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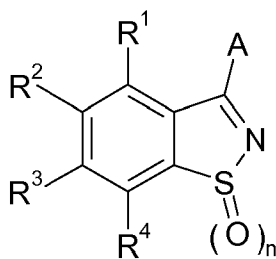
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(54) Title: 3-AMINO-1,2-BENZISOTHIAZOLE COMPOUNDS FOR COMBATING ANIMAL PEST II



(57) Abstract: The invention provides 3-amino-1,2-benzisothiazole compounds of formula (I) wherein n, R¹, R², R³, R⁴ and A are defined as in the description. The invention provides further agricultural compositions comprising an amount of at least one compound of the formula (I) or an enantiomer, diastereomer or salt thereof; the use of a compound of formula (I) or an enantiomer, diastereomer or salt thereof for combating animal pests; a method of combating animal pests which comprises contacting the animal pests, their habit, breeding ground, food supply, plant, seed, soil, area, material or environment in which the animal pests are growing or may grow, or the materials, plants, seeds, soils, surfaces or spaces to be protected from animal attack or infestation with a pesticidally effective amount of at least one compound

of the formula (I) or an enantiomer, diastereomer or salt thereof; a method for protecting crops from attack or infestation by animal pests, which comprises contacting a crop with a pesticidally effective amount of at least one compound of the formula (I) or an enantiomer, diastereomer or salt thereof; a method for the protection of seeds from soil insects and of the seedlings' roots and shoots from soil and foliar insects comprising contacting the seeds before sowing and/or after pregermination with at least one compound of the formula (I), or the enantiomers, diastereomers or salts thereof; and seeds comprising a compound of the formula I or an enantiomer, diastereomer or salt thereof.

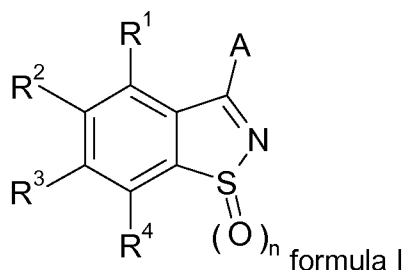
3-Amino-1,2-benzisothiazole compounds for combating animal pest II

The present invention relates to 3-amino-1,2-benzisothiazole compounds and to their isomeric imino derivatives, as well as to the enantiomers, diastereomers and salts thereof and to compositions comprising such compounds. The invention also relates to the use of the 3-amino-1,2-benzisothiazole compounds, of their salts or of compositions comprising them for combating animal pests. Furthermore the invention relates also to methods of applying such compounds.

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

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

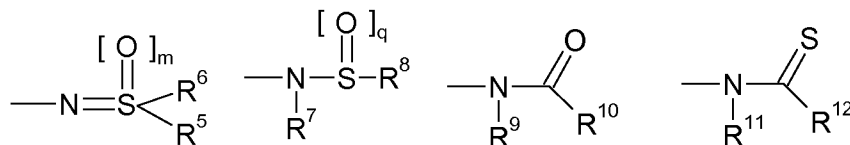
It has been found that these objects are solved by 3-amino-1,2-benzisothiazole derivatives of the general formula I:



wherein

25

n is 0, 1 or 2;



A is A¹, A², A³ or A⁴

and wherein

m is 0 or 1;

30 q is 0, 1 or 2;

R⁵, R⁶, R⁸ are independently from each other selected from C₁-C₁₀-alkyl, C₂-C₁₀-alkenyl, C₂-C₁₀-alkynyl, C₃-C₁₀-cycloalkyl, phenyl, naphthyl and 5- or 6-membered heteroaromatic or 3 to 7-membered saturated or partially unsaturated heterocyclic groups

containing 1, 2, 3 or 4 unsubstituted or substituted heteroatoms selected from O, S, SO, SO₂, N, NH or N-C₁-C₆-alkyl as ring members, wherein the heterocyclic groups may additionally contain 1,2 or 3 CO groups as ring members, and wherein the aliphatic radicals and the ring members of the cyclic groups may be unsubstituted, partially or fully halogenated and/or may carry one or more radicals, independently of one another selected from the group consisting of CN, NO₂, NH₂, C₁-C₁₀-alkyl, C₁-C₁₀-haloalkyl, C₁-C₁₀-alkoxy, C₁-C₁₀-haloalkoxy, C₁-C₁₀-alkylthio, C₁-C₁₀-alkylsulfinyl, C₁-C₁₀-alkylsulfonyl, C₁-C₁₀-haloalkoxy, C₁-C₁₀-haloalkylthio, C₁-C₁₀-alkoxycarbonyl, (C₁-C₁₀-alkyl)amino, di-(C₁-C₁₀-alkyl)amino, C₃-C₁₀-cycloalkyl and phenyl, it being possible for phenyl to be unsubstituted, partially or fully halogenated and/or to carry one or more substituents, independently of one another selected from the group consisting of C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy and C₁-C₄-haloalkoxy;

R⁷ or R⁹ is selected from hydrogen, C(=O)-R^c, C₁-C₆-alkoxy, C₁-C₁₀-alkyl, C₂-C₁₀-alkenyl, C₂-C₁₀-alkynyl, C₃-C₁₀-cycloalkyl, phenyl, naphthyl and 5- or 6-membered heteroaromatic or 3 to 7-membered saturated or partially unsaturated heterocyclic groups containing 1, 2, 3 or 4 unsubstituted or substituted heteroatoms selected from O, S, SO, SO₂, N, NH or N-C₁-C₆-alkyl as ring members, wherein the heterocyclic groups may additionally contain 1,2 or 3 CO groups as ring members, wherein the aliphatic radicals may be unsubstituted, partially or fully halogenated and/or may carry one or more radicals, independently of one another selected from the group consisting of CN, NO₂, C₁-C₁₀-alkyl, C₁-C₁₀-haloalkyl, C₃-C₁₀-cycloalkyl and phenyl, it being possible for phenyl to be unsubstituted, partially or fully halogenated and/or to carry one or more substituents, independently of one another selected from the group consisting of C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy and C₁-C₄-haloalkoxy, wherein the ring members of the cyclic groups may be unsubstituted, partially or fully halogenated and/or may carry one or more radicals, independently of one another selected from the group consisting of CN, NO₂, NH₂, C₁-C₁₀-alkyl, C₁-C₁₀-haloalkyl, C₁-C₁₀-alkoxy, C₁-C₁₀-haloalkoxy, C₁-C₁₀-alkylthio, C₁-C₁₀-alkylsulfinyl, C₁-C₁₀-alkylsulfonyl, C₁-C₁₀-haloalkoxy, C₁-C₁₀-haloalkylthio, C₁-C₁₀-alkoxycarbonyl, (C₁-C₁₀-alkyl)amino, di-(C₁-C₁₀-alkyl)amino, C₃-C₁₀-cycloalkyl and phenyl, it being possible for phenyl to be unsubstituted, partially or fully halogenated and/or to carry one or more substituents, independently of one another selected from the group consisting of C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy and C₁-C₄-haloalkoxy;

or

R⁵ and R⁶ form together with the sulfur atom they are bound to a saturated, partially or fully unsaturated 4 to 10-membered heterocyclic ring, optionally substituted by 1, 2, 3 or 4 radicals selected from C₁-C₆-alkyl and halogen, wherein the ring may contain, in addition to the sulfur atom, 1, 2 or 3 heteroatoms selected from the group consisting of N, O, S, CO, SO, SO₂ and N-R^e;

or

R^7 and R^8 form together with the sulfur atom and the nitrogen atom they are bound to a saturated, partially or fully unsaturated 4 to 10-membered heterocyclic ring, optionally substituted by 1, 2, 3 or 4 radicals selected from C_1 - C_6 -alkyl and halogen, wherein the ring may contain, in addition to the sulfur and nitrogen atom, 1, 2 or 3 heteroatoms selected from the group consisting of N, O, S, CO, SO, SO_2 and $N-R^e$;

R^{10} is selected dependently from R^9 , wherein
when R^9 is selected from substituents other than hydrogen and COR^c ,
 R^{10} is selected from substituents as defined for R^{12} below;

or wherein

when R^9 is selected from hydrogen or COR^c ,
 R^{10} is selected from saturated, partially or fully unsaturated or aromatic 5- to 7-membered heterocyclic groups containing 1, 2, 3 or 4 heteroatoms selected from O, CO, S, SO_2 , N, NH or $N-C_1$ - C_6 -alkyl, wherein the ring members of the heterocyclic rings may be unsubstituted, partially or fully halogenated and/or may carry one or more radicals, independently of one another each selected from the group consisting of CN, OH, NO_2 , NH_2 , C_1 - C_{10} -alkyl, C_1 - C_{10} -haloalkyl, C_1 - C_{10} -alkoxy, C_1 - C_{10} -haloalkoxy, C_1 - C_{10} -alkylthio, C_1 - C_{10} -alkylsulfinyl, C_1 - C_{10} -alkylsulfonyl, C_1 - C_{10} -haloalkylthio, C_1 - C_{10} -alkoxycarbonyl, $(C_1$ - C_{10} -alkyl)amino, di- $(C_1$ - C_{10} -alkyl)amino, C_3 - C_{10} -cycloalkyl, phenyl, 5- or 6-membered heteroaromatic rings and aromatic 8-, 9- or 10-membered fused heterobicyclic ring systems containing 1, 2, 3 or 4 heteroatoms selected from O, CO, S, SO_2 , N, NH or $N-C_1$ - C_6 -alkyl, it being possible for each of the aromatic or heteroaromatic rings to be unsubstituted, partially or fully halogenated and/or to carry one or more substituents, independently of one another selected from the group consisting of C_1 - C_{10} -alkyl, C_1 - C_{10} -haloalkyl, C_1 - C_{10} -alkoxy, C_1 - C_{10} -haloalkoxy, C_2 - C_{10} -alkenyl, C_2 - C_{10} -alkynyl, C_2 - C_{10} -haloalkenyl, C_2 - C_{10} -haloalkynyl, CN, NO_2 , NH_2 , C_1 - C_{10} -alkylthio, C_1 - C_{10} -alkylsulfinyl, C_1 - C_{10} -alkylsulfonyl, C_1 - C_{10} -haloalkylthio, C_2 - C_{10} -alkoxycarbonyl, C_1 - C_{10} -alkylaminocarbonyl, C_1 - C_{10} -dialkylaminocarbonyl, $(C_1$ - C_{10} -alkyl)amino, di- $(C_1$ - C_{10} -alkyl)amino, C_3 - C_{10} -cycloalkyl, C_3 - C_{10} -halocycloalkyl, C_3 - C_{10} -cycloalkylamino and C_2 - C_{10} -alkylcarbonyl;

R^{11} is selected from hydrogen, $C(=O)-R^c$, C_1 - C_{10} -alkyl, C_2 - C_{10} -alkenyl, C_2 - C_{10} -alkynyl, C_1 - C_{10} -alkoxy and C_3 - C_{10} -cycloalkyl, wherein the carbon atoms of all mentioned radicals may be unsubstituted, partially or fully halogenated and/or may carry one or more radicals, independently of one another each selected from the group consisting of CN, OH, NO_2 , NH_2 , C_1 - C_6 -alkyl, C_1 - C_{10} -haloalkyl, C_1 - C_{10} -alkoxy, C_1 - C_{10} -alkylthio, C_1 - C_{10} -alkylsulfinyl, C_1 - C_{10} -alkylsulfonyl, C_1 - C_{10} -haloalkoxy, C_1 - C_{10} -haloalkylthio, C_1 - C_{10} -alkoxycarbonyl, $(C_1$ - C_{10} -alkyl)amino, di- $(C_1$ - C_{10} -alkyl)amino, C_3 - C_{10} -cycloalkyl and phenyl, it being possible for phenyl to be unsubstituted, partially or fully halogenated and/or to carry one or more substituents, independently of one another selected from

the group consisting of C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy and C₁-C₄-haloalkoxy;

R¹² is selected from OR^d, NR^aR^b, C₁-C₁₀-alkyl, C₂-C₁₀-alkenyl, C₂-C₁₀-alkynyl, C₃-C₁₀-cycloalkyl, phenyl, naphthyl and saturated, partially or fully unsaturated or aromatic 5- to 7-membered heterocyclic groups containing 1, 2, 3 or 4 heteroatoms selected from O, CO, S, SO₂, N, NH or N-C₁-C₆-alkyl, wherein the carbon atoms of all mentioned radicals and the ring members of the heterocyclic rings may be unsubstituted, partially or fully halogenated and/or may carry one or more radicals, independently of one another each selected from the group consisting of CN, OH, NO₂, NH₂, C₁-C₁₀-alkyl, C₁-C₁₀-haloalkyl, C₁-C₁₀-alkoxy, C₁-C₁₀-haloalkoxy, C₁-C₁₀-alkylthio, C₁-C₁₀-alkylsulfinyl, C₁-C₁₀-alkylsulfonyl, C₁-C₁₀-haloalkylthio, C₁-C₁₀-alkoxycarbonyl, (C₁-C₁₀-alkyl)amino, di-(C₁-C₁₀-alkyl)amino, C₃-C₁₀-cycloalkyl, phenyl, 5- or 6-membered heteroaromatic rings and aromatic 8-, 9- or 10-membered fused heterobicyclic ring systems containing 1, 2, 3 or 4 heteroatoms selected from O, CO, S, SO₂, N, NH or N-C₁-C₆-alkyl, it being possible for each of the aromatic or heteroaromatic rings to be unsubstituted, partially or fully halogenated and/or to carry one or more substituents, independently of one another selected from the group consisting of C₁-C₁₀-alkyl, C₁-C₁₀-haloalkyl, C₁-C₁₀-alkoxy, C₁-C₁₀-haloalkoxy, C₂-C₁₀-alkenyl, C₂-C₁₀-alkynyl, C₂-C₁₀-haloalkenyl, C₂-C₁₀-haloalkynyl, CN, NO₂, NH₂, C₁-C₁₀-alkylthio, C₁-C₁₀-alkylsulfinyl, C₁-C₁₀-alkylsulfonyl, C₁-C₁₀-haloalkylthio, C₁-C₁₀-alkoxycarbonyl, C₁-C₁₀-alkylaminocarbonyl, C₁-C₁₀-dialkylaminocarbonyl, (C₁-C₁₀-alkyl)amino, di-(C₁-C₁₀-alkyl)amino, C₃-C₁₀-cycloalkyl, C₃-C₁₀-halocycloalkyl, C₃-C₁₀-cycloalkylamino and C₁-C₁₀-alkylcarbonyl;

R¹ is selected from CN, NO₂, NH₂, azido, halogen, sulfonylamino, sulfenylamino, sulfinylamino, C(=O)R^c, C₁-C₁₀-alkyl, C₂-C₁₀-alkenyl, C₂-C₁₀-alkynyl, C₃-C₁₀-cycloalkyl, C₁-C₁₀-alkoxy, C₁-C₁₀-alkylthio, (C₁-C₁₀-alkyl)amino, di-(C₁-C₁₀-alkyl)amino, C₁-C₁₀-alkylsulfinyl, C₁-C₁₀-alkylsulfenyl and C₁-C₁₀-alkylsulfonyl, wherein the carbon atoms of the C₃-C₁₀-cycloalkyl and the mentioned aliphatic radicals may be unsubstituted, partially or fully halogenated and/or may carry one or more radicals, selected from the group consisting of CN, NO₂, NH₂, C₁-C₁₀-alkoxy, C₁-C₁₀-alkylthio, C₁-C₁₀-alkylsulfinyl, C₁-C₁₀-alkylsulfonyl, C₁-C₁₀-haloalkoxy, C₁-C₁₀-haloalkylthio, (C₁-C₁₀-alkoxy)carbonyl, (C₁-C₁₀-alkyl)amino, di-(C₁-C₁₀-alkyl)amino, C₃-C₈-cycloalkyl and phenyl, it being possible for phenyl to be unsubstituted, partially or fully halogenated and/or to carry one or more substituents, independently of one another selected from the group consisting of C₁-C₁₀-alkyl, C₁-C₁₀-haloalkyl, C₁-C₁₀-alkoxy and C₁-C₁₀-haloalkoxy;

R², R³ and R⁴ are independently from each other selected from hydrogen, halogen, azido, COR^c, CN, NO₂, NH₂, C₁-C₁₀-alkyl, C₃-C₁₀-cycloalkyl, C₁-C₁₀-haloalkyl, C₁-C₁₀-alkoxy, C₁-C₁₀-alkylthio, C₁-C₁₀-alkylsulfinyl, C₁-C₁₀-alkylsulfonyl, C₁-C₁₀-haloalkoxy, C₁-C₁₀-haloalkylthio, C₂-C₁₀-alkenyl, C₂-C₁₀-alkynyl, (C₁-C₁₀-alkyl)amino, di-(C₁-C₁₀-alkyl)amino, sulfonyl, sulfonylamino, sulfenylamino and sulfanylamino;

and wherein

R^a and R^b are selected independently from each other from the group consisting of hydrogen, C₁-C₁₀-alkyl, C₃-C₁₀-cycloalkyl, C₂-C₁₀-alkenyl, C₂-C₁₀-alkynyl, aryl and aromatic, saturated, partially or fully unsaturated heterocyclic rings, and wherein the carbon atoms of all mentioned radicals may be unsubstituted or partially or fully substituted by halogen or C₁-C₁₀-alkyl;

R^c is selected from the group consisting of NH₂, C₁-C₁₀-alkyl, C₁-C₁₀-alkoxy, C₁-C₁₀-alkylamino, di(C₁-C₁₀-alkyl)amino, aryl and saturated, partially unsaturated or aromatic 3- to 7 -membered heterocyclic ring, which may contain as ring members 1, 2 or 3 unsubstituted or substituted heteroatoms selected from the group consisting of O, S, SO, SO₂, N, NH and N-C₁-C₆-alkyl, and wherein the carbon atoms of all mentioned radicals may be unsubstituted or partially or fully substituted by halogen or C₁-C₁₀-alkyl;

R^d is selected from the group consisting of hydrogen, C₁-C₁₀-alkyl, C₃-C₁₀-cycloalkyl, C₂-C₁₀-alkenyl, C₂-C₁₀-alkynyl, aryl and aromatic, saturated, partially or fully unsaturated heterocyclic rings;

R^e is hydrogen or C₁-C₁₀-alkyl;

or the enantiomers, distereomers or salts thereof.

Depending on the substitution pattern, the compounds of formula I can contain one or more chiral centers, in which case they are present as enantiomer or diastereomer mixtures. Subject matter of this invention are not only compositions containing these mixtures but also those containing the pure enantiomers or diastereomers.

Some similar compounds to formula I have been described inter alia in DE-A 1915387, WO 03/87072, JP-A 06220030, DE-A 1670920 and DE-A 1545842. Benzoisothiazoles useful for treating or preventing HCV infection can be found in WO2006/091858. However, an insecticidal, acaricidal or nematocidal activity of compounds of formula I has not been disclosed yet.

Amino- and amino-acylated 1,2-benzisothiazole compounds have been described by Drabek for an insecticidal activity in EP-A 207891, EP-A 191734, DE-A 3544436, EP-A 138762, EP-A 133418 and EP-A 110829, or 3-Amidinobenzisothiazole 1,1-dioxides for same use in EP-A 86748. JP-A 01319467 describes the preparation of N-acylated amino-benzisothiazoles and their 1,2-dioxyde derivatives as active ingredients for insecticidal purposes. Sulfonyl compounds and aphicidal compositions based on monosubstituted 3-amino-1,2 -benzisothiazole-1,1-dioxyde derivatives have been described in EP-A 0033984. The latter EP-A 33984 discloses 2-cyanobenzene sulfonamides having aphicidal activity. Their activity, however, is not satisfactory. Similar compounds to EP-A 33984 are described in WO 2005/035486, in unpublished international application PCT/EP2006/068469 and in unpublished US application 60/787809.

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

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Accordingly, the present invention relates to 3-amino-1,2-benzisothiazole compounds of the general formula I and to their agriculturally useful salts.

Moreover, the present invention relates to:

- 10 - agricultural compositions comprising an amount of at least one compound of the formula I or an enantiomer, diastereomer or salt thereof;
 - the use of a compound of formula I or an enantiomer, diastereomer or salt thereof for combating animal pests;
 - a method of combating animal pests which comprises contacting the animal
15 pests, their habit, breeding ground, food supply, plant, seed, soil, area, material or environment in which the animal pests are growing or may grow, or the materials, plants, seeds, soils, surfaces or spaces to be protected from animal attack or infestation with a pesticidally effective amount of at least one compound of the formula I or an enantiomer, diastereomer or salt thereof;
 - 20 - a method for protecting crops from attack or infestation by animal pests, which comprises contacting a crop with a pesticidally effective amount of at least one compound of the formula I or an enantiomer, diastereomer or salt thereof;
 - a method for the protection of seeds from soil insects and of the seedlings' roots and shoots from soil and foliar insects comprising contacting the seeds before
25 sowing and/or after pregermination with at least one compound of the formula I, or the enantiomers, diastereomers or salts thereof;
 - seeds comprising a compound of the formula I or an enantiomer, diastereomer or salt thereof.
- 30 Salts of the compounds of the formula I are preferably agriculturally acceptable salts. They can be formed in a customary method, e.g. by reacting the compound with an acid of the anion in question if the compound of formula I has a basic functionality or by reacting an acidic compound of formula I with a suitable base.
- 35 Suitable agriculturally useful salts are especially the salts of those cations or the acid addition salts of those acids whose cations and anions, respectively, do not have any adverse effect on the action of the compounds according to the present invention. Suitable cations are in particular the ions of the alkali metals, preferably lithium, sodium and potassium, of the alkaline earth metals, preferably calcium, magnesium and barium, and of the transition metals, preferably manganese, copper, zinc and iron, and
40 also ammonium (NH_4^+) and substituted ammonium in which one to four of the hydrogen atoms are replaced by $\text{C}_1\text{-C}_4\text{-alkyl}$, $\text{C}_1\text{-C}_4\text{-hydroxyalkyl}$, $\text{C}_1\text{-C}_4\text{-alkoxy}$, $\text{C}_1\text{-C}_4\text{-alkoxy-C}_1\text{-C}_4\text{-alkyl}$, $\text{hydroxy-C}_1\text{-C}_4\text{-alkoxy-C}_1\text{-C}_4\text{-alkyl}$, phenyl or benzyl. Examples of substituted

ammonium ions comprise methylammonium, isopropylammonium, dimethylammonium, diisopropylammonium, trimethylammonium, tetramethylammonium, tetraethylammonium, tetrabutylammonium, 2-hydroxyethylammonium, 2-(2-hydroxyethoxy)ethylammonium, bis(2-hydroxyethyl)ammonium, benzyltrimethylammonium and benzyltriethylammonium, furthermore phosphonium ions, sulfonium ions, preferably tri(C₁-C₄-alkyl)sulfonium, and sulfoxonium ions, preferably tri(C₁-C₄-alkyl)sulfoxonium.

Anions of useful acid addition salts are primarily chloride, bromide, fluoride, hydrogen sulfate, sulfate, dihydrogen phosphate, hydrogen phosphate, phosphate, nitrate, hydrogen carbonate, carbonate, hexafluorosilicate, hexafluorophosphate, benzoate, and the anions of C₁-C₄-alkanoic acids, preferably formate, acetate, propionate and butyrate. They can be formed by reacting the compounds of the formulae I with an acid of the corresponding anion, preferably of hydrochloric acid, hydrobromic acid, sulfuric acid, phosphoric acid or nitric acid.

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

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

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

The term "C_n-C_m-alkyl" as used herein (and also in C_n-C_m-alkylamino, di-C_n-C_m-alkylamino, C_n-C_m-alkylaminocarbonyl, di-(C_n-C_m-alkylamino)carbonyl, C_n-C_m-alkylthio, C_n-C_m-alkylsulfinyl and C_n-C_m-alkylsulfonyl) refers to a branched or unbranched saturated hydrocarbon group having n to m, e.g. 1 to 10 carbon atoms, preferably 1 to 6 carbon atoms, for example methyl, ethyl, propyl, 1-methylethyl, butyl, 1-methylpropyl, 2-methylpropyl, 1,1-dimethylethyl, pentyl, 1-methylbutyl, 2-methylbutyl, 3-methylbutyl, 2,2-dimethylpropyl, 1-ethylpropyl, hexyl, 1,1-dimethylpropyl, 1,2-dimethylpropyl, 1-methylpentyl, 2-methylpentyl, 3-methylpentyl, 4-methylpentyl, 1,1-dimethylbutyl, 1,2-dimethylbutyl, 1,3-dimethylbutyl, 2,2-dimethylbutyl, 2,3-dimethylbutyl, 3,3-dimethylbutyl, 1-ethylbutyl, 2-ethylbutyl, 1,1,2-trimethylpropyl, 1,2,2-trimethylpropyl, 1-ethyl-1-methylpropyl, 1-ethyl-2-methylpropyl, heptyl, octyl, 2-ethylhexyl, nonyl and decyl and their isomers. C₁-C₄-alkyl means for example methyl, ethyl, propyl, 1-methylethyl, butyl, 1-methylpropyl, 2-methylpropyl or 1,1-dimethylethyl.

The term "C_n-C_m-haloalkyl" as used herein (and also in C_n-C_m-haloalkylsulfinyl and C_n-C_m-haloalkylsulfonyl) refers to a straight-chain or branched alkyl group having n to m carbon atoms, e.g. 1 to 10 in particular 1 to 6 carbon atoms (as mentioned above),

where some or all of the hydrogen atoms in these groups may be replaced by halogen atoms as mentioned above, for example C₁-C₄-haloalkyl, such as chloromethyl, bromomethyl, dichloromethyl, trichloromethyl, fluoromethyl, difluoromethyl, trifluoromethyl, chlorofluoromethyl, dichlorofluoromethyl, chlorodifluoromethyl, 1-chloroethyl, 1-bromoethyl, 1-fluoroethyl, 2-fluoroethyl, 2,2-difluoroethyl, 2,2,2-trifluoroethyl, 2-chloro-2-fluoroethyl, 2-chloro-2,2-difluoroethyl, 2,2-dichloro-2-fluoroethyl, 2,2,2-trichloroethyl, pentafluoroethyl and the like. The term C₁-C₁₀-haloalkyl in particular comprises C₁-C₂-fluoroalkyl, which is synonym with methyl or ethyl, wherein 1, 2, 3, 4 or 5 hydrogen atoms are substituted by fluorine atoms, such as fluoromethyl, difluoromethyl, trifluoromethyl, 1-fluoroethyl, 2-fluoroethyl, 2,2-difluoroethyl, 2,2,2-trifluoroethyl and pentafluoromethyl.

Similarly, "C_n-C_m-alkoxy" and "C_n-C_m-alkylthio" (or C_n-C_m-alkylsulfenyl, respectively) refer to straight-chain or branched alkyl groups having n to m carbon atoms, e.g. 1 to 10, in particular 1 to 6 or 1 to 4 carbon atoms (as mentioned above) bonded through oxygen or sulfur linkages, respectively, at any bond in the alkyl group. Examples include C₁-C₄-alkoxy such as methoxy, ethoxy, propoxy, isopropoxy, butoxy, sec-butoxy, isobutoxy and tert-butoxy, further C₁-C₄-alkylthio such as methylthio, ethylthio, propylthio, isopropylthio, and n-butylthio.

Accordingly, the terms "C_n-C_m-haloalkoxy" and "C_n-C_m-haloalkylthio" (or C_n-C_m-haloalkylsulfenyl, respectively) refer to straight-chain or branched alkyl groups having n to m carbon atoms, e.g. 1 to 10, in particular 1 to 6 or 1 to 4 carbon atoms (as mentioned above) bonded through oxygen or sulfur linkages, respectively, at any bond in the alkyl group, where some or all of the hydrogen atoms in these groups may be replaced by halogen atoms as mentioned above, for example C₁-C₂-haloalkoxy, such as chloromethoxy, bromomethoxy, dichloromethoxy, trichloromethoxy, fluoromethoxy, difluoromethoxy, trifluoromethoxy, chlorofluoromethoxy, dichlorofluoromethoxy, chlorodifluoromethoxy, 1-chloroethoxy, 1-bromoethoxy, 1-fluoroethoxy, 2-fluoroethoxy, 2,2-difluoroethoxy, 2,2,2-trifluoroethoxy, 2-chloro-2-fluoroethoxy, 2-chloro-2,2-difluoroethoxy, 2,2-dichloro-2-fluoroethoxy, 2,2,2-trichloroethoxy and pentafluoroethoxy, further C₁-C₂-haloalkylthio, such as chloromethylthio, bromomethylthio, dichloromethylthio, trichloromethylthio, fluoromethylthio, difluoromethylthio, trifluoromethylthio, chlorofluoromethylthio, dichlorofluoromethylthio, chlorodifluoromethylthio, 1-chloroethylthio, 1-bromoethylthio, 1-fluoroethylthio, 2-fluoroethylthio, 2,2-difluoroethylthio, 2,2,2-trifluoroethylthio, 2-chloro-2-fluoroethylthio, 2-chloro-2,2-difluoroethylthio, 2,2-dichloro-2-fluoroethylthio, 2,2,2-trichloroethylthio and pentafluoroethylthio and the like. Similarly the terms C₁-C₂-fluoroalkoxy and C₁-C₂-fluoroalkylthio refer to C₁-C₂-fluoroalkyl which is bound to the remainder of the molecule via an oxygen atom or a sulfur atom, respectively.

The term "C₂-C_m-alkenyl" as used herein intends a branched or unbranched unsaturated hydrocarbon group having 2 to m, e.g. 2 to 10 or 2 to 6 carbon atoms and a dou-

- ble bond in any position, such as ethenyl, 1-propenyl, 2-propenyl, 1-methyl-ethenyl, 1-butenyl, 2-butenyl, 3-butenyl, 1-methyl-1-propenyl, 2-methyl-1-propenyl, 1-methyl-2-propenyl, 2-methyl-2-propenyl, 1-pentenyl, 2-pentenyl, 3-pentenyl, 4-pentenyl, 1-methyl-1-butenyl, 2-methyl-1-butenyl, 3-methyl-1-butenyl, 1-methyl-2-butenyl, 2-methyl-2-butenyl, 3-methyl-2-butenyl, 1-methyl-3-butenyl, 2-methyl-3-butenyl, 3-methyl-3-butenyl, 1,1-dimethyl-2-propenyl, 1,2-dimethyl-1-propenyl, 1,2-dimethyl-2-propenyl, 1-ethyl-1-propenyl, 1-ethyl-2-propenyl, 1-hexenyl, 2-hexenyl, 3-hexenyl, 4-hexenyl, 5-hexenyl, 1-methyl-1-pentenyl, 2-methyl-1-pentenyl, 3-methyl-1-pentenyl, 4-methyl-1-pentenyl, 1-methyl-2-pentenyl, 2-methyl-2-pentenyl, 3-methyl-2-pentenyl, 4-methyl-2-pentenyl, 1-methyl-3-pentenyl, 2-methyl-3-pentenyl, 3-methyl-3-pentenyl, 4-methyl-3-pentenyl, 1-methyl-4-pentenyl, 2-methyl-4-pentenyl, 3-methyl-4-pentenyl, 4-methyl-4-pentenyl, 1,1-dimethyl-2-butenyl, 1,1-dimethyl-3-butenyl, 1,2-dimethyl-1-butenyl, 1,2-dimethyl-2-butenyl, 1,2-dimethyl-3-butenyl, 1,3-dimethyl-1-butenyl, 1,3-dimethyl-2-butenyl, 1,3-dimethyl-3-butenyl, 2,2-dimethyl-3-butenyl, 2,3-dimethyl-1-butenyl, 2,3-dimethyl-2-butenyl, 2,3-dimethyl-3-butenyl, 3,3-dimethyl-1-butenyl, 3,3-dimethyl-2-butenyl, 1-ethyl-1-butenyl, 1-ethyl-2-butenyl, 1-ethyl-3-butenyl, 2-ethyl-1-butenyl, 2-ethyl-2-butenyl, 2-ethyl-3-butenyl, 1,1,2-trimethyl-2-propenyl, 1-ethyl-1-methyl-2-propenyl, 1-ethyl-2-methyl-1-propenyl and 1-ethyl-2-methyl-2-propenyl.
- 20 The term " C_2 - C_m -alkynyl" as used herein refers to a branched or unbranched unsaturated hydrocarbon group having 2 to m, e.g. 2 to 10 or 2 to 6 carbon atoms and containing at least one triple bond, such as ethynyl, propynyl, 1-butylnyl, 2-butylnyl, and the like.
- 25 The term " C_1 - C_4 -alkoxy- C_1 - C_4 -alkyl" as used herein refers to alkyl having 1 to 4 carbon atoms, e.g. like specific examples mentioned above, wherein one hydrogen atom of the alkyl radical is replaced by an C_1 - C_4 -alkoxy group.
- 30 The term " C_1 - C_4 -alkylthio- C_1 - C_4 -alkyl" as used herein refers to alkyl having 1 to 4 carbon atoms, wherein one hydrogen atom of the alkyl radical is replaced by a C_1 - C_4 -alkylthio group.
- 35 The term " C_3 - C_m -cycloalkyl" as used herein refers to a monocyclic 3- to m-membered saturated cycloaliphatic radicals, e.g. cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cycloheptyl, cyclooctyl and cyclodecyl.
- The term "aryl" as used herein refers to an aromatic hydrocarbon radical such as naphthyl or in particular phenyl.
- 40 The term "aryl- C_1 - C_4 -alkyl" as used herein refers to an aromatic hydrocarbon radical, which is bound to the remainder of the molecule via a C_1 - C_4 -alkylene group, examples comprise benzyl, 1-phenylethyl or 2-phenylethyl.

The term "3- to 7" or "5- to 7"-membered heterocyclyl" or "membered heterocyclic group" as used herein (and also in "heterocyclyl-C₁-C₄-alkyl") refers to a saturated, fully or partially unsaturated or aromatic heterocyclic radicals having 3 to 7 or 5 to 7 ring members, wherein 1, 2 or 3 ring members are heteroatoms selected from O, N and S or heteroatom groups, selected from S=O, S(O)₂ or N-R with R being H or alkyl. Examples for non-aromatic rings include azetidyl, pyrrolidinyl, pyrazolinyl, imidazolinyl, pyrrolinyl, pyrazolinyl, imidazolinyl, tetrahydrofuranyl, dihydrofuranyl, 1,3-dioxolanyl, dioxolenyl, thiolanyl, dihydrothienyl, oxazolidinyl, isoxazolidinyl, oxazolinyl, isoxazolinyl, thiazolinyl, isothiazolinyl, thiazolidinyl, isothiazolidinyl, oxathiolanyl, piperidinyl, piperazinyl, pyranyl, dihydropyranyl, tetrahydropyranyl, dioxanyl, thiopyranyl, dihydrothiopyranyl, tetrahydrothiopyranyl, morpholinyl, thiazinyl and the like. Examples for aromatic rings are listed in the following paragraph.

The term "3- to 7" or "5- to 7"-membered heteroaryl" or "membered heteroaromatic group" as used herein (and also in "heteroaryl-C₁-C₄-alkyl") refers to an aromatic heterocyclic radical having 3 to 7 or 5 to 7 ring members, wherein 1, 2 or 3 ring members are heteroatoms selected from O, N and S or heteroatom groups, selected from S=O, S(O)₂ or N-R with R being H or alkyl. Examples for monocyclic 3- to 7-membered heteroaromatic rings include triazinyl, pyrazinyl, pyrimidyl, pyridazinyl, pyridyl, thienyl, furyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, tetrazolyl, thiazolyl, oxazolyl, thiadiazolyl, oxadiazolyl, isothiazolyl and isoxazolyl.

The terms "heterocyclyl-C₁-C₄-alkyl" as used herein refer to aromatic and non-aromatic saturated, fully or partially unsaturated heterocyclic and the terms "heteroaryl-C₁-C₄-alkyl" as used herein refer to aromatic radicals, which are both bound to the remainder of the molecule via a C₁-C₄-alkylene group.

Preferences

With respect to the use according to the invention of the 3-amino-1,2-benzisothiazole compounds of formula I, particular preference is given to the following meanings of the substituents and variables, in each case on their own or in combination:

Preference is given to 3-amino-1,2 benzisothiazole compounds of formula I, wherein A is A³.

Preferred are 3-amino-1,2 benzisothiazole compounds of formula I, wherein n is 2 and A is selected from A¹ or A².

Preferred are especially 3-amino-1,2 benzisothiazole compounds of formula I, wherein n is 1 and A is A³.

Preferred are also 3-amino-1,2 benzisothiazole compounds of formula I, wherein n is 0 and A is A³.

5 Preference is given to 3-amino-1,2 benzisothiazole compounds of formula I, wherein R¹ is selected from halogen, C₁-C₆-alkyl, C₁-C₆-haloalkyl, C₁-C₆-alkoxy and C₁-C₆-haloalkoxy.

Preference is especially given to 3-amino-1,2 benzisothiazole compounds of formula I, wherein R¹ is selected from halogen, C₁-C₆-alkoxy and C₁-C₆-haloalkoxy.

10 Most preferred are 3-amino-1,2 benzisothiazole compounds of formula I, wherein R¹ is selected from fluoro, chloro, difluoromethoxy, dichloromethoxy, trifluoromethoxy or trichloromethoxy.

15 Preference is given to 3-amino-1,2 benzisothiazole compounds of formula I, wherein R², R³ and R⁴ are independently from one another selected from the group consisting of hydrogen and F, Cl, Br or J.

Preference is especially given to 3-amino-1,2 benzisothiazole compounds of formula I, wherein R², R³ and R⁴ are independently from one another selected from hydrogen or fluoro.

20 Most preferred are 3-amino-1,2 benzisothiazole compounds of formula I, wherein R², R³ and R⁴ are hydrogen.

25 Preference is given to 3-amino-1,2 benzisothiazole compounds of formula I, wherein when A is selected from A¹ and R⁵ and R⁶ form together with the sulfur atom they are bound to a saturated, partially or fully unsaturated or aromatic 5, 6 or 7-membered heterocyclic ring, optionally substituted by 1, 2, 3 or 4 radicals selected from C₁-C₅-alkyl and halogen, which may contain, in addition to the sulfur atom, 1, 2 or 3 unsubstituted or substituted heteroatoms selected from O, CO, S, SO, SO₂, N, NH, or N-C₁-C₆-alkyl.

30 Preference is given to 3-amino-1,2 benzisothiazole compounds of formula I, wherein when A is selected from A² and R⁷ and R⁸ form together with the sulfur atom and the nitrogen atom they are bound to a saturated, partially or fully unsaturated or aromatic 5, 6 or 7-membered heterocyclic ring, optionally substituted by 1, 2, 3 or 4 radicals selected from C₁-C₅-alkyl and halogen, which may contain, in addition to the sulfur atom, 1, 2 or 3 unsubstituted or substituted heteroatoms selected from O, CO, S, SO, SO₂, N, NH, or N-C₁-C₆-alkyl.

40 Preference is especially given to 3-amino-1,2 benzisothiazole compounds of formula I, wherein A is A¹ or A² and R⁵ and R⁶ or respectively R⁷ and R⁸ are independently from one another selected from C₁-C₆-alkyl or C₃-C₁₀-cycloalkyl, which both may be unsubstituted, partially or fully halogenated.

Most preferred are 3-amino-1,2 benzisothiazole compounds of formula I, wherein A is A¹ or A² and R⁵ and R⁶ or respectively R⁷ and R⁸ are independently from one another

selected from methyl, ethyl, n-propyl, i-propyl, which may be unsubstituted, partially or fully halogenated.

Preference is given to 3-amino-1,2 benzisothiazole compounds of formula I, wherein A is A³, R⁹ is C₁-C₆-alkyl and R¹⁰ is selected from C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₁-C₆-alkoxy, C₃-C₁₀-cycloalkyl and phenyl, wherein the radicals may be unsubstituted, partially or fully halogenated and/or may carry one or more radicals, independently of one another each selected from the group consisting of CN, NO₂, NH₂, C₁-C₆-alkoxy, C₁-C₆-alkylthio, C₁-C₆-alkylsulfinyl, C₁-C₆-alkylsulfonyl, C₁-C₆-haloalkoxy, C₁-C₆-haloalkylthio, C₁-C₆-alkoxycarbonyl, (C₁-C₁₀-alkyl)amino, di-(C₁-C₁₀-alkyl)amino, C₃-C₁₀-cycloalkyl and phenyl, it being possible for phenyl to be unsubstituted, partially or fully halogenated and/or to carry one or more substituents, independently of one another selected from the group consisting of C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy and C₁-C₄-haloalkoxy.

Preference is also given to 3-amino-1,2 benzisothiazole compounds of formula I, wherein A is A³, R⁹ is selected from hydrogen or C₁-C₆-alkyl and R¹⁰ is selected from pyridine, pyrazine, pyrimidine, pyrazole, imidazole, triazole, thiophene, thiazole, oxazole, furan, isothiazole, isoxazole, piperidine, tetrahydrofuran, dihydrofuran, thiolan, dihydrothiophen, pyrrolidine, dihydropyrrol, dihydropyrazole, dihydrooxazole, dihydrothiazole, oxathiolan or oxazolidine, each ring optionally substituted with 1 to 3 substituents independently of one another selected from the group consisting of CN, OH, NO₂, NH₂, C₁-C₆-alkyl, C₁-C₆-haloalkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₁-C₆-alkylthio, C₁-C₆-alkylsulfinyl, C₁-C₆-alkylsulfonyl, C₁-C₆-haloalkylthio, C₁-C₆-alkoxycarbonyl, (C₁-C₁₀-alkyl)amino, di-(C₁-C₁₀-alkyl)amino, C₃-C₁₀-cycloalkyl, phenyl and 5- or 6-membered heteroaromatic ring, it being possible for the aromatic or heteroaromatic rings to be unsubstituted, partially or fully halogenated and/or to carry one or more substituents, independently of one another selected from the group consisting of C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy, C₁-C₄-haloalkoxy, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₂-C₆-haloalkenyl, C₂-C₆-haloalkynyl, CN, NO₂, NH₂, C₁-C₆-alkylthio, C₁-C₆-alkylsulfinyl, C₁-C₆-alkylsulfonyl, C₁-C₆-haloalkylthio, C₂-C₆-alkoxycarbonyl, C₂-C₆-alkylaminocarbonyl, C₃-C₆-dialkylaminocarbonyl, (C₁-C₁₀-alkyl)amino, di-(C₁-C₁₀-alkyl)amino, C₃-C₁₀-cycloalkyl, C₃-C₁₀-halocycloalkyl, C₃-C₁₀-cycloalkylamino, C₂-C₆-alkylcarbonyl.

Preference is especially given to 3-amino-1,2 benzisothiazole compounds of formula I, wherein A is A³, R⁹ is selected from hydrogen or C₁-C₆-alkyl and R¹⁰ is selected from pyridine, pyrazine, pyrimidine, pyrazole, imidazole, triazole, thiophene, thiazole, oxazole, furan, isothiazole, isoxazole, piperidine, tetrahydrofuran, dihydrofuran, thiolan, dihydrothiophen, pyrrolidine, dihydropyrrol, dihydropyrazole, dihydrooxazole, dihydrothiazole, oxathiolan or oxazolidine, each ring optionally substituted with one to three substituents independently of one another selected from the group consisting of CN, OH, NO₂, NH₂, C₁-C₆-alkyl, C₁-C₆-haloalkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₁-C₆-alkylthio, C₁-C₆-alkylsulfinyl, C₁-C₆-alkylsulfonyl, C₁-C₆-haloalkylthio, C₁-C₆-

alkoxycarbonyl, (C₁-C₁₀-alkyl)amino, di-(C₁-C₁₀-alkyl)amino, C₃-C₁₀-cycloalkyl, phenyl, pyridine, pyrimidine, thiophene, isooxazol and isothiazol, it being possible for the aromatic or heteroaromatic rings to be unsubstituted, partially or fully halogenated and/or to carry one or more substituents, independently of one another selected from the

5 group consisting of C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy, C₁-C₄-haloalkoxy, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₂-C₆-haloalkenyl, C₂-C₆-haloalkynyl, cyano, nitro, amino, C₁-C₆-alkylthio, C₁-C₆-alkylsulfinyl, C₁-C₆-alkylsulfonyl and C₁-C₆-haloalkylthio.

Preference is given to 3-amino-1,2 benzisothiazole compounds of formula I, wherein R¹

10 is selected from halogen, C₁-C₆-alkoxy or C₁-C₆-haloalkoxy and R², R³ and R⁴ are independently of one another selected from the group consisting of hydrogen, F, Cl, Br or J.

Preference is especially given 3-amino-1,2 benzisothiazole compounds of formula I, wherein R¹ is selected from halogen, C₁-C₆-alkoxy or C₁-C₆-haloalkoxy and R², R³ and

15 R⁴ are hydrogen.

Preference is given to 3-amino-1,2 benzisothiazole compounds of formula I, wherein A is A¹, R¹ is selected from C₁-C₆-alkoxy or C₁-C₆-haloalkoxy, R², R³ and R⁴ are independently of one another selected from the group consisting of hydrogen, F, Cl, Br or J

20 and R⁵ and R⁶ are selected independently from each other from C₁-C₄-alkyl or form together with the sulfur atom as sole heteratom a 5 or 6 membered saturated heterocyclic ring.

Preference is given to 3-amino-1,2 benzisothiazole compounds of formula I, wherein A

25 is A³, R¹ is selected from C₁-C₆-alkoxy or C₁-C₆-haloalkoxy, R², R³ and R⁴ are independently of one another selected from the group consisting of hydrogen, F, Cl, Br or J, R⁹ is C₁-C₆-alkyl and R¹⁰ is selected from C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₁-C₆-alkoxy and C₃-C₁₀-cycloalkyl, wherein the carbon atoms-of all mentioned radicals may be unsubstituted, partially or fully halogenated and/or may carry one or more radi-

30 cals, independently of one another each selected from the group consisting of CN, NO₂, NH₂, C₁-C₆-alkoxy, C₁-C₆-alkylthio, C₁-C₆-alkylsulfinyl, C₁-C₆-alkylsulfonyl, C₁-C₆-haloalkoxy, C₁-C₆-haloalkylthio, C₁-C₆-alkoxycarbonyl, (C₁-C₁₀-alkyl)amino, C₃-C₁₀-cycloalkyl phenyl or a 5-or 6-membered heteroaromatic ring it being possible for each ring to be unsubstituted, partially or fully halogenated and/or to

35 carry one or more substituents, independently of one another selected from the group consisting of C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy, C₁-C₄-haloalkoxy, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₂-C₆-haloalkenyl, C₂-C₆-haloalkynyl, CN, NO₂, NH₂, C₁-C₆-alkylthio, C₁-C₆-alkylsulfinyl, C₁-C₆-alkylsulfonyl, C₁-C₆-haloalkylthio, C₂-C₆-alkoxycarbonyl, C₂-C₆-alkylaminocarbonyl, C₃-C₆-dialkylaminocarbonyl, (C₁-C₁₀-alkyl)amino, di-(C₁-C₁₀-alkyl)amino, C₃-C₁₀-cycloalkyl, C₃-C₁₀-halocycloalkyl, C₃-C₁₀-cycloalkylamino, C₂-C₆-alkylcarbonyl.

40

Preference is especially given to 3-amino-1,2 benzisothiazole compounds of formula I, wherein A is A³, n is 0, R¹ is selected from C₁-C₆-alkoxy or C₁-C₆-haloalkoxy, R², R³ and R⁴ are hydrogen, R⁹ is C₁-C₆-alkyl and R¹⁰ is selected from C₁-C₆-alkyl, C₃-C₁₀-cycloalkyl or phenyl, wherein the carbon atoms or the carbocyclic ring of the radicals
 5 may be unsubstituted, partially or fully halogenated and/or may carry one or more substituents, independently of one another selected from the group consisting of C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy, C₁-C₄-haloalkoxy, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₂-C₆-haloalkenyl, C₂-C₆-haloalkynyl, CN, NO₂, NH₂, C₁-C₆-alkylthio, C₁-C₆-alkylsulfinyl, C₁-C₆-alkylsulfonyl, C₁-C₆-haloalkylthio.

10

Most preferred are 3-amino-1,2 benzisothiazole compounds of formula I, wherein A is A³, n is 0, R¹ is selected from C₁-C₆-alkoxy or C₁-C₆-haloalkoxy, R², R³ and R⁴ are hydrogen, R⁹ is selected from hydrogen or C₁-C₆-alkyl and R¹⁰ is selected from pyridine, pyrazine, pyrimidine, pyrazole, imidazole, triazole, thiophene, thiazole, oxazole, furan,
 15 isothiazole, isoxazole, piperidine, tetrahydrofuran, dihydrofuran, thiolan, dihydrothiophen, pyrrolidine, dihydropyrrol, dihydropyrazole, dihydrooxazole, dihydrothiazole, oxathiolan or oxazolidine each ring optionally substituted with one to three substituents independently of one another selected from the group consisting of CN, OH, NO₂, NH₂, C₁-C₆-alkyl, C₁-C₆-haloalkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₁-C₆-alkylthio, C₁-C₆-alkylsulfinyl, C₁-C₆-alkylsulfonyl, C₁-C₆-haloalkylthio, C₁-C₆-alkoxycarbonyl, (C₁-C₁₀-alkyl)amino, di-(C₁-C₁₀-alkyl)amino, C₃-C₁₀-cycloalkyl, phenyl and 5- or 6-membered heteroaromatic ring, it being possible for the aromatic and heteroaromatic rings to be unsubstituted, partially or fully halogenated and/or to carry one or more substituents, independently of one another selected from the group consisting of C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy, C₁-C₄-haloalkoxy, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₂-C₆-haloalkenyl, C₂-C₆-haloalkynyl, CN, NO₂, NH₂, C₁-C₆-alkylthio, C₁-C₆-alkylsulfinyl, C₁-C₆-alkylsulfonyl, C₁-C₆-haloalkylthio, C₂-C₆-alkoxycarbonyl, C₂-C₆-alkylaminocarbonyl, C₃-C₆-dialkylaminocarbonyl, (C₁-C₁₀-alkyl)amino, di-(C₁-C₁₀-alkyl)amino, C₃-C₁₀-cycloalkyl, C₃-C₁₀-halocycloalkyl, C₃-C₁₀-cycloalkylamino, C₂-C₆-alkylcarbonyl.

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Examples of preferred compounds of formula I, wherein R¹, R², R³ and R⁴ are defined individually in the tables A1 to A154, and R⁵ and R⁶ or R⁹ and R¹⁰ are defined individually in the table A.

- 35 Table A1: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is H, R¹ is CH₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A2: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is H, R¹ is C₂H₅ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of
 40 table A;
- Table A3: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is H, R¹ is Cl and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;

- Table A4: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is H, R¹ is F and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 5 Table A5: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is H, R¹ is CF₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A6: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is H, R¹ is OCH₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 10 Table A7: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is H, R¹ is OC₂H₅ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A8: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is H, R¹ is OCF₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 15 Table A9: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is H, R¹ is OCHF₂ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A10: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is H, R¹ is OCCIF₂ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 20 Table A11: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is H, R¹ is OCF₂CHClF and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 25 Table A12: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is F, R¹ is CH₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A13: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is F, R¹ is C₂H₅ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 30 Table A14: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is F, R¹ is Cl and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A15: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is F, R¹ is F and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 35 Table A16: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is F, R¹ is CF₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 40 Table A17: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is F, R¹ is OCH₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;

- Table A18: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is F, R¹ is OC₂H₅ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 5 Table A19: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is F, R¹ is OCF₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A20: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is F, R¹ is OCHF₂ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 10 Table A21: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is F, R¹ is OCCIF₂ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A22: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is F, R¹ is OCF₂CHClF and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 15 Table A23: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is Cl, R¹ is CH₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A24: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is Cl, R¹ is C₂H₅ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 20 Table A25: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is Cl, R¹ is Cl and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 25 Table A26: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is Cl, R¹ is F and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A27: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is Cl, R¹ is CF₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 30 Table A28: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is Cl, R¹ is OCH₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A29: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is Cl, R¹ is OC₂H₅ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 35 Table A30: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is Cl, R¹ is OCF₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 40 Table A31: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is Cl, R¹ is OCHF₂ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;

- Table A32: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is Cl, R¹ is OCCIF₂ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 5 Table A33: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is Cl, R¹ is OCF₂CHClF and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A34: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is Br, R¹ is CH₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 10 Table A35: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is Br, R¹ is C₂H₅ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A36: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is Br, R¹ is Cl and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 15 Table A37: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is Br, R¹ is F and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A38: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is Br, R¹ is CF₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 20 Table A39: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is Br, R¹ is OCH₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 25 Table A40: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is Br, R¹ is OC₂H₅ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A41: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is Br, R¹ is OCF₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 30 Table A42: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is Br, R¹ is OCHF₂ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A43: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is Br, R¹ is OCCIF₂ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 35 Table A44: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is Br, R¹ is OCF₂CHClF and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 40 Table A45: Compounds of formula I, wherein each of R³ and R⁴ are H, R² is J, R¹ is CH₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;

- Table A46: Compounds of formula I, wherein each of R^3 and R^4 are H, R^2 is J, R^1 is C_2H_5 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 5 Table A47: Compounds of formula I, wherein each of R^3 and R^4 are H, R^2 is J, R^1 is Cl and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- Table A48: Compounds of formula I, wherein each of R^3 and R^4 are H, R^2 is J, R^1 is F and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 10 Table A49: Compounds of formula I, wherein each of R^3 and R^4 are H, R^2 is J, R^1 is CF_3 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- Table A50: Compounds of formula I, wherein each of R^3 and R^4 are H, R^2 is J, R^1 is OCH_3 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 15 Table A51: Compounds of formula I, wherein each of R^3 and R^4 are H, R^2 is J, R^1 is OC_2H_5 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- Table A52: Compounds of formula I, wherein each of R^3 and R^4 are H, R^2 is J, R^1 is OCF_3 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 20 Table A53: Compounds of formula I, wherein each of R^3 and R^4 are H, R^2 is J, R^1 is $OCHF_2$ and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- Table A54: Compounds of formula I, wherein each of R^3 and R^4 are H, R^2 is J, R^1 is $OCCIF_2$ and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 25 Table A55: Compounds of formula I, wherein each of R^3 and R^4 are H, R^2 is J, R^1 is OCF_2CHClF and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 30 Table A56: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is F, R^1 is CH_3 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- Table A57: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is F, R^1 is C_2H_5 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 35 Table A58: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is F, R^1 is Cl and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- Table A59: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is F, R^1 is F and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 40

- Table A60: Compounds of formula I, wherein each of R² and R⁴ are H, R³ is F, R¹ is CF₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 5 Table A61: Compounds of formula I, wherein each of R² and R⁴ are H, R³ is F, R¹ is OCH₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A62: Compounds of formula I, wherein each of R² and R⁴ are H, R³ is F, R¹ is OC₂H₅ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 10 Table A63: Compounds of formula I, wherein each of R² and R⁴ are H, R³ is F, R¹ is OCF₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A64: Compounds of formula I, wherein each of R² and R⁴ are H, R³ is F, R¹ is OCHF₂ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 15 Table A65: Compounds of formula I, wherein each of R² and R⁴ are H, R³ is F, R¹ is OCClF₂ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A66: Compounds of formula I, wherein each of R² and R⁴ are H, R³ is F, R¹ is OCF₂CHClF and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 20 Table A67: Compounds of formula I, wherein each of R² and R⁴ are H, R³ is Cl, R¹ is CH₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 25 Table A68: Compounds of formula I, wherein each of R² and R⁴ are H, R³ is Cl, R¹ is C₂H₅ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A69: Compounds of formula I, wherein each of R² and R⁴ are H, R³ is Cl, R¹ is Cl and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 30 Table A70: Compounds of formula I, wherein each of R² and R⁴ are H, R³ is Cl, R¹ is F and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A71: Compounds of formula I, wherein each of R² and R⁴ are H, R³ is Cl, R¹ is CF₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 35 Table A72: Compounds of formula I, wherein each of R² and R⁴ are H, R³ is Cl, R¹ is OCH₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 40 Table A73: Compounds of formula I, wherein each of R² and R⁴ are H, R³ is Cl, R¹ is OC₂H₅ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;

- Table A74: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is Cl, R^1 is OCF_3 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 5 Table A75: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is Cl, R^1 is $OCHF_2$ and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- Table A76: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is Cl, R^1 is $OCCIF_2$ and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 10 Table A77: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is Cl, R^1 is OCF_2CHClF and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- Table A78: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is Br, R^1 is CH_3 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 15 Table A79: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is Br, R^1 is C_2H_5 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- Table A80: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is Br, R^1 is Cl and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 20 Table A81: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is Br, R^1 is F and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 25 Table A82: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is Br, R^1 is CF_3 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- Table A83: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is Br, R^1 is OCH_3 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 30 Table A84: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is Br, R^1 is OC_2H_5 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- Table A85: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is Br, R^1 is OCF_3 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 35 Table A86: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is Br, R^1 is $OCHF_2$ and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 40 Table A87: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is Br, R^1 is $OCCIF_2$ and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;

- Table A88: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is Br, R^1 is OCF_2CHClF and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 5 Table A89: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is J, R^1 is CH_3 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- Table A90: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is J, R^1 is C_2H_5 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 10 Table A91: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is J, R^1 is Cl and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- Table A92: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is J, R^1 is F and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 15 Table A93: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is J, R^1 is CF_3 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- Table A94: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is J, R^1 is OCH_3 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 20 Table A95: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is J, R^1 is OC_2H_5 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 25 Table A96: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is J, R^1 is OCF_3 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- Table A97: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is J, R^1 is OCHF_2 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 30 Table A98: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is J, R^1 is OCClF_2 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- Table A99: Compounds of formula I, wherein each of R^2 and R^4 are H, R^3 is J, R^1 is OCF_2CHClF and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 35 Table A100: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is F, R^1 is CH_3 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 40 Table A101: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is F, R^1 is C_2H_5 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;

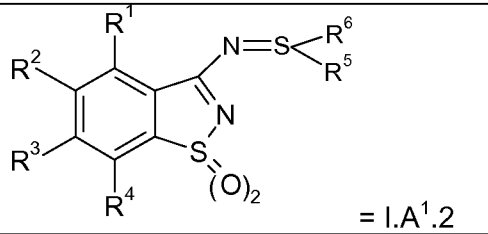
- Table A102: Compounds of formula I, wherein each of R² and R⁴ are H, R³ is J, R¹ is Cl and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 5 Table A103: Compounds of formula I, wherein each of R² and R⁴ are H, R³ is J, R¹ is F and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A104: Compounds of formula I, wherein each of R³ and R² are H, R⁴ is F, R¹ is CF₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 10 Table A105: Compounds of formula I, wherein each of R³ and R² are H, R⁴ is F, R¹ is OCH₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A106: Compounds of formula I, wherein each of R³ and R² are H, R⁴ is F, R¹ is OC₂H₅ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 15 Table A107: Compounds of formula I, wherein each of R³ and R² are H, R⁴ is F, R¹ is OCF₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A108: Compounds of formula I, wherein each of R³ and R² are H, R⁴ is F, R¹ is OCHF₂ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 20 Table A109: Compounds of formula I, wherein each of R³ and R² are H, R⁴ is F, R¹ is OCCIF₂ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 25 Table A110: Compounds of formula I, wherein each of R³ and R² are H, R⁴ is F, R¹ is OCF₂CHClF and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A111: Compounds of formula I, wherein each of R³ and R² are H, R⁴ is Cl, R¹ is CH₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 30 Table A112: Compounds of formula I, wherein each of R³ and R² are H, R⁴ is Cl, R¹ is C₂H₅ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A113: Compounds of formula I, wherein each of R³ and R² are H, R⁴ is Cl, R¹ is Cl and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 35 Table A114: Compounds of formula I, wherein each of R³ and R² are H, R⁴ is Cl, R¹ is F and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 40 Table A115: Compounds of formula I, wherein each of R³ and R² are H, R⁴ is Cl, R¹ is CF₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;

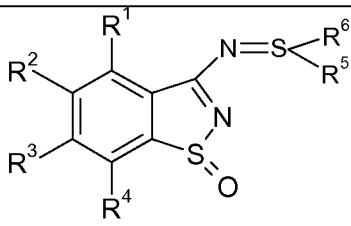
- Table A116: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is Cl, R^1 is OCH_3 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 5 Table A117: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is Cl, R^1 is OC_2H_5 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- Table A118: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is Cl, R^1 is OCF_3 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 10 Table A119: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is Cl, R^1 is $OCHF_2$ and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- Table A120: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is Cl, R^1 is $OCCIF_2$ and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 15 Table A121: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is Cl, R^1 is OCF_2CHClF and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- Table A122: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is Br, R^1 is CH_3 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 20 Table A123: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is Br, R^1 is C_2H_5 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 25 Table A124: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is Br, R^1 is Cl and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- Table A125: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is Br, R^1 is F and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 30 Table A126: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is Br, R^1 is CF_3 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- Table A127: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is Br, R^1 is OCH_3 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 35 Table A128: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is Br, R^1 is OC_2H_5 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 40 Table A129: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is Br, R^1 is OCF_3 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;

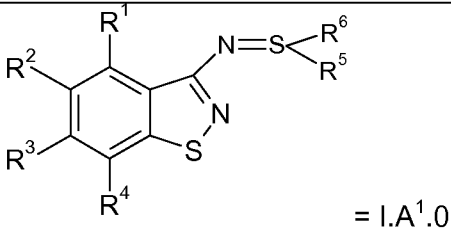
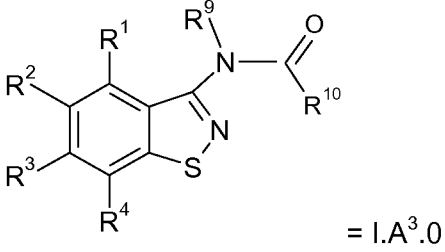
- Table A130: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is Br, R^1 is $OCHF_2$ and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 5 Table A131: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is Br, R^1 is $OCCIF_2$ and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- Table A132: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is Br, R^1 is OCF_2CHClF and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 10 Table A133: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is J, R^1 is CH_3 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- Table A134: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is J, R^1 is C_2H_5 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 15 Table A135: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is J, R^1 is Cl and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- Table A136: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is J, R^1 is F and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 20 Table A137: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is J, R^1 is CF_3 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 25 Table A138: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is J, R^1 is OCH_3 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- Table A139: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is J, R^1 is OC_2H_5 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 30 Table A140: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is J, R^1 is OCF_3 and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- Table A141: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is J, R^1 is $OCHF_2$ and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 35 Table A142: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is J, R^1 is $OCCIF_2$ and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;
- 40 Table A143: Compounds of formula I, wherein each of R^3 and R^2 are H, R^4 is J, R^1 is OCF_2CHClF and wherein R^5 and R^6 or R^9 and R^{10} are as defined in one row of table A;

- Table A144: Compounds of formula I, wherein each of R⁴ and R² are F, R³ is H, R¹ is CH₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 5 Table A145: Compounds of formula I, wherein each of R⁴ and R² are F, R³ is H, R¹ is C₂H₅ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A146: Compounds of formula I, wherein each of R⁴ and R² are F, R³ is H, R¹ is Cl and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 10 Table A147: Compounds of formula I, wherein each of R⁴ and R² are F, R³ is H, R¹ is F and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A148: Compounds of formula I, wherein each of R⁴ and R² are F, R³ is H, R¹ is CF₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 15 Table A149: Compounds of formula I, wherein each of R⁴ and R² are F, R³ is H, R¹ is OCH₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A150: Compounds of formula I, wherein each of R⁴ and R² are F, R³ is H, R¹ is OC₂H₅ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 20 Table A151: Compounds of formula I, wherein each of R⁴ and R² are F, R³ is H, R¹ is OCF₃ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A152: Compounds of formula I, wherein each of R⁴ and R² are F, R³ is H, R¹ is OCHF₂ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 25 Table A153: Compounds of formula I, wherein each of R⁴ and R² are F, R³ is H, R¹ is OCCIF₂ and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- Table A154: Compounds of formula I, wherein each of R⁴ and R² are F, R³ is H, R¹ is OCF₂CHCIF and wherein R⁵ and R⁶ or R⁹ and R¹⁰ are as defined in one row of table A;
- 30

35 Table A:

N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-1	 = I.A ¹ .2	CH ₃	CH ₃
C.I-2	I.A ¹ .2	CH ₃	CH ₃ CH ₂
C.I-3	I.A ¹ .2	CH ₃	CH ₃ CH ₂ CH ₂

N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-4	I.A ^{1.2}	CH ₃	(CH ₃) ₂ CH
C.I-5	I.A ^{1.2}	CH ₃	F ₃ C
C.I-6	I.A ^{1.2}	CH ₃ CH ₂	CH ₃ CH ₂
C.I-7	I.A ^{1.2}	CH ₃ CH ₂	CH ₃ CH ₂ CH ₂
C.I-8	I.A ^{1.2}	CH ₃ CH ₂	(CH ₃) ₂ CH
C.I-9	I.A ^{1.2}	CH ₃ CH ₂	F ₃ C
C.I-10	I.A ^{1.2}	CH ₃ CH ₂ CH ₂	CH ₃ CH ₂ CH ₂
C.I-11	I.A ^{1.2}	CH ₃ CH ₂ CH ₂	(CH ₃) ₂ CH
C.I-12	I.A ^{1.2}	CH ₃ CH ₂ CH ₂	F ₃ C
C.I-13	I.A ^{1.2}	(CH ₃) ₂ CH	(CH ₃) ₂ CH
C.I-14	I.A ^{1.2}	(CH ₃) ₂ CH	F ₃ C
C.I-15	I.A ^{1.2}	F ₃ C	F ₃ C
C.I-16	I.A ^{1.2}	-CH ₂ -CH ₂ -CH ₂ -CH ₂ -	
C.I-17	I.A ^{1.2}	-CH ₂ -CH ₂ -CH ₂ -CH ₂ -CH ₂ -	
C.I-18	I.A ^{1.2}	-CH ₂ -S-CH ₂ -CH ₂ -	
C.I-19	 = I.A ^{1.1}	CH ₃	CH ₃
C.I-20	I.A ^{1.1}	CH ₃	CH ₃ CH ₂
C.I-21	I.A ^{1.1}	CH ₃	CH ₃ CH ₂ CH ₂
C.I-22	I.A ^{1.1}	CH ₃	(CH ₃) ₂ CH
C.I-23	I.A ^{1.1}	CH ₃	F ₃ C
C.I-24	I.A ^{1.1}	CH ₃ CH ₂	CH ₃ CH ₂
C.I-25	I.A ^{1.1}	CH ₃ CH ₂	CH ₃ CH ₂ CH ₂
C.I-26	I.A ^{1.1}	CH ₃ CH ₂	(CH ₃) ₂ CH
C.I-27	I.A ^{1.1}	CH ₃ CH ₂	F ₃ C
C.I-28	I.A ^{1.1}	CH ₃ CH ₂ CH ₂	CH ₃ CH ₂ CH ₂
C.I-29	I.A ^{1.1}	CH ₃ CH ₂ CH ₂	(CH ₃) ₂ CH
C.I-30	I.A ^{1.1}	CH ₃ CH ₂ CH ₂	F ₃ C
C.I-31	I.A ^{1.1}	(CH ₃) ₂ CH	(CH ₃) ₂ CH
C.I-32	I.A ^{1.1}	(CH ₃) ₂ CH	F ₃ C
C.I-33	I.A ^{1.1}	F ₃ C	F ₃ C
C.I-34	I.A ^{1.1}	-CH ₂ -CH ₂ -CH ₂ -CH ₂ -	
C.I-35	I.A ^{1.1}	-CH ₂ -CH ₂ -CH ₂ -CH ₂ -CH ₂ -	
C.I-36	I.A ^{1.1}	-CH ₂ -S-CH ₂ -CH ₂ -	

N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-37	 = I.A ¹ .0	CH ₃	CH ₃
C.I-38	I.A ¹ .0	CH ₃	CH ₃ CH ₂
C.I-39	I.A ¹ .0	CH ₃	CH ₃ CH ₂ CH ₂
C.I-40	I.A ¹ .0	CH ₃	(CH ₃) ₂ CH
C.I-41	I.A ¹ .0	CH ₃	F ₃ C
C.I-42	I.A ¹ .0	CH ₃ CH ₂	CH ₃ CH ₂
C.I-43	I.A ¹ .0	CH ₃ CH ₂	CH ₃ CH ₂ CH ₂
C.I-44	I.A ¹ .0	CH ₃ CH ₂	(CH ₃) ₂ CH
C.I-45	I.A ¹ .0	CH ₃ CH ₂	F ₃ C
C.I-46	I.A ¹ .0	CH ₃ CH ₂ CH ₂	CH ₃ CH ₂ CH ₂
C.I-47	I.A ¹ .0	CH ₃ CH ₂ CH ₂	(CH ₃) ₂ CH
C.I-48	I.A ¹ .0	CH ₃ CH ₂ CH ₂	F ₃ C
C.I-49	I.A ¹ .0	(CH ₃) ₂ CH	(CH ₃) ₂ CH
C.I-50	I.A ¹ .0	(CH ₃) ₂ CH	F ₃ C
C.I-51	I.A ¹ .0	F ₃ C	F ₃ C
C.I-52	I.A ¹ .0	-CH ₂ -CH ₂ -CH ₂ -CH ₂ -	
C.I-53	I.A ¹ .0	-CH ₂ -CH ₂ -CH ₂ -CH ₂ -CH ₂ -	
C.I-54	I.A ¹ .0	-CH ₂ -S-CH ₂ -CH ₂ -	
C.I-55	 = I.A ³ .0	CH ₃	H
C.I-56	I.A ³ .0	CH ₃	F ₃ C
C.I-57	I.A ³ .0	CH ₃	Cl ₃ C
C.I-58	I.A ³ .0	CH ₃	Cl ₂ CH
C.I-59	I.A ³ .0	CH ₃	ClCH ₂
C.I-60	I.A ³ .0	CH ₃	CH ₃
C.I-61	I.A ³ .0	CH ₃	CH ₃ CH ₂
C.I-62	I.A ³ .0	CH ₃	(CH ₃) ₂ CH
C.I-63	I.A ³ .0	CH ₃	(CH ₃) ₃ C

N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-64	I.A ³ .0	CH ₃	CH ₃ CH ₂ CH ₂
C.I-65	I.A ³ .0	CH ₃	CH ₃ CH ₂ CH ₂ CH ₂
C.I-66	I.A ³ .0	CH ₃	(CH ₃) ₃ CCH ₂
C.I-67	I.A ³ .0	CH ₃	CH ₃ O
C.I-68	I.A ³ .0	CH ₃	CH ₃ CH ₂ O
C.I-69	I.A ³ .0	CH ₃	F ₃ CCH ₂ O
C.I-70	I.A ³ .0	CH ₃	CH ₃ NH
C.I-71	I.A ³ .0	CH ₃	CH ₃ CH ₂ NH
C.I-72	I.A ³ .0	CH ₃	(CH ₃) ₂ N
C.I-73	I.A ³ .0	CH ₃	(CH ₃ CH ₂) ₂ N
C.I-74	I.A ³ .0	CH ₃	(CH ₃ CH ₂)CH ₃ N
C.I-75	I.A ³ .0	CH ₃	C ₆ H ₅ NH
C.I-76	I.A ³ .0	CH ₃	(C ₆ H ₅)CH ₃ N
C.I-77	I.A ³ .0	CH ₃	(2,6-F ₂ C ₆ H ₃) NH
C.I-78	I.A ³ .0	CH ₃	(2,6-F ₂ C ₆ H ₃)CH ₃ N
C.I-79	I.A ³ .0	CH ₃	cyclopropyl
C.I-80	I.A ³ .0	CH ₃	cyclobutyl
C.I-81	I.A ³ .0	CH ₃	cyclopentyl
C.I-82	I.A ³ .0	CH ₃	cyclohexyl
C.I-83	I.A ³ .0	CH ₃	CNCH ₂
C.I-84	I.A ³ .0	CH ₃	CH ₃ OCH ₂
C.I-85	I.A ³ .0	CH ₃	CH ₃ CH ₂ OCH ₂
C.I-86	I.A ³ .0	CH ₃	CH ₃ OCH ₂ CH ₂
C.I-87	I.A ³ .0	CH ₃	F ₃ C CH ₂
C.I-88	I.A ³ .0	CH ₃	CH ₃ OCOCH ₂
C.I-89	I.A ³ .0	CH ₃	CH ₃ SCH ₂
C.I-90	I.A ³ .0	CH ₃	CH ₃ CH ₂ SCH ₂

N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-91	I.A ³ .0	CH ₃	CH ₃ SCH ₂ CH ₂
C.I-92	I.A ³ .0	CH ₃	C ₆ H ₅ CH ₂
C.I-93	I.A ³ .0	CH ₃	CH ₂ =CHCH ₂
C.I-94	I.A ³ .0	CH ₃	CH ₂ =CH
C.I-95	I.A ³ .0	CH ₃	CH ₃ CH=CH
C.I-96	I.A ³ .0	CH ₃	C ₆ H ₅
C.I-97	I.A ³ .0	CH ₃	2-F-C ₆ H ₄
C.I-98	I.A ³ .0	CH ₃	3-F-C ₆ H ₄
C.I-99	I.A ³ .0	CH ₃	4-F-C ₆ H ₄
C.I-100	I.A ³ .0	CH ₃	2-Cl-C ₆ H ₄
C.I-101	I.A ³ .0	CH ₃	3-Cl-C ₆ H ₄
C.I-102	I.A ³ .0	CH ₃	4-Cl-C ₆ H ₄
C.I-103	I.A ³ .0	CH ₃	2-CH ₃ -C ₆ H ₄
C.I-104	I.A ³ .0	CH ₃	3-CH ₃ -C ₆ H ₄
C.I-105	I.A ³ .0	CH ₃	4-CH ₃ -C ₆ H ₄
C.I-106	I.A ³ .0	CH ₃	2-CH ₃ O-C ₆ H ₄
C.I-107	I.A ³ .0	CH ₃	3-CH ₃ O-C ₆ H ₄
C.I-108	I.A ³ .0	CH ₃	4-CH ₃ O-C ₆ H ₄
C.I-109	I.A ³ .0	CH ₃	2-F ₃ C-C ₆ H ₄
C.I-110	I.A ³ .0	CH ₃	3-F ₃ C-C ₆ H ₄
C.I-111	I.A ³ .0	CH ₃	4-F ₃ C-C ₆ H ₄
C.I-112	I.A ³ .0	CH ₃	2-Br-C ₆ H ₄
C.I-113	I.A ³ .0	CH ₃	3-Br-C ₆ H ₄
C.I-114	I.A ³ .0	CH ₃	4-Br-C ₆ H ₄
C.I-115	I.A ³ .0	CH ₃	3-CN-C ₆ H ₄
C.I-116	I.A ³ .0	CH ₃	4-CN-C ₆ H ₄
C.I-117	I.A ³ .0	CH ₃	pyridin-2-yl

N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-118	I.A ³ .0	CH ₃	pyridin-3-yl
C.I-119	I.A ³ .0	CH ₃	pyridin-4-yl
C.I-120	I.A ³ .0	CH ₃	2-methyl-pyridin-5-yl
C.I-121	I.A ³ .0	CH ₃	3-methyl-pyridin-2-yl
C.I-122	I.A ³ .0	CH ₃	2-chloro-pyridin-3-yl
C.I-123	I.A ³ .0	CH ₃	2-chloro-pyridin-4-yl
C.I-124	I.A ³ .0	CH ₃	2-chloro-pyridin-5-yl
C.I-125	I.A ³ .0	CH ₃	2-chloro-pyridin-6-yl
C.I-126	I.A ³ .0	CH ₃	2-chloro-pyridin-6-yl
C.I-127	I.A ³ .0	CH ₃	4-trifluoromethyl-pyridin-3-yl
C.I-128	I.A ³ .0	CH ₃	3-methylthio-pyridin-3-yl
C.I-129	I.A ³ .0	CH ₃	2,3-dichloro-pyridin-5-yl
C.I-130	I.A ³ .0	CH ₃	2,5-dichloro-pyridin-3-yl
C.I-131	I.A ³ .0	CH ₃	2,6-dichloro-pyridin-3-yl
C.I-132	I.A ³ .0	CH ₃	3,5-dichloro-pyridin-4-yl
C.I-133	I.A ³ .0	CH ₃	N-methyl-pyrrol-2-yl
C.I-134	I.A ³ .0	CH ₃	pyrazin-2-yl
C.I-135	I.A ³ .0	CH ₃	4-trifluoromethyl-pyrimidin-5-yl
C.I-136	I.A ³ .0	CH ₃	furan-2-yl
C.I-137	I.A ³ .0	CH ₃	furan-3-yl
C.I-138	I.A ³ .0	CH ₃	2-tetrahydrofuranyl
C.I-139	I.A ³ .0	CH ₃	3-tetrahydrofuranyl
C.I-140	I.A ³ .0	CH ₃	thiophen-2-yl
C.I-141	I.A ³ .0	CH ₃	thiophen-3-yl

N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-142	I.A ³ .0	CH ₃	1-methyl-3-trifluoro- methyl-1H-pyrazol- 4-yl
C.I-143	I.A ³ .0	CH ₃	1-methyl-5-trifluoro- methyl-1H-pyrazol- 4-yl
C.I-144	I.A ³ .0	CH ₃	isoxazol-5-yl
C.I-145	I.A ³ .0	CH ₃	2,4-dimethyl- thiazol-5-yl
C.I-146	I.A ³ .0	CH ₃	4-trifluoromethyl- thiazol-5-yl
C.I-147	I.A ³ .0	CH ₃	3-methyl-isothiazol- 5-yl
C.I-148	I.A ³ .0	CH ₃	3,4-dichloro- isothiazol-5-yl
C.I-149	I.A ³ .0	CH ₃ CH ₂	H
C.I-150	I.A ³ .0	CH ₃ CH ₂	F ₃ C
C.I-151	I.A ³ .0	CH ₃ CH ₂	Cl ₃ C
C.I-152	I.A ³ .0	CH ₃ CH ₂	Cl ₂ CH
C.I-153	I.A ³ .0	CH ₃ CH ₂	ClCH ₂
C.I-154	I.A ³ .0	CH ₃ CH ₂	CH ₃
C.I-155	I.A ³ .0	CH ₃ CH ₂	CH ₃ CH ₂
C.I-156	I.A ³ .0	CH ₃ CH ₂	(CH ₃) ₂ CH
C.I-157	I.A ³ .0	CH ₃ CH ₂	(CH ₃) ₃ C
C.I-158	I.A ³ .0	CH ₃ CH ₂	CH ₃ CH ₂ CH ₂
C.I-159	I.A ³ .0	CH ₃ CH ₂	CH ₃ CH ₂ CH ₂ CH ₂
C.I-160	I.A ³ .0	CH ₃ CH ₂	(CH ₃) ₃ CCH ₂
C.I-161	I.A ³ .0	CH ₃ CH ₂	CH ₃ O
C.I-162	I.A ³ .0	CH ₃ CH ₂	CH ₃ CH ₂ O
C.I-163	I.A ³ .0	CH ₃ CH ₂	F ₃ CCH ₂ O
C.I-164	I.A ³ .0	CH ₃ CH ₂	CH ₃ NH
C.I-165	I.A ³ .0	CH ₃ CH ₂	CH ₃ CH ₂ NH

N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-166	I.A ³ .0	CH ₃ CH ₂	(CH ₃) ₂ N
C.I-167	I.A ³ .0	CH ₃ CH ₂	(CH ₃ CH ₂) ₂ N
C.I-168	I.A ³ .0	CH ₃ CH ₂	(CH ₃ CH ₂)CH ₃ N
C.I-169	I.A ³ .0	CH ₃ CH ₂	C ₆ H ₅ NH
C.I-170	I.A ³ .0	CH ₃ CH ₂	(C ₆ H ₅)CH ₃ N
C.I-171	I.A ³ .0	CH ₃ CH ₂	(2,6-F ₂ C ₆ H ₃) NH
C.I-172	I.A ³ .0	CH ₃ CH ₂	(2,6-F ₂ C ₆ H ₃)CH ₃ N
C.I-173	I.A ³ .0	CH ₃ CH ₂	cyclopropyl
C.I-174	I.A ³ .0	CH ₃ CH ₂	cyclobutyl
C.I-175	I.A ³ .0	CH ₃ CH ₂	cyclopentyl
C.I-176	I.A ³ .0	CH ₃ CH ₂	cyclohexyl
C.I-177	I.A ³ .0	CH ₃ CH ₂	CNCH ₂
C.I-178	I.A ³ .0	CH ₃ CH ₂	CH ₃ OCH ₂
C.I-179	I.A ³ .0	CH ₃ CH ₂	CH ₃ CH ₂ OCH ₂
C.I-180	I.A ³ .0	CH ₃ CH ₂	CH ₃ OCH ₂ CH ₂
C.I-181	I.A ³ .0	CH ₃ CH ₂	F ₃ C CH ₂
C.I-182	I.A ³ .0	CH ₃ CH ₂	CH ₃ OCOCH ₂
C.I-183	I.A ³ .0	CH ₃ CH ₂	CH ₃ SCH ₂
C.I-184	I.A ³ .0	CH ₃ CH ₂	CH ₃ CH ₂ SCH ₂
C.I-185	I.A ³ .0	CH ₃ CH ₂	CH ₃ SCH ₂ CH ₂
C.I-186	I.A ³ .0	CH ₃ CH ₂	C ₆ H ₅ CH ₂
C.I-187	I.A ³ .0	CH ₃ CH ₂	CH ₂ =CHCH ₂
C.I-188	I.A ³ .0	CH ₃ CH ₂	CH ₂ =CH
C.I-189	I.A ³ .0	CH ₃ CH ₂	CH ₃ CH=CH
C.I-190	I.A ³ .0	CH ₃ CH ₂	C ₆ H ₅
C.I-191	I.A ³ .0	CH ₃ CH ₂	2-F-C ₆ H ₄
C.I-192	I.A ³ .0	CH ₃ CH ₂	3-F-C ₆ H ₄

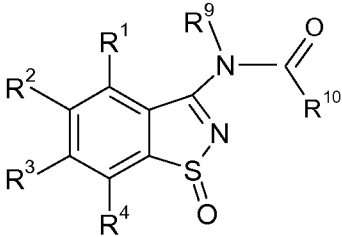
N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-193	I.A ³ .0	CH ₃ CH ₂	4-F-C ₆ H ₄
C.I-194	I.A ³ .0	CH ₃ CH ₂	2-Cl-C ₆ H ₄
C.I-195	I.A ³ .0	CH ₃ CH ₂	3-Cl-C ₆ H ₄
C.I-196	I.A ³ .0	CH ₃ CH ₂	4-Cl-C ₆ H ₄
C.I-197	I.A ³ .0	CH ₃ CH ₂	2-CH ₃ -C ₆ H ₄
C.I-198	I.A ³ .0	CH ₃ CH ₂	3-CH ₃ -C ₆ H ₄
C.I-199	I.A ³ .0	CH ₃ CH ₂	4-CH ₃ -C ₆ H ₄
C.I-200	I.A ³ .0	CH ₃ CH ₂	2-CH ₃ O-C ₆ H ₄
C.I-201	I.A ³ .0	CH ₃ CH ₂	3-CH ₃ O-C ₆ H ₄
C.I-202	I.A ³ .0	CH ₃ CH ₂	4-CH ₃ O-C ₆ H ₄
C.I-203	I.A ³ .0	CH ₃ CH ₂	2-F ₃ C-C ₆ H ₄
C.I-204	I.A ³ .0	CH ₃ CH ₂	3-F ₃ C-C ₆ H ₄
C.I-205	I.A ³ .0	CH ₃ CH ₂	4-F ₃ C-C ₆ H ₄
C.I-206	I.A ³ .0	CH ₃ CH ₂	2-Br-C ₆ H ₄
C.I-207	I.A ³ .0	CH ₃ CH ₂	3-Br-C ₆ H ₄
C.I-208	I.A ³ .0	CH ₃ CH ₂	4-Br-C ₆ H ₄
C.I-209	I.A ³ .0	CH ₃ CH ₂	3-CN-C ₆ H ₄
C.I-210	I.A ³ .0	CH ₃ CH ₂	4-CN-C ₆ H ₄
C.I-211	I.A ³ .0	CH ₃ CH ₂	pyridin-2-yl
C.I-212	I.A ³ .0	CH ₃ CH ₂	pyridin-3-yl
C.I-213	I.A ³ .0	CH ₃ CH ₂	pyridin-4-yl
C.I-214	I.A ³ .0	CH ₃ CH ₂	2-methyl-pyridin-5-yl
C.I-215	I.A ³ .0	CH ₃ CH ₂	3-methyl-pyridin-2-yl
C.I-216	I.A ³ .0	CH ₃ CH ₂	2-chloro-pyridin-3-yl
C.I-217	I.A ³ .0	CH ₃ CH ₂	2-chloro-pyridin-4-yl
C.I-218	I.A ³ .0	CH ₃ CH ₂	2-chloro-pyridin-5-yl

N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-219	I.A ³ .0	CH ₃ CH ₂	2-chloro-pyridin-6-yl
C.I-220	I.A ³ .0	CH ₃ CH ₂	2-chloro-pyridin-6-yl
C.I-221	I.A ³ .0	CH ₃ CH ₂	4-trifluoromethyl- pyridin-3-yl
C.I-222	I.A ³ .0	CH ₃ CH ₂	3-methylthio- pyridin-3-yl
C.I-223	I.A ³ .0	CH ₃ CH ₂	2,3-dichloro-pyridin- 5-yl
C.I-224	I.A ³ .0	CH ₃ CH ₂	2,5-dichloro-pyridin- 3-yl
C.I-225	I.A ³ .0	CH ₃ CH ₂	2,6-dichloro-pyridin- 3-yl
C.I-226	I.A ³ .0	CH ₃ CH ₂	3,5-dichloro-pyridin- 4-yl
C.I-227	I.A ³ .0	CH ₃ CH ₂	N-methypyrrol-2-yl
C.I-228	I.A ³ .0	CH ₃ CH ₂	pyrazin-2-yl
C.I-229	I.A ³ .0	CH ₃ CH ₂	4-trifluoromethyl- pyrimidin-5-yl
C.I-230	I.A ³ .0	CH ₃ CH ₂	furan-2-yl
C.I-231	I.A ³ .0	CH ₃ CH ₂	furan-3-yl
C.I-232	I.A ³ .0	CH ₃ CH ₂	2-tetrahydrofuranyl
C.I-233	I.A ³ .0	CH ₃ CH ₂	3-tetrahydrofuranyl
C.I-234	I.A ³ .0	CH ₃ CH ₂	thiophen-2-yl
C.I-235	I.A ³ .0	CH ₃ CH ₂	thiophen-3-yl
C.I-236	I.A ³ .0	CH ₃ CH ₂	1-methyl-3-trifluoro- methyl-1H-pyrazol- 4-yl
C.I-237	I.A ³ .0	CH ₃ CH ₂	1-methyl-5-trifluoro- methyl-1H-pyrazol- 4-yl
C.I-238	I.A ³ .0	CH ₃ CH ₂	isoxazol-5-yl
C.I-239	I.A ³ .0	CH ₃ CH ₂	2,4-dimethyl- thiazol-5-yl
C.I-240	I.A ³ .0	CH ₃ CH ₂	4-trifluoromethyl- thiazol-5-yl

N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-241	I.A ³ .0	CH ₃ CH ₂	3-methyl-isothiazol-5-yl
C.I-242	I.A ³ .0	CH ₃ CH ₂	3,4-dichloro-isothiazol-5-yl
C.I-243	I.A ³ .0	CH ₃ CH ₂ CH ₂	H
C.I-244	I.A ³ .0	CH ₃ CH ₂ CH ₂	F ₃ C
C.I-245	I.A ³ .0	CH ₃ CH ₂ CH ₂	Cl ₃ C
C.I-246	I.A ³ .0	CH ₃ CH ₂ CH ₂	Cl ₂ CH
C.I-247	I.A ³ .0	CH ₃ CH ₂ CH ₂	ClCH ₂
C.I-248	I.A ³ .0	CH ₃ CH ₂ CH ₂	CH ₃
C.I-249	I.A ³ .0	CH ₃ CH ₂ CH ₂	CH ₃ CH ₂
C.I-250	I.A ³ .0	CH ₃ CH ₂ CH ₂	(CH ₃) ₂ CH
C.I-251	I.A ³ .0	CH ₃ CH ₂ CH ₂	(CH ₃) ₃ C
C.I-252	I.A ³ .0	CH ₃ CH ₂ CH ₂	CH ₃ CH ₂ CH ₂
C.I-253	I.A ³ .0	CH ₃ CH ₂ CH ₂	CH ₃ CH ₂ CH ₂ CH ₂
C.I-254	I.A ³ .0	CH ₃ CH ₂ CH ₂	(CH ₃) ₃ CCH ₂
C.I-255	I.A ³ .0	CH ₃ CH ₂ CH ₂	CH ₃ O
C.I-256	I.A ³ .0	CH ₃ CH ₂ CH ₂	CH ₃ CH ₂ O
C.I-257	I.A ³ .0	CH ₃ CH ₂ CH ₂	F ₃ CCH ₂ O
C.I-258	I.A ³ .0	CH ₃ CH ₂ CH ₂	CH ₃ NH
C.I-259	I.A ³ .0	CH ₃ CH ₂ CH ₂	CH ₃ CH ₂ NH
C.I-260	I.A ³ .0	CH ₃ CH ₂ CH ₂	(CH ₃) ₂ N
C.I-261	I.A ³ .0	CH ₃ CH ₂ CH ₂	(CH ₃ CH ₂) ₂ N
C.I-262	I.A ³ .0	CH ₃ CH ₂ CH ₂	(CH ₃ CH ₂)CH ₃ N
C.I-263	I.A ³ .0	CH ₃ CH ₂ CH ₂	C ₆ H ₅ NH
C.I-264	I.A ³ .0	CH ₃ CH ₂ CH ₂	(C ₆ H ₅)CH ₃ N
C.I-265	I.A ³ .0	CH ₃ CH ₂ CH ₂	(2,6-F ₂ C ₆ H ₃) NH
C.I-266	I.A ³ .0	CH ₃ CH ₂ CH ₂	(2,6-F ₂ C ₆ H ₃)CH ₃ N

N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-267	I.A ³ .0	CH ₃ CH ₂ CH ₂	cyclopropyl
C.I-268	I.A ³ .0	CH ₃ CH ₂ CH ₂	cyclobutyl
C.I-269	I.A ³ .0	CH ₃ CH ₂ CH ₂	cyclopentyl
C.I-270	I.A ³ .0	CH ₃ CH ₂ CH ₂	cyclohexyl
C.I-271	I.A ³ .0	CH ₃ CH ₂ CH ₂	CNCH ₂
C.I-272	I.A ³ .0	CH ₃ CH ₂ CH ₂	CH ₃ OCH ₂
C.I-273	I.A ³ .0	CH ₃ CH ₂ CH ₂	CH ₃ CH ₂ OCH ₂
C.I-274	I.A ³ .0	CH ₃ CH ₂ CH ₂	CH ₃ OCH ₂ CH ₂
C.I-275	I.A ³ .0	CH ₃ CH ₂ CH ₂	F ₃ C CH ₂
C.I-276	I.A ³ .0	CH ₃ CH ₂ CH ₂	CH ₃ OCOCH ₂
C.I-277	I.A ³ .0	CH ₃ CH ₂ CH ₂	CH ₃ SCH ₂
C.I-278	I.A ³ .0	CH ₃ CH ₂ CH ₂	CH ₃ CH ₂ SCH ₂
C.I-279	I.A ³ .0	CH ₃ CH ₂ CH ₂	CH ₃ SCH ₂ CH ₂
C.I-280	I.A ³ .0	CH ₃ CH ₂ CH ₂	C ₆ H ₅ CH ₂
C.I-281	I.A ³ .0	CH ₃ CH ₂ CH ₂	CH ₂ =CHCH ₂
C.I-282	I.A ³ .0	CH ₃ CH ₂ CH ₂	CH ₂ =CH
C.I-283	I.A ³ .0	CH ₃ CH ₂ CH ₂	CH ₃ CH=CH
C.I-284	I.A ³ .0	CH ₃ CH ₂ CH ₂	C ₆ H ₅
C.I-285	I.A ³ .0	CH ₃ CH ₂ CH ₂	2-F-C ₆ H ₄
C.I-286	I.A ³ .0	CH ₃ CH ₂ CH ₂	3-F-C ₆ H ₄
C.I-287	I.A ³ .0	CH ₃ CH ₂ CH ₂	4-F-C ₆ H ₄
C.I-288	I.A ³ .0	CH ₃ CH ₂ CH ₂	2-Cl-C ₆ H ₄
C.I-289	I.A ³ .0	CH ₃ CH ₂ CH ₂	3-Cl-C ₆ H ₄
C.I-290	I.A ³ .0	CH ₃ CH ₂ CH ₂	4-Cl-C ₆ H ₄
C.I-291	I.A ³ .0	CH ₃ CH ₂ CH ₂	2-CH ₃ -C ₆ H ₄
C.I-292	I.A ³ .0	CH ₃ CH ₂ CH ₂	3-CH ₃ -C ₆ H ₄
C.I-293	I.A ³ .0	CH ₃ CH ₂ CH ₂	4-CH ₃ -C ₆ H ₄

N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-294	I.A ³ .0	CH ₃ CH ₂ CH ₂	2-CH ₃ O-C ₆ H ₄
C.I-295	I.A ³ .0	CH ₃ CH ₂ CH ₂	3-CH ₃ O-C ₆ H ₄
C.I-296	I.A ³ .0	CH ₃ CH ₂ CH ₂	4-CH ₃ O-C ₆ H ₄
C.I-297	I.A ³ .0	CH ₃ CH ₂ CH ₂	2-F ₃ C-C ₆ H ₄
C.I-298	I.A ³ .0	CH ₃ CH ₂ CH ₂	3-F ₃ C-C ₆ H ₄
C.I-299	I.A ³ .0	CH ₃ CH ₂ CH ₂	4-F ₃ C-C ₆ H ₄
C.I-300	I.A ³ .0	CH ₃ CH ₂ CH ₂	2-Br-C ₆ H ₄
C.I-301	I.A ³ .0	CH ₃ CH ₂ CH ₂	3-Br-C ₆ H ₄
C.I-302	I.A ³ .0	CH ₃ CH ₂ CH ₂	4-Br-C ₆ H ₄
C.I-303	I.A ³ .0	CH ₃ CH ₂ CH ₂	3-CN-C ₆ H ₄
C.I-304	I.A ³ .0	CH ₃ CH ₂ CH ₂	4-CN-C ₆ H ₄
C.I-305	I.A ³ .0	CH ₃ CH ₂ CH ₂	pyridin-2-yl
C.I-306	I.A ³ .0	CH ₃ CH ₂ CH ₂	pyridin-3-yl
C.I-307	I.A ³ .0	CH ₃ CH ₂ CH ₂	pyridin-4-yl
C.I-308	I.A ³ .0	CH ₃ CH ₂ CH ₂	2-methyl-pyridin-5-yl
C.I-309	I.A ³ .0	CH ₃ CH ₂ CH ₂	3-methyl-pyridin-2-yl
C.I-310	I.A ³ .0	CH ₃ CH ₂ CH ₂	2-chloro-pyridin-3-yl
C.I-311	I.A ³ .0	CH ₃ CH ₂ CH ₂	2-chloro-pyridin-4-yl
C.I-312	I.A ³ .0	CH ₃ CH ₂ CH ₂	2-chloro-pyridin-5-yl
C.I-313	I.A ³ .0	CH ₃ CH ₂ CH ₂	2-chloro-pyridin-6-yl
C.I-314	I.A ³ .0	CH ₃ CH ₂ CH ₂	2-chloro-pyridin-6-yl
C.I-315	I.A ³ .0	CH ₃ CH ₂ CH ₂	4-trifluoromethyl-pyridin-3-yl
C.I-316	I.A ³ .0	CH ₃ CH ₂ CH ₂	3-methylthio-pyridin-3-yl
C.I-317	I.A ³ .0	CH ₃ CH ₂ CH ₂	2,3-dichloro-pyridin-5-yl
C.I-318	I.A ³ .0	CH ₃ CH ₂ CH ₂	2,5-dichloro-pyridin-3-yl

N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-319	I.A ³ .0	CH ₃ CH ₂ CH ₂	2,6-dichloro-pyridin-3-yl
C.I-320	I.A ³ .0	CH ₃ CH ₂ CH ₂	3,5-dichloro-pyridin-4-yl
C.I-321	I.A ³ .0	CH ₃ CH ₂ CH ₂	N-methy-pyrrol-2-yl
C.I-322	I.A ³ .0	CH ₃ CH ₂ CH ₂	pyrazin-2-yl
C.I-323	I.A ³ .0	CH ₃ CH ₂ CH ₂	4-trifluoromethyl-pyrimidin-5-yl
C.I-324	I.A ³ .0	CH ₃ CH ₂ CH ₂	furan-2-yl
C.I-325	I.A ³ .0	CH ₃ CH ₂ CH ₂	furan-3-yl
C.I-326	I.A ³ .0	CH ₃ CH ₂ CH ₂	2-tetrahydrofuranyl
C.I-327	I.A ³ .0	CH ₃ CH ₂ CH ₂	3-tetrahydrofuranyl
C.I-328	I.A ³ .0	CH ₃ CH ₂ CH ₂	thiophen-2-yl
C.I-329	I.A ³ .0	CH ₃ CH ₂ CH ₂	thiophen-3-yl
C.I-330	I.A ³ .0	CH ₃ CH ₂ CH ₂	1-methyl-3-trifluoromethyl-1H-pyrazol-4-yl
C.I-331	I.A ³ .0	CH ₃ CH ₂ CH ₂	1-methyl-5-trifluoromethyl-1H-pyrazol-4-yl
C.I-332	I.A ³ .0	CH ₃ CH ₂ CH ₂	isoxazol-5-yl
C.I-333	I.A ³ .0	CH ₃ CH ₂ CH ₂	2,4-dimethyl-thiazol-5-yl
C.I-334	I.A ³ .0	CH ₃ CH ₂ CH ₂	4-trifluoromethyl-thiazol-5-yl
C.I-335	I.A ³ .0	CH ₃ CH ₂ CH ₂	3-methyl-isothiazol-5-yl
C.I-336	I.A ³ .0	CH ₃ CH ₂ CH ₂	3,4-dichloro-isothiazol-5-yl
C.I-337	 = I.A ³ .1	CH ₃	H
C.I-338	I.A ³ .1	CH ₃	F ₃ C

N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-339	I.A ³ .1	CH ₃	Cl ₃ C
C.I-340	I.A ³ .1	CH ₃	Cl ₂ CH
C.I-341	I.A ³ .1	CH ₃	ClCH ₂
C.I-342	I.A ³ .1	CH ₃	CH ₃
C.I-343	I.A ³ .1	CH ₃	CH ₃ CH ₂
C.I-344	I.A ³ .1	CH ₃	(CH ₃) ₂ CH
C.I-345	I.A ³ .1	CH ₃	(CH ₃) ₃ C
C.I-346	I.A ³ .1	CH ₃	CH ₃ CH ₂ CH ₂
C.I-347	I.A ³ .1	CH ₃	CH ₃ CH ₂ CH ₂ CH ₂
C.I-348	I.A ³ .1	CH ₃	(CH ₃) ₃ CCH ₂
C.I-349	I.A ³ .1	CH ₃	CH ₃ O
C.I-350	I.A ³ .1	CH ₃	CH ₃ CH ₂ O
C.I-351	I.A ³ .1	CH ₃	F ₃ CCH ₂ O
C.I-352	I.A ³ .1	CH ₃	CH ₃ NH
C.I-353	I.A ³ .1	CH ₃	CH ₃ CH ₂ NH
C.I-354	I.A ³ .1	CH ₃	(CH ₃) ₂ N
C.I-355	I.A ³ .1	CH ₃	(CH ₃ CH ₂) ₂ N
C.I-356	I.A ³ .1	CH ₃	(CH ₃ CH ₂)CH ₃ N
C.I-357	I.A ³ .1	CH ₃	C ₆ H ₅ NH
C.I-358	I.A ³ .1	CH ₃	(C ₆ H ₅)CH ₃ N
C.I-359	I.A ³ .1	CH ₃	(2,6-F ₂ C ₆ H ₃) NH
C.I-360	I.A ³ .1	CH ₃	(2,6-F ₂ C ₆ H ₃)CH ₃ N
C.I-361	I.A ³ .1	CH ₃	cyclopropyl
C.I-362	I.A ³ .1	CH ₃	cyclobutyl
C.I-363	I.A ³ .1	CH ₃	cyclopentyl
C.I-364	I.A ³ .1	CH ₃	cyclohexyl
C.I-365	I.A ³ .1	CH ₃	CNCH ₂

N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-366	I.A ³ .1	CH ₃	CH ₃ OCH ₂
C.I-367	I.A ³ .1	CH ₃	CH ₃ CH ₂ OCH ₂
C.I-368	I.A ³ .1	CH ₃	CH ₃ OCH ₂ CH ₂
C.I-369	I.A ³ .1	CH ₃	F ₃ C CH ₂
C.I-370	I.A ³ .1	CH ₃	CH ₃ OCOCH ₂
C.I-371	I.A ³ .1	CH ₃	CH ₃ SCH ₂
C.I-372	I.A ³ .1	CH ₃	CH ₃ CH ₂ SCH ₂
C.I-373	I.A ³ .1	CH ₃	CH ₃ SCH ₂ CH ₂
C.I-374	I.A ³ .1	CH ₃	C ₆ H ₅ CH ₂
C.I-375	I.A ³ .1	CH ₃	CH ₂ =CHCH ₂
C.I-376	I.A ³ .1	CH ₃	CH ₂ =CH
C.I-377	I.A ³ .1	CH ₃	CH ₃ CH=CH
C.I-378	I.A ³ .1	CH ₃	C ₆ H ₅
C.I-379	I.A ³ .1	CH ₃	2-F-C ₆ H ₄
C.I-380	I.A ³ .1	CH ₃	3-F-C ₆ H ₄
C.I-381	I.A ³ .1	CH ₃	4-F-C ₆ H ₄
C.I-382	I.A ³ .1	CH ₃	2-Cl-C ₆ H ₄
C.I-383	I.A ³ .1	CH ₃	3-Cl-C ₆ H ₄
C.I-384	I.A ³ .1	CH ₃	4-Cl-C ₆ H ₄
C.I-385	I.A ³ .1	CH ₃	2-CH ₃ -C ₆ H ₄
C.I-386	I.A ³ .1	CH ₃	3-CH ₃ -C ₆ H ₄
C.I-387	I.A ³ .1	CH ₃	4-CH ₃ -C ₆ H ₄
C.I-388	I.A ³ .1	CH ₃	2-CH ₃ O-C ₆ H ₄
C.I-389	I.A ³ .1	CH ₃	3-CH ₃ O-C ₆ H ₄
C.I-390	I.A ³ .1	CH ₃	4-CH ₃ O-C ₆ H ₄
C.I-391	I.A ³ .1	CH ₃	2-F ₃ C-C ₆ H ₄
C.I-392	I.A ³ .1	CH ₃	3-F ₃ C-C ₆ H ₄

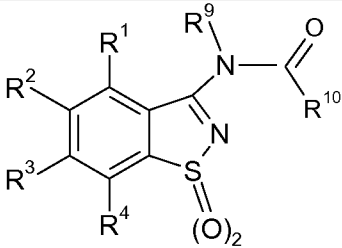
N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-393	I.A ³ .1	CH ₃	4-F ₃ C-C ₆ H ₄
C.I-394	I.A ³ .1	CH ₃	2-Br-C ₆ H ₄
C.I-395	I.A ³ .1	CH ₃	3-Br-C ₆ H ₄
C.I-396	I.A ³ .1	CH ₃	4-Br-C ₆ H ₄
C.I-397	I.A ³ .1	CH ₃	3-CN-C ₆ H ₄
C.I-398	I.A ³ .1	CH ₃	4-CN-C ₆ H ₄
C.I-399	I.A ³ .1	CH ₃	pyridin-2-yl
C.I-400	I.A ³ .1	CH ₃	pyridin-3-yl
C.I-401	I.A ³ .1	CH ₃	pyridin-4-yl
C.I-402	I.A ³ .1	CH ₃	2-methyl-pyridin-5-yl
C.I-403	I.A ³ .1	CH ₃	3-methyl-pyridin-2-yl
C.I-404	I.A ³ .1	CH ₃	2-chloro-pyridin-3-yl
C.I-405	I.A ³ .1	CH ₃	2-chloro-pyridin-4-yl
C.I-406	I.A ³ .1	CH ₃	2-chloro-pyridin-5-yl
C.I-407	I.A ³ .1	CH ₃	2-chloro-pyridin-6-yl
C.I-408	I.A ³ .1	CH ₃	2-chloro-pyridin-6-yl
C.I-409	I.A ³ .1	CH ₃	4-trifluoromethyl-pyridin-3-yl
C.I-410	I.A ³ .1	CH ₃	3-methylthio-pyridin-3-yl
C.I-411	I.A ³ .1	CH ₃	2,3-dichloro-pyridin-5-yl
C.I-412	I.A ³ .1	CH ₃	2,5-dichloro-pyridin-3-yl
C.I-413	I.A ³ .1	CH ₃	2,6-dichloro-pyridin-3-yl
C.I-414	I.A ³ .1	CH ₃	3,5-dichloro-pyridin-4-yl
C.I-415	I.A ³ .1	CH ₃	N-methyl-pyrrol-2-yl
C.I-416	I.A ³ .1	CH ₃	pyrazin-2-yl

N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-417	I.A ³ .1	CH ₃	4-trifluoromethyl-pyrimidin-5-yl
C.I-418	I.A ³ .1	CH ₃	furan-2-yl
C.I-419	I.A ³ .1	CH ₃	furan-3-yl
C.I-420	I.A ³ .1	CH ₃	2-tetrahydrofuranyl
C.I-421	I.A ³ .1	CH ₃	3-tetrahydrofuranyl
C.I-422	I.A ³ .1	CH ₃	thiophen-2-yl
C.I-423	I.A ³ .1	CH ₃	thiophen-3-yl
C.I-424	I.A ³ .1	CH ₃	1-methyl-3-trifluoromethyl-1H-pyrazol-4-yl
C.I-425	I.A ³ .1	CH ₃	1-methyl-5-trifluoromethyl-1H-pyrazol-4-yl
C.I-426	I.A ³ .1	CH ₃	isoxazol-5-yl
C.I-427	I.A ³ .1	CH ₃	2,4-dimethyl-thiazol-5-yl
C.I-428	I.A ³ .1	CH ₃	4-trifluoromethyl-thiazol-5-yl
C.I-429	I.A ³ .1	CH ₃	3-methyl-isothiazol-5-yl
C.I-430	I.A ³ .1	CH ₃	3,4-dichloro-isothiazol-5-yl
C.I-431	I.A ³ .1	CH ₃ CH ₂	H
C.I-432	I.A ³ .1	CH ₃ CH ₂	F ₃ C
C.I-433	I.A ³ .1	CH ₃ CH ₂	Cl ₃ C
C.I-434	I.A ³ .1	CH ₃ CH ₂	Cl ₂ CH
C.I-435	I.A ³ .1	CH ₃ CH ₂	ClCH ₂
C.I-436	I.A ³ .1	CH ₃ CH ₂	CH ₃
C.I-437	I.A ³ .1	CH ₃ CH ₂	CH ₃ CH ₂
C.I-438	I.A ³ .1	CH ₃ CH ₂	(CH ₃) ₂ CH
C.I-439	I.A ³ .1	CH ₃ CH ₂	(CH ₃) ₃ C
C.I-440	I.A ³ .1	CH ₃ CH ₂	CH ₃ CH ₂ CH ₂

N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-441	I.A ³ .1	CH ₃ CH ₂	CH ₃ CH ₂ CH ₂ CH ₂
C.I-442	I.A ³ .1	CH ₃ CH ₂	(CH ₃) ₃ CCH ₂
C.I-443	I.A ³ .1	CH ₃ CH ₂	CH ₃ O
C.I-444	I.A ³ .1	CH ₃ CH ₂	CH ₃ CH ₂ O
C.I-445	I.A ³ .1	CH ₃ CH ₂	F ₃ CCH ₂ O
C.I-446	I.A ³ .1	CH ₃ CH ₂	CH ₃ NH
C.I-447	I.A ³ .1	CH ₃ CH ₂	CH ₃ CH ₂ NH
C.I-448	I.A ³ .1	CH ₃ CH ₂	(CH ₃) ₂ N
C.I-449	I.A ³ .1	CH ₃ CH ₂	(CH ₃ CH ₂) ₂ N
C.I-450	I.A ³ .1	CH ₃ CH ₂	(CH ₃ CH ₂)CH ₃ N
C.I-451	I.A ³ .1	CH ₃ CH ₂	C ₆ H ₅ NH
C.I-452	I.A ³ .1	CH ₃ CH ₂	(C ₆ H ₅)CH ₃ N
C.I-453	I.A ³ .1	CH ₃ CH ₂	(2,6-F ₂ C ₆ H ₃) NH
C.I-454	I.A ³ .1	CH ₃ CH ₂	(2,6-F ₂ C ₆ H ₃)CH ₃ N
C.I-455	I.A ³ .1	CH ₃ CH ₂	cyclopropyl
C.I-456	I.A ³ .1	CH ₃ CH ₂	cyclobutyl
C.I-457	I.A ³ .1	CH ₃ CH ₂	cyclopentyl
C.I-458	I.A ³ .1	CH ₃ CH ₂	cyclohexyl
C.I-459	I.A ³ .1	CH ₃ CH ₂	CNCH ₂
C.I-460	I.A ³ .1	CH ₃ CH ₂	CH ₃ OCH ₂
C.I-461	I.A ³ .1	CH ₃ CH ₂	CH ₃ CH ₂ OCH ₂
C.I-462	I.A ³ .1	CH ₃ CH ₂	CH ₃ OCH ₂ CH ₂
C.I-463	I.A ³ .1	CH ₃ CH ₂	F ₃ C CH ₂
C.I-464	I.A ³ .1	CH ₃ CH ₂	CH ₃ OCOCH ₂
C.I-465	I.A ³ .1	CH ₃ CH ₂	CH ₃ SCH ₂
C.I-466	I.A ³ .1	CH ₃ CH ₂	CH ₃ CH ₂ SCH ₂
C.I-467	I.A ³ .1	CH ₃ CH ₂	CH ₃ SCH ₂ CH ₂

N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-468	I.A ³ .1	CH ₃ CH ₂	C ₆ H ₅ CH ₂
C.I-469	I.A ³ .1	CH ₃ CH ₂	CH ₂ =CHCH ₂
C.I-470	I.A ³ .1	CH ₃ CH ₂	CH ₂ =CH
C.I-471	I.A ³ .1	CH ₃ CH ₂	CH ₃ CH=CH
C.I-472	I.A ³ .1	CH ₃ CH ₂	C ₆ H ₅
C.I-473	I.A ³ .1	CH ₃ CH ₂	2-F-C ₆ H ₄
C.I-474	I.A ³ .1	CH ₃ CH ₂	3-F-C ₆ H ₄
C.I-475	I.A ³ .1	CH ₃ CH ₂	4-F-C ₆ H ₄
C.I-476	I.A ³ .1	CH ₃ CH ₂	2-Cl-C ₆ H ₄
C.I-477	I.A ³ .1	CH ₃ CH ₂	3-Cl-C ₆ H ₄
C.I-478	I.A ³ .1	CH ₃ CH ₂	4-Cl-C ₆ H ₄
C.I-479	I.A ³ .1	CH ₃ CH ₂	2-CH ₃ -C ₆ H ₄
C.I-480	I.A ³ .1	CH ₃ CH ₂	3-CH ₃ -C ₆ H ₄
C.I-481	I.A ³ .1	CH ₃ CH ₂	4-CH ₃ -C ₆ H ₄
C.I-482	I.A ³ .1	CH ₃ CH ₂	2-CH ₃ O-C ₆ H ₄
C.I-483	I.A ³ .1	CH ₃ CH ₂	3-CH ₃ O-C ₆ H ₄
C.I-484	I.A ³ .1	CH ₃ CH ₂	4-CH ₃ O-C ₆ H ₄
C.I-485	I.A ³ .1	CH ₃ CH ₂	2-F ₃ C-C ₆ H ₄
C.I-486	I.A ³ .1	CH ₃ CH ₂	3-F ₃ C-C ₆ H ₄
C.I-487	I.A ³ .1	CH ₃ CH ₂	4-F ₃ C-C ₆ H ₄
C.I-488	I.A ³ .1	CH ₃ CH ₂	2-Br-C ₆ H ₄
C.I-489	I.A ³ .1	CH ₃ CH ₂	3-Br-C ₆ H ₄
C.I-490	I.A ³ .1	CH ₃ CH ₂	4-Br-C ₆ H ₄
C.I-491	I.A ³ .1	CH ₃ CH ₂	3-CN-C ₆ H ₄
C.I-492	I.A ³ .1	CH ₃ CH ₂	4-CN-C ₆ H ₄
C.I-493	I.A ³ .1	CH ₃ CH ₂	pyridin-2-yl
C.I-494	I.A ³ .1	CH ₃ CH ₂	pyridin-3-yl

N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-495	I.A ³ .1	CH ₃ CH ₂	pyridin-4-yl
C.I-496	I.A ³ .1	CH ₃ CH ₂	2-methyl-pyridin-5-yl
C.I-497	I.A ³ .1	CH ₃ CH ₂	3-methyl-pyridin-2-yl
C.I-498	I.A ³ .1	CH ₃ CH ₂	2-chloro-pyridin-3-yl
C.I-499	I.A ³ .1	CH ₃ CH ₂	2-chloro-pyridin-4-yl
C.I-500	I.A ³ .1	CH ₃ CH ₂	2-chloro-pyridin-5-yl
C.I-501	I.A ³ .1	CH ₃ CH ₂	2-chloro-pyridin-6-yl
C.I-502	I.A ³ .1	CH ₃ CH ₂	2-chloro-pyridin-6-yl
C.I-503	I.A ³ .1	CH ₃ CH ₂	4-trifluoromethyl-pyridin-3-yl
C.I-504	I.A ³ .1	CH ₃ CH ₂	3-methylthio-pyridin-3-yl
C.I-505	I.A ³ .1	CH ₃ CH ₂	2,3-dichloro-pyridin-5-yl
C.I-506	I.A ³ .1	CH ₃ CH ₂	2,5-dichloro-pyridin-3-yl
C.I-507	I.A ³ .1	CH ₃ CH ₂	2,6-dichloro-pyridin-3-yl
C.I-508	I.A ³ .1	CH ₃ CH ₂	3,5-dichloro-pyridin-4-yl
C.I-509	I.A ³ .1	CH ₃ CH ₂	N-methylpyrrol-2-yl
C.I-510	I.A ³ .1	CH ₃ CH ₂	pyrazin-2-yl
C.I-511	I.A ³ .1	CH ₃ CH ₂	4-trifluoromethyl-pyrimidin-5-yl
C.I-512	I.A ³ .1	CH ₃ CH ₂	furan-2-yl
C.I-513	I.A ³ .1	CH ₃ CH ₂	furan-3-yl
C.I-514	I.A ³ .1	CH ₃ CH ₂	2-tetrahydrofuranyl
C.I-515	I.A ³ .1	CH ₃ CH ₂	3-tetrahydrofuranyl
C.I-516	I.A ³ .1	CH ₃ CH ₂	thiophen-2-yl
C.I-517	I.A ³ .1	CH ₃ CH ₂	thiophen-3-yl

N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-518	I.A ³ .1	CH ₃ CH ₂	1-methyl-3-trifluoromethyl-1H-pyrazol-4-yl
C.I-519	I.A ³ .1	CH ₃ CH ₂	1-methyl-5-trifluoromethyl-1H-pyrazol-4-yl
C.I-520	I.A ³ .1	CH ₃ CH ₂	isoxazol-5-yl
C.I-521	I.A ³ .1	CH ₃ CH ₂	2,4-dimethylthiazol-5-yl
C.I-522	I.A ³ .1	CH ₃ CH ₂	4-trifluoromethylthiazol-5-yl
C.I-523	I.A ³ .1	CH ₃ CH ₂	3-methyl-isothiazol-5-yl
C.I-524	I.A ³ .1	CH ₃ CH ₂	3,4-dichloroisothiazol-5-yl
C.I-525	 = I.A ³ .2	CH ₃	H
C.I-526	I.A ³ .2	CH ₃	F ₃ C
C.I-527	I.A ³ .2	CH ₃	Cl ₃ C
C.I-528	I.A ³ .2	CH ₃	Cl ₂ CH
C.I-529	I.A ³ .2	CH ₃	ClCH ₂
C.I-530	I.A ³ .2	CH ₃	CH ₃
C.I-531	I.A ³ .2	CH ₃	CH ₃ CH ₂
C.I-532	I.A ³ .2	CH ₃	(CH ₃) ₂ CH
C.I-533	I.A ³ .2	CH ₃	(CH ₃) ₃ C
C.I-534	I.A ³ .2	CH ₃	CH ₃ CH ₂ CH ₂
C.I-535	I.A ³ .2	CH ₃	CH ₃ CH ₂ CH ₂ CH ₂
C.I-536	I.A ³ .2	CH ₃	(CH ₃) ₃ CCH ₂
C.I-537	I.A ³ .2	CH ₃	CH ₃ O
C.I-538	I.A ³ .2	CH ₃	CH ₃ CH ₂ O

N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-539	I.A ³ .2	CH ₃	F ₃ CCH ₂ O
C.I-540	I.A ³ .2	CH ₃	CH ₃ NH
C.I-541	I.A ³ .2	CH ₃	CH ₃ CH ₂ NH
C.I-542	I.A ³ .2	CH ₃	(CH ₃) ₂ N
C.I-543	I.A ³ .2	CH ₃	(CH ₃ CH ₂) ₂ N
C.I-544	I.A ³ .2	CH ₃	(CH ₃ CH ₂)CH ₃ N
C.I-545	I.A ³ .2	CH ₃	C ₆ H ₅ NH
C.I-546	I.A ³ .2	CH ₃	(C ₆ H ₅)CH ₃ N
C.I-547	I.A ³ .2	CH ₃	(2,6-F ₂ C ₆ H ₃) NH
C.I-548	I.A ³ .2	CH ₃	(2,6-F ₂ C ₆ H ₃)CH ₃ N
C.I-549	I.A ³ .2	CH ₃	cyclopropyl
C.I-550	I.A ³ .2	CH ₃	cyclobutyl
C.I-551	I.A ³ .2	CH ₃	cyclopentyl
C.I-552	I.A ³ .2	CH ₃	cyclohexyl
C.I-553	I.A ³ .2	CH ₃	CNCH ₂
C.I-554	I.A ³ .2	CH ₃	CH ₃ OCH ₂
C.I-555	I.A ³ .2	CH ₃	CH ₃ CH ₂ OCH ₂
C.I-556	I.A ³ .2	CH ₃	CH ₃ OCH ₂ CH ₂
C.I-557	I.A ³ .2	CH ₃	F ₃ C CH ₂
C.I-558	I.A ³ .2	CH ₃	CH ₃ OCOCH ₂
C.I-559	I.A ³ .2	CH ₃	CH ₃ SCH ₂
C.I-560	I.A ³ .2	CH ₃	CH ₃ CH ₂ SCH ₂
C.I-561	I.A ³ .2	CH ₃	CH ₃ SCH ₂ CH ₂
C.I-562	I.A ³ .2	CH ₃	C ₆ H ₅ CH ₂
C.I-563	I.A ³ .2	CH ₃	CH ₂ =CHCH ₂
C.I-564	I.A ³ .2	CH ₃	CH ₂ =CH
C.I-565	I.A ³ .2	CH ₃	CH ₃ CH=CH

N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-566	I.A ³ .2	CH ₃	C ₆ H ₅
C.I-567	I.A ³ .2	CH ₃	2-F-C ₆ H ₄
C.I-568	I.A ³ .2	CH ₃	3-F-C ₆ H ₄
C.I-569	I.A ³ .2	CH ₃	4-F-C ₆ H ₄
C.I-570	I.A ³ .2	CH ₃	2-Cl-C ₆ H ₄
C.I-571	I.A ³ .2	CH ₃	3-Cl-C ₆ H ₄
C.I-572	I.A ³ .2	CH ₃	4-Cl-C ₆ H ₄
C.I-573	I.A ³ .2	CH ₃	2-CH ₃ -C ₆ H ₄
C.I-574	I.A ³ .2	CH ₃	3-CH ₃ -C ₆ H ₄
C.I-575	I.A ³ .2	CH ₃	4-CH ₃ -C ₆ H ₄
C.I-576	I.A ³ .2	CH ₃	2-CH ₃ O-C ₆ H ₄
C.I-577	I.A ³ .2	CH ₃	3-CH ₃ O-C ₆ H ₄
C.I-578	I.A ³ .2	CH ₃	4-CH ₃ O-C ₆ H ₄
C.I-579	I.A ³ .2	CH ₃	2-F ₃ C-C ₆ H ₄
C.I-580	I.A ³ .2	CH ₃	3-F ₃ C-C ₆ H ₄
C.I-581	I.A ³ .2	CH ₃	4-F ₃ C-C ₆ H ₄
C.I-582	I.A ³ .2	CH ₃	2-Br-C ₆ H ₄
C.I-583	I.A ³ .2	CH ₃	3-Br-C ₆ H ₄
C.I-584	I.A ³ .2	CH ₃	4-Br-C ₆ H ₄
C.I-585	I.A ³ .2	CH ₃	3-CN-C ₆ H ₄
C.I-586	I.A ³ .2	CH ₃	4-CN-C ₆ H ₄
C.I-587	I.A ³ .2	CH ₃	pyridin-2-yl
C.I-588	I.A ³ .2	CH ₃	pyridin-3-yl
C.I-589	I.A ³ .2	CH ₃	pyridin-4-yl
C.I-590	I.A ³ .2	CH ₃	2-methyl-pyridin-5-yl
C.I-591	I.A ³ .2	CH ₃	3-methyl-pyridin-2-yl

N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-592	I.A ³ .2	CH ₃	2-chloro-pyridin-3-yl
C.I-593	I.A ³ .2	CH ₃	2-chloro-pyridin-4-yl
C.I-594	I.A ³ .2	CH ₃	2-chloro-pyridin-5-yl
C.I-595	I.A ³ .2	CH ₃	2-chloro-pyridin-6-yl
C.I-596	I.A ³ .2	CH ₃	2-chloro-pyridin-6-yl
C.I-597	I.A ³ .2	CH ₃	4-trifluoromethyl- pyridin-3-yl
C.I-598	I.A ³ .2	CH ₃	3-methylthio- pyridin-3-yl
C.I-599	I.A ³ .2	CH ₃	2,3-dichloro-pyridin- 5-yl
C.I-600	I.A ³ .2	CH ₃	2,5-dichloro-pyridin- 3-yl
C.I-601	I.A ³ .2	CH ₃	2,6-dichloro-pyridin- 3-yl
C.I-602	I.A ³ .2	CH ₃	3,5-dichloro-pyridin- 4-yl
C.I-603	I.A ³ .2	CH ₃	N-methyl-pyrrol-2-yl
C.I-604	I.A ³ .2	CH ₃	pyrazin-2-yl
C.I-605	I.A ³ .2	CH ₃	4-trifluoromethyl- pyrimidin-5-yl
C.I-606	I.A ³ .2	CH ₃	furan-2-yl
C.I-607	I.A ³ .2	CH ₃	furan-3-yl
C.I-608	I.A ³ .2	CH ₃	2-tetrahydrofuranyl
C.I-609	I.A ³ .2	CH ₃	3-tetrahydrofuranyl
C.I-610	I.A ³ .2	CH ₃	thiophen-2-yl
C.I-611	I.A ³ .2	CH ₃	thiophen-3-yl
C.I-612	I.A ³ .2	CH ₃	1-methyl-3-trifluoro- methyl-1H-pyrazol- 4-yl
C.I-613	I.A ³ .2	CH ₃	1-methyl-5-trifluoro- methyl-1H-pyrazol- 4-yl
C.I-614	I.A ³ .2	CH ₃	isoxazol-5-yl

N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-615	I.A ³ .2	CH ₃	2,4-dimethyl-thiazol-5-yl
C.I-616	I.A ³ .2	CH ₃	4-trifluoromethyl-thiazol-5-yl
C.I-617	I.A ³ .2	CH ₃	3-methyl-isothiazol-5-yl
C.I-618	I.A ³ .2	CH ₃	3,4-dichloro-isothiazol-5-yl
C.I-619	I.A ³ .2	CH ₃ CH ₂	H
C.I-620	I.A ³ .2	CH ₃ CH ₂	F ₃ C
C.I-621	I.A ³ .2	CH ₃ CH ₂	Cl ₃ C
C.I-622	I.A ³ .2	CH ₃ CH ₂	Cl ₂ CH
C.I-623	I.A ³ .2	CH ₃ CH ₂	ClCH ₂
C.I-624	I.A ³ .2	CH ₃ CH ₂	CH ₃
C.I-625	I.A ³ .2	CH ₃ CH ₂	CH ₃ CH ₂
C.I-626	I.A ³ .2	CH ₃ CH ₂	(CH ₃) ₂ CH
C.I-627	I.A ³ .2	CH ₃ CH ₂	(CH ₃) ₃ C
C.I-628	I.A ³ .2	CH ₃ CH ₂	CH ₃ CH ₂ CH ₂
C.I-629	I.A ³ .2	CH ₃ CH ₂	CH ₃ CH ₂ CH ₂ CH ₂
C.I-630	I.A ³ .2	CH ₃ CH ₂	(CH ₃) ₃ CCH ₂
C.I-631	I.A ³ .2	CH ₃ CH ₂	CH ₃ O
C.I-632	I.A ³ .2	CH ₃ CH ₂	CH ₃ CH ₂ O
C.I-633	I.A ³ .2	CH ₃ CH ₂	F ₃ CCH ₂ O
C.I-634	I.A ³ .2	CH ₃ CH ₂	CH ₃ NH
C.I-635	I.A ³ .2	CH ₃ CH ₂	CH ₃ CH ₂ NH
C.I-636	I.A ³ .2	CH ₃ CH ₂	(CH ₃) ₂ N
C.I-637	I.A ³ .2	CH ₃ CH ₂	(CH ₃ CH ₂) ₂ N
C.I-638	I.A ³ .2	CH ₃ CH ₂	(CH ₃ CH ₂)CH ₃ N
C.I-639	I.A ³ .2	CH ₃ CH ₂	C ₆ H ₅ NH
C.I-640	I.A ³ .2	CH ₃ CH ₂	(C ₆ H ₅)CH ₃ N

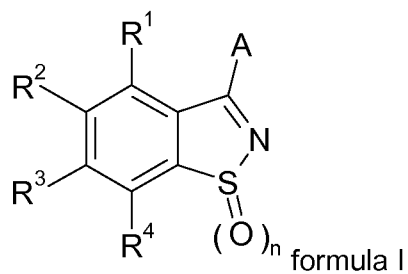
N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-641	I.A ³ .2	CH ₃ CH ₂	(2,6-F ₂ C ₆ H ₃) NH
C.I-642	I.A ³ .2	CH ₃ CH ₂	(2,6-F ₂ C ₆ H ₃)CH ₃ N
C.I-643	I.A ³ .2	CH ₃ CH ₂	cyclopropyl
C.I-644	I.A ³ .2	CH ₃ CH ₂	cyclobutyl
C.I-645	I.A ³ .2	CH ₃ CH ₂	cyclopentyl
C.I-646	I.A ³ .2	CH ₃ CH ₂	cyclohexyl
C.I-647	I.A ³ .2	CH ₃ CH ₂	CNCH ₂
C.I-648	I.A ³ .2	CH ₃ CH ₂	CH ₃ OCH ₂
C.I-649	I.A ³ .2	CH ₃ CH ₂	CH ₃ CH ₂ OCH ₂
C.I-650	I.A ³ .2	CH ₃ CH ₂	CH ₃ OCH ₂ CH ₂
C.I-651	I.A ³ .2	CH ₃ CH ₂	F ₃ C CH ₂
C.I-652	I.A ³ .2	CH ₃ CH ₂	CH ₃ OCOCH ₂
C.I-653	I.A ³ .2	CH ₃ CH ₂	CH ₃ SCH ₂
C.I-654	I.A ³ .2	CH ₃ CH ₂	CH ₃ CH ₂ SCH ₂
C.I-655	I.A ³ .2	CH ₃ CH ₂	CH ₃ SCH ₂ CH ₂
C.I-656	I.A ³ .2	CH ₃ CH ₂	C ₆ H ₅ CH ₂
C.I-657	I.A ³ .2	CH ₃ CH ₂	CH ₂ =CHCH ₂
C.I-658	I.A ³ .2	CH ₃ CH ₂	CH ₂ =CH
C.I-659	I.A ³ .2	CH ₃ CH ₂	CH ₃ CH=CH
C.I-660	I.A ³ .2	CH ₃ CH ₂	C ₆ H ₅
C.I-661	I.A ³ .2	CH ₃ CH ₂	2-F-C ₆ H ₄
C.I-662	I.A ³ .2	CH ₃ CH ₂	3-F-C ₆ H ₄
C.I-663	I.A ³ .2	CH ₃ CH ₂	4-F-C ₆ H ₄
C.I-664	I.A ³ .2	CH ₃ CH ₂	2-Cl-C ₆ H ₄
C.I-665	I.A ³ .2	CH ₃ CH ₂	3-Cl-C ₆ H ₄
C.I-666	I.A ³ .2	CH ₃ CH ₂	4-Cl-C ₆ H ₄
C.I-667	I.A ³ .2	CH ₃ CH ₂	2-CH ₃ -C ₆ H ₄

N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-668	I.A ³ .2	CH ₃ CH ₂	3-CH ₃ -C ₆ H ₄
C.I-669	I.A ³ .2	CH ₃ CH ₂	4-CH ₃ -C ₆ H ₄
C.I-670	I.A ³ .2	CH ₃ CH ₂	2-CH ₃ O-C ₆ H ₄
C.I-671	I.A ³ .2	CH ₃ CH ₂	3-CH ₃ O-C ₆ H ₄
C.I-672	I.A ³ .2	CH ₃ CH ₂	4-CH ₃ O-C ₆ H ₄
C.I-673	I.A ³ .2	CH ₃ CH ₂	2-F ₃ C-C ₆ H ₄
C.I-674	I.A ³ .2	CH ₃ CH ₂	3-F ₃ C-C ₆ H ₄
C.I-675	I.A ³ .2	CH ₃ CH ₂	4-F ₃ C-C ₆ H ₄
C.I-676	I.A ³ .2	CH ₃ CH ₂	2-Br-C ₆ H ₄
C.I-677	I.A ³ .2	CH ₃ CH ₂	3-Br-C ₆ H ₄
C.I-678	I.A ³ .2	CH ₃ CH ₂	4-Br-C ₆ H ₄
C.I-679	I.A ³ .2	CH ₃ CH ₂	3-CN-C ₆ H ₄
C.I-680	I.A ³ .2	CH ₃ CH ₂	4-CN-C ₆ H ₄
C.I-681	I.A ³ .2	CH ₃ CH ₂	pyridin-2-yl
C.I-682	I.A ³ .2	CH ₃ CH ₂	pyridin-3-yl
C.I-683	I.A ³ .2	CH ₃ CH ₂	pyridin-4-yl
C.I-684	I.A ³ .2	CH ₃ CH ₂	2-methyl-pyridin-5-yl
C.I-685	I.A ³ .2	CH ₃ CH ₂	3-methyl-pyridin-2-yl
C.I-686	I.A ³ .2	CH ₃ CH ₂	2-chloro-pyridin-3-yl
C.I-687	I.A ³ .2	CH ₃ CH ₂	2-chloro-pyridin-4-yl
C.I-688	I.A ³ .2	CH ₃ CH ₂	2-chloro-pyridin-5-yl
C.I-689	I.A ³ .2	CH ₃ CH ₂	2-chloro-pyridin-6-yl
C.I-690	I.A ³ .2	CH ₃ CH ₂	2-chloro-pyridin-6-yl
C.I-691	I.A ³ .2	CH ₃ CH ₂	4-trifluoromethyl-pyridin-3-yl
C.I-692	I.A ³ .2	CH ₃ CH ₂	3-methylthio-pyridin-3-yl

N°	Formula	R ⁵ , resp. R ⁹	R ⁶ , resp. R ¹⁰
C.I-693	I.A ³ .2	CH ₃ CH ₂	2,3-dichloro-pyridin-5-yl
C.I-694	I.A ³ .2	CH ₃ CH ₂	2,5-dichloro-pyridin-3-yl
C.I-695	I.A ³ .2	CH ₃ CH ₂	2,6-dichloro-pyridin-3-yl
C.I-696	I.A ³ .2	CH ₃ CH ₂	3,5-dichloro-pyridin-4-yl
C.I-697	I.A ³ .2	CH ₃ CH ₂	N-methylpyrrol-2-yl
C.I-698	I.A ³ .2	CH ₃ CH ₂	pyrazin-2-yl
C.I-699	I.A ³ .2	CH ₃ CH ₂	4-trifluoromethyl-pyrimidin-5-yl
C.I-700	I.A ³ .2	CH ₃ CH ₂	furan-2-yl
C.I-701	I.A ³ .2	CH ₃ CH ₂	furan-3-yl
C.I-702	I.A ³ .2	CH ₃ CH ₂	2-tetrahydrofuranyl
C.I-703	I.A ³ .2	CH ₃ CH ₂	3-tetrahydrofuranyl
C.I-704	I.A ³ .2	CH ₃ CH ₂	thiophen-2-yl
C.I-705	I.A ³ .2	CH ₃ CH ₂	thiophen-3-yl
C.I-706	I.A ³ .2	CH ₃ CH ₂	1-methyl-3-trifluoromethyl-1H-pyrazol-4-yl
C.I-707	I.A ³ .2	CH ₃ CH ₂	1-methyl-5-trifluoromethyl-1H-pyrazol-4-yl
C.I-708	I.A ³ .2	CH ₃ CH ₂	isoxazol-5-yl
C.I-709	I.A ³ .2	CH ₃ CH ₂	2,4-dimethyl-thiazol-5-yl
C.I-710	I.A ³ .2	CH ₃ CH ₂	4-trifluoromethyl-thiazol-5-yl
C.I-711	I.A ³ .2	CH ₃ CH ₂	3-methyl-isothiazol-5-yl
C.I-712	I.A ³ .2	CH ₃ CH ₂	3,4-dichloro-isothiazol-5-yl

Preparation methods

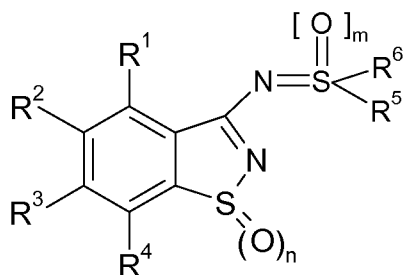
Compounds of the formula I



wherein A has the meaning

5

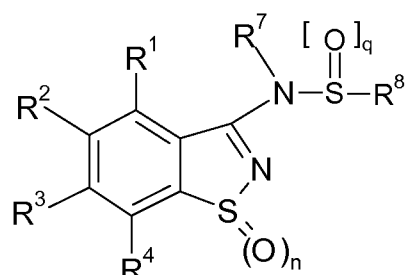
A¹:



(I-A¹)

or

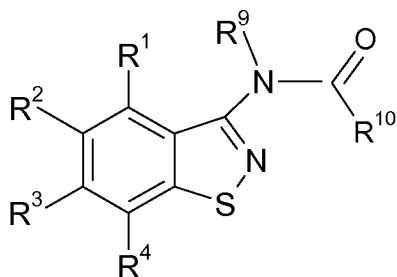
A²:



(I-A²)

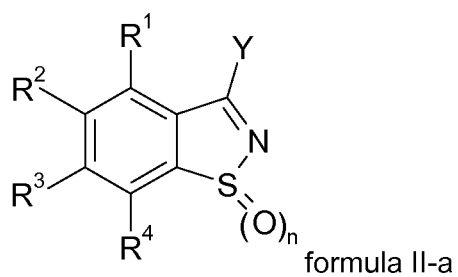
or

10 or A³:



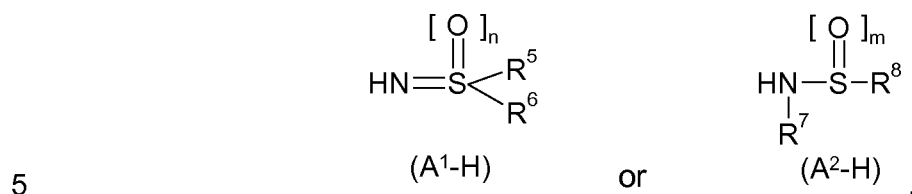
(I-A³)

15 and the other substituents and variables are as defined above for formula I, can be prepared in general by reacting an activated benzisothiazolone of formula II-a:



20 wherein Y is halogen or O-SO₂R and R is therein an alkyl, haloalkyl or a substituted phenyl (e.g. Y is mesylate, triflate and para-toluenesulfonate), and wherein R¹, R², R³ and R⁴ are as defined for formula I.

In case of A is A¹ or A² e.g. in presence of a base with a compound of the formula A¹-H or A²-H,

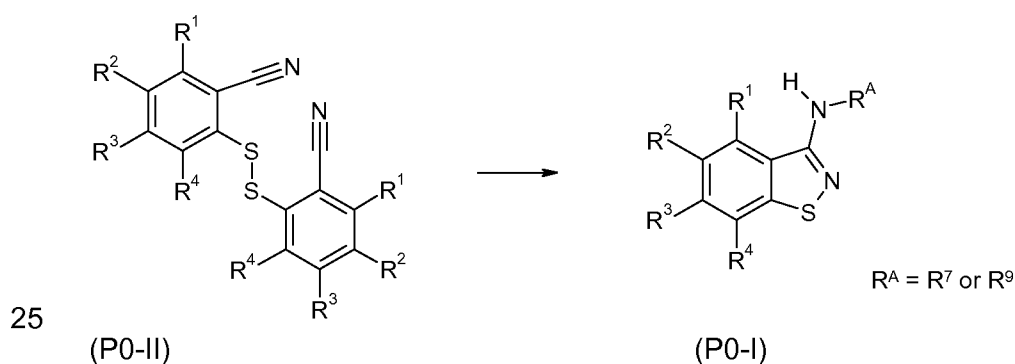


wherein the variables R⁵, R⁶, R⁷ and R⁸ are analogously as defined as before for formula I.

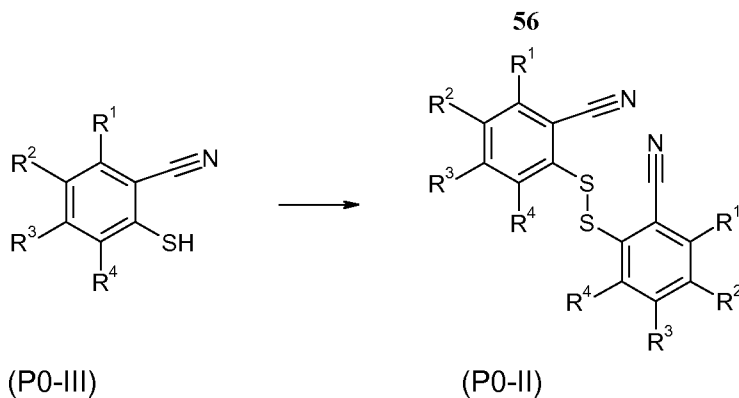
- 10 Suitable activated derivatives of the benzisothiazolone-derivative of formula II-a which may be used are, for example the 3-halobenzisothiazole-derivatives as 3-Chloro-benzisothiazole or as mentioned above the corresponding sulfonates, e.g. the triflates or mesylates.
- 15 The activated derivatives of the benzisothiazolone of formula II-a can be obtained according to the following schemes:

P.0. 3-Amino-benzisothiazole:

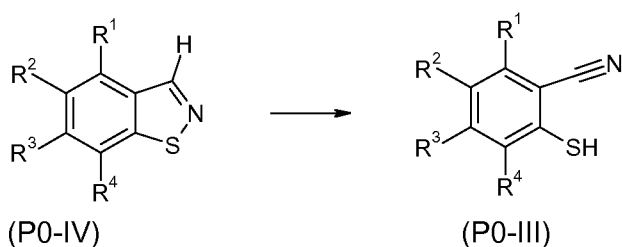
- 20 3-Amino-benzisothiazoles (P0-I) can be prepared by heating a suitably substituted di-sulfide (P0-II) together with an amine and an oxidizing agent such as dimethylsulfoxide (DMSO) in a polar solvent such as isopropanol as described by S. W. Walinsky et al. in Organic Process Research & Development 1999, 3, 126-130.



- The 2-cyano-disulfides (P0-II) can be prepared from the corresponding thiophenols (P0-III) by using oxidizing agents such as dimethylsulfoxid (DMSO) as reported by H. Boerzel et al. in Inorganic Chemistry 2003, 1604-1615.
- 30

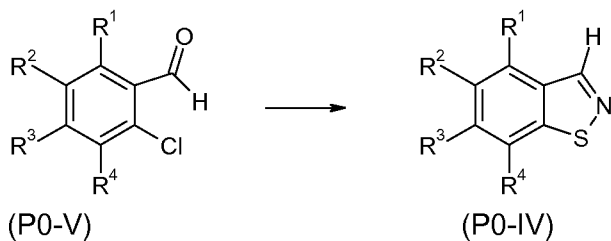


2-cyano-thiophenols (P0-III) can be prepared from benzisothiazoles (P0-IV) by treatment with strong bases such as NaOCH₃ as described by J. Markert et al. in Liebigs Annalen d. Chemie 1980,768-778.



10

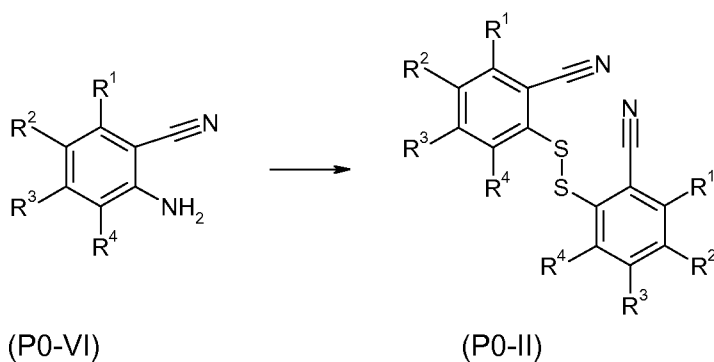
Said article also describes the synthesis of substituted benzisothiazoles (P0-IV) from 2-chloro-benzaldehydes (P0-V) via reaction with sulfur and ammonia.



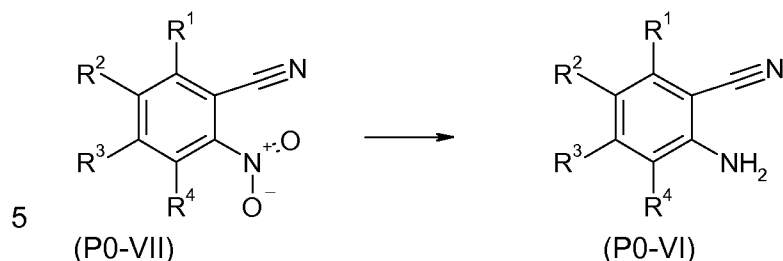
15

Alternatively, the 2-cyano-disulfides (P0-II) can be prepared from 2-cyano-anilines (P0-VI) via diazotation and subsequent reaction of the diazonium-salt with Na₂S and sulfur as described by V. M. Negrimovsky et al. in Phosphorus, Sulfur & The Related Elements 1995, 104, 161-167.

20



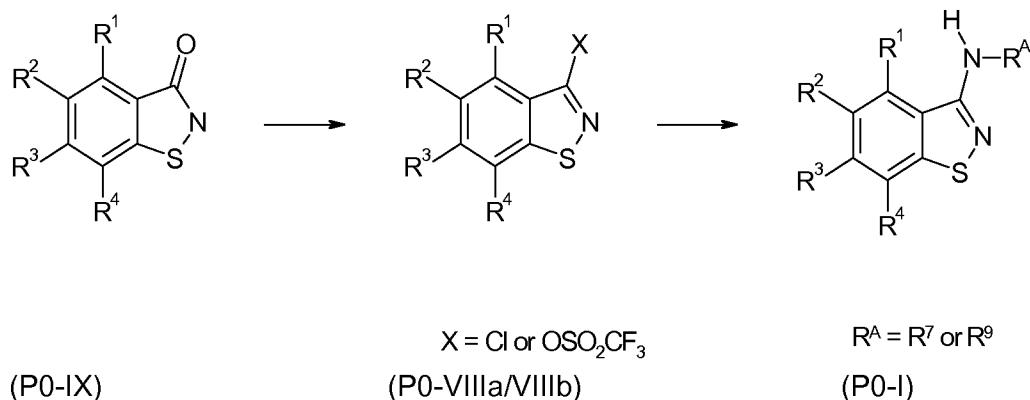
2-cyano-anilines (P0-VI) can be prepared from 2-cyano-nitrobenzenes (P0-VII) with a reducing agent such as iron as described by D. H. Klaubert in J. Med. Chem.1981, 24, 742-748.



10 Alternatively 3-amino-1,2-benzisothiazoles (P0-I) can be prepared from 3-chloro-benzo[d]isothiazole (P0-VIIIa) as described by H. Boeshagen et al. in Justus Liebig Annalen der Chemie, 1977, 20.

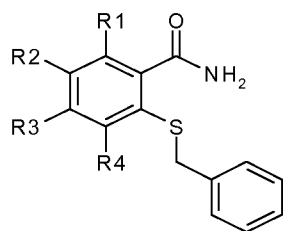
The Chloro-benzo[d]isothiazoles (P0-VIIIa) can be obtained from benzisothiazolones (P0-IX) by reaction with a chlorinating agent such as PCl_3 (described by J.P. Yevich et al. in Journal of Medicinal Chemistry 1986, 29, 359-369) or $\text{PCl}_3/\text{PCl}_5$ (S. G. Zlutin et al. Journal of Organic Chemistry 2000, 65, 8439-8443).

15 3-amino-1,2-benzisothiazoles (P0-I) can also be obtained from trifluoro-methanesulfonic acid benzo[d]isothiazol-3-yl ester (P0-VIIIb) in analogy to US 5359068 by reaction of said compounds with amines. This latter reference describes the trifluoro-methanesulfonic acid benzo[d]isothiazol-3-yl ester (P0-VIIIb) obtained from
20 benzisothiazolones.

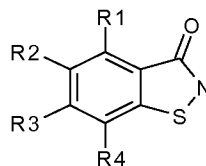


25 The above mentioned reference of S.G. Zlutin et al. also describes the synthesis of said benzisothiazolones (P0-IX) from 2-benzylsulfanyl-benzamides (P0-X) via treatment with an oxidizing agent such as SO_2Cl_2 .

58

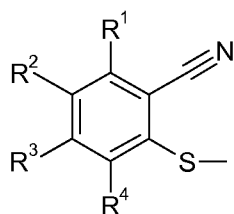


(P0-X)

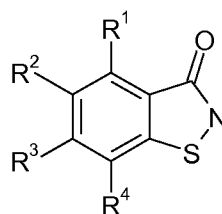


(P0-IX)

Alternatively, another method for preparing benzisothiazolones (P-XIV) from 2-
 5 (alkythio)benzonitriles (P-XVI) in a one-pot procedure is described in EP 1081141.



(P0-XI)

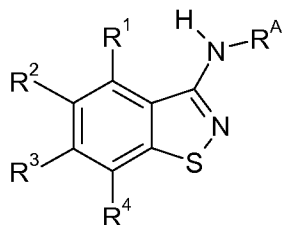


(P0-IX)

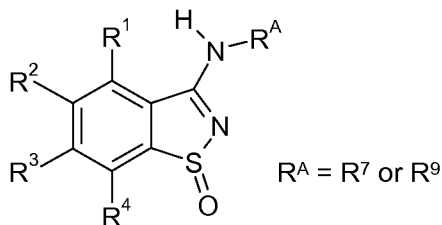
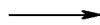
10

P.1 Aminobenzisothiazole-1-mono-oxides

Aminobenzisothiazole (P0-I) can be oxidized in analogy to a procedure described in
 Chemische Berichte, 103, 3166-3181 to yield the mono-oxygenated species (P1-I).
 15 Suitable oxidizing reagents are e.g. HNO₃, H₂O₂/acetic acid or m-chlor-perbenzoic acid.



(P0-I)



(P1-I)

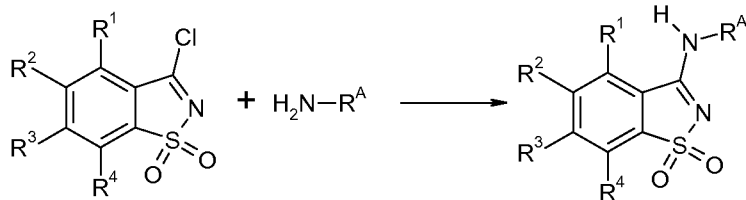
R^A = R⁷ or R⁹

20

P.2 3-Aminobenzisothiazole-1,1-dioxides

3-Aminobenzisothiazole-1,1-dioxides (P2-I) can be obtained from suitably substituted
 3-Chloro-benzo[d]isothiazole 1,1-dioxides (P2-II) by reaction with a primary amine in a
 25 polar, non-protic solvent such as tetrahydrofurane or dioxane as described in Journal of
 the Chemical Society Perkin Transaction 2, 2001, 1315-1324.

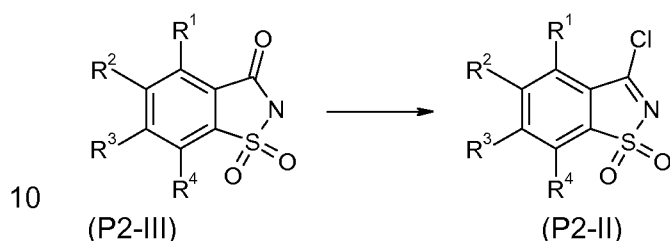
59

 $R^A = R^7 \text{ or } R^9$

(P2-II)

(P2-I)

- 3-Chloro-benzo[d]isothiazole 1,1-dioxides (P2-II) can be prepared by the reaction of a suitably substituted saccharine (P2-III) with a chlorinating agent such as $\text{ClCO}_2\text{CCl}_3$, $\text{PCl}_5/\text{POCl}_3$ or SOCl_2 as described by D. Dopp et al. in *Synthesis* 2001, 8, 1228-1235, by R. Salman in *Chem. Eng. Data* 1987, 32, 391 or by R. W. Lang in *Helvetica Chimica Acta* 1989, 72, 1248-1252.

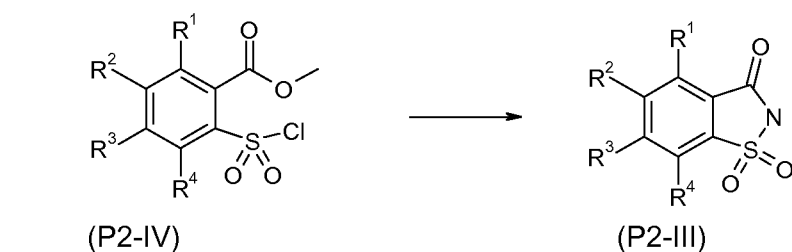


10

(P2-III)

(P2-II)

- Substituted saccharines (P2-III) can be prepared via reaction of 2-chlorosulfonyl-benzoic acid esters (P2-IV) with ammonia as it is described by M. C. Bell et al. in *Bio-organic & Medicinal Letters* 1991, No. 12, 733-736 or M. L. Trudell et al. in *Journal of Heterocyclic Chem.* 2004, 41, 435f.



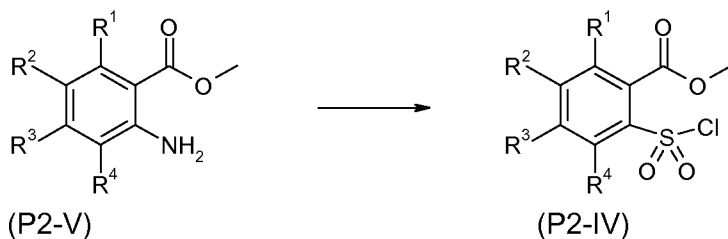
20

(P2-IV)

(P2-III)

- The latter article also describes the synthesis of mentioned 2-chlorosulfonyl-benzoic acid esters (P2-IV) from the corresponding methyl anthranilates (P2-V) via diazotation and subsequent chlorosulfonation. A similar synthetic procedure is described by G. Hamprecht et al. in *Chimia* (2004), 58, 117-122.

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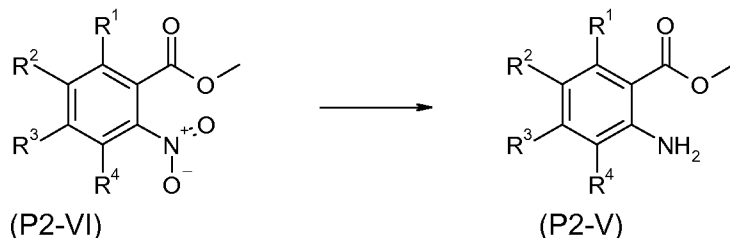


(P2-V)

(P2-IV)

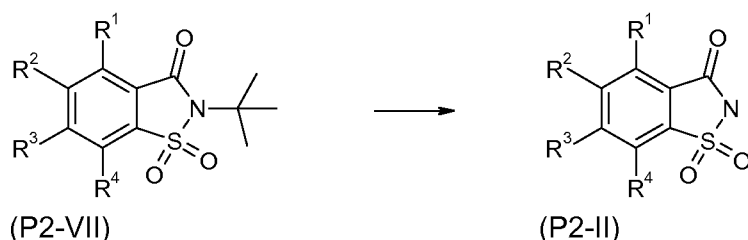
In cases where the methyl anthranilates (P2-V) are not commercially available, they can be prepared from the corresponding 2-nitro benzoic acid methyl ester (P2-VI) via catalytic hydrogenation as mentioned by J. F. W. Keana et al. in *Bioorganic & Medicinal Chemistry* 11 (2003) 1769-1780.

5



Alternatively, saccharines (P2-II) can be prepared by cleavage of the corresponding N-t-butyl saccharines (P2-VII) via heating with a strong acid such as trifluoroacetic acid in a way described by K. F. Burri in *Helvetica Chimica Acta* 1990, 73, 69-80.

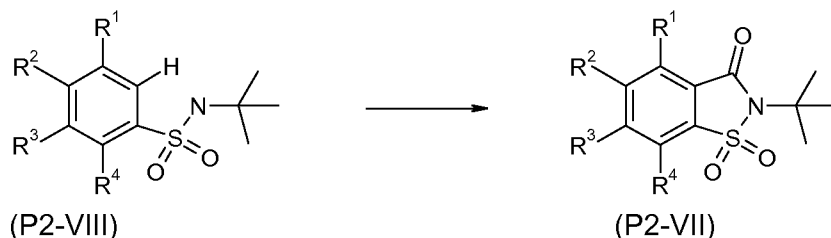
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15

N-t-butyl saccharines (P2-VII) can be obtained from the corresponding sulfonamides (P2-VIII) by directed ortho metallation with bases such as butyllithium or lithiumdiisopropylamide and subsequent trapping of the metallated species with carbon dioxide under ring-closure. The procedure is described by D. Becker et al. in *Tetrahedron* 1992, 2515-2522. The metallation can be carried out as described by N. Murugesan et al. in *J. Med. Chem.* 1998, 41, 5198-5218.

20

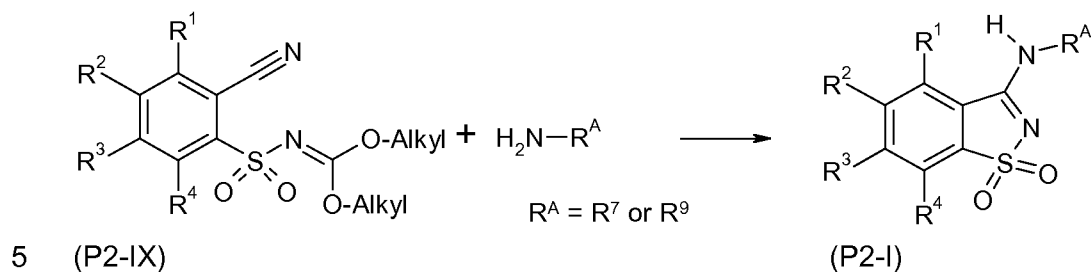


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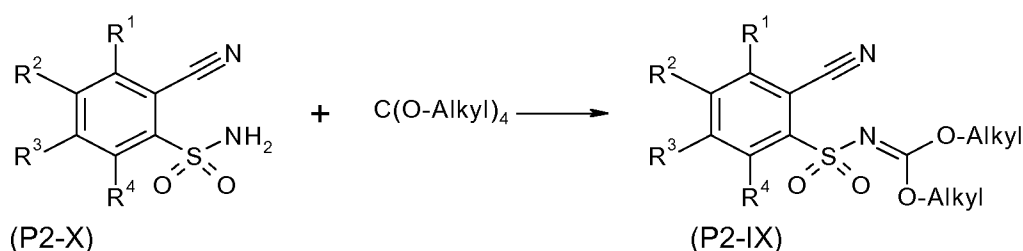
Alternatively, 3-amino-1,2-benzisothiazole 1,1-dioxides (P2-I) can also be prepared from suitably substituted imidates (P2-IX) via a reaction with primary amines at elevated temperature. The reaction can be carried out either neat or in a suitable solvent, preferentially a polar, high-boiling solvent such as tetrahydrofuran (THF) or dioxane. Preferentially, the reaction is carried out neat. In cases where the reaction is carried out neat, the preferred temperature is between room temperature and the boiling point of the respective amine. In cases where the reaction is carried out in a solvent, the preferred temperature is between room temperature and the boiling point of the respective

30

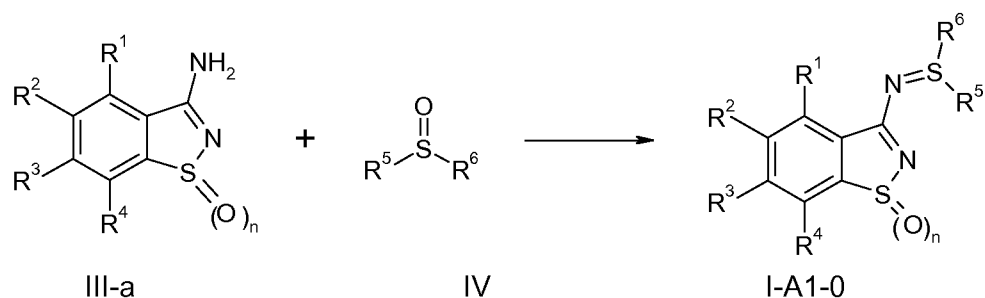
solvent. The substituent Alkyl in this method is preferentially an alkyl-substituent such as methyl or ethyl.



Said imidates (P2-IX) can be obtained by reacting a 2-cyanobenzene sulfonamide (P2-X) with a carbonic acid orthoester in a process similarly described in Journal of Organic Chemistry 1963, 28, 2902-2903. Said cyanobenzene sulfonamides (P2-X) can be prepared as described in WO 2005/035486.



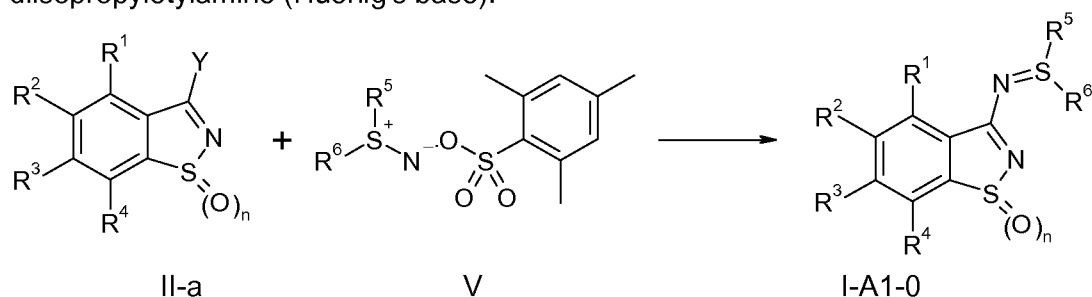
15 Compounds I-A1-0 of the present invention for which A has the meaning defined as A¹ and m= 0 can be made via a condensation reaction of aminobenzisothiazole-derivative III-a with suitably substituted sulfoxides IV in combination with a suitable condensating agent. Suitable condensing agents are, for example, phosphorous oxychloride, phosphorous (V) oxide, methanesulfonyl chloride, sulfuryl chloride, sulfur trichloride, boron
20 trifluoride, dicyclohexylcarbodiimide, aryl cyanates or acid anhydrides, preferably trifluoroacetic anhydride or trifluoromethanesulfonic anhydride.



25 Sulfoxides of formula IV can be obtained according to procedures known in the art, e.g. as described in J. March, *Advanced Organic Chemistry*, 4th Edition, Wiley, 1992, p. 1297.

30 Alternatively, said compounds can be prepared by reacting a suitably substituted activated benzisothiazolone II-a with suitably substituted thio-compound V in presence of a

base. Preferentially this base is an amine such as triethylamine or N-diisopropylethylamine (Huenig's base).



5

Thio-compounds V can be prepared following a procedure described in Tetrahedron 1975, 31, 3035-3040.

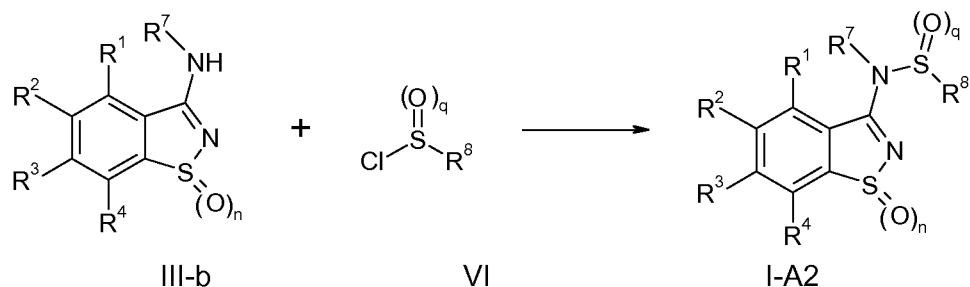
In cases, where n is 0, 1 or 2, compounds I-A1-1 for which m= 1, can be obtained from compounds I-A1-0 for which m = 0 by treatment with an appropriate oxidizing agent such as H₂O₂, NaOCl or 3-chloro-perbenzoic acid in analogy to syntheses described in Journal of Heterocyclic Chemistry 2005, 42, 599-607 (H₂O₂), Journal of Organic Chemistry 1984, 49, 2282-2284 (NaOCl) or Heterocycles 1998, 49, 181-190 (meta-chloro-perbenzoic acid (mcpba)):

15



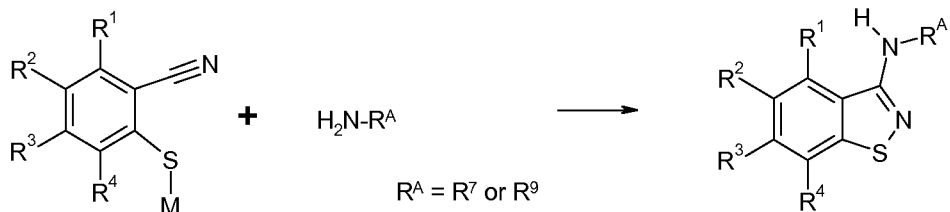
Compounds I-A2 in which A has the meaning given for A² can be obtained from aminobenzisothiazole-derivatives III-b via reaction with suitably substituted thio-compounds VI in the presence of a base in analogy to syntheses described in Farmaco 1992, 47, 265-274. Suitable bases would be, for example, amines such as triethylamine, Huenig's base or pyridine.

25



3-amino-1,2-benzisothiazoles (P0-I) can also be obtained from 2-mercapto-benzonitriles (P0-XII) or their alkali metal salts in analogy to L.K.A. Rahman et al.,

J.Chem.Soc. Perkin Trans I, 1983, 2973-2977 by reaction of said compounds with amines.



M = H or alkali metal

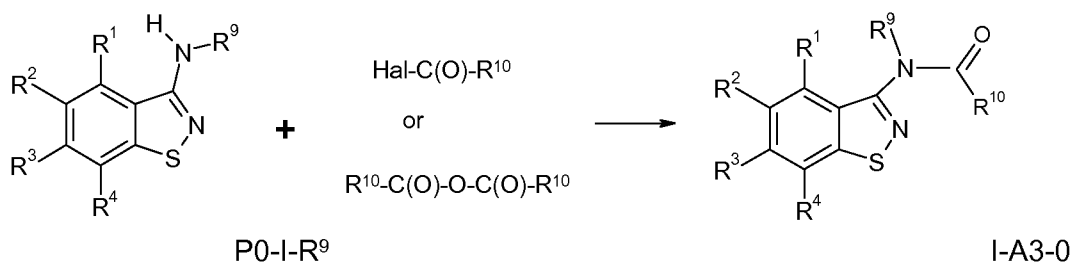
5

P0-XII

P0-I

Compounds I-A3 in which A has the meaning given for A³ can be obtained from aminobenzisothiazole-derivatives via reaction with an acyl halide (Hal-C(O)-R¹⁰), especially an acyl chloride, an acid anhydride (R¹⁰-C(O)-O-C(O)-R¹⁰) or a mixed acid anhydride in the presence of an appropriate base according to procedures known in the art, e.g. EP 133418. Appropriate bases include organic bases, for example tertiary amines, such as aliphatic amines, for example trimethylamine, triethylamine or diisopropylethylamine, cycloaliphatic tertiary amines, for example N-methylpiperidine, or aromatic amines, for example pyridine, substituted pyridines such as 2,4,6-collidine, 2,4-lutidine or 4-dimethylaminopyridine.

15



20 In the preparation methods described above, the variables R¹, R², R³, R⁴, R⁵, R⁶, R⁷, R⁸, R⁹ and R¹⁰ have the meanings as defined above, in particular the meanings mentioned as being preferred.

25 If individual compounds cannot be prepared via the above-described routes, they can be prepared by derivatization of other compounds I or by customary modifications of the synthesis routes described.

30 The reaction mixtures are worked up in the customary manner, for example by mixing with water, separating the phases, and, if appropriate, purifying the crude products by chromatography, for example on alumina or silica gel. Some of the intermediates and end products may be obtained in the form of colorless or pale brown viscous oils, which are freed or purified from volatile components under reduced pressure and at moderately elevated temperature. If the intermediates and end products are obtained as solids, they may be purified by recrystallization or digestion.

Agriculturally acceptable salts of the compounds of formula I can be formed in a customary manner, e.g. by reaction with an acid of the anion in question.

5 Pests

The compounds of the formula I are especially suitable for efficiently combating the following pests:

- 10 insects from the order of the lepidopterans (Lepidoptera), for example *Agrotis ypsilon*, *Agrotis segetum*, *Alabama argillacea*, *Anticarsia gemmatalis*, *Argyresthia conjugella*, *Autographa gamma*, *Bupalus piniarius*, *Cacoecia murinana*, *Capua reticulana*, *Cheimatobia brumata*, *Choristoneura fumiferana*, *Choristoneura occidentalis*, *Cirphis unipuncta*, *Cydia pomonella*, *Dendrolimus pini*, *Diaphania nitidalis*, *Diatraea grandiosella*, *Earias insulana*, *Elasmopalpus lignosellus*, *Eupoecilia ambiguella*, *Evetria bouliana*, *Feltia subterranea*, *Galleria mellonella*, *Grapholitha funebrana*, *Grapholitha molesta*, *Heliothis armigera*, *Heliothis virescens*, *Heliothis zea*, *Hellula undalis*, *Hibernia defoliaria*, *Hyphantria cunea*, *Hyponomeuta malinellus*, *Keiferia lycopersicella*, *Lambdina fiscellaria*, *Laphygma exigua*, *Leucoptera coffeella*, *Leucoptera scitella*, *Lithocolletis blancardella*, *Lobesia botrana*, *Loxostege sticticalis*, *Lymantria dispar*, *Lymantria monacha*, *Lyonetia clerkella*, *Malacosoma neustria*, *Mamestra brassicae*, *Orgyia pseudotsugata*, *Ostrinia nubilalis*, *Panolis flammea*, *Pectinophora gossypiella*, *Peridroma saucia*, *Phalera bucephala*, *Phthorimaea operculella*, *Phyllocnistis citrella*, *Pieris brassicae*, *Plathypena scabra*, *Plutella xylostella*, *Pseudoplusia includens*, *Rhyacionia frugiperda*, *Scrobipalpus absoluta*, *Sitotroga cerealella*, *Sparganothis pillariana*, *Spodoptera frugiperda*, *Spodoptera littoralis*, *Spodoptera litura*, *Thaumatopoea pityocampa*, *Tortrix viridana*, *Trichoplusia ni* and *Zeiraphera canadensis*,
- 30 beetles (Coleoptera), for example *Agrilus sinuatus*, *Agriotes lineatus*, *Agriotes obscurus*, *Amphimallus solstitialis*, *Anisandrus dispar*, *Anthonomus grandis*, *Anthonomus pomorum*, *Aphthona euphoridae*, *Athous haemorrhoidalis*, *Atomaria linearis*, *Blastophagus piniperda*, *Blitophaga undata*, *Bruchus rufimanus*, *Bruchus pisorum*, *Bruchus lentis*, *Byctiscus betulae*, *Cassida nebulosa*, *Cerotoma trifurcata*, *Cetonia aurata*, *Ceuthorrhynchus assimilis*, *Ceuthorrhynchus napi*, *Chaetocnema tibialis*, *Conoderus vespertinus*, *Crioceris asparagi*, *Ctenicera* ssp., *Diabrotica longicornis*, *Diabrotica semipunctata*, *Diabrotica 12-punctata*, *Diabrotica speciosa*, *Diabrotica virgifera*, *Epilachna varivestis*, *Epitrix hirtipennis*, *Eutinobothrus brasiliensis*, *Hylobius abietis*, *Hypera brunneipennis*, *Hypera postica*, *Ips typographus*, *Lema bilineata*, *Lema melanopus*, *Leptinotarsa decemlineata*, *Limoniuss californicus*, *Lissorhoptrus oryzophilus*, *Melanotus communis*, *Meligethes aeneus*, *Melolontha hippocastani*, *Melolontha melolontha*, *Oulema oryzae*, *Otiorrhynchus sulcatus*, *Otiorrhynchus ovatus*, *Phaedon cochleariae*, *Phyllotreta chrysocephala*, *Phyllophaga* sp., *Phyllopertha horticola*,

Phyllotreta nemorum, Phyllotreta striolata, Popillia japonica, Sitona lineatus and Sitophilus granaria,

- flies, mosquitoes (Diptera), e.g. Aedes aegypti, Aedes albopictus, Aedes vexans, Anastrepha ludens, Anopheles maculipennis, Anopheles crucians, Anopheles albimanus, Anopheles gambiae, Anopheles freeborni, Anopheles leucosphyrus, Anopheles minimus, Anopheles quadrimaculatus, Calliphora vicina, Ceratitis capitata, Chrysomya bezziana, Chrysomya hominivorax, Chrysomya macellaria, Chrysops discalis, Chrysops silacea, Chrysops atlanticus, Cochliomyia hominivorax, Contarinia sorghicola
- 10 Cordylobia anthropophaga, Culicoides furens, Culex pipiens, Culex nigripalpus, Culex quinquefasciatus, Culex tarsalis, Culiseta inornata, Culiseta melanura, Dacus cucurbitae, Dacus oleae, Dasineura brassicae, Delia antique, Delia coarctata, Delia platura, Delia radicum, Dermatobia hominis, Fannia canicularis, Geomyza Tripunctata, Gasterophilus intestinalis, Glossina morsitans, Glossina palpalis, Glossina fuscipes, Glossina
- 15 tachinoides, Haematobia irritans, Haplodiplosis equestris, Hippelates spp., Hylemyia platura, Hypoderma lineata, Leptoconops torrens, Liriomyza sativae, Liriomyza trifolii, Lucilia caprina, Lucilia cuprina, Lucilia sericata, Lycoria pectoralis, Mansonia titillanus, Mayetiola destructor, Musca autumnalis, Musca domestica, Muscina stabulans, Oestrus ovis, Opomyza florum, Oscinella frit, Pegomya hysocyami, Phorbia antiqua, Phorbia brassicae, Phorbia coarctata, Phlebotomus argentipes, Psorophora columbiae, Psila rosae, Psorophora discolor, Prosimulium mixtum, Rhagoletis cerasi, Rhagoletis pomonella, Sarcophaga haemorrhoidalis, Sarcophaga spp., Simulium vittatum, Stomoxys calcitrans, Tabanus bovinus, Tabanus atratus, Tabanus lineola, and Tabanus similis, Tipula oleracea, and Tipula paludosa
- 25 thrips (Thysanoptera), e.g. Dichromothrips corbetti, Dichromothrips ssp., Frankliniella fusca, Frankliniella occidentalis, Frankliniella tritici, Scirtothrips citri, Thrips oryzae, Thrips palmi and Thrips tabaci,
- 30 termites (Isoptera), e.g. Calotermes flavicollis, Leucotermes flavipes, Heterotermes aureus, Reticulitermes flavipes, Reticulitermes virginicus, Reticulitermes lucifugus, Reticulitermes santonensis, Reticulitermes grassei, Termes natalensis, and Coptotermes formosanus,
- 35 cockroaches (Blattaria - Blattodea), e.g. Blattella germanica, Blattella asahinae, Periplaneta americana, Periplaneta japonica, Periplaneta brunnea, Periplaneta fuliginosa, Periplaneta australasiae, and Blatta orientalis,
- 40 bugs, aphids, leafhoppers, whiteflies, scale insects, cicadas (Hemiptera), e.g. Acrosternum hilare, Blissus leucopterus, Cyrtopeltis notatus, Dysdercus cingulatus, Dysdercus intermedius, Eurygaster integriceps, Euschistus impictiventris, Leptoglossus phyllopus, Lygus lineolaris, Lygus pratensis, Nezara viridula, Piesma quadrata, Solubea insularis, Thyanta perditor, Acyrthosiphon onobrychis, Adelges laricis, Aphidula nastur-

tii, *Aphis fabae*, *Aphis forbesi*, *Aphis pomi*, *Aphis gossypii*, *Aphis grossulariae*, *Aphis schneideri*, *Aphis spiraecola*, *Aphis sambuci*, *Acyrtosiphon pisum*, *Aulacorthum solani*, *Bemisia argentifolii*, *Brachycaudus cardui*, *Brachycaudus helichrysi*, *Brachycaudus persicae*, *Brachycaudus prunicola*, *Brevicoryne brassicae*, *Capitophorus horni*, *Cerosiph*
 5 *pha gossypii*, *Chaetosiphon fragaefolii*, *Cryptomyzus ribis*, *Dreyfusia nordmannianae*, *Dreyfusia piceae*, *Dysaphis radicola*, *Dysaulacorthum pseudosolani*, *Dysaphis plantaginea*, *Dysaphis pyri*, *Empoasca fabae*, *Hyalopterus pruni*, *Hyperomyzus lactucae*, *Macrosiphum avenae*, *Macrosiphum euphorbiae*, *Macrosiphon rosae*, *Megoura viciae*, *Melanaphis pyraus*, *Metopolophium dirhodum*, *Myzus persicae*, *Myzus ascalonicus*,
 10 *Myzus cerasi*, *Myzus varians*, *Nasonovia ribis-nigri*, *Nilaparvata lugens*, *Pemphigus bursarius*, *Perkinsiella saccharicida*, *Phorodon humuli*, *Psylla mali*, *Psylla piri*, *Rhopalomyzus ascalonicus*, *Rhopalosiphum maidis*, *Rhopalosiphum padi*, *Rhopalosiphum insertum*, *Sappaphis mala*, *Sappaphis mali*, *Schizaphis graminum*, *Schizoneura lanuginosa*, *Sitobion avenae*, *Trialeurodes vaporariorum*, *Toxoptera aurantii*and, *Viteus*
 15 *vitifolii*, *Cimex lectularius*, *Cimex hemipterus*, *Reduvius senilis*, *Triatoma* spp., and *Ariulus critatus*.

ants, bees, wasps, sawflies (Hymenoptera), e.g. *Athalia rosae*, *Atta cephalotes*, *Atta capiguara*, *Atta cephalotes*, *Atta laevigata*, *Atta robusta*, *Atta sexdens*, *Atta texana*,
 20 *Crematogaster* spp., *Hoplocampa minuta*, *Hoplocampa testudinea*, *Lasius niger*, *Monomorium pharaonis*, *Solenopsis geminata*, *Solenopsis invicta*, *Solenopsis richteri*, *Solenopsis xyloni*, *Pogonomyrmex barbatus*, *Pogonomyrmex californicus*, *Pheidole megacephala*, *Dasymutilla occidentalis*, *Bombus* spp., *Vespula squamosa*, *Paravespula vulgaris*, *Paravespula pennsylvanica*, *Paravespula germanica*, *Dolichovespula maculata*, *Vespa crabro*, *Polistes rubiginosa*, *Camponotus floridanus*, and *Linepithema*
 25 *humile*,

crickets, grasshoppers, locusts (Orthoptera), e.g. *Acheta domestica*, *Gryllotalpa gryllotalpa*, *Locusta migratoria*, *Melanoplus bivittatus*, *Melanoplus femurrubrum*, *Melanoplus*
 30 *mexicanus*, *Melanoplus sanguinipes*, *Melanoplus spretus*, *Nomadacris septemfasciata*, *Schistocerca americana*, *Schistocerca gregaria*, *Dociostaurus maroccanus*, *Tachycines asynamorus*, *Oedaleus senegalensis*, *Zonozerus variegatus*, *Hieroglyphus daganensis*, *Kraussaria angulifera*, *Calliptamus italicus*, *Chortoicetes terminifera*, and *Locustana pardalina*,

35 Arachnoidea, such as arachnids (Acarina), e.g. of the families Argasidae, Ixodidae and Sarcoptidae, such as *Amblyomma americanum*, *Amblyomma variegatum*, *Amblyomma maculatum*, *Argas persicus*, *Boophilus annulatus*, *Boophilus decoloratus*, *Boophilus microplus*, *Dermacentor silvarum*, *Dermacentor andersoni*, *Dermacentor variabilis*,
 40 *Hyalomma truncatum*, *Ixodes ricinus*, *Ixodes rubicundus*, *Ixodes scapularis*, *Ixodes holocyclus*, *Ixodes pacificus*, *Ornithodoros moubata*, *Ornithodoros hermsi*, *Ornithodoros turicata*, *Ornithonyssus bacoti*, *Otobius megnini*, *Dermanyssus gallinae*, *Psoroptes ovis*, *Rhipicephalus sanguineus*, *Rhipicephalus appendiculatus*, *Rhipicephalus evertsi*,

- Sarcoptes scabiei, and Eriophyidae spp. such as Aculus schlechtendali, Phyllocoptrata oleivora and Eriophyes sheldoni; Tarsonemidae spp. such as Phytonemus pallidus and Polyphagotarsonemus latus; Tenuipalpidae spp. such as Brevipalpus phoenicis; Tetranychidae spp. such as Tetranychus cinnabarinus, Tetranychus kanzawai, Tetranychus pacificus, Tetranychus telarius and Tetranychus urticae, Panonychus ulmi, Panonychus citri, and Oligonychus pratensis; Araneida, e.g. Latrodectus mactans, and Loxosceles reclusa,
- fleas (Siphonaptera), e.g. Ctenocephalides felis, Ctenocephalides canis, Xenopsylla cheopis, Pulex irritans, Tunga penetrans, and Nosopsyllus fasciatus,
- silverfish, firebrat (Thysanura), e.g. Lepisma saccharina and Thermobia domestica,
- centipedes (Chilopoda), e.g. Scutigera coleoptrata,
- millipedes (Diplopoda), e.g. Narceus spp.,
- earwigs (Dermaptera), e.g. forficula auricularia,
- lice (Phthiraptera), e.g. Pediculus humanus capitis, Pediculus humanus corporis, Pthirus pubis, Haematopinus eurysternus, Haematopinus suis, Linognathus vituli, Bovicola bovis, Menopon gallinae, Menacanthus stramineus and Solenopotes capillatus.
- springtails (Collembola), e.g. Onychiurus ssp..
- They are also suitable for controlling Nematodes : plant parasitic nematodes such as root knot nematodes, Meloidogyne hapla, Meloidogyne incognita, Meloidogyne javanica, and other Meloidogyne species; cyst-forming nematodes, Globodera rostochiensis and other Globodera species; Heterodera avenae, Heterodera glycines, Heterodera schachtii, Heterodera trifolii, and other Heterodera species; Seed gall nematodes, Anguina species; Stem and foliar nematodes, Aphelenchoides species; Sting nematodes, Belonolaimus longicaudatus and other Belonolaimus species; Pine nematodes, Bursaphelenchus xylophilus and other Bursaphelenchus species; Ring nematodes, Criconema species, Criconemella species, Criconemoides species, Mesocriconema species; Stem and bulb nematodes, Ditylenchus destructor, Ditylenchus dipsaci and other Ditylenchus species; Awl nematodes, Dolichodorus species; Spiral nematodes, Helicotylenchus multicinctus and other Helicotylenchus species; Sheath and sheathoid nematodes, Hemicyclophora species and Hemicriconemoides species; Hirshmanniella species; Lance nematodes, Hoploaimus species; false rootknot nematodes, Nacobbus species; Needle nematodes, Longidorus elongatus and other Longidorus species; Lesion nematodes, Pratylenchus neglectus, Pratylenchus penetrans, Pratylenchus curvatus, Pratylenchus goodeyi and other Pratylenchus species; Burrowing nematodes, Radopholus similis and other Radopholus species; Reniform nematodes, Rotylenchus

robustus and other *Rotylenchus* species; *Scutellonema* species; Stubby root nematodes, *Trichodorus primitivus* and other *Trichodorus* species, *Paratrichodorus* species; Stunt nematodes, *Tylenchorhynchus claytoni*, *Tylenchorhynchus dubius* and other *Tylenchorhynchus* species; Citrus nematodes, *Tylenchulus* species; Dagger nematodes, *Xiphinema* species; and other plant parasitic nematode species.

Compounds of the formula I are particularly useful for controlling insects, preferably sucking or piercing insects such as insects from the genera Thysanoptera, Hymenoptera, Orthoptera and Hemiptera, in particular the following species:

Thysanoptera: *Frankliniella fusca*, *Frankliniella occidentalis*, *Frankliniella tritici*, *Scirtothrips citri*, *Thrips oryzae*, *Thrips palmi* and *Thrips tabaci*,

Hymenoptera: *Athalia rosae*, *Atta cephalotes*, *Atta sexdens*, *Atta texana*, *Hoplocampa minuta*, *Hoplocampa testudinea*, *Monomorium pharaonis*, *Solenopsis geminata* and *Solenopsis invicta*,

Orthoptera: *Acheta domestica*, *Blatta orientalis*, *Blattella germanica*, *Forficula auricularia*, *Gryllotalpa gryllotalpa*, *Locusta migratoria*, *Melanoplus bivittatus*, *Melanoplus femur-rubrum*, *Melanoplus mexicanus*, *Melanoplus sanguinipes*, *Melanoplus spretus*, *Nomadacris septemfasciata*, *Periplaneta americana*, *Schistocerca americana*, *Schistocerca peregrina*, *Stauronotus maroccanus* and *Tachycines asynamorus* ;

Hemiptera, in particular aphids: *Acyrtosiphon onobrychis*, *Adelges laricis*, *Aphidula nasturtii*, *Aphis fabae*, *Aphis forbesi*, *Aphis pomi*, *Aphis gossypii*, *Aphis grossulariae*, *Aphis schneideri*, *Aphis spiraecola*, *Aphis sambuci*, *Acyrtosiphon pisum*, *Aulacorthum solani*, *Brachycaudus cardui*, *Brachycaudus helichrysi*, *Brachycaudus persicae*, *Brachycaudus prunicola*, *Brevicoryne brassicae*, *Capitophorus horni*, *Cerosipha gossypii*, *Chaetosiphon fragaefolii*, *Cryptomyzus ribis*, *Dreyfusia nordmannianae*, *Dreyfusia piceae*, *Dysaphis radicola*, *Dysaulacorthum pseudosolani*, *Dysaphis plantaginea*, *Dysaphis pyri*, *Empoasca fabae*, *Hyalopterus pruni*, *Hyperomyzus lactucae*, *Macrosiphum avenae*, *Macrosiphum euphorbiae*, *Macrosiphon rosae*, *Megoura viciae*, *Melanaphis pyraeae*, *Metopolophium dirhodum*, *Myzodes persicae*, *Myzus ascalonicus*, *Myzus cerasi*, *Myzus varians*, *Nasonovia ribis-nigri*, *Nilaparvata lugens*, *Pemphigus bursarius*, *Perkinsiella saccharicida*, *Phorodon humuli*, *Psylla mali*, *Psylla piri*, *Rhopalomyzus ascalonicus*, *Rhopalosiphum maidis*, *Rhopalosiphum padi*, *Rhopalosiphum insertum*, *Sappaphis mala*, *Sappaphis mali*, *Schizaphis graminum*, *Schizoneura lanuginosa*, *Sitobion avenae*, *Trialeurodes vaporariorum*, *Toxoptera aurantiiand*, and *Viteus vitifolii*;

Compounds of the formula I are particularly useful for controlling insects of the orders Hemiptera and Thysanoptera and more preferably for controlling aphids.

Formulations

For use in a method according to the present invention, the compounds I can be converted into the customary formulations, e.g. solutions, emulsions, suspensions, dusts, powders, pastes, granules and directly sprayable solutions. The use form depends on the particular purpose and application method. Formulations and application methods are chosen to ensure in each case a fine and uniform distribution of the compound of the formula I according to the present invention.

- 10 The formulations are prepared in a known manner (see e.g. for review US 3,060,084, EP-A 707 445 (for liquid concentrates), Browning, "Agglomeration", Chemical Engineering, Dec. 4, 1967, 147-48, Perry's Chemical Engineer's Handbook, 4th Ed., McGraw-Hill, New York, 1963, pages 8-57 and et seq. WO 91/13546, US 4,172,714, US 4,144,050, US 3,920,442, US 5,180,587, US 5,232,701, US 5,208,030, GB 2,095,558, US 3,299,566, Klingman, Weed Control as a Science, John Wiley and Sons, Inc., New York, 1961, Hance et al., Weed Control Handbook, 8th Ed., Blackwell Scientific Publications, Oxford, 1989 and Mollet, H., Grubemann, A., Formulation technology, Wiley VCH Verlag GmbH, Weinheim (Germany), 2001, 2. D. A. Knowles, Chemistry and Technology of Agrochemical Formulations, Kluwer Academic Publishers, Dordrecht, 1998 (ISBN 0-7514-0443-8), for example by extending the active compound with auxiliaries suitable for the formulation of agrochemicals, such as solvents and/or carriers, if desired emulsifiers, surfactants and dispersants, preservatives, anti-foaming agents, anti-freezing agents, for seed treatment formulation also optionally colorants and/or binders and/or gelling agents.

25

Solvents/carriers, which are suitable, are e.g.:

- solvents such as water, aromatic solvents (for example Solvesso products, xylene and the like), paraffins (for example mineral fractions), alcohols (for example methanol, butanol, pentanol, benzyl alcohol), ketones (for example cyclohexanone, gamma-butyrolactone), pyrrolidones (N-methyl-pyrrolidone (NMP), N-octylpyrrolidone NOP), acetates (glycol diacetate), alkyl lactates, lactones such as gamma-butyrolactone, glycols, fatty acid dimethylamides, fatty acids and fatty acid esters, triglycerides, oils of vegetable or animal origin and modified oils such as alkylated plant oils. In principle, solvent mixtures may also be used.
- carriers such as ground natural minerals and ground synthetic minerals, such as silica gels, finely divided silicic acid, silicates, talc, kaolin, attaclay, limestone, lime, chalk, bole, loess, clay, dolomite, diatomaceous earth, calcium sulfate and magnesium sulfate, magnesium oxide, ground synthetic materials, fertilizers, such as, for example, ammonium sulfate, ammonium phosphate, ammonium nitrate, ureas and products of vegetable origin, such as cereal meal, tree bark meal, wood meal and nutshell meal, cellulose powders and other solid carriers.

Suitable emulsifiers are nonionic and anionic emulsifiers (for example polyoxyethylene fatty alcohol ethers, alkylsulfonates and arylsulfonates).

Examples of dispersants are lignin-sulfite waste liquors and methylcellulose.

5

Suitable surfactants are alkali metal, alkaline earth metal and ammonium salts of lignosulfonic acid, naphthalenesulfonic acid, phenolsulfonic acid, dibutyl naphthalenesulfonic acid, alkylaryl sulfonates, alkyl sulfates, alkylsulfonates, fatty alcohol sulfates, fatty acids and sulfated fatty alcohol glycol ethers, furthermore
10 condensates of sulfonated naphthalene and naphthalene derivatives with formaldehyde, condensates of naphthalene or of naphthalenesulfonic acid with phenol and formaldehyde, polyoxyethylene octylphenyl ether, ethoxylated isooctylphenol, octylphenol, nonylphenol, alkylphenyl polyglycol ethers, tributylphenyl polyglycol ether, tristearylphenyl polyglycol ether, alkylaryl polyether alcohols, alcohol and fatty
15 alcohol/ethylene oxide condensates, ethoxylated castor oil, polyoxyethylene alkyl ethers, ethoxylated polyoxypropylene, lauryl alcohol polyglycol ether acetal, sorbitol esters,

Also anti-freezing agents such as glycerin, ethylene glycol, propylene glycol and bactericides such as can be added to the formulation.
20

Suitable antifoaming agents are for example antifoaming agents based on silicon or magnesium stearate.

25 Suitable preservatives are for example dichlorophenol and benzyl alcohol hemiformal

Suitable thickeners are compounds which confer a pseudoplastic flow behavior to the formulation, i.e. high viscosity at rest and low viscosity in the agitated stage. Mention may be made, in this context, for example, of commercial thickeners based on polysaccharides, such as Xanthan Gum® (Kelzan® from Kelco), Rhodopol®23 (Rhone Poulenc) or Veegum® (from R.T. Vanderbilt), or organic phyllosilicates, such as Attaclay® (from Engelhardt). Antifoam agents suitable for the dispersions according to the invention are, for example, silicone emulsions (such as, for example, Silikon® SRE, Wacker or Rhodorsil® from Rhodia), long-chain alcohols, fatty acids, organofluorine
30 compounds and mixtures thereof. Biocides can be added to stabilize the compositions according to the invention against attack by microorganisms. Suitable biocides are, for example, based on isothiazolones such as the compounds marketed under the trademarks Proxel® from Avecia (or Arch) or Acticide® RS from Thor Chemie and Kathon® MK from Rohm & Haas. Suitable antifreeze agents are organic polyols, for example
40 ethylene glycol, propylene glycol or glycerol. These are usually employed in amounts of not more than 10% by weight, based on the total weight of the active compound composition. If appropriate, the active compound compositions according to the invention may comprise 1 to 5% by weight of buffer, based on the total amount of the formulation

prepared, to regulate the pH, the amount and type of the buffer used depending on the chemical properties of the active compound or the active compounds. Examples of buffers are alkali metal salts of weak inorganic or organic acids, such as, for example, phosphoric acid, boronic acid, acetic acid, propionic acid, citric acid, fumaric acid, tartaric acid, oxalic acid and succinic acid.

Substances which are suitable for the preparation of directly sprayable solutions, emulsions, pastes or oil dispersions are mineral oil fractions of medium to high boiling point, such as kerosene or diesel oil, furthermore coal tar oils and oils of vegetable or animal origin, aliphatic, cyclic and aromatic hydrocarbons, for example toluene, xylene, paraffin, tetrahydronaphthalene, alkylated naphthalenes or their derivatives, methanol, ethanol, propanol, butanol, cyclohexanol, cyclohexanone, isophorone, strongly polar solvents, for example dimethyl sulfoxide, N-methylpyrrolidone and water.

Powders, materials for spreading and dusts can be prepared by mixing or concomitantly grinding the active substances with a solid carrier.

Granules, for example coated granules, impregnated granules and homogeneous granules, can be prepared by binding the active ingredients to solid carriers. Examples of solid carriers are mineral earths such as silica gels, silicates, talc, kaolin, attaclay, limestone, lime, chalk, bole, loess, clay, dolomite, diatomaceous earth, calcium sulfate, magnesium sulfate, magnesium oxide, ground synthetic materials, fertilizers, such as, for example, ammonium sulfate, ammonium phosphate, ammonium nitrate, ureas, and products of vegetable origin, such as cereal meal, tree bark meal, wood meal and nut-shell meal, cellulose powders and other solid carriers.

In general, the formulations comprise from 0.01 to 95% by weight, preferably from 0.1 to 90% by weight, of the active ingredient. The active ingredients are employed in a purity of from 90% to 100%, preferably 95% to 100% (according to NMR spectrum).

For seed treatment purposes, respective formulations can be diluted 2-10 fold leading to concentrations in the ready to use preparations of 0,01 to 60% by weight active compound by weight, preferably 0,1 to 40% by weight.

The compound of formula I can be used as such, in the form of their formulations or the use forms prepared therefrom, for example in the form of directly sprayable solutions, powders, suspensions or dispersions, emulsions, oil dispersions, pastes, dustable products, materials for spreading, or granules, by means of spraying, atomizing, dusting, spreading or pouring. The use forms depend entirely on the intended purposes; they are intended to ensure in each case the finest possible distribution of the active compounds according to the invention.

The following are examples of formulations:

1. Products for dilution with water. For seed treatment purposes, such products may be applied to the seed diluted or undiluted.

5

A) Water-soluble concentrates (SL, LS)

10 parts by weight of the active compound is dissolved in 90 parts by weight of water or a water-soluble solvent. As an alternative, wetters or other auxiliaries are added. The active compound dissolves upon dilution with water, whereby a formulation with 10 % (w/w) of active compound is obtained.

10

B) Dispersible concentrates (DC)

15 20 parts by weight of the active compound is dissolved in 70 parts by weight of cyclohexanone with addition of 10 parts by weight of a dispersant, for example polyvinylpyrrolidone. Dilution with water gives a dispersion, whereby a formulation with 20% (w/w) of active compounds is obtained.

20

C) Emulsifiable concentrates (EC)

15 parts by weight of the active compounds is dissolved in 7 parts by weight of xylene with addition of calcium dodecylbenzenesulfonate and castor oil ethoxylate (in each case 5 parts by weight). Dilution with water gives an emulsion, whereby a formulation with 15% (w/w) of active compounds is obtained.

25

D) Emulsions (EW, EO, ES)

25 parts by weight of the active compound is dissolved in 35 parts by weight of xylene with addition of calcium dodecylbenzenesulfonate and castor oil ethoxylate (in each case 5 parts by weight). This mixture is introduced into 30 parts by weight of water by means of an emulsifier machine (e.g. Ultraturrax) and made into a homogeneous emulsion. Dilution with water gives an emulsion, whereby a formulation with 25% (w/w) of active compound is obtained.

35

E) Suspensions (SC, OD, FS)

In an agitated ball mill, 20 parts by weight of the active compound is comminuted with addition of 10 parts by weight of dispersants, wetters and 70 parts by weight of water or of an organic solvent to give a fine active compound suspension. Dilution with water gives a stable suspension of the active compound, whereby a formulation with 20% (w/w) of active compound is obtained.

40

F) Water-dispersible granules and water-soluble granules (WG, SG)

50 parts by weight of the active compound is ground finely with addition of 50 parts by weight of dispersants and wetters and made as water-dispersible or water-soluble granules by means of technical appliances (for example extrusion, spray tower, fluidized bed). Dilution with water gives a stable dispersion or solution of the active compound, whereby a formulation with 50% (w/w) of active compound is obtained.

G) Water-dispersible powders and water-soluble powders (WP, SP, SS, WS)

10

75 parts by weight of the active compound are ground in a rotor-stator mill with addition of 25 parts by weight of dispersants, wetters and silica gel. Dilution with water gives a stable dispersion or solution of the active compound, whereby a formulation with 75% (w/w) of active compound is obtained.

15

H) Gel-Formulation (GF)

In an agitated ball mill, 20 parts by weight of the active compound is comminuted with addition of 10 parts by weight of dispersants, 1 part by weight of a gelling agent wetters and 70 parts by weight of water or of an organic solvent to give a fine active compound suspension. Dilution with water gives a stable suspension of the active compound, whereby a formulation with 20% (w/w) of active compound is obtained.

2. Products to be applied undiluted for foliar applications. For seed treatment purposes, such products may be applied to the seed diluted or undiluted.

I) Dustable powders (DP, DS)

5 parts by weight of the active compound are ground finely and mixed intimately with 95 parts by weight of finely divided kaolin. This gives a dustable product having 5% (w/w) of active compound.

J) Granules (GR, FG, GG, MG)

0.5 part by weight of the active compound is ground finely and associated with 95.5 parts by weight of carriers, whereby a formulation with 0.5% (w/w) of active compound is obtained. Current methods are extrusion, spray-drying or the fluidized bed. This gives granules to be applied undiluted for foliar use.

K) ULV solutions (UL)

10 parts by weight of the active compound is dissolved in 90 parts by weight of an organic solvent, for example xylene. This gives a product having 10% (w/w) of active compound, which is applied undiluted for foliar use.

- 5 Aqueous use forms can be prepared from emulsion concentrates, pastes or wettable powders (sprayable powders, oil dispersions) by adding water. To prepare emulsions, pastes or oil dispersions, the substances, as such or dissolved in an oil or solvent, can be homogenized in water by means of a wetter, tackifier, dispersant or emulsifier. Alternatively, it is possible to prepare concentrates composed of active substance, wet-
10 ter, tackifier, dispersant or emulsifier and, if appropriate, solvent or oil, and such concentrates are suitable for dilution with water.

- The active ingredient concentrations in the ready-to-use products can be varied within relatively wide ranges. In general, they are from 0.0001 to 10%, preferably from 0.01 to
15 1%.

- The active ingredients may also be used successfully in the ultra-low-volume process (ULV), it being possible to apply formulations comprising over 95% by weight of active ingredient, or even to apply the active ingredient without additives.

- 20 In the method of this invention compounds I may be applied with other active ingredients, for example with other pesticides, insecticides, herbicides, fertilizers such as ammonium nitrate, urea, potash, and superphosphate, phytotoxicants and plant growth regulators, safeners and nematicides. These additional ingredients may be
25 used sequentially or in combination with the above-described compositions, if appropriate also added only immediately prior to use (tank mix). For example, the plant(s) may be sprayed with a composition of this invention either before or after being treated with other active ingredients.

- 30 The following list M of pesticides together with which the compounds according to the invention can be used and with which potential synergistic effects might be produced, is intended to illustrate the possible combinations, but not to impose any limitation:

- M.1. Organo(thio)phosphates: acephate, azamethiphos, azinphos-ethyl, azinphos-
35 methyl, chlorethoxyfos, chlorfenvinphos, chlormephos, chlorpyrifos, chlorpyrifos-methyl, coumaphos, cyanophos, demeton-S-methyl, diazinon, dichlorvos/ DDVP, dicrotophos, dimethoate, dimethylvinphos, disulfoton, EPN, ethion, ethoprophos, famphur, fenamiphos, fenitrothion, fenthion, flupyrazophos, fosthiazate, heptenophos, isoxathion, malathion, mecarbam, methamidophos, methidathion, mevinphos, monocrotophos,
40 naled, omethoate, oxydemeton-methyl, parathion, parathion-methyl, phenthoate, phorate, phosalone, phosmet, phosphamidon, phoxim, pirimiphos-methyl, profenofos, propetamphos, prothiofos, pyraclofos, pyridaphenthion, quinalphos, sulfotep, tebupirim-

fos, temephos, terbufos, tetrachlorvinphos, thiometon, triazophos, trichlorfon, vamidothion;

5 M.2. Carbamates: aldicarb, alanycarb, bendiocarb, benfuracarb, butocarboxim, butoxycarboxim, carbaryl, carbofuran, carbosulfan, ethiofencarb, fenobucarb, formetanate, furathiocarb, isoprocarb, methiocarb, methomyl, metolcarb, oxamyl, pirimicarb, propoxur, thiodicarb, thiofanox, trimethacarb, XMC, xylylcarb, triazamate;

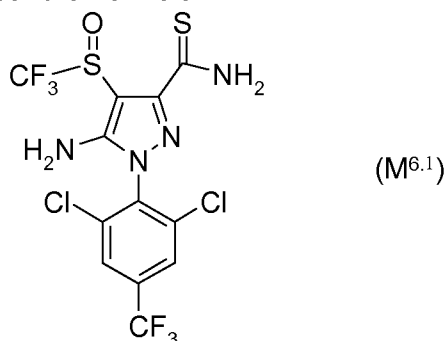
10 M.3. Pyrethroids: acrinathrin, allethrin, d-cis-trans allethrin, d-trans allethrin, bifenthrin, bioallethrin, bioallethrin S-cyclopentenyl, bioresmethrin, cycloprothrin, cyfluthrin, beta-, yfluthrin, cyhalothrin, lambda-cyhalothrin, gamma-cyhalothrin, cypermethrin, alpha-cypermethrin, beta-cypermethrin, theta-cypermethrin, zeta-cypermethrin, cyphenothrin, deltamethrin, empenthrin, esfenvalerate, etofenprox, fenpropathrin, fenvalerate, flucythrinate, flumethrin, tau-fluvalinate, halfenprox, imiprothrin, permethrin, phenothrin, 15 prallethrin, resmethrin, RU 15525, silafluofen, tefluthrin, tetramethrin, tralomethrin, transfluthrin, ZXI 8901;

20 M.4. Juvenile hormone mimics: hydroprene, kinoprene, methoprene, fenoxycarb, pyriproxyfen;

M.5. Nicotinic receptor agonists/antagonists compounds: acetamiprid, bensultap, cartap hydrochloride, clothianidin, dinotefuran, imidacloprid, thiamethoxam, nitenpyram, nicotine, spinosad (allosteric agonist), thiacloprid, thiocyclam, thiosultap-sodium and AKD1022.

25

M.6. GABA gated chloride channel antagonist compounds: chlordane, endosulfan, gamma-HCH (lindane); acetoprole, ethiprole, fipronil, pyrafluprole, pyriprole, vaniliprole, the phenylpyrazole compound of formula M^{6.1}



30 M.7. Chloride channel activators: abamectin, emamectin benzoate, milbemectin, le-pimectin;

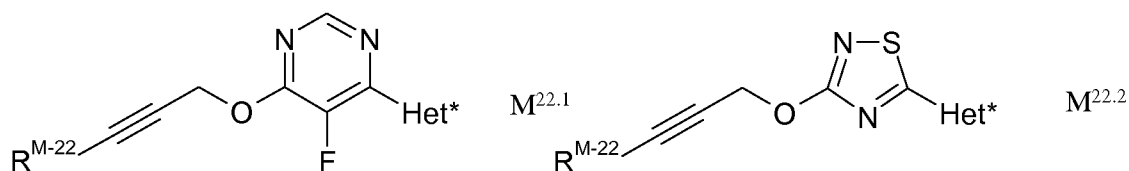
M.8. METI I compounds: fenazaquin, fenpyroximate, pyrimidifen, pyridaben, tebufenpyrad, tolfenpyrad, flufenerim, rotenone;

35

M.9. METI II and III compounds: acequinocyl, fluacyprim, hydramethylnon;

- M.10. Uncouplers of oxidative phosphorylation: chlorfenapyr, DNOC;
- M.11. Inhibitors of oxidative phosphorylation: azocyclotin, cyhexatin, diafenthiuron, fen-
5 butatin oxide, propargite, tetradifon;
- M.12. Moulting disruptors: cyromazine, chromafenozide, halofenozide, methoxy-
fenozide, tebufenozide;
- 10 M.13. Synergists: piperonyl butoxide, tribufos;
- M.14. Sodium channel blocker compounds: indoxacarb, metaflumizone;
- M.15. Fumigants: methyl bromide, chloropicrin sulfuryl fluoride;
- 15 M.16. Selective feeding blockers: crylotie, pymetrozine, flonicamid;
- M.17. Mite growth inhibitors: clofentezine, hexythiazox, etoxazole;
- 20 M.18. Chitin synthesis inhibitors: buprofezin, bistrifluron, chlorfluazuron, diflubenzuron, flucycloxuron, flufenoxuron, hexaflumuron, lufenuron, novaluron, noviflumuron, te-
flubenzuron, triflumuron;
- M.19. Lipid biosynthesis inhibitors: spiroticlofen, spiromesifen, spirotetramat;
- 25 M.20. octapaminergic agonsits: amitraz;
- M.21. ryanodine receptor modulators: flubendiamide;
- 30 M.22. Various: aluminium phosphide, amidoflumet, benclothiaz, benzoximate, bifenazate, borax, bromopropylate, cyanide, cyenopyrafen, cyflumetofen, chinome-
thionate, dicofol, fluoroacetate, phosphine, pyridalyl, pyrifluquinazon, sulfur, organic
sulfur compounds, tartar emetic; pyrimidinyl alkynylether compounds M^{22.1} or thiadia-
zolyl alkynylether compounds M^{22.2};

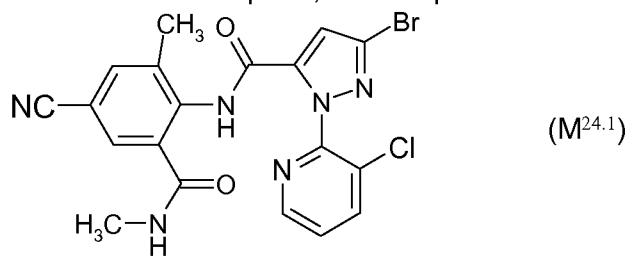
35



- wherein R^{M-22} is methyl or ethyl and Het* is 3,3-dimethylpyrrolidin-1-yl, 3-
methylpiperidin-1-yl, 3,5-dimethylpiperidin-1-yl, 3-trifluormethylpiperidin-1-yl, hexa-
40 hydroazepin-1-yl, 2,6-dimethylhexahydroazepin-1-yl or 2,6-dimethylmorpholin-4-yl.

- M.23. N-R'-2,2-dihalo-1-R''cyclo-propanecarboxamide-2-(2,6-dichloro- α,α,α -tri-fluoro-p-tolyl)hydrazone or N-R'-2,2-di(R''')propionamide-2-(2,6-dichloro- α,α,α -trifluoro-p-tolyl)-hydrazone, wherein R' is methyl or ethyl, halo is chloro or bromo, R'' is hydrogen or methyl and R''' is methyl or ethyl;

M.24. Anthranilamides: chloranthraniliprole, the compound of formula M^{24.1}



- M.25. Malononitrile compounds: CF₂HCF₂CF₂CF₂CH₂C(CN)₂CH₂CH₂CF₃ (2-(2,2,3,3,4,4,5,5-octafluoropentyl)-2-(3,3,3-trifluoro-propyl)malononitrile), CF₃(CH₂)₂C(CN)₂CH₂(CF₂)₅CF₂H, (2-(2,2,3,3,4,4,5,5,6,6,7,7-Dodecafluoro-heptyl)-2-(3,3,3-trifluoro-propyl)-malononitrile), CF₃(CH₂)₂C(CN)₂(CH₂)₂C(CF₃)₂F (2-(3,4,4,4-Tetrafluoro-3-trifluoromethyl-butyl)-2-(3,3,3-trifluoro-propyl)-malononitrile), CF₃(CH₂)₂C(CN)₂(CH₂)₂(CF₂)₃CF₃ (2-(3,3,4,4,5,5,6,6,6-Nonafluoro-hexyl)-2-(3,3,3-trifluoro-propyl)-malononitrile), CF₂H(CF₂)₃CH₂C(CN)₂CH₂(CF₂)₃CF₂H (2,2-Bis-(2,2,3,3,4,4,5,5-octafluoro-pentyl)-malononitrile), CF₃(CH₂)₂C(CN)₂CH₂(CF₂)₃CF₃ (2-(2,2,3,3,4,4,5,5,5-Nonafluoro-pentyl)-2-(3,3,3-trifluoro-propyl)-malononitrile), CF₃(CF₂)₂CH₂C(CN)₂CH₂(CF₂)₃CF₂H (2-(2,2,3,3,4,4,4-Heptafluoro-butyl)-2-(2,2,3,3,4,4,5,5-octafluoro-pentyl)-malononitrile), CF₃CF₂CH₂C(CN)₂CH₂(CF₂)₃CF₂H (2-(2,2,3,3,4,4,5,5-Octafluoro-pentyl)-2-(2,2,3,3,3-pentafluoro-propyl)-malononitrile), CF₂HCF₂CF₂CF₂CH₂C(CN)₂CH₂CH₂CF₂CF₃ (2-(2,2,3,3,4,4,5,5-octafluoropentyl)-2-(3,3,4,4,4-pentafluorobutyl)-malonodinitrile), CF₃(CH₂)₂C(CN)₂CH₂(CF₂)₃CF₂H (2-(2,2,3,3,4,4,5,5-octafluoropentyl)-2-(3,3,3-trifluoro-butyl)-malononitrile);

- M.26. Microbial disruptors: *Bacillus thuringiensis* subsp. *Israelensi*, *Bacillus sphaericus*, *Bacillus thuringiensis* subsp. *Aizawai*, *Bacillus thuringiensis* subsp. *Kurstaki*, *Bacillus thuringiensis* subsp. *Tenebrionis*;

- The commercially available compounds of the group M may be found in The Pesticide Manual, 13th Edition, British Crop Protection Council (2003) among other publications.

- Thioamides of formula M^{6.1} and their preparation have been described in WO 98/28279. Lepimectin is known from Agro Project, PJB Publications Ltd, November 2004. Benclothiaz and its preparation have been described in EP-A1 454621. Methidathion and Paraoxon and their preparation have been described in Farm Chemicals Handbook, Volume 88, Meister Publishing Company, 2001. Acetoprole and its preparation have been described in WO 98/28277. Metaflumizone and its preparation have

been described in EP-A1 462 456. Flupyrzofos has been described in Pesticide Science 54, 1988, p.237-243 and in US 4822779. Pyrafluprole and its preparation have been described in JP 2002193709 and in WO 01/00614. Pyriprole and its preparation have been described in WO 98/45274 and in US 6335357. Amidoflumet and its preparation have been described in US 6221890 and in JP 21010907. Flufenimer and its preparation have been described in WO 03/007717 and in WO 03/007718. AKD 1022 and its preparation have been described in US 6300348. Chloranthraniliprole has been described in WO 01/70671, WO 03/015519 and WO 05/118552. Anthranilamide derivatives of formula M^{24.1} have been described in WO 01/70671, WO 04/067528 and WO 05/118552. Cyflumetofen and its preparation have been described in WO 04/080180. The aminoquinazolinone compound pyrfluquinazon has been described in EP A 109 7932. The alkynylether compounds M^{22.1} and M^{22.2} are described e.g. in JP 2006131529. Organic sulfur compounds have been described in WO 2007060839. The malononitrile compounds have been described in WO 02/089579, WO 02/090320, WO 02/090321, WO 04/006677, WO 05/068423, WO 05/068432 and WO 05/063694.

Fungicidal mixing partners are those selected from the group F consisting of

- F.1 acylalanines such as benalaxyl, metalaxyl, ofurace, oxadixyl;
- F.2 amine derivatives such as aldimorph, dodine, dodemorph, fenpropimorph, fenpropidin, guazatine, iminoctadine, spiroxamin, tridemorph;
- F.3 anilinopyrimidines such as pyrimethanil, mepanipyrim or cyrodinyl;
- F.4 antibiotics such as cycloheximid, griseofulvin, kasugamycin, natamycin, polyoxin or streptomycin;
- F.5 azoles such as bitertanol, bromoconazole, cyproconazole, difenoconazole, dinitroconazole, epoxiconazole, fenbuconazole, fluquiconazole, flusilazole, hexaconazole, imazalil, metconazole, myclobutanil, penconazole, propiconazole, prochloraz, prothioconazole, tebuconazole, triadimefon, triadimenol, triflumizol, triticonazole, flutriafol;
- F.6 dicarboximides such as iprodion, myclozolin, procymidon, vinclozolin;
- F.7 dithiocarbamates such as ferbam, nabam, maneb, mancozeb, metam, metiram, propineb, polycarbamate, thiram, ziram, zineb;
- F.8 heterocyclic compounds such as anilazine, benomyl, boscalid, carbendazim, carboxin, oxycarboxin, cyazofamid, dazomet, dithianon, famoxadon, fenamidon, fenarimol, fuberidazole, flutolanil, furametpyr, isoprothiolane, mepronil, nuarimol, probenazole, proquinazid, pyrifenox, pyroquilon, quinoxifen, silthiofam, thiabendazole, thifluzamid, thiophanate-methyl, tiadinil, tricyclazole, triforine;
- F.9 copper fungicides such as Bordeaux mixture, copper acetate, copper oxychloride, basic copper sulfate;
- F.10 nitrophenyl derivatives such as binapacryl, dinocap, dinobuton, nitrophthalisopropyl;

F.11 phenylpyrroles such as fenpiclonil or fludioxonil;

F.12 strobilurins such as azoxystrobin, dimoxystrobin, fluoxastrobin, kresoxim-methyl, metominostrobin, orysastrobin, picoxystrobin or trifloxystrobin;

F.13 sulfenic acid derivatives such as captafol, captan, dichlofluanid, folpet, tolylfluanid;

5 F.14 cinnemamides and analogs such as dimethomorph, flumetover or flumorph;

F.15 sulfur, and other fungicides such as acibenzolar-S-methyl, benthiavalicarb, carpropamid, chlorothalonil, cyflufenamid, cymoxanil, dazomet, diclomezin, diclocymet, diethofencarb, edifenphos, ethaboxam, fenhexamid, fentin-acetate, fenoxanil, ferimzone, fluazinam, fosetyl, fosetyl-aluminum, iprovalicarb, hexachlorobenzene, metrafenon, pencycuron, propamocarb, phthalide, toloclofos-methyl, quintozone, zoxamid.

Applications

15 The animal pest, i.e. the insects, arachnids and nematodes, the plant, soil or water in which the plant is growing can be contacted with the present compound(s) I or composition(s) containing them by any application method known in the art. As such, "contacting" includes both direct contact (applying the compounds/compositions directly on the animal pest or plant - typically to the foliage, stem or roots of the plant) and indirect
20 contact (applying the compounds/compositions to the locus of the animal pest or plant).

The compounds of formula I or the pesticidal compositions comprising them may be used to protect growing plants and crops from attack or infestation by animal pests, especially insects, acaridae or arachnids by contacting the plant/crop with a pesticidally
25 effective amount of compounds of formula I. The term "crop" refers both to growing and harvested crops.

Moreover, animal pests may be controlled by contacting the target pest, its food supply, habitat, breeding ground or its locus with a pesticidally effective amount of compounds
30 of formula I. As such, the application may be carried out before or after the infection of the locus, growing crops, or harvested crops by the pest.

The compounds of the invention can also be applied preventively to places at which occurrence of the pests is expected.

35

The compounds of formula I may be also used to protect growing plants from attack or infestation by pests by contacting the plant with a pesticidally effective amount of compounds of formula I. As such, "contacting" includes both direct contact (applying the compounds/compositions directly on the pest and/or plant - typically to the foliage,
40 stem or roots of the plant) and indirect contact (applying the compounds/compositions to the locus of the pest and/or plant).

"Locus" means a habitat, breeding ground, plant, seed, soil, area, material or environment in which a pest or parasite is growing or may grow.

5 In general, "pesticidally effective amount" means the amount of active ingredient needed to achieve an observable effect on growth, including the effects of necrosis, death, retardation, prevention, and removal, destruction, or otherwise diminishing the occurrence and activity of the target organism. The pesticidally effective amount can vary for the various compounds/compositions used in the invention. A pesticidally effective amount of the compositions will also vary according to the prevailing conditions
10 such as desired pesticidal effect and duration, weather, target species, locus, mode of application, and the like.

In the case of soil treatment or of application to the pests dwelling place or nest, the quantity of active ingredient ranges from 0.0001 to 500 g per 100 m², preferably from
15 0.001 to 20 g per 100 m².

Customary application rates in the protection of materials are, for example, from 0.01 g to 1000 g of active compound per m² treated material, desirably from 0.1 g to 50 g per m².

20 Insecticidal compositions for use in the impregnation of materials typically contain from 0.001 to 95 weight %, preferably from 0.1 to 45 weight %, and more preferably from 1 to 25 weight % of at least one repellent and/or insecticide.

25 For use in treating crop plants, the rate of application of the active ingredients of this invention may be in the range of 0.1 g to 4000 g per hectare, desirably from 25 g to 600 g per hectare, more desirably from 50 g to 500 g per hectare.

30 The compounds of formula I are effective through both contact (via soil, glass, wall, bed net, carpet, plant parts or animal parts), and ingestion (bait, or plant part).

The compounds of the invention may also be applied against non-crop insect pests, such as ants, termites, wasps, flies, mosquitos, crickets, or cockroaches. For use against said non-crop pests, compounds of formula I are preferably used in a bait composition.
35

The bait can be a liquid, a solid or a semisolid preparation (e.g. a gel). Solid baits can be formed into various shapes and forms suitable to the respective application e.g. granules, blocks, sticks, disks. Liquid baits can be filled into various devices to ensure proper application, e.g. open containers, spray devices, droplet sources, or evaporation
40 sources. Gels can be based on aqueous or oily matrices and can be formulated to particular necessities in terms of stickyness, moisture retention or aging characteristics.

The bait employed in the composition is a product, which is sufficiently attractive to incite insects such as ants, termites, wasps, flies, mosquitos, crickets etc. or cockroaches to eat it. The attractiveness can be manipulated by using feeding stimulants or sex pheromones. Food stimulants are chosen, for example, but not exclusively, from animal and/or plant proteins (meat-, fish- or blood meal, insect parts, egg yolk), from fats and oils of animal and/or plant origin, or mono-, oligo- or polyorganosaccharides, especially from sucrose, lactose, fructose, dextrose, glucose, starch, pectin or even molasses or honey. Fresh or decaying parts of fruits, crops, plants, animals, insects or specific parts thereof can also serve as a feeding stimulant. Sex pheromones are known to be more insect specific. Specific pheromones are described in the literature and are known to those skilled in the art.

For use in bait compositions, the typical content of active ingredient is from 0.001 weight % to 15 weight %, desirably from 0.001 weight % to 5% weight % of active compound.

Formulations of compounds of formula I as aerosols (e.g. in spray cans), oil sprays or pump sprays are highly suitable for the non-professional user for controlling pests such as flies, fleas, ticks, mosquitos or cockroaches. Aerosol recipes are preferably composed of the active compound, solvents such as lower alcohols (e.g. methanol, ethanol, propanol, butanol), ketones (e.g. acetone, methyl ethyl ketone), paraffin hydrocarbons (e.g. kerosenes) having boiling ranges of approximately 50 to 250 °C, dimethylformamide, N-methylpyrrolidone, dimethyl sulfoxide, aromatic hydrocarbons such as toluene, xylene, water, furthermore auxiliaries such as emulsifiers such as sorbitol monooleate, oleyl ethoxylate having 3-7 mol of ethylene oxide, fatty alcohol ethoxylate, perfume oils such as ethereal oils, esters of medium fatty acids with lower alcohols, aromatic carbonyl compounds, if appropriate stabilizers such as sodium benzoate, amphoteric surfactants, lower epoxides, triethyl orthoformate and, if required, propellants such as propane, butane, nitrogen, compressed air, dimethyl ether, carbon dioxide, nitrous oxide, or mixtures of these gases.

The oil spray formulations differ from the aerosol recipes in that no propellants are used.

For use in spray compositions, the content of active ingredient is from 0.001 to 80 weights %, preferably from 0.01 to 50 weight % and most preferably from 0.01 to 15 weight %.

The compounds of formula I and its respective compositions can also be used in mosquito and fumigating coils, smoke cartridges, vaporizer plates or long-term vaporizers and also in moth papers, moth pads or other heat-independent vaporizer systems.

Methods to control infectious diseases transmitted by insects (e.g. malaria, dengue and yellow fever, lymphatic filariasis, and leishmaniasis) with compounds of formula I and its respective compositions also comprise treating surfaces of huts and houses, air spraying and impregnation of curtains, tents, clothing items, bed nets, tsetse-fly trap or the like. Insecticidal compositions for application to fibers, fabric, knitgoods, nonwovens, netting material or foils and tarpaulins preferably comprise a mixture including the insecticide, optionally a repellent and at least one binder. Suitable repellents for example are N,N-Diethyl-meta-toluamide (DEET), N,N-diethylphenylacetamide (DEPA), 1-(3-cyclohexan-1-yl-carbonyl)-2-methylpiperine, (2-hydroxymethylcyclohexyl) acetic acid lactone, 2-ethyl-1,3-hexandiol, indalone, Methylneodecanamide (MNDA), a pyrethroid not used for insect control such as {(+/-)-3-allyl-2-methyl-4-oxocyclopent-2-(+)-enyl-(+)-trans-chrysantemate (Esbiothrin), a repellent derived from or identical with plant extracts like limonene, eugenol, (+)-Eucamalol (1), (-)-1-epi-eucamalol or crude plant extracts from plants like Eucalyptus maculata, Vitex rotundifolia, Cymbopogon martinii, Cymbopogon citratus (lemon grass), Cymbopogon nardus (citronella). Suitable binders are selected for example from polymers and copolymers of vinyl esters of aliphatic acids (such as vinyl acetate and vinyl versatate), acrylic and methacrylic esters of alcohols, such as butyl acrylate, 2-ethylhexylacrylate, and methyl acrylate, mono- and di-ethylenically unsaturated hydrocarbons, such as styrene, and aliphatic dienes, such as butadiene.

The impregnation of curtains and bednets is done in general by dipping the textile material into emulsions or dispersions of the insecticide or spraying them onto the nets.

The compounds of formula I and its compositions can be used for protecting wooden materials such as trees, board fences, sleepers, etc. and buildings such as houses, outhouses, factories, but also construction materials, furniture, leathers, fibers, vinyl articles, electric wires and cables etc. from ants and/or termites, and for controlling ants and termites from doing harm to crops or human being (e.g. when the pests invade into houses and public facilities). The compounds of formula I are applied not only to the surrounding soil surface or into the under-floor soil in order to protect wooden materials but it can also be applied to lumbered articles such as surfaces of the under-floor concrete, alcove posts, beams, plywoods, furniture, etc., wooden articles such as particle boards, half boards, etc. and vinyl articles such as coated electric wires, vinyl sheets, heat insulating material such as styrene foams, etc. In case of application against ants doing harm to crops or human beings, the ant controller of the present invention is applied to the crops or the surrounding soil, or is directly applied to the nest of ants or the like.

Seed treatment

The compounds of formula I are also suitable for the treatment of seeds in order to protect the seed from insect pest, in particular from soil-living insect pests and the resulting plant's roots and shoots against soil pests and foliar insects.

- 5 The compounds of formula I are particularly useful for the protection of the seed from soil pests and the resulting plant's roots and shoots against soil pests and foliar insects. The protection of the resulting plant's roots and shoots is preferred. More preferred is the protection of resulting plant's shoots from piercing and sucking insects, wherein the protection from aphids is most preferred.

10

The present invention therefore comprises a method for the protection of seeds from insects, in particular from soil insects and of the seedlings' roots and shoots from insects, in particular from soil and foliar insects, said method comprising contacting the seeds before sowing and/or after pregermination with a compound of the general for-

- 15 formula I or a salt thereof. Particularly preferred is a method, wherein the plant's roots and shoots are protected, more preferably a method, wherein the plants shoots are protected from piercing and sucking insects, most preferably a method, wherein the plants shoots are protected from aphids.

- 20 The term seed embraces seeds and plant propagules of all kinds including but not limited to true seeds, seed pieces, suckers, corms, bulbs, fruit, tubers, grains, cuttings, cut shoots and the like and means in a preferred embodiment true seeds.

- 25 The term seed treatment comprises all suitable seed treatment techniques known in the art, such as seed dressing, seed coating, seed dusting, seed soaking and seed pelleting.

The present invention also comprises seeds coated with or containing the active compound.

- 30 The term "coated with and/or containing" generally signifies that the active ingredient is for the most part on the surface of the propagation product at the time of application, although a greater or lesser part of the ingredient may penetrate into the propagation product, depending on the method of application. When the said propagation product is (re)planted, it may absorb the active ingredient.

35

Suitable seed is seed of cereals, root crops, oil crops, vegetables, spices, ornamentals, for example seed of durum and other wheat, barley, oats, rye, maize (fodder maize and sugar maize / sweet and field corn), soybeans, oil crops, crucifers, cotton, sunflowers, bananas, rice, oilseed rape, turnip rape, sugarbeet, fodder beet, eggplants, potatoes, grass, lawn, turf, fodder grass, tomatoes, leeks, pumpkin/squash, cabbage, iceberg
40 lettuce, pepper, cucumbers, melons, Brassica species, melons, beans, peas, garlic, onions, carrots, tuberous plants such as potatoes, sugar cane, tobacco, grapes, petunias, geranium/pelargoniums, pansies and impatiens.

In addition, the active compound may also be used for the treatment seeds from plants, which tolerate the action of herbicides or fungicides or insecticides owing to breeding, including genetic engineering methods.

5

For example, the active compound can be employed in treatment of seeds from plants, which are resistant to herbicides from the group consisting of the sulfonylureas, imidazolinones, glufosinate-ammonium or glyphosate-isopropylammonium and analogous active substances (see for example, EP-A-0242236, EP-A-242246) (WO 92/00377) (EP-A-0257993, U.S. Pat. No. 5,013,659) or in transgenic crop plants, for example cotton, with the capability of producing *Bacillus thuringiensis* toxins (Bt toxins) which make the plants resistant to certain pests (EP-A-0142924, EP-A-0193259),

Furthermore, the active compound can be used also for the treatment of seeds from plants, which have modified characteristics in comparison with existing plants consist, which can be generated for example by traditional breeding methods and/or the generation of mutants, or by recombinant procedures). For example, a number of cases have been described of recombinant modifications of crop plants for the purpose of modifying the starch synthesized in the plants (e.g. WO 92/11376, WO 92/14827, WO 91/19806) or of transgenic crop plants having a modified fatty acid composition (WO 91/13972).

The seed treatment application of the active compound is carried out by spraying or by dusting the seeds before sowing of the plants and before emergence of the plants.

25

Compositions which are especially useful for seed treatment are e.g.:

- A Soluble concentrates (SL, LS)
- D Emulsions (EW, EO, ES)
- 30 E Suspensions (SC, OD, FS)
- F Water-dispersible granules and water-soluble granules (WG, SG)
- G Water-dispersible powders and water-soluble powders (WP, SP, WS)
- H Gel-Formulations (GF)
- I Dustable powders (DP, DS)

35

Conventional seed treatment formulations include for example flowable concentrates FS, solutions LS, powders for dry treatment DS, water dispersible powders for slurry treatment WS, water-soluble powders SS and emulsion ES and EC and gel formulation GF. These formulations can be applied to the seed diluted or undiluted. Application to the seeds is carried out before sowing, either directly on the seeds or after having pre-germinated the latter

40

In a preferred embodiment a FS formulation is used for seed treatment. Typically, a FS formulation may comprise 1-800 g/l of active ingredient, 1-200 g/l Surfactant, 0 to 200 g/l antifreezing agent, 0 to 400 g/l of binder, 0 to 200 g/l of a pigment and up to 1 liter of a solvent, preferably water.

5

Especially preferred FS formulations of compounds of formula I for seed treatment usually comprise from 0.1 to 80% by weight (1 to 800 g/l) of the active ingredient, from 0.1 to 20 % by weight (1 to 200 g/l) of at least one surfactant, e.g. 0.05 to 5 % by weight of a wetter and from 0.5 to 15 % by weight of a dispersing agent, up to 20 % by weight, e.g. from 5 to 20 % of an anti-freeze agent, from 0 to 15 % by weight, e.g. 1 to 15 % by weight of a pigment and/or a dye, from 0 to 40 % by weight, e.g. 1 to 40 % by weight of a binder (sticker /adhesion agent), optionally up to 5 % by weight, e.g. from 0.1 to 5 % by weight of a thickener, optionally from 0.1 to 2 % of an anti-foam agent, and optionally a preservative such as a biocide, antioxidant or the like, e.g. in an amount from 0.01 to 1 % by weight and a filler/vehicle up to 100 % by weight.

15

Seed Treatment formulations may additionally also comprise binders and optionally colorants.

20

Binders can be added to improve the adhesion of the active materials on the seeds after treatment. Suitable binders are homo- and copolymers from alkylene oxides like ethylene oxide or propylene oxide, polyvinylacetate, polyvinylalcohols, polyvinylpyrrolidones, and copolymers thereof, ethylene-vinyl acetate copolymers, acrylic homo- and copolymers, polyethyleneamines, polyethyleneamides and polyethyleneimines, polysaccharides like celluloses, tylose and starch, polyolefin homo- and copolymers like olefin/maleic anhydride copolymers, polyurethanes, polyesters, polystyrene homo and copolymers

25

Optionally, also colorants can be included in the formulation. Suitable colorants or dyes for seed treatment formulations are Rhodamin B, C.I. Pigment Red 112, C.I. Solvent Red 1, pigment blue 15:4, pigment blue 15:3, pigment blue 15:2, pigment blue 15:1, pigment blue 80, pigment yellow 1, pigment yellow 13, pigment red 112, pigment red 48:2, pigment red 48:1, pigment red 57:1, pigment red 53:1, pigment orange 43, pigment orange 34, pigment orange 5, pigment green 36, pigment green 7, pigment white 6, pigment brown 25, basic violet 10, basic violet 49, acid red 51, acid red 52, acid red 14, acid blue 9, acid yellow 23, basic red 10, basic red 108.

35

Examples of a gelling agent is carrageen (Satiagel®)

40

In the treatment of seed, the application rates of the compounds I are generally from 0.1 g to 10 kg per 100 kg of seed, preferably from 1 g to 5 kg per 100 kg of seed, more preferably from 1 g to 1000 g per 100 kg of seed and in particular from 1 g to 200 g per 100 kg of seed.

The invention therefore also relates to seed comprising a compound of the formula I, or an agriculturally useful salt of I, as defined herein. The amount of the compound I or the agriculturally useful salt thereof will in general vary from 0.1 g to 10 kg per 100 kg of seed, preferably from 1 g to 5 kg per 100 kg of seed, in particular from 1 g to 1000 g per 100 kg of seed. For specific crops such as lettuce the rate can be higher.

The present invention is now illustrated in further details by the following examples.

10 Examples

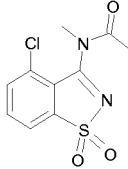
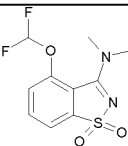
The present invention is now illustrated in further details by the following examples.

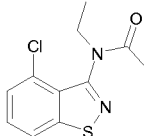
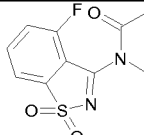
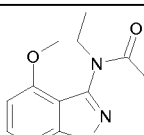
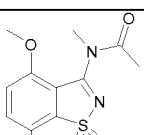
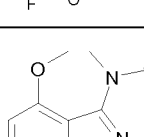
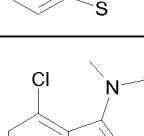
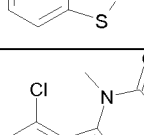
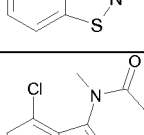
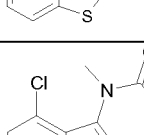
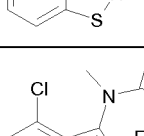
Some of the preferred compound examples are characterized by their physical data in the following table C. The characterization is done by coupled High Performance Liquid Chromatography / mass spectrometry (HPLC/MS), by NMR or by their melting points.

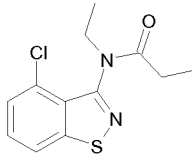
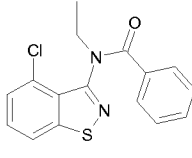
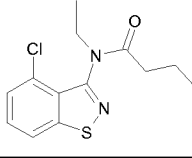
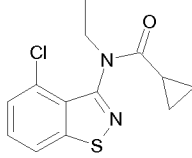
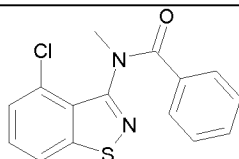
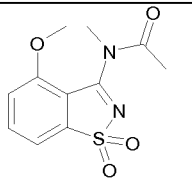
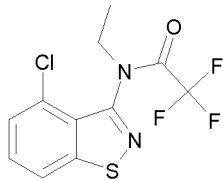
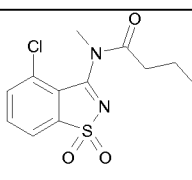
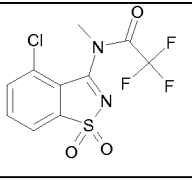
Analytical HPLC column: RP-18 column Chromolith Speed ROD from Merck KGaA, Germany). Elution: acetonitrile + 0.1% trifluoroacetic acid (TFA) / water + 0.1% trifluoroacetic acid (TFA) in a ratio of from 5:95 to 95:5 in 5 minutes at 40 °C. Alternatively the compounds were additionally or instead characterized by their melting point.

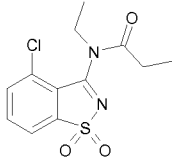
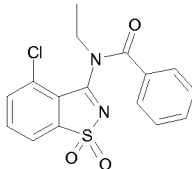
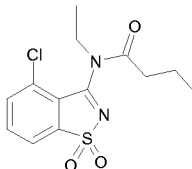
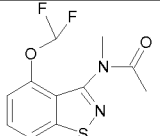
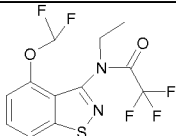
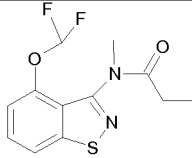
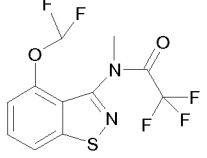
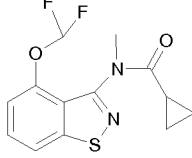
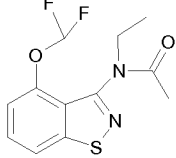
Some compounds were characterized by ¹H-NMR. The signals are characterized by chemical shift (ppm) vs. tetramethylsilane, by their multiplicity and by their integral (relative number of hydrogen atoms given). The following abbreviations are used to characterize the multiplicity of the signals: M = multiplett, q = quartett, t = triplett, d = doublet and s = singulett.

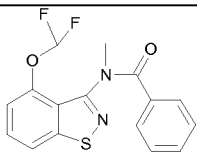
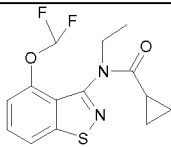
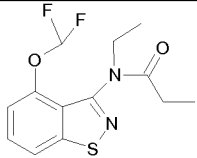
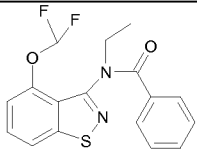
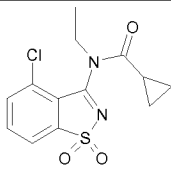
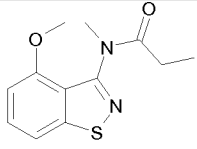
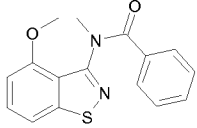
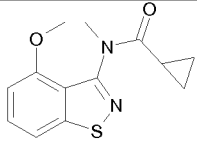
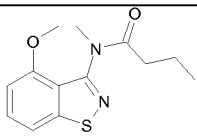
30 Table C:

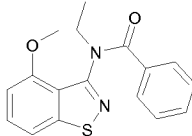
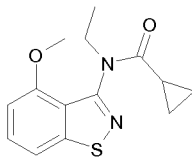
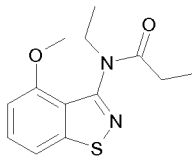
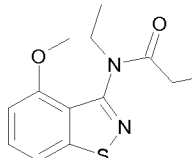
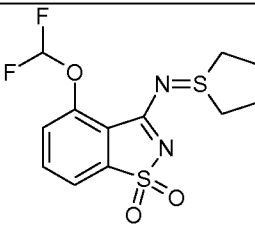
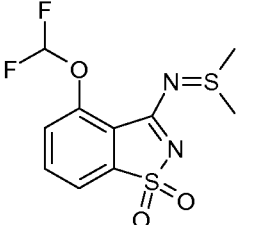
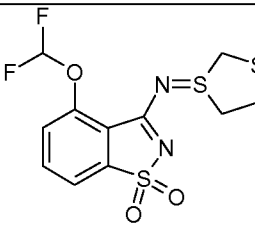
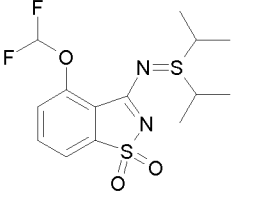
Compound example	Structure of compound	melting point F _p [°C]	HPLC-MS (t _r = retention time) or ¹ H NMR (in CDCl ₃): δ [ppm]
1.			t _r = 2.16 min, m/z= 295 [M+23]
2.			t _r = 2.31 min, m/z= 305 [M+1]

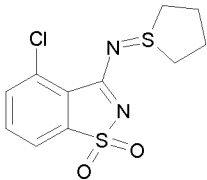
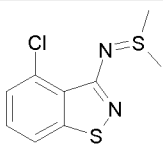
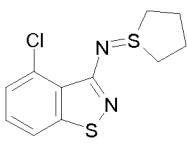
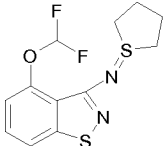
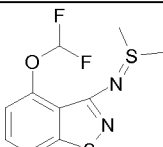
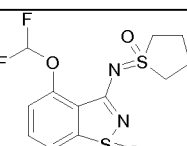
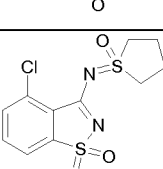
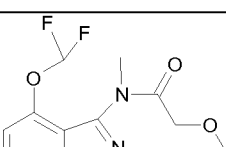
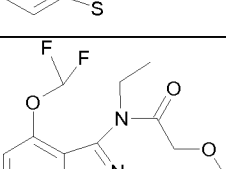
Compound example	Structure of compound	melting point F_p [°C]	HPLC-MS (t_r = retention time) or 1H NMR (in $CDCl_3$): δ [ppm]
3.			t_r = 2.75 min, m/z = 255 [M+1]
4.			t_r = 2.11 min, m/z = 257 [M+1]
5.			t_r = 2.62 min, m/z = 251 [M+1]
6.			t_r = 2.25 min, m/z = 245 [M+1]
7.			t_r = 2.32 min, m/z = 237 [M+1]
8.			t_r = 2.45 min, m/z = 241 [M+1]
9.			t_r = 2.79 min, m/z = 255 [M+1]
10.			t_r = 3.07 min, m/z = 269 [M+1]
11.			t_r = 2.84 min, m/z = 267 [M+1]
12.			t_r = 3.39 min, m/z = 295 [M+1]

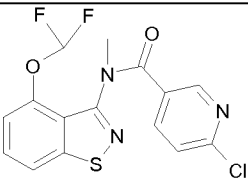
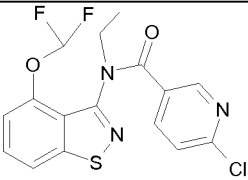
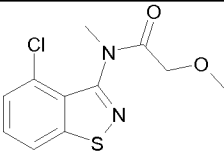
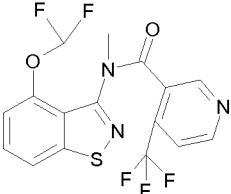
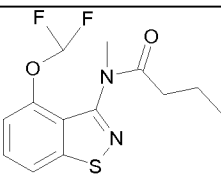
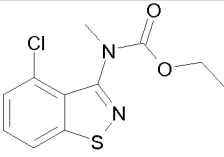
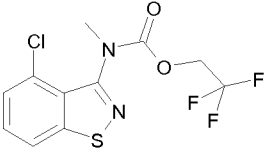
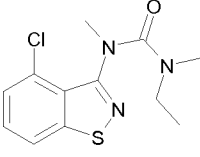
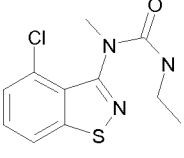
Compound example	Structure of compound	melting point F_p [°C]	HPLC-MS (t_r = retention time) or ^1H NMR (in CDCl_3): δ [ppm]
13.			t_r = 3.08 min, m/z = 269 [M+1]
14.			t_r = 3.39 min, m/z = 317 [M+1]
15.			t_r = 3.35 min, m/z = 283 [M+1]
16.			t_r = 3.12 min, m/z = 281 [M+1]
17.			t_r = 3.14 min, m/z = 303 [M+1]
18.			t_r = 2.06 min, m/z = 291 [M+1]
19.			t_r = 3.69 min, m/z = 309 [M+1]
20.			t_r = 2.93 min, m/z = 301 [M+1]
21.			t_r = 3.14 min, m/z = 327 [M+1]

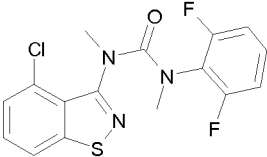
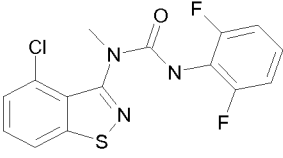
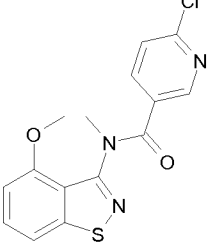
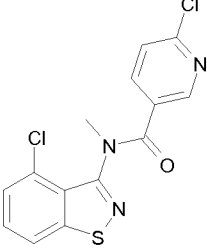
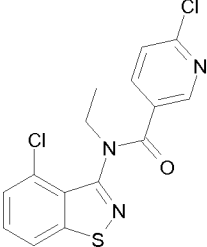
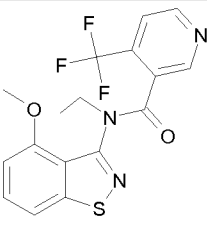
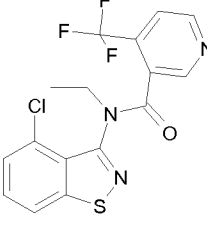
Compound example	Structure of compound	melting point F _p [°C]	HPLC-MS (t _r = retention time) or ¹ H NMR (in CDCl ₃): δ [ppm]
22.			t _r = 2.86 min, m/z= 301 [M+1]
23.			t _r = 3.28 min, m/z= 349 [M+1]
24.			t _r = 3.15 min, m/z= 315 [M+1]
25.			t _r = 2.53 min, m/z= 273 [M+1]
26.			t _r = 2.62 min, m/z= 341 [M+1]
27.			t _r = 2.84 min, m/z= 287 [M+1]
28.			t _r = 2.35 min, m/z= 327 [M+1]
29.			t _r = 2.89 min, m/z= 299 [M+1]
30.			t _r = 2.79 min, m/z= 287 [M+1]

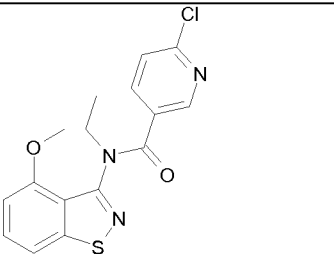
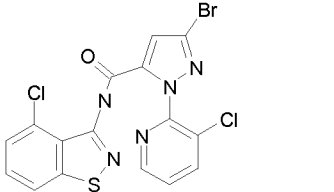
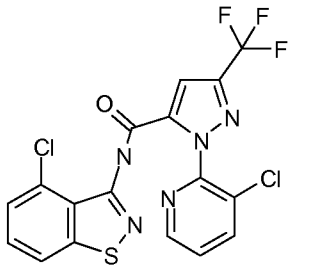
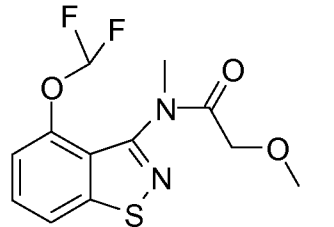
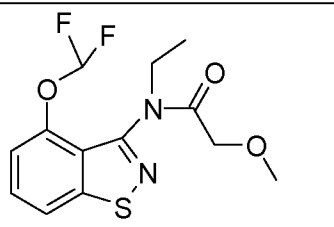
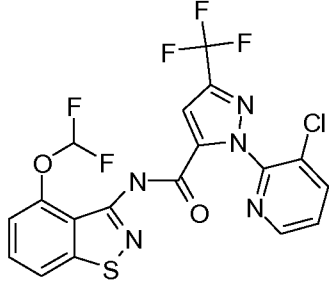
Compound example	Structure of compound	melting point F _p [°C]	HPLC-MS (t _r = retention time) or ¹ H NMR (in CDCl ₃): δ [ppm]
31.			t _r = 3.16 min, m/z= 335 [M+1]
32.			t _r = 3.12 min, m/z= 313 [M+1]
33.			¹ H NMR (in CDCl ₃): δ [ppm] = 1.04 (t, 3H), 1.20 (t, 3H), 1.89 (m, 1H), 2.10 (m, 1H), 3.41 (m, 1H), 4.22 (m, 1H), 6.68 (t, 1H), 7.19 (t, 1H), 7.57 (t, 1H), 7.75 (d, 1H)
34.			t _r = 3.12 min, m/z= 349 [M+1]
35.			t _r = 2.95 min, m/z= 335 [M+23]
36.			t _r = 2.63 min, m/z= 251 [M+1]
37.			t _r = 2.95 min, m/z= 299 [M+1]
38.			¹ H NMR (in CDCl ₃): δ [ppm] = 0.50 (m, 1H), 0.61 (m, 1H), 1.02 (m, 2H), 3.30 (s, 3H), 3.92 (s, 3H), 6.79 (d, 1H), 7.48 (m, 2H)
39.			t _r = 2.90 min, m/z= 265 [M+1]

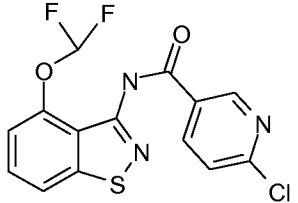
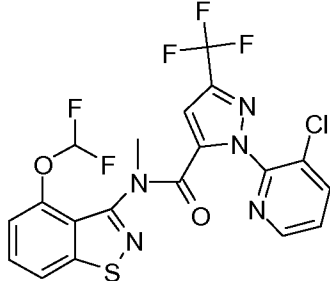
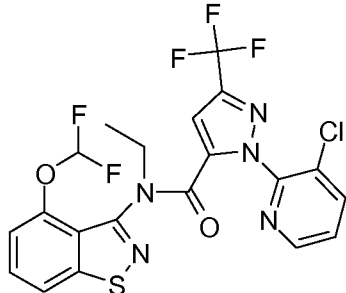
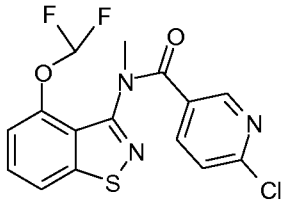
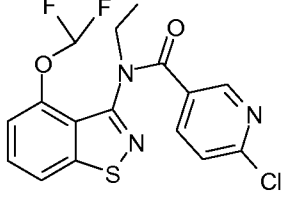
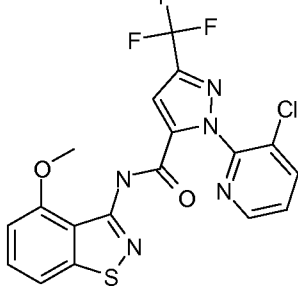
Compound example	Structure of compound	melting point F_p [°C]	HPLC-MS (t_r = retention time) or 1H NMR (in $CDCl_3$): δ [ppm]
40.			t_r = 3.17 min, m/z = 313 [M+1]
41.			t_r = 3.07 min, m/z = 277 [M+1]
42.			t_r = 2.89 min, m/z = 265 [M+1]
43.			t_r = 3.12 min, m/z = 279 [M+1]
44.		189-192	t_r = 2.32 min, m/z = 335 [M+1]
45.			t_r = 2.00 min, m/z = 309 [M+1]
46.		188-192	t_r = 2.35 min, m/z = 353 [M+1]
47.		112-113	t_r = 2.75 min, m/z = 365 [M+1]

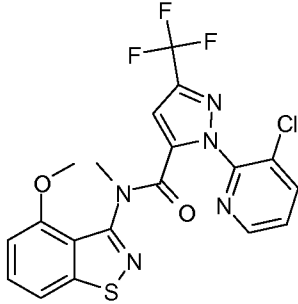
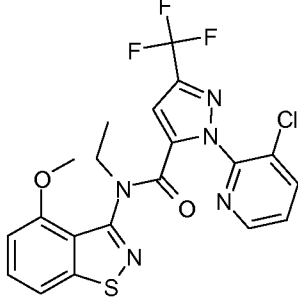
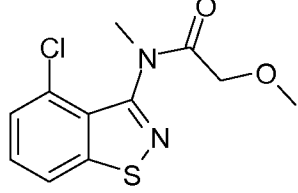
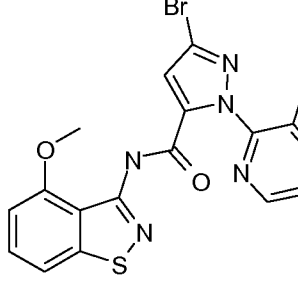
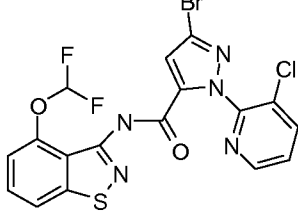
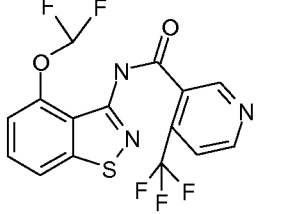
Compound example	Structure of compound	melting point F _p [°C]	HPLC-MS (t _r = retention time) or ¹ H NMR (in CDCl ₃): δ [ppm]
48.			t _r = 2.27 min, m/z= 303 [M+1]
49.		95-97	
50.			t _r = 1.80 min, m/z= 271 [M+1]
51.			t _r = 2.04 min, m/z= 303 [M+1]
52.			t _r = 1.90 min, m/z= 277 [M+1]
53.			t _r = 2.44 min, m/z= 351 [M+1]
54.			t _r = 2.35 min, m/z= 319 [M+1]
55.			t _r = 2.49 min, m/z= 303 [M+1]
56.			t _r = 2.74 min, m/z= 317 [M+1]

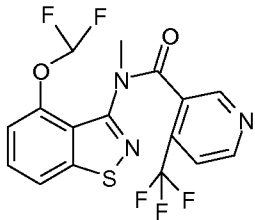
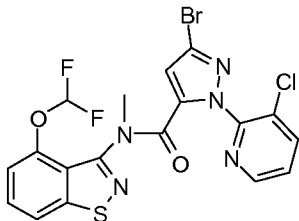
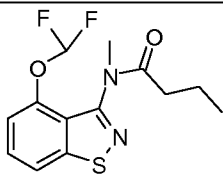
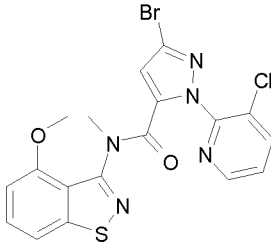
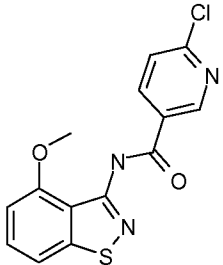
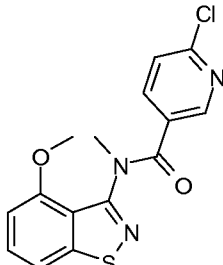
Compound example	Structure of compound	melting point F _p [°C]	HPLC-MS (t _r = retention time) or ¹ H NMR (in CDCl ₃): δ [ppm]
57.			t _r = 3.03 min, m/z= 370 [M+1]
58.			t _r = 3.26 min, m/z= 384 [M+1]
59.			t _r = 2.39 min, m/z= 271 [M+1]
60.		141-143°C	
61.			t _r = 2.97 min, m/z= 301 [M+1]
62.			t _r = 3.06 min, m/z= 271 [M+1]
63.			t _r = 3.35 min, m/z= 325 [M+1]
64.			t _r = 2.95 min, m/z= 284 [M+1]
65.			t _r = 2.34 min, m/z= 270 [M+1]

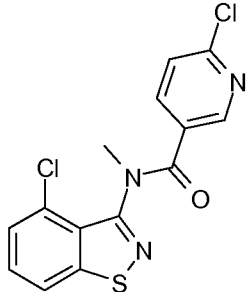
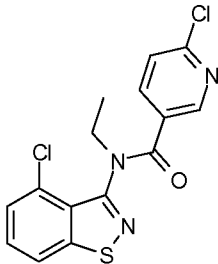
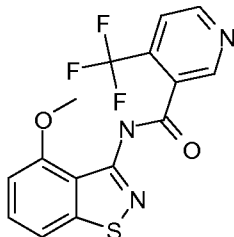
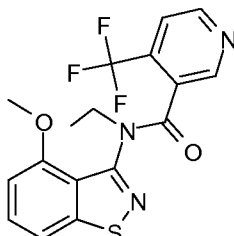
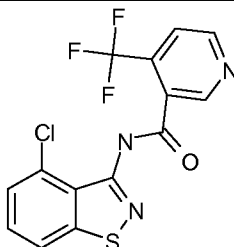
Compound example	Structure of compound	melting point F _p [°C]	HPLC-MS (t _r = retention time) or ¹ H NMR (in CDCl ₃): δ [ppm]
66.			t _r = 3.17 min, m/z= 368 [M+1]
67.			t _r = 2.97 min, m/z= 354 [M+1]
68.			t _r = 2.88 min, m/z= 334 [M+1]
69.			t _r = 2.97 min, m/z= 338 [M+1]
70.			t _r = 3.23 min, m/z= 352 [M+1]
71.			t _r = 3.23 min, m/z= 382 [M+1]
72.			t _r = 3.31 min, m/z= 386 [M+1]

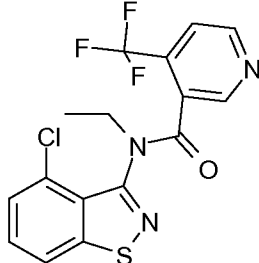
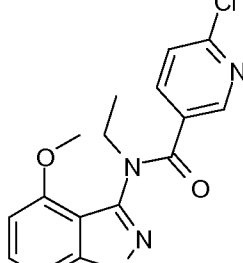
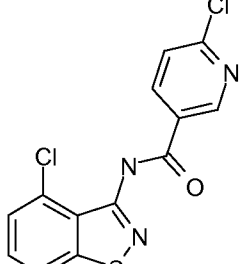
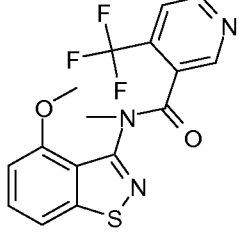
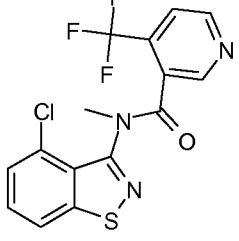
Compound example	Structure of compound	melting point F _p [°C]	HPLC-MS (t _r = retention time) or ¹ H NMR (in CDCl ₃): δ [ppm]
73.			t _r = 3.11 min, m/z= 348 [M+1]
74.			t _r = 3.2 min, m/z= 470 [M+1]
75.			t _r = 3.5 min, m/z= 458 [M+1]
76.			t _r = 2.49 min, m/z= 303 [M+1]
77.			t _r = 2.74 min, m/z= 317 [M+1]
78.			t _r = 3.49 min, m/z= 490 [M+1]

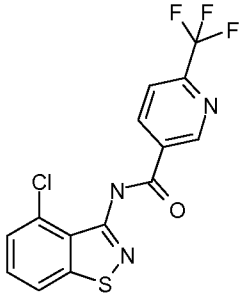
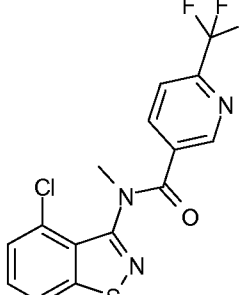
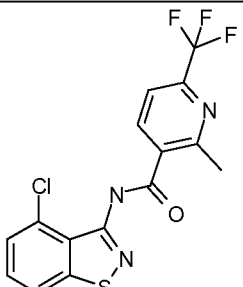
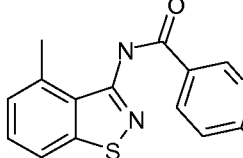
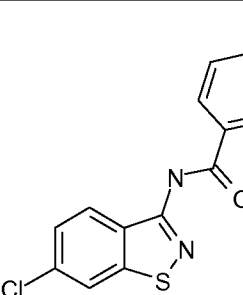
Compound example	Structure of compound	melting point F _p [°C]	HPLC-MS (t _r = retention time) or ¹ H NMR (in CDCl ₃): δ [ppm]
79.			t _r = 2.81 min, m/z= 356 [M+1]
80.			t _r = 3.66 min, m/z= 504 [M+1]
81.			t _r = 3.83 min, m/z= 518 [M+1]
82.			t _r = 3.03 min, m/z= 370 [M+1]
83.			t _r = 3.24 min, m/z= 384 [M+1]
84.		178-179	

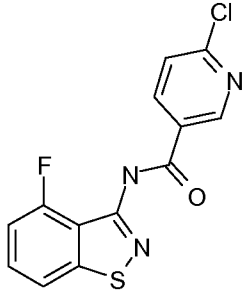
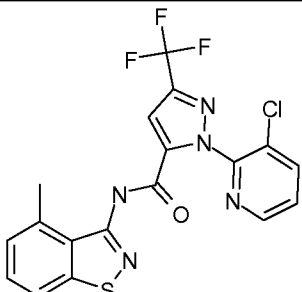
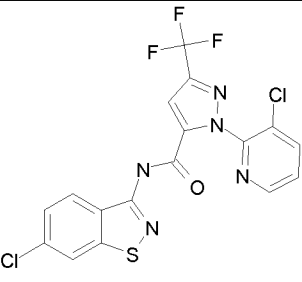
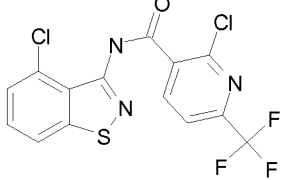
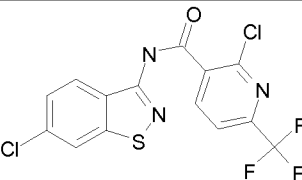
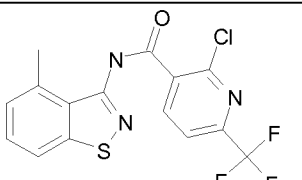
Compound example	Structure of compound	melting point F _p [°C]	HPLC-MS (t _r = retention time) or ¹ H NMR (in CDCl ₃): δ [ppm]
85.		117-120	
86.			t _r = 3.87 min, m/z= 482 [M+1]
87.			t _r = 2.39 min, m/z= 271 [M+1]
88.			t _r = 3.27 min, m/z= 466 [M+1]
89.			t _r = 3.27 min, m/z= 502 [M+1]
90.			t _r = 2.89 min, m/z= 390 [M+1]

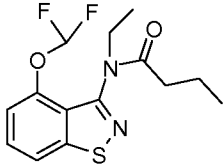
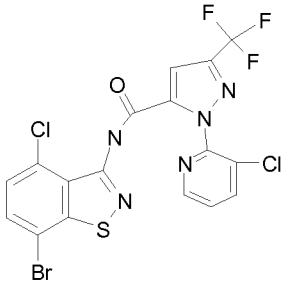
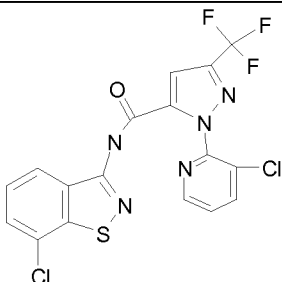
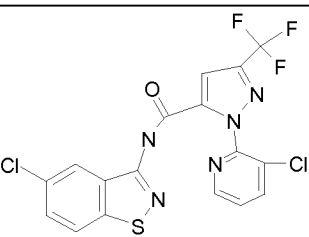
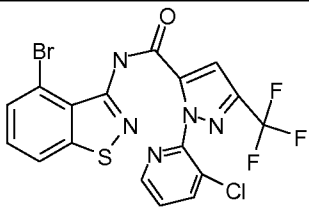
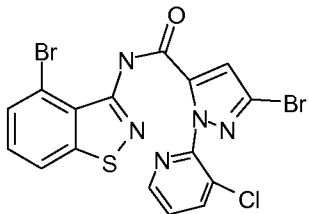
Compound example	Structure of compound	melting point F _p [°C]	HPLC-MS (t _r = retention time) or ¹ H NMR (in CDCl ₃): δ [ppm]
91.		141-143	
92.			t _r = 3.42 min, m/z= 516 [M+1]
93.			t _r = 2.97 min, m/z= 301 [M+1]
94.			¹ H NMR (in CDCl ₃): δ [ppm] = 3.32 (s, 3H), 3.93 (s, 3H), 5.51 (s, 1H), 6.78 (d, 1H), 7.40 (m, 1H), 7.49 (m, 2H), 7.89 (d, 1H), 8.48 (d, 1H)
95.			t _r = 2.74 min, m/z= 320 [M+1]
96.			t _r = 2.88 min, m/z= 334 [M+1]

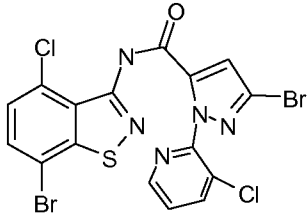
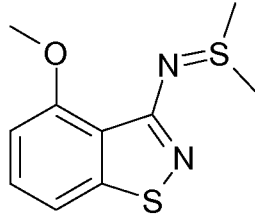
Compound example	Structure of compound	melting point F _p [°C]	HPLC-MS (t _r = retention time) or ¹ H NMR (in CDCl ₃): δ [ppm]
97.			t _r = 2.97min, m/z= 338 [M+1]
98.			t _r = 3.23 min, m/z= 352 [M+1]
99.			t _r = 2.77 min, m/z= 354 [M+1]
100.			t _r = 3.23 min, m/z= 382 [M+1]
101.			t _r = 2.69 min, m/z= 358 [M+1]

Compound example	Structure of compound	melting point F _p [°C]	HPLC-MS (t _r = retention time) or ¹ H NMR (in CDCl ₃): δ [ppm]
102.			t _r = 3.31 min, m/z= 386 [M+1]
103.			t _r = 3.11 min, m/z= 348 [M+1]
104.			t _r = 2.67 min, m/z= 324 [M+1]
105.			t _r = 3.00 min, m/z= 368 [M+1]
106.			t _r = 3.07 min, m/z= 372 [M+1]

Compound example	Structure of compound	melting point F _p [°C]	HPLC-MS (t _r = retention time) or ¹ H NMR (in CDCl ₃): δ [ppm]
107.			t _r = 3.04 min, m/z= 358 [M+1]
108.			t _r = 3.31 min, m/z= 372 [M+1]
109.			t _r = 3.06 min, m/z= 372 [M+1]
110.			t _r = 2.63 min, m/z= 304 [M+1]
111.			t _r = 2.94 min, m/z= 324 [M+1]

Compound example	Structure of compound	melting point F _p [°C]	HPLC-MS (t _r = retention time) or ¹ H NMR (in CDCl ₃): δ [ppm]
112.			t _r = 2.87 min, m/z= 309 [M+1]
113.			t _r = 3.28 min, m/z= 438 [M+1]
114.			t _r = 3.51 min, m/z= 458 [M+1]
115.			t _r = 3.12 min, m/z= 392 [M+1]
116.			t _r = 3.33 min, m/z= 392 [M+1]
117.			t _r = 3.09 min, m/z= 372 [M+1]

Compound example	Structure of compound	melting point F_p [$^{\circ}\text{C}$]	HPLC-MS (t_r = retention time) or ^1H NMR (in CDCl_3): δ [ppm]
118.			t_r = 3.20 min, m/z = 315 [M+1]
119.			t_r = 3.85 min, m/z = 538 [M+1]
120.			t_r = 3.78 min, m/z = 458 [M+1]
121.			t_r = 3.59 min, m/z = 460 [M+1]
122.			t_r = 3.54 min, m/z = 504 [M+1]
123.			t_r = 3.27 min, m/z = 514 [M+1]

Compound example	Structure of compound	melting point F _p [°C]	HPLC-MS (t _r = retention time) or ¹ H NMR (in CDCl ₃): δ [ppm]
124.			t _r = 3.62 min, m/z= 550 [M+1]
125.			t _r = 1.91 min, m/z= 241 [M+1]

Synthesis Examples

- 5 S.1 4-Difluoromethoxy-3-S-dimethyl-thionitroso-benzo[d]isothiazole 1,1-dioxide
[Compound example 45 (of table C)]

Step 1: S,S Dimethyl – S- Aminosulfonium mesitylenesulfonate was prepared according to Y. Tamura et al, Tetrahedron, 1975, 31, 3035-3040.

10

3-Chloro-4-difluoromethoxy-benzo[d]isothiazole 1,1-dioxide was prepared by adding 9.50 g (38.1 mmol) 4-Difluoromethoxy-saccharine, 6.8 g (57.0 mmol) thionyl chloride and 0.4 ml dimethylformamid (DMF) to 50 ml 1,4-dioxane and heating to reflux for 29 h. The mixture was cooled to room temperature and all volatiles were removed by distillation. 9.3 g of the 3-Chloro-4-difluoromethoxy-benzo[d]isothiazole 1,1-dioxide compound were obtained as a crude product and used in the next step without further purification.

15

Step 2: 0.51 g (1.90 mmol) 3-Chloro-4-difluoromethoxy-benzo[d]isothiazole 1,1-dioxide was dissolved in 15 ml dichloromethane at room temperature. 0.49 g Huenig's base was added, followed by 1.05 g (3.80 mmol) S,S Dimethyl – S- Aminosulfonium mesitylene-sulfonate. Stirring at room temperature was continued overnight. The solvent was removed by distillation and the residue was purified on silica (eluent: cyclohexanes/ ethyl acetate 1:1) to yield 155 mg (0.50 mmol) of compound example 45 of table C.

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- S.2 (4-Chloro-1,1-dioxo-1H-1λ⁶-benzo[d]isothiazol-3-yl)-(1-oxo-tetrahydro-1λ⁶-thiophen-1-ylidene)-amine [Compound example 54 (of table C)]:

100 mg (0.33 mmol) of compound 5 (prepared in analogy to compound 2) were dissolved in 2.5 ml dichloromethane at room temperature. 50 mg tetrabutylammonium bromide, dissolved in 5 ml ethyl acetate, were added, followed by 10 ml of a 12.5 wt.% NaOCl-solution. Stirring at room temperature was continued for 72 h. Water was added and the layers were separated. The aqueous layer was extracted with ethyl acetate twice. The combined organic layers were dried over magnesium sulfate. The solvent was removed by distillation and the residue was purified on silica (eluent: cyclohexanes/ ethyl acetate 1:2) to yield 20 mg (0.06 mmol) of compound 11.

S.3 N-Ethyl-N-(4-methoxy-benzo[d]isothiazol-3-yl)-acetamide
[Compound example 5 (of table C)]

- Step 1: 7.0 g (42 mmol) 4-Methoxy-benzo[d]isothiazole [Drug.Res. 30(II),11 (1980),1831-1838] were dissolved in 150 ml methyl glycol and 4.7 g (85 mmol) sodium methylate were added at room temperature. The mixture was heated at 80°C for 4 h, then additional 2.4 g (42 mmol) sodium methylate were added and the mixture was stirred for 1h. After 2h and again after 4 h additional 2.4 g (42 mmol) sodium methylate were added. The mixture was stirred overnight at room temperature. The resulting sodium salt was used without further purification.
- 82 g (1.3 mol) aqueous ethylamine (70%) was added to the reaction mixture, the solution was cooled to 0-5 °C and 40 g aqueous 12% sodium hypochlorite was added dropwise during 20 min. The mixture was stirred for 1 h at this temperature, then water was added and the product was extracted into ethyl acetate. The organic layer was dried over sodium sulfate, the solvent was removed by distillation and the residue was purified on silica (eluent: cyclohexanes/ ethyl acetate) to yield 5.7 g (27 mmol) of Ethyl-(4-methoxy-benzo[d]isothiazol-3-yl)-amine [¹H NMR (in CDCl₃): δ [ppm] = 1.32 (t, 3H), 3.58 (q, 2H), 3.98 (s, 3H), 6.28 (bs, 1H), 6.62 (d, 1H), 7.30 (m, 2H)].
- Step 2: 0.5 g (2.4 mmol) Ethyl-(4-methoxy-benzo[d]isothiazol-3-yl)-amine was dissolved in 20 ml acetonitrile at room temperature. 0.76 g (9.6 mmol) pyridine together with a catalytic amount of dimethylamino pyridine was added, followed by 0.58 g (7.2 mmol) acetyl chloride. Stirring at room temperature was continued overnight. Water was added and the product was extracted with dichloromethane. The organic layer was washed with aqueous HCl (10%), saturated sodium hydrogencarbonate and water. The organic layer was dried over sodium sulfate. The solvent was removed by distillation and the residue was purified on silica (eluent: cyclohexane/ ethyl acetate) to yield 0.47 g (1.88 mmol) of Compound example 5 (of table C)

S.4 N-(4-Difluoromethoxy-benzo[d]isothiazol-3-yl)-N-ethyl-2,2,2-trifluoro-acetamide
[Compound example 26 (of table C)]

- 5 Step 1: A mixture of 40 ml conc. HCl, 20 ml water and 20 ml ethanol was cooled to 0-5°C. 10 g (37 mmol) 2-Cyano-3-difluoromethoxy-benzenesulfonyl chloride [WO 2006/56433] were added to the stirred solution followed by 12.2 g (0.19 mol) zinc powder in small portions. Stirring was continued at room temperature for 2 h. Water and ethyl acetate were added and the organic layer was dried
10 over sodium sulfate. The solvent was removed by distillation and the residue was purified on silica (eluent: toluene/ acetone) to yield 2.62 g (12 mmol) 2-Difluoromethoxy-6-mercapto-benzamide.
- Step 2: 2.1 g (9.6 mmol) 2-Difluoromethoxy-6-mercapto-benzamide was dissolved in
15 90 ml methanol. A solution of 0.76 g potassium hydroxide (85%) in 90 ml water was added. 1.6 g hydroxylamine-O-sulfonic acid and 1.26 g potassium hydroxide (85%) were dissolved in 90 ml water and the solution was added dropwise to the reaction mixture at 0°C. Stirring was continued at 0°C for 3h. The reaction mixture was extracted 3 times with dichloromethane. The aqueous layer was
20 acidified with aq. HCl(10%) and the product was extracted with dichloromethane. The organic layer was dried over sodium sulfate. Evaporation of the solvent gave 1.2 g (4.4 mmol) 4-Difluoromethoxy-benzo[d]isothiazol-3-one (m.p. 176-177 °C)
- 25 Step 3: 3.1 g (14 mmol) Difluoromethoxy-benzo[d]isothiazol-3-one was dissolved in 100 ml dichloromethane at room temperature. 1.13 g (14 mmol) pyridine was added. 4.0 g (14 mmol) trifluoromethanesulfonic anhydride was added dropwise. Stirring at room temperature was continued for 2 h. Water was added and the product was extracted with dichloromethane. The organic layer was washed
30 with aqueous HCl (10%), and water. The organic layer was dried over sodium sulfate. The solvent was removed by distillation to yield 4.3 g trifluoromethanesulfonic acid 4-difluoromethoxy-benzo[d]isothiazol-3-yl ester which was used for the next step without further purification.
- 35 Step 4: 0.5 g (1.4 mmol) 4-difluoromethoxy-benzo[d]isothiazol-3-yl ester was dissolved in 20 ml tetrahydrofuran and 0.23 g triethylamine was added. The solution was treated for 5 minutes with gaseous ethylamine and stirred at room temperature for additional 30 min. Water was added and the product was extracted with ethyl acetate. The organic layer was washed with aqueous potassium carbonate (5%) and water. The organic layer was dried over sodium sulfate. The solvent was removed by distillation and the residue was purified on silica (eluent: cyclohexane/ ethyl acetate) to yield 0.14 g (0.46 mmol) (4-difluoromethoxy-benzo[d]isothiazol-3-yl)-ethyl-amine.
40

Step 5: 0.8 g (3.4 mmol) (4-Difluoromethoxy-benzo[d]isothiazol-3-yl)-ethyl-amine was dissolved in 50 ml acetonitrile at room temperature. 1.1 g (13.4 mmol) pyridine together with a catalytic amount of dimethylamino pyridine was added. A solution of 0.72 g (3.4 mmol) trifluoroacetic acid anhydride in 20 ml acetonitrile was added dropwise. Stirring at room temperature was continued for 4 h. Water was added and the product was extracted with ethyl acetate. The organic layer was washed with aqueous HCl (10%), and water. The organic layer was dried over sodium sulfate. The solvent was removed by distillation and the residue which was purified by treatment with methyl tert. butylether to yield 0.35 g (1.03 mmol) compound example 26 (of table C).

B. Biological examples of action against pests

If not otherwise described, the active compounds were formulated in a mixture of 50 vol.-% acetone:50 vol.-% water. A nonionic surfactant (Kinetic®) was included in the solution at a volume of 0.01% v/v.

In the following tests, the formulated solutions of the active compounds were diluted to an active ingredient concentration of 300 ppm and the diluted solutions were applied in the below mentioned tests.

The action of the compounds of the formula I against pests was demonstrated by the following experiments:

B.1 Cotton aphid (*Aphis gossypii*)

Cotton plants at the cotyledon stage were infested prior to treatment by placing a heavily infested leaf from the main aphid colony on top of each cotyledon. The aphids were allowed to transfer overnight and the host leaf was removed. The infested cotyledons were then dipped and agitated in the test solution for 3 seconds and allowed to dry in a fume hood. Test plants were maintained under fluorescent lighting in a 24-hr photoperiod at 25°C and 20-40% relative humidity. Aphid mortality on the treated plants, relative to mortality on untreated check plants, was determined after 5 days.

In this test compound examples 1-25, 27-59, 76-78, 80-83, 86, 87, 89, 91, 92, 94, 96-103, 105, 106, 108, 115, 118 and 125 provided at 300 ppm at least 89 % mortality of cotton aphid (*Aphis gossypii*, mixed life stages) in comparison with untreated controls.

B.2 Green Peach Aphid (*Myzus persicae*)

Bell pepper plants at the first true-leaf stage were infested prior to treatment by placing heavily infested leaves from the main aphid colony on top of the treatment plants. The

aphids were allowed to transfer overnight to accomplish an infestation of 30-40 aphids per plant and the host leaves were removed. The infested leaves of the test plants were then dipped and agitated in the test solution for 3 seconds and allowed to dry in a fume hood. Test plants were maintained under fluorescent lighting in a 24-hr photoperiod at 25°C and 20-40% relative humidity. Mortality on the treated plants, relative to mortality on untreated check plants, was determined after 5 days.

In this test compound examples 1-19, 25, 27-43, 44-52, 55-59, 76, 77, 82, 83, 87, 89-91, 96-98, 100-103, 118 and 125 provided at 300 ppm at least 89 % mortality of green peach aphid in comparison with untreated controls.

B.3 Cowpea aphid (*aphis craccivora*)

The active compound is dissolved at the desired concentration in a mixture of 1:1 (vol:vol) distilled water : acetone. The test solution is prepared at the day of use.

Potted cowpea plants colonized with approximately 100 - 150 aphids of various stages were sprayed after the pest population has been recorded. Population reduction was assessed after 24, 72, and 120 hours.

In this test, compounds 76, 77, 81, 82, 87, 90-92, 94, 96-103, 105, 106, 108 and 118 at 300 ppm showed over 89 % mortality in comparison with untreated controls.

B.4 Southern armyworm (*Spodoptera eridania*), 2nd instar larvae

The active compounds were formulated in 50:50 acetone:water (vol) and 100 ppm Kinetica™ surfactant.

A pair of first true leaves of Sieva lima bean was dipped into the test solution and allowed to dry. The leaves were then placed in a plastic perforated zip enclosure bag and ten 2nd instar larvae were added. At 4 days, observations were made of mortality and reduced feeding.

In this test, compounds 74, 75 and 113 at 300 ppm showed over 89 % mortality in comparison with untreated controls.

B.5 Diamond back moth (*plutella xylostella*)

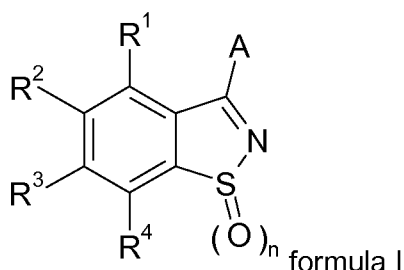
The active compound is dissolved at the desired concentration in a mixture of 1:1 (vol:vol) distilled water : acetone. The test solution is prepared at the day of use.

Leaves of Chinese cabbage were dipped in test solution and air-dried. Treated cabbage leaves were placed in petri dishes lined with moist filter paper and 3rd instar larvae were added. Mortality was recorded 24, 72, and 120 hours after treatment.

- 5 In this test, compounds 105 and 113 at 300 ppm showed over 89 % mortality in comparison with untreated controls.

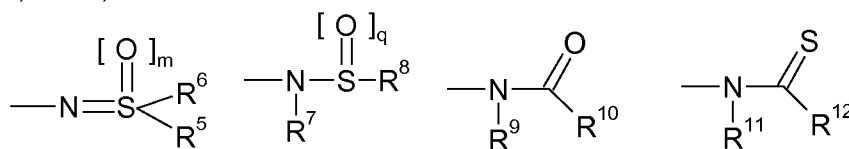
Claims:

1. 3-amino-1,2-benzisothiazole compounds of formula I



wherein

n is 0, 1 or 2;



A is A¹, A², A³ or A⁴

and wherein

m is 0 or 1;

q is 0, 1 or 2;

R⁵, R⁶, R⁸ are independently from each other selected from C₁-C₁₀-alkyl, C₂-C₁₀-alkenyl, C₂-C₁₀-alkynyl, C₃-C₁₀-cycloalkyl, phenyl, naphthyl and 5- or 6-membered heteroaromatic or 3 to 7-membered saturated or partially unsaturated heterocyclic groups containing 1, 2, 3 or 4 unsubstituted or substituted heteroatoms selected from O, S, SO, SO₂, N, NH or N-C₁-C₆-alkyl as ring members, wherein the heterocyclic groups may additionally contain 1, 2 or 3 CO groups as ring members, and wherein the aliphatic radicals and the ring members of the cyclic groups may be unsubstituted, partially or fully halogenated and/or may carry one or more radicals, independently of one another selected from the group consisting of CN, NO₂, NH₂, C₁-C₁₀-alkyl, C₁-C₁₀-haloalkyl, C₁-C₁₀-alkoxy, C₁-C₁₀-haloalkoxy, C₁-C₁₀-alkylthio, C₁-C₁₀-

- alkylsulfinyl, C₁-C₁₀-alkylsulfonyl, C₁-C₁₀-haloalkoxy, C₁-C₁₀-haloalkylthio, C₁-C₁₀-alkoxycarbonyl, (C₁-C₁₀-alkyl)amino, di-(C₁-C₁₀-alkyl)amino, C₃-C₁₀-cycloalkyl and phenyl,
- 5 it being possible for phenyl to be unsubstituted, partially or fully halogenated and/or to carry one or more substituents, independently of one another selected from the group consisting of C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy and C₁-C₄-haloalkoxy;
- 10 R⁷ or R⁹ is selected from hydrogen, C(=O)-R^c, C₁-C₆-alkoxy, C₁-C₁₀-alkyl, C₂-C₁₀-alkenyl, C₂-C₁₀-alkynyl, C₃-C₁₀-cycloalkyl, phenyl, naphthyl and 5- or 6-membered heteroaromatic or 3 to 7-membered saturated or partially unsaturated heterocyclic groups containing 1, 2, 3 or 4 unsubstituted or substituted heteroatoms selected from O,
- 15 S, SO, SO₂, N, NH or N-C₁-C₆-alkyl as ring members, wherein the heterocyclic groups may additionally contain 1, 2 or 3 CO groups as ring members, wherein the aliphatic radicals may be unsubstituted, partially or fully halogenated and/or may carry one or more radicals, independently of one another selected from the group consisting of
- 20 CN, NO₂, C₁-C₁₀-alkyl, C₁-C₁₀-haloalkyl, C₃-C₁₀-cycloalkyl and phenyl, it being possible for phenyl to be unsubstituted, partially or fully halogenated and/or to carry one or more substituents, independently of one another selected from the group consisting of C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy and C₁-C₄-haloalkoxy,
- 25 wherein the ring members of the cyclic groups may be unsubstituted, partially or fully halogenated and/or may carry one or more radicals, independently of one another selected from the group consisting of CN, NO₂, NH₂, C₁-C₁₀-alkyl, C₁-C₁₀-haloalkyl, C₁-C₁₀-alkoxy, C₁-C₁₀-haloalkoxy, C₁-C₁₀-alkylthio, C₁-C₁₀-alkylsulfinyl, C₁-C₁₀-alkylsulfonyl, C₁-C₁₀-haloalkoxy, C₁-C₁₀-haloalkylthio, C₁-C₁₀-alkoxycarbonyl, (C₁-C₁₀-alkyl)amino, di-(C₁-C₁₀-alkyl)amino, C₃-C₁₀-cycloalkyl and phenyl,
- 30 it being possible for phenyl to be unsubstituted, partially or fully halogenated and/or to carry one or more substituents, independently of one another selected from the group consisting of C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy and C₁-C₄-haloalkoxy;
- 35 or
- R⁵ and R⁶ form together with the sulfur atom they are bound to a saturated, partially or fully unsaturated 4 to 10-membered hetero-
- 40

- 5 cyclic ring, optionally substituted by 1, 2, 3 or 4 radicals selected from C₁-C₆-alkyl and halogen, wherein the ring may contain, in addition to the sulfur atom, 1, 2 or 3 heteroatoms selected from the group consisting of N, O, S, CO, SO, SO₂ and N-R^e;
- or
- 10 R⁷ and R⁸ form together with the sulfur atom and the nitrogen atom they are bound to a saturated, partially or fully unsaturated 4 to 10-membered heterocyclic ring, optionally substituted by 1, 2, 3 or 4 radicals selected from C₁-C₆-alkyl and halogen, wherein the ring may contain, in addition to the sulfur and nitrogen atom, 1, 2 or 3 heteroatoms selected from the group consisting of N, O, S, CO, SO, SO₂ and N-R^e;
- 15 R¹⁰ is selected dependently from R⁹, wherein
when R⁹ is selected from substituents other than hydrogen and COR^c,
R¹⁰ is selected from substituents as defined for R¹² below;
or wherein
when R⁹ is selected from hydrogen or COR^c,
- 20 R¹⁰ is selected from saturated, partially or fully unsaturated or aromatic 5- to 7-membered heterocyclic groups containing 1, 2, 3 or 4 heteroatoms selected from O, CO, S, SO₂, N, NH or N-C₁-C₆-alkyl, wherein the ring members of the heterocyclic rings may be unsubstituted, partially or fully halogenated and/or may carry one or more
- 25 radicals, independently of one another each selected from the group consisting of CN, OH, NO₂, NH₂, C₁-C₁₀-alkyl, C₁-C₁₀-haloalkyl, C₁-C₁₀-alkoxy, C₁-C₁₀-haloalkoxy, C₁-C₁₀-alkylthio, C₁-C₁₀-alkylsulfinyl, C₁-C₁₀-alkylsulfonyl, C₁-C₁₀-haloalkylthio, C₁-C₁₀-alkoxycarbonyl, (C₁-C₁₀-alkyl)amino, di-(C₁-C₁₀-alkyl)amino, C₃-C₁₀-cycloalkyl, phenyl,
- 30 5- or 6-membered heteroaromatic rings and aromatic 8-, 9- or 10-membered fused heterobicyclic ring systems containing 1, 2, 3 or 4 heteroatoms selected from O, CO, S, SO₂, N, NH or N-C₁-C₆-alkyl, it being possible for each of the aromatic or heteroaromatic rings to be unsubstituted, partially or fully halogenated and/or to carry one or
- 35 more substituents, independently of one another selected from the group consisting of C₁-C₁₀-alkyl, C₁-C₁₀-haloalkyl, C₁-C₁₀-alkoxy, C₁-C₁₀-haloalkoxy, C₂-C₁₀-alkenyl, C₂-C₁₀-alkynyl, C₂-C₁₀-haloalkenyl, C₂-C₁₀-haloalkynyl, CN, NO₂, NH₂, C₁-C₁₀-alkylthio, C₁-C₁₀-alkylsulfinyl, C₁-C₁₀-alkylsulfonyl, C₁-C₁₀-haloalkylthio, C₂-C₁₀-alkoxycarbonyl, C₁-C₁₀-alkylaminocarbonyl, C₁-C₁₀-dialkylaminocarbonyl, (C₁-C₁₀-
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alkyl)amino, di-(C₁-C₁₀-alkyl)amino, C₃-C₁₀-cycloalkyl, C₃-C₁₀-halocycloalkyl, C₃-C₁₀-cycloalkylamino and C₂-C₁₀-alkylcarbonyl;

- 5 R¹¹ is selected from hydrogen, C(=O)-R^c, C₁-C₁₀-alkyl, C₂-C₁₀-alkenyl, C₂-C₁₀-alkynyl, C₁-C₁₀-alkoxy and C₃-C₁₀-cycloalkyl, wherein the carbon atoms-of all mentioned radicals may be unsubstituted, partially or fully halogenated and/or may carry one or more radicals, independently of one another each selected from the group consisting of CN, OH, NO₂, NH₂, C₁-C₆-alkyl, C₁-C₁₀-haloalkyl, C₁-C₁₀-alkoxy, C₁-C₁₀-alkylthio, C₁-C₁₀-alkylsulfinyl, C₁-C₁₀-alkylsulfonyl, C₁-C₁₀-haloalkoxy, C₁-C₁₀-haloalkylthio, C₁-C₁₀-alkoxycarbonyl, (C₁-C₁₀-alkyl)amino, di-(C₁-C₁₀-alkyl)amino, C₃-C₁₀-cycloalkyl and phenyl, it being possible for phenyl to be unsubstituted, partially or fully halogenated and/or to carry one or more substituents, independently of one another selected from the group consisting of C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy and C₁-C₄-haloalkoxy;
- 20 R¹² is selected from OR^d, NR^aR^b, C₁-C₁₀-alkyl, C₂-C₁₀-alkenyl, C₂-C₁₀-alkynyl, C₃-C₁₀-cycloalkyl, phenyl, naphthyl and saturated, partially or fully unsaturated or aromatic 5- to 7-membered heterocyclic groups containing 1, 2, 3 or 4 heteroatoms selected from O, CO, S, SO₂, N, NH or N-C₁-C₆-alkyl, wherein the carbon atoms-of all mentioned radicals and the ring members of the heterocyclic rings may be unsubstituted, partially or fully halogenated and/or may carry one or more radicals, independently of one another each selected from the group consisting of CN, OH, NO₂, NH₂, C₁-C₁₀-alkyl, C₁-C₁₀-haloalkyl, C₁-C₁₀-alkoxy, C₁-C₁₀-haloalkoxy, C₁-C₁₀-alkylthio, C₁-C₁₀-alkylsulfinyl, C₁-C₁₀-alkylsulfonyl, C₁-C₁₀-haloalkylthio, C₁-C₁₀-alkoxycarbonyl, (C₁-C₁₀-alkyl)amino, di-(C₁-C₁₀-alkyl)amino, C₃-C₁₀-cycloalkyl, phenyl, 5-or 6-membered heteroaromatic rings and aromatic 8-, 9- or 10-membered fused heterobicyclic ring systems containing 1, 2, 3 or 4 heteroatoms selected from O, CO, S, SO₂, N, NH or N-C₁-C₆-alkyl, it being possible for each of the aromatic or heteroaromatic rings to be unsubstituted, partially or fully halogenated and/or to carry one or more substituents, independently of one another selected from the group consisting of C₁-C₁₀-alkyl, C₁-C₁₀-haloalkyl, C₁-C₁₀-alkoxy, C₁-C₁₀-haloalkoxy, C₂-C₁₀-alkenyl, C₂-C₁₀-alkynyl, C₂-C₁₀-haloalkenyl, C₂-C₁₀-haloalkynyl, CN, NO₂, NH₂, C₁-C₁₀-alkylthio, C₁-C₁₀-alkylsulfinyl,
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- 35
- 40

C₁-C₁₀-alkylsulfonyl, C₁-C₁₀-haloalkylthio, C₁-C₁₀-alkoxycarbonyl, C₁-C₁₀-alkylaminocarbonyl, C₁-C₁₀-dialkylaminocarbonyl, (C₁-C₁₀-alkyl)amino, di-(C₁-C₁₀-alkyl)amino, C₃-C₁₀-cycloalkyl, C₃-C₁₀-halocycloalkyl, C₃-C₁₀-cycloalkylamino and C₁-C₁₀-alkylcarbonyl;

5

R¹ is selected from CN, NO₂, NH₂, azido, halogen, sulfonylamino, sulfenylamino, sulfinylamino, C(=O)R^c, C₁-C₁₀-alkyl, C₂-C₁₀-alkenyl, C₂-C₁₀-alkynyl, C₃-C₁₀-cycloalkyl, C₁-C₁₀-alkoxy, C₁-C₁₀-alkylthio, (C₁-C₁₀-alkyl)amino, di(C₁-C₁₀-alkyl)amino, C₁-C₁₀-alkylsulfinyl, C₁-C₁₀-alkylsulfenyl and C₁-C₁₀-alkylsulfonyl,

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wherein the carbon atoms of the C₃-C₁₀-cycloalkyl and the mentioned aliphatic radicals may be unsubstituted, partially or fully halogenated and/or may carry one or more radicals, selected from the group consisting of CN, NO₂, NH₂, C₁-C₁₀-alkoxy, C₁-C₁₀-alkylthio, C₁-C₁₀-alkylsulfinyl, C₁-C₁₀-alkylsulfonyl, C₁-C₁₀-haloalkoxy, C₁-C₁₀-haloalkylthio, (C₁-C₁₀-alkoxy)carbonyl, (C₁-C₁₀-alkyl)amino, di(C₁-C₁₀-alkyl)amino, C₃-C₈-cycloalkyl and phenyl,

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it being possible for phenyl to be unsubstituted, partially or fully halogenated and/or to carry one or more substituents, independently of one another selected from the group consisting of C₁-C₁₀-alkyl, C₁-C₁₀-haloalkyl, C₁-C₁₀-alkoxy and C₁-C₁₀-haloalkoxy;

20

R², R³ and R⁴ are independently from each other selected from hydrogen, halogen, azido, COR^c, CN, NO₂, NH₂, C₁-C₁₀-alkyl, C₃-C₁₀-cycloalkyl, C₁-C₁₀-haloalkyl, C₁-C₁₀-alkoxy, C₁-C₁₀-alkylthio, C₁-C₁₀-alkylsulfinyl, C₁-C₁₀-alkylsulfonyl, C₁-C₁₀-haloalkoxy, C₁-C₁₀-haloalkylthio, C₂-C₁₀-alkenyl, C₂-C₁₀-alkynyl, (C₁-C₁₀-alkyl)amino, di(C₁-C₁₀-alkyl)amino, sulfonyl, sulfonylamino, sulfenylamino and sulfanylamino;

25

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and wherein

R^a and R^b are selected independently from each other from the group consisting of hydrogen, C₁-C₁₀-alkyl, C₃-C₁₀-cycloalkyl, C₂-C₁₀-alkenyl, C₂-C₁₀-alkynyl, aryl and aromatic, saturated, partially or fully unsaturated heterocyclic rings, and

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wherein the carbon atoms of all mentioned radicals may be unsubstituted or partially or fully substituted by halogen or C₁-C₁₀-alkyl;

R^c is selected from the group consisting of NH₂, C₁-C₁₀-alkyl, C₁-C₁₀-alkoxy, C₁-C₁₀-alkylamino, di(C₁-C₁₀-alkyl)amino, aryl and saturated, partially un-

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saturated or aromatic 3- to 7 -membered heterocyclic ring, which may contain as ring members 1, 2 or 3 unsubstituted or substituted heteroatoms selected from the group consisting of O, S, SO, SO₂, N, NH and N-C₁-C₆-alkyl, and

5 wherein the carbon atoms of all mentioned radicals may be unsubstituted or partially or fully substituted by halogen or C₁-C₁₀-alkyl;

R^d is selected from the group consisting of hydrogen, C₁-C₁₀-alkyl, C₃-C₁₀-cycloalkyl, C₂-C₁₀-alkenyl, C₂-C₁₀-alkynyl, aryl and aromatic, saturated, partially or fully unsaturated heterocyclic rings;

10 R^e is hydrogen or C₁-C₁₀-alkyl;

or the enantiomers, distereomers or salts thereof

15 2. 3-amino-1,2 benzisothiazole compounds of formula I according to claim 1, wherein A is A³.

3. 3-amino-1,2 benzisothiazole compounds of formula I according to claim 1, wherein n is 2 and A is selected from A¹ or A².

20 4. 3-amino-1,2 benzisothiazole compounds of formula I according to claim 1, wherein n is 1 and A is A³.

5. 3-amino-1,2 benzisothiazole compounds of formula I according to claim 1, wherein n is 0 and A is A³.

25 6. 3-amino-1,2 benzisothiazole compounds of formula I according to claim 1, wherein n is 0 and A is A⁴.

30 7. 3-amino-1,2 benzisothiazole compounds of formula I according to claim 1 or claim 2, wherein
R¹ is selected from halogen, C₁-C₁₀-alkyl, C₁-C₁₀-haloalkyl, C₁-C₁₀-alkoxy and C₁-C₁₀-haloalkoxy.

35 8. 3-amino-1,2 benzisothiazole compounds of formula I according to claim 1 or claim 2, wherein
R¹ is selected from halogen, C₁-C₁₀-alkoxy and C₁-C₁₀-haloalkoxy.

9. 3-amino-1,2 benzisothiazole compounds of formula I according to claim 1 or claim 2, wherein

R¹ is selected from fluoro, chloro, difluoromethoxy, dichloromethoxy, trifluoromethoxy or trichloromethoxy.

- 5 10. 3-amino-1,2 benzisothiazole compounds of formula I according to claim 1 or claim 2, wherein
R², R³ and R⁴ are independently from one another selected from the group consisting of hydrogen and F, Cl, Br or J.
- 10 11. 3-amino-1,2 benzisothiazole compounds of formula I according to claim 1 or claim 2, wherein
R², R³ and R⁴ are independently from one another selected from hydrogen or fluoro.
- 15 12. 3-amino-1,2 benzisothiazole compounds of formula I according to claim 1 or claim 2, wherein
R², R³ and R⁴ are hydrogen.
- 20 13. 3-amino-1,2 benzisothiazole compounds of formula I according to claim 1, wherein when A is selected from A¹ and
R⁵ and R⁶ form together with the sulfur atom they are bound to a saturated, partially or fully unsaturated or aromatic 5, 6 or 7-membered heterocyclic ring, optionally substituted by 1, 2, 3 or 4 radicals selected from C₁-C₆-alkyl and halogen, which may contain, in addition to the sulfur atom, 1, 2 or 3 unsubstituted or substituted heteroatoms selected from
25 O, CO, S, SO, SO₂, N, NH or N-C₁-C₆-alkyl.
- 30 14. 3-amino-1,2 benzisothiazole compounds of formula I according to claim 1, wherein when A is selected from A² and
R⁷ and R⁸ form together with the sulfur atom and the nitrogen atom they are bound to a saturated, partially or fully unsaturated or aromatic 5, 6 or 7-membered heterocyclic ring, optionally substituted by 1, 2, 3 or 4 radicals selected from C₁-C₆-alkyl and halogen, which may contain, in addition to the sulfur atom, 1, 2 or 3 unsubstituted or substituted heteroatoms selected from O, CO, S, SO, SO₂, N, NH or N-C₁-C₆-alkyl.
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- 40 15. 3-amino-1,2 benzisothiazole compounds of formula I according to claim 1, wherein when A is A¹ or A²,
R⁵, R⁶, R⁷ and R⁸ are independently from one another selected from C₁-C₁₀-alkyl or C₃-C₁₀-cycloalkyl, which both may be unsubstituted, partially or fully halogenated.

16. 3-amino-1,2 benzisothiazole compounds of formula I according to claim 1,
wherein when A is A¹ or A²,
R⁵, R⁶, R⁷ and R⁸ are independently from one another selected from methyl,
ethyl, n-propyl, i-propyl, which may be unsubstituted, partially or fully halogenated.
17. 3-amino-1,2 benzisothiazole compounds of formula I according to claim 1,
wherein when A is A³,
R⁹ is C₁-C₆-alkyl
and
R¹⁰ is selected from OR^d, NR^aR^b, C₁-C₁₀-alkyl, C₂-C₁₀-alkenyl, C₂-C₁₀-alkynyl, C₃-C₁₀-cycloalkyl and phenyl, wherein the radicals may be unsubstituted, partially or fully halogenated and/or may carry one or more radicals, independently of one another each selected from the group consisting of CN, NO₂, NH₂, C₁-C₁₀-alkoxy, C₁-C₁₀-alkylthio, C₁-C₁₀-alkylsulfinyl, C₁-C₁₀-alkylsulfonyl, C₁-C₁₀-haloalkoxy, C₁-C₁₀-haloalkylthio, C₁-C₁₀-alkoxycarbonyl, (C₁-C₁₀-alkyl)amino, di-(C₁-C₁₀-alkyl)amino, C₃-C₁₀-cycloalkyl and phenyl,
it being possible for phenyl to be unsubstituted, partially or fully halogenated and/or to carry one or more substituents, independently of one another selected from the group consisting of C₁-C₁₀-alkyl, C₁-C₁₀-haloalkyl, C₁-C₁₀-alkoxy and C₁-C₁₀-haloalkoxy.
18. 3-amino-1,2 benzisothiazole compounds of formula I according to claim 1,
wherein when A is A³
R⁹ is selected from hydrogen or C₁-C₆-alkyl;
and
R¹⁰ is selected from pyridine, pyrazine, pyrimidine, pyrazole, imidazole, triazole, thiophene, thiazole, oxazole, furan, isothiazole, isoxazole, piperidine, tetrahydrofuran, dihydrofuran, thiolan, dihydrothiophen, pyrrolidine, dihydropyrrol, dihydropyrazole, dihydrooxazole, dihydrothiazole, oxathiolan or oxazolidine,
each ring optionally substituted with 1 to 3 substituents independently of one another selected from the group consisting of CN, OH, NO₂, NH₂, C₁-C₁₀-alkyl, C₁-C₁₀-haloalkyl, C₁-C₁₀-alkoxy, C₁-C₁₀-haloalkoxy, C₁-C₁₀-alkylthio, C₁-C₁₀-alkylsulfinyl, C₁-C₁₀-alkylsulfonyl, C₁-C₁₀-haloalkylthio, C₁-C₁₀-alkoxycarbonyl, (C₁-C₁₀-alkyl)amino, di-(C₁-C₁₀-alkyl)amino, C₃-C₁₀-cycloalkyl, phenyl and 5-or 6-membered heteroaromatic ring,

it being possible for the aromatic or heteraromatic rings to be unsubstituted, partially or fully halogenated and/or to carry one or more substituents, independently of one another selected from the group consisting of C₁-C₁₀-alkyl, C₁-C₁₀-haloalkyl, C₁-C₁₀-alkoxy, C₁-C₁₀-haloalkoxy, C₂-C₁₀-alkenyl, C₂-C₁₀-alkynyl, C₂-C₁₀-haloalkenyl, C₂-C₁₀-haloalkynyl, CN, NO₂, NH₂, C₁-C₁₀-alkylthio, C₁-C₁₀-alkylsulfinyl, C₁-C₁₀-alkylsulfonyl, C₁-C₁₀-haloalkylthio, C₂-C₁₀-alkoxycarbonyl, C₂-C₁₀-alkylaminocarbonyl, C₃-C₁₀-dialkylaminocarbonyl, (C₁-C₁₀-alkyl)amino, di-(C₁-C₁₀-alkyl)amino, C₃-C₁₀-cycloalkyl, C₃-C₁₀-halocycloalkyl, C₃-C₁₀-cycloalkylamino, C₁-C₁₀-alkylcarbonyl.

19. 3-amino-1,2 benzisothiazole compounds of formula I according to claim 1, wherein when A is A³
- R⁹ is selected from hydrogen or C₁-C₆-alkyl;
- and
- R¹⁰ is selected from pyridine, pyrazine, pyrimidine, pyrazole, imidazole, triazole, thiophene, thiazole, oxazole, furan, isothiazole, isoxazole, piperidine, tetrahydrofuran, dihydrofuran, thiolan, dihydrothiophen, pyrrolidine, dihydropyrrol, dihydropyrazole, dihydrooxazole, dihydrothiazole, oxathiolan or oxazolidine, each ring optionally substituted with one to three substituents independently of one another selected from the group consisting of CN, OH, NO₂, NH₂, C₁-C₁₀-alkyl, C₁-C₁₀-haloalkyl, C₁-C₁₀-alkoxy, C₁-C₁₀-haloalkoxy, C₁-C₁₀-alkylthio, C₁-C₁₀-alkylsulfinyl, C₁-C₁₀-alkylsulfonyl, C₁-C₁₀-haloalkylthio, C₁-C₁₀-alkoxycarbonyl, (C₁-C₁₀-alkyl)amino, di-(C₁-C₁₀-alkyl)amino, C₃-C₁₀-cycloalkyl, phenyl, pyridine, pyrimidine, thiophene, isooxazol and isothiazol, it being possible for the aromatic or heteroaromatic rings to be unsubstituted, partially or fully halogenated and/or to carry one or more substituents, independently of one another selected from the group consisting of CN, NO₂, NH₂, C₁-C₁₀-alkyl, C₁-C₁₀-haloalkyl, C₁-C₁₀-alkoxy, C₁-C₁₀-haloalkoxy, C₂-C₁₀-alkenyl, C₂-C₁₀-alkynyl, C₂-C₁₀-haloalkenyl, C₂-C₁₀-haloalkynyl, C₁-C₁₀-alkylthio, C₁-C₁₀-alkylsulfinyl, C₁-C₁₀-alkylsulfonyl and C₁-C₁₀-haloalkylthio.
20. 3-amino-1,2 benzisothiazole compounds of formula I according to claim 1 or claim 2, wherein
- R¹ is selected from halogen, C₁-C₆-alkoxy or C₁-C₆-haloalkoxy and R², R³ and R⁴ are independently of one another selected from the group consisting of hydrogen, F, Cl, Br or J.

21. 3-amino-1,2 benzisothiazole compounds of formula I according to claim 1 or claim 2, wherein
 R^1 is selected from halogen, C_1 - C_6 -alkoxy or C_1 - C_6 -haloalkoxy and R^2 , R^3 and R^4 are hydrogen.
- 5 22. 3-amino-1,2 benzisothiazole compounds of formula I according to claim 1, wherein when A is A^1 or A^2 ,
 R^1 is selected from C_1 - C_6 -alkoxy or C_1 - C_6 -haloalkoxy;
 R^2 , R^3 and R^4 are independently of one another selected from the group consisting of hydrogen, F, Cl, Br or J; and
 R^5 and R^6 are selected independently from each other from C_1 - C_6 -alkyl or form together with the sulfur atom as sole heteroatom a 5 or 6 membered saturated heterocyclic ring.
- 10 23. 3-amino-1,2 benzisothiazole compounds of formula I according to claim 1, wherein when A is A^3 ,
 R^1 is selected from C_1 - C_6 -alkoxy or C_1 - C_6 -haloalkoxy;
 R^2 , R^3 and R^4 are independently of one another selected from the group consisting of hydrogen, F, Cl, Br or J; and
 R^9 is C_1 - C_6 -alkyl and
 R^{10} is selected from C_1 - C_{10} -alkyl, C_2 - C_{10} -alkenyl, C_2 - C_{10} -alkynyl, C_1 - C_{10} -alkoxy and C_3 - C_{10} -cycloalkyl, wherein the carbon atoms-of all mentioned radicals may be unsubstituted, partially or fully halogenated and/or may carry one or more radicals, independently of one another each selected from the group
25 consisting of CN, NO_2 , NH_2 , C_1 - C_{10} -alkoxy, C_1 - C_{10} -alkylthio, C_1 - C_{10} -alkylsulfinyl, C_1 - C_{10} -alkylsulfonyl, C_1 - C_{10} -haloalkoxy, C_1 - C_{10} -haloalkylthio, C_1 - C_{10} -alkoxycarbonyl, $(C_1$ - C_{10} -alkyl)amino, di- $(C_1$ - C_{10} -alkyl)amino, C_3 - C_{10} -cycloalkyl, phenyl or a 5-or 6-membered heteroaromatic ring, it being possible for each ring to be unsubstituted, partially or fully halogenated and/or to carry one or more substituents, independently of one another selected from the group consisting of CN, NO_2 , NH_2 , C_1 - C_{10} -alkyl, C_1 - C_{10} -haloalkyl, C_1 - C_{10} -alkoxy, C_1 - C_{10} -haloalkoxy, C_2 - C_{10} -alkenyl, C_2 - C_{10} -alkynyl, C_2 - C_{10} -haloalkenyl, C_2 - C_{10} -haloalkynyl, C_1 - C_{10} -alkylthio, C_1 - C_{10} -alkylsulfinyl, C_1 - C_{10} -alkylsulfonyl, C_1 - C_{10} -haloalkylthio, C_2 - C_{10} -alkoxycarbonyl, C_1 - C_{10} -alkylaminocarbonyl, C_1 - C_{10} -dialkylaminocarbonyl, $(C_1$ - C_{10} -alkyl)amino, di- $(C_1$ - C_{10} -alkyl)amino, C_3 - C_{10} -cycloalkyl, C_3 - C_{10} -halocycloalkyl, C_3 - C_{10} -cycloalkylamino, C_1 - C_{10} -alkylcarbonyl
- 30 24. 3-amino-1,2 benzisothiazole compounds of formula I according to claim 1, wherein when A is A^3 , n is 0,
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- R¹ is selected from C₁-C₆-alkoxy or C₁-C₆-haloalkoxy;
 R², R³ and R⁴ are hydrogen
 R⁹ is C₁-C₆-alkyl
 and
 5 R¹⁰ is selected from C₁-C₆-alkyl, C₃-C₆-cycloalkyl or phenyl,
 wherein the carbon atoms or the carbocyclic ring of the radicals may be
 unsubstituted, partially or fully halogenated and/or may carry one or more
 substituents, independently of one another selected from the group consist-
 10 ing of CN, NO₂, NH₂, C₁-C₁₀-alkyl, C₁-C₁₀-haloalkyl, C₁-C₁₀-alkoxy, C₁-C₁₀-
 haloalkoxy, C₂-C₁₀-alkenyl, C₂-C₁₀-alkynyl, C₂-C₁₀-haloalkenyl, C₂-C₁₀-
 haloalkynyl, C₁-C₁₀-alkylthio, C₁-C₁₀-alkylsulfinyl, C₁-C₁₀-alkylsulfonyl, C₁-
 C₁₀-haloalkylthio.
25. 3-amino-1,2 benzisothiazole compounds of formula I according to claim 1,
 15 wherein when A is A³, n is 0,
 R¹ is selected from C₁-C₆-alkoxy or C₁-C₆-haloalkoxy;
 R², R³ and R⁴ are hydrogen
 R⁹ is selected from hydrogen or C₁-C₆-alkyl;
 and
 20 R¹⁰ is selected from pyridine, pyrazine, pyrimidine, pyrazole, imidazole, tria-
 zole, thiophene, thiazole, oxazole, furan, isothiazole, isoxazole, piperidine,
 tetrahydrofuran, dihydrofuran, thiolan, dihydrothiophen, pyrrolidine, dihy-
 dropyrrol, dihydropyrazole, dihydrooxazole, dihydrothiazole, oxathiolan or
 oxazolidine, each ring optionally substituted with one to three substituents
 25 independently of one another selected from the group consisting of CN,
 OH, NO₂, NH₂, C₁-C₁₀-alkyl, C₁-C₁₀-haloalkyl, C₁-C₁₀-alkoxy, C₁-C₁₀-
 haloalkoxy, C₁-C₁₀-alkylthio, C₁-C₁₀-alkylsulfinyl, C₁-C₁₀-alkylsulfonyl, C₁-C₁₀-
 haloalkylthio, C₁-C₁₀-alkoxycarbonyl, (C₁-C₁₀-alkyl)amino, di-(C₁-C₁₀-
 alkyl)amino, C₃-C₁₀-cycloalkyl, phenyl and 5-or 6-membered heteroaromatic
 30 ring,
 it being possible for the aromatic and heteroaromatic rings to be unsubsti-
 tuted, partially or fully halogenated and/or to carry one or more substitu-
 ents, independently of one another selected from the group consisting of
 CN, NO₂, NH₂, C₁-C₁₀-alkyl, C₁-C₁₀-haloalkyl, C₁-C₁₀-alkoxy, C₁-C₁₀-
 35 haloalkoxy, C₂-C₁₀-alkenyl, C₂-C₁₀-alkynyl, C₂-C₁₀-haloalkenyl, C₂-C₁₀-
 haloalkynyl, C₁-C₁₀-alkylthio, C₁-C₁₀-alkylsulfinyl, C₁-C₁₀-alkylsulfonyl, C₁-
 C₁₀-haloalkylthio, C₂-C₁₀-alkoxycarbonyl, C₂-C₁₀-alkylaminocarbonyl, C₃-
 C₁₀-dialkylaminocarbonyl, (C₁-C₁₀-alkyl)amino, di-(C₁-C₁₀-alkyl)amino, C₃-
 C₁₀-cycloalkyl, C₃-C₁₀-halocycloalkyl, C₃-C₁₀-cycloalkylamino, C₂-C₁₀-
 40 alkylcarbonyl

26. A composition comprising at least one 3-amino-1,2-benzisothiazole compound of the formula I according to any one of claims 1 to 25, or the enantiomer, diastereomer or salt thereof and at least one inert liquid and/or solid carrier.
- 5
27. An agricultural composition comprising such a pesticidal effective amount of at least one 3-amino-1,2-benzisothiazole compound of the formula I according to any one of claims 1 to 25 or the enantiomer, diastereomer or agriculturally useful salt thereof, and at least one inert liquid and/or solid agriculturally acceptable carrier and, if desired, at least one surfactant.
- 10
28. A method for combating or controlling insects, arachnids or nematodes comprising contacting an insect, arachnid or nematode or their food supply, habitat or breeding grounds with a pesticidally effective amount of at least one 3-amino-1,2-benzisothiazole compound of the formula I according to any one of claims 1 to 25 or the enantiomers, diastereomers or salts thereof or a composition comprising at least such one compound of formula I.
- 15
29. A method for protecting growing plants from attack or infestation by insects, arachnids or nematodes comprising contacting a plant, or soil or water in which the plant is growing, with a pesticidally effective amount of at least one 3-amino-1,2-benzisothiazole compound of the formula I according to any one of claims 1 to 25 or the enantiomers, diastereomers or salts thereof or a composition comprising at least such one compound of formula I.
- 20
30. A method as defined in claims 28 or 29, wherein the animal pest is from the order Homoptera or Thysanoptera.
- 25
31. A method for the protection of seeds from soil insects and of the seedlings' roots and shoots from soil and foliar insects comprising contacting the seeds before sowing and/or after pregermination with at least one 3-amino-1,2-benzisothiazole compound of the formula I according to any one of claims 1 to 25 or the enantiomers, diastereomers or salts thereof or a composition comprising at least such one compound of formula I.
- 30
32. The method according to claim 31, wherein the 3-amino-1,2-benzisothiazole compound of the formula I is applied in an amount of from 100 mg to 10 kg per 100 kg of seeds.
- 35

33. A method according to claim 31, wherein of the resulting plant's roots and shoots are protected.
34. A method according to claim 31, wherein the resulting plant's shoots are protected from aphids.
35. Seed comprising an 3-amino-1,2-benzisothiazole compound of the formula I or an agriculturally useful salt of I, as defined in any of claims 1 to 25, in an amount of from 0.1 g to 10 kg per 100 kg of seed.