salts, amides, esters or thioesters, provided the compounds of formula (I) have a carboxyl group.

The present invention also provides formulations comprising at least one compound of formula (I) and auxiliaries customary for formulating crop protection agents.

The present invention also provides combinations comprising at least one compound of formula (I) (component A) and at least one further compound selected from the herbicidal compounds B (component B) and safeners C (component C).

The present invention also provides the use of compounds of formula (I) as herbicides, i.e. for controlling undesired vegetation.

The present invention furthermore provides a method for controlling undesired vegetation where a herbicidal effective amount of at least one compound of formula (I) is allowed to act on plants, their seeds and/or their habitat.

If the compounds of formula (I), the herbicidal compounds B and/or the safeners C as described herein are capable of forming geometric isomers, for example E/Z isomers, it is possible to use both, the pure isomers and mixtures thereof, according to the invention.

If the compounds of formula (I), the herbicidal compounds B and/or the safeners C as described herein have one or more centres of chirality and, as a consequence, are present as enantiomers or diastereomers, it is possible to use both, the pure enantiomers and diastereomers and their mixtures, according to the invention.

If the compounds of formula (I), the herbicidal compounds B and/or the safeners C as described herein have ionizable functional groups, they can also be employed in the form of their agriculturally acceptable salts. Suitable are, in general, the salts of those cations and the acid addition salts of those acids whose cations and anions, respectively, have no adverse effect on the activity of the active compounds.

Preferred cations are the ions of the alkali metals, preferably of lithium, sodium and potassium, of the alkaline earth metals, preferably of calcium and magnesium, and of the transition metals, preferably of manganese, copper, zinc and iron, further ammonium and substituted ammonium in which one to four hydrogen atoms are replaced by C_1-C_4-alkyl, hydroxy-C_1-C_4-alkyl, C_1-C_4-alkoxy-C_1-C_4-alkyl, hydroxy-C_1-C_4-alkoxy-C_1-C_4-alkyl, phenyl or benzyl, preferably ammonium, methylammonium, isopropylammonium, dimethylammonium, diethylammonium, diisopropylammonium, trimethylammonium, triethylammonium, tris(isopropyl)ammonium, heptylammonium, dodecylammonium, tetradecylammonium, tetramethylammonium, tetraethylammonium, tetrabutylammonium, 2-hydroxyethylammonium (olamine salt), 2-(2-hydroxyeth-1-oxy)eth-1-ylammonium (diglycolamine salt), di(2-hydroxyeth-1-yl)ammonium (diolamine salt), tris(2-hydroxyethyl)ammonium (trolamine salt), tris(2-hydroxypropyl)ammonium, benzyltrimethylammonium, benzyltriethylammonium, N,N,N-trimethylethanolammonium (choline salt), furthermore phosphonium ions, sulfonium ions, preferably tri(C_1-C_4-alkyl)sulfonium, such as trimethylsulfonium, and sulfoxonium ions, preferably tri(C_1-C_4-alkyl)sulfoxonium, and finally the salts of polybasic amines such as N,N-bis-(3-aminopropyl)methylamine and diethylenetriamine.

Anions of useful acid addition salts are primarily chloride, bromide, fluoride, iodide, hydrogensulfate, methylsulfate, sulfate, dihydrogenphosphate, hydrogenphosphate, nitrate, bicarbonate, carbonate, hexafluorosilicate, hexafluorophosphate, benzoate and also the anions of C_1-C_4-alkanoic acids, preferably formate, acetate, propionate and butyrate.

Compounds of formula (I), herbicidal compounds B and/or safeners C as described herein having a carboxyl group can be employed in the form of the acid, in the form of an agriculturally suitable salt as mentioned above or else in the form of an agriculturally acceptable derivative, for example as amides, such as mono- and di-C_1-C_6-alkylamides or arylamides, as esters, for example as allyl esters, propargyl esters, C_1-C_{10}-alkyl esters, alkoxyalkyl esters, tefuryl ((tetrahydrofuran-2-yl)methyl) esters and also as thioesters, for example as C_1-C_{10}-alkylthio esters. Preferred mono- and di-C_1-C_6-alkylamides are the methyl and the dimethylamides. Preferred arylamides are, for example, the anilides and the 2-chloroanilides. Preferred alkyl esters are, for example, the methyl, ethyl, propyl, isopropyl, butyl, isobutyl, pentyl, mexyl (1-methylhexyl), meptyl (1-methylheptyl), heptyl, octyl or isooctyl (2-ethylhexyl) esters. Preferred C_1-C_4-alkoxy-C_1-C_4-alkyl esters are the straight-chain or branched C_1-C_4-alkoxy ethyl esters, for example the 2-methoxyethyl, 2-ethoxyethyl, 2-butoxyethyl (butotyl), 2-butoxypropyl or 3-butoxypropyl ester. An example of a straight-chain or branched C_1-C_{10}-alkylthio ester is the ethylthio ester.

The terms used for organic groups in the definition of the variables are, for example the expression "halogen", collective terms which represent the individual members of these groups of organic units.

The prefix C_x-C_y denotes the number of possible carbon atoms in the particular case. All hydrocarbon chains can be straight-chain or branched.

- halogen: fluorine, chlorine, bromine, or iodine, especially fluorine, chlorine or bromine;
- alkyl and the alkyl moieties of composite groups such as, for example, alkoxy, alkylamino, alkoxycarbonyl: saturated straight-chain or branched hydrocarbon radicals having 1 to 10 carbon atoms, for example C_1-C_{10}-akyl, such as 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 and 1-ethyl-2-methylpropyl; heptyl, octyl, 2-ethylhexyl and positional isomers thereof; nonyl, decyl and positional isomers thereof;
- haloalkyl: straight-chain or branched alkyl groups having 1 to 10 carbon atoms (as mentioned above), where some or all of the hydrogen atoms in these groups are replaced by halogen atoms as mentioned above. In one embodiment, the alkyl groups are substituted at least once or completely by a particular halogen atom, preferably fluorine, chlorine or bromine. In a further embodiment, the alkyl groups are partially or fully halogenated by different halogen atoms; in the case of mixed halogen substitutions, the combination of chlorine and fluorine is preferred.

Particular preference is given to (C_1-C_3)-haloalkyl, more preferably (C_1-C_2)-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 or 1,1,1-trifluoroprop-2-yl;

- alkenyl and also the alkenyl moieties in composite groups, such as alkenyloxy: unsaturated straight-chain or branched hydrocarbon radicals having 2 to 10 carbon atoms and one double bond in any position. According to the invention, it may be preferred to use small alkenyl groups, such as (C_2-C_4)-alkenyl; on the other hand, it may also be preferred to employ larger alkenyl groups, such as (C_5-C_8)-alkenyl. Examples of alkenyl groups are, for example, C_2-C_6-alkenyl, such as ethenyl, 1-propenyl, 2-propenyl, 1-methylethenyl, 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;
- haloalkenyl: alkenyl groups as mentioned above which are partially or fully substituted by fluorine, chlorine, bromine and/or iodine, for example 2-chloroprop-2-en-1-yl, 3-chloroprop-2-en-1-yl, 2,3-dichloroprop-2-en-1-yl, 3,3-dichloroprop-2-en-1-yl, 2,3,3-trichloro-2-en-1-yl, 2,3-dichlorobut-2-en-1-yl, 2-bromoprop-2-en-1-yl, 3-bromoprop-2-en-1-yl, 2,3-dibromoprop-2-en-1-yl, 3,3-dibromoprop-2-en-1-yl, 2,3,3-tribromo-2-en-1-yl or 2,3-dibromobut-2-en-1-yl;
- alkynyl and the alkynyl moieties in composite groups, such as alkynyloxy: straight-chain or branched hydrocarbon groups having 2 to 10 carbon atoms and one or two triple bonds in any position, for example C_2-C_6-alkynyl, such as ethynyl, 1-propynyl, 2-propynyl, 1-butynyl, 2-butynyl, 3-butynyl, 1-methyl-2-propynyl, 1-pentynyl, 2-pentynyl, 3-pentynyl, 4-pentynyl, 1-methyl-2-butynyl, 1-methyl-3-butynyl, 2-methyl-3-butynyl, 3-methyl-1-butynyl, 1,1-dimethyl-2-propynyl, 1-ethyl-2-propynyl, 1-hexynyl, 2-hexynyl, 3-hexynyl, 4-hexynyl, 5-hexynyl, 1-methyl-2-pentynyl, 1-methyl-3-pentynyl, 1-methyl-4-pentynyl, 2-methyl-3-pentynyl, 2-methyl-4-pentynyl, 3-methyl-1-pentynyl, 3-methyl-4-pentynyl, 4-methyl-1-pentynyl, 4-methyl-2-pentynyl, 1,1-dimethyl-2-butynyl, 1,1-dimethyl-3-butynyl, 1,2-dimethyl-3-butynyl, 2,2-dimethyl-3-butynyl, 3,3-dimethyl-1-butynyl, 1-ethyl-2-butynyl, 1-ethyl-3-butynyl, 2-ethyl-3-butynyl and 1-ethyl-1-methyl-2-propynyl;

haloalkynyl: alkynyl groups as mentioned above which are partially or fully substituted by fluorine, chlorine, bromine and/or iodine, for example 1,1-difluoroprop-2-yn-1-yl, 3-chloroprop-2-yn-1-yl, 3-bromoprop-2-yn-1-yl, 3-iodoprop-2-yn-1-yl, 4-fluorobut-2-yn-1-yl, 4-chlorobut-2-yn-1-yl, 1,1-difluorobut-2-yn-1-yl, 4-iodobut-3-yn-1-yl, 5-fluoropent-3-yn-1-yl, 5-iodopent-4-yn-1-yl, 6-fluorohex-4-yn-1-yl or 6-iodohex-5-yn-1-yl;

cycloalkyl and also the cycloalkyl moieties in composite groups: mono- or bicyclic saturated hydrocarbon groups having 3 to 10, in particular 3 to 6, carbon ring members, for example C_3-C_6-cycloalkyl, such as cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cycloheptyl or cyclooctyl.

Examples of bicyclic radicals comprise bicyclo[2.2.1]heptyl, bicyclo[3.1.1]heptyl, bicyclo[2.2.2]octyl and bicyclo[3.2.1]octyl. In this connection, optionally substituted C_3-C_3-cycloalkyl means a cycloalkyl radical having from 3 to 8 carbon atoms, in which at least one hydrogen atom, for example 1, 2, 3, 4 or 5 hydrogen atoms, is/are replaced by substituents which are inert under the conditions of the reaction. Examples of inert substituents are CN, C_1-C_6-alkyl, C_1-C_4-haloalkyl, C_1-C_6-alkoxy, C_3-C_6-cycloalkyl, and C_1-C_4-alkoxy-C_1-C_6-alkyl;

halocycloalkyl and the halocycloalkyl moieties in halocycloalkoxy, halocycloalkylcarbonyl and the like: monocyclic saturated hydrocarbon groups having 3 to 10 carbon ring members (as mentioned above) in which some or all of the hydrogen atoms may be replaced by halogen atoms as mentioned above, in particular fluorine, chlorine and bromine;

cycloalkoxy: cycloalkyl groups as mentioned above which are attached via an oxygen;

alkoxy and also the alkoxy moieties in composite groups, such as alkoxyalkyl: an alkyl group as defined above which is attached via an oxygen, preferably having 1 to 10, more preferably 2 to 6, carbon atoms. Examples are: methoxy, ethoxy, n-propoxy, 1-methylethoxy, butoxy, 1-methylpropoxy, 2-methylpropoxy or 1,1-dimethylethoxy, and also for example, pentoxy, 1-methylbutoxy, 2-methylbutoxy, 3-methylbutoxy, 1,1-dimethylpropoxy, 1,2-dimethylpropoxy, 2,2-dimethylpropoxy, 1-ethylpropoxy, hexoxy, 1-methylpentoxy, 2-methylpentoxy, 3-methylpentoxy, 4-methylpentoxy, 1,1-dimethylbutoxy, 1,2-dimethylbutoxy, 1,3-dimethylbutoxy, 2,2-dimethylbutoxy, 2,3-dimethylbutoxy, 3,3-dimethylbutoxy, 1-ethylbutoxy, 2-ethylbutoxy, 1,1,2-trimethylpropoxy, 1,2,2-trimethylpropoxy, 1-ethyl-1-methylpropoxy or 1-ethyl-2-methylpropoxy;

haloalkoxy: alkoxy as defined above, where some or all of the hydrogen atoms in these groups are replaced by halogen atoms as described above under haloalkyl, in particular by fluorine, chlorine or bromine. Examples are OCH_2F, $OCHF_2$, OCF_3, OCH_2Cl, $OCHCl_2$, $OCCl_3$, chlorofluoromethoxy, dichlorofluoromethoxy, chlorodifluoromethoxy, 2-fluoroethoxy, 2-chloroethoxy, 2-bromoethoxy, 2-iodoethoxy, 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, OC_2F_5, 2-fluoropropoxy, 3-fluoropropoxy, 2,2-difluoropropoxy, 2,3-difluoropropoxy, 2-chloropropoxy, 3-chloropropoxy, 2,3-dichloropropoxy, 2-bromopropoxy, 3-bromopropoxy, 3,3,3-trifluoropropoxy, 3,3,3-trichloropropoxy, OCH_2—C_2F_5, OCF_2—C_2F_5, 1-(CH_2F)-2-fluoroethoxy, 1-(CH_2Cl)-2-chloroethoxy, 1-(CH_2Br)-2-bromoethoxy, 4-fluorobutoxy, 4-chlorobutoxy, 4-bromobutoxy or nonafluorobutoxy; and also 5-fluoropentoxy, 5-chloropentoxy, 5-bromopentoxy, 5-iodopentoxy, undecafluoropentoxy, 6-fluorohexoxy, 6-chlorohexoxy, 6-bromohexoxy, 6-iodohexoxy or dodecafluorohexoxy;

alkylthio: an alkyl group as defined above, which is attached via a sulfur atom preferably having 1 to 6, more preferably 1 to 3, carbon atoms.

alkylsulfinyl: an alkyl group as defined above, which is attached via S(O), preferably having 1 to 6, more preferably 1 to 3, carbon atoms.

alkysulfonyl: an alkyl group as defined above, which is attached via $S(O)_2$, preferably having 1 to 6, more preferably 1 to 3, carbon atoms.

hydroxyl: OH group which is attached via an O atom;

cyano: CN group which is attached via an C atom;

nitro: NO_2 group which is attached via an N atom.

The preferred embodiments of the invention mentioned herein below have to be understood as being preferred either independently from each other or in combination with one another.

According to particular embodiments of the invention, preference is given to those compounds of formula (I) wherein the variables, either independently of one another or in combination with one another, have the following meanings:

Preferred compounds according to the invention are compounds of formula (I), wherein R^1 is selected from the group consisting of hydrogen, (C_1-C_3)-alkyl, (C_3-C_4)-cycloalkyl, (C_1-C_3)-haloalkyl, (C_2-C_3)-alkenyl, (C_2-C_3)-alkynyl, (C_1-C_3)-alkoxy-(C_1-C_3)-alkyl, (C_1-C_3)-alkoxy.

More preferred compounds according to the invention are compounds of formula (I), wherein R^1 is selected from the group consisting of hydrogen, (C_1-C_3)-alkyl, (C_3-C_4)-cycloalkyl, and (C_1-C_3)-alkoxy-(C_1-C_3)-alkyl.

Also preferred compounds according to the invention are compounds of formula (I), wherein R^1 is selected from the group consisting of hydrogen, methyl, and methoxymethyl.

In particular, R^1 is hydrogen.

Further preferred compounds according to the invention are compounds of formula (I), wherein R^2 is selected from the group consisting of hydrogen, halogen and (C_1-C_3)-alkyl.

Also preferred compounds according to the invention are compounds of formula (I), wherein R^2 is selected from the group consisting of hydrogen, fluorine, chlorine and methyl.

In particular, R^2 is hydrogen.

Further preferred compounds according to the invention are compounds of formula (I), wherein R^3 is selected from the group consisting of hydrogen, halogen, cyano, (C_1-C_3)-alkyl, (C_1-C_3)-haloalkyl and (C_1-C_3)-haloalkoxy.

Other preferred compounds according to the invention are compounds of formula (I), wherein R^3 is selected from the group consisting of hydrogen, halogen, hydroxyl, cyano and (C_1-C_3)-alkyl.

More preferred compounds according to the invention are compounds of formula (I), wherein R^3 is selected from the group consisting of halogen, (C_1-C_3)-haloalkyl, (C_1-C_3)-haloalkoxy, and (C_1-C_3)-alkyl.

Also preferred compounds according to the invention are compounds of formula (I), wherein R^3 is selected from the group consisting of hydrogen, halogen, hydroxyl, (C_1-C_3)-haloalkyl, and methyl.

In particular, R^3 is hydrogen or halogen, very particular chlorine or fluorine.

Further preferred compounds according to the invention are compounds of formula (I), wherein R^4 is selected from the group consisting of hydrogen and halogen.

Also preferred compounds according to the invention are compounds of formula (I), wherein R^4 is selected from the group consisting of hydrogen, fluorine, chlorine and bromine.

In particular, R^4 is hydrogen or hydrogen, fluorine or chlorine, very particular hydrogen.

Further preferred compounds according to the invention are compounds of formula (I), wherein R^5 is selected from the group consisting of hydrogen, halogen, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl and $(C_1$-$C_3)$-haloalkoxy.

Other preferred compounds according to the invention are compounds of formula (I), wherein R^5 is selected from the group consisting of hydrogen, halogen, hydroxyl, cyano and $(C_1$-$C_3)$-alkyl.

More preferred compounds according to the invention are compounds of formula (I), wherein R^5 is selected from the group consisting of halogen, $(C_1$-$C_3)$-haloalkyl, $(C_1$-$C_3)$-haloalkoxy, and $(C_1$-$C_3)$-alkyl.

Also preferred compounds according to the invention are compounds of formula (I), wherein R^5 is selected from the group consisting of hydrogen, halogen, hydroxyl, $(C_1$-$C_3)$-haloalkyl, and methyl.

In particular, R^5 is hydrogen or halogen, very particular chlorine or fluorine.

Further preferred compounds according to the invention are compounds of formula (I), wherein R^6 is selected from the group consisting of hydrogen, halogen and $(C_1$-$C_3)$-alkyl.

Also preferred compounds according to the invention are compounds of formula (I), wherein R^6 is selected from the group consisting of hydrogen, fluorine, chlorine and methyl.

In particular, R^6 is hydrogen.

Further preferred compounds according to the invention are compounds of formula (I), wherein R^7 is selected from the group consisting of hydrogen, cyano, or $(C_1$-$C_3)$-alkyl, $(C_3$-$C_4)$-cycloalkyl, $(C_2$-$C_3)$-alkenyl, and $(C_1$-$C_3)$-alkoxy, each substituted by m radicals from the group consisting of fluorine, chlorine, and $(C_1$-$C_2)$-alkoxy. In this context, m is preferably 0, 1, 2, or 3.

Other preferred compounds according to the invention are compounds of formula (I), wherein R^7 is selected from the group consisting of $(C_1$-$C_3)$-alkyl, $(C_3$-$C_4)$-cycloalkyl, $(C_2$-$C_3)$-alkenyl, and $(C_1$-$C_3)$-alkoxy, each substituted by m radicals from the group consisting of fluorine, chlorine, and $(C_1$-$C_2)$-alkoxy. In this context, m is preferably 0, 1, 2, or 3.

Also preferred compounds according to the invention are compounds of formula (I), wherein R^7 is selected from the group consisting of $(C_1$-$C_2)$-alkyl, cyclopropyl, $(C_1$-$C_2)$-haloalkyl, $(C_2$-$C_3)$-alkenyl, and $(C_1$-$C_2)$-alkoxy.

In particular, R^7 is hydrogen, cyano, methyl, ethyl, chloromethyl, trifluoromethyl, cyclopropyl, ethenyl, and methoxy.

Very particular, R^7 is methyl, ethyl, chloromethyl, trifluoromethyl, cyclopropyl, ethenyl, and methoxy, preferably methyl.

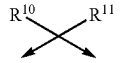
Further preferred compounds according to the invention are compounds of formula (I), wherein R^8 and R^9 each independently are selected from the group consisting of hydrogen, halogen, $(C_1$-$C_3)$-alkyl, and $(C_1$-$C_3)$-haloalkyl.

Further preferred compounds according to the invention are compounds of formula (I), wherein R^8 and R^9 each independently are selected from the group consisting of hydrogen, fluorine, chlorine, and methyl.

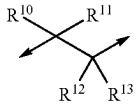
In particular, R^8 and R^9 are hydrogen.

In the compounds of formula (I), X is selected from the group consisting of a bond (X^0) or a divalent unit from the group consisting of (X^1), (X^2), (X^3), (X^4), (X^5) and (X^6), wherein the orientation of (X^1), (X^2), (X^3), (X^4), (X^5) and (X^6) within the molecule is as depicted, the left arrow representating the bond to the adjacent nitrogen, the right arrow representating the bond to the adjacent group Y.

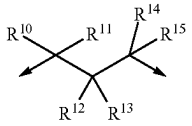
(X^1)



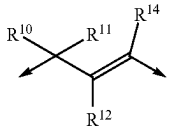
(X^2)



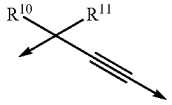
(X^3)



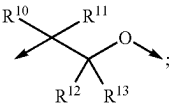
(X^4)



(X^5)

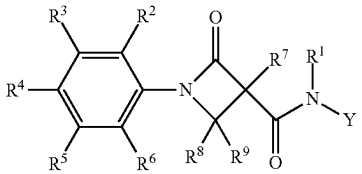


(X^6)



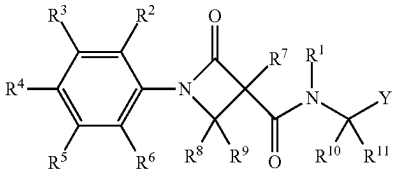
In a preferred embodiment (compounds of formula $(I.X^0)$), X is a bond (X^0):

$(I.X^0)$



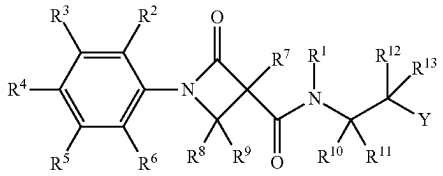
In another preferred embodiment (compounds of formula $(I.X^1)$), X is (X^1), wherein the orientation of (X^1) within the molecule is as depicted, the left arrow representating the bond to the adjacent nitrogen, the right arrow representating the bond to the adjacent group Y:

(I.X^1)



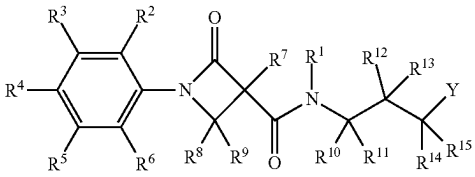
In another preferred embodiment (compounds of formula (I.X^2)), X is (X^2), wherein the orientation of (X^2) within the molecule is as depicted, the left arrow representating the bond to the adjacent nitrogen, the right arrow representating the bond to the adjacent group Y:

(I.X^2)



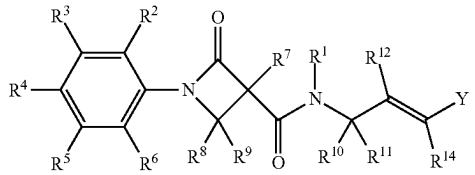
In another preferred embodiment (compounds of formula (I.X^3)), X is (X^3), wherein the orientation of (X^3) within the molecule is as depicted, the left arrow representating the bond to the adjacent nitrogen, the right arrow representating the bond to the adjacent group Y:

(I.X^3)



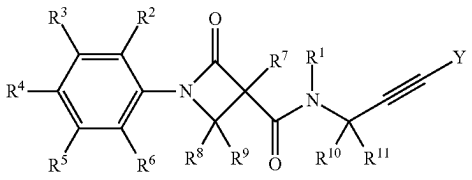
In another preferred embodiment (compounds of formula (I.X^4)), X is (X^4), wherein the orientation of (X^4) within the molecule is as depicted, the left arrow representating the bond to the adjacent nitrogen, the right arrow representating the bond to the adjacent group Y:

(I.X^4)



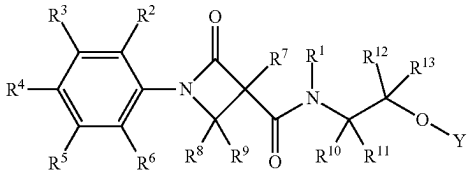
In another preferred embodiment (compounds of formula (I.X^5)), X is (X^5), wherein the orientation of (X^5) within the molecule is as depicted, the left arrow representating the bond to the adjacent nitrogen, the right arrow representating the bond to the adjacent group Y:

(I.X^5)



In another preferred embodiment (compounds of formula (I.X^6)), X is (X^6), wherein the orientation of (X^6) within the molecule is as depicted, the left arrow representating the bond to the adjacent nitrogen, the right arrow representating the bond to the adjacent group Y:

(I.X^6)



Further preferred compounds according to the invention are compounds of formula (I), wherein X is selected from the group consisting of a bond (X^0) or a divalent unit from the group consisting of CH_2, CH_2CH_2, $CHCH_3$, $CH_2CH_2CH_2$, $CH(CH_2CH_3)$, $CH(CH_3)CH_2$, $C(CH_3)_2$, $C(CH_3)_2CH_2$, $C(iPr)CH_3$, $CH(CH_2iPr)CH_2$, $CH_2CH{=}CH$, $C(CH_3)_2C{\equiv}C$, $CH(CF_3)CH_2$, $CH(CH_3)CH_2O$, CH_2CH_2O, $CH(cPr)CH_2O$, $CH(CH_2OCH_3)$, $CH(CH_2CH_2SCH_3)$, $CH(COOH)$, $CH(COOCH_3)$, $CH(COOH)CH_2$, $CH(COOCH_3)CH_2$, $CH_2COH(CF_3)$, $CH(CONHCH_3)$, $CH(CONHCH_3)CH_2$ and $CH_2CH_2CONHCH_2$.

Further preferred compounds according to the invention are compounds of formula (I), wherein R^{10}-R^{15} each independently is selected from the group consisting of hydrogen, fluorine, chlorine, bromine, iodine, hydroxyl, cyano, CO_2R^e, $CONR^bR^d$, or (C_1-C_6)-alkyl, (C_3-C_5)-cycloalkyl, (C_2-C_6)-alkenyl, each substituted by m radicals from the group consisting of fluorine, or (C_1-C_6)-alkoxy, (C_3-C_6)-cycloalkoxy, (C_3-C_6)-alkenyloxy, (C_3-C_6)-alkynyloxy, (C_1-C_3)-alkylthio, (C_1-C_3)-alkylsulfinyl, and (C_1-C_3)-alkylsulfonyl, each substituted by m radicals from the group consisting of fluorine.

Also preferred compounds according to the invention are compounds of formula (I), wherein R^{10}-R^{15} each independently is selected from the group consisting of hydrogen, fluorine, chlorine, CO_2R^e, $CONR^bR^d$, or (C_1-C_6)-alkyl, substituted by m radicals from the group consisting of fluorine, or (C_1-C_6)-alkoxy, substituted by m radicals from the group consisting of fluorine.

In particular, R^{10}-R^{15} each independently is selected from the group consisting of halogen, (C_1-C_6)-alkyl, (C_1-C_3)-alkoxy, and CO_2R^e.

Further preferred compounds according to the invention are compounds of formula (I), wherein Y is selected from the group consisting of hydrogen, cyano, hydroxyl, Z, or (C_1-C_{12})-alkyl, (C_3-C_3)-cycloalkyl, (C_2-C_{12})-alkenyl or (C_2-C_{12})-alkynyl each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, cyano, hydroxyl, Z, CO_2R^e, and $CONR^bR^h$.

Also preferred compounds according to the invention are compounds of formula (I), wherein Y is selected from the

group consisting of hydrogen, cyano, hydroxyl, Z, or (C_1-C_{12})-alkyl, and (C_3-C_3)-cycloalkyl, each substituted by m radicals from the group consisting of fluorine, CO_2R^e, and $CONR^bR^h$.

Also preferred compounds according to the invention are compounds of formula (I), wherein Y is selected from the group consisting of (C_1-C_{12})-alkyl, (C_3-C_3)-cycloalkyl, (C_2-C_{12})-alkenyl or (C_2-C_{12})-alkynyl, each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, cyano, hydroxyl, OR^d, Z, OZ, NHZ, $S(O)_nR^a$, $SO_2NR^bR^d$, $SO_2NR^bCOR^e$, CO_2R^e, $CONR^bR^h$, COR^b, $CONR^eSO_2R^a$, NR^bR^e, NR^bCOR^e, $NR^bCONR^eR^e$, $NR^bCO_2R^e$, $NR^bSO_2R^e$ $NR^bSO_2NR^bR^e$, $OCONR^bR^e$, $OCSNR^bR^e$, $PORfRf$ and $C(R^b)$=NOR^e.

Also preferred compounds according to the invention are compounds of formula (I), wherein Y is selected from the group consisting of (C_1-C_{12})-alkyl, (C_3-C_3)-cycloalkyl, (C_2-C_{12})-alkenyl or (C_2-C_{12})-alkynyl, each substituted by m radicals from the group consisting of fluorine and CO_2R^e.

In particular, Y is selected from the group consisting of Z, or (C_1-C_{12})-alkyl and (C_3-C_3)-cycloalkyl, each substituted by m radicals from the group consisting of fluorine, (C_1-C_2)-alkoxy, CO_2R^e, $CONR^bR^h$, and $CONR^eSO_2R^a$.

Very particular, Y is selected from the group consisting of Z, or (C_1-C_{12})-alkyl and (C_3-C_3)-cycloalkyl, each substituted by m radicals from the group consisting of fluorine, (C_1-C_2)-alkoxy, CO_2R^e, and $CONR^bR^h$

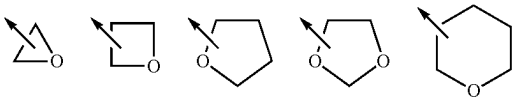
According to one preferred embodiment, Y is Z.

Preferred compounds according to the invention are compounds of formula (I), wherein Z is selected from the group consisting of four-, five- or six-membered saturated, partly unsaturated, fully unsaturated or aromatic rings, except phenyl, which are formed from r carbon atoms and n oxygen atoms, each substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^h$, $S(O)_nR^a$, $SO_2NR^bR^d$, $SO_2NR^bCOR^e$, COR^b, $CONR^eSO_2R^a$, NR^bR^e, NR^bCOR^e, $NR^bCONR^eR^e$, $NR^bCO_2R^e$, $NR^bSO_2R^e$, $NR^bSO_2NR^bR^e$, $OCONR^bR^e$, $OCSNR^bR^e$, $PORfRf$ and $C(R^b)$=NOR^eR^b, R^c, R^e and R^f, and where carbon atoms bear n oxo groups.

Also preferred compounds according to the invention are compounds of formula (I), wherein Z is selected from the group consisting of four-, five- or six-membered saturated, partly unsaturated, fully unsaturated or aromatic rings, except phenyl, which are formed from r carbon atoms and n oxygen atoms, each substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^h$, R^b, R^c, R^e and R^f, and where carbon atoms bear n oxo groups.

Further preferred compounds according to the invention are compounds of formula (I), wherein Z is selected from the group consisting of three-, four-, five- or six-membered saturated, partly unsaturated, fully unsaturated or aromatic rings, except phenyl, which are formed from r carbon atoms, n nitrogen atoms, n sulfur atoms and n oxygen atoms, and which are substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^h$, $CONR^eSO_2R^a$, R^b, R^c, R^e and R^f, and where the sulfur atoms and carbon atoms bear n oxo groups.

Representative examples for the three-, four-, five- or six-membered saturated, partly unsaturated, fully unsaturated or aromatic rings mentioned above, are the following structures:



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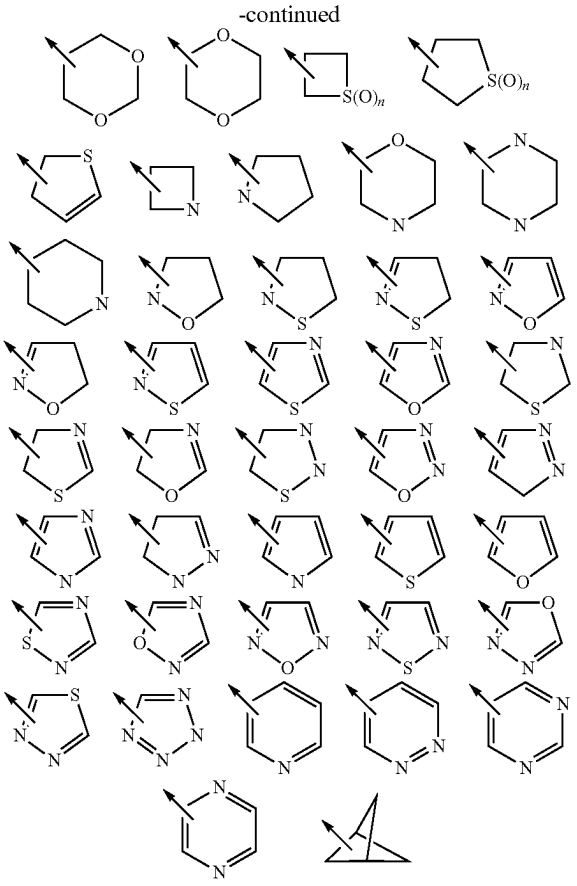
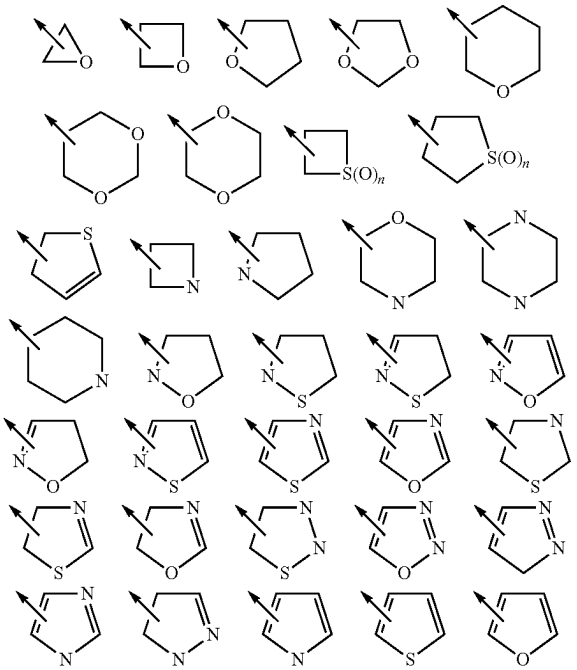


Other representative examples for the four-, five- or six-membered saturated, partly unsaturated, fully unsaturated or aromatic rings mentioned above, are the following structures:



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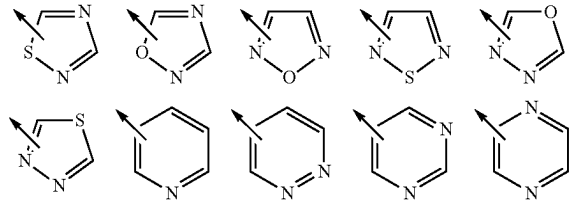
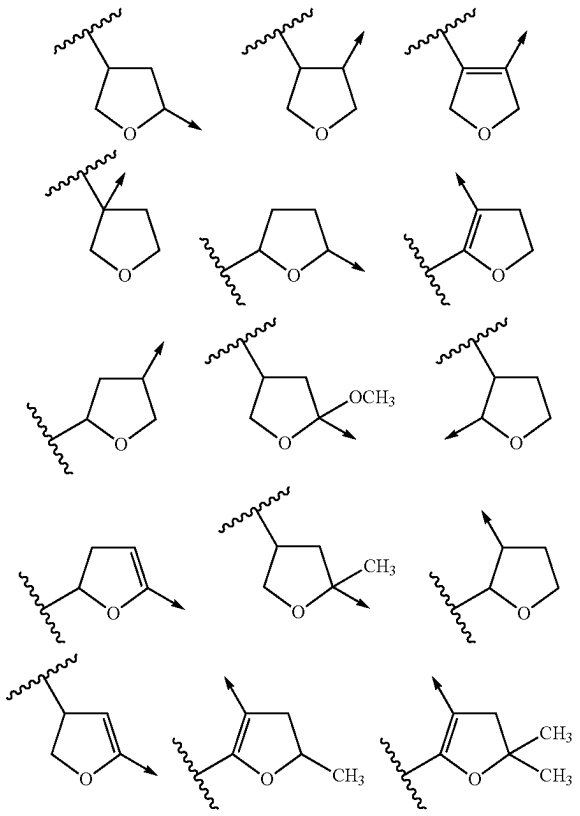


Also preferred compounds according to the invention are compounds of formula (I), wherein Z is selected from the group consisting of four- or five-membered saturated or partly unsaturated rings, which are formed from r carbon atoms and n oxygen atoms, each substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^h$, $CONR^eSO_2R^a$, R^b, R^c, R^e and R^f.

Also preferred compounds according to the invention are compounds of formula (I), wherein Z is selected from the group consisting of five-membered saturated or partly unsaturated rings, which are formed from 4 carbon atoms and 1 oxygen atom, each substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^h$, $CONR^eSO_2R^a$, R^b, R^c, R^e and R^f.

Representative examples for the five-membered saturated or partly unsaturated rings, which are formed from 4 carbon atoms and 1 oxygen atom, each substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^h$, $CONR^eSO_2R^a$, R^b, R^c, R^e and R^f mentioned above, are the following structures, the arrow indicating the bond to any of the mentioned substituents:



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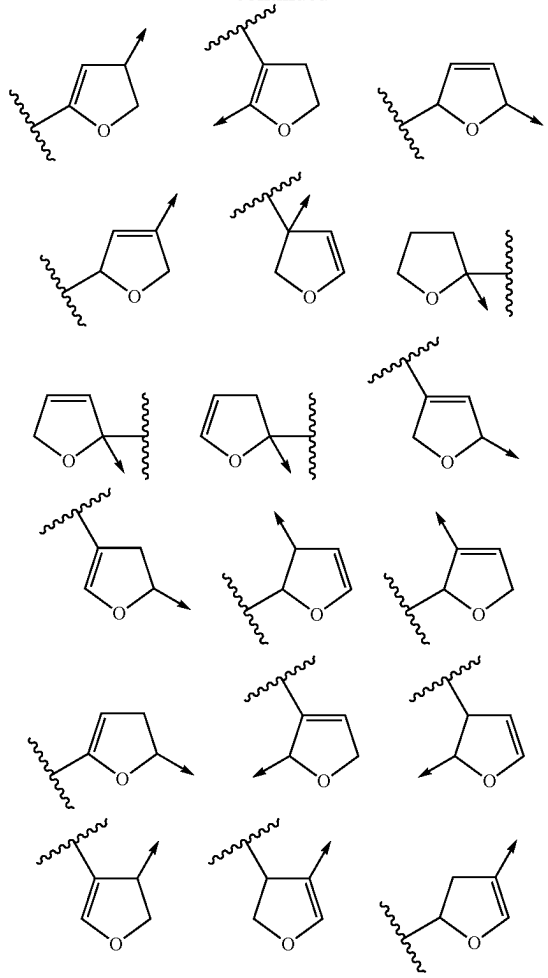
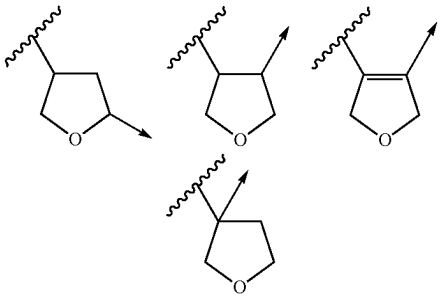
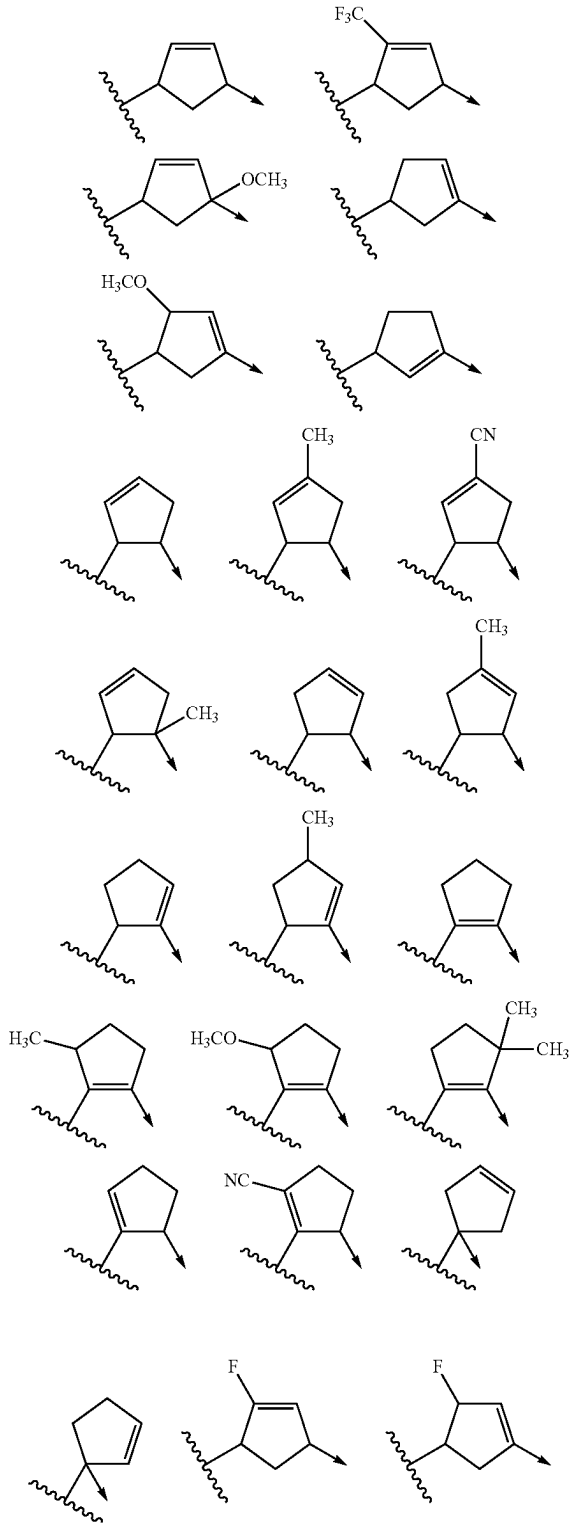


Preferred examples for the five-membered saturated or partly unsaturated rings, which are formed from 4 carbon atoms and 1 oxygen atom, each substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^h$, $CONR^eSO_2R^a$, R^b, R^c, R^e and R^f mentioned above, are the following structures, the arrow indicating the bond to any of the mentioned substituents, preferably to CO_2R^e:



Also preferred compounds according to the invention are compounds of formula (I), wherein Z is selected from the group consisting of five-membered saturated or partly unsaturated rings, which are formed from 5 carbon atoms, each substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^h$, $CONR^eSO_2R^a$, R^b, R^c, R^e and R^f.

Representative examples for the five-membered saturated or partly unsaturated rings, which are formed from 5 carbon atoms, each substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^h$, $CONR^eSO_2R^a$, R^b, R^c, R^e and R^f mentioned above, are the following structures, the arrow indicating the bond to any of the mentioned substituents:



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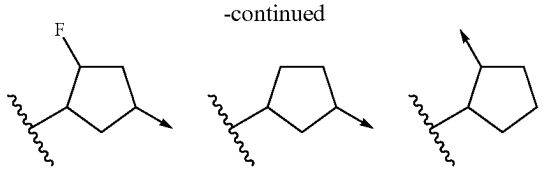
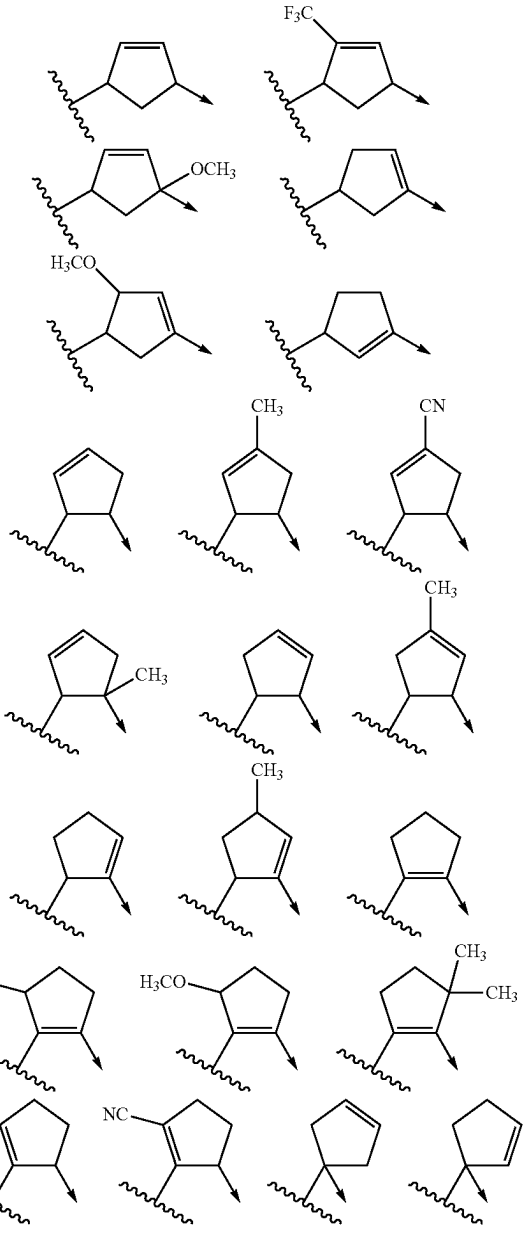
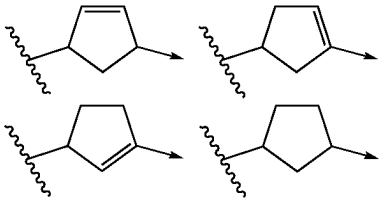


Other representative examples for the five-membered saturated or partly unsaturated rings, which are formed from 5 carbon atoms, each substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^h$, R^b, $CONR^eSO_2R^a$, R^c, R^e and R^f mentioned above, are the following structures, the arrow indicating the bond to any of the mentioned substituents:



Preferred examples for the five-membered saturated or partly unsaturated rings, which are formed from 5 carbon

atoms, each substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^h$, $CONR^eSO_2R^a$, R^b, R^c, R^e and R^f mentioned above, are the following structures, the arrow indicating the bond to any of the mentioned substituents, preferably to CO_2R^e:

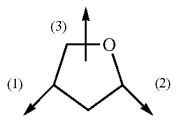


In particular, Z is selected from the group consisting of cyclobutyl, cyclopentyl, cyclopentenyl, and tetrahydrofuranyl, each substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^h$, $CONR^eSO_2R^a$, R^b, R^c, R^e and R^f.

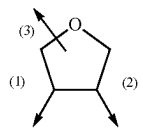
Very particular, Z is selected from the group consisting of cyclobutyl, cyclopentyl, cyclopentenyl, and tetrahydrofuranyl, each substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^h$, R^b, R^c, R^e and R^f.

Preferred examples Z.1 to Z.5, each substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^h$, $CONR^eSO_2R^a$, R^b, R^c, R^e and R^f mentioned above, are the following structures, arrow (1), representing the binding site to X, arrows (2) and (3) indicating the bond to any of the mentioned substituents, in particular to CO_2R^e, $CONR^bR^h$, R^b, R^c, R^e and R^f:

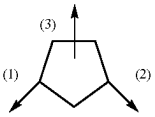
Z.1



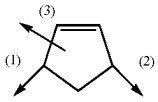
Z.2



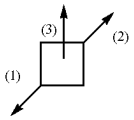
Z.3



Z.4



Z.5



Preferred compounds of the present invention are compounds of formula (I), wherein the substituents have the following meanings:

R^1 hydrogen, $(C_1$-$C_3)$-alkyl, $(C_3$-$C_4)$-cycloalkyl, $(C_1$-$C_3)$-haloalkyl, $(C_2$-$C_3)$-alkenyl, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-alkynyl, $(C_2$-$C_3)$-haloalkynyl, $(C_1$-$C_3)$-alkoxy-$(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^2 hydrogen, halogen, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^3 hydrogen, halogen, nitro, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, hydroxy-$(C_1$-$C_3)$-alkyl, $(C_3$-$C_5)$-cycloalkyl, $(C_3$-$C_5)$-halocycloalkyl, hydroxy-$(C_3$-$C_5)$-cycloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy, $(C_1$-$C_3)$-alkoxycarbonyl, $(C_2$-$C_3)$ alkenyl, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$ alkynyl, $(C_2$-$C_3)$-haloalkynyl, $(C_1$-$C_3)$-alkylthio, $(C_1$-$C_3)$-alkylsulfinyl, $(C_1$-$C_3)$-alkylsulfonyl;

R^4 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_3$-$C_4)$-halocycloalkyl, $(C_1$-$C_3)$-haloalkoxy, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-haloalkynyl;

R^5 hydrogen, halogen, nitro, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, hydroxy-$(C_1$-$C_3)$-alkyl, $(C_3$-$C_5)$-cycloalkyl, $(C_3$-$C_5)$-halocycloalkyl, hydroxy-$(C_3$-$C_5)$-cycloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy, $(C_1$-$C_3)$-alkoxycarbonyl, $(C_2$-$C_3)$ alkenyl, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$ alkynyl, $(C_2$-$C_3)$-haloalkynyl, $(C_1$-$C_3)$-alkylthio, $(C_1$-$C_3)$-alkylsulfinyl, $(C_1$-$C_3)$-alkylsulfonyl;

R^6 hydrogen, halogen, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

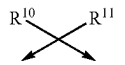
R^7 fluorine, cyano, or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_3$-$C_6)$-alkenyl, $(C_2$-$C_6)$-alkynyl, $(C_1$-$C_6)$-alkoxy, each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, hydroxyl, cyano and $(C_1$-$C_6)$-alkoxy;

R^8, R^9 each independently hydrogen, halogen, cyano, or $(C_1$-$C_6)$-alkyl, $(C_1$-$C_6)$-alkoxy, each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, and cyano; or

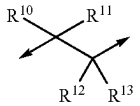
R^8 and R^9 form, together with the carbon atom to which they are bound, a saturated, partially or fully unsaturated three to five-membered ring containing, in addition to this carbon atom, q carbon atoms and n oxygen atoms;

X a bond (X^0) or a divalent unit from the group consisting of (X^1), (X^2), (X^3), (X^4), (X^5), and (X^6):

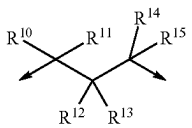
(X^1)



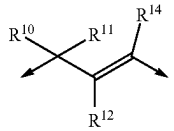
(X^2)



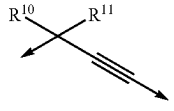
(X^3)



(X^4)



(X^5)



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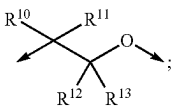
(X6)



R^{10}-R^{15} each independently hydrogen, fluorine, chlorine, bromine, iodine, hydroxyl, cyano, CO_2R^e, $CONR^bR^d$, R^a, or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_5)$-cycloalkyl, $(C_2$-$C_6)$-alkenyl, $(C_2$-$C_6)$-alkynyl, each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, hydroxyl and cyano, or $(C_1$-$C_6)$-alkoxy, $(C_3$-$C_6)$-cycloalkoxy, $(C_3$-$C_6)$-alkenyloxy or $(C_3$-$C_6)$-alkynyloxy, each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, cyano and $(C_1$-$C_2)$-alkoxy;

Y hydrogen, cyano, hydroxyl, Z,

or

$(C_1$-$C_{12})$-alkyl, $(C_3$-$C_3)$-cycloalkyl, $(C_2$-$C_{12})$-alkenyl or $(C_2$-$C_{12})$-alkynyl, each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, cyano, hydroxyl, OR^d, Z, OZ, NHZ, $S(O)_nR^a$, $SO_2NR^bR^d$, $SO_2NR^bCOR^e$, CO_2R^e, $CONR^bR^h$, COR^b, $CONR^eSO_2R^a$, NR^bR^e, NR^b-COR^e, $NR^bCONR^eR^e$, $NR^bCO_2R^e$, $NR^bSO_2R^e$ $NR^bSO_2NR^bR^e$, $OCONR^bR^e$, $OCSNR^bR^e$, POR^fR^f and $C(R^b)$=NOR^e;

Z a three-, four-, five- or six-membered saturated, partly unsaturated, fully unsaturated or aromatic ring, except phenyl, which is formed from r carbon atoms, n nitrogen atoms, n sulfur atoms and n oxygen atoms, and which is substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^h$, R^b, R^c, R^e and R^f, and where the sulfur atoms and carbon atoms bear n oxo groups;

R^a $(C_1$-$C_6)$-alkyl or $(C_3$-$C_6)$-cycloalkyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, iodine, cyano and hydroxy;

R^b hydrogen or R^a;

R^c fluorine, chlorine, bromine, iodine, cyano, hydroxyl, $S(O)_nR^a$ or $(C_1$-$C_6)$-alkoxy, $(C_3$-$C_6)$-alkenyloxy or $(C_3$-$C_6)$-alkynyloxy, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

R^d hydrogen or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_2$-$C_4)$-alkenyl, phenyl-$(C_1$-$C_3)$-alkyl or $(C_2$-$C_4)$-alkynyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

R^e R^d.

R^f $(C_1$-$C_3)$-alkyl or $(C_1$-$C_3)$-alkoxy;

R^h hydrogen or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_2$-$C_4)$-alkenyl, $(C_1$-$C_6)$-alkoxycarbonyl-$(C_1$-$C_6)$-alkyl, or $(C_2$-$C_4)$-alkynyl each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

m 0, 1, 2, 3, 4 or 5;

n 0, 1 or 2;

q 1, 2, 3, or 4;

r 1, 2, 3, 4, 5 or 6;

including their agriculturally acceptable salts, amides, esters or thioesters, provided the compounds of formula (I) have a carboxyl group.

Preferred compounds of the present invention are compounds of formula (I), wherein the substituents have the following meanings:

R^1 hydrogen, $(C_1$-$C_3)$-alkyl, $(C_3$-$C_4)$-cycloalkyl, $(C_1$-$C_3)$-haloalkyl, $(C_2$-$C_3)$-alkenyl, $(C_2$-$C_3)$-alkynyl, $(C_1$-$C_3)$-alkoxy-$(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-alkoxy, preferably hydrogen, $(C_1$-$C_3)$-alkyl, or $(C_3$-$C_4)$-cycloalkyl, more preferably hydrogen;

R^2 hydrogen;

R^3 halogen, cyano, $(C_1$-$C_3)$-alkyl, preferably fluorine or chlorine;

R^4 hydrogen or fluorine, preferably hydrogen;

R^5 halogen, cyano, $(C_1$-$C_3)$-alkyl, preferably fluorine, or chlorine;

R^6 hydrogen;

R^7 fluorine, cyano, or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_3$-$C_6)$-alkenyl, $(C_2$-$C_6)$-alkynyl, $(C_1$-$C_6)$-alkoxy, each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, hydroxyl, cyano and $(C_1$-$C_6)$-alkoxy;

R^8, R^9 each independently hydrogen, halogen, $(C_1$-$C_3)$-alkyl, or $(C_1$-$C_3)$-haloalkyl;

X a bond;

Y Z;

Z a three-, four-, five- or six-membered saturated, partly unsaturated, fully unsaturated or aromatic ring, except phenyl, which is formed from r carbon atoms, n nitrogen atoms, n sulfur atoms and n oxygen atoms, and which is substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^h$, $CONR^eSO_2R^a$, R^b, R^c, R^e and R^f, and where the sulfur atoms and carbon atoms bear n oxo groups;

R^a $(C_1$-$C_6)$-alkyl or $(C_3$-$C_6)$-cycloalkyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, iodine, cyano and hydroxy;

R^b hydrogen, $(C_1$-$C_6)$-alkyl or $(C_3$-$C_6)$-cycloalkyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, iodine, cyano and hydroxy;

R^c fluorine, chlorine, bromine, iodine, cyano, hydroxyl, $S(O)_nR^a$ or $(C_1$-$C_6)$-alkoxy, $(C_3$-$C_6)$-alkenyloxy or $(C_3$-$C_6)$-alkynyloxy, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

R^e hydrogen or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_2$-$C_4)$-alkenyl, phenyl-$(C_1$-$C_3)$-alkyl or $(C_2$-$C_4)$-alkynyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

R^f $(C_1$-$C_3)$-alkyl or $(C_1$-$C_3)$-alkoxy;

R^h hydrogen or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_2$-$C_4)$-alkenyl, $(C_1$-$C_6)$-alkoxycarbonyl-$(C_1$-$C_6)$-alkyl, or $(C_2$-$C_4)$-alkynyl each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

r 1, 2, 3, 4, 5 or 6;

n 0, 1 or 2;

m 0, 1, 2, 3, 4 or 5.

Further preferred compounds of the present invention are compounds of formula (I), wherein the substituents have the following meanings:

R^1 hydrogen, $(C_1$-$C_3)$-alkyl, $(C_3$-$C_4)$-cycloalkyl, $(C_1$-$C_3)$-haloalkyl, $(C_2$-$C_3)$-alkenyl, $(C_2$-$C_3)$-alkynyl, $(C_1$-$C_3)$-alkoxy-$(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-alkoxy, preferably hydrogen, $(C_1$-$C_3)$-alkyl, or $(C_3$-$C_4)$-cycloalkyl, more preferably hydrogen;

R^2 hydrogen;
R^3 halogen, cyano, $(C_1$-$C_3)$-alkyl, preferably fluorine or chlorine;
R^4 hydrogen or fluorine, preferably hydrogen;
R^5 halogen, cyano, $(C_1$-$C_3)$-alkyl, preferably fluorine, or chlorine;
R^6 hydrogen;
R^7 fluorine, cyano, or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_3$-$C_6)$-alkenyl, $(C_2$-$C_6)$-alkynyl, $(C_1$-$C_6)$-alkoxy, each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, hydroxyl, cyano and $(C_1$-$C_6)$-alkoxy;
R^8, R^9 each independently hydrogen, halogen, $(C_1$-$C_3)$-alkyl, or $(C_1$-$C_3)$-haloalkyl;
X a bond;
Y Z;
Z a three-, four-, five- or six-membered saturated, partly unsaturated, fully unsaturated or aromatic ring, except phenyl, which is formed from r carbon atoms, n nitrogen atoms, n sulfur atoms and n oxygen atoms, and which is substituted by m radicals from the group consisting of CO_2R^e, and where the sulfur atoms and carbon atoms bear n oxo groups;
R^e hydrogen or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_3$-$C_4)$-alkenyl, phenyl-$(C_1$-$C_3)$-alkyl or $(C_3$-$C_4)$-alkynyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;
r 1, 2, 3, 4, 5 or 6;
n 0, 1 or 2;
m 0, 1, 2, 3, 4 or 5.

Further preferred compounds of the present invention are compounds of formula (I), wherein the substituents have the following meanings:

R^1 hydrogen, $(C_1$-$C_3)$-alkyl, $(C_3$-$C_4)$-cycloalkyl, $(C_1$-$C_3)$-haloalkyl, $(C_2$-$C_3)$-alkenyl, $(C_2$-$C_3)$-alkynyl, $(C_1$-$C_3)$-alkoxy-$(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-alkoxy, preferably hydrogen, $(C_1$-$C_3)$-alkyl, or $(C_3$-$C_4)$-cycloalkyl, more preferably hydrogen;
R^2 hydrogen;
R^3 halogen, cyano, $(C_1$-$C_3)$-alkyl, preferably fluorine or chlorine;
R^4 hydrogen or fluorine, preferably hydrogen;
R^5 halogen, cyano, $(C_1$-$C_3)$-alkyl, preferably fluorine, or chlorine;
R^6 hydrogen;
R^7 fluorine, cyano, or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_3$-$C_6)$-alkenyl, $(C_2$-$C_6)$-alkynyl, $(C_1$-$C_6)$-alkoxy, each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, hydroxyl, cyano and $(C_1$-$C_6)$-alkoxy;
R^8, R^9 each independently hydrogen, halogen, $(C_1$-$C_3)$-alkyl, or $(C_1$-$C_3)$-haloalkyl;
X a bond;
Y Z;
Z five-membered saturated, partly unsaturated, or fully unsaturated carbocycle, which is substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^b$, $CONR^eSO_2R^a$, R^b, R^c, R^e and R^f;
R^a $(C_1$-$C_6)$-alkyl or $(C_3$-$C_6)$-cycloalkyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, iodine, cyano and hydroxy;
R^b hydrogen, $(C_1$-$C_6)$-alkyl or $(C_3$-$C_6)$-cycloalkyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, iodine, cyano and hydroxy;
R^c fluorine, chlorine, bromine, iodine, cyano, hydroxyl, $S(O)_nR^a$ or $(C_1$-$C_6)$-alkoxy, $(C_3$-$C_6)$-alkenyloxy or $(C_3$-$C_6)$-alkynyloxy, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;
R^e hydrogen or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_2$-$C_4)$-alkenyl, phenyl-$(C_1$-$C_3)$-alkyl or $(C_2$-$C_4)$-alkynyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;
R^f $(C_1$-$C_3)$-alkyl or $(C_1$-$C_3)$-alkoxy;
R^h hydrogen or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_2$-$C_4)$-alkenyl, $(C_1$-$C_6)$-alkoxycarbonyl-$(C_1$-$C_6)$-alkyl, or $(C_2$-$C_4)$-alkynyl each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;
m 0, 1, 2 or 3.

Further preferred compounds of the present invention are compounds of formula (I), wherein the substituents have the following meanings:

R^1 hydrogen, $(C_1$-$C_3)$-alkyl, $(C_3$-$C_4)$-cycloalkyl, $(C_1$-$C_3)$-haloalkyl, $(C_2$-$C_3)$-alkenyl, $(C_2$-$C_3)$-alkynyl, $(C_1$-$C_3)$-alkoxy-$(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-alkoxy, preferably hydrogen, $(C_1$-$C_3)$-alkyl, or $(C_3$-$C_4)$-cycloalkyl, more preferably hydrogen;
R^2 hydrogen;
R^3 halogen, cyano, $(C_1$-$C_3)$-alkyl, preferably fluorine or chlorine;
R^4 hydrogen or fluorine, preferably hydrogen;
R^5 halogen, cyano, $(C_1$-$C_3)$-alkyl, preferably fluorine, or chlorine;
R^6 hydrogen;
R^7 fluorine, cyano, or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_3$-$C_6)$-alkenyl, $(C_2$-$C_6)$-alkynyl, $(C_1$-$C_6)$-alkoxy, each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, hydroxyl, cyano and $(C_1$-$C_6)$-alkoxy;
R^8, R^9 each independently hydrogen, halogen, $(C_1$-$C_3)$-alkyl, or $(C_1$-$C_3)$-haloalkyl;
X a bond;
Y Z;
Z five-membered saturated, partly unsaturated, or fully unsaturated carbocycle, which is substituted by m radicals from the group consisting of CO_2R^e and R^b;
R^b hydrogen or $(C_1$-$C_6)$-alkyl or $(C_3$-$C_6)$-cycloalkyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, iodine, cyano and hydroxy;
R^e hydrogen or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_3$-$C_4)$-alkenyl, phenyl-$(C_1$-$C_3)$-alkyl or $(C_3$-$C_4)$-alkynyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;
m 0, 1, 2 or 3.

Further preferred compounds of the present invention are compounds of formula (I), wherein the substituents have the following meanings:

R^1 hydrogen, $(C_1$-$C_3)$-alkyl, $(C_3$-$C_4)$-cycloalkyl, $(C_1$-$C_3)$-haloalkyl, $(C_2$-$C_3)$-alkenyl, $(C_2$-$C_3)$-alkynyl, $(C_1$-$C_3)$-alkoxy-$(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-alkoxy, preferably hydrogen, $(C_1$-$C_3)$-alkyl, or $(C_3$-$C_4)$-cycloalkyl, more preferably hydrogen;
R^2 hydrogen;
R^3 halogen, cyano, $(C_1$-$C_3)$-alkyl, preferably fluorine or chlorine;
R^4 hydrogen or fluorine, preferably hydrogen;

R^5 halogen, cyano, $(C_1$-$C_3)$-alkyl, preferably fluorine, or chlorine;

R^6 hydrogen;

R^7 fluorine, cyano, or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_3$-$C_6)$-alkenyl, $(C_2$-$C_6)$-alkynyl, $(C_1$-$C_6)$-alkoxy, each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, hydroxyl, cyano and $(C_1$-$C_6)$-alkoxy;

R^8, R^9 each independently hydrogen, halogen, $(C_1$-$C_3)$-alkyl, or $(C_1$-$C_3)$-haloalkyl;

X a bond;

Y $(C_1$-$C_8)$-alkyl, $(C_3$-$C_8)$-cycloalkyl, $(C_2$-$C_8)$-alkenyl or $(C_2$-$C_8)$-alkynyl, each substituted by m radicals from the group consisting of fluorine and CO_2R^e;

R^e hydrogen or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_2$-$C_4)$-alkenyl, phenyl-$(C_1$-$C_3)$-alkyl or $(C_2$-$C_4)$-alkynyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

m 0, 1, 2, or 3.

Further preferred compounds of the present invention are compounds of formula (I), wherein the substituents have the following meanings:

R^1 hydrogen, $(C_1$-$C_3)$-alkyl, $(C_3$-$C_4)$-cycloalkyl, $(C_1$-$C_3)$-haloalkyl, $(C_2$-$C_3)$-alkenyl, $(C_2$-$C_3)$-alkynyl, $(C_1$-$C_3)$-alkoxy-$(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-alkoxy, preferably hydrogen, $(C_1$-$C_3)$-alkyl, or $(C_3$-$C_4)$-cycloalkyl, more preferably hydrogen;

R^2 hydrogen;

R^3 halogen, cyano, $(C_1$-$C_3)$-alkyl, preferably fluorine or chlorine;

R^4 hydrogen or fluorine, preferably hydrogen;

R^5 halogen, cyano, $(C_1$-$C_3)$-alkyl, preferably fluorine, or chlorine;

R^6 hydrogen;

R^7 fluorine, cyano, or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_3$-$C_6)$-alkenyl, $(C_2$-$C_6)$-alkynyl, $(C_1$-$C_6)$-alkoxy, each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, hydroxyl, cyano and $(C_1$-$C_6)$-alkoxy;

R^8, R^9 each independently hydrogen, halogen, $(C_1$-$C_3)$-alkyl, or $(C_1$-$C_3)$-haloalkyl;

X a bond;

Y $(C_1$-$C_8)$-alkyl, $(C_3$-$C_8)$-cycloalkyl, $(C_2$-$C_8)$-alkenyl or $(C_2$-$C_8)$-alkynyl, each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, cyano, hydroxyl, OR^d, Z, OZ, NHZ, $S(O)_nR^a$, $SO_2NR^bR^d$, $SO_2NR^bCOR^e$, CO_2R^e, $CONR^bR^h$, COR^b, $CONR^eSO_2R^a$, NR^bR^e, NR^bCOR^e, $NR^bCONR^eR^e$, $NR^bCO_2R^e$, $NR^bSO_2R^e$ $NR^bSO_2NR^bR^e$, $OCONR^bR^e$, $OCSNR^bR^e$, POR^fR^f and $C(R^b)$=NOR^e;

Z a three-, four-, five- or six-membered saturated, partly unsaturated, fully unsaturated or aromatic ring, except phenyl, which is formed from r carbon atoms, n nitrogen atoms, n sulfur atoms and n oxygen atoms, and which is substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^h$, $CONR^eSO_2R^a$, R^b, R^c, R^e and R^f, and where the sulfur atoms and carbon atoms bear n oxo groups;

R^a $(C_1$-$C_6)$-alkyl or $(C_3$-$C_6)$-cycloalkyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, iodine, cyano and hydroxy;

R^b hydrogen, $(C_1$-$C_6)$-alkyl or $(C_3$-$C_6)$-cycloalkyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, iodine, cyano and hydroxy;

R^c fluorine, chlorine, bromine, iodine, cyano, hydroxyl, $S(O)_nR^a$ or $(C_1$-$C_6)$-alkoxy, $(C_3$-$C_6)$-alkenyloxy or $(C_3$-$C_6)$-alkynyloxy, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

R^d hydrogen or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_2$-$C_4)$-alkenyl, phenyl-$(C_1$-$C_3)$-alkyl or $(C_2$-$C_4)$-alkynyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

R^e hydrogen or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_2$-$C_4)$-alkenyl, phenyl-$(C_1$-$C_3)$-alkyl or $(C_2$-$C_4)$-alkynyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

R^f $(C_1$-$C_3)$-alkyl or $(C_1$-$C_3)$-alkoxy;

R^h hydrogen or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_2$-$C_4)$-alkenyl, $(C_1$-$C_6)$-alkoxycarbonyl-$(C_1$-$C_6)$-alkyl, or $(C_2$-$C_4)$-alkynyl each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

r 1, 2, 3, 4, 5 or 6;

m 0, 1, 2 or 3;

n 0, 1 or 2.

Further preferred compounds of the present invention are compounds of formula (I), wherein the substituents have the following meanings:

R^1 hydrogen, $(C_1$-$C_3)$-alkyl, $(C_3$-$C_4)$-cycloalkyl, $(C_1$-$C_3)$-haloalkyl, $(C_2$-$C_3)$-alkenyl, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-alkynyl, $(C_2$-$C_3)$-haloalkynyl, $(C_1$-$C_3)$-alkoxy-$(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^2 hydrogen, halogen, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^3 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_3$-$C_5)$-halocycloalkyl, $(C_1$-$C_3)$-haloalkoxy, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-haloalkynyl;

R^4 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_3$-$C_4)$-halocycloalkyl, $(C_1$-$C_3)$-haloalkoxy, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-haloalkynyl;

R^5 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_3$-$C_5)$-halocycloalkyl, $(C_1$-$C_3)$-haloalkoxy, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-haloalkynyl;

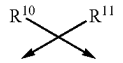
R^6 hydrogen, halogen, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^7 $(C_1$-$C_2)$-alkyl, cyclopropyl, $(C_1$-$C_2)$-haloalkyl, $(C_2$-$C_3)$-alkenyl, $(C_1$-$C_2)$-alkoxy;

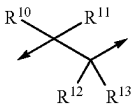
R^8, R^9 each independently hydrogen, halogen, $(C_1$-$C_3)$-alkyl, or $(C_1$-$C_3)$-haloalkyl;

X a bond (X^0) or a divalent unit from the group consisting of (X^1), (X^2), (X^3), (X^4), (X^5), and (X^6):

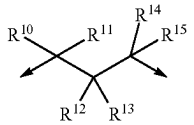
(X^1)



(X^2)

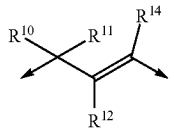


(X^3)

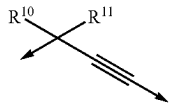


-continued

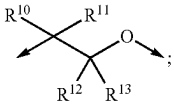
(X4)



(X5)



(X6)



;

R^{10}-R^{15} each independently hydrogen, fluorine, chlorine, bromine, iodine, hydroxyl, cyano, CO_2R^e, $CONR^bR^d$, R^a, or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_5)$-cycloalkyl, $(C_2$-$C_6)$-alkenyl, $(C_2$-$C_6)$-alkynyl each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, hydroxyl and cyano, or $(C_1$-$C_6)$-alkoxy, $(C_3$-$C_6)$-cycloalkoxy, $(C_3$-$C_6)$-alkenyloxy or $(C_3$-$C_6)$-alkynyloxy each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, cyano and $(C_1$-$C_2)$-alkoxy;

Y hydrogen, cyano, hydroxyl, Z,
or
$(C_1$-$C_{12})$-alkyl, $(C_3$-$C_3)$-cycloalkyl, $(C_2$-$C_{12})$-alkenyl or $(C_2$-$C_{12})$-alkynyl each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, cyano, hydroxyl, OR^d, Z, OZ, NHZ, $S(O)_nR^a$, $SO_2NR^bR^d$, $SO_2NR^bCOR^e$, CO_2R^e, $CONR^bR^h$, COR^b, $CONR^eSO_2R^a$, NR^bR^e, NR^b-COR^e, $NR^bCONR^eR^e$, $NR^bCO_2R^e$, $NR^bSO_2R^e$ $NR^bSO_2NR^bR^e$, $OCONR^bR^e$, $OCSNR^bR^e$, POR^fR^f and $C(R^b)$=NOR^e;

Z a three-, four-, five- or six-membered saturated, partly unsaturated, fully unsaturated or aromatic ring, except phenyl, which is formed from r carbon atoms, n nitrogen atoms, n sulfur atoms and n oxygen atoms, and which is substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^h$, $CONR^eSO_2R^a$, R^b, R^c, R^e and R^f, and where the sulfur atoms and carbon atoms bear n oxo groups;

R^a $(C_1$-$C_6)$-alkyl or $(C_3$-$C_6)$-cycloalkyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, iodine, cyano and hydroxy;

R^b hydrogen or R^a;

R^c fluorine, chlorine, bromine, iodine, cyano, hydroxyl, $S(O)_nR^a$ or $(C_1$-$C_6)$-alkoxy, $(C_3$-$C_6)$-alkenyloxy or $(C_3$-$C_6)$-alkynyloxy, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

R^d hydrogen or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_2$-$C_4)$-alkenyl, phenyl-$(C_1$-$C_3)$-alkyl or $(C_2$-$C_4)$-alkynyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

R^e R^d;

R^f $(C_1$-$C_3)$-alkyl or $(C_1$-$C_3)$-alkoxy;

R^h hydrogen or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_2$-$C_4)$-alkenyl, $(C_1$-$C_6)$-alkoxycarbonyl-$(C_1$-$C_6)$-alkyl, or $(C_2$-$C_4)$-alkynyl each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

m 0, 1, 2, 3, 4 or 5;

n 0, 1 or 2;

r 1, 2, 3, 4, 5 or 6.

Further preferred compounds of the present invention are compounds of formula (I), wherein the substituents have the following meanings:

R^1 hydrogen, $(C_1$-$C_3)$-alkyl, $(C_3$-$C_4)$-cycloalkyl, $(C_1$-$C_3)$-haloalkyl, $(C_2$-$C_3)$-alkenyl, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-alkynyl, $(C_2$-$C_3)$-haloalkynyl, $(C_1$-$C_3)$-alkoxy-$(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^2 hydrogen, halogen, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^3 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_3$-$C_5)$-halocycloalkyl, $(C_1$-$C_3)$-haloalkoxy, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-haloalkynyl;

R^4 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_3$-$C_4)$-halocycloalkyl, $(C_1$-$C_3)$-haloalkoxy, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-haloalkynyl;

R^5 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_3$-$C_5)$-halocycloalkyl, $(C_1$-$C_3)$-haloalkoxy, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-haloalkynyl;

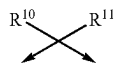
R^8 hydrogen, halogen, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^7 hydrogen, cyano, $(C_1$-$C_2)$-alkyl, $(C_3$-$C_8)$-cycloalkyl, $(C_1$-$C_2)$-haloalkyl, $(C_1$-$C_2)$-alkoxy;

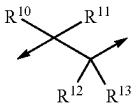
R^8, R^9 each independently hydrogen, halogen, $(C_1$-$C_3)$-alkyl, or $(C_1$-$C_3)$-haloalkyl;

X a bond (X^0) or a divalent unit from the group consisting of (X^1), (X^2), (X^3), (X^4), (X^5), and (X^6):

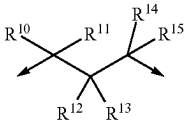
(X1)



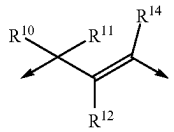
(X2)



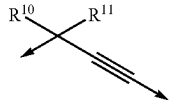
(X3)



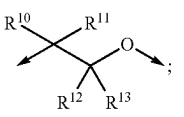
(X4)



(X5)



(X6)



;

R^{10}-R^{15} each independently hydrogen, fluorine, chlorine, bromine, iodine, hydroxyl, cyano, CO_2R^e, $CONR^bR^d$,

R^a, or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_5)$-cycloalkyl, $(C_2$-$C_6)$-alkenyl, $(C_2$-$C_6)$-alkynyl each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, hydroxyl and cyano, or $(C_1$-$C_8)$-alkoxy, $(C_3$-$C_8)$-cycloalkoxy, $(C_3$-$C_8)$-alkenyloxy or $(C_3$-$C_8)$-alkynyloxy each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, cyano and $(C_1$-$C_2)$-alkoxy;

Y hydrogen, cyano, hydroxyl, Z,

or

$(C_1$-$C_{12})$-alkyl, $(C_3$-$C_8)$-cycloalkyl, $(C_2$-$C_{12})$-alkenyl or $(C_2$-$C_{12})$-alkynyl each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, cyano, hydroxyl, OR^d, Z, OZ, NHZ, $S(O)_nR^a$, $SO_2NR^bR^d$, $SO_2NR^bCOR^e$, CO_2R^e, $CONR^bR^h$, COR^b, $CONR^eSO_2R^a$, NR^bR^e, NR^b-COR^e, $NR^bCONR^eR^e$, $NR^bCO_2R^e$, $NR^bSO_2R^e$ $NR^bSO_2NR^bR^e$, $OCONR^bR^e$, $OCSNR^bR^e$, POR^fR^f and $C(R^b)$=NOR^e;

Z a three-, four-, five- or six-membered saturated, partly unsaturated, fully unsaturated or aromatic ring, except phenyl, which is formed from r carbon atoms, n nitrogen atoms, n sulfur atoms and n oxygen atoms, and which is substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^h$, $CONR^eSO_2R^a$, R^b, R^c, R^e and R^f, and where the sulfur atoms and carbon atoms bear n oxo groups;

R^a $(C_1$-$C_8)$-alkyl or $(C_3$-$C_8)$-cycloalkyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, iodine, cyano and hydroxy;

R^b hydrogen or R^a;

R^c fluorine, chlorine, bromine, iodine, cyano, hydroxyl, $S(O)_nR^a$ or $(C_1$-$C_8)$-alkoxy, $(C_3$-$C_8)$-alkenyloxy or $(C_3$-$C_8)$-alkynyloxy, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

R^d hydrogen or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_2$-$C_4)$-alkenyl, phenyl-$(C_1$-$C_3)$-alkyl or $(C_2$-$C_4)$-alkynyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

R^e R^d;

R^f $(C_1$-$C_3)$-alkyl or $(C_1$-$C_3)$-alkoxy;

R^h hydrogen or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_2$-$C_4)$-alkenyl, $(C_1$-$C_6)$-alkoxycarbonyl-$(C_1$-$C_6)$-alkyl, or $(C_2$-$C_4)$-alkynyl each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

m 0, 1, 2, 3, 4 or 5;

n 0, 1 or 2;

r 1, 2, 3, 4, 5 or 6.

Further preferred compounds of the present invention are compounds of formula (I), wherein the substituents have the following meanings:

R^1 hydrogen, $(C_1$-$C_3)$-alkyl, $(C_3$-$C_4)$-cycloalkyl, $(C_1$-$C_3)$-haloalkyl, $(C_2$-$C_3)$-alkenyl, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-alkynyl, $(C_2$-$C_3)$-haloalkynyl, $(C_1$-$C_3)$-alkoxy-$(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^2 hydrogen, halogen, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^3 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_3$-$C_5)$-halocycloalkyl, $(C_1$-$C_3)$-haloalkoxy, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-haloalkynyl;

R^4 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_3$-$C_4)$-halocycloalkyl, $(C_1$-$C_3)$-haloalkoxy, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-haloalkynyl;

R^5 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_3$-$C_5)$-halocycloalkyl, $(C_1$-$C_3)$-haloalkoxy, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-haloalkynyl;

R^6 hydrogen, halogen, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^7 $(C_1$-$C_2)$-alkyl, cyclopropyl, $(C_1$-$C_2)$-haloalkyl, $(C_2$-$C_3)$-alkenyl, $(C_1$-$C_2)$-alkoxy;

R^8, R^9 each independently hydrogen, halogen, $(C_1$-$C_3)$-alkyl, or $(C_1$-$C_3)$-haloalkyl;

X a bond;

Y Z, or $(C_1$-$C_8)$-alkyl, $(C_3$-$C_8)$-cycloalkyl, $(C_2$-$C_8)$-alkenyl or $(C_2$-$C_8)$-alkynyl, each substituted by m radicals from the group consisting of fluorine and CO_2R^e;

Z four to five-membered saturated or partly unsaturated ring which is formed from r carbon atoms, n oxygen atoms, and which is substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^h$, $CONR^eSO_2R^a$, R^b, R^c, R^e and R^f;

R^a $(C_1$-$C_6)$-alkyl or $(C_3$-$C_6)$-cycloalkyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, iodine, cyano and hydroxy;

R^b hydrogen, or $(C_1$-$C_6)$-alkyl or $(C_3$-$C_6)$-cycloalkyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, iodine, cyano and hydroxy;

R^c fluorine, chlorine, bromine, iodine, cyano, hydroxyl, $S(O)_nR^a$ or $(C_1$-$C_6)$-alkoxy, $(C_3$-$C_6)$-alkenyloxy or $(C_3$-$C_6)$-alkynyloxy, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

R^e hydrogen or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_2$-$C_4)$-alkenyl, phenyl-$(C_1$-$C_3)$-alkyl or $(C_2$-$C_4)$-alkynyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

R^f $(C_1$-$C_3)$-alkyl or $(C_1$-$C_3)$-alkoxy;

R^h hydrogen or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_2$-$C_4)$-alkenyl, $(C_1$-$C_6)$-alkoxycarbonyl-$(C_1$-$C_6)$-alkyl, or $(C_2$-$C_4)$-alkynyl each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

m 0, 1, 2, 3, 4 or 5;

n 0, 1 or 2;

r 1, 2, 3, 4, or 5.

Further preferred compounds of the present invention are compounds of formula (I), wherein the substituents have the following meanings:

R^1 hydrogen, $(C_1$-$C_3)$-alkyl, $(C_3$-$C_4)$-cycloalkyl, $(C_1$-$C_3)$-haloalkyl, $(C_2$-$C_3)$-alkenyl, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-alkynyl, $(C_2$-$C_3)$-haloalkynyl, $(C_1$-$C_3)$-alkoxy-$(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^2 hydrogen, halogen, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^3 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_3$-$C_5)$-halocycloalkyl, $(C_1$-$C_3)$-haloalkoxy, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-haloalkynyl;

R^4 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_3$-$C_4)$-halocycloalkyl, $(C_1$-$C_3)$-haloalkoxy, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-haloalkynyl;

R^5 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_3$-$C_5)$-halocycloalkyl, $(C_1$-$C_3)$-haloalkoxy, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-haloalkynyl;

R^6 hydrogen, halogen, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^7 hydrogen, cyano, $(C_1$-$C_2)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_1$-$C_2)$-haloalkyl, $(C_1$-$C_2)$-alkoxy;

R^8, R^9 each independently hydrogen, halogen, $(C_1$-$C_3)$-alkyl, or $(C_1$-$C_3)$-haloalkyl;

X a bond;

Y Z, or $(C_1$-$C_8)$-alkyl, $(C_3$-$C_8)$-cycloalkyl, $(C_2$-$C_8)$-alkenyl or $(C_2$-$C_8)$-alkynyl, each substituted by m radicals from the group consisting of fluorine and CO_2R^e;

Z four to five-membered saturated or partly unsaturated ring which is formed from r carbon atoms, n oxygen atoms, and which is substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^h$, $CONR^eSO_2R^a$, R^b, R^c, R^e and R^f;

R^a $(C_1$-$C_6)$-alkyl or $(C_3$-$C_6)$-cycloalkyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, iodine, cyano and hydroxy;

R^b hydrogen, or $(C_1$-$C_6)$-alkyl or $(C_3$-$C_6)$-cycloalkyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, iodine, cyano and hydroxy;

R^c fluorine, chlorine, bromine, iodine, cyano, hydroxyl, $S(O)_nR^a$ or $(C_1$-$C_6)$-alkoxy, $(C_3$-$C_6)$-alkenyloxy or $(C_3$-$C_6)$-alkynyloxy, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

R^e hydrogen or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_2$-$C_4)$-alkenyl, phenyl-$(C_1$-$C_3)$-alkyl or $(C_2$-$C_4)$-alkynyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

R^f $(C_1$-$C_3)$-alkyl or $(C_1$-$C_3)$-alkoxy;

R^h hydrogen or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_2$-$C_4)$-alkenyl, $(C_1$-$C_6)$-alkoxycarbonyl-$(C_1$-$C_6)$-alkyl, or $(C_2$-$C_4)$-alkynyl each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

m 0, 1, 2, 3, 4 or 5;

n 0, 1 or 2;

r 1, 2, 3, 4, or 5.

Further preferred compounds of the present invention are compounds of formula (I), wherein the substituents have the following meanings:

R^1 hydrogen, $(C_1$-$C_3)$-alkyl, $(C_3$-$C_4)$-cycloalkyl, $(C_1$-$C_3)$-haloalkyl, $(C_2$-$C_3)$-alkenyl, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-alkynyl, $(C_2$-$C_3)$-haloalkynyl, $(C_1$-$C_3)$-alkoxy-$(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^2 hydrogen, halogen, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^3 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_3$-$C_5)$-halocycloalkyl, $(C_1$-$C_3)$-haloalkoxy, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-haloalkynyl;

R^4 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_3$-$C_4)$-halocycloalkyl, $(C_1$-$C_3)$-haloalkoxy, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-haloalkynyl;

R^5 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_3$-$C_5)$-halocycloalkyl, $(C_1$-$C_3)$-haloalkoxy, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-haloalkynyl;

R^6 hydrogen, halogen, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^7 fluorine, cyano, or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_3$-$C_6)$-alkenyl, $(C_2$-$C_6)$-alkynyl, $(C_1$-$C_6)$-alkoxy, each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, hydroxyl, cyano and $(C_1$-$C_6)$-alkoxy;

R^8, R^9 each independently hydrogen, halogen, $(C_1$-$C_3)$-alkyl, or $(C_1$-$C_3)$-haloalkyl

X a bond;

Y Z;

Z four to five-membered saturated or partly unsaturated ring which is formed from r carbon atoms, n oxygen atoms, and which is substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^h$, $CONR^eSO_2R^a$, R^b, R^c, R^e and R^f;

R^a $(C_1$-$C_6)$-alkyl or $(C_3$-$C_6)$-cycloalkyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, iodine, cyano and hydroxy;

R^b hydrogen, or $(C_1$-$C_6)$-alkyl or $(C_3$-$C_6)$-cycloalkyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, iodine, cyano and hydroxy;

R^c fluorine, chlorine, bromine, iodine, cyano, hydroxyl, $S(O)_nR^a$ or $(C_1$-$C_6)$-alkoxy, $(C_3$-$C_6)$-alkenyloxy or $(C_3$-$C_6)$-alkynyloxy, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

R^e hydrogen or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_2$-$C_4)$-alkenyl, phenyl-$(C_1$-$C_3)$-alkyl or $(C_2$-$C_4)$-alkynyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

R^f $(C_1$-$C_3)$-alkyl or $(C_1$-$C_3)$-alkoxy;

R^h hydrogen or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_2$-$C_4)$-alkenyl, $(C_1$-$C_6)$-alkoxycarbonyl-$(C_1$-$C_6)$-alkyl, or $(C_2$-$C_4)$-alkynyl each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

m 0, 1, 2, 3, 4 or 5;

n 0, 1 or 2;

r 1, 2, 3, 4, or 5.

Further preferred compounds of the present invention are compounds of formula (I), wherein the substituents have the following meanings:

R^1 hydrogen, $(C_1$-$C_3)$-alkyl, $(C_3$-$C_4)$-cycloalkyl, $(C_1$-$C_3)$-haloalkyl, $(C_2$-$C_3)$-alkenyl, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-alkynyl, $(C_2$-$C_3)$-haloalkynyl, $(C_1$-$C_3)$-alkoxy-$(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^2 hydrogen, halogen, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^3 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_3$-$C_5)$-halocycloalkyl, $(C_1$-$C_3)$-haloalkoxy, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-haloalkynyl;

R^4 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_3$-$C_4)$-halocycloalkyl, $(C_1$-$C_3)$-haloalkoxy, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-haloalkynyl;

R^5 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_3$-$C_4)$-halocycloalkyl, $(C_1$-$C_3)$-haloalkoxy, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-haloalkynyl;

R^6 hydrogen, halogen, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^7 fluorine, cyano, or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_3$-$C_6)$-alkenyl, $(C_2$-$C_6)$-alkynyl, $(C_1$-$C_6)$-alkoxy, each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, hydroxyl, cyano and $(C_1$-$C_6)$-alkoxy;

R^8, R^9 each independently hydrogen, halogen, $(C_1$-$C_3)$-alkyl, or $(C_1$-$C_3)$-haloalkyl;

X a bond;

Y $(C_1$-$C_{12})$-alkyl, $(C_3$-$C_8)$-cycloalkyl, $(C_2$-$C_{12})$-alkenyl or $(C_2$-$C_{12})$-alkynyl each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, cyano, hydroxyl, OR^d, Z, OZ, NHZ, $S(O)_nR^a$, $SO_2NR^bR^d$, $SO_2NR^bCOR^e$, CO_2R^e, $CONR^bR^h$, COR^b, $CONR^eSO_2R^a$, NR^bR^e, NR^bCOR^e, NR^b-

$CONR^eR^e$, $NR^bCO_2R^e$, $NR^bSO_2R^e$ $NR^bSO_2NR^bR^e$, $OCONR^bR^e$, $OCSNR^bR^e$, POR^fR^f and $C(R^b)=NOR^e$;

Z a three-, four-, five- or six-membered saturated, partly unsaturated, fully unsaturated or aromatic ring, except phenyl, which is formed from r carbon atoms, n nitrogen atoms, n sulfur atoms and n oxygen atoms, and which is substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^h$, R^b, R^c, R^e and R^f, and where the sulfur atoms and carbon atoms bear n oxo groups;

R^a $(C_1\text{-}C_6)$-alkyl or $(C_3\text{-}C_6)$-cycloalkyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, iodine, cyano and hydroxy;

R^b hydrogen or R^a;

R^c fluorine, chlorine, bromine, iodine, cyano, hydroxyl, $S(O)_nR^a$ or $(C_1\text{-}C_6)$-alkoxy, $(C_3\text{-}C_6)$-alkenyloxy or $(C_3\text{-}C_6)$-alkynyloxy, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1\text{-}C_2)$-alkoxy;

R^d hydrogen or $(C_1\text{-}C_6)$-alkyl, $(C_3\text{-}C_6)$-cycloalkyl, $(C_2\text{-}C_4)$-alkenyl, phenyl-$(C_1\text{-}C_3)$-alkyl or $(C_2\text{-}C_4)$-alkynyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1\text{-}C_2)$-alkoxy;

R^e R^d;

R^f $(C_1\text{-}C_3)$-alkyl or $(C_1\text{-}C_3)$-alkoxy;

R^h hydrogen or $(C_1\text{-}C_6)$-alkyl, $(C_3\text{-}C_6)$-cycloalkyl, $(C_2\text{-}C_4)$-alkenyl, $(C_1\text{-}C_6)$-alkoxycarbonyl-$(C_1\text{-}C_6)$-alkyl, or $(C_2\text{-}C_4)$-alkynyl each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1\text{-}C_2)$-alkoxy;

r 1, 2, 3, 4, 5 or 6;

m 0, 1, 2, 3, 4 or 5;

n 0, 1 or 2.

Further preferred compounds of the present invention are compounds of formula (I), wherein the substituents have the following meanings:

R^1 hydrogen;

R^2 hydrogen;

R^3 hydrogen, halogen, cyano, $(C_1\text{-}C_3)$-alkyl, $(C_1\text{-}C_3)$-haloalkoxy;

R^4 hydrogen, halogen;

R^5 hydrogen, halogen, cyano, $(C_1\text{-}C_3)$-alkyl, $(C_1\text{-}C_3)$-haloalkoxy;

R^6 hydrogen;

R^7 hydrogen, cyano, $(C_1\text{-}C_6)$-alkyl, $(C_3\text{-}C_6)$-cycloalkyl, $(C_1\text{-}C_6)$-haloalkyl, $(C_1\text{-}C_6)$-alkoxy;

R^8 hydrogen;

R^9 hydrogen;

X a bond;

Y Z or $(C_1\text{-}C_8)$-alkyl, which is substituted by m radicals from the group consisting of CO_2R^e;

Z a five-membered saturated or partly unsaturated carbocycle, which is substituted by m radicals from the group consisting of CO_2R^e;

R^a $(C_1\text{-}C_6)$-alkyl or $(C_3\text{-}C_6)$-cycloalkyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, iodine, cyano and hydroxy;

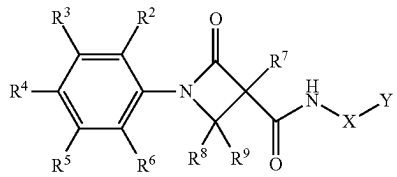
R^e hydrogen or $(C_1\text{-}C_6)$-alkyl, $(C_3\text{-}C_6)$-cycloalkyl, $(C_2\text{-}C_4)$-alkenyl, phenyl-$(C_1\text{-}C_3)$-alkyl or $(C_2\text{-}C_4)$-alkynyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano, CO_2R^a and $(C_1\text{-}C_2)$-alkoxy, $(C_1\text{-}C_3)$-alkylthio, $(C_1\text{-}C_3)$-alkylsulfinyl, $(C_1\text{-}C_3)$-alkylsulfonyl, phenylthio, phenylsulfinyl, and phenylsulfonyl;

m 0, 1, 2, 3, 4 or 5.

Further preferred embodiments (I.I and I.II) of compounds of formula (I) are compounds, wherein

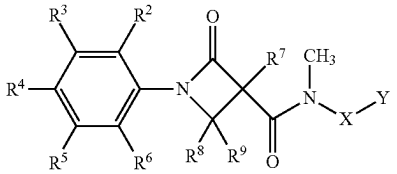
(I.I): R^1 is hydrogen:

(I.I)



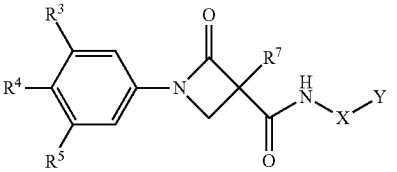
(I.II): R^1 is methyl:

(I.II)



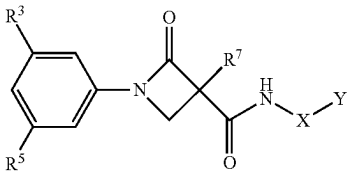
Compounds of formula (I.I.a.) wherein wherein R^1, R^2, R^6, R^8, and R^9 are hydrogen are particularly preferred:

(I.I.a)



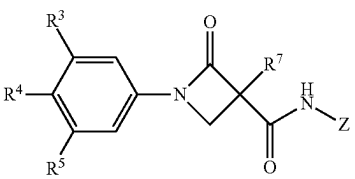
Compounds of formula (I.I.b.) wherein wherein R^1, R^2, R^4, R^6, R^8, and R^9 are hydrogen are also particularly preferred:

(I.I.b)



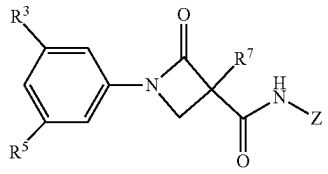
Compounds of formula (I.I.c.) wherein wherein R^1, R^2, R^6, R^8, and R^9 are hydrogen, X is a bond (X^0), and Y is Z are particularly preferred:

(I.I.c)



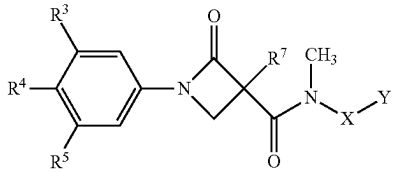
Compounds of formula (I.I.d.) wherein wherein R^1, R^2, R^4, R^6, R^8, and R^9 are hydrogen, X is a bond (X^0), and Y is Z are also particularly preferred:

(I.I.d)



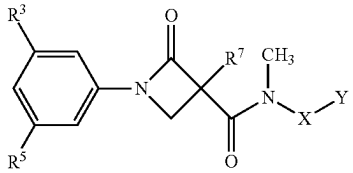
Compounds of formula (I.II.a.) wherein wherein R^2, R^6, R^8, and R^9 are hydrogen and R^1 is methyl are also particularly preferred:

(I.II.a)



Compounds of formula (I.II.b.) wherein wherein R^2, R^4, R^6, R^8, and R^9 are hydrogen and R^1 is methyl are also particularly preferred:

(I.II.b)



In the context of the present invention, compounds wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 below, are particularly preferred.

TABLE 1

Cpd.	R^3	R^4	R^5	R^7
1.	H	H	H	CH_3
2.	F	H	H	CH_3
3.	Cl	H	H	CH_3
4.	Br	H	H	CH_3
5.	CN	H	H	CH_3
6.	CH_3	H	H	CH_3
7.	CF_3	H	H	CH_3
8.	OCH_3	H	H	CH_3
9.	H	F	H	CH_3
10.	F	F	H	CH_3
11.	Cl	F	H	CH_3
12.	Br	F	H	CH_3
13.	CN	F	H	CH_3
14.	CH_3	F	H	CH_3
15.	CF_3	F	H	CH_3
16.	OCH_3	F	H	CH_3
17.	H	H	F	CH_3
18.	F	H	F	CH_3
19.	Cl	H	F	CH_3
20.	Br	H	F	CH_3
21.	CN	H	F	CH_3
22.	CH_3	H	F	CH_3
23.	CF_3	H	F	CH_3
24.	OCH_3	H	F	CH_3
25.	H	F	F	CH_3
26.	F	F	F	CH_3
27.	Cl	F	F	CH_3
28.	Br	F	F	CH_3
29.	CN	F	F	CH_3
30.	CH_3	F	F	CH_3
31.	CF_3	F	F	CH_3
32.	OCH_3	F	F	CH_3
33.	H	H	Cl	CH_3
34.	F	H	Cl	CH_3
35.	Cl	H	Cl	CH_3
36.	Br	H	Cl	CH_3
37.	CN	H	Cl	CH_3
38.	CH_3	H	Cl	CH_3
39.	CF_3	H	Cl	CH_3
40.	OCH_3	H	Cl	CH_3
41.	H	F	Cl	CH_3
42.	F	F	Cl	CH_3
43.	Cl	F	Cl	CH_3
44.	Br	F	Cl	CH_3
45.	CN	F	Cl	CH_3
46.	CH_3	F	Cl	CH_3
47.	CF_3	F	Cl	CH_3
48.	OCH_3	F	Cl	CH_3
49.	H	H	Br	CH_3
50.	F	H	Br	CH_3
51.	Cl	H	Br	CH_3
52.	Br	H	Br	CH_3
53.	CN	H	Br	CH_3
54.	CH_3	H	Br	CH_3
55.	CF_3	H	Br	CH_3
56.	OCH_3	H	Br	CH_3
57.	H	F	Br	CH_3
58.	F	F	Br	CH_3
59.	Cl	F	Br	CH_3
60.	Br	F	Br	CH_3
61.	CN	F	Br	CH_3
62.	CH_3	F	Br	CH_3
63.	CF_3	F	Br	CH_3
64.	OCH_3	F	Br	CH_3
65.	H	H	CN	CH_3
66.	F	H	CN	CH_3
67.	Cl	H	CN	CH_3
68.	Br	H	CN	CH_3
69.	CN	H	CN	CH_3
70.	CH_3	H	CN	CH_3
71.	CF_3	H	CN	CH_3
72.	OCH_3	H	CN	CH_3
73.	H	F	CN	CH_3
74.	F	F	CN	CH_3
75.	Cl	F	CN	CH_3
76.	Br	F	CN	CH_3
77.	CN	F	CN	CH_3
78.	CH_3	F	CN	CH_3
79.	CF_3	F	CN	CH_3
80.	OCH_3	F	CN	CH_3
81.	H	H	CH_3	CH_3
82.	F	H	CH_3	CH_3
83.	Cl	H	CH_3	CH_3
84.	Br	H	CH_3	CH_3
85.	CN	H	CH_3	CH_3
86.	CH_3	H	CH_3	CH_3
87.	CF_3	H	CH_3	CH_3
88.	OCH_3	H	CH_3	CH_3
89.	H	F	CH_3	CH_3
90.	F	F	CH_3	CH_3
91.	Cl	F	CH_3	CH_3
92.	Br	F	CH_3	CH_3
93.	CN	F	CH_3	CH_3
94.	CH_3	F	CH_3	CH_3
95.	CF_3	F	CH_3	CH_3
96.	OCH_3	F	CH_3	CH_3
97.	H	H	CF_3	CH_3
98.	F	H	CF_3	CH_3
99.	Cl	H	CF_3	CH_3

TABLE 1-continued

Cpd.	R^3	R^4	R^5	R^7
100.	Br	H	CF_3	CH_3
101.	CN	H	CF_3	CH_3
102.	CH_3	H	CF_3	CH_3
103.	CF_3	H	CF_3	CH_3
104.	OCH_3	H	CF_3	CH_3
105.	H	F	CF_3	CH_3
106.	F	F	CF_3	CH_3
107.	Cl	F	CF_3	CH_3
108.	Br	F	CF_3	CH_3
109.	CN	F	CF_3	CH_3
110.	CH_3	F	CF_3	CH_3
111.	CF_3	F	CF_3	CH_3
112.	OCH_3	F	CF_3	CH_3
113.	H	H	OCH_3	CH_3
114.	F	H	OCH_3	CH_3
115.	Cl	H	OCH_3	CH_3
116.	Br	H	OCH_3	CH_3
117.	CN	H	OCH_3	CH_3
118.	CH_3	H	OCH_3	CH_3
119.	CF_3	H	OCH_3	CH_3
120.	OCH_3	H	OCH_3	CH_3
121.	H	F	OCH_3	CH_3
122.	F	F	OCH_3	CH_3
123.	Cl	F	OCH_3	CH_3
124.	Br	F	OCH_3	CH_3
125.	CN	F	OCH_3	CH_3
126.	CH_3	F	OCH_3	CH_3
127.	CF_3	F	OCH_3	CH_3
128.	OCH_3	F	OCH_3	CH_3
129.	H	H	H	$CHCH_2$
130.	F	H	H	$CHCH_2$
131.	Cl	H	H	$CHCH_2$
132.	Br	H	H	$CHCH_2$
133.	CN	H	H	$CHCH_2$
134.	CH_3	H	H	$CHCH_2$
135.	CF_3	H	H	$CHCH_2$
136.	OCH_3	H	H	$CHCH_2$
137.	H	F	H	$CHCH_2$
138.	F	F	H	$CHCH_2$
139.	Cl	F	H	$CHCH_2$
140.	Br	F	H	$CHCH_2$
141.	CN	F	H	$CHCH_2$
142.	CH_3	F	H	$CHCH_2$
143.	CF_3	F	H	$CHCH_2$
144.	OCH_3	F	H	$CHCH_2$
145.	H	H	F	$CHCH_2$
146.	F	H	F	$CHCH_2$
147.	Cl	H	F	$CHCH_2$
148.	Br	H	F	$CHCH_2$
149.	CN	H	F	$CHCH_2$
150.	CH_3	H	F	$CHCH_2$
151.	CF_3	H	F	$CHCH_2$
152.	OCH_3	H	F	$CHCH_2$
153.	H	F	F	$CHCH_2$
154.	F	F	F	$CHCH_2$
155.	Cl	F	F	$CHCH_2$
156.	Br	F	F	$CHCH_2$
157.	CN	F	F	$CHCH_2$
158.	CH_3	F	F	$CHCH_2$
159.	CF_3	F	F	$CHCH_2$
160.	OCH_3	F	F	$CHCH_2$
161.	H	H	Cl	$CHCH_2$
162.	F	H	Cl	$CHCH_2$
163.	Cl	H	Cl	$CHCH_2$
164.	Br	H	Cl	$CHCH_2$
165.	CN	H	Cl	$CHCH_2$
166.	CH_3	H	Cl	$CHCH_2$
167.	CF_3	H	Cl	$CHCH_2$
168.	OCH_3	H	Cl	$CHCH_2$
169.	H	F	Cl	$CHCH_2$
170.	F	F	Cl	$CHCH_2$
171.	Cl	F	Cl	$CHCH_2$
172.	Br	F	Cl	$CHCH_2$
173.	CN	F	Cl	$CHCH_2$
174.	CH_3	F	Cl	$CHCH_2$
175.	CF_3	F	Cl	$CHCH_2$
176.	OCH_3	F	Cl	$CHCH_2$
177.	H	H	Br	$CHCH_2$

TABLE 1-continued

Cpd.	R^3	R^4	R^5	R^7
178.	F	H	Br	$CHCH_2$
179.	Cl	H	Br	$CHCH_2$
180.	Br	H	Br	$CHCH_2$
181.	CN	H	Br	$CHCH_2$
182.	CH_3	H	Br	$CHCH_2$
183.	CF_3	H	Br	$CHCH_2$
184.	OCH_3	H	Br	$CHCH_2$
185.	H	F	Br	$CHCH_2$
186.	F	F	Br	$CHCH_2$
187.	Cl	F	Br	$CHCH_2$
188.	Br	F	Br	$CHCH_2$
189.	CN	F	Br	$CHCH_2$
190.	CH_3	F	Br	$CHCH_2$
191.	CF_3	F	Br	$CHCH_2$
192.	OCH_3	F	Br	$CHCH_2$
193.	H	H	CN	$CHCH_2$
194.	F	H	CN	$CHCH_2$
195.	Cl	H	CN	$CHCH_2$
196.	Br	H	CN	$CHCH_2$
197.	CN	H	CN	$CHCH_2$
198.	CH_3	H	CN	$CHCH_2$
199.	CF_3	H	CN	$CHCH_2$
200.	OCH_3	H	CN	$CHCH_2$
201.	H	F	CN	$CHCH_2$
202.	F	F	CN	$CHCH_2$
203.	Cl	F	CN	$CHCH_2$
204.	Br	F	CN	$CHCH_2$
205.	CN	F	CN	$CHCH_2$
206.	CH_3	F	CN	$CHCH_2$
207.	CF_3	F	CN	$CHCH_2$
208.	OCH_3	F	CN	$CHCH_2$
209.	H	H	CH_3	$CHCH_2$
210.	F	H	CH_3	$CHCH_2$
211.	Cl	H	CH_3	$CHCH_2$
212.	Br	H	CH_3	$CHCH_2$
213.	CN	H	CH_3	$CHCH_2$
214.	CH_3	H	CH_3	$CHCH_2$
215.	CF_3	H	CH_3	$CHCH_2$
216.	OCH_3	H	CH_3	$CHCH_2$
217.	H	F	CH_3	$CHCH_2$
218.	F	F	CH_3	$CHCH_2$
219.	Cl	F	CH_3	$CHCH_2$
220.	Br	F	CH_3	$CHCH_2$
221.	CN	F	CH_3	$CHCH_2$
222.	CH_3	F	CH_3	$CHCH_2$
223.	CF_3	F	CH_3	$CHCH_2$
224.	OCH_3	F	CH_3	$CHCH_2$
225.	H	H	CF_3	$CHCH_2$
226.	F	H	CF_3	$CHCH_2$
227.	Cl	H	CF_3	$CHCH_2$
228.	Br	H	CF_3	$CHCH_2$
229.	CN	H	CF_3	$CHCH_2$
230.	CH_3	H	CF_3	$CHCH_2$
231.	CF_3	H	CF_3	$CHCH_2$
232.	OCH_3	H	CF_3	$CHCH_2$
233.	H	F	CF_3	$CHCH_2$
234.	F	F	CF_3	$CHCH_2$
235.	Cl	F	CF_3	$CHCH_2$
236.	Br	F	CF_3	$CHCH_2$
237.	CN	F	CF_3	$CHCH_2$
238.	CH_3	F	CF_3	$CHCH_2$
239.	CF_3	F	CF_3	$CHCH_2$
240.	OCH_3	F	CF_3	$CHCH_2$
241.	H	H	OCH_3	$CHCH_2$
242.	F	H	OCH_3	$CHCH_2$
243.	Cl	H	OCH_3	$CHCH_2$
244.	Br	H	OCH_3	$CHCH_2$
245.	CN	H	OCH_3	$CHCH_2$
246.	CH_3	H	OCH_3	$CHCH_2$
247.	CF_3	H	OCH_3	$CHCH_2$
248.	OCH_3	H	OCH_3	$CHCH_2$
249.	H	F	OCH_3	$CHCH_2$
250.	F	F	OCH_3	$CHCH_2$
251.	Cl	F	OCH_3	$CHCH_2$
252.	Br	F	OCH_3	$CHCH_2$
253.	CN	F	OCH_3	$CHCH_2$
254.	CH_3	F	OCH_3	$CHCH_2$
255.	CF_3	F	OCH_3	$CHCH_2$

TABLE 1-continued

Cpd.	R^3	R^4	R^5	R^7
256.	OCH_3	F	OCH_3	$CHCH_2$
257.	H	H	H	CH_2Cl
258.	F	H	H	CH_2Cl
259.	Cl	H	H	CH_2Cl
260.	Br	H	H	CH_2Cl
261.	CN	H	H	CH_2Cl
262.	CH_3	H	H	CH_2Cl
263.	CF_3	H	H	CH_2Cl
264.	OCH_3	H	H	CH_2Cl
265.	H	F	H	CH_2Cl
266.	F	F	H	CH_2Cl
267.	Cl	F	H	CH_2Cl
268.	Br	F	H	CH_2Cl
269.	CN	F	H	CH_2Cl
270.	CH_3	F	H	CH_2Cl
271.	CF_3	F	H	CH_2Cl
272.	OCH_3	F	H	CH_2Cl
273.	H	H	F	CH_2Cl
274.	F	H	F	CH_2Cl
275.	Cl	H	F	CH_2Cl
276.	Br	H	F	CH_2Cl
277.	CN	H	F	CH_2Cl
278.	CH_3	H	F	CH_2Cl
279.	CF_3	H	F	CH_2Cl
280.	OCH_3	H	F	CH_2Cl
281.	H	F	F	CH_2Cl
282.	F	F	F	CH_2Cl
283.	Cl	F	F	CH_2Cl
284.	Br	F	F	CH_2Cl
285.	CN	F	F	CH_2Cl
286.	CH_3	F	F	CH_2Cl
287.	CF_3	F	F	CH_2Cl
288.	OCH_3	F	F	CH_2Cl
289.	H	H	Cl	CH_2Cl
290.	F	H	Cl	CH_2Cl
291.	Cl	H	Cl	CH_2Cl
292.	Br	H	Cl	CH_2Cl
293.	CN	H	Cl	CH_2Cl
294.	CH_3	H	Cl	CH_2Cl
295.	CF_3	H	Cl	CH_2Cl
296.	OCH_3	H	Cl	CH_2Cl
297.	H	F	Cl	CH_2Cl
298.	F	F	Cl	CH_2Cl
299.	Cl	F	Cl	CH_2Cl
300.	Br	F	Cl	CH_2Cl
301.	CN	F	Cl	CH_2Cl
302.	CH_3	F	Cl	CH_2Cl
303.	CF_3	F	Cl	CH_2Cl
304.	OCH_3	F	Cl	CH_2Cl
305.	H	H	Br	CH_2Cl
306.	F	H	Br	CH_2Cl
307.	Cl	H	Br	CH_2Cl
308.	Br	H	Br	CH_2Cl
309.	CN	H	Br	CH_2Cl
310.	CH_3	H	Br	CH_2Cl
311.	CF_3	H	Br	CH_2Cl
312.	OCH_3	H	Br	CH_2Cl
313.	H	F	Br	CH_2Cl
314.	F	F	Br	CH_2Cl
315.	Cl	F	Br	CH_2Cl
316.	Br	F	Br	CH_2Cl
317.	CN	F	Br	CH_2Cl
318.	CH_3	F	Br	CH_2Cl
319.	CF_3	F	Br	CH_2Cl
320.	OCH_3	F	Br	CH_2Cl
321.	H	H	CN	CH_2Cl
322.	F	H	CN	CH_2Cl
323.	Cl	H	CN	CH_2Cl
324.	Br	H	CN	CH_2Cl
325.	CN	H	CN	CH_2Cl
326.	CH_3	H	CN	CH_2Cl
327.	CF_3	H	CN	CH_2Cl
328.	OCH_3	H	CN	CH_2Cl
329.	H	F	CN	CH_2Cl
330.	F	F	CN	CH_2Cl
331.	Cl	F	CN	CH_2Cl
332.	Br	F	CN	CH_2Cl
333.	CN	F	CN	CH_2Cl

TABLE 1-continued

Cpd.	R^3	R^4	R^5	R^7
334.	CH_3	F	CN	CH_2Cl
335.	CF_3	F	CN	CH_2Cl
336.	OCH_3	F	CN	CH_2Cl
337.	H	H	CH_3	CH_2Cl
338.	F	H	CH_3	CH_2Cl
339.	Cl	H	CH_3	CH_2Cl
340.	Br	H	CH_3	CH_2Cl
341.	CN	H	CH_3	CH_2Cl
342.	CH_3	H	CH_3	CH_2Cl
343.	CF_3	H	CH_3	CH_2Cl
344.	OCH_3	H	CH_3	CH_2Cl
345.	H	F	CH_3	CH_2Cl
346.	F	F	CH_3	CH_2Cl
347.	Cl	F	CH_3	CH_2Cl
348.	Br	F	CH_3	CH_2Cl
349.	CN	F	CH_3	CH_2Cl
350.	CH_3	F	CH_3	CH_2Cl
351.	CF_3	F	CH_3	CH_2Cl
352.	OCH_3	F	CH_3	CH_2Cl
353.	H	H	CF_3	CH_2Cl
354.	F	H	CF_3	CH_2Cl
355.	Cl	H	CF_3	CH_2Cl
356.	Br	H	CF_3	CH_2Cl
357.	CN	H	CF_3	CH_2Cl
358.	CH_3	H	CF_3	CH_2Cl
359.	CF_3	H	CF_3	CH_2Cl
360.	OCH_3	H	CF_3	CH_2Cl
361.	H	F	CF_3	CH_2Cl
362.	F	F	CF_3	CH_2Cl
363.	Cl	F	CF_3	CH_2Cl
364.	Br	F	CF_3	CH_2Cl
365.	CN	F	CF_3	CH_2Cl
366.	CH_3	F	CF_3	CH_2Cl
367.	CF_3	F	CF_3	CH_2Cl
368.	OCH_3	F	CF_3	CH_2Cl
369.	H	H	OCH_3	CH_2Cl
370.	F	H	OCH_3	CH_2Cl
371.	Cl	H	OCH_3	CH_2Cl
372.	Br	H	OCH_3	CH_2Cl
373.	CN	H	OCH_3	CH_2Cl
374.	CH_3	H	OCH_3	CH_2Cl
375.	CF_3	H	OCH_3	CH_2Cl
376.	OCH_3	H	OCH_3	CH_2Cl
377.	H	F	OCH_3	CH_2Cl
378.	F	F	OCH_3	CH_2Cl
379.	Cl	F	OCH_3	CH_2Cl
380.	Br	F	OCH_3	CH_2Cl
381.	CN	F	OCH_3	CH_2Cl
382.	CH_3	F	OCH_3	CH_2Cl
383.	CF_3	F	OCH_3	CH_2Cl
384.	OCH_3	F	OCH_3	CH_2Cl
385.	H	H	H	CF_3
386.	F	H	H	CF_3
387.	Cl	H	H	CF_3
388.	Br	H	H	CF_3
389.	CN	H	H	CF_3
390.	CH_3	H	H	CF_3
391.	CF_3	H	H	CF_3
392.	OCH_3	H	H	CF_3
393.	H	F	H	CF_3
394.	F	F	H	CF_3
395.	Cl	F	H	CF_3
396.	Br	F	H	CF_3
397.	CN	F	H	CF_3
398.	CH_3	F	H	CF_3
399.	CF_3	F	H	CF_3
400.	OCH_3	F	H	CF_3
401.	H	H	F	CF_3
402.	F	H	F	CF_3
403.	Cl	H	F	CF_3
404.	Br	H	F	CF_3
405.	CN	H	F	CF_3
406.	CH_3	H	F	CF_3
407.	CF_3	H	F	CF_3
408.	OCH_3	H	F	CF_3
409.	H	F	F	CF_3
410.	F	F	F	CF_3
411.	Cl	F	F	CF_3

TABLE 1-continued

Cpd.	R^3	R^4	R^5	R^7
412.	Br	F	F	CF_3
413.	CN	F	F	CF_3
414.	CH_3	F	F	CF_3
415.	CF_3	F	F	CF_3
416.	OCH_3	F	F	CF_3
417.	H	H	Cl	CF_3
418.	F	H	Cl	CF_3
419.	Cl	H	Cl	CF_3
420.	Br	H	Cl	CF_3
421.	CN	H	Cl	CF_3
422.	CH_3	H	Cl	CF_3
423.	CF_3	H	Cl	CF_3
424.	OCH_3	H	Cl	CF_3
425.	H	F	Cl	CF_3
426.	F	F	Cl	CF_3
427.	Cl	F	Cl	CF_3
428.	Br	F	Cl	CF_3
429.	CN	F	Cl	CF_3
430.	CH_3	F	Cl	CF_3
431.	CF_3	F	Cl	CF_3
432.	OCH_3	F	Cl	CF_3
433.	H	H	Br	CF_3
434.	F	H	Br	CF_3
435.	Cl	H	Br	CF_3
436.	Br	H	Br	CF_3
437.	CN	H	Br	CF_3
438.	CH_3	H	Br	CF_3
439.	CF_3	H	Br	CF_3
440.	OCH_3	H	Br	CF_3
441.	H	F	Br	CF_3
442.	F	F	Br	CF_3
443.	Cl	F	Br	CF_3
444.	Br	F	Br	CF_3
445.	CN	F	Br	CF_3
446.	CH_3	F	Br	CF_3
447.	CF_3	F	Br	CF_3
448.	OCH_3	F	Br	CF_3
449.	H	H	CN	CF_3
450.	F	H	CN	CF_3
451.	Cl	H	CN	CF_3
452.	Br	H	CN	CF_3
453.	CN	H	CN	CF_3
454.	CH_3	H	CN	CF_3
455.	CF_3	H	CN	CF_3
456.	OCH_3	H	CN	CF_3
457.	H	F	CN	CF_3
458.	F	F	CN	CF_3
459.	Cl	F	CN	CF_3
460.	Br	F	CN	CF_3
461.	CN	F	CN	CF_3
462.	CH_3	F	CN	CF_3
463.	CF_3	F	CN	CF_3
464.	OCH_3	F	CN	CF_3
465.	H	H	CH_3	CF_3
466.	F	H	CH_3	CF_3
467.	Cl	H	CH_3	CF_3
468.	Br	H	CH_3	CF_3
469.	CN	H	CH_3	CF_3
470.	CH_3	H	CH_3	CF_3
471.	CF_3	H	CH_3	CF_3
472.	OCH_3	H	CH_3	CF_3
473.	H	F	CH_3	CF_3
474.	F	F	CH_3	CF_3
475.	Cl	F	CH_3	CF_3
476.	Br	F	CH_3	CF_3
477.	CN	F	CH_3	CF_3
478.	CH_3	F	CH_3	CF_3
479.	CF_3	F	CH_3	CF_3
480.	OCH_3	F	CH_3	CF_3
481.	H	H	CF_3	CF_3
482.	F	H	CF_3	CF_3
483.	Cl	H	CF_3	CF_3
484.	Br	H	CF_3	CF_3
485.	CN	H	CF_3	CF_3
486.	CH_3	H	CF_3	CF_3
487.	CF_3	H	CF_3	CF_3
488.	OCH_3	H	CF_3	CF_3
489.	H	F	CF_3	CF_3

TABLE 1-continued

Cpd.	R^3	R^4	R^5	R^7
490.	F	F	CF_3	CF_3
491.	Cl	F	CF_3	CF_3
492.	Br	F	CF_3	CF_3
493.	CN	F	CF_3	CF_3
494.	CH_3	F	CF_3	CF_3
495.	CF_3	F	CF_3	CF_3
496.	OCH_3	F	CF_3	CF_3
497.	H	H	OCH_3	CF_3
498.	F	H	OCH_3	CF_3
499.	Cl	H	OCH_3	CF_3
500.	Br	H	OCH_3	CF_3
501.	CN	H	OCH_3	CF_3
502.	CH_3	H	OCH_3	CF_3
503.	CF_3	H	OCH_3	CF_3
504.	OCH_3	H	OCH_3	CF_3
505.	H	F	OCH_3	CF_3
506.	F	F	OCH_3	CF_3
507.	Cl	F	OCH_3	CF_3
508.	Br	F	OCH_3	CF_3
509.	CN	F	OCH_3	CF_3
510.	CH_3	F	OCH_3	CF_3
511.	CF_3	F	OCH_3	CF_3
512.	OCH_3	F	OCH_3	CF_3
513.	H	H	H	OCH_3
514.	F	H	H	OCH_3
515.	Cl	H	H	OCH_3
516.	Br	H	H	OCH_3
517.	CN	H	H	OCH_3
518.	CH_3	H	H	OCH_3
519.	CF_3	H	H	OCH_3
520.	OCH_3	H	H	OCH_3
521.	H	F	H	OCH_3
522.	F	F	H	OCH_3
523.	Cl	F	H	OCH_3
524.	Br	F	H	OCH_3
525.	CN	F	H	OCH_3
526.	CH_3	F	H	OCH_3
527.	CF_3	F	H	OCH_3
528.	OCH_3	F	H	OCH_3
529.	H	H	F	OCH_3
530.	F	H	F	OCH_3
531.	Cl	H	F	OCH_3
532.	Br	H	F	OCH_3
533.	CN	H	F	OCH_3
534.	CH_3	H	F	OCH_3
535.	CF_3	H	F	OCH_3
536.	OCH_3	H	F	OCH_3
537.	H	F	F	OCH_3
538.	F	F	F	OCH_3
539.	Cl	F	F	OCH_3
540.	Br	F	F	OCH_3
541.	CN	F	F	OCH_3
542.	CH_3	F	F	OCH_3
543.	CF_3	F	F	OCH_3
544.	OCH_3	F	F	OCH_3
545.	H	H	Cl	OCH_3
546.	F	H	Cl	OCH_3
547.	Cl	H	Cl	OCH_3
548.	Br	H	Cl	OCH_3
549.	CN	H	Cl	OCH_3
550.	CH_3	H	Cl	OCH_3
551.	CF_3	H	Cl	OCH_3
552.	OCH_3	H	Cl	OCH_3
553.	H	F	Cl	OCH_3
554.	F	F	Cl	OCH_3
555.	Cl	F	Cl	OCH_3
556.	Br	F	Cl	OCH_3
557.	CN	F	Cl	OCH_3
558.	CH_3	F	Cl	OCH_3
559.	CF_3	F	Cl	OCH_3
560.	OCH_3	F	Cl	OCH_3
561.	H	H	Br	OCH_3
562.	F	H	Br	OCH_3
563.	Cl	H	Br	OCH_3
564.	Br	H	Br	OCH_3
565.	CN	H	Br	OCH_3
566.	CH_3	H	Br	OCH_3
567.	CF_3	H	Br	OCH_3

TABLE 1-continued

Cpd.	R^3	R^4	R^5	R^7
568.	OCH_3	H	Br	OCH_3
569.	H	F	Br	OCH_3
570.	F	F	Br	OCH_3
571.	Cl	F	Br	OCH_3
572.	Br	F	Br	OCH_3
573.	CN	F	Br	OCH_3
574.	CH_3	F	Br	OCH_3
575.	CF_3	F	Br	OCH_3
576.	OCH_3	F	Br	OCH_3
577.	H	H	CN	OCH_3
578.	F	H	CN	OCH_3
579.	Cl	H	CN	OCH_3
580.	Br	H	CN	OCH_3
581.	CN	H	CN	OCH_3
582.	CH_3	H	CN	OCH_3
583.	CF_3	H	CN	OCH_3
584.	OCH_3	H	CN	OCH_3
585.	H	F	CN	OCH_3
586.	F	F	CN	OCH_3
587.	Cl	F	CN	OCH_3
588.	Br	F	CN	OCH_3
589.	CN	F	CN	OCH_3
590.	CH_3	F	CN	OCH_3
591.	CF_3	F	CN	OCH_3
592.	OCH_3	F	CN	OCH_3
593.	H	H	CH_3	OCH_3
594.	F	H	CH_3	OCH_3
595.	Cl	H	CH_3	OCH_3
596.	Br	H	CH_3	OCH_3
597.	CN	H	CH_3	OCH_3
598.	CH_3	H	CH_3	OCH_3
599.	CF_3	H	CH_3	OCH_3
600.	OCH_3	H	CH_3	OCH_3
601.	H	F	CH_3	OCH_3
602.	F	F	CH_3	OCH_3
603.	Cl	F	CH_3	OCH_3
604.	Br	F	CH_3	OCH_3
605.	CN	F	CH_3	OCH_3
606.	CH_3	F	CH_3	OCH_3
607.	CF_3	F	CH_3	OCH_3
608.	OCH_3	F	CH_3	OCH_3
609.	H	H	CF_3	OCH_3
610.	F	H	CF_3	OCH_3
611.	Cl	H	CF_3	OCH_3
612.	Br	H	CF_3	OCH_3
613.	CN	H	CF_3	OCH_3
614.	CH_3	H	CF_3	OCH_3
615.	CF_3	H	CF_3	OCH_3
616.	OCH_3	H	CF_3	OCH_3
617.	H	F	CF_3	OCH_3
618.	F	F	CF_3	OCH_3
619.	Cl	F	CF_3	OCH_3
620.	Br	F	CF_3	OCH_3
621.	CN	F	CF_3	OCH_3
622.	CH_3	F	CF_3	OCH_3
623.	CF_3	F	CF_3	OCH_3
624.	OCH_3	F	CF_3	OCH_3
625.	H	H	OCH_3	OCH_3
626.	F	H	OCH_3	OCH_3
627.	Cl	H	OCH_3	OCH_3
628.	Br	H	OCH_3	OCH_3
629.	CN	H	OCH_3	OCH_3
630.	CH_3	H	OCH_3	OCH_3
631.	CF_3	H	OCH_3	OCH_3
632.	OCH_3	H	OCH_3	OCH_3
633.	H	F	OCH_3	OCH_3
634.	F	F	OCH_3	OCH_3
635.	Cl	F	OCH_3	OCH_3
636.	Br	F	OCH_3	OCH_3
637.	CN	F	OCH_3	OCH_3
638.	CH_3	F	OCH_3	OCH_3
639.	CF_3	F	OCH_3	OCH_3
640.	OCH_3	F	OCH_3	OCH_3
641.	H	H	H	
642.	F	H	H	
643.	Cl	H	H	
644.	Br	H	H	
645.	CN	H	H	
646.	CH_3	H	H	
647.	CF_3	H	H	
648.	OCH_3	H	H	
649.	H	F	H	
650.	F	F	H	
651.	Cl	F	H	
652.	Br	F	H	
653.	CN	F	H	
654.	CH_3	F	H	
655.	CF_3	F	H	
656.	OCH_3	F	H	
657.	H	H	F	
658.	F	H	F	
659.	Cl	H	F	
660.	Br	H	F	

TABLE 1-continued

Cpd.	R^3	R^4	R^5	R^7
661.	CN	H	F	
662.	CH_3	H	F	
663.	CF_3	H	F	
664.	OCH_3	H	F	
665.	H	F	F	
666.	F	F	F	
667.	Cl	F	F	
668.	Br	F	F	
669.	CN	F	F	
670.	CH_3	F	F	
671.	CF_3	F	F	
672.	OCH_3	F	F	
673.	H	H	Cl	
674.	F	H	Cl	
675.	Cl	H	Cl	
676.	Br	H	Cl	
677.	CN	H	Cl	
678.	CH_3	H	Cl	

TABLE 1-continued

Cpd.	R^3	R^4	R^5	R^7
679.	CF_3	H	Cl	
680.	OCH_3	H	Cl	
681.	H	F	Cl	
682.	F	F	Cl	
683.	Cl	F	Cl	
684.	Br	F	Cl	
685.	CN	F	Cl	
686.	CH_3	F	Cl	
687.	CF_3	F	Cl	
688.	OCH_3	F	Cl	
689.	H	H	Br	
690.	F	H	Br	
691.	Cl	H	Br	
692.	Br	H	Br	
693.	CN	H	Br	
694.	CH_3	H	Br	
695.	CF_3	H	Br	
696.	OCH_3	H	Br	
697.	H	F	Br	

TABLE 1-continued

Cpd.	R^3	R^4	R^5	R^7
698.	F	F	Br	
699.	Cl	F	Br	
700.	Br	F	Br	
701.	CN	F	Br	
702.	CH_3	F	Br	
703.	CF_3	F	Br	
704.	OCH_3	F	Br	
705.	H	H	CN	
706.	F	H	CN	
707.	Cl	H	CN	
708.	Br	H	CN	
709.	CN	H	CN	
710.	CH_3	H	CN	
711.	CF_3	H	CN	
712.	OCH_3	H	CN	
713.	H	F	CN	
714.	F	F	CN	
715.	Cl	F	CN	
716.	Br	F	CN	
717.	CN	F	CN	
718.	CH_3	F	CN	
719.	CF_3	F	CN	
720.	OCH_3	F	CN	
721.	H	H	CH_3	
722.	F	H	CH_3	
723.	Cl	H	CH_3	
724.	Br	H	CH_3	
725.	CN	H	CH_3	
726.	CH_3	H	CH_3	
727.	CF_3	H	CH_3	
728.	OCH_3	H	CH_3	
729.	H	F	CH_3	
730.	F	F	CH_3	
731.	Cl	F	CH_3	
732.	Br	F	CH_3	
733.	CN	F	CH_3	
734.	CH_3	F	CH_3	

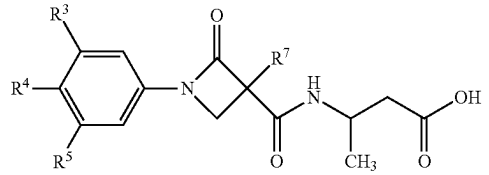
TABLE 1-continued

Cpd.	R^3	R^4	R^5	R^7
735.	CF_3	F	CH_3	
736.	OCH_3	F	CH_3	
737.	H	H	CF_3	
738.	F	H	CF_3	
739.	Cl	H	CF_3	
740.	Br	H	CF_3	
741.	CN	H	CF_3	
742.	CH_3	H	CF_3	
743.	CF_3	H	CF_3	
744.	OCH_3	H	CF_3	
745.	H	F	CF_3	
746.	F	F	CF_3	
747.	Cl	F	CF_3	
748.	Br	F	CF_3	
749.	CN	F	CF_3	
750.	CH_3	F	CF_3	
751.	CF_3	F	CF_3	
752.	OCH_3	F	CF_3	
753.	H	H	OCH_3	
754.	F	H	OCH_3	
755.	Cl	H	OCH_3	
756.	Br	H	OCH_3	
757.	CN	H	OCH_3	
758.	CH_3	H	OCH_3	
759.	CF_3	H	OCH_3	
760.	OCH_3	H	OCH_3	
761.	H	F	OCH_3	
762.	F	F	OCH_3	
763.	Cl	F	OCH_3	
764.	Br	F	OCH_3	
765.	CN	F	OCH_3	
766.	CH_3	F	OCH_3	
767.	CF_3	F	OCH_3	
768.	OCH_3	F	OCH_3	

In Table 1,  means cyclopropyl.

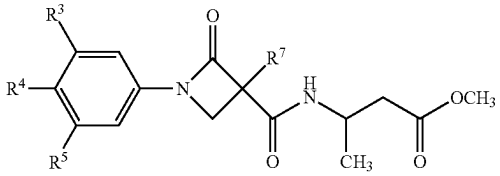
Compounds of formula I.1., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.1.1-I.1.768, are particularly preferred:

(I.1.)



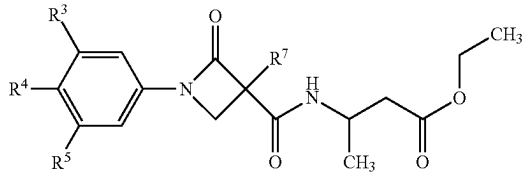
Compounds of formula I.2., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.2.1-I.2.768, are particularly preferred:

(I.2)



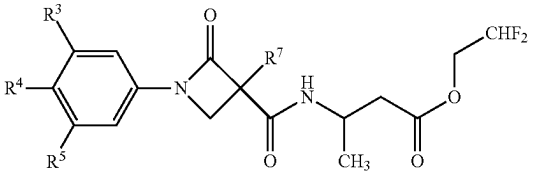
Compounds of formula I.3., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.3.1-I.3.768, are particularly preferred:

(I.3.)



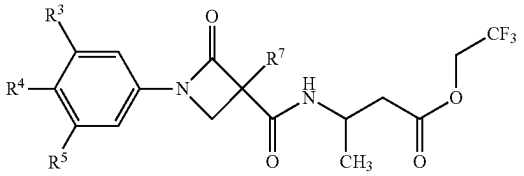
Compounds of formula I.4., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.4.1-I.4.768, are particularly preferred:

(I.4.)



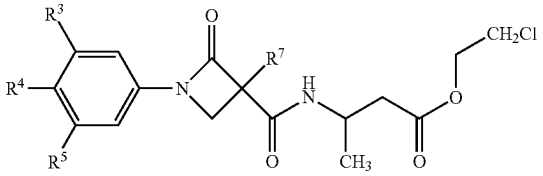
Compounds of formula I.5., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.5.1-I.5.768, are particularly preferred:

(I.5.)



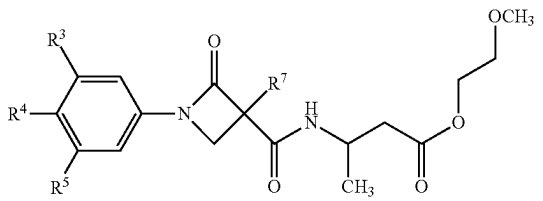
Compounds of formula I.6., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.6.1-I.6.768, are particularly preferred:

(I.6.)



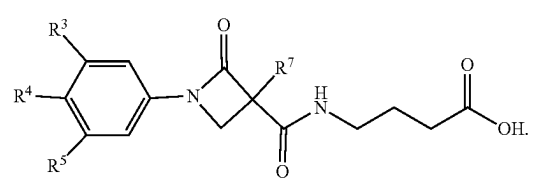
Compounds of formula I.7., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.7.1-I.7.768, are particularly preferred:

(I.7.)



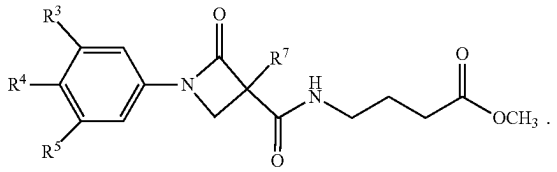
Compounds of formula I.8., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.8.1-I.8.768, are particularly preferred:

(I.8)



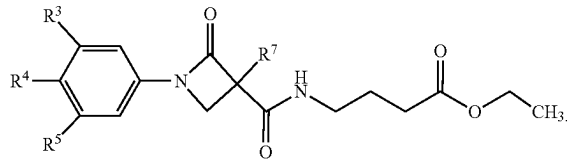
Compounds of formula I.9., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.9.1-I.9.768, are particularly preferred:

(I.9)



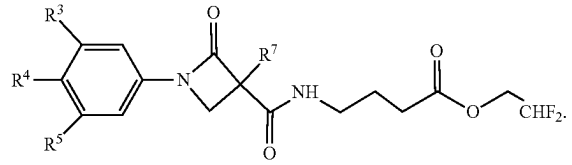
Compounds of formula I.10., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.10.1-I.10.768, are particularly preferred:

(I.10)



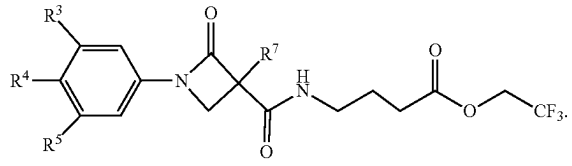
Compounds of formula I.11., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.11.1-I.11.768, are particularly preferred:

(I.11)



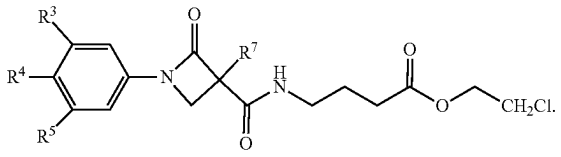
Compounds of formula I.12., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.12.1-I.12.768, are particularly preferred:

(I.12)



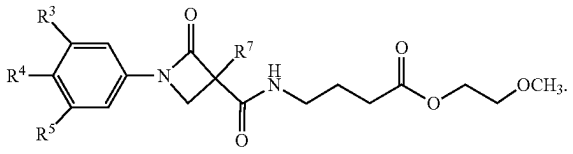
Compounds of formula I.13., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.13.1-I.13.768, are particularly preferred:

(I.13)



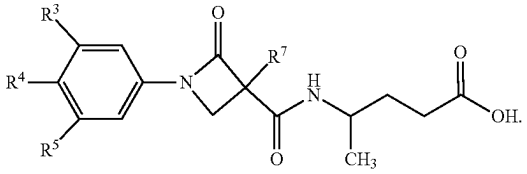
Compounds of formula I.14., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.14.1-I.14.768, are particularly preferred:

(I.14)



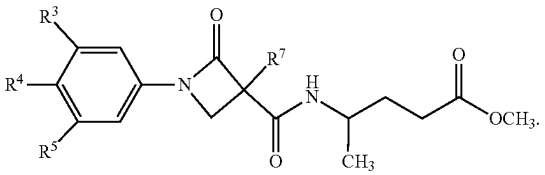
Compounds of formula I.15., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.15.1-I.15.768, are particularly preferred:

(I.15)



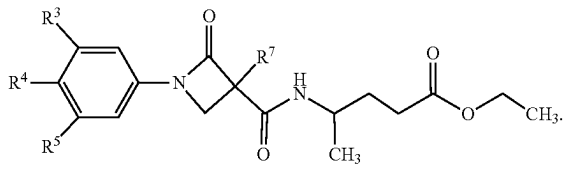
Compounds of formula I.16., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.16.1-I.16.768, are particularly preferred:

(I.16)



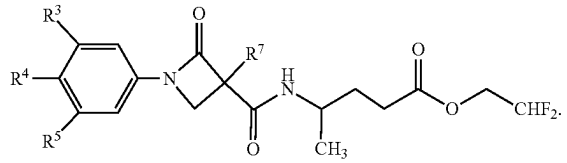
Compounds of formula I.17., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.17.1-I.17.768, are particularly preferred:

(I.17)



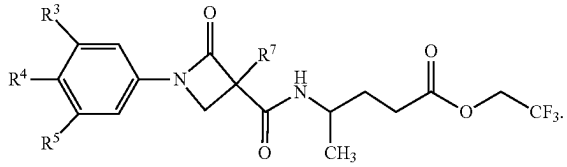
Compounds of formula I.18., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.18.1-I.18.768, are particularly preferred:

(I.18)



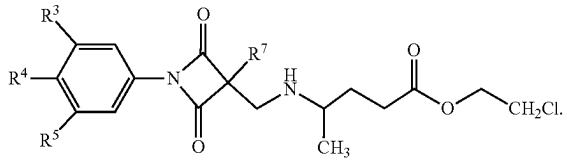
Compounds of formula I.19., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.19.1-I.19.768, are particularly preferred:

(I.19)



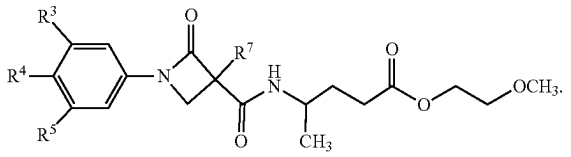
Compounds of formula I.20., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.20.1-I.20.768, are particularly preferred:

(I.20)



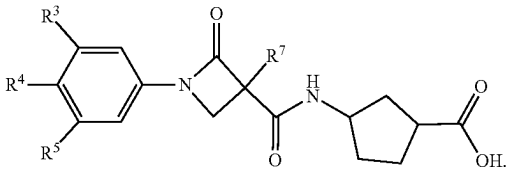
Compounds of formula I.21., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.21.1-I.21.768, are particularly preferred:

(I.21)



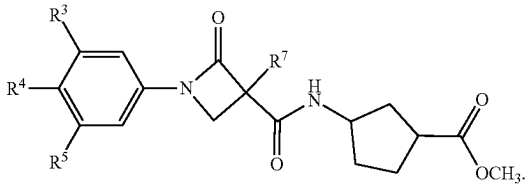
Compounds of formula I.22., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.22.1-I.22.768, are particularly preferred:

(I.22)



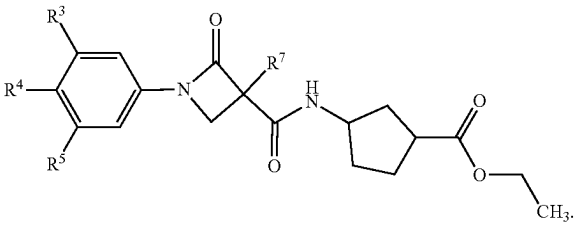
Compounds of formula I.23., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.23.1-I.23.768, are particularly preferred:

(I.23)



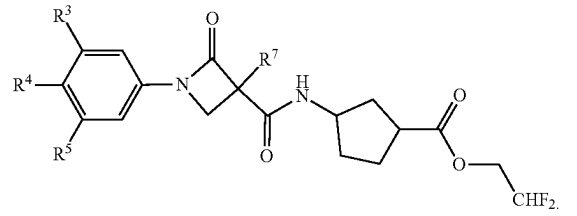
Compounds of formula I.24., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.24.1-I.24.768, are particularly preferred:

(I.24)



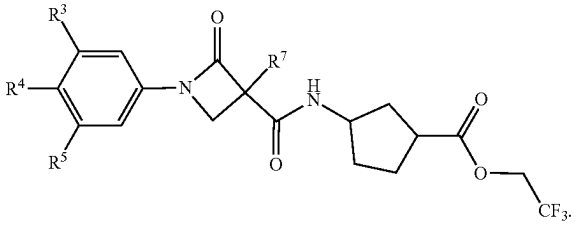
Compounds of formula I.25., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.25.1-I.25.768, are particularly preferred:

(I.25)



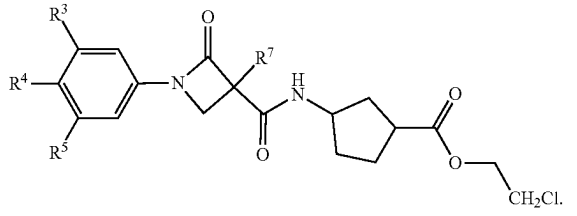
Compounds of formula I.26., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.26.1-I.26.768, are particularly preferred:

(I.26)



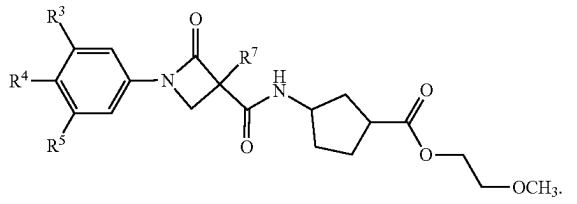
Compounds of formula I.27., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.27.1-I.27.768, are particularly preferred:

(I.27)



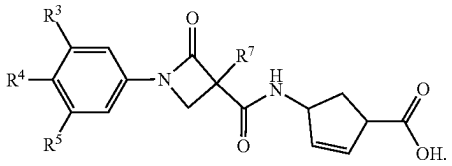
Compounds of formula I.28., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.28.1-I.28.768, are particularly preferred:

(I.28)



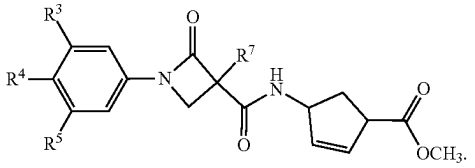
Compounds of formula I.29., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.29.1-I.29.768, are particularly preferred:

(I.29)



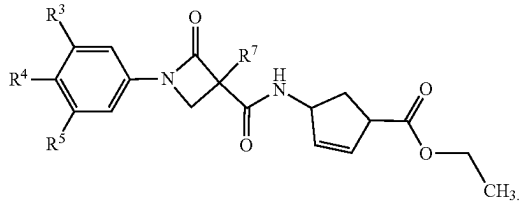
Compounds of formula I.30., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.30.1-I.30.768, are particularly preferred:

(I.30)



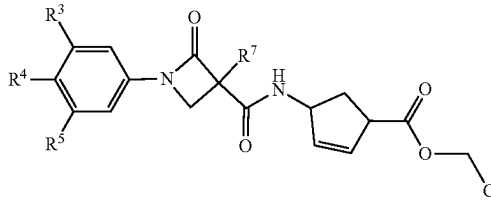
Compounds of formula I.31., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.31.1-I.31.768, are particularly preferred:

(I.31)



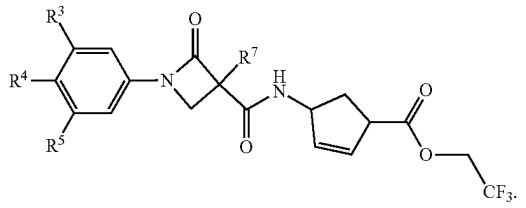
Compounds of formula I.32., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.32.1-I.32.768, are particularly preferred:

(I.32)



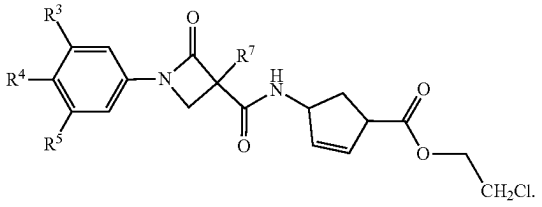
Compounds of formula I.33., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.33.1-I.33.768, are particularly preferred:

(I.33)



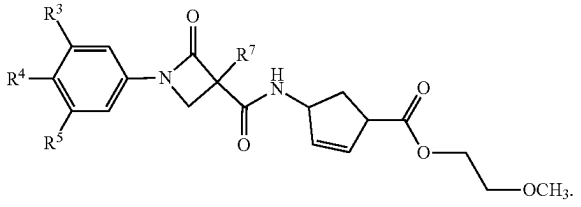
Compounds of formula I.34., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.34.1-I.34.768, are particularly preferred:

(I.34)



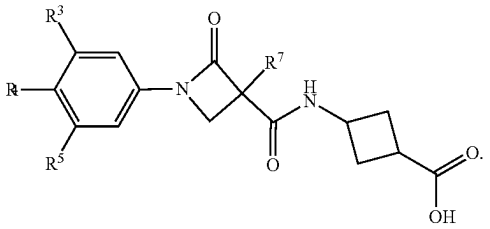
Compounds of formula I.35., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.35.1-I.35.768, are particularly preferred:

(I.35)



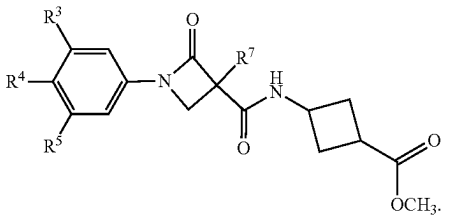
Compounds of formula I.36., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.36.1-I.36.768, are particularly preferred:

(I.36)



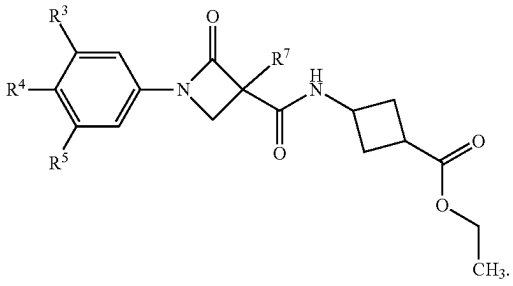
Compounds of formula I.37., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.37.1-I.37.768, are particularly preferred:

(I.37)



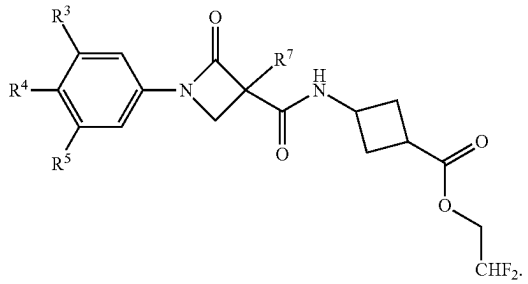
Compounds of formula I.38., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.38.1-I.38.768, are particularly preferred:

(I.38)



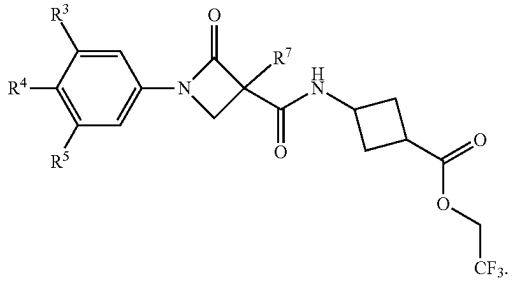
Compounds of formula I.39., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.39.1-I.39.768, are particularly preferred:

(I.39)



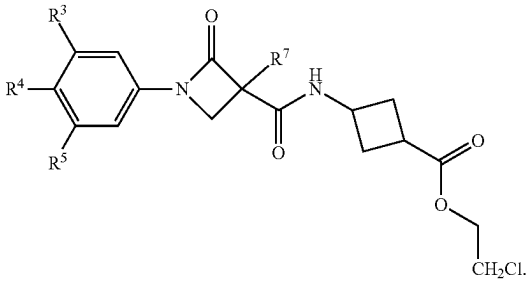
Compounds of formula I.40., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.40.1-I.40.768, are particularly preferred:

(I.40)



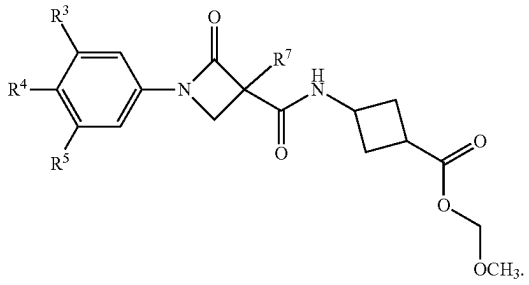
Compounds of formula I.41., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.41.1-I.41.768, are particularly preferred:

(I.41)



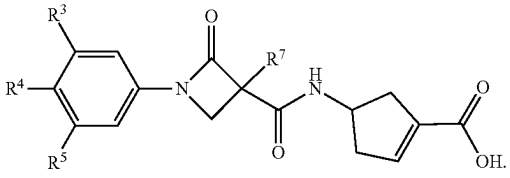
Compounds of formula I.42., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.42.1-I.42.768, are particularly preferred:

(I.42)



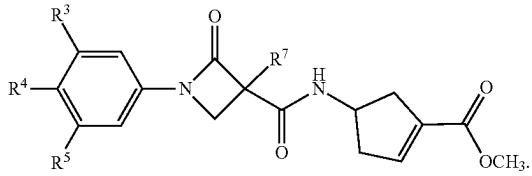
Compounds of formula I.43., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.43.1-I.43.768, are particularly preferred:

(I.43)



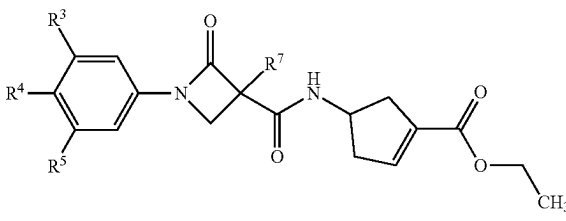
Compounds of formula I.44., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.44.1-I.44.768, are particularly preferred:

(I.44)



Compounds of formula I.45., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.45.1-I.45.768, are particularly preferred:

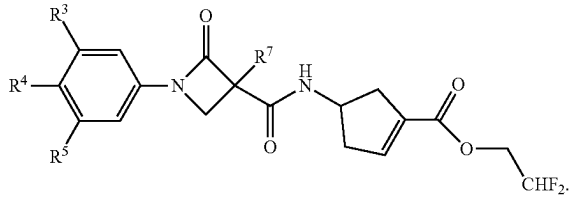
(I.45)



Compounds of formula I.46., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the

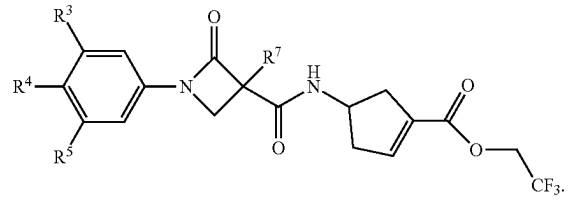
meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.46.1-I.46.768, are particularly preferred:

(I.46)



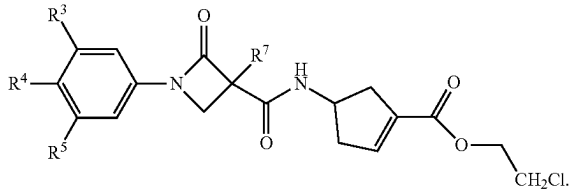
Compounds of formula I.47., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.47.1-I.47.768, are particularly preferred:

(I.47)



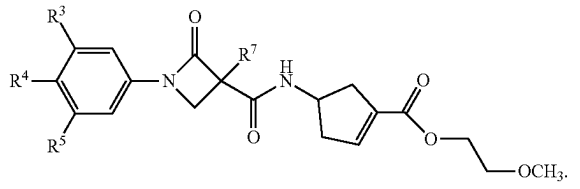
Compounds of formula I.48., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.48.1-I.48.768, are particularly preferred:

(I.48)



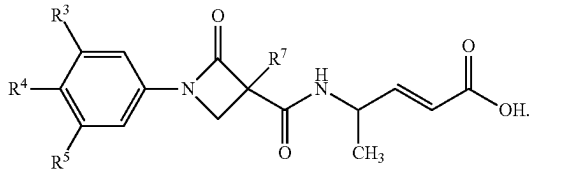
Compounds of formula I.49., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.49.1-I.49.768, are particularly preferred:

(I.49)



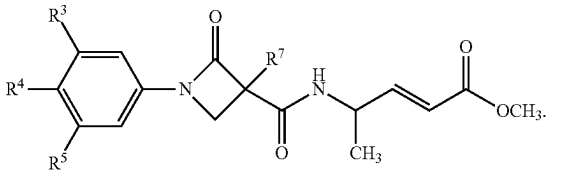
Compounds of formula I.50., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.50.1-I.50.768, are particularly preferred:

(I.50)



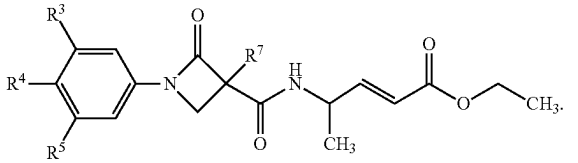
Compounds of formula I.51., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.51.1-I.51.768, are particularly preferred:

(I.51)



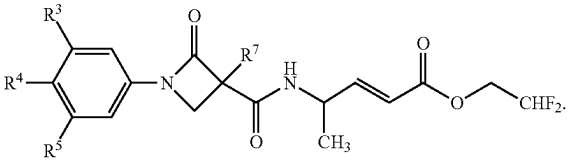
Compounds of formula I.52., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.52.1-I.52.768, are particularly preferred:

(I.52)



Compounds of formula I.53., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.53.1-I.53.768, are particularly preferred:

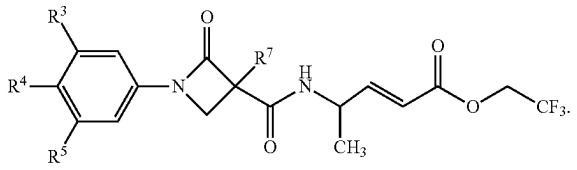
(I.53)



Compounds of formula I.54., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the

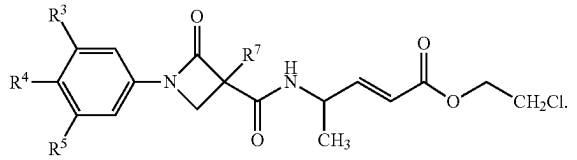
meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.54.1-I.54.768, are particularly preferred:

(I.54)



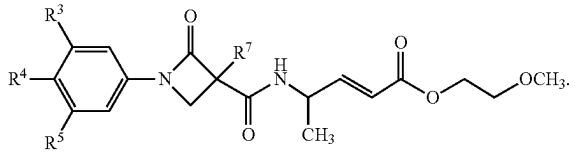
Compounds of formula I.55., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.55.1-I.55.768, are particularly preferred:

(I.55)

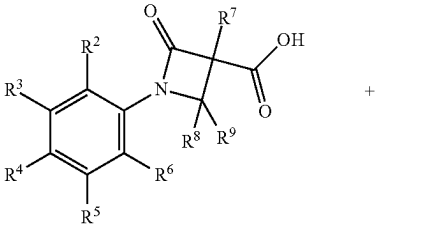


Compounds of formula I.56., wherein wherein R^1, R^2, R^6, R^8 and R^9 are hydrogen, and R^3, R^4, R^5 and R^7 have the meanings as defined lines in 1 to 768 of Table 1 above, i.e. individual compounds I.56.1-I.56.768, are particularly preferred:

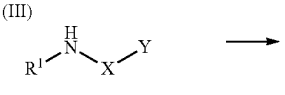
(I.56)



The compounds of formula (I) according to the invention can be prepared by standard processes of organic chemistry, for example by the following processes:



(III)



(II)

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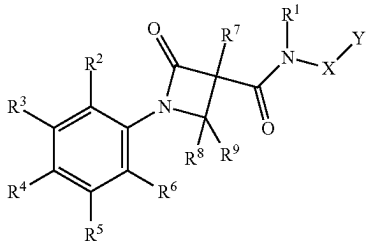
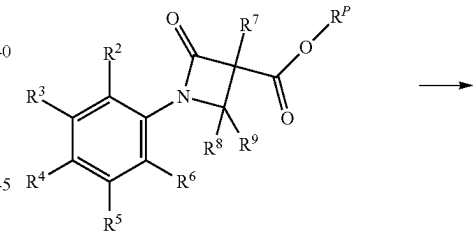


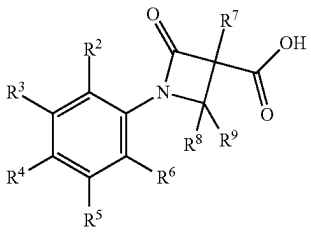
(I)

The compounds of formula (I) can be prepared according to methods or in analogy to methods that are described in the prior art. The synthesis takes advantage of starting materials that are commercially available or may be prepared according to conventional procedures starting from readily available compounds.

Compounds of the formula (I) can be prepared from the carboxylic acids (Ill) and commercially available amines (II) using an organic base and a coupling reagent. Thus, compounds of formula (I) can be synthesized from the corresponding carboxylic acids (1 eq.) using a coupling reagent (1-2 eq.), for example T_3P (propanephosphonic acid anhydride) or HATU (O-(7-azabenzotriazole-1-yl)-N,N,N',N'-tetramethyluronium-hexafluorphosphate), an organic base (1-3 eq.) and the amines (II) (1-3 eq.). The reaction is typically carried out in an organic solvent. Preferably an aprotic organic solvent is used. Most preferably tetrahydrofuran (THF), N,N-dimethylformamide (DMF) or acetonitrile (ACN) are used. The reaction is carried out at temperatures between 0° C. and reflux. Preferably the reaction is carried out at room temperature. Preferably the organic base is triethylamine or N,N-diisopropylethylamine.



(IV)

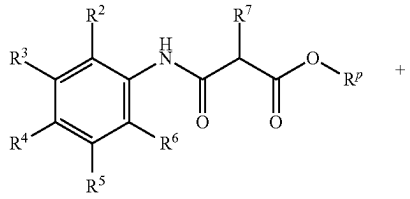


(III)

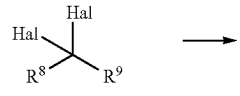
The carboxylic acids (Ill) are commercially available or can be prepared from the corresponding esters (IV) (wherein RP is alkyl or benzyl). If RP is alkyl, esters (IV) may be cleaved using aqueous alkali metal hydroxides. Preferably lithium hydroxide, sodium hydroxide or potassium hydroxide (1-2 eq.) are employed. The reaction is typically carried out in mixtures of water and an organic solvent. Preferably

the organic solvent is THF, methanol or acetonitrile. The reaction is carried out at temperatures between 0° C. and 100° C. Preferably the reaction is carried at room temperature. If RP is benzyl in (IV), then the ester may be cleaved using palladium on charcoal (0.001-1 eq.) as catalyst and hydrogen gas at temperatures between 0° C. and reflux. Preferably the reaction is carried out at room temperature. Typically, an organic solvent is employed. Preferably THF, methanol or ethanol are employed.

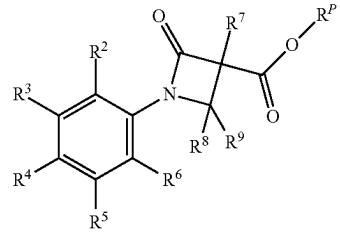
N-aryl-beta-lactam compounds (IV) are commercially available or can be prepared by known methods. For example, the esters (IV) can be made from malonates (V) prepared by using alkylating agents (VI, Hal=halogen) in the presence of a base as described in Angew. Chem. Int. Ed. 2017, 56, 12179-12183:



(V)

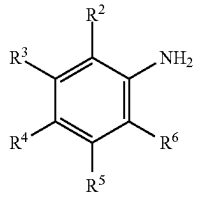


(VI)

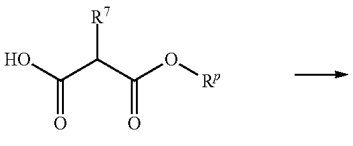


(IV)

Other methods are for example described in J. Chem. Soc., Perkin Trans. 1, 1996, 2793-2798, or in J. Org. Chem. 2019, 84, 12101-12110 or in Nature Communications, 6:6462, DOI: 10.1038/ncomms7462.



(VIII)



(VII)

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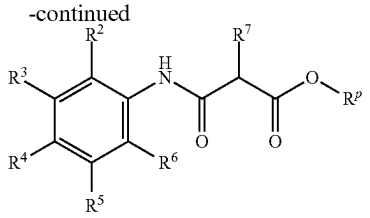


(V)

Compounds of the formula (V) can be prepared from commercially available carboxylic acids (VII) and commercially available amines (VIII) using a base and a coupling reagent. Thus, compounds of formula (V) can be synthesized from the corresponding carboxylic acids (1 eq.) using a coupling reagent (1-2 eq.), for example T_3P (propanephosphonic acid anhydride) or HATU (O-(7-azabenzotriazole-1-yl)-N,N,N',N'-tetramethyluronium-hexafluorphosphate), an organic base (1-3 eq.) and the amines (VIII) (1-3 eq.). The reaction is typically carried out in an organic solvent. Preferably an aprotic organic solvent is used. Most preferably tetrahydrofuran (THF), N,N-dimethylformamide (DMF) or acetonitrile (ACN) are used. The reaction is carried out at temperatures between 0° C. to refluxing temperatures. Preferably the reaction is carried out at room temperature. Preferably the organic base is triethylamine or N,N-diisopropylethylamine.

To widen the spectrum of action, the compounds of formula (I) may be mixed with many representatives of other herbicidal or growth-regulating active ingredient groups and then applied concomitantly. Suitable components for combinations are, for example, herbicides from the classes of the acetamides, amides, aryloxyphenoxypropionates, benzamides, benzofuran, benzoic acids, benzothiadiazinones, bipyridylium, carbamates, chloroacetamides, chlorocarboxylic acids, cyclohexanediones, dinitroanilines, dinitrophenol, diphenyl ether, glycines, imidazolinones, isoxazoles, isoxazolidinones, nitriles, N-phenylphthalimides, oxadiazoles, oxazolidinediones, oxyacetamides, phenoxycarboxylic acids, phenylcarbamates, phenylpyrazoles, phenylpyrazolines, phenylpyridazines, phosphinic acids, phosphoroamidates, phosphorodithioates, phthalamates, pyrazoles, pyridazinones, pyridines, pyridinecarboxylic acids, pyridinecarboxamides, pyrimidinediones, pyrimidinyl(thio)benzoates, quinolinecarboxylic acids, semicarbazones, sulfonylaminocarbonyltriazolinones, sulfonylureas, tetrazolinones, thiadiazoles, thiocarbamates, triazines, triazinones, triazoles, triazolinones, triazolocarboxamides, triazolopyrimidines, triketones, uracils, ureas.

It may furthermore be beneficial to apply the compounds of formula (I) alone or in combination with other herbicides, or else in the form of a mixture with other crop protection agents, for example together with agents for controlling pests or phytopathogenic fungi or bacteria. Also of interest is the miscibility with mineral salt solutions, which are employed for treating nutritional and trace element deficiencies. Other additives such as non-phytotoxic oils and oil concentrates may also be added.

In one embodiment of the present invention the combinations according to the present invention comprise at least one compound of formula (I) (compound A or component A) and at least one further active compound selected from herbicides B (compound B), preferably herbicides B of class b1) to b15), and safeners C (compound C).

In another embodiment of the present invention the combinations according to the present invention comprise at least one compound of formula (I) and at least one further active compound B (herbicide B).

Examples of herbicides B which can be used in combination with the compounds A of formula (I) according to the present invention are:

b1) from the group of the lipid biosynthesis inhibitors:

ACC-herbicides such as alloxydim, alloxydim-sodium, butroxydim, clethodim, clodinafop, clodinafop-propargyl, cycloxydim, cyhalofop, cyhalofop-butyl, diclofop, diclofop-methyl, fenoxaprop, fenoxaprop-ethyl, fenoxaprop-P, fenoxaprop-P-ethyl, fluazifop, fluazifop-butyl, fluazifop-P, fluazifop-P-butyl, haloxyfop, haloxyfop-methyl, haloxyfop-P, haloxyfop-P-methyl, metamifop, pinoxaden, profoxydim, propaquizafop, quizalofop, quizalofop-ethyl, quizalofop-tefuryl, quizalofop-P, quizalofop-P-ethyl, quizalofop-P-tefuryl, sethoxydim, tepraloxydim, tralkoxydim, 4-(4'-Chloro-4-cyclopropyl-2'-fluoro[1,1'-biphenyl]-3-yl)-5-hydroxy-2,2,6,6-tetramethyl-2H-pyran-3(6H)-one (CAS 1312337-72-6); 4-(2',4'-Dichloro-4-cyclopropyl[1,1'-biphenyl]-3-yl)-5-hydroxy-2,2,6,6-tetramethyl-2H-pyran-3(6H)-one (CAS 1312337-45-3); 4-(4'-Chloro-4-ethyl-2'-fluoro[1,1'-biphenyl]-3-yl)-5-hydroxy-2,2,6,6-tetramethyl-2H-pyran-3(6H)-one (CAS 1033757-93-5); 4-(2',4'-Dichloro-4-ethyl[1,1'-biphenyl]-3-yl)-2,2,6,6-tetramethyl-2H-pyran-3,5(4H,6H)-dione (CAS 1312340-84-3); 5-(Acetyloxy)-4-(4'-chloro-4-cyclopropyl-2'-fluoro[1,1'-biphenyl]-3-yl)-3,6-dihydro-2,2,6,6-tetramethyl-2H-pyran-3-one (CAS 1312337-48-6); 5-(Acetyloxy)-4-(2',4'-dichloro-4-cyclopropyl-[1,1'-biphenyl]-3-yl)-3,6-dihydro-2,2,6,6-tetramethyl-2H-pyran-3-one; 5-(Acetyloxy)-4-(4'-chloro-4-ethyl-2'-fluoro[1,1'-biphenyl]-3-yl)-3,6-dihydro-2,2,6,6-tetramethyl-2H-pyran-3-one (CAS 1312340-82-1); 5-(Acetyloxy)-4-(2',4'-dichloro-4-ethyl[1,1'-biphenyl]-3-yl)-3,6-dihydro-2,2,6,6-tetramethyl-2H-pyran-3-one (CAS 1033760-55-2); 4-(4'-Chloro-4-cyclopropyl-2'-fluoro[1,1'-biphenyl]-3-yl)-5,6-dihydro-2,2,6,6-tetramethyl-5-oxo-2H-pyran-3-yl carbonic acid methyl ester (CAS 1312337-51-1); 4-(2',4'-Dichloro-4-cyclopropyl-[1,1'-biphenyl]-3-yl)-5,6-dihydro-2,2,6,6-tetramethyl-5-oxo-2H-pyran-3-yl carbonic acid methyl ester; 4-(4'-Chloro-4-ethyl-2'-fluoro[1,1'-biphenyl]-3-yl)-5,6-dihydro-2,2,6,6-tetramethyl-5-oxo-2H-pyran-3-yl carbonic acid methyl ester (CAS 1312340-83-2); 4-(2',4'-Dichloro-4-ethyl[1,1'-biphenyl]-3-yl)-5,6-dihydro-2,2,6,6-tetramethyl-5-oxo-2H-pyran-3-yl carbonic acid methyl ester (CAS 1033760-58-5); and non ACC herbicides such as benfuresate, butylate, cycloate, dalapon, dimepiperate, EPTC, esprocarb, ethofumesate, flupropanate, molinate, orbencarb, pebulate, prosulfocarb, TCA, thiobencarb, tiocarbazil, triallate and vernolate;

b2) from the group of the ALS inhibitors:

sulfonylureas such as amidosulfuron, azimsulfuron, bensulfuron, bensulfuron-methyl, chlorimuron, chlorimuron-ethyl, chlorsulfuron, cinosulfuron, cyclosulfamuron, ethametsulfuron, ethametsulfuron-methyl, ethoxysulfuron, flazasulfuron, flucetosulfuron, flupyrsulfuron, flupyrsulfuron-methyl-sodium, foramsulfuron, halosulfuron, halosulfuron-methyl, imazosulfuron, iodosulfuron, iodosulfuron-methyl-sodium, iofensulfuron, iofensulfuron-sodium, mesosulfuron, metazosulfuron, metsulfuron, metsulfuron-methyl, nicosulfuron, orthosulfamuron, oxasulfuron, primisulfuron, primisulfuron-methyl, propyrisulfuron, prosulfuron, pyrazosulfuron, pyrazosulfuron-ethyl, rimsulfuron, sulfometuron, sulfometuron-methyl, sulfosulfuron, thifensulfuron, thifensulfuron-methyl, triasulfuron, tribenuron, tribenuron-methyl, trifloxysulfuron, triflusulfuron, triflusulfuron-methyl and tritosulfuron,

imidazolinones such as imazamethabenz, imazamethabenz-methyl, imazamox, imazapic, imazapyr, imazaquin and imazethapyr, triazolopyrimidine herbicides and sulfonanilides such as cloransulam, cloransulam-methyl, diclosulam, flumetsulam, florasulam, metosulam, penoxsulam, pyrimisulfan and pyroxsulam,

pyrimidinylbenzoates such as bispyribac, bispyribac-sodium, pyribenzoxim, pyriftalid, pyriminobac, pyriminobac-methyl, pyrithiobac, pyrithiobac-sodium, 4-[[[2-[(4,6-dimethoxy-2-pyrimidinyl)oxy]phenyl]methyl]amino]-benzoic acid-1-methylethyl ester (CAS 420138-41-6), 4-[[[2-[(4,6-dimethoxy-2-pyrimidinyl)oxy]phenyl]methyl]amino]-benzoic acid propyl ester (CAS 420138-40-5), N-(4-bromophenyl)-2-[(4,6-dimethoxy-2-pyrimidinyl)oxy]benzenemethanamine (CAS 420138-01-8),

sulfonylaminocarbonyl-triazolinone herbicides such as flucarbazone, flucarbazone-sodium, propoxycarbazone, propoxycarbazone-sodium, thiencarbazone and thiencarbazone-methyl; and triafamone;

among these, a preferred embodiment of the invention relates to those compositions comprising at least one imidazolinone herbicide;

b3) from the group of the photosynthesis inhibitors:

amicarbazone, inhibitors of the photosystem II, e.g. 1-(6-tert-butylpyrimidin-4-yl)-2-hydroxy-4-methoxy-3-methyl-2H-pyrrol-5-one (CAS 1654744-66-7), 1-(5-tert-butylisoxazol-3-yl)-2-hydroxy-4-methoxy-3-methyl-2H-pyrrol-5-one (CAS 1637455-12-9), 1-(5-tert-butylisoxazol-3-yl)-4-chloro-2-hydroxy-3-methyl-2H-pyrrol-5-one (CAS 1637453-94-1), 1-(5-tert-butyl-1-methyl-pyrazol-3-yl)-4-chloro-2-hydroxy-3-methyl-2H-pyrrol-5-one (CAS 1654057-29-0), 1-(5-tert-butyl-1-methyl-pyrazol-3-yl)-3-chloro-2-hydroxy-4-methyl-2H-pyrrol-5-one (CAS 1654747-80-4), 4-hydroxy-1-methoxy-5-methyl-3-[4-(trifluoromethyl)-2-pyridyl]imidazolidin-2-one; (CAS 2023785-78-4), 4-hydroxy-1,5-dimethyl-3-[4-(trifluoromethyl)-2-pyridyl]imidazolidin-2-one (CAS 2023785-79-5), 5-ethoxy-4-hydroxy-1-methyl-3-[4-(trifluoromethyl)-2-pyridyl]imidazolidin-2-one (CAS 1701416-69-4), 4-hydroxy-1-methyl-3-[4-(trifluoromethyl)-2-pyridyl]imidazolidin-2-one (CAS 1708087-22-2), 4-hydroxy-1,5-dimethyl-3-[1-methyl-5-(trifluoromethyl)pyrazol-3-yl]imidazolidin-2-one (CAS 2023785-80-8), 1-(5-tert-butylisoxazol-3-yl)-4-ethoxy-5-hydroxy-3-methyl-imidazolidin-2-one (CAS 1844836-64-1), triazine herbicides, including of chlorotriazine, triazinones, triazindiones, methylthiotriazines and pyridazinones such as ametryn, atrazine, chloridazone, cyanazine, desmetryn, dimethametryn, hexazinone, metribuzin, prometon, prometryn, propazine, simazine, simetryn, terbumeton, terbuthylazin, terbutryn and trietazin, aryl urea such as chlorobromuron, chlorotoluron, chloroxuron, dimefuron, diuron, fluometuron, isoproturon, isouron, linuron, metamitron, methabenzthiazuron, metobenzuron, metoxuron, monolinuron, neburon, siduron, tebuthiuron and thiadiazuron, phenyl carbamates such as desmedipham, karbutilat, phenmedipham, phenmedipham-ethyl, nitrile herbicides such as bromofenoxim, bromoxynil and its salts and esters, ioxynil

and its salts and esters, uraciles such as bromacil, lenacil and terbacil, and bentazon and bentazon-sodium, pyridate, pyridafol, pentanochlor and propanil and inhibitors of the photosystem I such as diquat, diquat-dibromide, paraquat, paraquat-dichloride and paraquat-dimetilsulfate. Among these, a preferred embodiment of the invention relates to those compositions comprising at least one aryl urea herbicide. Among these, likewise a preferred embodiment of the invention relates to those compositions comprising at least one triazine herbicide. Among these, likewise a preferred embodiment of the invention relates to those compositions comprising at least one nitrile herbicide;

b4) from the group of the protoporphyrinogen-IX oxidase inhibitors:

acifluorfen, acifluorfen-sodium, azafenidin, bencarbazone, benzfendizone, bifenox, butafenacil, carfentrazone, carfentrazone-ethyl, chlomethoxyfen, chlorphthalim, cinidon-ethyl, cyclopyranil, fluazolate, flufenpyr, flufenpyr-ethyl, flumiclorac, flumiclorac-pentyl, flumioxazin, fluoroglycofen, fluoroglycofen-ethyl, fluthiacet, fluthiacet-methyl, fomesafen, halosafen, lactofen, oxadiargyl, oxadiazon, oxyfluorfen, pentoxazone, profluazol, pyraclonil, pyraflufen, pyraflufen-ethyl, saflufenacil, sulfentrazone, thidiazimin, tiafenacil, trifludimoxazin, ethyl [3-[2-chloro-4-fluoro-5-(1-methyl-6-trifluoromethyl-2,4-dioxo-1,2,3,4-tetrahydropyrimidin-3-yl)phenoxy]-2-pyridyloxy] acetate (CAS 353292-31-6; S-3100), N-ethyl-3-(2,6-dichloro-4-trifluoro-methylphenoxy)-5-methyl-1H-pyrazole-1-carboxamide (CAS 452098-92-9), N-tetrahydrofurfuryl-3-(2,6-dichloro-4-trifluoromethylphenoxy)-5-methyl-1H-pyrazole-1-carboxamide (CAS 915396-43-9), N-ethyl-3-(2-chloro-6-fluoro-4-trifluoromethylphenoxy)-5-methyl-1H-pyrazole-1-carboxamide (CAS 452099-05-7), N-tetrahydrofurfuryl-3-(2-chloro-6-fluoro-4-trifluoro-methylphenoxy)-5-methyl-1H-pyrazole-1-carboxamide (CAS 452100-03-7), 3-[7-fluoro-3-oxo-4-(prop-2-ynyl)-3,4-dihydro-2H-benzo[1,4]oxazin-6-yl]-1,5-dimethyl-6-thioxo-[1,3,5] triazinan-2,4-dione (CAS 451484-50-7), 2-(2,2,7-trifluoro-3-oxo-4-prop-2-ynyl-3,4-dihydro-2H-benzo [1,4]oxazin-6-yl)-4,5,6,7-tetrahydro-isoindole-1,3-dione (CAS 1300118-96-0), 1-methyl-6-trifluoromethyl-3-(2,2,7-trifluoro-3-oxo-4-prop-2-ynyl-3,4-dihydro-2H-benzo[1,4]oxazin-6-yl)-1H-pyrimidine-2,4-dione (CAS 1304113-05-0), methyl (E)-4-[2-chloro-5-[4-chloro-5-(difluoromethoxy)-1H-methyl-pyrazol-3-yl]-4-fluoro-phenoxy]-3-methoxy-but-2-enoate (CAS 948893-00-3), and 3-[7-chloro-5-fluoro-2-(trifluoromethyl)-1H-benzimidazol-4-yl]-1-methyl-6-(trifluoromethyl)-1H-pyrimidine-2,4-dione (CAS 212754-02-4), 2-[2-chloro-5-[3-chloro-5-(trifluoromethyl)-2-pyridinyl]-4-fluorophenoxy]-2-methoxy-acetic acid methyl ester (CAS 1970221-16-9), 2-[2-[[3-chloro-6-[3,6-dihydro-3-methyl-2,6-dioxo-4-(trifluoromethyl)-1(2H)-pyrimidinyl]-5-fluoro-2-pyridinyl]oxy]phenoxy]-acetic acid methyl ester (CAS 2158274-96-3), 2-[2-[[3-chloro-6-[3,6-dihydro-3-methyl-2,6-dioxo-4-(trifluoromethyl)-1(2H)-pyrimidinyl]-5-fluoro-2-pyridinyl]oxy]phenoxy] acetic acid ethyl ester (CAS 158274-50-9), methyl 2-[[3-[2-chloro-5-[4-(difluoromethyl)-3-methyl-5-oxo-1,2,4-triazol-1-yl]-4-fluoro-phenoxy]-2-pyridyl]oxy]acetate (CAS 2271389-22-9), ethyl 2-[[3-[2-chloro-5-[4-(difluoromethyl)-3-methyl-5-oxo-1,2,4-triazol-1-yl]-4-fluoro-phenoxy]-2-pyridyl]oxy]acetate (CAS 2230679-62-4), 2-[[3-[[3-chloro-6-[3,6-dihydro-3-methyl-2,6-dioxo-4-(trifluoromethyl)-1(2H)-pyrimidinyl]-5-fluoro-2-pyridinyl]oxy]-2-pyridinyl]oxy]-acetic acid methyl ester (CAS 2158275-73-9), 2-[[3-[[3-chloro-6-[3,6-dihydro-3-methyl-2,6-dioxo-4-(trifluoromethyl)-1(2H)-pyrimidinyl]-5-fluoro-2-pyridinyl]oxy]-2-pyridinyl]oxy] acetic acid ethyl ester (CAS 2158274-56-5), 2-[2-[[3-chloro-6-[3,6-dihydro-3-methyl-2,6-dioxo-4-(trifluoromethyl)-1(2H)-pyrimidinyl]-5-fluoro-2-pyridinyl]oxy]phenoxy]-N-(methylsulfonyl)-acetamide (CAS 2158274-53-2), 2-[[3-[[3-chloro-6-[3,6-dihydro-3-methyl-2,6-dioxo-4-(trifluoromethyl)-1(2H)-pyrimidinyl]-5-fluoro-2-pyridinyl]oxy]-2-pyridinyl]oxy]-N-(methylsulfonyl)-acetamide (CAS 2158276-22-1);

b5) from the group of the bleacher herbicides:

PDS inhibitors: beflubutamid, diflufenican, fluridone, flurochloridone, flurtamone, norflurazon, picolinafen, and 4-(3-trifluoromethylphenoxy)-2-(4-trifluoromethylphenyl)pyrimidine (CAS 180608-33-7), HPPD inhibitors: benzobicyclon, benzofenap, bicyclopyrone, clomazone, fenquinotrione, isoxaflutole, mesotrione, oxotrione (CAS 1486617-21-3), pyrasulfotole, pyrazolynate, pyrazoxyfen, sulcotrione, tefuryltrione, tembotrione, tolpyralate, topramezone, bleacher, unknown target: aclonifen, amitrole flumeturon 2-chloro-3-methylsulfanyl-N-(1-methyltetrazol-5-yl)-4-(trifluoromethyl)benzamide (CAS 1361139-71-0), bixlozone and 2-(2,5-dichlorophenyl)methyl-4,4-dimethyl-3-isoxazolidinone (CAS 81778-66-7);

b6) from the group of the EPSP synthase inhibitors:

glyphosate, glyphosate-isopropylammonium, glyposate-potassium and glyphosate-trimesium (sulfosate);

b7) from the group of the glutamine synthase inhibitors:

bilanaphos (bialaphos), bilanaphos-sodium, glufosinate, glufosinate-P and glufosinate-ammonium;

b8) from the group of the DHP synthase inhibitors:

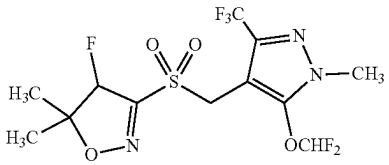
asulam;

b9) from the group of the mitosis inhibitors:

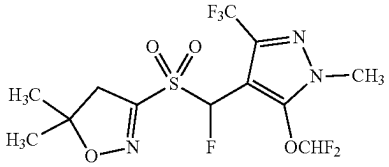
compounds of group K1: dinitroanilines such as benfluralin, butralin, dinitramine, ethalfluralin, fluchloralin, oryzalin, pendimethalin, prodiamine and trifluralin, phosphoramidates such as amiprophos, amiprophos-methyl, and butamiphos, benzoic acid herbicides such as chlorthal, chlorthal-dimethyl, pyridines such as dithiopyr and thiazopyr, benzamides such as propyzamide and tebutam; compounds of group K2: carbetamide, chlorpropham, flamprop, flamprop-isopropyl, flamprop-methyl, flamprop-M-isopropyl, flamprop-M-methyl and propham; among these, compounds of group K1, in particular dinitroanilines are preferred;

b10) from the group of the VLCFA inhibitors:

chloroacetamides such as acetochlor, alachlor, amidochlor, butachlor, dimethachlor, dimethenamid, dimethenamid-P, metazachlor, metolachlor, metolachlor-S, pethoxamid, pretilachlor, propachlor, propisochlor and thenylchlor, oxyacetanilides such as flufenacet and mefenacet, acetanilides such as diphenamid, naproanilide, napropamide and napropamide-M, tetrazolinones such fentrazamide, and other herbicides such as anilofos, cafenstrole, fenoxasulfone, ipfencarbazone, piperophos, pyroxasulfone and isoxazoline compounds of the formulae II.1, II.2, II.3, II.4, II.5, II.6, II.7, II.8 and II.9



II.1



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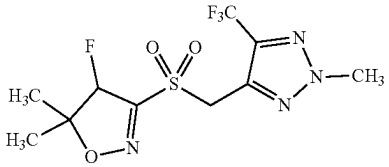

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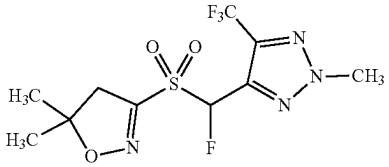

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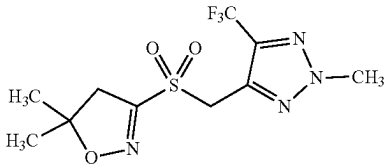

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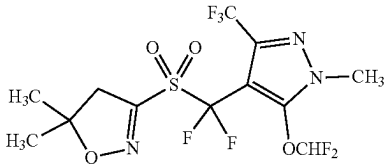

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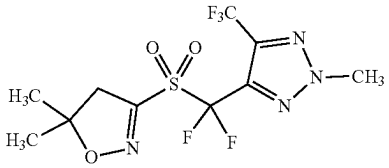

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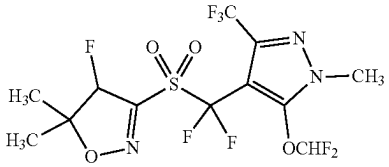

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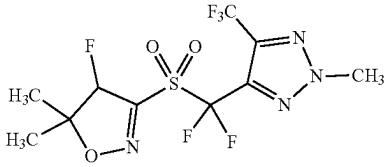


II.9

the isoxazoline compounds of the formula (II) are known in the art, e.g. from WO 2006/024820, WO 2006/037945, WO 2007/071900 and WO 2007/096576;

among the VLCFA inhibitors, preference is given to chloroacetamides and oxyacetamides;

b11) from the group of the cellulose biosynthesis inhibitors:

chlorthiamid, dichlobenil, flupoxam, indaziflam, isoxaben, triaziflam and 1-cyclohexyl-5-pentafluorphenyloxy-14-[1,2,4,6]thiatriazin-3-ylamine (CAS 175899-01-1);

b12) from the group of the decoupler herbicides:

dinoseb, dinoterb and DNOC and its salts;

b13) from the group of the auxinic herbicides:

2,4-D and its salts and esters such as clacyfos, 2,4-DB and its salts and esters, aminocyclopyrachlor and its salts and esters, aminopyralid and its salts such as aminopyralid-dimethylammonium, aminopyralid-tris(2-hydroxypropyl)ammonium and its esters, benazolin, benazolin-ethyl, chloramben and its salts and esters, clomeprop, clopyralid and its salts and esters, dicamba and its salts and esters, dichlorprop and its salts and esters, dichlorprop-P and its salts and esters, flopyrauxifen, fluroxypyr, fluroxypyr-butometyl, fluroxypyr-meptyl, halauxifen and its salts and esters (CAS 943832-60-8); MCPA and its salts and esters, MCPA-thioethyl, MCPB and its salts and esters, mecoprop and its salts and esters, mecoprop-P and its salts and esters, picloram and its salts and esters, quinclorac, quinmerac, TBA (2,3,6) and its salts and esters, triclopyr and its salts and esters, florpyrauxifen, florpyrauxifen-benzyl (CAS 1390661-72-9) and 4-amino-3-chloro-5-fluoro-6-(7-fluoro-1H-indol-6-yl)picolinic acid (CAS 1629965-65-6);

b14) from the group of the auxin transport inhibitors: diflufenzopyr, diflufenzopyr-sodium, naptalam and naptalam-sodium;

b15) from the group of the other herbicides: bromobutide, chlorflurenol, chlorflurenol-methyl, cinmethylin, cumyluron, cyclopyrimorate (CAS 499223-49-3) and its salts and esters, dalapon, dazomet, difenzoquat, difenzoquat-metilsulfate, dimethipin, DSMA, dymron, endothal and its salts, etobenzanid, flurenol, flurenol-butyl, flurprimidol, fosamine, fosamine-ammonium, indanofan, maleic hydrazide, mefluidide, metam, methiozolin, methyl azide, methyl bromide, methyldymron, methyl iodide, MSMA, oleic acid, oxaziclomefone, pelargonic acid, pyributicarb, quinoclamine tetflupyrolimet, and tridiphane.

Moreover, it may be useful to apply the compounds of formula (I) in combination with safeners. Safeners are chemical compounds which prevent or reduce damage on useful plants without having a major impact on the herbicidal action of the compounds of the formula (I) towards undesired vegetation. They can be applied either before sowings (e.g. on seed treatments, shoots or seedlings) or in the pre-emergence application or post-emergence application of the useful plant. The safeners and the compounds of formula (I) and optionally the herbicides B can be applied simultaneously or in succession.

In another embodiment of the present invention the combinations according to the present invention comprise at least one compound of formula (I) and at least one safener C (component C).

Examples of safeners are e.g. (quinolin-8-oxy)acetic acids, 1-phenyl-5-haloalkyl-1H-1,2,4-triazol-3-carboxylic acids, 1-phenyl-4,5-dihydro-5-alkyl-1H-pyrazol-3,5-dicar-

boxylic acids, 4,5-dihydro-5,5-diaryl-3-isoxazol carboxylic acids, dichloroacetamides, alpha-oximinophenylacetonitriles, acetophenonoximes, 4,6-dihalo-2-phenylpyrimidines, N-[[4-(aminocarbonyl)phenyl]sulfonyl]-2-benzoic amides, 1,8-naphthalic anhydride, 2-halo-4-(haloalkyl)-5-thiazol carboxylic acids, phosphorthiolates and N-alkyl-O-phenylcarbamates and their agriculturally acceptable salts and their agriculturally acceptable derivatives such amides, esters, and thioesters, provided they have an acid group.

Examples of safener compounds C are benoxacor, cloquintocet, cyometrinil, cyprosulfamide, dichlormid, dicyclonon, dietholate, fenchlorazole, fenclorim, flurazole, fluxofenim, furilazole, isoxadifen, mefenpyr, mephenate, naphthalic anhydride, oxabetrinil, 4-(dichloroacetyl)-1-oxa-4-azaspiro[4.5]decane (MON4660, CAS 71526-07-3), 2,2,5-trimethyl-3-(dichloroacetyl)-1,3-oxazolidine (R-29148, CAS 52836-31-4), metcamifen and BPCMS (CAS 54091-06-4).

The active compounds B of groups b1) to b15) and the active compounds C are known herbicides and safeners, see, for example, The Compendium of Pesticide Common Names (http://www.alanwood.net/pesticides/); Farm Chemicals Handbook 2000 volume 86, Meister Publishing Company, 2000; B. Hock, C. Fedtke, R. R. Schmidt, Herbizide [Herbicides], Georg Thieme Verlag, Stuttgart 1995; W. H. Ahrens, Herbicide Handbook, 7th edition, Weed Science Society of America, 1994; and K. K. Hatzios, Herbicide Handbook, Supplement for the 7th edition, Weed Science Society of America, 1998. 2,2,5-Trimethyl-3-(dichloroacetyl)-1,3-oxazolidine [CAS No. 52836-31-4] is also referred to as R-29148. 4-(Dichloroacetyl)-1-oxa-4-azaspiro [4.5]decane [CAS No. 71526-07-3] is also referred to as AD-67 and MON 4660.

The assignment of the active compounds to the respective mechanisms of action is based on current knowledge. If several mechanisms of action apply to one active compound, this substance was only assigned to one mechanism of action.

The invention also relates to formulations comprising at least an auxiliary and at least one compound of formula (I) according to the invention.

A formulation comprises a pesticidally effective amount of a compound of formula (I). The term "effective amount" denotes an amount of the combination or of the compound of formula (I), which is sufficient for controlling undesired vegetation, especially for controlling undesired vegetation in crops (i.e. cultivated plants) and which does not result in a substantial damage to the treated crop plants. Such an amount can vary in a broad range and is dependent on various factors, such as the undesired vegetation to be controlled, the treated crop plants or material, the climatic conditions and the specific compound of formula (I) used.

The compounds of formula (I), their salts, amides, esters or thioesters can be converted into customary types of formulations, e. g. solutions, emulsions, suspensions, dusts, powders, pastes, granules, pressings, capsules, and mixtures thereof. Examples for formulation 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 formulation 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 formulations 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.

Suitable auxiliaries are solvents, liquid carriers, solid carriers or fillers, surfactants, dispersants, emulsifiers, wetting agents, 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; polysaccharides, 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 emulsifier, 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-substituted 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-substituted 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 compounds of formula (I) on the target. Examples are surfactants, mineral or vegetable oils, and other auxiliaries. 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), inorganic 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 formulation types and their preparation are:

i) Water-Soluble Concentrates (SL, LS)

10-60 wt % of a compound of formula (I) or a combination comprising at least one compound of formula (I) (component A) and at least one further compound selected from the herbicidal compounds B (component B) and safeners C (component C) 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) ad 100 wt %. The active substance dissolves upon dilution with water.

ii) Dispersible Concentrates (DC)

5-25 wt % of a compound of formula (I) or a combination comprising at least one compound of formula (I) (component A) and at least one further compound selected from the herbicidal compounds B (component B) and safeners C (component C) according to the invention and 1-10 wt % dispersant (e. g. polyvinylpyrrolidone) are dissolved in organic solvent (e.g. cyclohexanone) ad 100 wt %. Dilution with water gives a dispersion.

iii) Emulsifiable Concentrates (EC)

15-70 wt % of compound of formula (I) or a combination comprising at least one compound of formula (I) (component A) and at least one further compound selected from the herbicidal compounds B (component B) and safeners C (component C) according to the invention and 5-10 wt % emulsifiers (e.g. calcium dodecylbenzenesulfonate and castor oil ethoxylate) are dissolved in water-insoluble organic solvent (e.g. aromatic hydrocarbon) ad 100 wt %. Dilution with water gives an emulsion.

iv) Emulsions (EW, EO, ES)

5-40 wt % of compound of formula (I) or a combination comprising at least one compound of formula (I) (component A) and at least one further compound selected from the herbicidal compounds B (component B) and safeners C (component C) 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 water ad 100 wt % 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 of formula (I) or a combination comprising at least one compound of formula (I) (component A) and at least one further compound selected from the herbicidal compounds B (component B) and safeners C (component C) 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 water ad 100 wt % to give a fine active substance suspension. Dilution with water gives a stable suspension of the active substance. For FS type formulation 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 of formula (I) or a combination comprising at least one compound of formula (I) (component A) and at least one further compound selected from the herbicidal compounds B (component B) and safeners C (component C) according to the invention are ground finely with addition of dispersants and wetting agents (e.g. sodium lignosulfonate and alcohol ethoxylate) ad 100 wt % 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 of formula (I) or a combination comprising at least one compound of formula (I) (component A) and at least one further compound selected from the herbicidal compounds B (component B) and safeners C (component C) 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 solid carrier (e.g. silica gel) ad 100 wt %. 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 of formula (I) or a combination comprising at least one compound of formula (I) (component A) and at least one further compound selected from the herbicidal compounds B (component B) and safeners C (component C) 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 water ad 100 wt % to give

a fine suspension of the active substance. Dilution with water gives a stable suspension of the active substance.

iv) Microemulsion (ME)

5-20 wt % of a compound of formula (I) or a combination comprising at least one compound of formula (I) (component A) and at least one further compound selected from the herbicidal compounds B (component B) and safeners C (component C) 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. alcohol ethoxylate and arylphenol ethoxylate), and water ad 100%. This mixture is stirred for 1 h to produce spontaneously a thermodynamically stable microemulsion.

iv) Microcapsules (CS)

An oil phase comprising 5-50 wt % of a compound of formula (I) or a combination comprising at least one compound of formula (I) (component A) and at least one further compound selected from the herbicidal compounds B (component B) and safeners C (component C) 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 of formula (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'-diisocyanate) 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 polyurea microcapsules. The monomers amount to 1-10 wt %. The wt % relate to the total CS formulation.

ix) Dustable Powders (DP, DS)

1-10 wt % of a compound of formula (I) or a combination comprising at least one compound of formula (I) (component A) and at least one further compound selected from the herbicidal compounds B (component B) and safeners C (component C) according to the invention are ground finely and mixed intimately with solid carrier (e.g. finely divided kaolin) ad 100 wt %.

x) Granules (GR, FG)

0.5-30 wt % of a compound of formula (I) or a combination comprising at least one compound of formula (I) (component A) and at least one further compound selected from the herbicidal compounds B (component B) and safeners C (component C) according to the invention is ground finely and associated with solid carrier (e.g. silicate) ad 100 wt %. Granulation is achieved by extrusion, spray-drying or the fluidized bed.

xi) Ultra-Low Volume Liquids (UL)

1-50 wt % of a compound of formula (I) or a combination comprising at least one compound of formula (I) (component A) and at least one further compound selected from the herbicidal compounds B (component B) and safeners C (component C) according to the invention are dissolved in organic solvent (e.g. aromatic hydrocarbon) ad 100 wt %.

The formulation 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 formulations and/or combinations generally comprise between 0.01 and 95%, preferably between 0.1 and 90%, and in particular between 0.5 and 75%, by weight of the compounds of formula (I).

The compounds of formula (I) are employed in a purity of from 90% to 100%, preferably from 95% to 100% (according to NMR spectrum).

Solutions for seed treatment (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 formulations 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. (nach unten verschoben)

Methods for applying compounds of formula (I), formulations and/or combinations thereof, on to plant propagation material, especially seeds, include dressing, coating, pelleting, dusting, soaking and in-furrow application methods of the propagation material. Preferably, compounds of formula (I), formulations and/or combinations 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.

Various types of oils, wetting agents, adjuvants, fertilizer, or micronutrients, and further pesticides (e.g. herbicides, insecticides, fungicides, growth regulators, safeners) may be added to the compounds of formula (I), the formulations and/or the combinations comprising them as premix or, if appropriate not until immediately prior to use (tank mix). These agents can be admixed with the formulations according to the invention in a weight ratio of 1:100 to 100:1, preferably 1:10 to 10:1.

The user applies the compounds of formula (I) according to the invention, the formulations and/or the combinations comprising them usually from a pre-dosage device, a knapsack sprayer, a spray tank, a spray plane, or an irrigation system. Usually, the formulation is made up with water, buffer, and/or further auxiliaries to the desired application concentration and the ready-to-use spray liquor or the formulation 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, either individual components of the formulation according to the invention or partially premixed components, e. g. components comprising compounds of formula (I) and optionally active substances from the groups B and/or C), may be mixed by the user in a spray tank and further auxiliaries and additives may be added, if appropriate.

In a further embodiment, individual components of the formulation 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 formulation according to the invention or partially premixed components, e. g components comprising compounds of formula (I) and optionally active substances from the groups B and/or C), can be applied jointly (e.g. after tank mix) or consecutively.

The compounds of formula (I), are suitable as herbicides. They are suitable as such, as an appropriate formulation or in combination with at least one further compound selected from the herbicidal active compounds B (component B) and safeners C (component C).

The compounds of formula (I), or the formulations and/or combinations comprising the compounds of formula (I), control undesired vegetation on non-crop areas very efficiently, especially at high rates of application. They act against broad-leaved weeds and grass weeds in crops such as wheat, rice, maize, soya and cotton without causing any significant damage to the crop plants. This effect is mainly observed at low rates of application.

The compounds of formula (I), or the formulations and/or the combinations comprising them, are applied to the plants mainly by spraying the leaves. Here, the application can be carried out using, for example, water as carrier by customary spraying techniques using spray liquor amounts of from about 100 to 1000 l/ha (for example from 300 to 400 l/ha). The compounds of formula (I), or the formulations and/or the combinations comprising them, may also be applied by the low-volume or the ultra-low-volume method, or in the form of microgranules.

Application of the compounds of formula (I), or the formulations and/or the combinations comprising them, can be done before, during and/or after, preferably during and/or after, the emergence of the undesired vegetation.

Application of the compounds of formula (I), or the formulations and/or the combinations can be carried out before or during sowing.

The compounds of formula (I), or the formulations and/or the combinations comprising them, can be applied pre-, post-emergence or pre-plant, or together with the seed of a crop plant. It is also possible to apply the compounds of formula (I), or the formulations and/or the combinations comprising them, by applying seed, pretreated with the compounds of formula (I), or the formulations and/or the combinations comprising them, of a crop plant. If the active ingredients are less well tolerated by certain crop plants, application techniques may be used in which the combinations are sprayed, with the aid of the spraying equipment, in such a way that as far as possible they do not come into contact with the leaves of the sensitive crop plants, while the active ingredients reach the leaves of undesired vegetation growing underneath, or the bare soil surface (post-directed, lay-by).

In a further embodiment, the compounds of formula (I), or the formulations and/or the combinations comprising them, can be applied by treating seed. The treatment of seeds comprises essentially all procedures familiar to the person skilled in the art (seed dressing, seed coating, seed dusting, seed soaking, seed film coating, seed multilayer coating, seed encrusting, seed dripping and seed pelleting) based on the compounds of formula (I), or the formulations and/or the combinations prepared therefrom. Here, the combinations can be applied diluted or undiluted.

The term "seed" comprises seed of all types, such as, for example, corns, seeds, fruits, tubers, seedlings and similar forms. Here, preferably, the term seed describes corns and seeds. The seed used can be seed of the crop plants mentioned above, but also the seed of transgenic plants or plants obtained by customary breeding methods.

When employed in plant protection, the amounts of active substances applied, i.e. the compounds of formula (I), component B and, if appropriate, component C without formulation auxiliaries, 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 and in particular from 0.1 to 0.75 kg per ha.

In another embodiment of the invention, the application rate of the compounds of formula (I), component B and, if appropriate, component C, is from 0.001 to 3 kg/ha, preferably from 0.005 to 2.5 kg/ha and in particular from 0.01 to 2 kg/ha of active substance (a.s.).

In another preferred embodiment of the invention, the rates of application of the compounds of formula (I) according to the present invention (total amount of compounds of formula (I)) are from 0.1 g/ha to 3000 g/ha, preferably 10 g/ha to 1000 g/ha, depending on the control target, the season, the target plants and the growth stage.

In another preferred embodiment of the invention, the application rates of the compounds of formula (I) are in the range from 0.1 g/ha to 5000 g/ha and preferably in the range from 1 g/ha to 2500 g/ha or from 5 g/ha to 2000 g/ha.

In another preferred embodiment of the invention, the application rate of the compounds of formula (I) is 0.1 to 1000 g/ha, preferably 1 to 750 g/ha, more preferably 5 to 500 g/ha.

The required application rates of herbicidal compounds B are generally in the range of from 0.0005 kg/ha to 2.5 kg/ha and preferably in the range of from 0.005 kg/ha to 2 kg/ha or 0.01 kg/ha to 1.5 kg/h of a.s.

The required application rates of safeners C are generally in the range of from 0.0005 kg/ha to 2.5 kg/ha and preferably in the range of from 0.005 kg/ha to 2 kg/ha or 0.01 kg/ha to 1.5 kg/h of a.s.

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 seeds) are generally required.

In another embodiment of the invention, to treat the seed, the amounts of active substances applied, i.e. the compounds of formula (I), component B and, if appropriate, component C are generally employed in amounts of from 0.001 to 10 kg per 100 kg of seed.

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.

In case of combinations according to the present invention it is immaterial whether the compounds of formula (I), and the further component B and/or the component C are formulated and applied jointly or separately.

In the case of separate application, it is of minor importance, in which order the application takes place. It is only necessary, that the compounds of formula (I), and the further component B and/or the component C are applied in a time frame that allows simultaneous action of the active ingredients on the plants, preferably within a time-frame of at most 14 days, in particular at most 7 days.

Depending on the application method in question, the compounds of formula (I), or the formulations and/or combinations comprising them, can additionally be employed in a further number of crop plants for eliminating undesired vegetation. Examples of suitable crops are the following:

Allium cepa, Ananas comosus, Arachis hypogaea, Asparagus officinalis, Avena sativa, Beta vulgaris spec. *altissima, Beta vulgaris* spec. *rapa, Brassica napus* var. *napus, Brassica napus* var. *napobrassica, Brassica rapa* var. *silvestris, Brassica oleracea, Brassica nigra, Camellia sinensis, Carthamus tinctorius, Carya illinoinensis, Citrus limon, Citrus sinensis, Coffea arabica* (*Coffea canephora, Coffea liberica*), *Cucumis sativus, Cynodon dactylon, Daucus carota, Elaeis guineensis, Fragaria vesca, Glycine max, Gossypium hirsutum,*

(*Gossypium arboreum, Gossypium herbaceum, Gossypium vitifolium*), *Helianthus annuus, Hevea brasiliensis, Hordeum vulgare, Humulus lupulus, Ipomoea batatas, Juglans regia, Lens culinaris, Linum usitatissimum, Lycopersicon lycopersicum, Malus* spec., *Manihot esculenta, Medicago sativa, Musa* spec., *Nicotiana tabacum* (*N. rustica*), *Olea europaea, Oryza sativa, Phaseolus lunatus, Phaseolus vulgaris, Picea abies, Pinus* spec., *Pistacia vera, Pisum sativum, Prunus avium, Prunus persica, Pyrus communis, Prunus armeniaca, Prunus cerasus, Prunus dulcis* and *Prunus domestica, Ribes sylvestre, Ricinus communis, Saccharum officinarum, Secale cereale, Sinapis alba, Solanum tuberosum, Sorghum bicolor* (s. *vulgare*), *Theobroma cacao, Trifolium pratense, Triticum aestivum, Triticale, Triticum durum, Vicia faba, Vitis vinifera* and *Zea mays*.

Preferred crops are *Arachis hypogaea, Beta vulgaris* spec. *altissima, Brassica napus* var. *napus, Brassica oleracea, Citrus limon, Citrus sinensis, Coffea arabica* (*Coffea canephora, Coffea liberica*), *Cynodon dactylon, Glycine max, Gossypium hirsutum*, (*Gossypium arboreum, Gossypium herbaceum, Gossypium vitifolium*), *Helianthus annuus, Hordeum vulgare, Juglans regia, Lens culinaris, Linum usitatissimum, Lycopersicon lycopersicum, Malus* spec., *Medicago sativa, Nicotiana tabacum* (*N. rustica*), *Olea europaea, Oryza sativa, Phaseolus lunatus, Phaseolus vulgaris, Pistacia vera, Pisum sativum, Prunus dulcis, Saccharum officinarum, Secale cereale, Solanum tuberosum, Sorghum bicolor* (s. *vulgare*), *Triticale, Triticum aestivum, Triticum durum, Vicia faba, Vitis vinifera* and *Zea mays*.

Especially preferred crops are crops of cereals, corn, soybeans, rice, oilseed rape, cotton, potatoes, peanuts or permanent crops.

The compounds of formula (I) according to the invention, or the formulations and/or combinations comprising them, can also be used in crops which have been modified by mutagenesis or genetic engineering in order to provide a new trait to a plant or to modify an already present trait.

The term "crops" as used herein includes also (crop) plants which have been modified by mutagenesis or genetic engineering in order to provide a new trait to a plant or to modify an already present trait.

Mutagenesis includes techniques of random mutagenesis using X-rays or mutagenic chemicals, but also techniques of targeted mutagenesis, in order to create mutations at a specific locus of a plant genome. Targeted mutagenesis techniques frequently use oligonucleotides or proteins like CRISPR/Cas, zinc-finger nucleases, TALENs or meganucleases to achieve the targeting effect.

Genetic engineering usually uses recombinant DNA techniques to create modifications in a plant genome which under natural circumstances cannot readily be obtained by cross breeding, mutagenesis or natural recombination. Typically, one or more genes are integrated into the genome of a plant in order to add a trait or improve a trait. These integrated genes are also referred to as transgenes in the art, while plant comprising such transgenes are referred to as transgenic plants. The process of plant transformation usually produces several transformation events, which differ in the genomic locus in which a transgene has been integrated. Plants comprising a specific transgene on a specific genomic locus are usually described as comprising a specific "event", which is referred to by a specific event name. Traits which have been introduced in plants or have been modified include in particular herbicide tolerance, insect resistance, increased yield and tolerance to abiotic conditions, like drought.

Herbicide tolerance has been created by using mutagenesis as well as using genetic engineering. Plants which have been rendered tolerant to acetolactate synthase (ALS) inhibitor herbicides by conventional methods of mutagenesis and breeding comprise plant varieties commercially available under the name Clearfield®. However, most of the herbicide tolerance traits have been created via the use of transgenes.

Herbicide tolerance has been created to glyphosate, glufosinate, 2,4-D, dicamba, oxynil herbicides, like bromoxynil and ioxynil, sulfonylurea herbicides, ALS inhibitor herbicides and 4-hydroxyphenylpyruvate dioxygenase (HPPD) inhibitors, like isoxaflutole and mesotrione.

Transgenes which have been used to provide herbicide tolerance traits comprise: for tolerance to glyphosate: cp4 epsps, epsps grg23ace5, mepsps, 2mepsps, gat4601, gat4621 and goxv247, for tolerance to glufosinate: pat and bar, for tolerance to 2,4-D: aad-1 and aad-12, for tolerance to dicamba: dmo, for tolerance to oxynil herbicies: bxn, for tolerance to sulfonylurea herbicides: zm-hra, csr1-2, gm-hra, S4-HrA, for tolerance to ALS inhibitor herbicides: csr1-2, for tolerance to HPPD inhibitor herbicides: hppdPF, W336 and avhppd-03.

Transgenic corn events comprising herbicide tolerance genes are for example, but not excluding others, DAS40278, MON801, MON802, MON809, MON810, MON832, MON87411, MON87419, MON87427, MON88017, MON89034, NK603, GA21, MZHGOJG, HCEM485, VCO-Ø1981-5, 676, 678, 680, 33121, 4114, 59122, 98140, Bt10, Bt176, CBH-351, DBT418, DLL25, MS3, MS6, MZIR098, T25, TC1507 and TC6275.

Transgenic soybean events comprising herbicide tolerance genes are for example, but not excluding others, GTS 40-3-2, MON87705, MON87708, MON87712, MON87769, MON89788, A2704-12, A2704-21, A5547-127, A5547-35, DP356043, DAS44406-6, DAS68416-4, DAS-81419-2, GU262, SYHTOH2, W62, W98, FG72 and CV127.

Transgenic cotton events comprising herbicide tolerance genes are for example, but not excluding others, 19-51a, 31707, 42317, 81910, 281-24-236, 3006-210-23, BXN10211, BXN10215, BXN10222, BXN10224, MON1445, MON1698, MON88701, MON88913, GHB119, GHB614, LLCotton25, T303-3 and T304-40.

Transgenic canola events comprising herbicide tolerance genes are for example, but not excluding others, MON88302, HCR-1, HCN10, HCN28, HCN92, MS1, MS8, PHY14, PHY23, PHY35, PHY36, RF1, RF2 and RF3.

Insect resistance has mainly been created by transferring bacterial genes for insecticidal proteins to plants. Transgenes which have most frequently been used are toxin genes of *Bacillus* spec. and synthetic variants thereof, like cry1A, cry1Ab, cry1Ab-Ac, cry1Ac, cry1A.105, cry1F, cry1Fa2, cry2Ab2, cry2Ae, mcry3A, ecry3.1Ab, cry3Bb1, cry34Ab1, cry35Ab1, cry9C, vip3A(a), vip3Aa20. However, also genes of plant origin have been transferred to other plants. In particular genes coding for protease inhibitors, like CpTI and pinII. A further approach uses transgenes in order to produce double stranded RNA in plants to target and down-regulate insect genes. An example for such a transgene is dvsnf7.

Transgenic corn events comprising genes for insecticidal proteins or double stranded RNA are for example, but not excluding others, Bt10, Bt11, Bt176, MON801, MON802, MON809, MON810, M0N863, M0N87411, M0N88017,

M0N89034, 33121, 4114, 5307, 59122, TC1507, TC6275, CBH-351, MIR162, DBT418 and MZIR098.

Transgenic soybean events comprising genes for insecticidal proteins are for example, but not excluding others, MON87701, MON87751 and DAS-81419.

Transgenic cotton events comprising genes for insecticidal proteins are for example, but not excluding others, SGK321, MON531, MON757, MON1076, MON15985, 31707, 31803, 31807, 31808, 42317, BNLA-601, Event1, COT67B, COT102, T303-3, T304-40, GFM Cry1A, GK12, MLS 9124, 281-24-236, 3006-210-23, GHB119 and SGK321.

Increased yield has been created by increasing ear biomass using the transgene athb17, being present in corn event MON87403, or by enhancing photosynthesis using the transgene bbx32, being present in the soybean event MON87712.

Crops comprising a modified oil content have been created by using the transgenes: gm-fad2-1, Pj.D6D, Nc.Fad3, fad2-1A and fatb1-A. Soybean events comprising at least one of these genes are: 260-05, MON87705 and MON87769.

Tolerance to abiotic conditions, in particular to tolerance to drought, has been created by using the transgene cspB, comprised by the corn event MON87460 and by using the transgene Hahb-4, comprised by soybean event IND-00410-5.

Traits are frequently combined by combining genes in a transformation event or by combining different events during the breeding process. Preferred combination of traits are herbicide tolerance to different groups of herbicides, insect tolerance to different kind of insects, in particular tolerance to lepidopteran and coleopteran insects, herbicide tolerance with one or several types of insect resistance, herbicide tolerance with increased yield as well as a combination of herbicide tolerance and tolerance to abiotic conditions.

Plants comprising singular or stacked traits as well as the genes and events providing these traits are well known in the art. For example, detailed information as to the mutagenized or integrated genes and the respective events are available from websites of the organizations "International Service for the Acquisition of Agri-biotech Applications (ISAAA)" (http://www.isaaa.org/gmapprovaldatabase) and the "Center for Environmental Risk Assessment (CERA)" (http://cera-gmc.org/GMCropDatabase), as well as in patent applications, like EP3028573 and WO2017/011288.

The use of the compounds of formula (I) or formulations or combinations comprising them according to the invention on crops may result in effects which are specific to a crop comprising a certain gene or event. These effects might involve changes in growth behavior or changed resistance to biotic or abiotic stress factors. Such effects may in particular comprise enhanced yield, enhanced resistance or tolerance to insects, nematodes, fungal, bacterial, mycoplasma, viral or viroid pathogens as well as early vigor, early or delayed ripening, cold or heat tolerance as well as changed amino acid or fatty acid spectrum or content.

Furthermore, plants are also covered that contain by the use of recombinant DNA techniques a modified amount of ingredients or new ingredients, specifically to improve raw material production, e.g., potatoes that produce increased amounts of amylopectin (e.g. Amflora® potato, BASF SE, Germany).

Furthermore, it has been found that the compounds of formula (I) according to the invention, or the formulations and/or combinations comprising them, are also suitable for the defoliation and/or desiccation of plant parts of crops such as cotton, potato, oilseed rape, sunflower, soybean or field beans, in particular cotton. In this regard, formulations and/or combinations for the desiccation and/or defoliation of crops, processes for preparing these formulations and/or combinations and methods for desiccating and/or defoliating plants using the compounds of formula (I) have been found.

As desiccants, the compounds of formula (I) are particularly suitable for desiccating the above-ground parts of crop plants such as potato, oilseed rape, sunflower and soybean, but also cereals. This makes possible the fully mechanical harvesting of these important crop plants.

Also of economic interest is to facilitate harvesting, which is made possible by concentrating within a certain period of time the dehiscence, or reduction of adhesion to the tree, in citrus fruit, olives and other species and varieties of pernicious fruit, stone fruit and nuts. The same mechanism, i.e. the promotion of the development of abscission tissue between fruit part or leaf part and shoot part of the plants is also essential for the controlled defoliation of useful plants, in particular cotton.

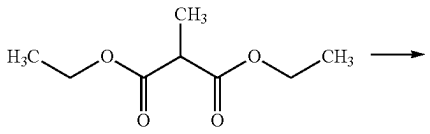
Moreover, a shortening of the time interval in which the individual cotton plants mature leads to an increased fiber quality after harvesting.

A CHEMISTRY EXAMPLES

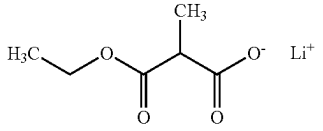
Chemical bonds, drawn as bars in chemical formulae, indicate the relative stereochemistry on the ring system.

Example 1

Synthesis of 1-(3,5-difluorophenyl)-3-methyl-2-oxo-azetidine-3-carboxylic (Inter A)

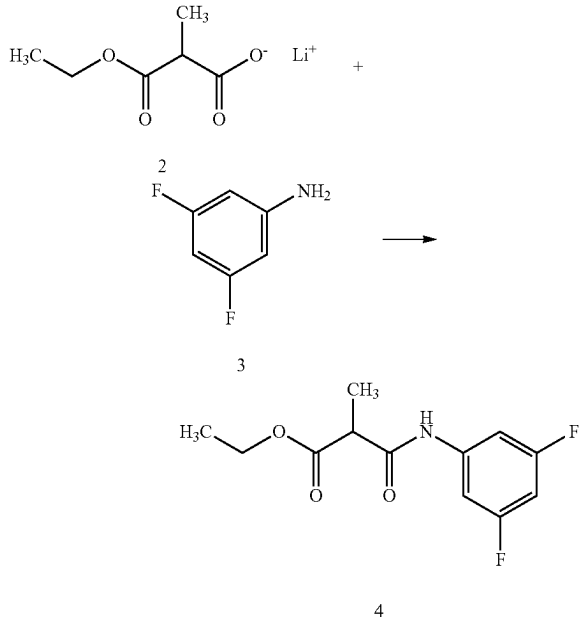


1



2

A solution of lithium hydroxide in water was added dropwise to mixture of diethyl 2-methylpropanedioate (1) (100.0 g, 574 mmol), tetrahydrofuran (THF) (200 ml) and water (200 ml) and the reaction mixture was stirred at room temperature overnight. THF was evaporated in vacuo and the remainder washed with methyl t-butyl ether. The aqueous solution was concentrated in vacuo and the remainder dried to give the product (2) (51.8 g, 59% yield). 1H NMR: (400 MHz, D2O) δ=4.2 (t, 2H), 3.35 (q, 1H), 1.35-1.20 (m, 6H).

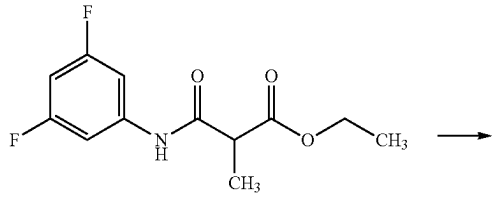


2

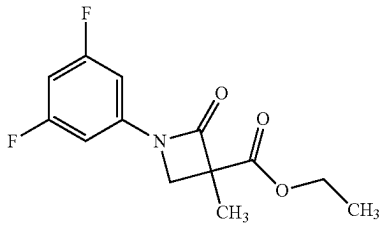
3

4

A mixture of aniline 3 (61.1 g, 473 mmol), the lithium salt of 3-ethoxy-2-methyl-3-oxo-propanoic acid (2) (60.0 g, 395 mmol) and triethylamine (164 mL, 3 equiv.) in THF (500 mL) was treated with n-propanephosphonic acid anhydride (427 g, 671 mmol, 50% solution in ethyl acetate), (T3P, CAS [68957-94-8]), and stirred overnight at room temperature. Water was added and the reaction mixture extracted with ethyl acetate; the organic layers were washed with aqueous hydrochloric acid solution (1M) and water, dried over sodium sulfate and concentrated in vacuo. The remainder was triturated with di-isopropyl ether and filtered. The residue consists of the product (4) (72.1 g, 71% yield). 1H NMR: (400 MHz, CDCl3) δ=9.9 (br s, 1H), 7.20-7.10 (m, 2), 6.60 (m, 1H), 4.25 (q, 2H), 3.40 (q, 1H), 1.55 (d, 3H), 1.30 (t, 3H).

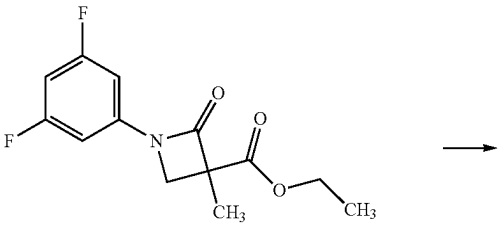


4

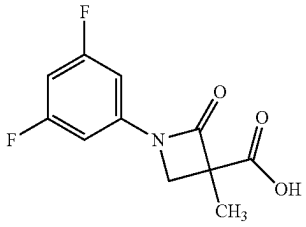


5

To a solution of ethyl 3-(3,5-difluoroanilino)-2-methyl-3-oxo-propanoate (4) (72.1 g, 280 mmol) in dimethyl formamide (200 mL) and cesium carbonate (75.1 g, 280 mmol) was added diiodomethane (182.6 g, 560 mmol) at room temperature. During this addition the temperature rose to ca. 40° C. The mixture was stirred overnight at 20° C. Water was added and the reaction mixture extracted with ethyl acetate, the organic layers were washed with water, dried over sodium sulfate and concentrated in vacuo. Flash chromatography (cyclohexane/ethyl acetate) gave crude ethyl 1-(3,5-difluorophenyl)-3-methyl-2-oxo-azetidine-3-carboxylate (5) (49.7 g, 66% yield). This product was used without further purification for the next step.



5



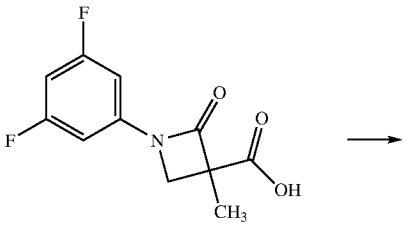
Inter A

A solution of potassium hydroxide (10.4 g, 185 mmol) in water was added dropwise to a mixture of ethyl 1-(3,5-difluorophenyl)-3-methyl-2-oxo-azetidine-3-carboxylate (5) (49.7 g, 185 mmol), THF (125 ml) and water (125 ml) and the reaction mixture stirred at room temperature overnight.

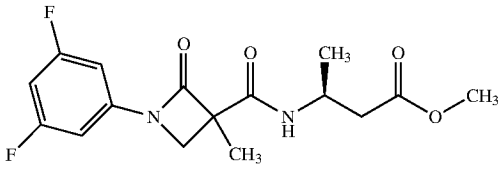
THF was evaporated in vacuo and the remainder washed with methyl t-butyl ether. The aqueous solution was adjusted to a pH value of ca. 1 with concentrated hydrochloric acid solution and extracted with ethyl acetate, the organic phase dried with sodium sulfate and concentrated in vacuo. The remainder was triturated with di-isopropyl ether and filtered. The residue consisted of the product as an off-white solid (Inter A) (20.5 g, 46% yield). 1H NMR: (400 MHz, DMSO-d6) δ=13.3 (br s, 1H), 7.10-7.00 (m, 3H), 4.05 (d, 1H), 3.65 (d, 1H), 1.50 (s, 3H).

Example 2

Synthesis of methyl (3S)-3-[[1-(3,5-difluorophenyl)-3-methyl-2-oxo-azetidine-3-carbonyl]amino] butanoate (1:1 mixture of diastereomers)—Compound 14



Inter A



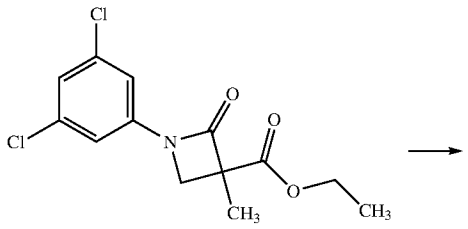
I4

To a solution of the carboxylic acid Inter A (250 mg, 1.04 mmol) in dimethylformamide (DMF) commercially available methyl (3S)-3-aminobutanoate (S-homoalanine) hydrochloride (160 mg, 1.04 mmol) was added. To the resulting solution was added HATU (2-(7-aza-1H-benzotriazole-1-yl)-1,1,3,3-tetramethyluronium hexafluorophosphate, CAS [148893-10-1]), (433 mg, 1.14 mmol) and then diisopropylethylamine (0.43 mL). The resulting reaction mixture was stirred at room temperature overnight. To the reaction mixture water and sodium bicarbonate solution were added. The reaction mixture was extracted with ethyl acetate, washed with water, dried (sodium sulfate) and the solvent was evaporated under reduced pressure. The crude product was purified by column chromatography using ethyl acetate as solvent yielding 305 mg (87%) methyl (3S)-3-[[1-(3,5-difluorophenyl)-3-methyl-2-oxo-azetidine-3-carbonyl] amino]butanoate as a 1:1 mixture of diastereomers). 1H NMR (500 MHz, Chloroform-d) δ 6.9 (m, 2H), 6.8-6.65 (m, 1H), 6.6 (m, 1H), 4.35 (m, 1H), 4.1 (m, 1H) 3.75+3.65 (2×s, 3H) 3.5 (m, 1H), 2.55 (m, 2H), 1.7 (s, 3H), 1.25 (m, 3H).

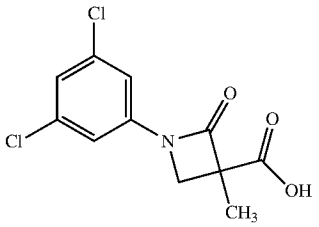
Example 3

Synthesis of 1-(3,5-dichlorophenyl)-3-methyl-2-oxo-azetidine-3-carboxylic (Inter B)

In a similar way to the synthesis for Inter A described above starting from diethyl 2-methylpropanedioate, Inter B was obtained as an off-white solid by saponification of ethyl 1-(3,5-dichlorophenyl)-3-methyl-2-oxo-azetidine-3-carboxylate.



6

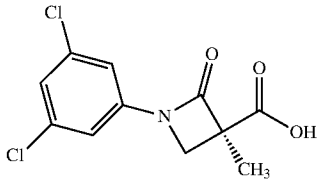


Inter B

A solution of potassium hydroxide (5.26 g, 93.7 mmol) in water was added dropwise to mixture of ethyl 1-(3,5-dichlorophenyl)-3-methyl-2-oxo-azetidine-3-carboxylate (6) (28.3 g, 93.7 mmol), THF (125 ml) and water (125 ml) and the reaction mixture stirred at room temperature overnight. THF was evaporated in vacuo and the remainder washed with methyl t-butyl ether. The aqueous solution was adjusted to pH 1 with concentrated hydrochloric acid solution and extracted with ethyl acetate, the organic phase dried with sodium sulfate and concentrated in vacuo. The remainder was triturated with di-isopropyl ether and filtered. The residue consisted of the product as an off-white solid (Inter B) (13.0 g, 51% yield) 1H NMR: (400 MHz, deutero-THF) δ=7.4 (s, 2H), 7.15 (s, 1H), 4.1 (d, 1H), 3.55 (d, 1H), 1.55 (s, 3H).

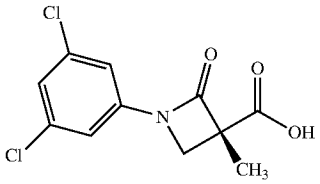
The pure enantiomers of Inter B, (3S)-1-(3,5-dichlorophenyl)-3-methyl-2-oxo-azetidine-3-carboxylic acid (S-Inter B) and (3R)-1-(3,5-dichlorophenyl)-3-methyl-2-oxo-azetidine-3-carboxylic acid (R-Inter B) were obtained by chiral supercritical fluid chromatography (SFC). Data for S- and R-Inter B:

(3S)-1-(3,5-dichlorophenyl)-3-methyl-2-oxo-azetidine-3-carboxylic acid (S-Inter B)



$[\alpha]\frac{20}{D} = -68.8°$ ($c = 1$, EtOH)

(3R)-1-(3,5-dichlorophenyl)-3-methyl-2-oxo-azetidine-3-carboxylic acid (R-Inter B)

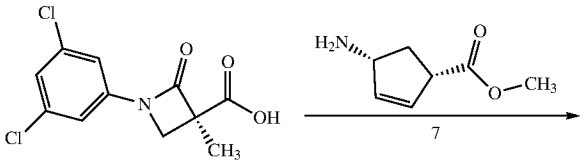


$[\alpha]\frac{20}{D} = +69.0°$ (c = 1, EtOH)

The absolute stereochemistry was assigned by x-ray crystallography of the reaction product of one of the enantiomers to the compound of example 4 (see reaction example below).

Example 4

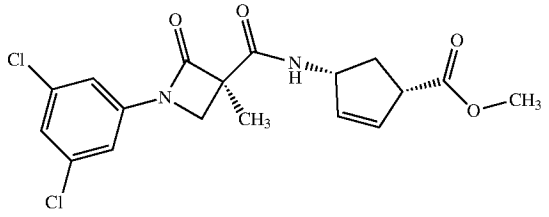
Synthesis of Methyl (1S,4R)-4-[[(3R)-1-(3,5-dichlorophenyl)-3-methyl-2-oxo-azetidine-3-carbonyl]amino]cyclopent-2-ene-1-carboxylate



(S)-Inter B

7

-continued



8

To a solution of the carboxylic acid (S-Inter B, 10.0 g, 34.5 mmol) in dimethylformamide (DMF) methyl (1S,4R)-4-aminocyclopent-2-ene-1-carboxylate (7, CAS 229613-83-6) was added. To the resulting solution was added HATU (15.0 g, 39.5 mmol)) and then diisopropylethylamine (11.7 mL). The resulting reaction mixture was stirred at room temperature for 2 hours. To the reaction mixture water (10 mL) was added. The resulting mixture was extracted with ethyl acetate, washed with water, dried (sodium sulfate), evaporated under reduced pressure. The crude product was purified by column chromatography using ethyl acetate as solvent yielding methyl (1S,4R)-4-[[(3R)-1-(3,5-dichlorophenyl)-3-methyl-2-oxo-azetidine-3-carbonyl]amino]cyclopent-2-ene-1-carboxylate (8, 7.6 g, 55%). 1H NMR (400 MHz, Chloroform-d) δ 7.25 (s, 2H), 7.1 (s, 1H), 6.7 (br d, 1H), 6.0-5.85 (m, 2H), 5.05 (m, 1H), 4.1 (d, 1H), 3.75 (s, 3H), 3.55 (m, 1H), 3.45 (d, 1H), 2.45 (m, 1H), 1.95 (m, 1H), 1.7 (s, 3H).

High Performance Liquid Chromatography: HPLC-column Kinetex XB C18 1.7μ (50×2.1 mm); eluent: acetonitrile/water+0.1% trifluoroacetic acid (gradient from 5:95 to 100:0 in 1.5 min at 60° C., flow gradient from 0.8 to 1.0 ml/min in 1.5 min).

In analogy to the examples described above, the following compounds of formula (I), wherein R^1, R^8 and R^9 are hydrogen, were prepared, starting from commercially available diesters and using commercially available amines:

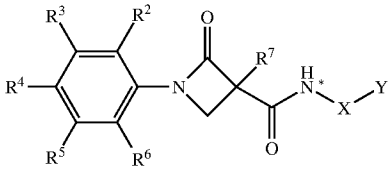


TABLE 2

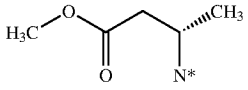
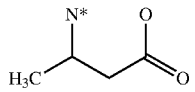
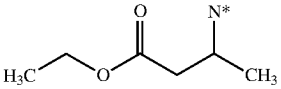
Cpd.	R^2	R^3	R^4	R^5	R^6	R^7	N*-X-Y	HPLC/MS
I1	H	Cl	H	Cl	H	CH_3		372.7
I2	H	Cl	H	Cl	H	CH_3		358.7
I3	H	Cl	H	Cl	H	OCH_3		402.7

TABLE 2-continued

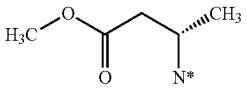
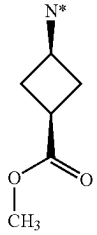
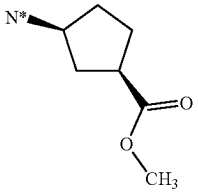
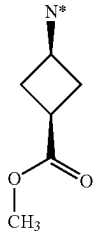
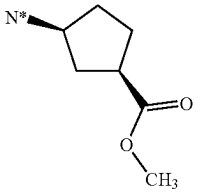
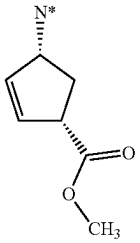
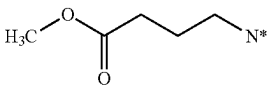
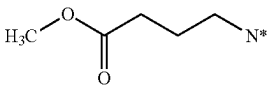
Cpd.	R^2	R^3	R^4	R^5	R^6	R^7	N*-X-Y	HPLC/ MS
I4	H	F	H	F	H	CH_3		341
I5	H	Cl	H	Cl	H	CH_3		384.9
I6	H	Cl	H	Cl	H	CH_3		398.9
I7	H	F	H	F	H	CH_3		353
I8	H	F	H	F	H	CH_3		366.8
I9	H	Cl	H	Cl	H	CH_3		396.8
I10	H	F	H	F	H	CH_3		340.8
I11	H	Cl	H	Cl	H	CH_3		372.7

TABLE 2-continued

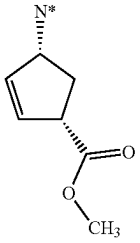
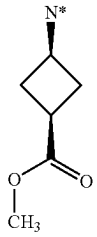
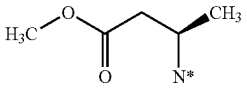
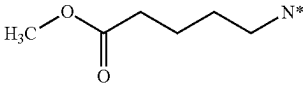
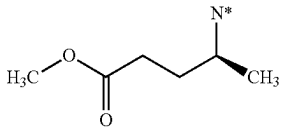
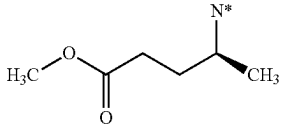
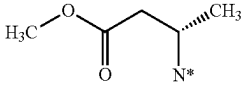
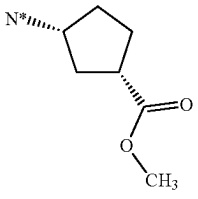
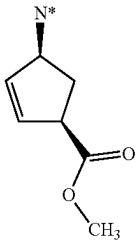
Cpd.	R^2	R^3	R^4	R^5	R^6	R^7	N*-X-Y	HPLC/ MS
I12	H	F	H	F	H	CH_3		364.8
I13	H	F	H	F	H	OCH_3		369
I14	H	Cl	H	Cl	H	CH_3		372.5
I15	H	F	H	F	H	CH_3		355.0
I16	H	Cl	H	Cl	H	CH_3		387
I17	H	F	H	F	H	CH_3		355.0
I18	H	Cl	H	Cl	H	CH_2CH_3		387.0
I19	H	F	H	F	H	CH_3		367.0
I20	H	Cl	H	Cl	H	CH_3		396.7

TABLE 2-continued

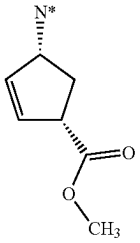
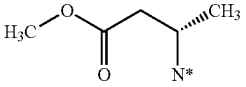
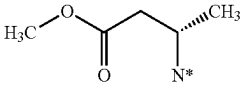
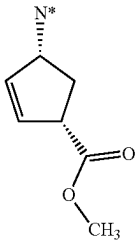
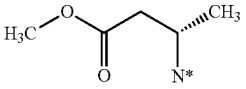
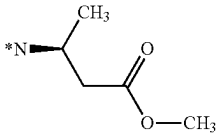
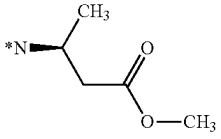
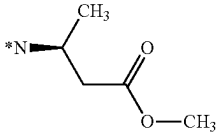
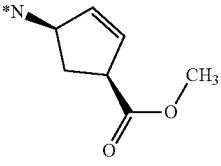
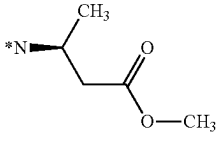
Cpd.	R^2	R^3	R^4	R^5	R^6	R^7	N*-X-Y	HPLC/ MS
I21	H	Cl	H	Cl	H	CH_3		396.9
I22	H	Cl	H	Cl	H			398.9
I23#	H	Cl	H	Cl	H	CH_3		372.7
I24	H	Cl	H	Cl	H	CH_2CH_3		410.7
I25	H	Cl	H	Cl	H	CH_2CH_3		386.7
I26	H	Cl	H	Cl	H			398.9
I27#	H	Cl	H	Cl	H	CH_3		372.7
I28#	H	Cl	H	Cl	H	CH_3		372.7
I29	H	Cl	H	Cl	H	CH_2CH_3		410.7
I30	H	Cl	H	Cl	H	CH_2CH_3		386.7

TABLE 2-continued

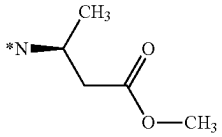
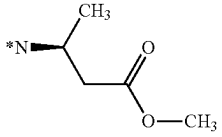
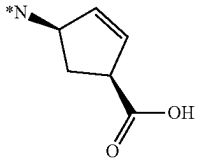
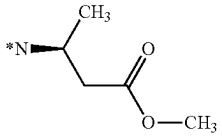
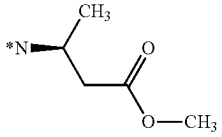
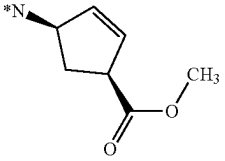
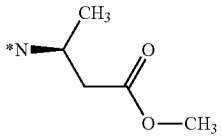
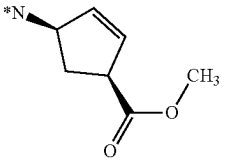
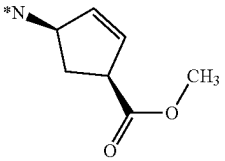
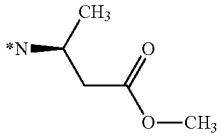
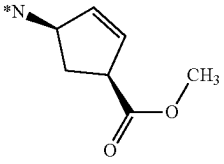
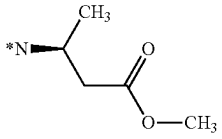
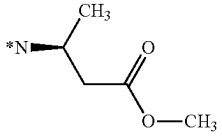
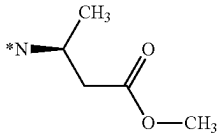
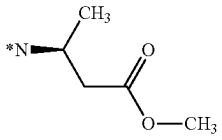
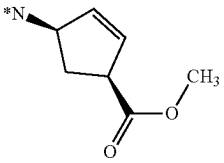
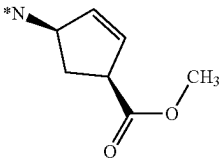
Cpd.	R^2	R^3	R^4	R^5	R^6	R^7	N*-X-Y	HPLC/ MS
I31	H	Cl	H	Cl	H	H		
I32	H	F	H	F	H			367
I33	H	F	H	F	H	CH_3		
I34	H	Cl	H	Cl	H	CN		
I35	H	Cl	H	H	H	CH_3		338.8
I36	H	Cl	H	H	H	CH_3		362,9
I37	H	F	H	H	H	CH_3		323
I38	H	F	H	H	H	CH_3		347
I39	H	F	H	Cl	H	CH_3		380.9

TABLE 2-continued

Cpd.	R^2	R^3	R^4	R^5	R^6	R^7	N*-X-Y	HPLC/MS
I40	H	F	H	Cl	H	CH_3		357.1
I41	H	F	H	CH_3	H	CH_3		361
I42	H	F	H	CH_3	H	CH_3		337.2
I43	H	Cl	H	Cl	H	CH_3		
I44	H	OCF_2CHF_2	H	H	H	CH_3		420.9
I45	H	CN	F	H	H	CH_3		347.9
I46	H	OCF_2CHF_2	H	H	H	CH_3		444.9
I47	H	CN	F	H	H	CH_3		371.9

In Table 2,  means cyclopropyl.

HPLC/MS = MassChargeRatio

#:I23 is a single isomer, prepared from enantiopure S-Inter B.

#:I27 is a single isomer, prepared from enantiopure S-Inter B.

#:I28 is a single isomer, prepared from enantiopure R-Inter B.

B USE EXAMPLES

The herbicidal activity of the compounds of formula (I) was demonstrated by the following greenhouse experiments:

The culture containers used were plastic flowerpots containing loamy sand with approximately 3.0% of humus as the substrate. The seeds of the test plants were sown separately for each species.

For the pre-emergence treatment, the active ingredients, which had been suspended or emulsified in water, were applied directly after sowing by means of finely distributing nozzles. The containers were irrigated gently to promote germination and growth and subsequently covered with transparent plastic hoods until the test plants had rooted. This cover caused uniform germination of the test plants, unless this had been impaired by the active ingredients. For the post-emergence treatment, the test plants were first grown to a height of 3 to 15 cm, depending on the plant habit, and only then treated with the active ingredients which had been suspended or emulsified in water. For this purpose, the test plants were either sown directly and grown in the same containers, or they were first grown separately as seedlings and transplanted into the test containers a few days prior to treatment.

Depending on the species, the test plants were kept at 10-25° C. or 20-35° C., respectively. The test period extended over 2 to 4 weeks. During this time, the test plants were tended, and their response to the individual treatments was evaluated.

Evaluation was carried out using a scale from 0 to 100. 100 means no emergence of the test plants, or complete destruction of at least the aerial moieties, and 0 means no damage, or normal course of growth. A good herbicidal activity is given at values of 80 to 90 and a very good herbicidal activity is given at values of 90 to 100.

The test plants used in the greenhouse experiments were of the following species: Bayer code Scientific name

Bayer code	Scientific name
ABUTH	*Abutilon theophrasti*
ALOMY	*Alopercurus myosuroides*
AMARE	*Amaranthus retroflexus*
APESV	*Apera spica-venti*
AVEFA	*Avena fatua*
ECHCG	*Echinocloa crus-galli*
SETVI	*Setaria viridis*
SETFA	*Setaria faberi*

At an application rate of 1,000 kg/ha, applied by the pre-emergence method:

- compound 11 showed very good herbicidal activity against APESV.
- compound 11 showed very good herbicidal activity against SETFA.

At an application rate of 0,500 kg/ha, applied by the pre-emergence method:

- compounds 15, 16, 112, 119, 124, 129 showed very good herbicidal activity against AMARE.
- compound 13 showed good herbicidal activity against AMARE.
- compounds 12, 14, 15, 16, 17, 18, 19, 112, 113, 114, 116, 117, 118, 119, 120, 121, 122, 124, 126, 127, 129 showed very good herbicidal activity against APESV.
- compounds 13, 111, 115 showed good herbicidal activity against APESV.
- compounds 14, 17, 18, 19, 116, 117, 118, 122, 126, 127, 129 showed very good herbicidal activity against ECHCG.
- compounds 12, 121, 126, 127 showed very good herbicidal activity against SETFA.

At an application rate of 0,250 kg/ha, applied by the pre-emergence method:

- compounds 125, 130, 132, 135, 137, 138, 139, 140, 141, 142 showed very good herbicidal activity against APESV.
- compound 142 showed good herbicidal activity against ABUTH.
- compounds 130, 136 showed very good herbicidal activity against ALOMY.
- compounds 136, 137, 138, 139 showed very good herbicidal activity against AMARE.
- compounds 132, 142 showed good herbicidal activity against AMARE.
- compounds 130, 136, 138, 139 showed very good herbicidal activity against ECHCG.
- compound 141 showed good herbicidal activity against ECHCG.
- compounds 125, 135, 140 showed very good herbicidal activity against SETFA.
- compounds 141 showed good herbicidal activity against SETFA.

At an application rate of 1,000 kg/ha, applied by the post-emergence method:

- compound 131 showed very good herbicidal activity against ABUTH.
- compounds 11, 131 showed very good herbicidal activity against AMARE.
- compound 11 showed very good herbicidal activity against ECHCG.
- compounds 11, 131 showed very good herbicidal activity against SETVI.

At an application rate of 0,500 kg/ha, applied by the post-emergence method:

- compounds 16, 112, 121, 129 showed very good herbicidal activity against ABUTH.
- compounds 116, 124 showed good herbicidal activity against ABUTH.
- compounds 13, 14, 15, 16, 17, 18, 114, 116, 117, 118, 120, 126 showed very good herbicidal activity against ALOMY.
- Compounds 110, 111, 113, 115, 119, 122 showed good herbicidal activity against ALOMY.
- compounds 14, 19, 111, 124, 127, 129 showed very good herbicidal activity against AMARE.
- compounds 12, 15, 18, 110, 117, showed good herbicidal activity against AMARE.
- compounds 15, 115, 117 showed very good herbicidal activity against AVEFA.
- compound 13, 16, 111, 113, 114, 119, 120 showed good herbicidal activity against AVEFA.
- compounds 12, 14, 19, 112, 118, 121, 122, 126, 127 showed very good herbicidal activity against ECHCG.
- compounds 17, 120 showed good herbicidal activity against ECHCG.
- compounds 19, 112, 116, 118, 121, 122, 124, 126, 127, 129 showed very good herbicidal activity against SETVI.
- compounds 12, 13, 17, 18, 110, 119 showed good herbicidal activity against SETVI.

At an application rate of 0,250 kg/ha, applied by the post-emergence method:

compound 147 showed very good herbicidal activity against ABUTH.

compounds 130, 138, 139, 141 showed very good herbicidal activity against AMARE.

compound 125 showed good herbicidal activity against AMARE.

compounds 132, 135, 147 showed very good herbicidal activity against ALOMY.

compound 142 showed good herbicidal activity against ALOMY.

compounds 132, 135, 137, 140, 141, 142 showed very good herbicidal activity against AVEFA.

compound 146 showed good herbicidal activity against AVEFA.

compounds 125, 130, 138, 139, 140 showed very good herbicidal activity against ECHCG.

compound 141 showed good herbicidal activity against ECHCG.

compounds 125, 130, 132, 135, 138, 139, 140, 142, 147 showed very good herbicidal activity against SETVI.

At an application rate of 62.5 g/ha, applied by the post-emergence method:

compound 133 showed good herbicidal activity against ALOMY.

compound 133 showed very good herbicidal activity against AVEFA.

compound 133 showed very good herbicidal activity against SETFA.

At an application rate of 16.0 g/ha, applied by the post-emergence method:

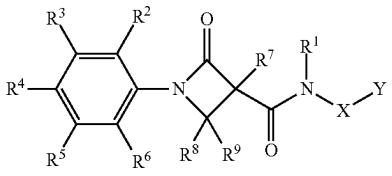
compound 136 showed very good herbicidal activity against LOLMU.

compound 136 showed very good herbicidal activity against AVEFA.

compound 136 showed very good herbicidal activity against SETVI.

The invention claimed is:

1. A compound of formula (I)



(I)

wherein the substituents have the following meanings:

R^1 hydrogen, $(C_1$-$C_3)$-alkyl, $(C_3$-$C_4)$-cycloalkyl, $(C_1$-$C_3)$-haloalkyl, $(C_2$-$C_3)$-alkenyl, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-alkynyl, $(C_2$-$C_3)$-haloalkynyl, $(C_1$-$C_3)$-alkoxy-$(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^2 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^3 hydrogen, halogen, nitro, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, hydroxy-$(C_1$-$C_3)$-alkyl, $(C_3$-$C_5)$-cycloalkyl, $(C_3$-$C_5)$-halocycloalkyl, hydroxy-$(C_3$-$C_5)$-cycloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy, $(C_1$-$C_3)$-alkoxycarbonyl, $(C_2$-$C_3)$ alkenyl, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$ alkynyl, $(C_2$-$C_3)$-haloalkynyl, $(C_1$-$C_3)$-alkylthio, $(C_1$-$C_3)$-alkylsulfinyl, $(C_1$-$C_3)$-alkylsulfonyl;

R^4 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_3$-$C_4)$-halocycloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-haloalkynyl, $(C_1$-$C_3)$-alkylthio;

R^5 hydrogen, halogen, nitro, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, hydroxy-$(C_1$-$C_3)$-alkyl, $(C_3$-$C_5)$-cycloalkyl, $(C_3$-$C_5)$-halocycloalkyl, hydroxy-$(C_3$-$C_5)$-cycloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy, $(C_1$-$C_3)$-alkoxycarbonyl, $(C_2$-$C_3)$ alkenyl, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$ alkynyl, $(C_2$-$C_3)$-haloalkynyl, $(C_1$-$C_3)$-alkylthio, $(C_1$-$C_3)$-alkylsulfinyl, $(C_1$-$C_3)$-alkylsulfonyl;

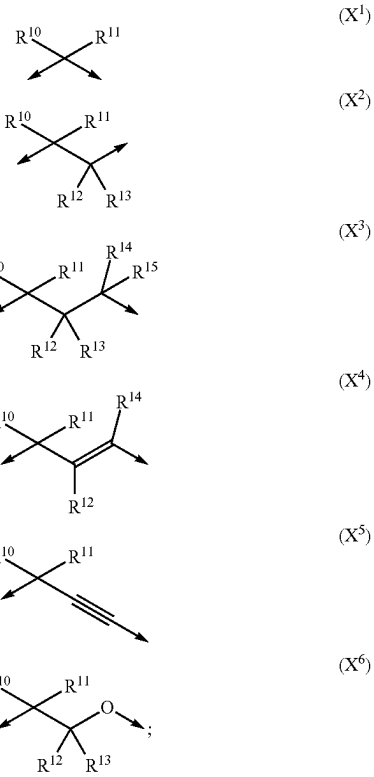
R^6 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^7 hydrogen, fluorine, cyano, or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_3$-$C_6)$-alkenyl, $(C_2$-$C_6)$-alkynyl, $(C_1$-$C_6)$-alkoxy, each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, hydroxyl, cyano and $(C_1$-$C_6)$-alkoxy;

R^8, R^9 each independently hydrogen, halogen, cyano, or $(C_1$-$C_6)$-alkyl, $(C_1$-$C_6)$-alkoxy, each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, and cyano; or

R^8 and R^9 form, together with the carbon atom to which they are bound, a saturated, partially or fully unsaturated three to five-membered ring containing, in addition to this carbon atom, q carbon atoms and n oxygen atoms;

X a bond (X^0) or a divalent unit from the group consisting of (X^1), (X^2), (X^3), (X^4), (X^5), and (X^6):



(X^1) (X^2) (X^3) (X^4) (X^5) (X^6);

R^{10}-R^{15} each independently hydrogen, fluorine, chlorine, bromine, iodine, hydroxyl, cyano, CO_2R^e, $CONR^bR^d$, $NR^bCO_2R^e$, R^a, or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_5)$-cycloalkyl, $(C_2$-$C_6)$-alkenyl, $(C_2$-$C_6)$-alkynyl, each substituted by m radicals from the group consisting of fluorine, chlo-

rine, bromine, iodine, hydroxyl and cyano, or $(C_1$-$C_6)$-alkoxy, $(C_3$-$C_6)$-cycloalkoxy, $(C_3$-$C_6)$-alkenyloxy, $(C_3$-$C_6)$-alkynyloxy, $(C_1$-$C_3)$-alkylthio, $(C_1$-$C_3)$-alkylsulfinyl, $(C_1$-$C_3)$-alkylsulfonyl, each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, cyano and $(C_1$-$C_2)$-alkoxy;

Y hydrogen, cyano, hydroxyl, Z,

or

$(C_1$-$C_{12})$-alkyl, $(C_3$-$C_8)$-cycloalkyl, $(C_2$-$C_{12})$-alkenyl or $(C_2$-$C_{12})$-alkynyl, each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, cyano, hydroxyl, OR^d, Z, OZ, NHZ, $S(O)_nR^a$, $SO_2NR^bR^d$, $SO_2NR^bCOR^e$, CO_2R^e, $CONR^bR^h$, COR^b, $CONR^eSO_2R^a$, NR^bR^e, NR^b-COR^e, $NR^bCONR^eR^e$, $NR^bCO_2R^e$, $NR^bSO_2R^e$ $NR^bSO_2NR^bR^e$, $OCONR^bR^e$, $OCSNR^bR^e$, POR^fR^f and $C(R^b)$=NOR^e;

Z a three-, four-, five- or six-membered saturated, partly unsaturated, fully unsaturated or aromatic ring, except phenyl, which is formed from r carbon atoms, n nitrogen atoms, n sulfur atoms and n oxygen atoms, and which is substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^h$, $S(O)_nR^a$, $SO_2NR^bR^d$, $SO_2NR^bCOR^e$, COR^b, $CONR^eSO_2R^a$, NR^bR^e, NR^b-COR^e, $NR^bCONR^eR^e$, $NR^bCO_2R^e$, $NR^bSO_2R^e$ $NR^bSO_2NR^bR^e$, $OCONR^bR^e$, $OCSNR^bR^e$, POR^fR^f, $C(R^b)$=NOR^e, R^b, R^c, R^e and R^f, and where the sulfur atoms and carbon atoms bear n oxo groups;

R^a $(C_1$-$C_6)$-alkyl or $(C_3$-$C_6)$-cycloalkyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, iodine, cyano, hydroxy, and $(C_1$-$C_3)$-alkoxy;

R^b hydrogen, $(C_1$-$C_3)$-alkoxy or R^a;

R^c fluorine, chlorine, bromine, iodine, cyano, hydroxyl, $S(O)_nR^a$ or $(C_1$-$C_6)$-alkoxy, $(C_3$-$C_6)$-alkenyloxy or $(C_3$-$C_6)$-alkynyloxy, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and $(C_1$-$C_2)$-alkoxy;

R^d hydrogen or $(C_1$-$C_6)$-alkyl, $(C_3$-$C_6)$-cycloalkyl, $(C_2$-$C_4)$-alkenyl, $(C_3$-$C_6)$-cycloalkyl-$(C_1$-$C_3)$-alkyl, phenyl-$(C_1$-$C_3)$-alkyl, furanyl-$(C_1$-$C_3)$-alkyl or $(C_2$-$C_4)$-alkynyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano, CO_2R^a, $CONR^bR^h$, $(C_1$-$C_2)$-alkoxy, $(C_1$-$C_3)$-alkylthio, $(C_1$-$C_3)$-alkylsulfinyl, $(C_1$-$C_3)$-alkylsulfonyl, phenylthio, phenylsulfinyl, and phenylsulfonyl;

R^e R^d;

R^f $(C_1$-$C_3)$-alkyl or $(C_1$-$C_3)$-alkoxy;

R^h hydrogen or $(C_1$-$C_6)$-alkyl, $(C_1$-$C_2)$-alkoxy, $(C_3$-$C_6)$-cycloalkyl, $(C_2$-$C_4)$-alkenyl, $(C_1$-$C_6)$-alkoxycarbonyl-$(C_1$-$C_6)$-alkyl, or $(C_2$-$C_4)$-alkynyl each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano, CO_2R^a and $(C_1$-$C_2)$-alkoxy;

m 0, 1, 2, 3, 4 or 5;

n 0, 1 or 2;

q 1, 2, 3, or 4;

r 1, 2, 3, 4, 5 or 6;

including their agriculturally acceptable salts, amides, esters or thioesters, provided the compounds of formula (I) have a carboxyl group.

2. The compound as claimed in claim **1**, wherein wherein the substituents have the following meaning:

R^1 hydrogen.

3. The compound as claimed in claim **1**, wherein wherein the substituents have the following meaning:

R^2 hydrogen, halogen, $(C_1$-$C_3)$-alkyl;

R^6 hydrogen, halogen, $(C_1$-$C_3)$-alkyl.

4. The compound as claimed in claim **1**, wherein wherein the substituents have the following meaning:

R^3 hydrogen, halogen, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkoxy;

R^5 hydrogen, halogen, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkoxy.

5. The compound as claimed in claim **1**, wherein wherein the substituents have the following meaning:

R^4 hydrogen, halogen.

6. The compound as claimed in claim **1**, wherein wherein the substituents have the following meaning:

R^7 $(C_1$-$C_2)$-alkyl, cyclopropyl, $(C_1$-$C_2)$-haloalkyl, $(C_2$-$C_3)$-alkenyl, $(C_1$-$C_2)$-alkoxy.

7. The compound as claimed in claim **1**, wherein wherein the substituents have the following meaning:

R^8 hydrogen, halogen, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl;

R^9 hydrogen, halogen, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl.

8. The compound as claimed in claim **1**, wherein wherein the substituents have the following meaning:

X a bond.

9. The compound as claimed in claim **1**, wherein wherein the substituents have the following meaning:

X a bond;

Y $(C_1$-$C_8)$-alkyl, $(C_3$-$C_8)$-cycloalkyl, $(C_2$-$C_8)$-alkenyl or $(C_2$-$C_8)$-alkynyl, each substituted by m radicals from the group consisting of fluorine, chlorine, bromine, iodine, cyano, hydroxyl, OR^d, Z, OZ, NHZ, $S(O)_nR^a$, $SO_2NR^bR^d$, $SO_2NR^bCOR^e$, CO_2R^e, $CONR^bR^h$, COR^b, $CONR^eSO_2R^a$, NR^bR^e, NR^bCOR^e, $NR^bCONR^eR^e$, $NR^bCO_2R^e$, $NR^bSO_2R^e$ $NR^bSO_2NR^bR^e$, $OCONR^bR^e$, $OCSNR^bR^e$, POR^fR^f and $C(R^b)$=NOR^e.

10. The compound as claimed in claim **1**, wherein wherein the substituents have the following meaning:

X a bond;

Y Z;

Z a four- or five-membered saturated or partly unsaturated ring, which is formed from r carbon atoms and n oxygen atoms, each substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^h$, $CONR^eSO_2R^a$, R^b, R^c, R^e and R^f.

11. The compound as claimed in claim **1**, wherein wherein the substituents have the following meaning:

R^1 hydrogen, $(C_1$-$C_3)$-alkyl, $(C_3$-$C_4)$-cycloalkyl, $(C_1$-$C_3)$-haloalkyl, $(C_2$-$C_3)$-alkenyl, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-alkynyl, $(C_2$-$C_3)$-haloalkynyl, $(C_1$-$C_3)$-alkoxy-$(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^2 hydrogen, halogen, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^3 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_3$-$C_5)$-halocycloalkyl, $(C_1$-$C_3)$-haloalkoxy, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-haloalkynyl;

R^4 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_3$-$C_4)$-halocycloalkyl, $(C_1$-$C_3)$-haloalkoxy, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-haloalkynyl;

R^5 hydrogen, halogen, hydroxyl, cyano, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_3$-$C_5)$-halocycloalkyl, $(C_1$-$C_3)$-haloalkoxy, $(C_2$-$C_3)$-haloalkenyl, $(C_2$-$C_3)$-haloalkynyl;

R^6 hydrogen, halogen, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl, $(C_1$-$C_3)$-alkoxy, $(C_1$-$C_3)$-haloalkoxy;

R^7 $(C_1$-$C_2)$-alkyl, cyclopropyl, $(C_1$-$C_2)$-haloalkyl, $(C_2$-$C_3)$-alkenyl, $(C_1$-$C_2)$-alkoxy;

R^8 hydrogen, halogen, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl;

R^9 hydrogen, halogen, $(C_1$-$C_3)$-alkyl, $(C_1$-$C_3)$-haloalkyl;

X a bond;

Y Z, or (C_1-C_8)-alkyl, (C_3-C_8)-cycloalkyl, (C_2-C_8)-alkenyl or (C_2-C_8)-alkynyl, each substituted by m radicals from the group consisting of fluorine and CO_2R^e;

Z four to five-membered saturated or partly unsaturated ring which is formed from r carbon atoms, n oxygen atoms, and which is substituted by m radicals from the group consisting of CO_2R^e, $CONR^bR^h$, $CONR^eSO_2R^a$, R^b, R^c, R^e and R^f;

R^a (C_1-C_6)-alkyl or (C_3-C_6)-cycloalkyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, iodine, cyano, hydroxy, and (C_1-C_3)-alkoxy;

R^b hydrogen, or (C_1-C_6)-alkyl or (C_3-C_6)-cycloalkyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, iodine, cyano and hydroxy;

R^c fluorine, chlorine, bromine, iodine, cyano, hydroxyl, $S(O)_nR^a$ or (C_1-C_6)-alkoxy, (C_3-C_6)-alkenyloxy or (C_3-C_6)-alkynyloxy, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and (C_1-C_2)-alkoxy;

R^e hydrogen or (C_1-C_6)-alkyl, (C_3-C_6)-cycloalkyl, (C_2-C_4)-alkenyl, phenyl-(C_1-C_3)-alkyl or (C_2-C_4)-alkynyl, each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and (C_1-C_2)-alkoxy;

R^f (C_1-C_3)-alkyl or (C_1-C_3)-alkoxy;

R^h hydrogen or (C_1-C_6)-alkyl, (C_3-C_6)-cycloalkyl, (C_2-C_4)-alkenyl, (C_1-C_6)-alkoxycarbonyl-(C_1-C_6)-alkyl, or (C_2-C_4)-alkynyl each of which is substituted by m radicals selected from the group consisting of fluorine, chlorine, bromine, cyano and (C_1-C_2)-alkoxy;

m 0, 1, 2, 3, 4 or 5;

n 0, 1 or 2;

r 1, 2, 3, 4, or 5.

12. A composition comprising at least one compound as claimed in claim **1**, and at least one auxiliary, which is customary for formulating crop protection compounds.

13. The composition as claimed in claim **12**, comprising a further herbicide.

14. A method for controlling unwanted vegetation which comprises applying a herbicidally effective amount of at least one compound as claimed in claim **1** onto plants, their seed and/or their habitat.

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