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(81) Bestimmungsstaaten *(soweit nicht anders angegeben, für jede verfügbare nationale Schutzrechtsart)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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Veröffentlicht:
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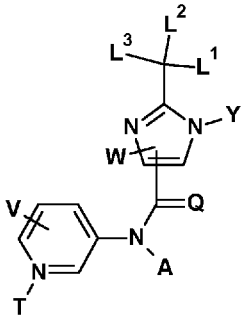
(54) Title: SUBSTITUTED 2-ALKYLIMIDAZOLYL-CARBOXAMIDES AS PEST CONTROL AGENTS

(54) Bezeichnung: SUBSTITUIERTE 2-ALKYLIMIDAZOLYL-CARBOXAMIDE ALS SCHÄDLINGSBEKÄMPFUNGSMITTEL



(I)

(57) Abstract: The invention relates to compounds of general formula (I), where Q, V, T, W, Y, L^1, L^2, L^3 and A have the meanings given in the description, and also to a method for producing same and to the use of same for controlling animal pests.

(57) Zusammenfassung: Die vorliegende Erfindung betrifft Verbindungen der allgemeinen Formel (I), in welcher Q, V, T, W, Y, L^1, L^2, L^3 und A die in der Beschreibung angegebenen Bedeutungen haben – sowie ein Verfahren zu ihrer Herstellung und ihre Verwendung zur Bekämpfung von tierischen Schädlingen.

WO 2017/186536 A1

01 Dec 2020 2017256505

Substituted 2-alkylimidazolylcarboxamides as pesticides

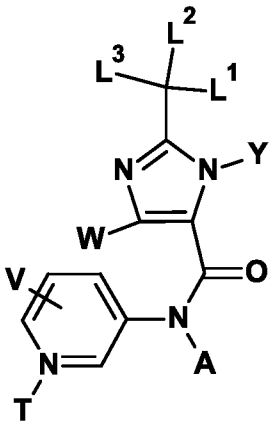
The present application relates to novel heterocyclic compounds, to processes and intermediates for the preparation thereof, and their use for controlling animal pests.

WO 2011/009804 A2 describes heterocyclic compounds including, *inter alia*, imidazolylcarboxamides which can be used as insecticides.

Modern insecticides have to meet many demands, for example in relation to extent, persistence and spectrum of their action and possible use. Questions of toxicity, sparing of beneficial species and pollinators, environmental properties, application rates, combinability with other active compounds or formulation auxiliaries play a role, as does the question of the effort required for the synthesis of an active compound; furthermore, resistances may occur, to mention only some parameters. For all these reasons alone, the search for novel crop protection compositions cannot be considered complete, and there is a constant need for novel compounds having improved properties compared to the known compounds, at least in relation to individual aspects.

The present invention provides compounds which widen the spectrum of the pesticides in various aspects.

In a first aspect, there is provided a compound of formula (I-1)



(I-1)

where

V represents a radical from the group consisting of hydrogen, fluorine, chlorine, methyl and cyano,

W represents a radical from the group consisting of hydrogen, fluorine, chlorine, bromine, methyl, ethyl and cyano,

2017256505 25 Jan 2021

Y represents a radical from the group consisting of hydrogen; methyl, ethyl, propyl, allyl and propargyl, optionally mono- to trisubstituted independently of one another by fluorine, methoxy, ethoxy and cyano,

A represents a radical from the group consisting of hydrogen; methyl, ethyl, propyl, allyl, propargyl, cyclopropyl and cyclopropylmethyl, optionally mono- to trisubstituted independently of one another by fluorine, methoxy, ethoxy and cyano,

T represents an electron pair or oxygen,

L^1 represents a radical from the group consisting of hydrogen, methyl, trifluoromethyl, trichloromethyl, isopropyl, isobutyl, isopentyl, phenyl, 2-chlorophenyl, 3-chlorophenyl, 4-chlorophenyl, 3,4-dichlorophenyl, 2-pyridinyl, 3-pyridinyl, 4-pyridinyl, 4-chloropyridin-3-yl, 2-pyrimidyl and benzyl,

L^2 represents hydrogen or methyl,

or

L^1 and L^2 together represent vinyl, prop-1-en-2-yl, (1*E*)-prop-1-en-1-yl, (1*Z*)-prop-1-en-1-yl or cyclopropyl,

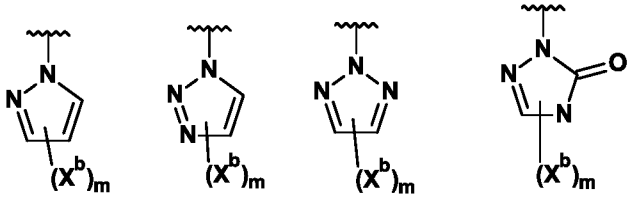
L^3 represents a radical from the group consisting of hydrogen, $S(O)_nR^{1a}$, OR^{1b} and $N(R^2)(R^3)$, where in the case that L^1 represents hydrogen, methyl, trifluoromethyl, trichloromethyl, isopropyl, isobutyl or isopentyl and/or L^2 represents hydrogen or methyl, L^3 represents a radical from the group consisting of $S(O)_nR^{1a}$, OR^{1b} and $N(R^2)(R^3)$,

R^{1a} represents a radical from the group consisting of methyl, ethyl, isopropyl, isobutyl, tert-butyl, cyclopropylmethyl, 2,2-dimethylpropyl, 2-methoxy-2-oxoethyl, phenyl, 2-chlorophenyl, 3-chlorophenyl, 4-chlorophenyl and 2-pyrimidyl,

R^{1b} represents a radical from the group consisting of hydrogen, methyl, ethyl, 2,2,2-trifluoroethyl, isopropyl, cyclopropylmethyl, benzyl, 3-chlorophenyl and 4-chlorophenyl,

R^2 and R^3 together with N represent a heterocycle from the group consisting of U-2, U-4, U-5 and U-13,

2017256505 01 Dec 2020



U-2 U-4 U-5 U-13

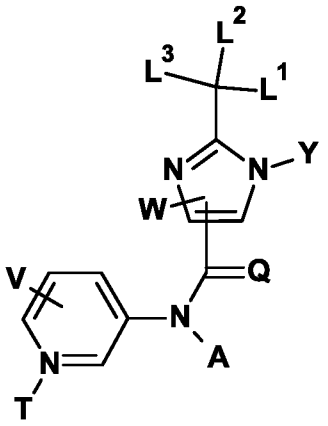
X^b represents trifluoromethyl, methyl or cyclopropyl,

m represents a number 0 or 1,

n represents a number 0 or 2,

or a salt thereof.

In another aspect, the present invention provides compounds of the formula (I)



(I)

in which (configuration 0-2)

Q represents oxygen or sulfur,

V represents a radical from the group consisting of hydrogen, halogen, alkyl, haloalkyl, alkoxy, haloalkoxy and cyano,

W represents a radical from the group consisting of hydrogen, halogen, alkyl, haloalkyl, alkoxy, haloalkoxy and cyano,

Y represents a radical from the group consisting of hydrogen, optionally substituted alkyl, alkenyl and alkynyl, optionally substituted cycloalkyl which is optionally interrupted by heteroatoms, optionally substituted cycloalkylalkyl which is optionally interrupted by heteroatoms, arylalkyl, hetarylalkyl and cyano,

A represents a radical from the group consisting of hydrogen, optionally substituted alkyl, alkenyl and alkynyl and optionally substituted cycloalkyl and cycloalkylalkyl which are optionally interrupted by heteroatoms,

T represents oxygen or an electron pair,

U^1 represents a radical from the group consisting of hydrogen, cyano, optionally substituted alkyl, alkenyl and alkynyl, optionally substituted cycloalkyl and cycloalkenyl which are optionally interrupted by heteroatoms, optionally substituted cycloalkylalkyl which is optionally interrupted by heteroatoms, optionally substituted aryl and hetaryl, optionally substituted arylalkyl and hetarylalkyl,

L^2 represents a radical from the group consisting of hydrogen and optionally substituted alkyl

or

L^1 and L^2 together with the carbon atom to which they are attached represent an optionally substituted three- to eight-membered aliphatic ring which may optionally be interrupted by heteroatoms

or

L^1 and L^2 together represent optionally substituted alkenyl,

L^3 represents a radical from the group consisting of hydrogen, $S(O)_nR^{1a}$, OR^{1b} and $N(R^2)(R^3)$, where in the case that L^1 and/or L^2 represents hydrogen or optionally

substituted alkyl, L^3 represents a radical from the group consisting of $S(O)_nR^{1a}$, OR^{1b} and $N(R^2)(R^3)$,

R^{1a} represents a radical from the group consisting of optionally substituted alkyl, alkenyl and alkynyl, optionally substituted cycloalkyl and cycloalkenyl which are optionally interrupted by heteroatoms, optionally substituted cycloalkylalkyl and cycloalkenylalkyl which are optionally interrupted by heteroatoms, optionally substituted aryl and hetaryl, optionally substituted arylalkyl and hetarylalkyl,

R^{1b} represents a radical from the group consisting of hydrogen, optionally substituted alkyl, alkenyl and alkynyl, optionally substituted cycloalkyl and cycloalkenyl which are optionally interrupted by heteroatoms, optionally substituted cycloalkylalkyl and cycloalkenylalkyl which are optionally interrupted by heteroatoms, optionally substituted aryl and hetaryl and optionally substituted arylalkyl and hetarylalkyl,

R^2 represents a radical from the group consisting of hydrogen, optionally substituted alkyl, alkenyl and alkynyl, optionally substituted cycloalkyl and cycloalkenyl which are optionally interrupted by heteroatoms, optionally substituted cycloalkylalkyl and cycloalkenylalkyl which are optionally interrupted by heteroatoms, optionally substituted aryl and hetaryl and optionally substituted arylalkyl and hetarylalkyl,

R^3 represents a radical from the group consisting of hydrogen, optionally substituted alkyl, alkenyl and alkynyl or represents the radicals $C(O)N(R^5)(R^6)$, $C(O)R^7$, $C(O)OR^8$ and SO_2R^9,

or

R^2 and R^3 together with the nitrogen atom to which they are attached represent an optionally substituted saturated, partially saturated or aromatic heterocycle which has 3 to 9 ring atoms and may optionally by interrupted by further heteroatoms and/or one or two CO groups,

R^5 and R^6 independently of one another represent a radical from the group consisting of hydrogen, optionally substituted alkyl, alkenyl and alkynyl, optionally substituted cycloalkyl and cycloalkenyl which are optionally interrupted by heteroatoms, optionally substituted cycloalkylalkyl which is optionally interrupted by heteroatoms,

optionally substituted aryl and hetaryl and optionally substituted arylalkyl and hetarylalkyl,

or

R^5 and R^6 together with the nitrogen atom to which they are attached represent an optionally substituted three- to eight-membered aliphatic ring which may optionally be interrupted by heteroatoms

R^7 represents a radical from the group consisting of hydrogen, optionally substituted alkyl, alkenyl and alkynyl, optionally substituted cycloalkyl and cycloalkenyl which are optionally interrupted by heteroatoms, optionally substituted cycloalkylalkyl and cycloalkenylalkyl which are optionally interrupted by heteroatoms, optionally substituted aryl and hetaryl and optionally substituted arylalkyl and hetarylalkyl,

R^8 represents a radical from the group consisting of hydrogen, optionally substituted alkyl, alkenyl and alkynyl, optionally substituted cycloalkyl and cycloalkenyl which are optionally interrupted by heteroatoms, optionally substituted cycloalkylalkyl and cycloalkenylalkyl which are optionally interrupted by heteroatoms, optionally substituted aryl and hetaryl and optionally substituted arylalkyl and hetarylalkyl,

R^9 represents a radical from the group consisting of optionally substituted alkyl, alkenyl and alkynyl, optionally substituted cycloalkyl and cycloalkenyl which are optionally interrupted by heteroatoms, optionally substituted cycloalkylalkyl and cycloalkenylalkyl which are optionally interrupted by heteroatoms, optionally substituted aryl and hetaryl and optionally substituted arylalkyl and hetarylalkyl,

n represents a number 0, 1 or 2,

and salts thereof,

Preferred substituents or ranges for the radicals listed in the compounds of the formula (I) are illustrated below. The combination thereof forms the range of preference (1-2), where

Q represents oxygen or sulphur,

V represents a radical from the group consisting of hydrogen, halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-haloalkoxy and cyano,

W represents a radical from the group consisting of hydrogen, halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-haloalkoxy and cyano,

Y represents a radical from the group consisting of hydrogen, C_1-C_6-alkyl, C_3-C_6-alkenyl or C_3-C_6-alkynyl, optionally mono- to polysubstituted independently of one another by halogen, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$- and cyano, C_3-C_8-cycloalkyl, optionally mono- to tetrasubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano, straight-chain or branched C_3-C_8-cycloalkyl-C_1-C_4-alkyl, optionally interrupted once or twice independently of one another by O, $S(O)_n$ and NR^4 and optionally mono- to tetrasubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano, aryl-C_1-C_4-alkyl and hetaryl-C_1-C_4-alkyl, optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano,

A represents a radical from the group consisting of hydrogen; C_1-C_6-alkyl, C_3-C_6-alkenyl and C_3-C_6-alkynyl, optionally mono- to polysubstituted independently of one another by halogen, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$- and cyano; C_3-C_6-cycloalkyl which is optionally mono- to disubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and may optionally be interrupted by O, $S(O)_n$, NR^4; straight-chain or branched C_3-C_8-cycloalkyl-C_1-C_4-alkyl which is optionally mono- to disubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and may optionally be interrupted by O, $S(O)_n$ or NR^4,

T represents oxygen or an electron pair,

L^1 represents a radical from the group consisting of hydrogen; C_1-C_8-alkyl, C_2-C_8-alkenyl and C_2-C_8-alkynyl, optionally independently of one another mono- to pentasubstituted by halogen and mono- to disubstituted by C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$- and cyano; C_3-C_8-cycloalkyl and C_5-C_8-cycloalkenyl which are optionally independently of one another mono- to pentasubstituted by halogen and mono- to disubstituted by C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and

which may optionally be interrupted once to twice independently of one another by O, $S(O)_n$, CO and NR^4; straight-chain or branched C_3-C_8-cycloalkyl-C_1-C_4-alkyl and C_5-C_8-cycloalkenyl-C_1-C_4-alkyl which are optionally independently of one another mono- to pentasubstituted by halogen and mono- to disubstituted by C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and which may optionally be interrupted once to twice independently of one another by O, $S(O)_n$, CO and NR^4; and aryl, hetaryl, arylalkyl and hetarylalkyl which are optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano,

L^2 represents a radical from the group consisting of hydrogen and C_1-C_4-alkyl which is optionally independently of one another mono- to pentasubstituted by halogen and mono- to disubstituted by C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$- and cyano

or

L^1 and L^2 together with the carbon atom to which they are attached represent C_3-C_8-cycloalkyl which is optionally independently of one another mono- to trisubstituted by halogen, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$- and cyano

or

L^1 and L^2 together represent C_2-C_6-alkenyl which is optionally independently of one another mono- to trisubstituted by halogen, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$- and cyano,

L^3 represents a radical from the group consisting of hydrogen, $S(O)_nR^{1a}$, OR^{1b} and $N(R^2)(R^3)$, where in the case that L^1 and/or L^2 represents hydrogen or optionally substituted alkyl, L^3 represents a radical from the group consisting of $S(O)_nR^{1a}$, OR^{1b} and $N(R^2)(R^3)$,

R^{1a} represents a radical from the group consisting of C_1-C_8-alkyl, C_3-C_8-alkenyl and C_3-C_8-alkynyl, optionally independently of one another mono- to pentasubstituted by halogen and mono- to disubstituted by C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, cyano, $C(O)N(R^5)(R^6)$, $C(G)R^7$ and $C(O)OR^8$; C_3-C_8-cycloalkyl and C_5-C_8-cycloalkenyl which are optionally independently of one another mono- to tetrasubstituted by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and which may optionally be interrupted once to twice independently of one another by O, $S(O)_n$, CO

and NR^4; straight-chain or branched C_3-C_8-cycloalkyl-C_1-C_4-alkyl and C_5-C_8-cycloalkenyl-C_1-C_4-alkyl which are optionally independently of one another mono- to tetrasubstituted by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and which may optionally be interrupted once to twice independently of one another by O, $S(O)_n$, CO and NR^4; aryl and hetaryl which are optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano; and aryl-C_1-C_4-alkyl and hetaryl-C_1-C_4-alkyl which are optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano,

R^{1b} represents a radical from the group consisting of hydrogen; C_1-C_8-alkyl, C_3-C_8-alkenyl and C_3-C_8-alkynyl, optionally independently of one another mono- to pentasubstituted by halogen and mono- to disubstituted by C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, cyano, $C(O)N(R^5)(R^6)$, $C(G)R^7$ and $C(O)OR^8$; C_3-C_8-cycloalkyl and C_5-C_8-cycloalkenyl which are optionally independently of one another mono- to tetrasubstituted by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and which may optionally be interrupted once to twice independently of one another by O, $S(O)_n$, CO and NR^4; straight-chain or branched C_3-C_8-cycloalkyl-C_1-C_4-alkyl and C_5-C_8-cycloalkenyl-C_1-C_4-alkyl which are optionally independently of one another mono- to tetrasubstituted by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and which may optionally be interrupted once to twice independently of one another by O, $S(O)_n$, CO and NR^4; aryl and hetaryl which are optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano; and straight-chain or branched aryl-C_1-C_4-alkyl and hetaryl-C_1-C_4-alkyl which are optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano,

G represents O, N-CN or $N\text{-}OR^8$,

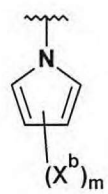
R^2 represents a radical from the group consisting of hydrogen; C_1-C_8-alkyl, C_3-C_8-alkenyl and C_3-C_8-alkynyl, optionally independently of one another mono- to pentasubstituted by halogen and mono- to disubstituted by C_1-C_4-alkoxy, C_1-C_4-

alkyl-$S(O)_n$- and cyano; C_3-C_8-cycloalkyl and C_5-C_8-cycloalkenyl which are optionally independently of one another mono- to disubstituted by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and which may optionally be interrupted once to twice independently of one another by O, $S(O)_n$, CO and NR^4; straight-chain or branched C_3-C_8-cycloalkyl-C_1-C_4-alkyl and C_5-C_8-cycloalkenyl-C_1-C_4-alkyl which are optionally independently of one another mono- to disubstituted by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and which may optionally be interrupted once to twice independently of one another by O, $S(O)_n$, CO and NR^4; aryl and hetaryl which are optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano; and straight-chain or branched aryl-C_1-C_4-alkyl and hetaryl-C_1-C_4-alkyl which are optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano,

R^3 represents a radical from the group consisting of hydrogen; C_1-C_8-alkyl, C_3-C_8-alkenyl and C_3-C_8-alkynyl, optionally independently of one another mono- to trisubstituted by halogen, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$- and cyano, or represents the radicals $C(O)N(R^5)(R^6)$, $C(O)R^7$, $C(O)OR^8$ and SO_2R^9,

or

R^2 and R^3 together with the nitrogen atom to which they are attached represent a heterocycle from the group consisting of U-1 to U-36,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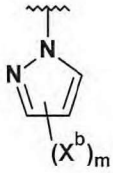
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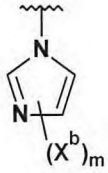
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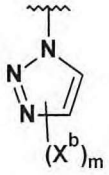
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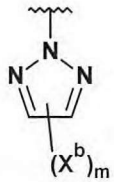
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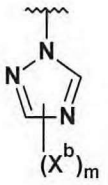
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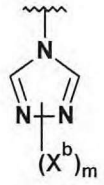
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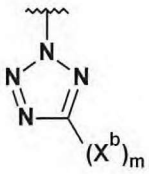
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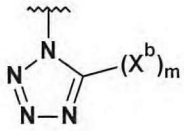
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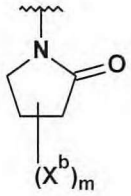
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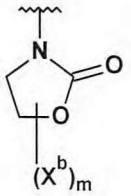
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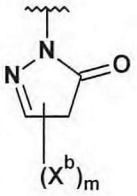
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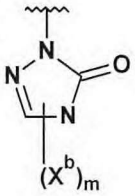
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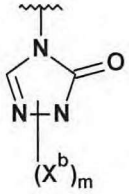
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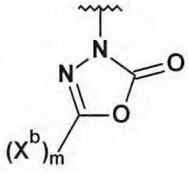
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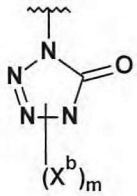
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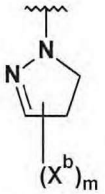
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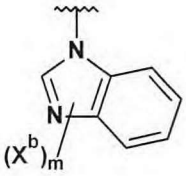
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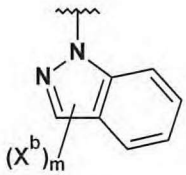
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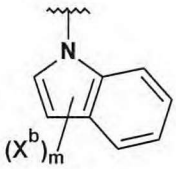
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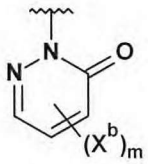
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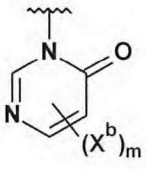
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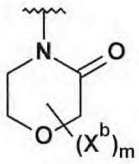
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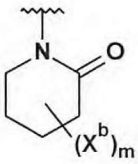
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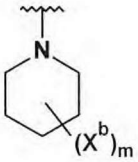
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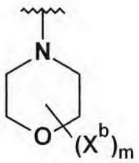
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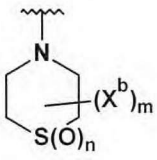
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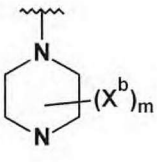
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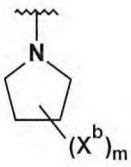
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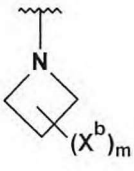
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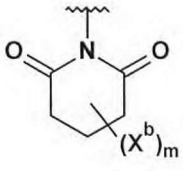
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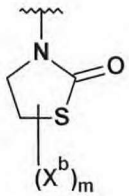
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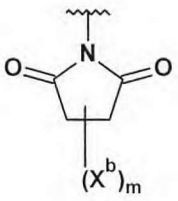
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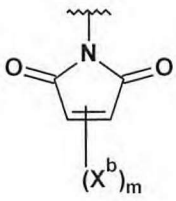
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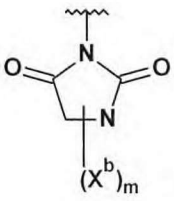
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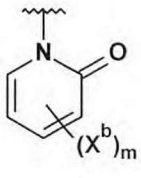

U-36

R^4 represents a radical from the group consisting of hydrogen; C_1-C_8-alkyl, C_3-C_8-alkenyl and C_3-C_8-alkynyl, optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkoxy and C_1-C_4-alkyl-$S(O)_n$-; C_3-C_8-cycloalkyl and C_3-C_8-cycloalkyl-C_1-C_4-alkyl, optionally mono- to disubstituted independently of one

another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano; aryl and hetaryl, optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano; and straight-chain or branched aryl-C_1-C_4-alkyl and hetaryl-C_1-C_4-alkyl, optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano,

R^5 and R^6 independently of one another represent a radical from the group consisting of hydrogen; C_1-C_8-alkyl, C_3-C_8-alkenyl and C_3-C_8-alkynyl, optionally mono- to pentasubstituted by halogen and mono- to disubstituted by C_1-C_4-alkoxy and C_1-C_4-alkyl-$S(O)_n$-; C_3-C_8-cycloalkyl, C_5-C_8-cycloalkenyl and C_3-C_8-cycloalkyl-C_1-C_4-alkyl, optionally mono- to disubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano; aryl and hetaryl, optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano; and straight-chain or branched aryl-C_1-C_4-alkyl and hetaryl-C_1-C_4-alkyl, optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano,

or

R^5 and R^6 together with the nitrogen atom to which they are attached represent a three- to eight-membered aliphatic ring which may optionally be substituted by C_1-C_2-alkyl, C_1-C_2-haloalkyl and C_1-C_2-alkoxy and optionally interrupted by O or $S(O)_n$,

R^7 represents a radical from the group consisting of hydrogen; C_1-C_8-alkyl, C_3-C_8-alkenyl and C_3-C_8-alkynyl, optionally independently of one another mono- to pentasubstituted by halogen and mono- to disubstituted by C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$- and cyano; C_3-C_8-cycloalkyl and C_5-C_8-cycloalkenyl which are optionally independently of one another mono- to disubstituted by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and which may optionally be interrupted by O, $S(O)_n$, CO or NR^4; straight-chain or branched C_3-C_8-cycloalkyl-C_1-C_4-alkyl and C_5-C_8-cycloalkenyl-C_1-C_4-alkyl which are optionally independently of one another mono- to disubstituted by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-

alkoxy and cyano and which may optionally be interrupted by O, $S(O)_n$, CO or NR^4; aryl and hetaryl which are optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano; and straight-chain or branched aryl-C_1-C_4-alkyl and hetaryl-C_1-C_4-alkyl which are optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano,

R^8 represents a radical from the group consisting of hydrogen; C_1-C_8-alkyl, C_3-C_8-alkenyl and C_3-C_8-alkynyl, optionally independently of one another mono- to pentasubstituted by halogen and mono- to disubstituted by C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$- and cyano; C_3-C_8-cycloalkyl and C_5-C_8-cycloalkenyl which are optionally independently of one another mono- to disubstituted by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and which may optionally be interrupted by O, $S(O)_n$, CO, NR^4; straight-chain or branched C_3-C_8-cycloalkyl-C_1-C_4-alkyl and C_5-C_8-cycloalkenyl-C_1-C_4-alkyl which are optionally independently of one another mono- to disubstituted by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, cyano and which may optionally be interrupted by O, $S(O)_n$, CO, NR^4; aryl and hetaryl which are optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano; and straight-chain or branched aryl-C_1-C_4-alkyl and hetaryl-C_1-C_4-alkyl which are optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano,

R^9 represents a radical from the group consisting of C_1-C_8-alkyl, C_3-C_8-alkenyl and C_3-C_8-alkynyl, optionally independently of one another mono- to pentasubstituted by halogen and mono- to disubstituted by C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$- and cyano; C_3-C_8-cycloalkyl and C_5-C_8-cycloalkenyl which are optionally independently of one another mono- to disubstituted by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and which may optionally be interrupted by O, $S(O)_n$, CO, NR^4; straight-chain or branched C_3-C_8-cycloalkyl-C_1-C_4-alkyl and C_5-C_8-cycloalkenyl-C_1-C_4-alkyl which are optionally independently of one another mono- to disubstituted

by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and which may optionally be interrupted by O, $S(O)_n$, CO, NR^4; and aryl and hetaryl which are optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano; straight-chain or branched aryl-C_1-C_4-alkyl and hetaryl-C_1-C_4-alkyl which are optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano,

X^b represents a radical from the group consisting of halogen, nitro, cyano, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, C_1-C_4-alkoxy-C_1-C_4-alkyl, cyano-C_1-C_4-alkyl; C_3-C_6-cycloalkyl and C_3-C_6-cycloalkyl-C_1-C_4-alkyl which are optionally mono- to tetrasubstituted by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and C_1-C_4-alkyl-$S(O)_n$- and which may optionally be interrupted by O or $S(O)_n$; C_2-C_6-alkenyl, C_2-C_6-alkynyl, C_1-C_4-alkylcarbonyl, C_1-C_4-haloalkylcarbonyl, C_1-C_6-alkoxycarbonyl, C_1-C_6-alkylaminocarbonyl, di-(C_1-C_6)-alkylaminocarbonyl, C_1-C_6-alkylcarbonylamino, aryl and hetaryl, where the substituents aryl and hetaryl may optionally be mono- or polysubstituted by identical or different substituents from the group consisting of halogen, cyano, nitro, C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, C_1-C_4-alkoxy, C_1-C_4-haloalkyl, C_1-C_6-haloalkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano and where the ring nitrogen atoms in U-13, U-14, U-16, U-28 and U-35 are not substituted by halogen, nitro, cyano, C_1-C_4-alkoxy, C_1-C_4-haloalkoxy and C_1-C_4-alkoxy-C_1-C_4-alkyloxy,

m represents a number 0, 1 or 2, where in the case of m = 2 the radicals X^b may optionally be independent of one another,

n represents a number 0, 1 or 2,

and salts thereof.

Particularly preferred substituents or ranges for the radicals listed in the compounds of formula (I) are elucidated below. The combination thereof forms the range of preference (2-2), where

Q represents oxygen or sulfur,

V represents a radical from the group consisting of hydrogen, fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, difluoromethoxy, trifluoromethoxy and cyano,

W represents a radical from the group consisting of hydrogen, fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, difluoromethoxy, trifluoromethoxy and cyano,

Y represents a radical from the group consisting of hydrogen; C_1-C_4-alkyl, C_3-C_4-alkenyl and C_3-C_4-alkynyl, optionally mono- to pentasubstituted independently of one another by fluorine, chlorine, bromine, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, cyano; C_3-C_6-cycloalkyl, optionally mono- or disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy, cyano; and straight-chain or branched C_3-C_6-cycloalkyl-C_1-C_2-alkyl, optionally interrupted once or twice independently of one another by O, $S(O)_n$, NR^4 and optionally mono- to tetrasubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy, cyano; and cyano,

A represents a radical from the group consisting of hydrogen; C_1-C_6-alkyl, C_3-C_6-alkenyl or C_3-C_6-alkynyl, optionally mono- to pentasubstituted independently of one another by fluorine, chlorine, bromine, methoxy, ethoxy, methyl-$S(O)_m$-, ethyl-$S(O)_m$- or cyano; C_3-C_6-cycloalkyl, optionally mono- or disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy or cyano; and straight-chain or branched C_3-C_6-cycloalkyl-C_1-C_2-alkyl, optionally mono- or disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy or cyano,

T represents oxygen or an electron pair,

L^1 represents a radical from the group consisting of hydrogen; C_1-C_6-alkyl, C_2-C_6-alkenyl and C_2-C_6-alkynyl, optionally independently of one another mono- to pentasubstituted by fluorine, chlorine and bromine and mono- to trisubstituted by methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$- and cyano; C_3-C_6-cycloalkyl, optionally interrupted once or twice independently of one another by O, $S(O)_n$, CO

and NR^4 and optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; straight-chain or branched C_3-C_6-cycloalkyl-C_1-C_2-alkyl, optionally interrupted once or twice independently of one another by O, $S(O)_n$, CO and NR^4 and optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; phenyl, naphthyl, pyridyl, pyrimidyl, pyridazinyl, pyrazinyl, triazinyl, furanyl, thienyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, pyrazolyl, imidazolyl, oxadiazolyl and thiadiazolyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano; and straight-chain or branched phenyl-C_1-C_2-alkyl, pyridyl-C_1-C_2-alkyl, pyrimidyl-C_1-C_2-alkyl, thiazolyl-C_1-C_2-alkyl and pyrazolyl-C_1-C_2-alkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano,

L^2 represents a radical from the group consisting of hydrogen and C_1-C_4-alkyl which is optionally independently of one another mono- to pentasubstituted by fluorine, chlorine and bromine and mono- to disubstituted by methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$- and cyano

or

L^1 and L^2 together with the carbon atom to which they are attached represent C_3-C_8-cycloalkyl which is optionally independently of one another mono- to trisubstituted by fluorine, chlorine, bromine, methyl-$S(O)_n$-, ethyl-$S(O)_n$- and cyano

or

L^1 and L^2 together represent C_2-C_6-alkenyl which is optionally independently of one another mono- to trisubstituted by fluorine, chlorine, bromine, methyl-$S(O)_n$-, ethyl-$S(O)_n$- and cyano

L^3 represents a radical from the group consisting of hydrogen, $S(O)_nR^{1a}$, OR^{1b} and $N(R^2)(R^3)$, where in the case that L^1 and/or L^2 represents hydrogen or optionally substituted alkyl, L^3 represents a radical from the group consisting of $S(O)_nR^{1a}$, OR^{1b} and $N(R^2)(R^3)$,

R^{1a} represents a radical from the group consisting of C_1-C_6-alkyl, C_3-C_6-alkenyl and C_3-C_6-alkynyl, optionally independently of one another mono- to pentasubstituted by fluorine, chlorine and bromine and mono- to disubstituted by methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, cyano, $C(O)N(R^5)(R^6)$, $C(G)R^7$ and $C(O)OR^8$; C_3-C_6-cycloalkyl, optionally interrupted once or twice independently of one another by O, $S(O)_n$, CO and NR^4 and optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; straight-chain or branched C_3-C_6-cycloalkyl-C_1-C_2-alkyl, optionally interrupted once or twice independently of one another by O, $S(O)_n$, CO and NR^4 and optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; phenyl, naphthyl, pyridyl, pyrimidyl, pyridazinyl, pyrazinyl, triazinyl, furanyl, thienyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, pyrazolyl, imidazolyl, oxadiazolyl and thiadiazolyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano; and straight-chain or branched phenyl-C_1-C_2-alkyl, pyridyl-C_1-C_2-alkyl, pyrimidyl-C_1-C_2-alkyl, thiazolyl-C_1-C_2-alkyl and pyrazolyl-C_1-C_2-alkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano,

R^{1b} represents a radical from the group consisting of hydrogen; C_1-C_6-alkyl, C_3-C_6-alkenyl and C_3-C_6-alkynyl, optionally independently of one another mono- to pentasubstituted by fluorine, chlorine and bromine and mono- to disubstituted by methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, cyano, $C(O)N(R^5)(R^6)$, $C(G)R^7$ and $C(O)OR^8$; C_3-C_6-cycloalkyl, optionally interrupted once or twice independently of one another by O, $S(O)_n$, CO and NR^4 and optionally mono- to disubstituted

independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; straight-chain or branched C_3-C_6-cycloalkyl-C_1-C_2-alkyl, optionally interrupted once or twice independently of one another by O, $S(O)_n$, CO and NR^4 and optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; phenyl, naphthyl, pyridyl, pyrimidyl, pyridazinyl, pyrazinyl, triazinyl, furanyl, thienyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, pyrazolyl, imidazolyl, oxadiazolyl and thiadiazolyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano; and straight-chain or branched phenyl-C_1-C_2-alkyl, pyridyl-C_1-C_2-alkyl, pyrimidyl-C_1-C_2-alkyl, thiazolyl-C_1-C_2-alkyl and pyrazolyl-C_1-C_2-alkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano,

G represents O or N-OR^8,

R^2 represents a radical from the group consisting of hydrogen; C_1-C_6-alkyl, C_3-C_6-alkenyl and C_3-C_6-alkynyl, optionally independently of one another mono- to pentasubstituted by fluorine, chlorine and bromine and mono- to disubstituted by methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$- and cyano; C_3-C_6-cycloalkyl, optionally interrupted once or twice independently of one another by O, $S(O)_n$, CO and NR^4 and optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; straight-chain or branched C_3-C_6-cycloalkyl-C_1-C_2-alkyl, optionally interrupted once or twice independently of one another by O, $S(O)_n$, CO and NR^4 and optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; phenyl, naphthyl, pyridyl, pyrimidyl, pyridazinyl, pyrazinyl, triazinyl, furanyl, thienyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, pyrazolyl, imidazolyl, oxadiazolyl and thiadiazolyl, optionally mono- to disubstituted independently of one another by

fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano; and straight-chain or branched phenyl-C_1-C_2-alkyl, pyridyl-C_1-C_2-alkyl, pyrimidyl-C_1-C_2-alkyl, thiazolyl-C_1-C_2-alkyl and pyrazolyl-C_1-C_2-alkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano,

R^3 represents a radical from the group consisting of hydrogen; C_1-C_6-alkyl, C_3-C_6-alkenyl and C_3-C_6-alkynyl, optionally mono- to trisubstituted independently of one another by fluorine, chlorine, bromine, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$- and cyano; or represents the radicals $C(O)N(R^5)(R^6)$, $C(O)R^7$, $C(O)OR^8$ and SO_2R^9,

or

R^2 and R^3 together with N represent a heterocycle from the group consisting of U-1, U-2, U-3, U-4, U-5, U-6, U-7, U-10, U-13, U-14, U-24, U-25, U-26, U-27, U-29, U-30, U-31, U-32, U-33, U-34, U-35 and U-36,

R^4 represents a radical from the group consisting of hydrogen; C_1-C_6-alkyl, C_3-C_6-alkenyl and C_3-C_6-alkynyl, optionally mono- to trisubstituted independently of one another by fluorine, chlorine, bromine, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$- and cyano; C_3-C_6-cycloalkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; straight-chain or branched C_3-C_6-cycloalkyl-C_1-C_2-alkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; phenyl, naphthyl, pyridyl, pyrimidyl, pyridazinyl, pyrazinyl, triazinyl, furanyl, thienyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, pyrazolyl, imidazolyl, oxadiazolyl and thiadiazolyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano; and straight-chain or branched phenyl-C_1-C_2-alkyl, pyridyl-C_1-C_2-alkyl, pyrimidyl-

C_1-C_2-alkyl, thiazolyl-C_1-C_2-alkyl and pyrazolyl-C_1-C_2-alkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano,

R^5 and R^6 independently of one another represent a radical from the group consisting of hydrogen; C_1-C_6-alkyl, C_3-C_6-alkenyl and C_3-C_6-alkynyl, optionally independently of one another mono- to pentasubstituted by fluorine, chlorine and bromine and mono- to disubstituted by methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$- and cyano; C_3-C_6-cycloalkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; straight-chain or branched C_3-C_6-cycloalkyl-C_1-C_2-alkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; phenyl, naphthyl, pyridyl, pyrimidyl, pyridazinyl, pyrazinyl, triazinyl, furanyl, thienyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, pyrazolyl, imidazolyl, oxadiazolyl and thiadiazolyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano; straight-chain or branched phenyl-C_1-C_2-alkyl, pyridyl-C_1-C_2-alkyl, pyrimidyl-C_1-C_2-alkyl, thiazolyl-C_1-C_2-alkyl and pyrazolyl-C_1-C_2-alkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano,

or

R^5 and R^6 together with the nitrogen atom to which they are attached represent a three- to six-membered aliphatic ring which may optionally be substituted by C_1-C_2-alkyl, C_1-C_2-haloalkyl and C_1-C_2-alkoxy and optionally interrupted by O or $S(O)_n$,

R^7 represents a radical from the group consisting of hydrogen; C_1-C_6-alkyl, C_3-C_6-alkenyl and C_3-C_6-alkynyl, optionally independently of one another mono- to

pentasubstituted by fluorine, chlorine and bromine and mono- to disubstituted by methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$- and cyano; C_3-C_6-cycloalkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; straight-chain or branched C_3-C_6-cycloalkyl-C_1-C_2-alkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; phenyl, naphthyl, pyridyl, pyrimidyl, pyridazinyl, pyrazinyl, triazinyl, furanyl, thienyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, pyrazolyl, imidazolyl, oxadiazolyl and thiadiazolyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano; and straight-chain or branched phenyl-C_1-C_2-alkyl, pyridyl-C_1-C_2-alkyl, pyrimidyl-C_1-C_2-alkyl, thiazolyl-C_1-C_2-alkyl and pyrazolyl-C_1-C_2-alkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano,

R^8 represents a radical from the group consisting of hydrogen; C_1-C_6-alkyl, C_3-C_6-alkenyl and C_3-C_6-alkynyl, optionally independently of one another mono- to pentasubstituted by fluorine, chlorine and bromine and mono- to disubstituted by methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$- and cyano; C_3-C_6-cycloalkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; straight-chain or branched C_3-C_6-cycloalkyl-C_1-C_2-alkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; phenyl, naphthyl, pyridyl, pyrimidyl, pyridazinyl, pyrazinyl, triazinyl, furanyl, thienyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, pyrazolyl, imidazolyl, oxadiazolyl and thiadiazolyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano; and straight-chain or branched phenyl-C_1-C_2-

alkyl, pyridyl-C_1-C_2-alkyl, pyrimidyl-C_1-C_2-alkyl, thiazolyl-C_1-C_2-alkyl and pyrazolyl-C_1-C_2-alkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano,

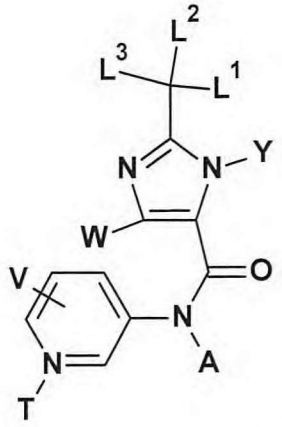
X^b represents a radical from the group consisting of halogen, nitro, cyano, C_1-C_4-alkyl, C_3-C_6-cycloalkyl, C_1-C_2-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$- C_3-C_6-halocycloalkyl, C_1-C_4-alkoxy-C_1-C_4-alkyl, C_1-C_4-alkoxycarbonyl, C_1-C_4-alkylaminocarbonyl, C_1-C_6-alkylsulphonyl, C_1-C_6-alkylcarbonylamino and phenyl, where phenyl may optionally be mono- to trisubstituted by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano,

m represents a number 0, 1 or 2, where in the case of m = 2 the radicals X^b may optionally be independent of one another,

n represents a number 0, 1 or 2,

and salts thereof.

Taking into account the position of the carboxamide group at the imidazole radical, formula (I) gives the very particularly preferred structure (I-1). Very particularly preferred substituents or ranges of the radicals listed in the compounds of the formula (I-1) are illustrated below. The combination thereof forms the range of preference (3-2), where



(I-1)

V represents a radical from the group consisting of hydrogen, fluorine, chlorine, methyl and cyano,

W represents a radical from the group consisting of hydrogen, fluorine, chlorine, bromine, methyl, ethyl and cyano,

Y represents a radical from the group consisting of hydrogen; methyl, ethyl, propyl, allyl and propargyl, optionally mono- to trisubstituted independently of one another by fluorine, methoxy, ethoxy and cyano,

A represents a radical from the group consisting of hydrogen; methyl, ethyl, propyl, allyl, propargyl, cyclopropyl and cyclopropylmethyl, optionally mono- to trisubstituted independently of one another by fluorine, methoxy, ethoxy and cyano,

T represents an electron pair or oxygen,

L^1 represents a radical from the group consisting of hydrogen; methyl, ethyl, propyl, isopropyl, n-butyl, isobutyl, sec-butyl, tert-butyl, pentyl, isopentyl, 2,2-dimethylpropyl, hexyl, neo-hexyl, vinyl, allyl, methallyl, 2-butenyl, propargyl, ethynyl and 2-butynyl, optionally mono- to trisubstituted independently of one another by fluorine, chlorine and bromine and monosubstituted by methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl or cyano; cyclopropyl, cyclobutyl, cyclopentyl and cyclohexyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, methyl, ethyl, trifluoromethyl, methoxy and cyano; cyclopropylmethyl, cyclobutylmethyl, cyclopentylmethyl and cyclohexylmethyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, methyl, ethyl,

trifluoromethyl, methoxy and cyano; phenyl, pyridyl, pyrimidyl, thienyl and thiazolyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, difluoromethoxy, trifluoromethoxy, trifluoromethylsulphanyl, trifluoromethylsulphinyl, trifluoromethylsulphonyl, difluoromethylsulphanyl, difluoromethylsulphinyl, difluoromethylsulphonyl, trifluoroethylsulphanyl, trifluoroethylsulphinyl, trifluoroethylsulphonyl, nitro and cyano; benzyl, pyridylmethyl, pyrimidylmethyl, thiazolylmethyl and pyrazolylmethyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, difluoromethoxy, trifluoromethoxy, trifluoromethylsulphanyl, trifluoromethylsulphinyl, trifluoromethylsulphonyl, difluoromethylsulphanyl, difluoromethylsulphinyl, difluoromethylsulphonyl, trifluoroethylsulphanyl, trifluoroethylsulphinyl, trifluoroethylsulphonyl, nitro and cyano,

L^2 represents a radical from the group consisting of hydrogen; methyl, ethyl and propyl, optionally mono- to trisubstituted independently of one another by fluorine, methoxy, ethoxy and cyano

or

L^1 and L^2 together with the carbon atom to which they are attached represent cyclopropyl, cyclobutyl, cyclopentyl or cyclohexyl, optionally independently of one another mono- to trisubstituted by fluorine, chlorine, bromine, methyl-$S(O)_n$-, ethyl-$S(O)_n$- and cyano

or

L^1 and L^2 together represent ethenyl, propenyl or butenyl, optionally independently of one another mono- to trisubstituted by fluorine, chlorine, bromine, methyl-$S(O)_n$-, ethyl-$S(O)_n$- and cyano,

L^3 represents a radical from the group consisting of hydrogen, $S(O)_nR^{1a}$, OR^{1b} and $N(R^2)(R^3)$, where in the case that L^1 and/or L^2 represents hydrogen or optionally

substituted alkyl, L^3 represents a radical from the group consisting of $S(O)_nR^{1a}$, OR^{1b} and $N(R^2)(R^3)$,

R^{1a} represents a radical from the group consisting of methyl, ethyl, propyl, isopropyl, n-butyl, isobutyl, sec-butyl, tert-butyl, pentyl, isopentyl, 2,2-dimethylpropyl, hexyl, neo-hexyl, allyl, methallyl, 2-butenyl, propargyl and 2-butynyl, optionally mono- to pentasubstituted independently of one another by fluorine, chlorine and bromine and monosubstituted by methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, cyano, $C(O)N(R^5)(R^6)$ or $C(O)OR^8$; cyclopropyl, cyclobutyl, cyclopentyl and cyclohexyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, methyl, ethyl, trifluoromethyl, methoxy and cyano; tetrahydrofuranyl, tetrahydropyranyl, pyrrolidyl, N-methylpyrrolidyl, piperidyl and N-methylpiperidyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, methyl, ethyl, trifluoromethyl, methoxy and cyano; cyclopropylmethyl, cyclobutylmethyl, cyclopentylmethyl and cyclohexylmethyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, methyl, ethyl, trifluoromethyl, methoxy and cyano; phenyl, pyridyl, pyrimidyl, thienyl and thiazolyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, difluoromethoxy, trifluoromethoxy, trifluoromethylsulphanyl, trifluoromethylsulphinyl, trifluoromethylsulphonyl, difluoromethylsulphanyl, difluoromethylsulphinyl, difluoromethylsulphonyl, trifluoroethylsulphanyl, trifluoroethylsulphinyl, trifluoroethylsulphonyl, nitro and cyano; and benzyl, pyridylmethyl, pyrimidylmethyl, thiazolylmethyl and pyrazolylmethyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, difluoromethoxy, trifluoromethoxy, trifluoromethylsulphanyl, trifluoromethylsulphinyl, trifluoromethylsulphonyl, difluoromethylsulphanyl, difluoromethylsulphinyl, difluoromethylsulphonyl, trifluoroethylsulphanyl, trifluoroethylsulphinyl, trifluoroethylsulphonyl, nitro and cyano,

R^{1b} represents a radical from the group consisting of hydrogen; methyl, ethyl, propyl, isopropyl, n-butyl, isobutyl, sec-butyl, tert-butyl, pentyl, isopentyl, 2,2-dimethylpropyl, hexyl, neo-hexyl, allyl, methallyl, 2-butenyl, propargyl and 2-butynyl, optionally mono- to pentasubstituted independently of one another by fluorine, chlorine, bromine or monosubstituted by methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, cyano, $C(O)N(R^5)(R^6)$ or $C(O)OR^8$; cyclopropyl, cyclobutyl, cyclopentyl and cyclohexyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, methyl, ethyl, trifluoromethyl, methoxy and cyano; tetrahydrofuranyl, tetrahydropyranyl, pyrrolidyl, N-methylpyrrolidyl, piperidyl and N-methylpiperidyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, methyl, ethyl, trifluoromethyl, methoxy and cyano; cyclopropylmethyl, cyclobutylmethyl, cyclopentylmethyl and cyclohexylmethyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, methyl, ethyl, trifluoromethyl, methoxy and cyano; phenyl, pyridyl, pyrimidyl, thienyl and thiazolyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, difluoromethoxy, trifluoromethoxy, trifluoromethylsulphanyl, trifluoromethylsulphinyl, trifluoromethylsulphonyl, difluoromethylsulphanyl, difluoromethylsulphinyl, difluoromethylsulphonyl, trifluoroethylsulphanyl, trifluoroethylsulphinyl, trifluoroethylsulphonyl, nitro and cyano; and benzyl, pyridylmethyl, pyrimidylmethyl, thiazolylmethyl and pyrazolylmethyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, difluoromethoxy, trifluoromethoxy, trifluoromethylsulphanyl, trifluoromethylsulphinyl, trifluoromethylsulphonyl, difluoromethylsulphanyl, difluoromethylsulphinyl, difluoromethylsulphonyl, trifluoroethylsulphanyl, trifluoroethylsulphinyl, trifluoroethylsulphonyl, nitro and cyano,

R^2 and R^3 together with N represent a heterocycle from the group consisting of U-1, U-2, U-3, U-4, U-5, U-6, U-7, U-13, U-25, U-26, U-27, U-29, U-30, U-31, U-32, U-33, U-34, U-35 and U-36,

R^5 and R^6 independently of one another represent a radical from the group consisting of hydrogen; methyl, ethyl, propyl, isopropyl, n-butyl, isobutyl, sec-butyl, tert-butyl, pentyl, isopentyl, 2,2-dimethylpropyl, hexyl, neo-hexyl, allyl, methallyl, 2-butenyl, propargyl and 2-butynyl, optionally mono- to trisubstituted independently of one another by fluorine, chlorine and bromine or monosubstituted by methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl or cyano; cyclopropyl, cyclobutyl, cyclopentyl and cyclohexyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, methyl, ethyl, trifluoromethyl, methoxy and cyano; cyclopropylmethyl, cyclobutylmethyl, cyclopentylmethyl and cyclohexylmethyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, methyl, ethyl, trifluoromethyl, methoxy and cyano; phenyl, pyridyl, pyrimidyl, thienyl and thiazolyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, difluoromethoxy, trifluoromethoxy, trifluoromethylsulphanyl, trifluoromethylsulphinyl, trifluoromethylsulphonyl, difluoromethylsulphanyl, difluoromethylsulphinyl, difluoromethylsulphonyl, trifluoroethylsulphanyl, trifluoroethylsulphinyl, trifluoroethylsulphonyl, nitro and cyano; and benzyl, pyridylmethyl, pyrimidylmethyl, thiazolylmethyl and pyrazolylmethyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, difluoromethoxy, trifluoromethoxy, trifluoromethylsulphanyl, trifluoromethylsulphinyl, trifluoromethylsulphonyl, difluoromethylsulphanyl, difluoromethylsulphinyl, difluoromethylsulphonyl, trifluoroethylsulphanyl, trifluoroethylsulphinyl, trifluoroethylsulphonyl, nitro and cyano,

R^8 represents a radical from the group consisting of hydrogen; methyl, ethyl, propyl, isopropyl, n-butyl, isobutyl, sec-butyl, tert-butyl, pentyl, isopentyl, 2,2-dimethylpropyl, hexyl, neo-hexyl, allyl, methallyl, 2-butenyl, propargyl and 2-butynyl, optionally mono- to trisubstituted independently of one another by fluorine, chlorine and bromine or monosubstituted by methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl or cyano; cyclopropyl, cyclobutyl, cyclopentyl and cyclohexyl, optionally mono- to

disubstituted independently of one another by fluorine, chlorine, methyl, ethyl, trifluoromethyl, methoxy and cyano; cyclopropylmethyl, cyclobutylmethyl, cyclopentylmethyl and cyclohexylmethyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, methyl, ethyl, trifluoromethyl, methoxy and cyano; phenyl, pyridyl, pyrimidyl, thienyl and thiazolyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, difluoromethoxy, trifluoromethoxy, trifluoromethylsulphanyl, trifluoromethylsulphinyl, trifluoromethylsulphonyl, difluoromethylsulphanyl, difluoromethylsulphinyl, difluoromethylsulphonyl, trifluoroethylsulphanyl, trifluoroethylsulphinyl, trifluoroethylsulphonyl, nitro and cyano; benzyl, pyridylmethyl, pyrimidylmethyl, thiazolylmethyl and pyrazolylmethyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, difluoromethoxy, trifluoromethoxy, trifluoromethylsulphanyl, trifluoromethylsulphinyl, trifluoromethylsulphonyl, difluoromethylsulphanyl, difluoromethylsulphinyl, difluoromethylsulphonyl, trifluoroethylsulphanyl, trifluoroethylsulphinyl, trifluoroethylsulphonyl, nitro and cyano,

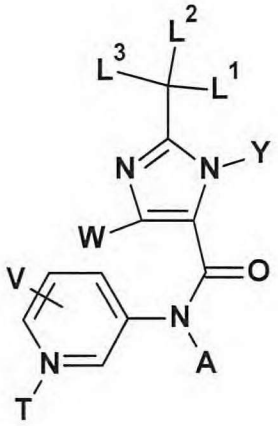
X^b represents a radical from the group consisting of fluorine, chlorine, bromine, cyano, methyl, ethyl, n-propyl, isopropyl, cyclopropyl, trifluoromethyl, difluoromethyl, trifluoroethyl, methoxy, ethoxy, n-propoxy, isopropoxy, trifluoromethoxy, methoxymethyl, ethoxymethyl, methoxyethyl, ethoxyethyl, methyl-$S(O)_n$-, ethyl-$S(O)_n$- and phenyl, where phenyl may optionally be mono- to trisubstituted by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, nitro and cyano,

m represents a number 0.1 or 2, where in the case of m = 2 the radicals X^b may optionally be independent of one another,

n represents a number 0, 1 or 2,

and salts thereof.

Especially preferred substituents or ranges for the radicals listed in the compounds of the formula (I-1) are elucidated below. The combination thereof forms the range of preference (4-2), where



(I-1),

V represents hydrogen,

W represents hydrogen,

Y represents methyl,

A represents methyl, ethyl or cyclopropyl,

T represents an electron pair or oxygen,

L^1 represents a radical from the group consisting of hydrogen, methyl, trifluoromethyl, trichloromethyl, isopropyl, isobutyl, isopentyl, phenyl, 2-chlorophenyl, 3-chlorophenyl, 4-chlorophenyl, 3,4-dichlorophenyl, 2-pyridinyl, 3-pyridinyl, 4-pyridinyl, 4-chloropyridin-3-yl, 2-pyrimidyl and benzyl,

L^2 represents hydrogen or methyl,

or

L^1 and L^2 together represent vinyl, prop-1-en-2-yl, (1*E*)-prop-1-en-1-yl, (1*Z*)-prop-1-en-1-yl or cyclopropyl,

L^3 represents a radical from the group consisting of hydrogen, $S(O)_nR^{1a}$, OR^{1b} and $N(R^2)(R^3)$, where in the case that L^1 and/or L^2 represents hydrogen or optionally substituted alkyl, L^3 represents a radical from the group consisting of $S(O)_nR^{1a}$, OR^{1b} and $N(R^2)(R^3)$,

R^{1a} represents a radical from the group consisting of methyl, ethyl, isopropyl, isobutyl, tert-butyl, cyclopropylmethyl, 2,2-dimethylpropyl, 2-methoxy-2-oxoethyl, phenyl, 2-chlorophenyl, 3-chlorophenyl, 4-chlorophenyl and 2-pyrimidyl,

R^{1b} represents a radical from the group consisting of hydrogen, methyl, ethyl, 2,2,2-trifluoroethyl, isopropyl, cyclopropylmethyl, benzyl, 3-chlorophenyl and 4-chlorophenyl,

R^2 and R^3 together with N represent a heterocycle from the group consisting of U-2, U-4, U-5 and U-13,

X^b represents trifluoromethyl, methyl or cyclopropyl,

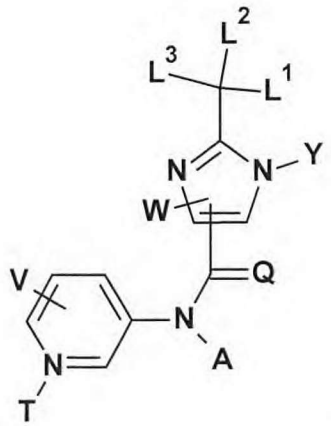
m represents a number 0 or 1,

n represents a number 0 or 2,

and salts thereof.

Further ranges of preference of the invention are listed below:

compounds of the formula (I)



(I)

in which (configuration (0-1))

Q represents oxygen or sulphur,

V represents a radical from the group consisting of hydrogen, halogen, alkyl, haloalkyl, alkoxy, haloalkoxy and cyano,

W represents a radical from the group consisting of hydrogen, halogen, alkyl, haloalkyl, alkoxy, haloalkoxy and cyano,

Y represents a radical from the group consisting of hydrogen, optionally substituted alkyl, alkenyl and alkynyl, optionally substituted cycloalkyl which is optionally interrupted by heteroatoms, optionally substituted cycloalkylalkyl which is optionally interrupted by heteroatoms, arylalkyl, hetarylalkyl and cyano,

A represents a radical from the group consisting of hydrogen, optionally substituted alkyl, alkenyl and alkynyl and optionally substituted cycloalkyl and cycloalkylalkyl which are optionally interrupted by heteroatoms,

T represents oxygen or an electron pair,

L^1 represents a radical from the group consisting of hydrogen, cyano, optionally substituted alkyl, alkenyl and alkynyl, optionally substituted cycloalkyl and cycloalkenyl which are optionally interrupted by heteroatoms, optionally substituted cycloalkylalkyl which is optionally interrupted by heteroatoms, optionally substituted aryl and hetaryl, optionally substituted arylalkyl and hetarylalkyl,

L^2 represents a radical from the group consisting of hydrogen and optionally substituted alkyl

or

L^1 and L^2 together with the carbon atom to which they are attached represent an optionally substituted three- to eight-membered aliphatic ring which may optionally be interrupted by heteroatoms

or

L^1 and L^2 together represent optionally substituted alkenyl,

L^3 represents a radical from the group consisting of hydrogen, $S(O)_nR^{1a}$, OR^{1b} and $N(R^2)(R^3)$,

R^{1a} represents a radical from the group consisting of optionally substituted alkyl, alkenyl and alkynyl, optionally substituted cycloalkyl and cycloalkenyl which are optionally interrupted by heteroatoms, optionally substituted cycloalkylalkyl and cycloalkenylalkyl which are optionally interrupted by heteroatoms, optionally substituted aryl and hetaryl, optionally substituted arylalkyl and hetarylalkyl,

R^{1b} represents a radical from the group consisting of hydrogen, optionally substituted alkyl, alkenyl and alkynyl, optionally substituted cycloalkyl and cycloalkenyl which are optionally interrupted by heteroatoms, optionally substituted cycloalkylalkyl and cycloalkenylalkyl which are optionally interrupted by heteroatoms, optionally substituted aryl and hetaryl, optionally substituted arylalkyl and hetarylalkyl,

R^2 represents a radical from the group consisting of hydrogen, optionally substituted alkyl, alkenyl and alkynyl, optionally substituted cycloalkyl and cycloalkenyl which are optionally interrupted by heteroatoms, optionally substituted cycloalkylalkyl and cycloalkenylalkyl which are optionally interrupted by heteroatoms, optionally substituted aryl and hetaryl, optionally substituted arylalkyl and hetarylalkyl,

R^3 represents a radical from the group consisting of hydrogen, optionally substituted alkyl, alkenyl and alkynyl or represents the radicals $C(O)N(R^5)(R^6)$, $C(O)R^7$, $C(O)OR^8$ and SO_2R^9,

or

R^2 and R^3 together with the nitrogen atom to which they are attached represent an optionally substituted saturated, partially saturated or aromatic heterocycle which has 3 to 9 ring atoms and may optionally by interrupted by further heteroatoms and/or one or two CO groups,

R^5 and R^6 independently of one another represent a radical from the group consisting of hydrogen, optionally substituted alkyl, alkenyl and alkynyl, optionally substituted cycloalkyl and cycloalkenyl which are optionally interrupted by heteroatoms, optionally substituted cycloalkylalkyl which is optionally interrupted by heteroatoms, optionally substituted aryl and hetaryl, optionally substituted arylalkyl and hetarylalkyl,

or

R^5 and R^6 together with the nitrogen atom to which they are attached represent an optionally substituted three- to eight-membered aliphatic ring which may optionally be interrupted by heteroatoms,

R^7 represents a radical from the group consisting of hydrogen, optionally substituted alkyl, alkenyl and alkynyl, optionally substituted cycloalkyl and cycloalkenyl which are optionally interrupted by heteroatoms, optionally substituted cycloalkylalkyl and cycloalkenylalkyl which are optionally interrupted by heteroatoms, optionally substituted aryl and hetaryl, optionally substituted arylalkyl and hetarylalkyl,

R^8 represents a radical from the group consisting of hydrogen, optionally substituted alkyl, alkenyl and alkynyl, optionally substituted cycloalkyl and cycloalkenyl which are optionally interrupted by heteroatoms, optionally substituted cycloalkylalkyl and cycloalkenylalkyl which are optionally interrupted by heteroatoms, optionally substituted aryl and hetaryl, optionally substituted arylalkyl and hetarylalkyl,

R^9 represents a radical from the group consisting of optionally substituted alkyl, alkenyl and alkynyl, optionally substituted cycloalkyl and cycloalkenyl which are optionally interrupted by heteroatoms, optionally substituted cycloalkylalkyl and cycloalkenylalkyl which are optionally interrupted by heteroatoms, optionally substituted aryl and hetaryl, optionally substituted arylalkyl and hetarylalkyl,

n represents a number 0, 1 or 2,

and salts thereof.

Preferred substituents or ranges for the radicals listed in the compounds of the formula (I) are illustrated below. The combination thereof forms the range of preference (1-1).

Q represents oxygen or sulfur,

V represents a radical from the group consisting of hydrogen, halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-haloalkoxy and cyano,

W represents a radical from the group consisting of hydrogen, halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-haloalkoxy and cyano,

Y represents a radical from the group consisting of hydrogen; C_1-C_6-alkyl, C_3-C_6-alkenyl or C_3-C_6-alkynyl, optionally mono- to polysubstituted independently of one

another by halogen, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$- and cyano; C_3-C_8-cycloalkyl, optionally mono- to tetrasubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano; straight-chain or branched C_3-C_8-cycloalkyl-C_1-C_4-alkyl, optionally interrupted once or twice independently of one another by O, $S(O)_n$ and NR^4 and optionally mono- to tetrasubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano; aryl-C_1-C_4-alkyl and hetaryl-C_1-C_4-alkyl, optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano,

A represents a radical from the group consisting of hydrogen; C_1-C_6-alkyl, C_3-C_6-alkenyl and C_3-C_6-alkynyl, optionally mono- to polysubstituted independently of one another by halogen, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$- and cyano; C_3-C_6-cycloalkyl which is optionally mono- to disubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and may optionally be interrupted by O, $S(O)_n$, NR^4; straight-chain or branched C_3-C_8-cycloalkyl-C_1-C_4-alkyl which is optionally mono- to disubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and may optionally be interrupted by O, $S(O)_n$ or NR^4,

T represents oxygen or an electron pair,

L^1 represents a radical from the group consisting of hydrogen; C_1-C_8-alkyl, C_2-C_8-alkenyl and C_2-C_8-alkynyl, optionally independently of one another mono- to pentasubstituted by halogen and mono- to disubstituted by C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$- and cyano; C_3-C_8-cycloalkyl and C_5-C_8-cycloalkenyl which are optionally independently of one another mono- to pentasubstituted by halogen and mono- to disubstituted by C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and which may optionally be interrupted once to twice independently of one another by O, $S(O)_n$, CO and NR^4; straight-chain or branched C_3-C_8-cycloalkyl-C_1-C_4-alkyl and C_5-C_8-cycloalkenyl-C_1-C_4-alkyl which are optionally independently of one another mono- to pentasubstituted by halogen and mono- to disubstituted by C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and which may optionally be interrupted once to twice independently of one another by O, $S(O)_n$, CO and NR^4; aryl, hetaryl, arylalkyl and hetarylalkyl which are optionally mono- to trisubstituted independently

of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano,

L^2 represents a radical from the group consisting of hydrogen and C_1-C_4-alkyl which is optionally independently of one another mono- to pentasubstituted by halogen and mono- to disubstituted by C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$- and cyano

or

L^1 and L^2 together with the carbon atom to which they are attached represent C_3-C_8-cycloalkyl which is independently of one another mono- to trisubstituted by halogen, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$- and cyano

or

L^1 and L^2 together represent C_2-C_6-alkenyl which is independently of one another mono- to trisubstituted by halogen, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$- and cyano,

L^3 represents a radical from the group consisting of hydrogen, $S(O)_nR^{1a}$, OR^{1b} and $N(R^2)(R^3)$,

R^{1a} represents a radical from the group consisting of C_1-C_8-alkyl, C_3-C_8-alkenyl and C_3-C_8-alkynyl, optionally independently of one another mono- to pentasubstituted by halogen and mono- to disubstituted by C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, cyano, $C(O)N(R^5)(R^6)$, $C(G)R^7$ and $C(O)OR^8$; C_3-C_8-cycloalkyl and C_5-C_8-cycloalkenyl which are optionally independently of one another mono- to tetrasubstituted by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and which may optionally be interrupted once to twice independently of one another by O, $S(O)_n$, CO and NR^4; straight-chain or branched C_3-C_8-cycloalkyl-C_1-C_4-alkyl and C_5-C_8-cycloalkenyl-C_1-C_4-alkyl which are optionally independently of one another mono- to tetrasubstituted by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and which may optionally be interrupted once to twice independently of one another by O, $S(O)_n$, CO and NR^4; aryl and hetaryl which are optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano; straight-chain or branched aryl-C_1-C_4-alkyl and hetaryl-C_1-C_4-alkyl which are optionally mono- to trisubstituted independently of one another by halogen,

C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano,

R^{1b} represents a radical from the group consisting of hydrogen, C_1-C_8-alkyl, C_3-C_8-alkenyl and C_3-C_8-alkynyl, optionally independently of one another mono- to pentasubstituted by halogen and mono- to disubstituted by C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, cyano, $C(O)N(R^5)(R^6)$, $C(G)R^7$ and $C(O)OR^8$; C_3-C_8-cycloalkyl and C_5-C_8-cycloalkenyl which are optionally independently of one another mono- to tetrasubstituted by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and which may optionally be interrupted once to twice independently of one another by O, $S(O)_n$, CO and NR^4; straight-chain or branched C_3-C_8-cycloalkyl-C_1-C_4-alkyl and C_5-C_8-cycloalkenyl-C_1-C_4-alkyl which are optionally independently of one another mono- to tetrasubstituted by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and which may optionally be interrupted once to twice independently of one another by O, $S(O)_n$, CO and NR^4; aryl and hetaryl which are optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano; straight-chain or branched aryl-C_1-C_4-alkyl and hetaryl-C_1-C_4-alkyl which are optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano,

G represents O, N-CN or $N\text{-}OR^8$,

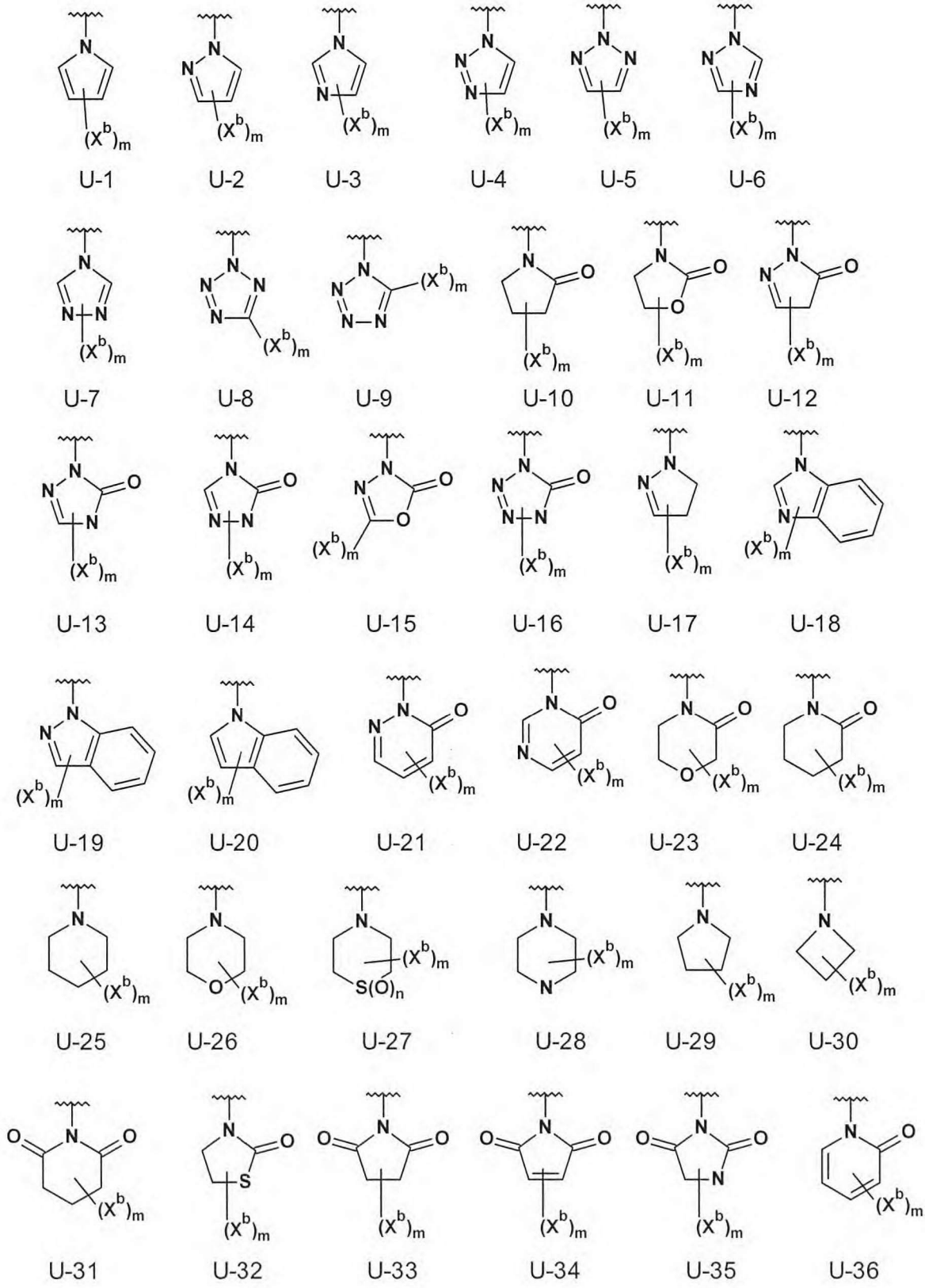
R^2 represents a radical from the group consisting of hydrogen; C_1-C_8-alkyl, C_3-C_8-alkenyl and C_3-C_8-alkynyl, optionally independently of one another mono- to pentasubstituted by halogen and mono- to disubstituted by C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$- and cyano; C_3-C_8-cycloalkyl and C_5-C_8-cycloalkenyl which are optionally independently of one another mono- to disubstituted by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and which may optionally be interrupted once to twice independently of one another by O, $S(O)_n$, CO and NR^4; straight-chain or branched C_3-C_8-cycloalkyl-C_1-C_4-alkyl and C_5-C_8-cycloalkenyl-C_1-C_4-alkyl which are optionally independently of one another mono- to disubstituted by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and which may optionally be interrupted once to twice independently of one another by O, $S(O)_n$, CO and NR^4; aryl and hetaryl which are optionally mono- to trisubstituted independently

of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano; straight-chain or branched aryl-C_1-C_4-alkyl and hetaryl-C_1-C_4-alkyl which are optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano,

R^3 represents a radical from the group consisting of hydrogen; C_1-C_8-alkyl, C_3-C_8-alkenyl and C_3-C_8-alkynyl, optionally independently of one another mono- to trisubstituted by halogen, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$- and cyano, or represents the radicals $C(O)N(R^5)(R^6)$, $C(O)R^7$, $C(O)OR^8$ and SO_2R^9,

or

R^2 and R^3 together with the nitrogen atom to which they are attached represent a heterocycle from the group consisting of U-1 to U-36,



R^4 represents a radical from the group consisting of hydrogen; C_1-C_8-alkyl, C_3-C_8-alkenyl and C_3-C_8-alkynyl, optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkoxy and C_1-C_4-alkyl-$S(O)_n$-; C_3-C_8-cycloalkyl and C_3-C_8-cycloalkyl-C_1-C_4-alkyl, optionally mono- to disubstituted independently of one

another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano; aryl and hetaryl, optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano; straight-chain or branched aryl-C_1-C_4-alkyl and hetaryl-C_1-C_4-alkyl, optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano,

R^5 and R^6 independently of one another represent a radical from the group consisting of hydrogen; C_1-C_8-alkyl, C_3-C_8-alkenyl and C_3-C_8-alkynyl, optionally mono- to pentasubstituted independently of one another by halogen and mono- to disubstituted by C_1-C_4-alkoxy and C_1-C_4-alkyl-$S(O)_n$-; C_3-C_8-cycloalkyl, C_5-C_8-cycloalkenyl and C_3-C_8-cycloalkyl-C_1-C_4-alkyl, optionally mono- to disubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano; aryl and hetaryl, optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano; straight-chain or branched aryl-C_1-C_4-alkyl and hetaryl-C_1-C_4-alkyl, optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano,

or

R^5 and R^6 together with the nitrogen atom to which they are attached represent a three- to eight-membered aliphatic ring which may optionally be substituted by C_1-C_2-alkyl, C_1-C_2-haloalkyl and C_1-C_2-alkoxy and optionally interrupted by O or $S(O)_n$,

R^7 represents a radical from the group consisting of hydrogen; C_1-C_8-alkyl, C_3-C_8-alkenyl and C_3-C_8-alkynyl, optionally independently of one another mono- to pentasubstituted by halogen and mono- to disubstituted by C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$- and cyano; C_3-C_8-cycloalkyl and C_5-C_8-cycloalkenyl which are optionally independently of one another mono- to disubstituted by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and which may optionally be interrupted by O, $S(O)_n$, CO or NR^4; straight-chain or branched C_3-C_8-cycloalkyl-C_1-C_4-alkyl and C_5-C_8-cycloalkenyl-C_1-C_4-alkyl which are optionally independently of one another mono- to disubstituted by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-

alkoxy and cyano and which may optionally be interrupted by O, $S(O)_n$, CO or NR^4; aryl and hetaryl which are optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano; straight-chain or branched aryl-C_1-C_4-alkyl and hetaryl-C_1-C_4-alkyl which are optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano,

R^8 represents a radical from the group consisting of hydrogen; C_1-C_8-alkyl, C_3-C_8-alkenyl and C_3-C_8-alkynyl, optionally independently of one another mono- to pentasubstituted by halogen and mono- to disubstituted by C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$- and cyano; C_3-C_8-cycloalkyl and C_5-C_8-cycloalkenyl which are optionally independently of one another mono- to disubstituted by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and which may optionally be interrupted by O, $S(O)_n$, CO, NR^4; straight-chain or branched C_3-C_8-cycloalkyl-C_1-C_4-alkyl and C_5-C_8-cycloalkenyl-C_1-C_4-alkyl which are optionally independently of one another mono- to disubstituted by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, cyano and which may optionally be interrupted by O, $S(O)_n$, CO, NR^4; aryl and hetaryl which are optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano; straight-chain or branched aryl-C_1-C_4-alkyl and hetaryl-C_1-C_4-alkyl which are optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano,

R^9 represents a radical from the group consisting of C_1-C_8-alkyl, C_3-C_8-alkenyl and C_3-C_8-alkynyl, optionally independently of one another mono- to pentasubstituted by halogen and mono- to disubstituted by C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$- and cyano; C_3-C_8-cycloalkyl and C_5-C_8-cycloalkenyl which are optionally independently of one another mono- to disubstituted by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and which may optionally be interrupted by O, $S(O)_n$, CO, NR^4; straight-chain or branched C_3-C_8-cycloalkyl-C_1-C_4-alkyl and C_5-C_8-cycloalkenyl-C_1-C_4-alkyl which are optionally independently of one another mono- to disubstituted

by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and cyano and which may optionally be interrupted by O, $S(O)_n$, CO, NR^4; aryl and hetaryl which are optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano; straight-chain or branched aryl-C_1-C_4-alkyl and hetaryl-C_1-C_4-alkyl which are optionally mono- to trisubstituted independently of one another by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano,

X^b represents a radical from the group consisting of halogen, nitro, cyano, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$-, C_1-C_4-alkoxy-C_1-C_4-alkyl, cyano-C_1-C_4-alkyl; C_3-C_6-cycloalkyl and C_3-C_6-cycloalkyl-C_1-C_4-alkyl which are optionally mono- to tetrasubstituted by halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy and C_1-C_4-alkyl-$S(O)_n$- and which may optionally be interrupted by O or $S(O)_n$; C_2-C_6-alkenyl, C_2-C_6-alkynyl, C_1-C_4-alkylcarbonyl, C_1-C_4-haloalkylcarbonyl, C_1-C_6-alkoxycarbonyl, C_1-C_6-alkylaminocarbonyl, di-(C_1-C_6)-alkylaminocarbonyl, C_1-C_6-alkylcarbonylamino, aryl and hetaryl, where the substituents aryl and hetaryl may optionally be mono- or polysubstituted by identical or different substituents from the group consisting of halogen, cyano, nitro, C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, C_1-C_4-alkoxy, C_1-C_4-haloalkyl, C_1-C_6-haloalkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkyl-$S(O)_n$-, nitro and cyano and where the ring nitrogen atoms in U-13, U-14, U-16, U-28 and U-35 are not substituted by halogen, nitro, cyano, C_1-C_4-alkoxy, C_1-C_4-haloalkoxy and C_1-C_4-alkoxy-C_1-C_4-alkyloxy,

m represents a number 0, 1 or 2, where in the case of m = 2 the radicals X^b may optionally be independent of one another,

n represents a number 0, 1 or 2,

and salts thereof.

Particularly preferred substituents or ranges for the radicals listed in the compounds of formula (I) are elucidated below. The combination thereof forms the range of preference (2-1).

Q represents oxygen or sulfur,

V represents a radical from the group consisting of hydrogen, fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, difluoromethoxy, trifluoromethoxy and cyano,

W represents a radical from the group consisting of hydrogen, fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, difluoromethoxy, trifluoromethoxy and cyano,

Y represents a radical from the group consisting of hydrogen; C_1-C_4-alkyl, C_3-C_4-alkenyl and C_3-C_4-alkynyl, optionally mono- to pentasubstituted independently of one another by fluorine, chlorine, bromine, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$- and cyano; C_3-C_6-cycloalkyl, optionally mono- or disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy, cyano; straight-chain or branched C_3-C_6-cycloalkyl-C_1-C_2-alkyl, optionally interrupted once or twice independently of one another by O, $S(O)_n$, NR^4 and optionally mono- to tetrasubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy, cyano; and cyano,

A represents a radical from the group consisting of hydrogen; C_1-C_6-alkyl, C_3-C_6-alkenyl or C_3-C_6-alkynyl, optionally mono- to pentasubstituted independently of one another by fluorine, chlorine, bromine, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$- or cyano; C_3-C_6-cycloalkyl, optionally mono- or disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy or cyano; and straight-chain or branched C_3-C_6-cycloalkyl-C_1-C_2-alkyl, optionally mono- or disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy or cyano,

T represents oxygen or an electron pair,

L^1 represents a radical from the group consisting of hydrogen; C_1-C_6-alkyl, C_2-C_6-alkenyl and C_2-C_6-alkynyl, optionally independently of one another mono- to pentasubstituted by fluorine, chlorine and bromine and mono- to trisubstituted by methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$- and cyano; C_3-C_6-cycloalkyl, optionally interrupted once or twice independently of one another by O, $S(O)_n$, CO and NR^4 and optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and

cyano; straight-chain or branched C_3-C_6-cycloalkyl-C_1-C_2-alkyl, optionally interrupted once or twice independently of one another by O, $S(O)_n$, CO and NR^4 and optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; phenyl, naphthyl, pyridyl, pyrimidyl, pyridazinyl, pyrazinyl, triazinyl, furanyl, thienyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, pyrazolyl, imidazolyl, oxadiazolyl and thiadiazolyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano; straight-chain or branched phenyl-C_1-C_2-alkyl, pyridyl-C_1-C_2-alkyl, pyrimidyl-C_1-C_2-alkyl, thiazolyl-C_1-C_2-alkyl and pyrazolyl-C_1-C_2-alkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano,

L^2 represents a radical from the group consisting of hydrogen and C_1-C_4-alkyl which is optionally independently of one another mono- to pentasubstituted by fluorine, chlorine and bromine and mono- to disubstituted by methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$- and cyano

or

L^1 and L^2 together with the carbon atom to which they are attached represent C_3-C_8-cycloalkyl which is independently of one another mono- to trisubstituted by fluorine, chlorine, bromine, methyl-$S(O)_n$-, ethyl-$S(O)_n$- and cyano

or

L^1 and L^2 together represent C_2-C_6-alkenyl which is independently of one another mono- to trisubstituted by fluorine, chlorine, bromine, methyl-$S(O)_n$-, ethyl-$S(O)_n$- and cyano

L^3 represents a radical from the group consisting of hydrogen, $S(O)_nR^{1a}$, OR^{1b} and $N(R^2)(R^3)$,

R^{1a} represents a radical from the group consisting of C_1-C_6-alkyl, C_3-C_6-alkenyl and C_3-C_6-alkynyl, optionally independently of one another mono- to pentasubstituted by fluorine, chlorine and bromine and mono- to disubstituted by methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, cyano, $C(O)N(R^5)(R^6)$, $C(G)R^7$ and $C(O)OR^8$; C_3-C_6-cycloalkyl, optionally interrupted once or twice independently of one another by O, $S(O)_n$, CO and NR^4 and optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; straight-chain or branched C_3-C_6-cycloalkyl-C_1-C_2-alkyl, optionally interrupted once or twice independently of one another by O, $S(O)_n$, CO and NR^4 and optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; phenyl, naphthyl, pyridyl, pyrimidyl, pyridazinyl, pyrazinyl, triazinyl, furanyl, thienyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, pyrazolyl, imidazolyl, oxadiazolyl and thiadiazolyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano; straight-chain or branched phenyl-C_1-C_2-alkyl, pyridyl-C_1-C_2-alkyl, pyrimidyl-C_1-C_2-alkyl, thiazolyl-C_1-C_2-alkyl and pyrazolyl-C_1-C_2-alkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano,

R^{1b} represents a radical from the group consisting of hydrogen; C_1-C_6-alkyl, C_3-C_6-alkenyl and C_3-C_6-alkynyl, optionally independently of one another mono- to pentasubstituted by fluorine, chlorine and bromine and mono- to disubstituted by methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, cyano, $C(O)N(R^5)(R^6)$, $C(G)R^7$ and $C(O)OR^8$; C_3-C_6-cycloalkyl, optionally interrupted once or twice independently of one another by O, $S(O)_n$, CO and NR^4 and optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; straight-chain or branched C_3-C_6-cycloalkyl-C_1-C_2-alkyl, optionally interrupted once or twice independently of one another by O, $S(O)_n$, CO and NR^4 and optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl,

trifluoromethyl, methoxy, ethoxy and cyano; phenyl, naphthyl, pyridyl, pyrimidyl, pyridazinyl, pyrazinyl, triazinyl, furanyl, thienyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, pyrazolyl, imidazolyl, oxadiazolyl and thiadiazolyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano; straight-chain or branched phenyl-C_1-C_2-alkyl, pyridyl-C_1-C_2-alkyl, pyrimidyl-C_1-C_2-alkyl, thiazolyl-C_1-C_2-alkyl and pyrazolyl-C_1-C_2-alkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano,

G represents O or N-OR^8,

R^2 represents a radical from the group consisting of hydrogen; C_1-C_6-alkyl, C_3-C_6-alkenyl and C_3-C_6-alkynyl, optionally independently of one another mono- to pentasubstituted by fluorine, chlorine and bromine and mono- to disubstituted by methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$- and cyano; C_3-C_6-cycloalkyl, optionally interrupted once or twice independently of one another by O, $S(O)_n$, CO and NR^4 and optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; straight-chain or branched C_3-C_6-cycloalkyl-C_1-C_2-alkyl, optionally interrupted once or twice independently of one another by O, $S(O)_n$, CO and NR^4 and optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; phenyl, naphthyl, pyridyl, pyrimidyl, pyridazinyl, pyrazinyl, triazinyl, furanyl, thienyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, pyrazolyl, imidazolyl, oxadiazolyl and thiadiazolyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano; straight-chain or branched phenyl-C_1-C_2-alkyl, pyridyl-C_1-C_2-alkyl, pyrimidyl-C_1-C_2-alkyl, thiazolyl-C_1-C_2-alkyl and pyrazolyl-C_1-C_2-alkyl, optionally mono- to

disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano,

R^3 represents a radical from the group consisting of hydrogen; C_1-C_6-alkyl, C_3-C_6-alkenyl and C_3-C_6-alkynyl, optionally mono- to trisubstituted independently of one another by fluorine, chlorine, bromine, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$- and cyano; or represents the radicals $C(O)N(R^5)(R^6)$, $C(O)R^7$, $C(O)OR^8$ and SO_2R^9,

or

R^2 and R^3 together with N represent a heterocycle from the group consisting of U-1, U-2, U-3, U-4, U-5, U-6, U-7, U-10, U-13, U-14, U-24, U-25, U-26, U-27, U-29, U-30, U-31, U-32, U-33, U-34, U-35 and U-36,

R^4 represents a radical from the group consisting of hydrogen; C_1-C_6-alkyl, C_3-C_6-alkenyl and C_3-C_6-alkynyl, optionally mono- to trisubstituted independently of one another by fluorine, chlorine, bromine, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$- and cyano; C_3-C_6-cycloalkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; straight-chain or branched C_3-C_6-cycloalkyl-C_1-C_2-alkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; phenyl, naphthyl, pyridyl, pyrimidyl, pyridazinyl, pyrazinyl, triazinyl, furanyl, thienyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, pyrazolyl, imidazolyl, oxadiazolyl and thiadiazolyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano; straight-chain or branched phenyl-C_1-C_2-alkyl, pyridyl-C_1-C_2-alkyl, pyrimidyl-C_1-C_2-alkyl, thiazolyl-C_1-C_2-alkyl and pyrazolyl-C_1-C_2-alkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano,

R^5 and R^6 independently of one another represent a radical from the group consisting of hydrogen; C_1-C_6-alkyl, C_3-C_6-alkenyl and C_3-C_6-alkynyl, optionally independently of one another mono- to pentasubstituted by fluorine, chlorine and bromine and mono- to disubstituted by methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$- and cyano; C_3-C_6-cycloalkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; straight-chain or branched C_3-C_6-cycloalkyl-C_1-C_2-alkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; phenyl, naphthyl, pyridyl, pyrimidyl, pyridazinyl, pyrazinyl, triazinyl, furanyl, thienyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, pyrazolyl, imidazolyl, oxadiazolyl and thiadiazolyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano; straight-chain or branched phenyl-C_1-C_2-alkyl, pyridyl-C_1-C_2-alkyl, pyrimidyl-C_1-C_2-alkyl, thiazolyl-C_1-C_2-alkyl and pyrazolyl-C_1-C_2-alkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, digluoromethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano,

or

R^5 and R^6 together with the nitrogen atom to which they are attached represent a three- to six-membered aliphatic ring which may optionally be substituted by C_1-C_2-alkyl, C_1-C_2-haloalkyl and C_1-C_2-alkoxy and optionally interrupted by O or $S(O)_n$,

R^7 represents a radical from the group consisting of hydrogen; C_1-C_6-alkyl, C_3-C_6-alkenyl and C_3-C_6-alkynyl, optionally independently of one another mono- to pentasubstituted by fluorine, chlorine and bromine and mono- to disubstituted by methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$- and cyano; C_3-C_6-cycloalkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; straight-chain or branched C_3-C_6-cycloalkyl-C_1-C_2-alkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl,

trifluoromethyl, methoxy, ethoxy and cyano; phenyl, naphthyl, pyridyl, pyrimidyl, pyridazinyl, pyrazinyl, triazinyl, furanyl, thienyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, pyrazolyl, imidazolyl, oxadiazolyl and thiadiazolyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano; straight-chain or branched phenyl-C_1-C_2-alkyl, pyridyl-C_1-C_2-alkyl, pyrimidyl-C_1-C_2-alkyl, thiazolyl-C_1-C_2-alkyl and pyrazolyl-C_1-C_2-alkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano,

R^8 represents a radical from the group consisting of hydrogen; C_1-C_6-alkyl, C_3-C_6-alkenyl and C_3-C_6-alkynyl, optionally independently of one another mono- to pentasubstituted by fluorine, chlorine and bromine and mono- to disubstituted by methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$- and cyano; C_3-C_6-cycloalkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; straight-chain or branched C_3-C_6-cycloalkyl-C_1-C_2-alkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxy, ethoxy and cyano; phenyl, naphthyl, pyridyl, pyrimidyl, pyridazinyl, pyrazinyl, triazinyl, furanyl, thienyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, pyrazolyl, imidazolyl, oxadiazolyl and thiadiazolyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano; straight-chain or branched phenyl-C_1-C_2-alkyl, pyridyl-C_1-C_2-alkyl, pyrimidyl-C_1-C_2-alkyl, thiazolyl-C_1-C_2-alkyl and pyrazolyl-C_1-C_2-alkyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano,

2017256505 01 Dec 2020

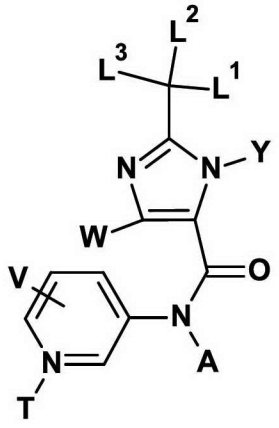
X^b represents a radical from the group consisting of halogen, nitro, cyano, C_1-C_4-alkyl, C_3-C_6-cycloalkyl, C_1-C_2-haloalkyl, C_1-C_4-alkoxy, C_1-C_4-alkyl-$S(O)_n$-, C_1-C_4-haloalkoxy, C_1-C_4-haloalkyl-$S(O)_n$- C_3-C_6-halocycloalkyl, C_1-C_4-alkoxy-C_1-C_4-alkyl, C_1-C_4-alkoxycarbonyl, C_1-C_4-alkylaminocarbonyl, C_1-C_6-alkylsulphonyl, C_1-C_6-alkylcarbonylamino and phenyl which may optionally be mono- to trisubstituted by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methyl-$S(O)_n$-, ethyl-$S(O)_n$-, difluoromethoxy, trifluoromethoxy, trifluoromethyl-$S(O)_n$-, difluoroethyl-$S(O)_n$-, trifluoroethyl-$S(O)_n$-, nitro and cyano,

m represents a number 0, 1 or 2, where in the case of m = 2 the radicals X^b may optionally be independent of one another,

n represents a number 0, 1 or 2,

and salts thereof.

Very particularly preferred substituents or ranges of the radicals listed in the compounds of the formula (I) are illustrated below. Taking into account the position of the carboxamide group at the imidazole radical, the very particularly preferred structure (I-1) is obtained. The combination thereof forms the range of preference (3-1).



(I-1)

V represents a radical from the group consisting of hydrogen, fluorine, chlorine, methyl and cyano,

W represents a radical from the group consisting of hydrogen, fluorine, chlorine, bromine, methyl, ethyl and cyano,

Y represents a radical from the group consisting of hydrogen; methyl, ethyl, propyl, allyl and propargyl, optionally mono- to trisubstituted independently of one another by fluorine, methoxy, ethoxy and cyano,

A represents a radical from the group consisting of hydrogen; methyl, ethyl, propyl, allyl, propargyl, cyclopropyl and cyclopropylmethyl, optionally mono- to trisubstituted independently of one another by fluorine, methoxy, ethoxy and cyano,

T represents an electron pair,

L^1 represents a radical from the group consisting of hydrogen; methyl, ethyl, propyl, isopropyl, n-butyl, isobutyl, sec-butyl, tert-butyl, pentyl, isopentyl, 2,2-dimethylpropyl, hexyl, neo-hexyl, vinyl, allyl, methallyl, 2-butenyl, propargyl, ethynyl and 2-butynyl, optionally mono- to trisubstituted independently of one another by fluorine, chlorine and bromine and monosubstituted by methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl or cyano; cyclopropyl, cyclobutyl, cyclopentyl and cyclohexyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, methyl, ethyl, trifluoromethyl, methoxy and cyano; cyclopropylmethyl, cyclobutylmethyl, cyclopentylmethyl and cyclohexylmethyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, methyl, ethyl, trifluoromethyl, methoxy and cyano; phenyl, pyridyl, pyrimidyl, thienyl and thiazolyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, difluoromethoxy, trifluoromethoxy, trifluoromethylsulphanyl, trifluoromethylsulphinyl, trifluoromethylsulphonyl, difluoromethylsulphanyl, difluoromethylsulphinyl, difluoromethylsulphonyl, trifluoroethylsulphanyl, trifluoroethylsulphinyl, trifluoroethylsulphonyl, nitro and cyano; benzyl, pyridylmethyl, pyrimidylmethyl, thiazolylmethyl and pyrazolylmethyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, difluoromethoxy, trifluoromethoxy, trifluoromethylsulphanyl, trifluoromethylsulphinyl, trifluoromethylsulphonyl, difluoromethylsulphanyl,

difluoromethylsulphinyl, difluoromethylsulphonyl, trifluoroethylsulphanyl, trifluoroethylsulphinyl, trifluoroethylsulphonyl, nitro and cyano,

L^2 represents a radical from the group consisting of hydrogen; methyl, ethyl and propyl, optionally mono- to trisubstituted independently of one another by fluorine, methoxy, ethoxy and cyano

or

L^1 and L^2 together with the carbon atom to which they are attached represent cyclopropyl, cyclobutyl, cyclopentyl or cyclohexyl, independently of one another mono- to trisubstituted by fluorine, chlorine, bromine, methyl-$S(O)_n$-, ethyl-$S(O)_n$- and cyano

or

L^1 and L^2 together represent ethenyl, propenyl or butenyl, independently of one another mono- to trisubstituted by fluorine, chlorine, bromine, methyl-$S(O)_n$-, ethyl-$S(O)_n$- and cyano,

L^3 represents a radical from the group consisting of hydrogen, $S(O)_nR^{1a}$, OR^{1b} and $N(R^2)(R^3)$,

R^{1a} represents a radical from the group consisting of methyl, ethyl, propyl, isopropyl, n-butyl, isobutyl, sec-butyl, tert-butyl, pentyl, isopentyl, 2,2-dimethylpropyl, hexyl, neo-hexyl, allyl, methallyl, 2-butenyl, propargyl and 2-butynyl, optionally mono- to pentasubstituted independently of one another by fluorine, chlorine and bromine and monosubstituted by methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, cyano, $C(O)N(R^5)(R^6)$ or $C(O)OR^8$; cyclopropyl, cyclobutyl, cyclopentyl and cyclohexyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, methyl, ethyl, trifluoromethyl, methoxy and cyano; tetrahydrofuranyl, tetrahydropyranyl, pyrrolidyl, N-methylpyrrolidyl, piperidyl and N-methylpiperidyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, methyl, ethyl, trifluoromethyl, methoxy and cyano; cyclopropylmethyl, cyclobutylmethyl, cyclopentylmethyl and cyclohexylmethyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, methyl, ethyl, trifluoromethyl, methoxy and cyano; phenyl, pyridyl, pyrimidyl, thienyl and

thiazolyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, difluoromethoxy, trifluoromethoxy, trifluoromethylsulphanyl, trifluoromethylsulphinyl, trifluoromethylsulphonyl, difluoromethylsulphanyl, difluoromethylsulphinyl, difluoromethylsulphonyl, trifluoroethylsulphanyl, trifluoroethylsulphinyl, trifluoroethylsulphonyl, nitro and cyano; benzyl, pyridylmethyl, pyrimidylmethyl, thiazolylmethyl and pyrazolylmethyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, difluoromethoxy, trifluoromethoxy, trifluoromethylsulphanyl, trifluoromethylsulphinyl, trifluoromethylsulphonyl, difluoromethylsulphanyl, difluoromethylsulphinyl, difluoromethylsulphonyl, trifluoroethylsulphanyl, trifluoroethylsulphinyl, trifluoroethylsulphonyl, nitro and cyano,

R^{1b} represents a radical from the group consisting of hydrogen; methyl, ethyl, propyl, isopropyl, n-butyl, isobutyl, sec-butyl, tert-butyl, pentyl, isopentyl, 2,2-dimethylpropyl, hexyl, neo-hexyl, allyl, methallyl, 2-butenyl, propargyl and 2-butynyl, optionally mono- to pentasubstituted independently of one another by fluorine, chlorine, bromine or monosubstituted by methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, cyano, $C(O)N(R^5)(R^6)$ or $C(O)OR^8$; cyclopropyl, cyclobutyl, cyclopentyl and cyclohexyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, methyl, ethyl, trifluoromethyl, methoxy and cyano; tetrahydrofuranyl, tetrahydropyranyl, pyrrolidyl, N-methylpyrrolidyl, piperidyl and N-methylpiperidyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, methyl, ethyl, trifluoromethyl, methoxy and cyano; cyclopropylmethyl, cyclobutylmethyl, cyclopentylmethyl and cyclohexylmethyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, methyl, ethyl, trifluoromethyl, methoxy and cyano; phenyl, pyridyl, pyrimidyl, thienyl and thiazolyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, difluoromethoxy, trifluoromethoxy,

trifluoromethylsulphanyl, trifluoromethylsulphinyl, trifluoromethylsulphonyl, difluoromethylsulphanyl, difluoromethylsulphinyl, difluoromethylsulphonyl, trifluoroethylsulphanyl, trifluoroethylsulphinyl, trifluoroethylsulphonyl, nitro and cyano; benzyl, pyridylmethyl, pyrimidylmethyl, thiazolylmethyl and pyrazolylmethyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, difluoromethoxy, trifluoromethoxy, trifluoromethylsulphanyl, trifluoromethylsulphinyl, trifluoromethylsulphonyl, difluoromethylsulphanyl, difluoromethylsulphinyl, difluoromethylsulphonyl, trifluoroethylsulphanyl, trifluoroethylsulphinyl, trifluoroethylsulphonyl, nitro and cyano,

R^2 and R^3 together with N represent a heterocycle from the group consisting of U-1, U-2, U-3, U-4, U-5, U-6, U-7, U-25, U-26, U-27, U-29, U-30, U-31, U-32, U-33, U-34, U-35 and U-36,

R^5 and R^6 independently of one another represent a radical from the group consisting of hydrogen; methyl, ethyl, propyl, isopropyl, n-butyl, isobutyl, sec-butyl, tert-butyl, pentyl, isopentyl, 2,2-dimethylpropyl, hexyl, neo-hexyl, allyl, methallyl, 2-butenyl, propargyl and 2-butynyl, mono- to trisubstituted independently of one another by fluorine, chlorine and bromine or monosubstituted by methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl or cyano; cyclopropyl, cyclobutyl, cyclopentyl and cyclohexyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, methyl, ethyl, trifluoromethyl, methoxy and cyano; cyclopropylmethyl, cyclobutylmethyl, cyclopentylmethyl and cyclohexylmethyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, methyl, ethyl, trifluoromethyl, methoxy and cyano; phenyl, pyridyl, pyrimidyl, thienyl and thiazolyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, difluoromethoxy, trifluoromethoxy, trifluoromethylsulphanyl, trifluoromethylsulphinyl, trifluoromethylsulphonyl, difluoromethylsulphanyl, difluoromethylsulphinyl, difluoromethylsulphonyl, trifluoroethylsulphanyl,

trifluoroethylsulphinyl, trifluoroethylsulphonyl, nitro and cyano; benzyl, pyridylmethyl, pyrimidylmethyl, thiazolylmethyl and pyrazolylmethyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, difluoromethoxy, trifluoromethoxy, trifluoromethylsulphanyl, trifluoromethylsulphinyl, trifluoromethylsulphonyl, difluoromethylsulphanyl, difluoromethylsulphinyl, difluoromethylsulphonyl, trifluoroethylsulphanyl, trifluoroethylsulphinyl, trifluoroethylsulphonyl, nitro and cyano,

R^8 represents a radical from the group consisting of hydrogen; methyl, ethyl, propyl, isopropyl, n-butyl, isobutyl, sec-butyl, tert-butyl, pentyl, isopentyl, 2,2-dimethylpropyl, hexyl, neo-hexyl, allyl, methallyl, 2-butenyl, propargyl and 2-butynyl, mono- to trisubstituted independently of one another by fluorine, chlorine and bromine or monosubstituted by methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl or cyano; cyclopropyl, cyclobutyl, cyclopentyl and cyclohexyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, methyl, ethyl, trifluoromethyl, methoxy and cyano; cyclopropylmethyl, cyclobutylmethyl, cyclopentylmethyl and cyclohexylmethyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, methyl, ethyl, trifluoromethyl, methoxy and cyano; phenyl, pyridyl, pyrimidyl, thienyl and thiazolyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, difluoromethoxy, trifluoromethoxy, trifluoromethylsulphanyl, trifluoromethylsulphinyl, trifluoromethylsulphonyl, difluoromethylsulphanyl, difluoromethylsulphinyl, difluoromethylsulphonyl, trifluoroethylsulphanyl, trifluoroethylsulphinyl, trifluoroethylsulphonyl, nitro and cyano; benzyl, pyridylmethyl, pyrimidylmethyl, thiazolylmethyl and pyrazolylmethyl, optionally mono- to disubstituted independently of one another by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, methylsulphanyl, ethylsulphanyl, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, difluoromethoxy, trifluoromethoxy, trifluoromethylsulphanyl, trifluoromethylsulphinyl, trifluoromethylsulphonyl, difluoromethylsulphanyl,

difluoromethylsulphinyl, difluoromethylsulphonyl, trifluoroethylsulphanyl, trifluoroethylsulphinyl, trifluoroethylsulphonyl, nitro and cyano,

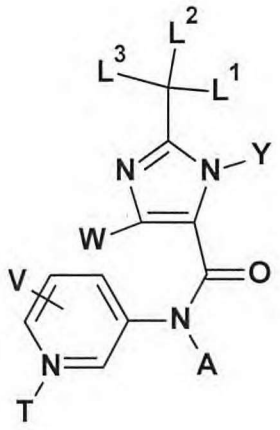
X^b represents a radical from the group consisting of fluorine, chlorine, bromine, cyano, methyl, ethyl, n-propyl, isopropyl, cyclopropyl, trifluoromethyl, difluoromethyl, trifluoroethyl, methoxy, ethoxy, n-propoxy, isopropoxy, trifluoromethoxy, methoxymethyl, ethoxymethyl, methoxyethyl, ethoxyethyl, methyl-$S(O)_n$-, ethyl-$S(O)_n$- and phenyl which may optionally be mono- to trisubstituted by fluorine, chlorine, bromine, methyl, ethyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, nitro and cyano,

m represents a number 0, 1 or 2, where in the case of m = 2 the radicals X^b may optionally be independent of one another,

n represents a number 0, 1 or 2,

and salts thereof.

Especially preferred substituents or ranges for the radicals listed in the compounds of the formula (I) are elucidated below. Taking into account the position of the carboxamide group at the imidazole radical, the very particularly preferred structure (I-1) is obtained. The combination thereof forms the range of preference (4-1).



(I-1),

V represents hydrogen,

W represents hydrogen,

Y represents methyl,

A represents hydrogen or methyl,

T represents an electron pair,

L^1 represents a radical from the group consisting of hydrogen, methyl, isopropyl, phenyl, 2-chlorophenyl, 3-chlorophenyl, 4-chlorophenyl, 3,4-dichlorophenyl, 2-pyridinyl, 3-pyridinyl, 4-pyridinyl, 4-chloropyridin-3-yl, 2-pyrimidyl and benzyl,

L^2 represents hydrogen or methyl,

or

L^1 and L^2 together represent vinyl,

L^3 represents a radical from the group consisting of hydrogen, $S(O)_nR^{1a}$, OR^{1b} and $N(R^2)(R^3)$,

R^{1a} represents a radical from the group consisting of methyl, ethyl, isopropyl, isobutyl, tert-butyl, cyclopropylmethyl, 2,2-dimethylpropyl, 2-methoxy-2-oxoethyl, phenyl, benzyl, 2-chlorophenyl, 3-chlorophenyl, 4-chlorophenyl and 2-pyrimidyl,

R^{1b} represents a radical from the group consisting of hydrogen, methyl, cyclopropylmethyl, benzyl and 3-chlorophenyl,

R^2 and R^3 together with N represent a heterocycle from the group consisting of U-2, U-4 and U-5,

X^b represents trifluoromethyl,

m represents a number 0 or 1,

n represents a number 0 or 2,

and salts thereof.

Hereinbelow, *embodiment (0)* is equivalent to *embodiment (0-1) or (0-2)* and *range of preference (x)* is equivalent to *range of preference (x-1) or (x-2)* where x = 1, 2, 3 or 4.

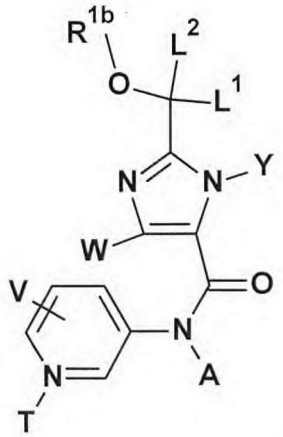
Particular preference is furthermore given to compounds of the formula (I) or (I-1) in which Q, V, W, Y, A, T, L_1, L_2, R^{1a}, R^{1b}, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, m, n, G and X_b have the meanings according to embodiment (0) or range of preference (1) or range of preference (2) or range of preference (3) or range of preference (4) and L^3 represents a radical from the group consisting of $S(O)_nR^{1a}$, OR^{1b} and $N(R^2)(R^3)$.

Very particular preference is furthermore given to compounds of the formula (I) or (I-1) in which Q, V, W, Y, A, T, L_1, L_2, R^{1a}, R^{1b}, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, m, n, G and X_b have the meanings according to embodiment (0) or range of preference (1) or range of preference (2) or range of preference (3) or range of preference (4) and L^3 represents a radical from the group consisting of $S(O)_nR^{1a}$ and $N(R^2)(R^3)$.

Special preference is furthermore given to compounds of the formula (I) or (I-1) in which Q, V, W, Y, A, T, L_1, L_2, R^{1a}, R^{1b}, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, m, n, G and X_b have the meanings according to embodiment (0) or range of preference (1) or range of preference (2) or range of preference (3) or range of preference (4) and L^3 represents $S(O)_nR^{1a}$.

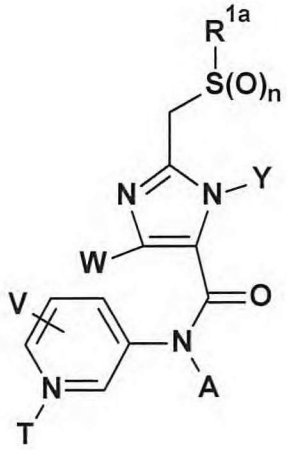
In the preferred embodiments (I-1a) to (I-1d) below, all groups, radicals and substituents have the meaning described above in embodiment (0) or in range of preference (1) or in range of preference (2) or in range of preference (3) or in range of preference (4).

In a preferred embodiment, the invention relates to the compounds of the formula (I-1a).



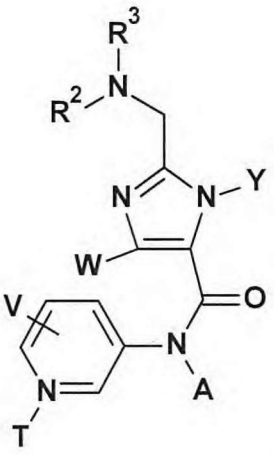
(I-1a)

In a further preferred embodiment, the invention relates to the compounds of the formula (I-1c).



(I-1c)

In a further preferred embodiment, the invention relates to the compounds of the formula (I-1d).



(I-1d)

Particular preference is given to the compounds of the formula (I-1c) or (I-1d) and very particularly preferably of the formula (I-1c).

In preferred range (1), unless stated otherwise,

halogen is selected from the group consisting of fluorine, chlorine, bromine and iodine, preferably in turn from the group consisting of fluorine, chlorine and bromine,

hetaryl (synonymous with heteroaryl, including as part of a larger unit, for example hetarylalkyl) is selected from the group consisting of furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, 1,2,3-triazolyl, 1,2,4-triazolyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, 1,2,3-oxadiazolyl, 1,2,4-oxadiazolyl, 1,3,4-oxadiazolyl, 1,2,5-oxadiazolyl, 1,2,3-thiadiazolyl, 1,2,4-thiadiazolyl, 1,3,4-thiadiazolyl, 1,2,5-thiadiazolyl, pyridyl, pyrimidinyl, pyridazinyl, pyrazinyl, 1,2,3-triazinyl,

1,2,4-triazinyl, 1,3,5-triazinyl, benzofuryl, benzoisofuryl, benzothienyl, benzoisothienyl, indolyl, isoindolyl, indazolyl, benzothiazolyl, benzoisothiazolyl, benzoxazolyl, benzisoxazolyl, benzimidazolyl, 2,1,3-benzoxadiazole, quinolinyl, isoquinolinyl, cinnolinyl, phthalazinyl, quinazolinyl, quinoxalinyl, naphthyridinyl, benzotriazinyl, purinyl, pteridinyl and indolizinyl,

heterocyclyl represents a saturated 3-, 4-, 5- or 6-membered ring which contains 1 or 2 nitrogen atoms and/or one oxygen atom and/or one sulphur atom, but where 2 nitrogen atoms shall not be directly vicinal, for example aziridinyl, azetidinyl, azolidinyl, azinanyl, oxiranyl, oxetanyl, oxolanyl, oxanyl, dioxanyl, thiiranyl, thietanyl, thiolanyl, thianyl and tetrahydrofuryl.

In preferred range (2), unless stated otherwise,

halogen represents fluorine, chlorine, bromine and iodine, preferably fluorine, chlorine and bromine,

hetaryl (including as part of a larger unit, such as hetarylalkyl) represents pyridyl, pyrimidyl, thiazolyl, oxazolyl, pyrazolyl, thienyl, furanyl, benzyl, pyridinylmethyl and thiazolylmethyl, and

heterocyclyl (including as part of a larger unit, such as heterocyclylalkyl) represents a saturated or unsaturated 3-, 4- or 5-membered ring which contains 1 or 2 nitrogen atoms and/or one oxygen atom and/or one sulphur atom, but where 2 nitrogen atoms shall not be directly vicinal, for example 1- or 2-aziridinyl, 2-oxiranyl, 2-thiiranyl, 1- or 2-azetidinyl, 2- or 3-oxetanyl, 2- or 3-thietanyl, 1,3-dioxetan-2-yl, 1-, 2- or 3-pyrrolidinyl.

In preferred range (3), unless stated otherwise,

halogen represents fluorine, chlorine, bromine and iodine, preferably fluorine, chlorine and bromine,

heterocyclyl (including as part of a larger unit, such as heterocyclylalkyl) represents a saturated or unsaturated 3- or 4-membered ring which contains 1 or 2 nitrogen atoms and/or one oxygen atom and/or one sulphur atom, but where 2 nitrogen atoms shall not be directly vicinal, for example 1- or 2-aziridinyl, 2-oxiranyl, 2-thiiranyl, 1- or 2-azetidinyl, 2- or 3-oxetanyl, 2- or 3-thietanyl or 1,3-dioxetan-2-yl. Halogen-substituted radicals, for example haloalkyl, are, unless otherwise specified, monohalogenated or polyhalogenated up to the maximum number of possible substituents. In the case of polyhalogenation, the halogen atoms may be identical or different. In this case, halogen represents fluorine, chlorine, bromine or iodine, in particular fluorine, chlorine or bromine.

Saturated or unsaturated hydrocarbon radicals, such as alkyl or alkenyl, may each be straight-chain or branched if possible, including in combination with heteroatoms, as, for example, in alkoxy.

Unless stated otherwise, optionally substituted radicals may be mono- or polysubstituted, where the substituents in the case of polysubstitutions may be the same or different.

If, in the compounds of the formula (I), T represents oxygen, these compounds are present as N-oxides.

If, in the compounds of the formula (I), T represents an electron pair, these compounds are present as pyridines.

The radical definitions or illustrations given in general terms or listed within ranges of preference apply correspondingly to end products and to starting materials and intermediates. These radical definitions can be combined with one another as desired, i.e. including combinations between the respective ranges of preference.

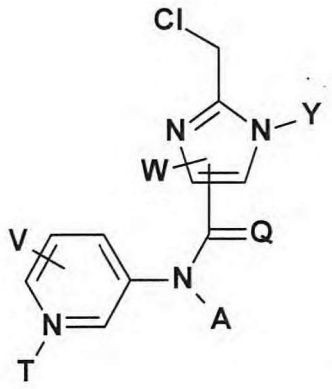
Preference according to the invention is given to using compounds of the formula (I) which contain a combination of the meanings listed above as being preferred (preferred range (1)).

Particular preference according to the invention is given to using compounds of the formula (I) which contain a combination of the meanings listed above as being particularly preferred (preferred range (2)).

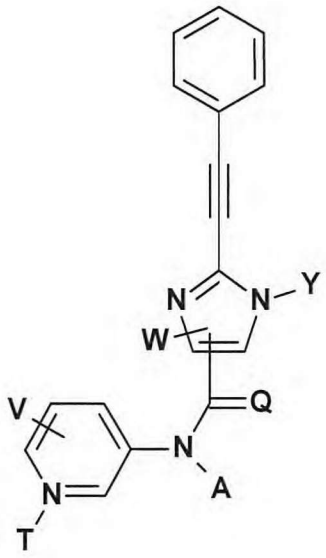
Very particular preference according to the invention is given to using compounds of the formula (I) which contain a combination of the meanings listed above as being very particularly preferred (preferred range (3)).

Special preference according to the invention is given to using compounds of the formula (I) which contain a combination of the meanings listed above as being very particularly preferred (preferred range (4)).

The invention furthermore provides intermediates of the formulae (II) and (III)



(II),



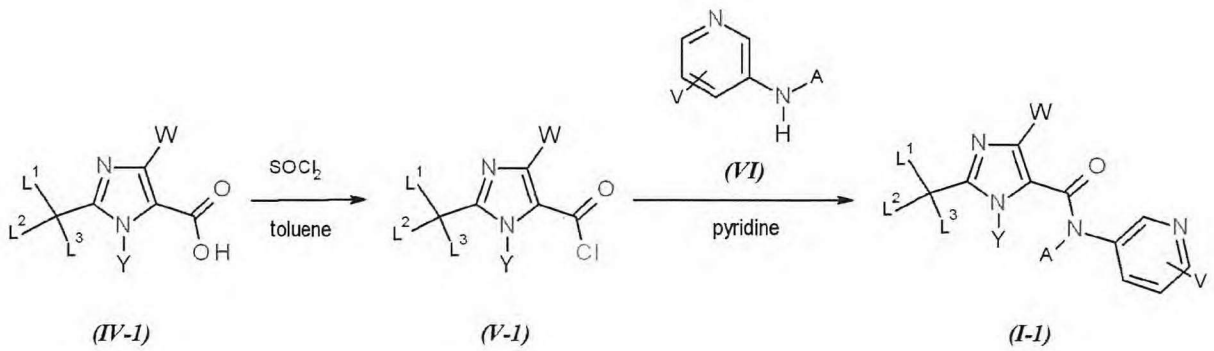
(III),

where the radicals present have the meanings according to compound (I) according to the invention or according to any of the preferred ranges (1) to (4) and preferably according to preferred range (4).

Depending on the nature of the substituents, the compounds of the formula (I) may be in the form of geometric and/or optically active isomers or corresponding isomer mixtures in different compositions. These stereoisomers are, for example, enantiomers, diastereomers, atropisomers or geometric isomers. The invention therefore encompasses both pure stereoisomers and any desired mixtures of these isomers.

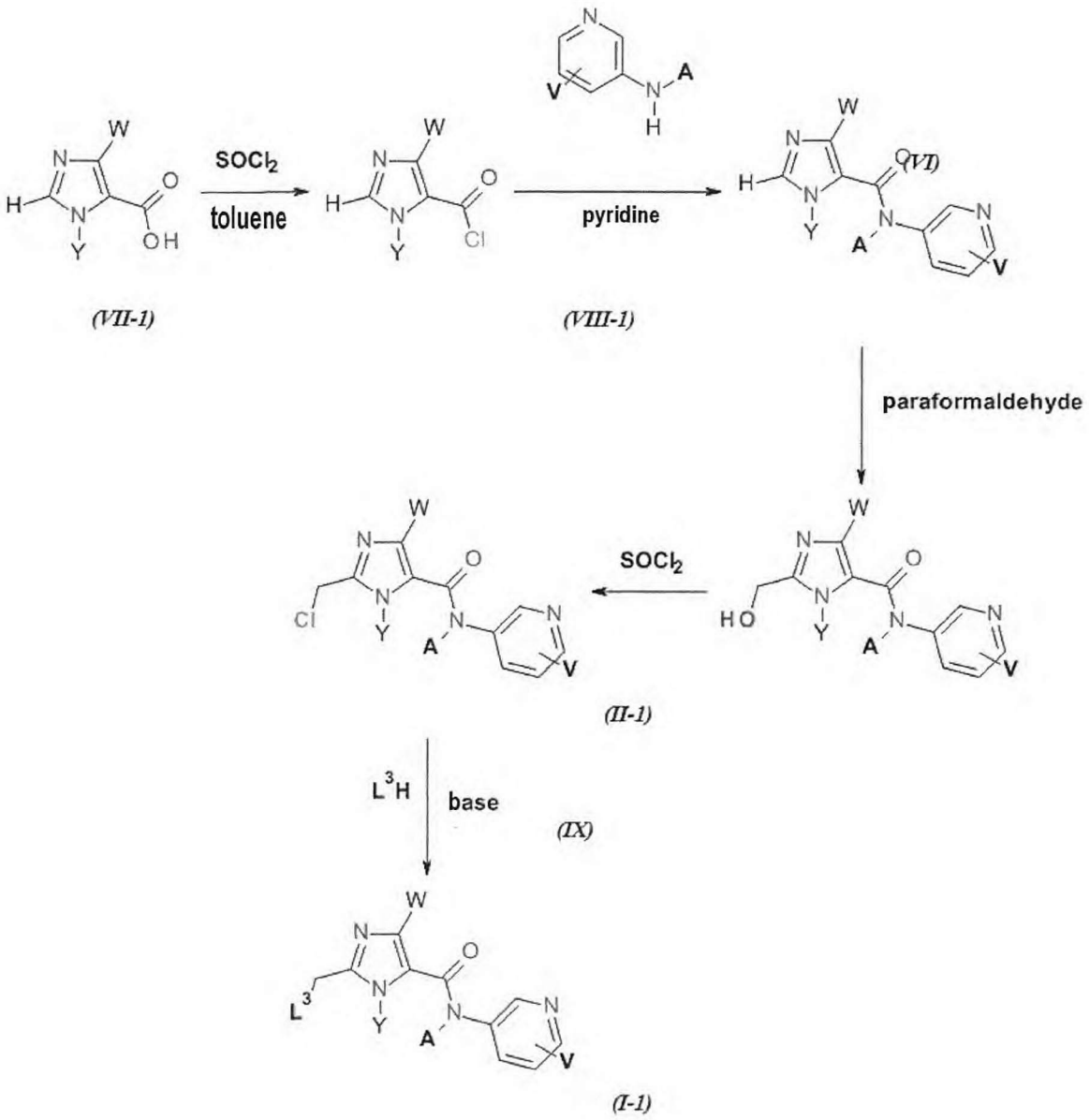
The compounds of the formula (I-1) can be synthesized, for example, according to processes A to F, as shown in the schemes below.

Process A

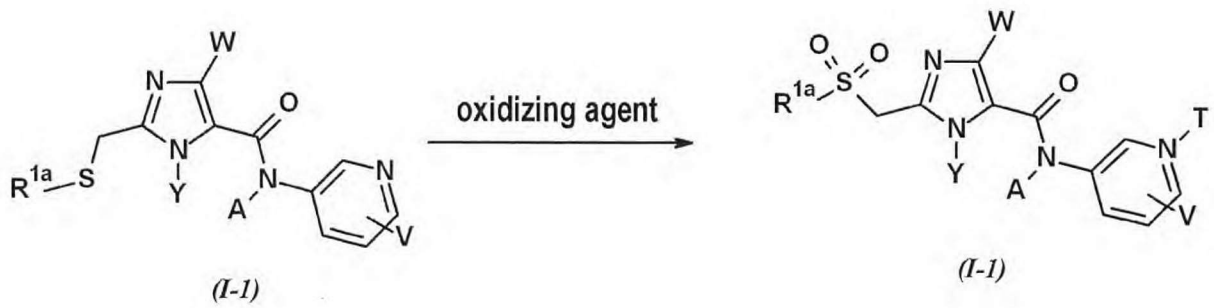


(IV-1) *(V-1)* *(I-1)*

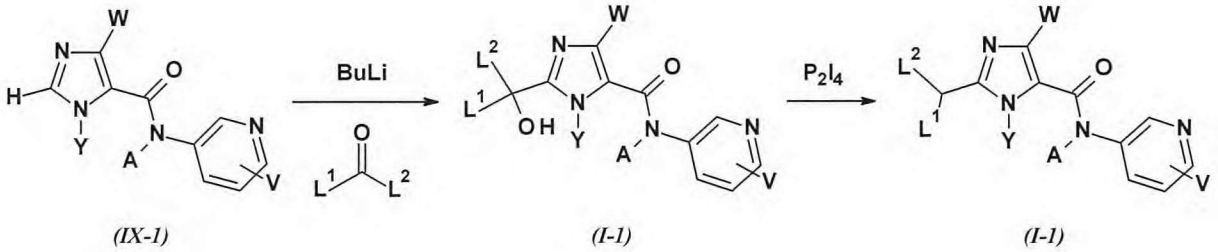
Processes B-1 and B-2



Process B-2, if L^3 represents SR^{1a}



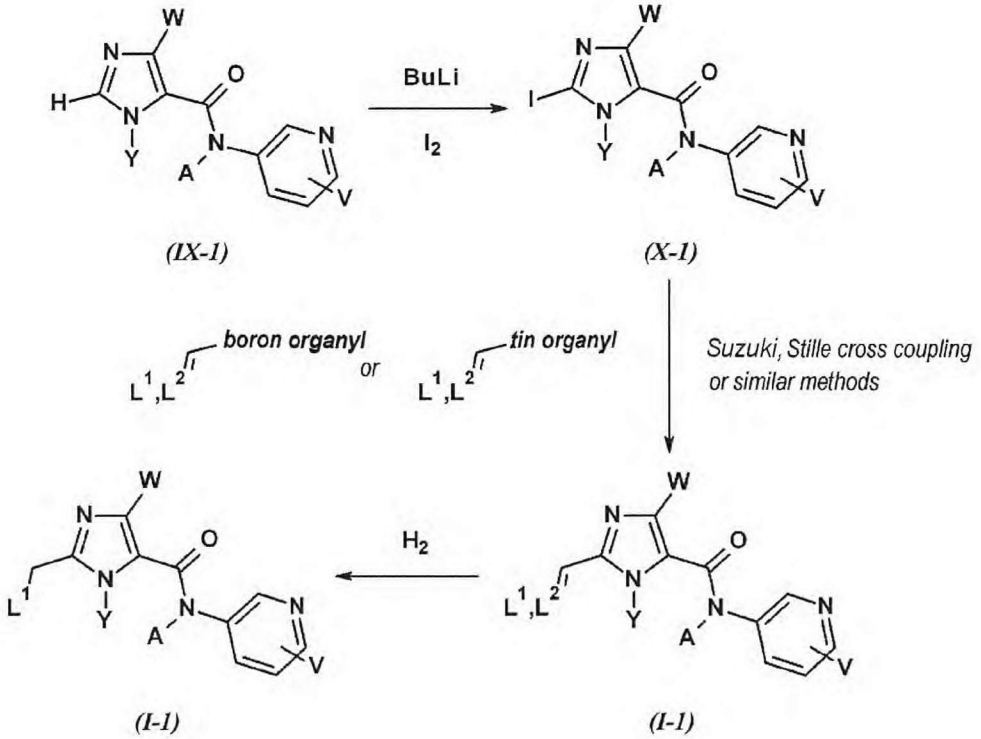
Process C



(IX-1) (I-1) (I-1)

BuLi= n-butyllithium

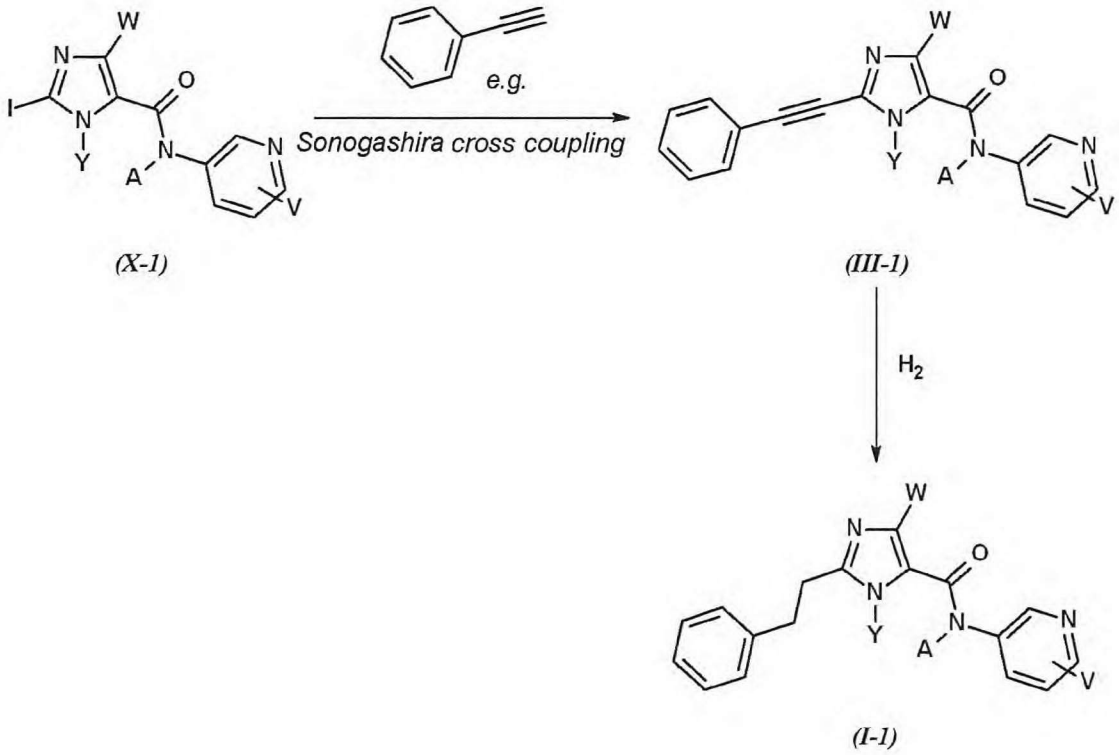
Process D



(IX-1) (X-1) (I-1) (I-1)

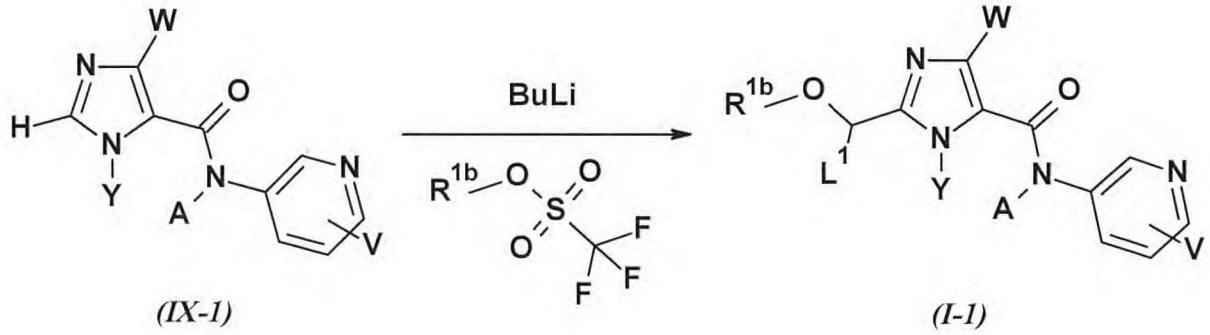
BuLi= n-butyllithium

Process E



(X-1) *(III-1)* *(I-1)*

Process F



(IX-1) *(I-1)*

BuLi= n-butyllithium

The imidazolylcarboxylic acids of the formula (IV-1) required for process A are commercially available or can be prepared by processes known from the literature, e.g. HOFFMANN-LAROCHE INC. patent: US2006/0019949 A1, 2006.

The imidazolylcarboxylic acids of the formula (VII-1) required for process B are commercially available or can be prepared by processes known from the literature, e.g. O'Connell, John F.; Parquette, Jonathan; Yelle, William E.; Wang, Wilhelm; Rapoport, Henry, Synthesis 1988, 767-771, BASF Aktiengesellschaft patent: US4864030 A1, 1989, Takeda Pharmaceutical Company Limited Patent: EP2530078 A1, 2012, TAISHO PHARMACEUTICAL CO., LTD. patent: US2012/10414 A1, 2012, Subrayan, Ramachandran P.; Thurber, Ernest L.; Rasmussen, Paul G., Tetrahedron, 1994, 50, 2641 – 2656.

The 3-aminopyridines of the formula (VI) required for processes A and B are commercially available or can be prepared, for example, by processes known from the literature, e.g. Liu, Zhen-Jiang; Vors, Jean-Pierre; Gesing, Ernst R. F.; Bolm, Carsten, Advanced Synthesis and Catalysis, 2010, 352, 3158 – 3162, BAYER CROPSCIENCE AG patent: US2010/305124 A1, 2010, Shafir, Alexandr; Buchwald, Stephen L., Journal of the American Chemical Society, 2006, 128, 8742 – 8743.

The L^3H (e.g. thiols, alcohols, pyrazoles, triazoles, etc.) of the formula (IX) required for process B are commercially available or can be prepared by general processes known in organic chemistry.

Most of the organometallic compounds (e.g. vinylboronic acids/esters, etc.) required for process D, and the catalysts needed, are commercial products or can be prepared by processes generally known in organic chemistry.

Most of the alkynes (e.g. phenylacetylene etc.) required for process E, and the catalysts needed, are commercial products or can be prepared by processes generally known in organic chemistry.

Most of the trifluoromethanesulphonates required for process F are commercial products or can be prepared by processes generally known in organic chemistry.

Numerous reaction conditions for the lithiation coupling process (Processes C, D and F) have been described, for example Hoechst Aktiengesellschaft patent: US4764624 A1, 1988. Ohta, Shunsaku; Yamamoto, Tetsuya; Kawasaki, Ikuo; Yamashita, Masayuki; Katsuma, Hideo; Nasako, Rieko; Kobayashi, Kazuhiro; Ogawa, Kazuo, Chemical and Pharmaceutical Bulletin,

1992, 40, 2681 – 2685. Hara, Kenji; Iwahashi, Keiji; Kanamori, Yoshikazu; Naito, Satoshi; Takakusagi, Satoru; Uosaki, Kohei; Sawamura, Masaya, Chemistry Letters, 2006, 35, 870 – 871.

Examples of solvents include: diethyl ether, tetrahydrofuran.

Examples of lithiation agents include: n-butyllithium, lithium diisopropylamine, lithium tert-butoxide.

The reaction temperature for the initial lithiation step is optionally between -100 and -75°C.

Amidation process

The compounds of the formula (I-1) and the intermediates of the formula (IX-1) in the process according to the invention can be synthesized using amidation reactions known from the literature, or analogously to the examples explicitly mentioned.

A number of reaction conditions have been described for the amidation step, for example G. Benz in Comprehensive Organic Synthesis, 1st Ed., Pergamon Press, Oxford, 1991, Vol. 6, pp. 381-417; P.D. Bailey et al. in Comprehensive Organic Functional Group Transformation, 1st Ed., Elsevier Science Ltd., Oxford, 1995, Vol. 5, pp. 257-308 and R.C. Larock in Comprehensive Organic Transformations, 2nd Ed., Wiley-VCH, New York, Weinheim, 1999, pp. 1929-1994. Some of these reactions proceed via intermediate carbonyl chlorides, which can be employed in isolated form or in in-situ-generated form.

The amidation reactions are optionally effected in the presence of a condensing agent, optionally in the presence of an acid acceptor and optionally in the presence of a solvent.

Useful condensing agents include all the condensing agents typically usable for such amidation reactions. Examples include activators such as phosgene, phosphorus trichloride, phosphorus oxychloride, oxalyl chloride, oxalyl bromide or thionyl chloride; carbodiimides such as *N,N′*-dicyclohexylcarbodiimide (DCC) and 1-(3-dimethylaminopropyl)-3-ethylcarbodiimide (EDCI), or other customary condensing agents such as phosphorus pentoxide, polyphosphoric acid, *N,N′*-carbonyldiimidazole, 2-chloropyridine 1-methoiodide (Mukaiyama's reagent), 2-ethoxy-N-ethoxycarbonyl-1,2-dihydroquinoline (EEDQ), triphenylphosphine/carbon tetrachloride, bromotripyrrolidinophosphonium hexafluorophosphate (BROP), O-(*1H*-benzotriazol-1-yloxy)tris(dimethylamino)phosphonium hexafluorophosphate (BOP), *N,N,N′,N′*-

bis(tetramethylene)chlorouronium tetrafluoroborate, O-(*1H*-benzotriazol-1-yl)-*N,N,N',N'*-tetramethyluronium hexafluorophosphate (HBTU), O-(*1H*-benzotriazol-1-yl)-*N,N,N',N'*-bis(tetramethylene)uronium hexafluorophosphate, O-(*1H*-benzotriazol-1-yl)-*N,N,N',N'*-tetramethyluronium tetrafluoroborate (TBTU), O-(*1H*-benzotriazol-1-yl)-*N,N,N',N'*-bis(tetramethylene)uronium tetrafluoroborate, O-(7-azabenzotriazol-1-yl)-*N,N,N',N'*-tetramethyluronium hexafluorophosphate (HATU), 1-hydroxybenzotriazole (HOBt) and 4-(4,6-dimethoxy-1,3,5-triazin-2-yl)-4-methylmorpholinium salt (DMT.MM), usually available as a chloride. These reagents can be used separately or in combination.

Suitable acid acceptors are all customary inorganic or organic bases, for example organic amines such as triethylamine, diisopropylethylamine, *N*-methylmorpholine, pyridine or *N,N*-dimethylaminopyridine, alkali metal and alkaline earth metal carbonates such as lithium carbonate, sodium carbonate, potassium carbonate or caesium carbonate; alkali metal bicarbonates such as sodium bicarbonate or potassium bicarbonate. The amidation reaction in the processes according to the invention is optionally carried out in the presence of a suitable reaction auxiliary such as, for example, *N,N*-dimethylformamide or *N,N*-dimethylaminopyridine. Suitable solvents or diluents are all inert organic solvents, for example aliphatic or aromatic hydrocarbons (such as petroleum ether, toluene, cyclohexane), halogenated hydrocarbons (such as chlorotoluene, dichlorobenzene, dichloromethane, chloroform, 1,2-dichloroethane), ethers (such as diethyl ether, dioxane, tetrahydrofuran, 1,2-dimethoxyethane), esters (such as ethyl or methyl acetate), nitrohydrocarbons (such as nitromethane, nitroethane, nitrobenzene), nitriles (such as acetonitrile, propionitrile, butyronitrile, benzonitrile), amides (such as *N,N*-dimethylformamide, *N,N*-dimethylacetamide, *N*-methylformanilide, *N*-methylpyrrolidone, hexamethylphosphoramide), and also dimethyl sulphoxide, sulpholane or water or mixtures of the solvents mentioned.

It is also possible to use mixed anhydrides for preparing compounds of the formula (I-1) (cf. Anderson, George W.; Zimmerman, Joan E.; Callahan, Francis M., J. Am. Chem. Soc. 1967, 89, 5012-5017). In this process, it is possible to use chloroformic esters, for example methyl chloroformate, ethyl chloroformate, isobutyl chloroformate and isopropyl chloroformate. It is likewise possible for this purpose to use diethylacetyl chloride, trimethylacetyl chloride and similar compounds.

Hereinbelow, the statements concerning the compounds of the formula (I) do, of course, also apply to the compounds of the formulae (I-1) and (I-1a) to (I-1d) which are embraced by formula (I).

Methods and uses

The invention also relates to methods for controlling animal pests, in which compounds of the formula (I) are allowed to act on animal pests and/or their habitat. The control of the animal pests is preferably conducted in agriculture and forestry, and in material protection. This preferably excludes methods for surgical or therapeutic treatment of the human or animal body and diagnostic methods carried out on the human or animal body.

The invention further relates to the use of the compounds of the formula (I) as pesticides, especially crop protection compositions.

In the context of the present application, the term "pesticide" in each case also always encompasses the term "crop protection composition".

The compounds of the formula (I), given good plant tolerance, favourable endotherm toxicity and good environmental compatibility, are suitable for protecting plants and plant organs against biotic and abiotic stress factors, for increasing harvest yields, for improving the quality of the harvested material and for controlling animal pests, especially insects, arachnids, helminths, especially nematodes and molluscs, which are encountered in agriculture, in horticulture, in animal husbandry, in aquatic cultures, in forests, in gardens and leisure facilities, in the protection of stored products and of materials, and in the hygiene sector.

In the context of the present patent application, the term "hygiene" should be understood to mean any and all measures, provisions and procedures which have the aim of preventing diseases, especially infection diseases, and which serve to protect the health of humans and animals and/or protect the environment and/or maintain cleanliness. According to the invention, this especially includes measures for cleaning, disinfection and sterilization, for example of textiles or hard surfaces, especially surfaces made of glass, wood, cement, porcelain, ceramic, plastic or else metal(s), in order to ensure that these are free of hygiene pests and/or their secretions. The scope of protection of the invention in this regard preferably excludes surgical or therapeutic treatment procedures to be applied to the human body or the bodies of animals, and diagnostic procedures which are conducted on the human body or the bodies of animals.

The term "hygiene sector" covers all areas, technical fields and industrial applications in which these hygiene measures, provisions and procedures are important, for example with regard to

hygiene in kitchens, bakeries, airports, bathrooms, swimming pools, department stores, hotels, hospitals, stables, animal keeping, etc.

The term "hygiene pest" should therefore be understood to mean one or more animal pests whose presence in the hygiene sector is problematic, especially for reasons of health. A main aim is therefore that of avoiding, or limiting to a minimum degree, the presence of hygiene pests and/or the exposure to these in the hygiene sector. This can especially be achieved through the use of a pesticide which can be used both for prevention of infestation and for prevention of an existing infestation. It is also possible to use formulations which prevent or reduce exposure to pests. Hygiene pests include, for example, the organisms mentioned below.

The term "hygiene protection" thus covers all acts by which these hygiene measures, provisions and procedures are maintained and/or improved.

The compounds of the formula (I) can preferably be used as pesticides. They are active against normally sensitive and resistant species and also against all or specific stages of development. The abovementioned pests include:

pests from the phylum of the Arthropoda, especially from the class of the Arachnida, for example Acarus spp., e.g. Acarus siro, Aceria kuko, Aceria sheldoni, Aculops spp., Aculus spp., e.g. Aculus fockeui, Aculus schlechtendali, Amblyomma spp., Amphitetranychus viennensis, Argas spp., Boophilus spp., Brevipalpus spp., e.g. Brevipalpus phoenicis, Bryobia graminum, Bryobia praetiosa, Centruroides spp., Chorioptes spp., Dermanyssus gallinae, Dermatophagoides pteronyssinus, Dermatophagoides farinae, Dermacentor spp., Eotetranychus spp., e.g. Eotetranychus hicoriae, Epitrimerus pyri, Eutetranychus spp., e.g. Eutetranychus banksi, Eriophyes spp., e.g. Eriophyes pyri, Glycyphagus domesticus, Halotydeus destructor, Hemitarsonemus spp., e.g. Hemitarsonemus latus (=Polyphagotarsonemus latus), Hyalomma spp., Ixodes spp., Latrodectus spp., Loxosceles spp., Neutrombicula autumnalis, Nuphersa spp., Oligonychus spp., e.g. Oligonychus coffeae, Oligonychus coniferarum, Oligonychus ilicis, Oligonychus indicus, Oligonychus mangiferus, Oligonychus pratensis, Oligonychus punicae, Oligonychus yothersi, Ornithodorus spp., Ornithonyssus spp., Panonychus spp., e.g. Panonychus citri (=Metatetranychus citri), Panonychus ulmi (=Metatetranychus ulmi), Phyllocoptruta oleivora, Platytetranychus multidigituli, Polyphagotarsonemus latus, Psoroptes spp., Rhipicephalus spp., Rhizoglyphus spp., Sarcoptes spp., Scorpio maurus, Steneotarsonemus spp., Steneotarsonemus spinki, Tarsonemus spp., e.g. Tarsonemus confusus, Tarsonemus pallidus,

Tetranychus spp., e.g. Tetranychus canadensis, Tetranychus cinnabarinus, Tetranychus turkestani, Tetranychus urticae, Trombicula alfreddugesi, Vaejovis spp., Vasates lycopersici;

from the class of the Chilopoda, for example Geophilus spp., Scutigera spp.;

from the order or the class of the Collembola, for example Onychiurus armatus; Sminthurus viridis;

from the class of the Diplopoda, for example Blaniulus guttulatus;

from the class of the Insecta, for example from the order of the Blattodea, e.g. Blatta orientalis, Blattella asahinai, Blattella germanica, Leucophaea maderae, Loboptera decipiens, Neostylopyga rhombifolia, Panchlora spp., Parcoblatta spp., Periplaneta spp., e.g. Periplaneta americana, Periplaneta australasiae, Pycnoscelus surinamensis, Supella longipalpa;

from the order of the Coleoptera for example Acalymma vittatum, Acanthoscelides obtectus, Adoretus spp., Aethina tumida, Agelastica alni, Agriotes spp., e.g. Agriotes linneatus, Agriotes mancus, Alphitobius diaperinus, Amphimallon solstitialis, Anobium punctatum, Anoplophora spp., Anthonomus spp., e.g. Anthonomus grandis, Anthrenus spp., Apion spp., Apogonia spp., Atomaria spp., e.g. Atomaria linearis, Attagenus spp., Baris caerulescens, Bruchidius obtectus, Bruchus spp., e.g. Bruchus pisorum, Bruchus rufimanus, Cassida spp., Cerotoma trifurcata, Ceutorrhynchus spp., e.g. Ceutorrhynchus assimilis, Ceutorrhynchus quadridens, Ceutorrhynchus rapae, Chaetocnema spp., e.g. Chaetocnema confinis, Chaetocnema denticulata, Chaetocnema ectypa, Cleonus mendicus, Conoderus spp., Cosmopolites spp., e.g. Cosmopolites sordidus, Costelytra zealandica, Ctenicera spp., Curculio spp., e.g. Curculio caryae, Curculio caryatrypes, Curculio obtusus, Curculio sayi, Cryptolestes ferrugineus, Cryptolestes pusillus, Cryptorhynchus lapathi, Cryptorhynchus mangiferae, Cylindrocopturus spp., Cylindrocopturus adspersus, Cylindrocopturus furnissi, Dermestes spp., Diabrotica spp., e.g. Diabrotica balteata, Diabrotica barberi, Diabrotica undecimpunctata howardi, Diabrotica undecimpunctata undecimpunctata, Diabrotica virgifera virgifera, Diabrotica virgifera zeae, Dichocrocis spp., Dicladispa armigera, Diloboderus spp., Epicaerus spp., Epilachna spp., e.g. Epilachna borealis, Epilachna varivestis, Epitrix spp., e.g. Epitrix cucumeris, Epitrix fuscula, Epitrix hirtipennis, Epitrix subcrinita, Epitrix tuberis, Faustinus spp., Gibbium psylloides, Gnathocerus cornutus, Hellula undalis, Heteronychus arator, Heteronyx spp., Hylamorpha elegans, Hylotrupes bajulus, Hypera postica, Hypomeces squamosus, Hypothenemus spp., e.g. Hypothenemus hampei, Hypothenemus obscurus, Hypothenemus pubescens, Lachnosterna consanguinea, Lasioderma serricorne, Latheticus oryzae, Lathridius spp., Lema spp., Leptinotarsa decemlineata, Leucoptera

spp., e.g. Leucoptera coffeella, Lissorhoptrus oryzophilus, Listronotus (= Hyperodes) spp., Lixus spp., Luperodes spp., Luperomorpha xanthodera, Lyctus spp., Megascelis spp., Melanotus spp., e.g. Melanotus longulus oregonensis, Meligethes aeneus, Melolontha spp., e.g. Melolontha melolontha, Migdolus spp., Monochamus spp., Naupactus xanthographus, Necrobia spp., Neogalerucella spp., Niptus hololeucus, Oryctes rhinoceros, Oryzaephilus surinamensis, Oryzaphagus oryzae, Otiorhynchus spp., e.g. Otiorhynchus cribricollis, Otiorhynchus ligustici, Otiorhynchus ovatus, Otiorhynchus rugosostriarus, Otiorhynchus sulcatus, Oulema spp., e.g. Oulema melanopus, Oulema oryzae, Oxycetonia jucunda, Phaedon cochleariae, Phyllophaga spp., Phyllophaga helleri, Phyllotreta spp., e.g. Phyllotreta armoraciae, Phyllotreta pusilla, Phyllotreta ramosa, Phyllotreta striolata, Popillia japonica, Premnotrypes spp., Prostephanus truncatus, Psylliodes spp., e.g. Psylliodes affinis, Psylliodes chrysocephala, Psylliodes punctulata, Ptinus spp., Rhizobius ventralis, Rhizopertha dominica, Rhynchophorus spp., Rhynchophorus ferrugineus, Rhynchophorus palmarum, Sinoxylon perforans, Sitophilus spp., e.g. Sitophilus granarius, Sitophilus linearis, Sitophilus oryzae, Sitophilus zeamais, Sphenophorus spp., Stegobium paniceum, Sternechus spp., e.g. Sternechus paludatus, Symphyletes spp., Tanymecus spp., e.g. Tanymecus dilaticollis, Tanymecus indicus, Tanymecus palliatus, Tenebrio molitor, Tenebrioides mauretanicus, Tribolium spp., e.g. Tribolium audax, Tribolium castaneum, Tribolium confusum, Trogoderma spp., Tychius spp., Xylotrechus spp., Zabrus spp., e.g. Zabrus tenebrioides;

from the order of the Dermaptera, for example Anisolabis maritime, Forficula auricularia, Labidura riparia;

from the order of the Diptera, for example Aedes spp., e.g. Aedes aegypti, Aedes albopictus, Aedes sticticus, Aedes vexans, Agromyza spp., e.g. Agromyza frontella, Agromyza parvicornis, Anastrepha spp., Anopheles spp., e.g. Anopheles quadrimaculatus, Anopheles gambiae, Asphondylia spp., Bactrocera spp., e.g. Bactrocera cucurbitae, Bactrocera dorsalis, Bactrocera oleae, Bibio hortulanus, Calliphora erythrocephala, Calliphora vicina, Ceratitis capitata, Chironomus spp., Chrysomya spp., Chrysops spp., Chrysozona pluvialis, Cochliomya spp., Contarinia spp., e.g. Contarinia johnsoni, Contarinia nasturtii, Contarinia pyrivora, Contarinia schulzi, Contarinia sorghicola, Contarinia tritici, Cordylobia anthropophaga, Cricotopus sylvestris, Culex spp., e.g. Culex pipiens, Culex quinquefasciatus, Culicoides spp., Culiseta spp., Cuterebra spp., Dacus oleae, Dasineura spp., e.g. Dasineura brassicae, Delia spp., e.g. Delia antiqua, Delia coarctata, Delia florilega, Delia platura, Delia radicum, Dermatobia hominis, Drosophila spp., e.g. Drosphila melanogaster, Drosophila suzukii, Echinocnemus spp., Euleia

heraclei, Fannia spp., Gasterophilus spp., Glossina spp., Haematopota spp., Hydrellia spp., Hydrellia griseola, Hylemya spp., Hippobosca spp., Hypoderma spp., Liriomyza spp., e.g. Liriomyza brassicae, Liriomyza huidobrensis, Liriomyza sativae, Lucilia spp., e.g. Lucilia cuprina, Lutzomyia spp., Mansonia spp., Musca spp., e.g. Musca domestica, Musca domestica vicina, Oestrus spp., Oscinella frit, Paratanytarsus spp., Paralauterborniella subcincta, Pegomya or Pegomyia spp., e.g. Pegomya betae, Pegomya hyoscyami, Pegomya rubivora, Phlebotomus spp., Phorbia spp., Phormia spp., Piophila casei, Platyparea poeciloptera, Prodiplosis spp., Psila rosae, Rhagoletis spp., e.g. Rhagoletis cingulata, Rhagoletis completa, Rhagoletis fausta, Rhagoletis indifferens, Rhagoletis mendax, Rhagoletis pomonella, Sarcophaga spp., Simulium spp., e.g. Simulium meridionale, Stomoxys spp., Tabanus spp., Tetanops spp., Tipula spp., e.g. Tipula paludosa, Tipula simplex, Toxotrypana curvicauda;

from the order of the Hemiptera, for example Acizzia acaciaebaileyanae, Acizzia dodonaeae, Acizzia uncatoides, Acrida turrita, Acyrthosipon spp., e.g. Acyrthosiphon pisum, Acrogonia spp., Aeneolamia spp., Agonoscena spp., Aleurocanthus spp., Aleyrodes proletella, Aleurolobus barodensis, Aleurothrixus floccosus, Allocaridara malayensis, Amrasca spp., e.g. Amrasca bigutulla, Amrasca devastans, Anuraphis cardui, Aonidiella spp., e.g. Aonidiella aurantii, Aonidiella citrina, Aonidiella inornata, Aphanostigma piri, Aphis spp., e.g. Aphis citricola, Aphis craccivora, Aphis fabae, Aphis forbesi, Aphis glycines, Aphis gossypii, Aphis hederae, Aphis illinoisensis, Aphis middletoni, Aphis nasturtii, Aphis nerii, Aphis pomi, Aphis spiraecola, Aphis viburniphila, Arboridia apicalis, Arytainilla spp., Aspidiella spp., Aspidiotus spp., e.g. Aspidiotus nerii, Atanus spp., Aulacorthum solani, Bemisia tabaci, Blastopsylla occidentalis, Boreioglycaspis melaleucae, Brachycaudus helichrysi, Brachycolus spp., Brevicoryne brassicae, Cacopsylla spp., e.g. Cacopsylla pyricola, Calligypona marginata, Capulinia spp., Carneocephala fulgida, Ceratovacuna lanigera, Cercopidae, Ceroplastes spp., Chaetosiphon fragaefolii, Chionaspis tegalensis, Chlorita onukii, Chondracris rosea, Chromaphis juglandicola, Chrysomphalus aonidum, Chrysomphalus ficus, Cicadulina mbila, Coccomytilus halli, Coccus spp., e.g. Coccus hesperidum, Coccus longulus, Coccus pseudomagnoliarum, Coccus viridis, Cryptomyzus ribis, Cryptoneossa spp., Ctenarytaina spp., Dalbulus spp., Dialeurodes chittendeni, Dialeurodes citri, Diaphorina citri, Diaspis spp., Diuraphis spp., Doralis spp., Drosicha spp., Dysaphis spp., e.g. Dysaphis apiifolia, Dysaphis plantaginea, Dysaphis tulipae, Dysmicoccus spp., Empoasca spp., e.g. Empoasca abrupta, Empoasca fabae, Empoasca maligna, Empoasca solana, Empoasca stevensi, Eriosoma spp., e.g. Eriosoma americanum, Eriosoma lanigerum, Eriosoma pyricola, Erythroneura spp., Eucalyptolyma spp., Euphyllura spp., Euscelis bilobatus, Ferrisia spp., Fiorinia spp., Furcaspis oceanica, Geococcus coffeae, Glycaspis spp., Heteropsylla

cubana, Heteropsylla spinulosa, Homalodisca coagulata, Hyalopterus arundinis, Hyalopterus pruni, Icerya spp., e.g. Icerya purchasi, Idiocerus spp., Idioscopus spp., Laodelphax striatellus, Lecanium spp., e.g. Lecanium corni (=Parthenolecanium corni), Lepidosaphes spp., e.g. Lepidosaphes ulmi, Lipaphis erysimi, Lopholeucaspis japonica, Lycorma delicatula, Macrosiphum spp., e.g. Macrosiphum euphorbiae, Macrosiphum lilii, Macrosiphum rosae, Macrosteles facifrons, Mahanarva spp., Melanaphis sacchari, Metcalfiella spp., Metcalfa pruinosa, Metopolophium dirhodum, Monellia costalis, Monelliopsis pecanis, Myzus spp., e.g. Myzus ascalonicus, Myzus cerasi, Myzus ligustri, Myzus ornatus, Myzus persicae, Myzus nicotianae, Nasonovia ribisnigri, Neomaskellia spp., Nephotettix spp., e.g. Nephotettix cincticeps, Nephotettix nigropictus, Nettigoniclla spectra, Nilaparvata lugens, Oncometopia spp., Orthezia praelonga, Oxya chinensis, Pachypsylla spp., Parabemisia myricae, Paratrioza spp., e.g. Paratrioza cockerelli, Parlatoria spp., Pemphigus spp., e.g. Pemphigus bursarius, Pemphigus populivenae, Peregrinus maidis, Perkinsiella spp., Phenacoccus spp., e.g. Phenacoccus madeirensis, Phloeomyzus passerinii, Phorodon humuli, Phylloxera spp., e.g. Phylloxera devastatrix, Phylloxera notabilis, Pinnaspis aspidistrae, Planococcus spp., e.g. Planococcus citri, Prosopidopsylla flava, Protopulvinaria pyriformis, Pseudaulacaspis pentagona, Pseudococcus spp., e.g. Pseudococcus calceolariae, Pseudococcus comstocki, Pseudococcus longispinus, Pseudococcus maritimus, Pseudococcus viburni, Psyllopsis spp., Psylla spp., e.g. Psylla buxi, Psylla mali, Psylla pyri, Pteromalus spp., Pulvinaria spp., Pyrilla spp., Quadraspidiotus spp., e.g. Quadraspidiotus juglansregiae, Quadraspidiotus ostreaeformis, Quadraspidiotus perniciosus, Quesada gigas, Rastrococcus spp., Rhopalosiphum spp., e.g. Rhopalosiphum maidis, Rhopalosiphum oxyacanthae, Rhopalosiphum padi, Rhopalosiphum rufiabdominale, Saissetia spp., e.g. Saissetia coffeae, Saissetia miranda, Saissetia neglecta, Saissetia oleae, Scaphoideus titanus, Schizaphis graminum, Selenaspidus articulatus, Sipha flava, Sitobion avenae, Sogata spp., Sogatella furcifera, Sogatodes spp., Stictocephala festina, Siphoninus phillyreae, Tenalaphara malayensis, Tetragonocephela spp., Tinocallis caryaefoliae, Tomaspis spp., Toxoptera spp., e.g. Toxoptera aurantii, Toxoptera citricidus, Trialeurodes vaporariorum, Trioza spp., e.g. Trioza diospyri, Typhlocyba spp., Unaspis spp., Viteus vitifolii, Zygina spp.;

from the suborder of the Heteroptera, for example Aelia spp., Anasa tristis, Antestiopsis spp., Boisea spp., Blissus spp., Calocoris spp., Campylomma livida, Cavelerius spp., Cimex spp., e.g. Cimex adjunctus, Cimex hemipterus, Cimex lectularius, Cimex pilosellus, Collaria spp., Creontiades dilutus, Dasynus piperis, Dichelops furcatus, Diconocoris hewetti, Dysdercus spp., Euschistus spp., e.g. Euschistus heros, Euschistus servus, Euschistus tristigmus, Euschistus variolarius, Eurydema spp., Eurygaster spp., Halyomorpha halys, Heliopeltis spp., Horcias

nobilellus, Leptocorisa spp., Leptocorisa varicornis, Leptoglossus occidentalis, Leptoglossus phyllopus, Lygocoris spp., e.g. Lygocoris pabulinus, Lygus spp., e.g. Lygus elisus, Lygus hesperus, Lygus lineolaris, Macropes excavatus, Megacopta cribraria, Miridae, Monalonion atratum, Nezara spp., e.g. Nezara viridula, Nysius spp., Oebalus spp., Pentomidae, Piesma quadrata, Piezodorus spp., e.g. Piezodorus guildinii, Psallus spp., Pseudacysta persea, Rhodnius spp., Sahlbergella singularis, Scaptocoris castanea, Scotinophora spp., Stephanitis nashi, Tibraca spp., Triatoma spp.;

from the order of the Hymenoptera, for example Acromyrmex spp., Athalia spp., e.g. Athalia rosae, Atta spp., Camponotus spp., Dolichovespula spp., Diprion spp., e.g. Diprion similis, Hoplocampa spp., e.g. Hoplocampa cookei, Hoplocampa testudinea, Lasius spp., Linepithema (Iridiomyrmex) humile, Monomorium pharaonis, Paratrechina spp., Paravespula spp., Plagiolepis spp., Sirex spp., Solenopsis invicta, Tapinoma spp., Technomyrmex albipes, Urocerus spp., Vespa spp., e.g. Vespa crabro, Wasmannia auropunctata, Xeris spp.;

from the order of the Isopoda, for example Armadillidium vulgare, Oniscus asellus, Porcellio scaber;

from the order of the Isoptera, for example Coptotermes spp., e.g. Coptotermes formosanus, Cornitermes cumulans, Cryptotermes spp., Incisitermes spp., Kalotermes spp., Microtermes obesi, Nasutitermes spp., Odontotermes spp., Porotermes spp., Reticulitermes spp., e.g. Reticulitermes flavipes, Reticulitermes hesperus;

from the order of the Lepidoptera, for example Achroia grisella, Acronicta major, Adoxophyes spp., e.g. Adoxophyes orana, Aedia leucomelas, Agrotis spp., e.g. Agrotis segetum, Agrotis ipsilon, Alabama spp., e.g. Alabama argillacea, Amyelois transitella, Anarsia spp., Anticarsia spp., e.g. Anticarsia gemmatalis, Argyroploce spp., Autographa spp., Barathra brassicae, Blastodacna atra, Borbo cinnara, Bucculatrix thurberiella, Bupalus piniarius, Busseola spp., Cacoecia spp., Caloptilia theivora, Capua reticulana, Carpocapsa pomonella, Carposina niponensis, Cheimatobia brumata, Chilo spp., e.g. Chilo plejadellus, Chilo suppressalis, Choreutis pariana, Choristoneura spp., Chrysodeixis chalcites, Clysia ambiguella, Cnaphalocerus spp., Cnaphalocrocis medinalis, Cnephasia spp., Conopomorpha spp., Conotrachelus spp., Copitarsia spp., Cydia spp., e.g. Cydia nigricana, Cydia pomonella, Dalaca noctuides, Diaphania spp., Diparopsis spp., Diatraea saccharalis, Earias spp., Ecdytolopha aurantium, Elasmopalpus lignosellus, Eldana saccharina, Ephestia spp., e.g. Ephestia elutella, Ephestia kuehniella, Epinotia spp., Epiphyas postvittana, Erannis spp., Erschoviella musculana, Etiella spp., Eudocima spp.,

Eulia spp., Eupoecilia ambiguella, Euproctis spp., e.g. Euproctis chrysorrhoea, Euxoa spp., Feltia spp., Galleria mellonella, Gracillaria spp., Grapholitha spp., e.g. Grapholita molesta, Grapholita prunivora, Hedylepta spp., Helicoverpa spp., e.g. Helicoverpa armigera, Helicoverpa zea, Heliothis spp., e.g. Heliothis virescens Hofmannophila pseudospretella, Homoeosoma spp., Homona spp., Hyponomeuta padella, Kakivoria flavofasciata, Lampides spp., Laphygma spp., Laspeyresia molesta, Leucinodes orbonalis, Leucoptera spp., e.g. Leucoptera coffeella, Lithocolletis spp., e.g. Lithocolletis blancardella, Lithophane antennata, Lobesia spp., e.g. Lobesia botrana, Loxagrotis albicosta, Lymantria spp., e.g. Lymantria dispar, Lyonetia spp., e.g. Lyonetia clerkella, Malacosoma neustria, Maruca testulalis, Mamestra brassicae, Melanitis leda, Mocis spp., Monopis obviella, Mythimna separata, Nemapogon cloacellus, Nymphula spp., Oiketicus spp., Omphisa spp., Operophtera spp., Oria spp., Orthaga spp., Ostrinia spp., e.g. Ostrinia nubilalis, Panolis flammea, Parnara spp., Pectinophora spp., e.g. Pectinophora gossypiella, Perileucoptera spp., Phthorimaea spp., e.g. Phthorimaea operculella, Phyllocnistis citrella, Phyllonorycter spp., e.g. Phyllonorycter blancardella, Phyllonorycter crataegella, Pieris spp., e.g. Pieris rapae, Platynota stultana, Plodia interpunctella, Plusia spp., Plutella xylostella (=Plutella maculipennis), Prays spp., Prodenia spp., Protoparce spp., Pseudaletia spp., e.g. Pseudaletia unipuncta, Pseudoplusia includens, Pyrausta nubilalis, Rachiplusia nu, Schoenobius spp., e.g. Schoenobius bipunctifer, Scirpophaga spp., e.g. Scirpophaga innotata, Scotia segetum, Sesamia spp., e.g. Sesamia inferens, Sparganothis spp., Spodoptera spp., e.g. Spodoptera eradiana, Spodoptera exigua, Spodoptera frugiperda, Spodoptera praefica, Stathmopoda spp., Stenoma spp., Stomopteryx subsecivella, Synanthedon spp., Tecia solanivora, Thaumetopoea spp., Thermesia gemmatalis, Tinea cloacella, Tinea pellionella, Tineola bisselliella, Tortrix spp., Trichophaga tapetzella, Trichoplusia spp., e.g. Trichoplusia ni, Tryporyza incertulas, Tuta absoluta, Virachola spp.;

from the order of the Orthoptera or Saltatoria, for example Acheta domesticus, Dichroplus spp., Gryllotalpa spp., e.g. Gryllotalpa gryllotalpa, Hieroglyphus spp., Locusta spp., e.g. Locusta migratoria, Melanoplus spp., e.g. Melanoplus devastator, Paratlanticus ussuriensis, Schistocerca gregaria;

from the order of the Phthiraptera, for example Damalinia spp., Haematopinus spp., Linognathus spp., Pediculus spp., Phylloxera vastatrix, Phthirus pubis, Trichodectes spp.;

from the order of the Psocoptera, for example Lepinotus spp., Liposcelis spp.;

from the order of the Siphonaptera, for example Ceratophyllus spp., Ctenocephalides spp., e.g. Ctenocephalides canis, Ctenocephalides felis, Pulex irritans, Tunga penetrans, Xenopsylla cheopis;

from the order of the Thysanoptera, for example Anaphothrips obscurus, Baliothrips biformis, Chaetanaphothrips leeuweni, Drepanothrips reuteri, Enneothrips flavens, Frankliniella spp., e.g. Frankliniella fusca, Frankliniella occidentalis, Frankliniella schultzei, Frankliniella tritici, Frankliniella vaccinii, Frankliniella williamsi, Haplothrips spp., Heliothrips spp., Hercinothrips femoralis, Kakothrips spp., Rhipiphorothrips cruentatus, Scirtothrips spp., Taeniothrips cardamomi, Thrips spp., e.g. Thrips palmi, Thrips tabaci;

from the order of the Zygentoma (= Thysanura), for example Ctenolepisma spp., Lepisma saccharina, Lepismodes inquilinus, Thermobia domestica;

from the class of the Symphyla, for example Scutigerella spp., e.g. Scutigerella immaculata;

pests from the phylum of the Mollusca, for example from the class of the Bivalvia, e.g. Dreissena spp.;

and also from the class of the Gastropoda, for example Arion spp., e.g. Arion ater rufus, Biomphalaria spp., Bulinus spp., Deroceras spp., e.g. Deroceras laeve, Galba spp., Lymnaea spp., Oncomelania spp., Pomacea spp., Succinea spp.;

plant pests from the phylum of the Nematoda, i.e. plant-parasitic nematodes, in particular Aglenchus spp., e.g. Aglenchus agricola, Anguina spp., e.g. Anguina tritici, Aphelenchoides spp., e.g. Aphelenchoides arachidis, Aphelenchoides fragariae, Belonolaimus spp., e.g. Belonolaimus gracilis, Belonolaimus longicaudatus, Belonolaimus nortoni, Bursaphelenchus spp., e.g. Bursaphelenchus cocophilus, Bursaphelenchus eremus, Bursaphelenchus xylophilus, Cacopaurus spp., e.g. Cacopaurus pestis, Criconemella spp., e.g. Criconemella curvata, Criconemella onoensis, Criconemella ornata, Criconemella rusium, Criconemella xenoplax (= Mesocriconema xenoplax), Criconemoides spp., e.g. Criconemoides ferniae, Criconemoides onoense, Criconemoides ornatum, Ditylenchus spp., e.g. Ditylenchus dipsaci, Dolichodorus spp., Globodera spp., e.g. Globodera pallida, Globodera rostochiensis, Helicotylenchus spp., e.g. Helicotylenchus dihystera, Hemicriconemoides spp., Hemicycliophora spp., Heterodera spp., e.g. Heterodera avenae, Heterodera glycines, Heterodera schachtii, Hirschmaniella spp., Hoplolaimus spp., Longidorus spp., e.g. Longidorus africanus, Meloidogyne spp., e.g. Meloidogyne chitwoodi, Meloidogyne fallax, Meloidogyne hapla, Meloidogyne incognita, Meloinema spp., Nacobbus

spp., Neotylenchus spp., Paralongidorus spp., Paraphelenchus spp., Paratrichodorus spp., e.g. Paratrichodorus minor, Paratylenchus spp., Pratylenchus spp., e.g. Pratylenchus penetrans, Pseudohalenchus spp., Psilenchus spp., Punctodera spp., Quinisulcius spp., Radopholus spp., e.g. Radopholus citrophilus, Radopholus similis, Rotylenchulus spp., Rotylenchus spp., Scutellonema spp., Subanguina spp., Trichodorus spp., e.g. Trichodorus obtusus, Trichodorus primitivus, Tylenchorhynchus spp., e.g. Tylenchorhynchus annulatus, Tylenchulus spp., e.g. Tylenchulus semipenetrans, Xiphinema spp., e.g. Xiphinema index.

The compounds of the formula (I) can, as the case may be, at certain concentrations or application rates, also be used as herbicides, safeners, growth regulators or agents to improve plant properties, as microbicides or gametocides, for example as fungicides, antimycotics, bactericides, virucides (including agents against viroids) or as agents against MLO (mycoplasma-like organisms) and RLO (rickettsia-like organisms). They can, as the case may be, also be used as intermediates or precursors for the synthesis of other active ingredients.

Formulations

The present invention further relates to formulations and use forms prepared therefrom as pesticides, for example drench, drip and spray liquors, comprising at least one compound of the formula (I). Optionally, the use forms comprise further pesticides and/or adjuvants which improve action, such as penetrants, e.g. vegetable oils, for example rapeseed oil, sunflower oil, mineral oils, for example paraffin oils, alkyl esters of vegetable fatty acids, for example rapeseed oil methyl ester or soya oil methyl ester, or alkanol alkoxylates and/or spreaders, for example alkylsiloxanes and/or salts, for example organic or inorganic ammonium or phosphonium salts, for example ammonium sulphate or diammonium hydrogenphosphate and/or retention promoters, for example dioctyl sulphosuccinate or hydroxypropylguar polymers and/or humectants, for example glycerol and/or fertilizers, for example ammonium-, potassium- or phosphorus-containing fertilizers.

Customary formulations are, for example, water-soluble liquids (SL), emulsion concentrates (EC), emulsions in water (EW), suspension concentrates (SC, SE, FS, OD), water-dispersible granules (WG), granules (GR) and capsule concentrates (CS); these and further possible formulation types are described, for example, by Crop Life International and in Pesticide Specifications, Manual on development and use of FAO and WHO specifications for pesticides, FAO Plant Production and Protection Papers – 173, prepared by the FAO/WHO Joint Meeting

on Pesticide Specifications, 2004, ISBN: 9251048576. The formulations, in addition to one or more compounds of the formula (I), optionally comprise further active agrochemical ingredients.

Preference is given to formulations or use forms comprising auxiliaries, for example extenders, solvents, spontaneity promoters, carriers, emulsifiers, dispersants, frost protection agents, biocides, thickeners and/or further auxiliaries, for example adjuvants. An adjuvant in this context is a component which enhances the biological effect of the formulation, without the component itself having any biological effect. Examples of adjuvants are agents which promote retention, spreading, attachment to the leaf surface or penetration.

These formulations are produced in a known manner, for example by mixing the compounds of the formula (I) with auxiliaries, for example extenders, solvents and/or solid carriers and/or other auxiliaries, for example surfactants. The formulations are produced either in suitable facilities or else before or during application.

The auxiliaries used may be substances suitable for imparting special properties, such as certain physical, technical and/or biological properties, to the formulation of the compounds of the formula (I), or to the use forms prepared from these formulations (for example ready-to-use pesticides such as spray liquors or seed-dressing products).

Suitable extenders are, for example, water, polar and nonpolar organic chemical liquids, for example from the classes of the aromatic and non-aromatic hydrocarbons (such as paraffins, alkylbenzenes, alkylnaphthalenes, chlorobenzenes), the alcohols and polyols (which, if appropriate, may also be substituted, etherified and/or esterified), the ketones (such as acetone, cyclohexanone), esters (including fats and oils) and (poly)ethers, the simple and substituted amines, amides, lactams (such as N-alkylpyrrolidones) and lactones, the sulphones and sulphoxides (such as dimethyl sulphoxide).

If the extender utilized is water, it is also possible to use, for example, organic solvents as auxiliary solvents. Useful liquid solvents are essentially: aromatics such as xylene, toluene or alkylnaphthalenes, chlorinated aromatics or chlorinated aliphatic hydrocarbons such as chlorobenzenes, chloroethylenes or methylene chloride, aliphatic hydrocarbons such as cyclohexane or paraffins, for example petroleum fractions, mineral and vegetable oils, alcohols such as butanol or glycol and their ethers and esters, ketones such as acetone, methyl ethyl ketone, methyl isobutyl ketone or cyclohexanone, strongly polar solvents such as dimethylformamide and dimethyl sulphoxide, and also water.

In principle, it is possible to use all suitable solvents. Examples of suitable solvents are aromatic hydrocarbons, for example xylene, toluene or alkylnaphthalenes, chlorinated aromatic or chlorinated aliphatic hydrocarbons, for example chlorobenzene, chloroethylene or methylene chloride, aliphatic hydrocarbons, for example cyclohexane, paraffins, petroleum fractions, mineral and vegetable oils, alcohols, for example methanol, ethanol, isopropanol, butanol or glycol and their ethers and esters, ketones, for example acetone, methyl ethyl ketone, methyl isobutyl ketone or cyclohexanone, strongly polar solvents, for example dimethyl sulphoxide, and water.

In principle, it is possible to use all suitable carriers. Useful carriers especially include, for example, ammonium salts and natural, finely ground rocks, such as kaolins, aluminas, talc, chalk, quartz, attapulgite, montmorillonite or diatomaceous earth, and synthetic, finely ground rocks, such as highly disperse silica, aluminium oxide and natural or synthetic silicates, resins, waxes and/or solid fertilizers. It is likewise possible to use mixtures of such carriers. Useful carriers for granules include: for example crushed and fractionated natural rocks such as calcite, marble, pumice, sepiolite, dolomite, and synthetic granules of inorganic and organic flours, and also granules of organic material such as sawdust, paper, coconut shells, maize cobs and tobacco stalks.

It is also possible to use liquefied gaseous extenders or solvents. Especially suitable extenders or carriers are those which are gaseous at standard temperature and under atmospheric pressure, for example aerosol propellants such as halogenated hydrocarbons, and also butane, propane, nitrogen and carbon dioxide.

Examples of emulsifiers and/or foam formers, dispersants or wetting agents having ionic or nonionic properties or mixtures of these surface-active substances are salts of polyacrylic acid, salts of lignosulphonic acid, salts of phenolsulphonic acid or naphthalenesulphonic acid, polycondensates of ethylene oxide with fatty alcohols or with fatty acids or with fatty amines, with substituted phenols (preferably alkylphenols or arylphenols), salts of sulphosuccinic esters, taurine derivatives (preferably alkyl taurates), phosphoric esters of polyethoxylated alcohols or phenols, fatty acid esters of polyols, and derivatives of the compounds containing sulphates, sulphonates and phosphates, for example alkylaryl polyglycol ethers, alkylsulphonates, alkyl sulphates, arylsulphonates, protein hydrolysates, lignosulphite waste liquors and methylcellulose. The presence of a surfactant is advantageous if one of the compounds of the formula (I) and/or one of the inert carriers is insoluble in water and if the application takes place in water.

Further auxiliaries which may be present in the formulations and the use forms derived therefrom include dyes such as inorganic pigments, for example iron oxide, titanium oxide and Prussian Blue, and organic dyes such as alizarin dyes, azo dyes and metal phthalocyanine dyes, and nutrients and trace nutrients such as salts of iron, manganese, boron, copper, cobalt, molybdenum and zinc.

Additional components which may be present are stabilizers, such as cold stabilizers, preservatives, antioxidants, light stabilizers, or other agents which improve chemical and/or physical stability. Foam generators or antifoams may also be present.

In addition, the formulations and the use forms derived therefrom may also comprise, as additional auxiliaries, stickers such as carboxymethylcellulose and natural and synthetic polymers in the form of powders, granules or latices, such as gum arabic, polyvinyl alcohol and polyvinyl acetate, or else natural phospholipids such as cephalins and lecithins and synthetic phospholipids. Further auxiliaries may be mineral and vegetable oils.

It is possible if appropriate for still further auxiliaries to be present in the formulations and the use forms derived therefrom. Examples of such additives are fragrances, protective colloids, binders, adhesives, thickeners, thixotropic agents, penetrants, retention promoters, stabilizers, sequestrants, complexing agents, humectants, spreaders. In general, the compounds of the formula (I) can be combined with any solid or liquid additive commonly used for formulation purposes.

Useful retention promoters include all those substances which reduce dynamic surface tension, for example dioctyl sulphosuccinate, or increase viscoelasticity, for example hydroxypropylguar polymers.

Useful penetrants in the present context are all those substances which are typically used to improve the penetration of agrochemically active compounds into plants. Penetrants are defined in this context by their ability to penetrate from the (generally aqueous) application liquor and/or from the spray coating into the cuticle of the plant and hence to increase the mobility of the active ingredients in the cuticle. The method described in the literature (Baur et al., 1997, Pesticide Science 51, 131-152) can be used for determining this property. Examples include alcohol alkoxylates such as coconut fatty ethoxylate (10) or isotridecyl ethoxylate (12), fatty acid esters, for example rapeseed oil methyl ester or soya oil methyl ester, fatty amine alkoxylates, for example tallowamine ethoxylate (15), or ammonium and/or phosphonium salts, for example ammonium sulphate or diammonium hydrogenphosphate.

The formulations preferably comprise between 0.00000001% and 98% by weight of the compound of the formula (I), more preferably between 0.01% and 95% by weight of the compound of the formula (I), most preferably between 0.5% and 90% by weight of the compound of the formula (I), based on the weight of the formulation.

The content of the compound of the formula (I) in the use forms prepared from the formulations (in particular pesticides) may vary within wide ranges. The concentration of the compound of the formula (I) in the use forms may typically be between 0.00000001% and 95% by weight of the compound of the formula (I), preferably between 0.00001% and 1% by weight, based on the weight of the use form. Application is accomplished in a customary manner appropriate for the use forms.

Mixtures

The compounds of the formula (I) can also be used in a mixture with one or more suitable fungicides, bactericides, acaricides, molluscicides, nematicides, insecticides, microbiological agents, beneficial organisms, herbicides, fertilizers, bird repellents, phytotonics, sterilants, safeners, semiochemicals and/or plant growth regulators, in order thus, for example, to broaden the spectrum of action, prolong the period of action, enhance the rate of action, prevent repellency or prevent evolution of resistance. In addition, active ingredient combinations of this kind can improve plant growth and/or tolerance to abiotic factors, for example high or low temperatures, to drought or to elevated water content or soil salinity. It is also possible to improve flowering and fruiting performance, optimize germination capacity and root development, facilitate harvesting and improve yields, influence maturation, improve the quality and/or the nutritional value of the harvested products, prolong storage life and/or improve the processability of the harvested products.

In addition, the compounds of the formula (I) may be present in a mixture with other active compounds or semiochemicals such as attractants and/or bird repellents and/or plant activators and/or growth regulators and/or fertilizers. Likewise, the compounds of the formula (I) can be used to improve plant properties, for example growth, yield and quality of the harvested material.

In a particular embodiment according to the invention, the compounds of the formula (I) are present in formulations or in the use forms prepared from these formulations in a mixture with further compounds, preferably those as described below.

If one of the compounds mentioned below can occur in different tautomeric forms, these forms are also included even if not explicitly mentioned in each case. All the mixing components mentioned, as the case may be, may also form salts with suitable bases or acids if they are capable of doing so on the basis of their functional groups.

Insecticides/acaricides/nematicides

The active compounds specified here with their common names are known and are described for example in "The Pesticide Manual", 16th ed., British Crop Protection Council 2012, or can be searched for on the Internet (e.g. http://www.alanwood.net/pesticides). The classification is based on the IRAC Mode of Action Classification Scheme applicable at the time of filing of this patent application.

(1) Acetylcholinesterase (AChE) inhibitors, for example carbamates, e.g. alanycarb, aldicarb, bendiocarb, benfuracarb, butocarboxim, butoxycarboxim, carbaryl, carbofuran, carbosulfan, ethiofencarb, fenobucarb, formetanate, furathiocarb, isoprocarb, methiocarb, methomyl, metolcarb, oxamyl, pirimicarb, propoxur, thiodicarb, thiofanox, triazamate, trimethacarb, XMC and xylylcarb; or organophosphates, e.g. acephate, azamethiphos, azinphos-ethyl, azinphos-methyl, cadusafos, chlorethoxyfos, chlorfenvinphos, chlormephos, chlorpyrifos-methyl, coumaphos, cyanophos, demeton-S-methyl, diazinon, dichlorvos/DDVP, dicrotophos, dimethoate, dimethylvinphos, disulfoton, EPN, ethion, ethoprophos, famphur, fenamiphos, fenitrothion, fenthion, fosthiazate, heptenophos, imicyafos, isofenphos, isopropyl O-(methoxyaminothiophosphoryl) salicylate, isoxathion, malathion, mecarbam, methamidophos, methidathion, mevinphos, monocrotophos, naled, omethoate, oxydemeton-methyl, parathion-methyl, phenthoate, phorate, phosalone, phosmet, phosphamidon, phoxim, pirimiphos-methyl, profenofos, propetamphos, prothiofos, pyraclofos, pyridaphenthion, quinalphos, sulfotep, tebupirimfos, temephos, terbufos, tetrachlorvinphos, thiometon, triazophos, triclorfon and vamidothion.

(2) GABA-gated chloride channel blockers, for example cyclodiene-organochlorines, e.g. chlordane and endosulfan or phenylpyrazoles (fiproles), e.g. ethiprole and fipronil.

(3) Sodium channel modulators, for example pyrethroids, e.g. acrinathrin, allethrin, d-cis-trans allethrin, d-trans allethrin, bifenthrin, bioallethrin, bioallethrin S-cyclopentenyl isomer, bioresmethrin, cycloprothrin, cyfluthrin, beta-cyfluthrin, cyhalothrin, lambda-cyhalothrin, gamma-cyhalothrin, cypermethrin, alpha-cypermethrin, beta-cypermethrin, theta-cypermethrin, zeta-cypermethrin, cyphenothrin [(1R)-trans isomer], deltamethrin, empenthrin [(EZ)-(1R) isomer], esfenvalerate, etofenprox, fenpropathrin, fenvalerate, flucythrinate, flumethrin, tau-fluvalinate, halfenprox, imiprothrin, kadethrin, momfluorothrin, permethrin, phenothrin [(1R)-trans isomer], prallethrin, pyrethrins (pyrethrum), resmethrin, silafluofen, tefluthrin, tetramethrin, tetramethrin [(1R) isomer], tralomethrin and transfluthrin or DDT or methoxychlor.

(4) Nicotinic acetylcholine receptor (nAChR) competitive modulators, for example neonicotinoids, e.g. acetamiprid, clothianidin, dinotefuran, imidacloprid, nitenpyram, thiacloprid and thiamethoxam or nicotine or sulfoxaflor or flupyradifurone.

(5) Nicotinic acetylcholine receptor (nAChR) allosteric modulators, for example spinosyns, e.g. spinetoram and spinosad.

(6) Glutamate-gated chloride channel (GluCl) allosteric modulators, for example avermectins/milbemycins, e.g. abamectin, emamectin benzoate, lepimectin and milbemectin.

(7) Juvenile hormone mimetics, for example juvenile hormone analogues, e.g. hydroprene, kinoprene and methoprene or fenoxycarb or pyriproxyfen.

(8) Miscellaneous non-specific (multisite) inhibitors, for example alkyl halides, e.g. methyl bromide and other alkyl halides; or chloropicrin or sulphuryl fluoride or borax or tartar emetic or methyl isocyanate generator, e.g. diazomet and metam.

(9) Chordotonal organ modulators, e.g. pymetrozine or flonicamide.

(10) Mite growth inhibitors, for example clofentezine, hexythiazox and diflovidazin or etoxazole.

(11) Microbial disruptors of the insect midgut membrane, for example *Bacillus thuringiensis* subspecies *israelensis*, *Bacillus sphaericus*, *Bacillus thuringiensis* subspecies *aizawai*, *Bacillus thuringiensis* subspecies *kurstaki*, *Bacillus thuringiensis* subspecies *tenebrionis* and *B.t.* plant proteins: Cry1Ab, Cry1Ac, Cry1Fa, Cry1A.105, Cry2Ab, VIP3A, mCry3A, Cry3Ab, Cry3Bb, Cry34Ab1/35Ab1.

(12) Inhibitors of mitochondrial ATP synthase, such as ATP disruptors, for example diafenthiuron or organotin compounds, e.g. azocyclotin, cyhexatin and fenbutatin oxide or propargite or tetradifon.

(13) Uncouplers of oxidative phosphorylation via disruption of the proton gradient, for example chlorfenapyr, DNOC and sulfluramid.

(14) Nicotinic acetylcholine receptor channel blockers, for example bensultap, cartap hydrochloride, thiocyclam, and thiosultap-sodium.

(15) Inhibitors of chitin biosynthesis, type 0, for example bistrifluron, chlorfluazuron, diflubenzuron, flucycloxuron, flufenoxuron, hexaflumuron, lufenuron, novaluron, noviflumuron, teflubenzuron and triflumuron.

(16) Inhibitors of chitin biosynthesis, type 1, for example buprofezin.

(17) Moulting disruptors (especially in the case of Diptera), for example cyromazine.

(18) Ecdysone receptor agonists, for example chromafenozide, halofenozide, methoxyfenozide and tebufenozide.

(19) Octopamine receptor agonists, for example amitraz.

(20) Mitochondrial complex III electron transport inhibitors, for example hydramethylnon or acequinocyl or fluacrypyrim.

(21) Mitochondrial complex I electron transport inhibitors, for example METI acaricides, e.g. fenazaquin, fenpyroximate, pyrimidifen, pyridaben, tebufenpyrad and tolfenpyrad or rotenone (Derris).

(22) Voltage-dependent sodium channel blockers, for example indoxacarb or metaflumizone.

(23) Inhibitors of acetyl CoA carboxylase, for example tetronic and tetramic acid derivatives, e.g. spirodiclofen, spiromesifen and spirotetramat.

(24) Mitochondrial complex IV electron transport inhibitors, for example phosphines, e.g. aluminium phosphide, calcium phosphide, phosphine and zinc phosphide, or cyanides, calcium cyanide, potassium cyanide and sodium cyanide.

(25) Mitochondrial complex II electron transport inhibitors, for example beta-keto nitrile derivatives, e.g. cyenopyrafen and cyflumetofen and carboxanilides, for example pyflubumide.

(28) Ryanodine receptor modulators, for example diamides, e.g. chlorantraniliprole, cyantraniliprole and flubendiamide,

further active ingredients, for example afidopyropen, afoxolaner, azadirachtin, benclothiaz, benzoximate, bifenazate, broflanilide, bromopropylate, chinomethionat, chloroprallethrin, cryolite, cyclaniliprole, cycloxaprid, cyhalodiamide, dicloromezotiaz, dicofol, epsilon metofluthrin, epsilon momfluthrin, flometoquin, fluazaindolizine, fluensulfone, flufenerim, flufenoxystrobin, flufiprole, fluhexafon, fluopyram, fluralaner, fluxametamide, fufenozide, guadipyr, heptafluthrin, imidaclothiz, iprodione, kappa bifenthrin, kappa tefluthrin, lotilaner, meperfluthrin, paichongding, pyridalyl, pyrifluquinazon, pyriminostrobin, spirobudiclofen, tetramethylfluthrin, tetraniliprole, tetrachlorantraniliprole, tioxazafen, thiofluoximate, triflumezopyrim and iodomethane; additionally preparations based on *Bacillus firmus* (I-1582, BioNeem, Votivo), and the following compounds: 1-{2-fluoro-4-methyl-5-[(2,2,2-trifluoroethyl)sulphinyl]phenyl}-3-(trifluoromethyl)-1H-1,2,4-triazole-5-amine (known from WO2006/043635) (CAS 885026-50-6), {1'-[(2E)-3-(4-chlorophenyl)prop-2-en-1-yl]-5-fluorospiro[indole-3,4'-piperidine]-1(2H)-yl}(2-chloropyridin-4-yl)methanone (known from WO2003/106457) (CAS 637360-23-7), 2-chloro-N-[2-{1-[(2E)-3-(4-chlorophenyl)prop-2-en-1-yl]piperidin-4-yl}-4-(trifluoromethyl)phenyl]isonicotinamide (known from WO2006/003494) (CAS 872999-66-1), 3-(4-chloro-2,6-dimethylphenyl)-4-hydroxy-8-methoxy-1,8-diazaspiro[4.5]dec-3-en-2-one (known from WO 2010052161) (CAS 1225292-17-0), 3-(4-chloro-2,6-dimethylphenyl)-8-methoxy-2-oxo-1,8-diazaspiro[4.5]dec-3-en-4-yl ethylcarbonate (known from EP 2647626) (CAS-1440516-42-6), 4-(but-2-yn-1-yloxy)-6-(3,5-dimethylpiperidin-1-yl)-5-fluoropyrimidine (known from WO2004/099160) (CAS 792914-58-0), PF1364 (known from JP2010/018586) (CAS Reg.No. 1204776-60-2), N-[(2E)-1-[(6-chloropyridin-3-yl)methyl]pyridin-2(1H)-ylidene]-2,2,2-trifluoroacetamide (known from WO2012/029672) (CAS 1363400-41-2), (3E)-3-[1-[(6-chloro-3-pyridyl)methyl]-2-pyridylidene]-1,1,1-trifluoropropan-2-one (known from WO2013/144213) (CAS 1461743-15-6), N-[3-(benzylcarbamoyl)-4-chlorophenyl]-1-methyl-3-(pentafluoroethyl)-4-(trifluoromethyl)-1H-pyrazole-5-carboxamide (known from WO2010/051926) (CAS 1226889-14-0), 5-bromo-4-chloro-N-[4-chloro-2-methyl-6-(methylcarbamoyl)phenyl]-2-(3-chloro-2-pyridyl)pyrazole-3-carboxamide (known from CN103232431) (CAS 1449220-44-3), 4-[5-(3,5-dichlorophenyl)-4,5-dihydro-5-(trifluoromethyl)-3-isoxazolyl]-2-methyl-N-(cis-1-oxido-3-thietanyl)benzamide, 4-

[5-(3,5-dichlorophenyl)-4,5-dihydro-5-(trifluoromethyl)-3-isoxazolyl]-2-methyl-N-(trans-1-oxido-3-thietanyl)benzamide and 4-[(5S)-5-(3,5-dichlorophenyl)-4,5-dihydro-5-(trifluoromethyl)-3-isoxazolyl]-2-methyl-N-(cis-1-oxido-3-thietanyl)benzamide (known from WO 2013/050317 A1) (CAS 1332628-83-7), N-[3-chloro-1-(3-pyridinyl)-1H-pyrazol-4-yl]-N-ethyl-3-[(3,3,3-trifluoropropyl)sulphinyl]propanamide, (+)-N-[3-chloro-1-(3-pyridinyl)-1H-pyrazol-4-yl]-N-ethyl-3-[(3,3,3-trifluoropropyl)sulphinyl]propanamide and (-)-N-[3-chloro-1-(3-pyridinyl)-1H-pyrazol-4-yl]-N-ethyl-3-[(3,3,3-trifluoropropyl)sulphinyl]propanamide (known from WO 2013/162715 A2, WO 2013/162716 A2, US 2014/0213448 A1) (CAS 1477923-37-7), 5-[[(2E)-3-chloro-2-propen-1-yl]amino]-1-[2,6-dichloro-4-(trifluoromethyl)phenyl]-4-[(trifluoromethyl)sulphinyl]-1H-pyrazole-3-carbonitrile (known from CN 101337937 A) (CAS 1105672-77-2), 3-bromo-N-[4-chloro-2-methyl-6-[(methylamino)thioxomethyl]phenyl]-1-(3-chloro-2-pyridinyl)-1H-pyrazole-5-carboxamide, (Liudaibenjiaxuanan, known from CN 103109816 A) (CAS 1232543-85-9); N-[4-chloro-2-[[(1,1-dimethylethyl)amino]carbonyl]-6-methylphenyl]-1-(3-chloro-2-pyridinyl)-3-(fluoromethoxy)-1H-pyrazole-5-carboxamide (known from WO 2012/034403 A1) (CAS 1268277-22-0), N-[2-(5-amino-1,3,4-thiadiazol-2-yl)-4-chloro-6-methylphenyl]-3-bromo-1-(3-chloro-2-pyridinyl)-1H-pyrazole-5-carboxamide (known from WO 2011/085575 A1) (CAS 1233882-22-8), 4-[3-[2,6-dichloro-4-[(3,3-dichloro-2-propen-1-yl)oxy]phenoxy]propoxy]-2-methoxy-6-(trifluoromethyl)pyrimidine (known from CN 101337940 A) (CAS 1108184-52-6); (2E)- and 2(Z)-2-[2-(4-cyanophenyl)-1-[3-(trifluoromethyl)phenyl]ethylidene]-N-[4-(difluoromethoxy)phenyl]hydrazinecarboxamide (known from CN 101715774 A) (CAS 1232543-85-9); cyclopropanecarboxylic acid 3-(2,2-dichloroethenyl)-2,2-dimethyl-4-(1H-benzimidazol-2-yl)phenyl ester (known from CN 103524422 A) (CAS 1542271-46-4); (4aS)-7-chloro-2,5-dihydro-2-[[(methoxycarbonyl)[4-[(trifluoromethyl)thio]phenyl]amino]carbonyl]indeno[1,2-e][1,3,4]oxadiazine-4a(3H)-carboxylic acid methyl ester (known from CN 102391261 A) (CAS 1370358-69-2); 6-deoxy-3-O-ethyl-2,4-di-O-methyl-1-[N-[4-[1-[4-(1,1,2,2,2-pentafluoroethoxy)phenyl]-1H-1,2,4-triazole-3-yl]phenyl]carbamate]-α-L-mannopyranose (known from US 2014/0275503 A1) (CAS 1181213-14-8); 8-(2-cyclopropylmethoxy-4-trifluoromethylphenoxy)-3-(6-trifluoromethylpyridazin-3-yl)-3-azabicyclo[3.2.1]octane (CAS 1253850-56-4), (8-anti)-8-(2-cyclopropylmethoxy-4-trifluoromethylphenoxy)-3-(6-trifluoromethylpyridazin-3-yl)-3-azabicyclo[3.2.1]octane (CAS 933798-27-7), (8-syn)-8-(2-cyclopropylmethoxy-4-trifluoromethylphenoxy)-3-(6-trifluoromethylpyridazin-3-yl)-3-azabicyclo[3.2.1]octane (known from WO 2007040280 A1, WO 2007040282 A1) (CAS 934001-66-8) and N-[3-chloro-1-(3-

pyridinyl)-1H-pyrazol-4-yl]-N-ethyl-3-[(3,3,3-trifluoropropyl)thio]propanamide (known from WO 2015/058021 A1, WO 2015/058028 A1) (CAS 1477919-27-9).

Fungicides

The active compounds specified herein by their common name are known and described, for example, in "Pesticide Manual" (16th Ed. British Crop Protection Council) or searchable on the internet (for example: http://www.alanwood.net/pesticides).

All the mixing components mentioned in classes (1) to (15), as the case may be, may form salts with suitable bases or acids if they are capable of doing so on the basis of their functional groups. All the fungicidal mixing components mentioned in classes (1) to (15), as the case may be, may include tautomeric forms.

1) Ergosterol biosynthesis inhibitors, for example (1.001) cyproconazole, (1.002) difenoconazole, (1.003) epoxiconazole, (1.004) fenhexamid, (1.005) fenpropidin, (1.006) fenpropimorph, (1.007) fenpyrazamine, (1.008) fluquinconazole, (1.009) flutriafol, (1.010) imazalil, (1.011) imazalil sulphate, (1.012) ipconazole, (1.013) metconazole, (1.014) myclobutanil, (1.015) paclobutrazol, (1.016) prochloraz, (1.017) propiconazole, (1.018) prothioconazole, (1.019) pyrisoxazole, (1.020) spiroxamine, (1.021) tebuconazole, (1.022) tetraconazole, (1.023) triadimenol, (1.024) tridemorph, (1.025) triticonazole, (1.026) (1R,2S,5S)-5-(4-chlorobenzyl)-2-(chloromethyl)-2-methyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol, (1.027) (1S,2R,5R)-5-(4-chlorobenzyl)-2-(chloromethyl)-2-methyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol, (1.028) (2R)-2-(1-chlorocyclopropyl)-4-[(1R)-2,2-dichlorocyclopropyl]-1-(1H-1,2,4-triazol-1-yl)butan-2-ol (1.029) (2R)-2-(1-chlorocyclopropyl)-4-[(1S)-2,2-dichlorocyclopropyl]-1-(1H-1,2,4-triazol-1-yl)butan-2-ol, (1.030) (2R)-2-[4-(4-chlorophenoxy)-2-(trifluoromethyl)phenyl]-1-(1H-1,2,4-triazol-1-yl)propan-2-ol, (1.031) (2S)-2-(1-chlorocyclopropyl)-4-[(1R)-2,2-dichlorocyclopropyl]-1-(1H-1,2,4-triazol-1-yl)butan-2-ol, (1.032) (2S)-2-(1-chlorocyclopropyl)-4-[(1S)-2,2-dichlorocyclopropyl]-1-(1H-1,2,4-triazol-1-yl)butan-2-ol, (1.033) (2S)-2-[4-(4-chlorophenoxy)-2-(trifluoromethyl)phenyl]-1-(1H-1,2,4-triazol-1-yl)propan-2-ol, (1.034) (R)-[3-(4-chloro-2-fluorophenyl)-5-(2,4-difluorophenyl)-1,2-oxazol-4-yl](pyridin-3-yl)methanol, (1.035) (S)-[3-(4-chloro-2-fluorophenyl)-5-(2,4-difluorophenyl)-1,2-oxazol-4-yl](pyridin-3-yl)methanol, (1.036) [3-(4-chloro-2-fluorophenyl)-5-(2,4-difluorophenyl)-1,2-oxazol-4-yl](pyridin-3-yl)methanol, (1.037) 1-({(2R,4S)-2-[2-chloro-4-(4-chlorophenoxy)phenyl]-4-methyl-1,3-dioxolan-2-yl}methyl)-1H-1,2,4-triazole, (1.038) 1-({(2S,4S)-2-[2-chloro-4-(4-chlorophenoxy)phenyl]-4-methyl-1,3-dioxolan-2-

yl}methyl)-1H-1,2,4-triazole, (1.039) 1-{[3-(2-chlorophenyl)-2-(2,4-difluorophenyl)oxiran-2-yl]methyl}-1H-1,2,4-triazol-5-yl thiocyanate, (1.040) 1-{[rel(2R,3R)-3-(2-chlorophenyl)-2-(2,4-difluorophenyl)oxiran-2-yl]methyl}-1H-1,2,4-triazol-5-yl thiocyanate, (1.041) 1-{[rel(2R,3S)-3-(2-chlorophenyl)-2-(2,4-difluorophenyl)oxiran-2-yl]methyl}-1H-1,2,4-triazol-5-yl thiocyanate, (1.042) 2-[(2R,4R,5R)-1-(2,4-dichlorophenyl)-5-hydroxy-2,6,6-trimethylheptan-4-yl]-2,4-dihydro-3H-1,2,4-triazole-3-thione, (1.043) 2-[(2R,4R,5S)-1-(2,4-dichlorophenyl)-5-hydroxy-2,6,6-trimethylheptan-4-yl]-2,4-dihydro-3H-1,2,4-triazole-3-thione, (1.044) 2-[(2R,4S,5R)-1-(2,4-dichlorophenyl)-5-hydroxy-2,6,6-trimethylheptan-4-yl]-2,4-dihydro-3H-1,2,4-triazole-3-thione, (1.045) 2-[(2R,4S,5S)-1-(2,4-dichlorophenyl)-5-hydroxy-2,6,6-trimethylheptan-4-yl]-2,4-dihydro-3H-1,2,4-triazole-3-thione, (1.046) 2-[(2S,4R,5R)-1-(2,4-dichlorophenyl)-5-hydroxy-2,6,6-trimethylheptan-4-yl]-2,4-dihydro-3H-1,2,4-triazole-3-thione, (1.047) 2-[(2S,4R,5S)-1-(2,4-dichlorophenyl)-5-hydroxy-2,6,6-trimethylheptan-4-yl]-2,4-dihydro-3H-1,2,4-triazole-3-thione, (1.048) 2-[(2S,4S,5R)-1-(2,4-dichlorophenyl)-5-hydroxy-2,6,6-trimethylheptan-4-yl]-2,4-dihydro-3H-1,2,4-triazole-3-thione, (1.049) 2-[(2S,4S,5S)-1-(2,4-dichlorophenyl)-5-hydroxy-2,6,6-trimethylheptan-4-yl]-2,4-dihydro-3H-1,2,4-triazole-3-thione, (1.050) 2-[1-(2,4-dichlorophenyl)-5-hydroxy-2,6,6-trimethylheptan-4-yl]-2,4-dihydro-3H-1,2,4-triazole-3-thione, (1.051) 2-[2-chloro-4-(2,4-dichlorophenoxy)phenyl]-1-(1H-1,2,4-triazol-1-yl)propan-2-ol, (1.052) 2-[2-chloro-4-(4-chlorophenoxy)phenyl]-1-(1H-1,2,4-triazol-1-yl)butan-2-ol, (1.053) 2-[4-(4-chlorophenoxy)-2-(trifluoromethyl)phenyl]-1-(1H-1,2,4-triazol-1-yl)butan-2-ol, (1.054) 2-[4-(4-chlorophenoxy)-2-(trifluoromethyl)phenyl]-1-(1H-1,2,4-triazol-1-yl)pentan-2-ol, (1.055) 2-[4-(4-chlorophenoxy)-2-(trifluoromethyl)phenyl]-1-(1H-1,2,4-triazol-1-yl)propan-2-ol, (1.056) 2-{[3-(2-chlorophenyl)-2-(2,4-difluorophenyl)oxiran-2-yl]methyl}-2,4-dihydro-3H-1,2,4-triazole-3-thione, (1.057) 2-{[rel(2R,3R)-3-(2-chlorophenyl)-2-(2,4-difluorophenyl)oxiran-2-yl]methyl}-2,4-dihydro-3H-1,2,4-triazole-3-thione, (1.058) 2-{[rel(2R,3S)-3-(2-chlorophenyl)-2-(2,4-difluorophenyl)oxiran-2-yl]methyl}-2,4-dihydro-3H-1,2,4-triazole-3-thione, (1.059) 5-(4-chlorobenzyl)-2-(chloromethyl)-2-methyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol, (1.060) 5-(allylsulphanyl)-1-{[3-(2-chlorophenyl)-2-(2,4-difluorophenyl)oxiran-2-yl]methyl}-1H-1,2,4-triazole, (1.061) 5-(allylsulphanyl)-1-{[rel(2R,3R)-3-(2-chlorophenyl)-2-(2,4-difluorophenyl)oxiran-2-yl]methyl}-1H-1,2,4-triazole, (1.062) 5-(allylsulphanyl)-1-{[rel(2R,3S)-3-(2-chlorophenyl)-2-(2,4-difluorophenyl)oxiran-2-yl]methyl}-1H-1,2,4-triazole, (1.063) N'-(2,5-dimethyl-4-{[3-(1,1,2,2-tetrafluoroethoxy)phenyl]sulphanyl}phenyl)-N-ethyl-N-methylimidoformamide, (1.064) N'-(2,5-dimethyl-4-{[3-(2,2,2-trifluoroethoxy)phenyl]sulphanyl}phenyl)-N-ethyl-N-methylimidoformamide, (1.065) N'-(2,5-dimethyl-4-{[3-(2,2,3,3-

tetrafluoropropoxy)phenyl]sulphanyl}phenyl)-N-ethyl-N-methylimidoformamide, (1.066) N'-(2,5-dimethyl-4-{[3-(pentafluoroethoxy)phenyl]sulphanyl}phenyl)-N-ethyl-N-methylimidoformamide, (1.067) N'-(2,5-dimethyl-4-{3-[(1,1,2,2-tetrafluoroethyl)sulphanyl]phenoxy}phenyl)-N-ethyl-N-methylimidoformamide, (1.068) N'-(2,5-dimethyl-4-{3-[(2,2,2-trifluoroethyl)sulphanyl]phenoxy}phenyl)-N-ethyl-N-methylimidoformamide, (1.069) N'-(2,5-dimethyl-4-{3-[(2,2,3,3-tetrafluoropropyl)sulphanyl]phenoxy}phenyl)-N-ethyl-N-methylimidoformamide, (1.070) N'-(2,5-dimethyl-4-{3-[(pentafluoroethyl)sulphanyl]phenoxy}phenyl)-N-ethyl-N-methylimidoformamide, (1.071) N'-(2,5-dimethyl-4-phenoxyphenyl)-N-ethyl-N-methylimidoformamide, (1.072) N'-(4-{[3-(difluoromethoxy)phenyl]sulphanyl}-2,5-dimethylphenyl)-N-ethyl-N-methylimidoformamide, (1.073) N'-(4-{3-[(difluoromethyl)sulphanyl]phenoxy}-2,5-dimethylphenyl)-N-ethyl-N-methylimidoformamide, (1.074) N'-[5-bromo-6-(2,3-dihydro-1H-inden-2-yloxy)-2-methylpyridin-3-yl]-N-ethyl-N-methylimidoformamide, (1.075) N'-{4-[(4,5-dichloro-1,3-thiazol-2-yl)oxy]-2,5-dimethylphenyl}-N-ethyl-N-methylimidoformamide, (1.076) N'-{5-bromo-6-[(1R)-1-(3,5-difluorophenyl)ethoxy]-2-methylpyridin-3-yl}-N-ethyl-N-methylimidoformamide, (1.077) N'-{5-bromo-6-[(1S)-1-(3,5-difluorophenyl)ethoxy]-2-methylpyridin-3-yl}-N-ethyl-N-methylimidoformamide, (1.078) N'-{5-bromo-6-[(cis-4-isopropylcyclohexyl)oxy]-2-methylpyridin-3-yl}-N-ethyl-N-methylimidoformamide, (1.079) N'-{5-bromo-6-[(trans-4-isopropylcyclohexyl)oxy]-2-methylpyridin-3-yl}-N-ethyl-N-methylimidoformamide, (1.080) N'-{5-bromo-6-[1-(3,5-difluorophenyl)ethoxy]-2-methylpyridin-3-yl}-N-ethyl-N-methylimidoformamide.

2) Inhibitors of the respiratory chain in complex I or II, for example (2.001) benzovindiflupyr, (2.002) bixafen, (2.003) boscalid, (2.004) carboxin, (2.005) fluopyram, (2.006) flutolanil, (2.007) fluxapyroxad, (2.008) furametpyr, (2.009) isofetamid, (2.010) isopyrazam (anti-epimeric enantiomer 1R,4S,9S), (2.011) isopyrazam (anti-epimeric enantiomer 1S,4R,9R), (2.012) isopyrazam (anti-epimeric racemate 1RS,4SR,9SR), (2.013) isopyrazam (mixture of the syn-epimeric racemate 1RS,4SR,9RS and the anti-epimeric racemate 1RS,4SR,9SR), (2.014) isopyrazam (syn-epimeric enantiomer 1R,4S,9R), (2.015) isopyrazam (syn-epimeric enantiomer 1S,4R,9S), (2.016) isopyrazam (syn-epimeric racemate 1RS,4SR,9RS), (2.017) penflufen, (2.018) penthiopyrad, (2.019) pydiflumetofen, (2.020) pyraziflumid, (2.021) sedaxane, (2.022) 1,3-dimethyl-N-(1,1,3-trimethyl-2,3-dihydro-1H-inden-4-yl)-1H-pyrazole-4-carboxamide, (2.023) 1,3-dimethyl-N-[(3R)-1,1,3-trimethyl-2,3-dihydro-1H-inden-4-yl]-1H-pyrazole-4-carboxamide, (2.024) 1,3-dimethyl-N-[(3S)-1,1,3-trimethyl-2,3-dihydro-1H-inden-4-yl]-1H-

pyrazole-4-carboxamide, (2.025) 1-methyl-3-(trifluoromethyl)-N-[2'-(trifluoromethyl)biphenyl-2-yl]-1H-pyrazole-4-carboxamide, (2.026) 2-fluoro-6-(trifluoromethyl)-N-(1,1,3-trimethyl-2,3-dihydro-1H-inden-4-yl)benzamide, (2.027) 3-(difluoromethyl)-1-methyl-N-(1,1,3-trimethyl-2,3-dihydro-1H-inden-4-yl)-1H-pyrazole-4-carboxamide, (2.028) 3-(difluoromethyl)-1-methyl-N-[(3R)-1,1,3-trimethyl-2,3-dihydro-1H-inden-4-yl]-1H-pyrazole-4-carboxamide, (2.029) 3-(difluoromethyl)-1-methyl-N-[(3S)-1,1,3-trimethyl-2,3-dihydro-1H-inden-4-yl]-1H-pyrazole-4-carboxamide, (2.030) 3-(difluoromethyl)-N-(7-fluoro-1,1,3-trimethyl-2,3-dihydro-1H-inden-4-yl)-1-methyl-1H-pyrazole-4-carboxamide, (2.031) 3-(difluoromethyl)-N-[(3R)-7-fluoro-1,1,3-trimethyl-2,3-dihydro-1H-inden-4-yl]-1-methyl-1H-pyrazole-4-carboxamide, (2.032) 3-(difluoromethyl)-N-[(3S)-7-fluoro-1,1,3-trimethyl-2,3-dihydro-1H-inden-4-yl]-1-methyl-1H-pyrazole-4-carboxamide, (2.033) 5,8-difluoro-N-[2-(2-fluoro-4-{[4-(trifluoromethyl)pyridin-2-yl]oxy}phenyl)ethyl]quinazolin-4-amine, (2.034) N-(2-cyclopentyl-5-fluorobenzyl)-N-cyclopropyl-3-(difluoromethyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide, (2.035) N-(2-tert-butyl-5-methylbenzyl)-N-cyclopropyl-3-(difluoromethyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide, (2.036) N-(2-tert-butylbenzyl)-N-cyclopropyl-3-(difluoromethyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide, (2.037) N-(5-chloro-2-ethylbenzyl)-N-cyclopropyl-3-(difluoromethyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide, (2.038) N-(5-chloro-2-isopropylbenzyl)-N-cyclopropyl-3-(difluoromethyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide, (2.039) N-[(1R,4S)-9-(dichloromethylene)-1,2,3,4-tetrahydro-1,4-methanonaphthalen-5-yl]-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide, (2.040) N-[(1S,4R)-9-(dichloromethylene)-1,2,3,4-tetrahydro-1,4-methanonaphthalen-5-yl]-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide, (2.041) N-[1-(2,4-dichlorophenyl)-1-methoxypropan-2-yl]-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide, (2.042) N-[2-chloro-6-(trifluoromethyl)benzyl]-N-cyclopropyl-3-(difluoromethyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide, (2.043) N-[3-chloro-2-fluoro-6-(trifluoromethyl)benzyl]-N-cyclopropyl-3-(difluoromethyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide, (2.044) N-[5-chloro-2-(trifluoromethyl)benzyl]-N-cyclopropyl-3-(difluoromethyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide, (2.045) N-cyclopropyl-3-(difluoromethyl)-5-fluoro-1-methyl-N-[5-methyl-2-(trifluoromethyl)benzyl]-1H-pyrazole-4-carboxamide, (2.046) N-cyclopropyl-3-(difluoromethyl)-5-fluoro-N-(2-fluoro-6-isopropylbenzyl)-1-methyl-1H-pyrazole-4-carboxamide, (2.047) N-cyclopropyl-3-(difluoromethyl)-5-fluoro-N-(2-isopropyl-5-methylbenzyl)-1-methyl-1H-pyrazole-4-carboxamide, (2.048) N-cyclopropyl-3-(difluoromethyl)-5-fluoro-N-(2-isopropylbenzyl)-1-methyl-1H-pyrazole-4-carbothioamide, (2.049) N-cyclopropyl-3-(difluoromethyl)-5-fluoro-N-(2-isopropylbenzyl)-1-methyl-1H-

pyrazole-4-carboxamide, (2.050) N-cyclopropyl-3-(difluoromethyl)-5-fluoro-N-(5-fluoro-2-isopropylbenzyl)-1-methyl-1H-pyrazole-4-carboxamide, (2.051) N-cyclopropyl-3-(difluoromethyl)-N-(2-ethyl-4,5-dimethylbenzyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide, (2.052) N-cyclopropyl-3-(difluoromethyl)-N-(2-ethyl-5-fluorobenzyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide, (2.053) N-cyclopropyl-3-(difluoromethyl)-N-(2-ethyl-5-methylbenzyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide, (2.054) N-cyclopropyl-N-(2-cyclopropyl-5-fluorobenzyl)-3-(difluoromethyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide, (2.055) N-cyclopropyl-N-(2-cyclopropyl-5-methylbenzyl)-3-(difluoromethyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide, (2.056) N-cyclopropyl-N-(2-cyclopropylbenzyl)-3-(difluoromethyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide.

3) Inhibitors of the respiratory chain in complex III, for example (3.001) ametoctradin, (3.002) amisulbrom, (3.003) azoxystrobin, (3.004) coumethoxystrobin, (3.005) coumoxystrobin, (3.006) cyazofamid, (3.007) dimoxystrobin, (3.008) enoxastrobin, (3.009) famoxadon, (3.010) fenamidon, (3.011) flufenoxystrobin, (3.012) fluoxastrobin, (3.013) kresoxim-methyl, (3.014) metominostrobin, (3.015) orysastrobin, (3.016) picoxystrobin, (3.017) pyraclostrobin, (3.018) pyrametostrobin, (3.019) pyraoxystrobin, (3.020) trifloxystrobin (3.021) (2E)-2-{2-[({[(1E)-1-(3-{[(E)-1-fluoro-2-phenylvinyl]oxy}phenyl)ethylidene]amino}oxy)methyl]phenyl}-2-(methoxyimino)-N-methylacetamide, (3.022) (2E,3Z)-5-{[1-(4-chlorophenyl)-1H-pyrazol-3-yl]oxy}-2-(methoxyimino)-N,3-dimethylpent-3-enamide, (3.023) (2R)-2-{2-[(2,5-dimethylphenoxy)methyl]phenyl}-2-methoxy-N-methylacetamide, (3.024) (2S)-2-{2-[(2,5-dimethylphenoxy)methyl]phenyl}-2-methoxy-N-methylacetamide, (3.025) (3S,6S,7R,8R)-8-benzyl-3-[({3-[(isobutyryloxy)methoxy]-4-methoxypyridin-2-yl}carbonyl)amino]-6-methyl-4,9-dioxo-1,5-dioxonan-7-yl 2-methylpropanoate, (3.026) 2-{2-[(2,5-dimethylphenoxy)methyl]phenyl}-2-methoxy-N-methylacetamide, (3.027) N-(3-ethyl-3,5,5-trimethylcyclohexyl)-3-formamido-2-hydroxybenzamide, (3.028) (2E,3Z)-5-{[1-(4-chloro-2-fluorophenyl)-1H-pyrazol-3-yl]oxy}-2-(methoxyimino)-N,3-dimethylpent-3-enamide.

4) Mitosis and cell division inhibitors, for example (4.001) carbendazim, (4.002) diethofencarb, (4.003) ethaboxam, (4.004) fluopicolid, (4.005) pencycuron, (4.006) thiabendazole, (4.007) thiophanate-methyl, (4.008) zoxamide, (4.009) 3-chloro-4-(2,6-difluorophenyl)-6-methyl-5-phenylpyridazine, (4.010) 3-chloro-5-(4-chlorophenyl)-4-(2,6-difluorophenyl)-6-methylpyridazine, (4.011) 3-chloro-5-(6-chloropyridin-3-yl)-6-methyl-4-(2,4,6-trifluorophenyl)pyridazine, (4.012) 4-(2-bromo-4-fluorophenyl)-N-(2,6-difluorophenyl)-1,3-dimethyl-1H-pyrazol-5-amine, (4.013) 4-(2-bromo-4-fluorophenyl)-N-(2-bromo-6-

fluorophenyl)-1,3-dimethyl-1H-pyrazol-5-amine, (4.014) 4-(2-bromo-4-fluorophenyl)-N-(2-bromophenyl)-1,3-dimethyl-1H-pyrazol-5-amine, (4.015) 4-(2-bromo-4-fluorophenyl)-N-(2-chloro-6-fluorophenyl)-1,3-dimethyl-1H-pyrazol-5-amine, (4.016) 4-(2-bromo-4-fluorophenyl)-N-(2-chlorophenyl)-1,3-dimethyl-1H-pyrazol-5-amine, (4.017) 4-(2-bromo-4-fluorophenyl)-N-(2-fluorophenyl)-1,3-dimethyl-1H-pyrazol-5-amine, (4.018) 4-(2-chloro-4-fluorophenyl)-N-(2,6-difluorophenyl)-1,3-dimethyl-1H-pyrazol-5-amine, (4.019) 4-(2-chloro-4-fluorophenyl)-N-(2-chloro-6-fluorophenyl)-1,3-dimethyl-1H-pyrazol-5-amine, (4.020) 4-(2-chloro-4-fluorophenyl)-N-(2-chlorophenyl)-1,3-dimethyl-1H-pyrazol-5-amine, (4.021) 4-(2-chloro-4-fluorophenyl)-N-(2-fluorophenyl)-1,3-dimethyl-1H-pyrazol-5-amine, (4.022) 4-(4-chlorophenyl)-5-(2,6-difluorophenyl)-3,6-dimethylpyridazine, (4.023) N-(2-bromo-6-fluorophenyl)-4-(2-chloro-4-fluorophenyl)-1,3-dimethyl-1H-pyrazol-5-amine, (4.024) N-(2-bromophenyl)-4-(2-chloro-4-fluorophenyl)-1,3-dimethyl-1H-pyrazol-5-amine, (4.025) N-(4-chloro-2,6-difluorophenyl)-4-(2-chloro-4-fluorophenyl)-1,3-dimethyl-1H-pyrazol-5-amine.

5) Compounds having capacity for multisite activity, for example (5.001) Bordeaux mixture, (5.002) captafol, (5.003) captan, (5.004) chlorthalonil, (5.005) copper hydroxide, (5.006) copper naphthenate, (5.007) copper oxide, (5.008) copper oxychloride, (5.009) copper(2+) sulphate, (5.010) dithianon, (5.011) dodin, (5.012) folpet, (5.013) mancozeb, (5.014) maneb, (5.015) metiram, (5.016) zinc metiram, (5.017) copper oxine, (5.018) propineb, (5.019) sulphur and sulphur preparations including calcium polysulphide, (5.020) thiram, (5.021) zineb, (5.022) ziram.

6) Compounds capable of triggering host defence, for example (6.001) acibenzolar-S-methyl, (6.002) isotianil, (6.003) probenazole, (6.004) tiadinil.

7) Amino acid and/or protein biosynthesis inhibitors, for example (7.001) cyprodinil, (7.002) kasugamycin, (7.003) kasugamycin hydrochloride hydrate, (7.004) oxytetracycline, (7.005) pyrimethanil, (7.006) 3-(5-fluoro-3,3,4,4-tetramethyl-3,4-dihydroisoquinolin-1-yl)quinoline.

(8) ATP production inhibitors, for example (8.001) silthiofam.

9) Cell wall synthesis inhibitors, for example (9.001) benthiavalicarb, (9.002) dimethomorph, (9.003) flumorph, (9.004) iprovalicarb, (9.005) mandipropamid, (9.006) pyrimorph, (9.007) valifenalate, (9.008) (2E)-3-(4-tert-butylphenyl)-3-(2-chloropyridin-4-yl)-1-(morpholin-4-yl)prop-2-en-1-one, (9.009) (2Z)-3-(4-tert-butylphenyl)-3-(2-chloropyridin-4-yl)-1-(morpholin-4-yl)prop-2-en-1-one.

10) Lipid and membrane synthesis inhibitors, for example (10.001) propamocarb, (10.002) propamocarb hydrochloride, (10.003) tolclofos-methyl.

11) Melanin biosynthesis inhibitors, for example (11.001) tricyclazole, (11.002) 2,2,2-trifluoroethyl {3-methyl-1-[(4-methylbenzoyl)amino]butan-2-yl}carbamate.

12) Nucleic acid synthesis inhibitors, for example (12.001) benalaxyl, (12.002) benalaxyl-M (kiralaxyl), (12.003) metalaxyl, (12.004) metalaxyl-M (mefenoxam).

13) Signal transduction inhibitors, for example (13.001) fludioxonil, (13.002) iprodione, (13.003) procymidone, (13.004) proquinazid, (13.005) quinoxyfen, (13.006) vinclozolin.

14) Compounds that can act as uncouplers, for example (14.001) fluazinam, (14.002) meptyldinocap.

15) Further compounds, for example (15.001) abscisic acid, (15.002) benthiazole, (15.003) bethoxazin, (15.004) capsimycin, (15.005) carvone, (15.006) chinomethionat, (15.007) cufraneb, (15.008) cyflufenamid, (15.009) cymoxanil, (15.010) cyprosulfamide, (15.011) flutianil, (15.012) fosetyl-aluminium, (15.013) fosetyl-calcium, (15.014) fosetyl-sodium, (15.015) methyl isothiocyanate, (15.016) metrafenon, (15.017) mildiomycin, (15.018) natamycin, (15.019) nickel dimethyldithiocarbamate, (15.020) nitrothal-isopropyl, (15.021) oxamocarb, (15.022) oxathiapiprolin, (15.023) oxyfenthiin, (15.024) pentachlorophenol and salts, (15.025) phosphonic acid and salts thereof, (15.026) propamocarb-fosetylate, (15.027) pyriofenone (chlazafenone) (15.028) tebufloquin, (15.029) tecloftalam, (15.030) tolnifanide, (15.031) 1-(4-{4-[(5R)-5-(2,6-difluorophenyl)-4,5-dihydro-1,2-oxazol-3-yl]-1,3-thiazol-2-yl}piperidin-1-yl)-2-[5-methyl-3-(trifluoromethyl)-1H-pyrazol-1-yl]ethanone, (15.032) 1-(4-{4-[(5S)-5-(2,6-difluorophenyl)-4,5-dihydro-1,2-oxazol-3-yl]-1,3-thiazol-2-yl}piperidin-1-yl)-2-[5-methyl-3-(trifluoromethyl)-1H-pyrazol-1-yl]ethanone, (15.033) 2-(6-benzylpyridin-2-yl)quinazoline, (15.034) 2,6-dimethyl-1H,5H-[1,4]dithiino[2,3-c:5,6-c']dipyrrole-1,3,5,7(2H,6H)-tetrone, (15.035) 2-[3,5-bis(difluoromethyl)-1H-pyrazol-1-yl]-1-[4-(4-{5-[2-(prop-2-yn-1-yloxy)phenyl]-4,5-dihydro-1,2-oxazol-3-yl}-1,3-thiazol-2-yl)piperidin-1-yl]ethanone, (15.036) 2-[3,5-bis(difluoromethyl)-1H-pyrazol-1-yl]-1-[4-(4-{5-[2-chloro-6-(prop-2-yn-1-yloxy)phenyl]-4,5-dihydro-1,2-oxazol-3-yl}-1,3-thiazol-2-yl)piperidin-1-yl]ethanone, (15.037) 2-[3,5-bis(difluoromethyl)-1H-pyrazol-1-yl]-1-[4-(4-{5-[2-fluoro-6-(prop-2-yn-1-yloxy)phenyl]-4,5-dihydro-1,2-oxazol-3-yl}-1,3-thiazol-2-yl)piperidin-1-yl]ethanone, (15.038) 2-[6-(3-fluoro-4-methoxyphenyl)-5-methylpyridin-2-yl]quinazoline, (15.039) 2-{(5R)-3-[2-(1-{[3,5-bis(difluoromethyl)-1H-pyrazol-1-yl]acetyl}piperidin-4-yl)-1,3-thiazol-4-yl]-4,5-dihydro-1,2-oxazol-5-yl}-3-

chlorophenyl methanesulphonate, (15.040) 2-{(5S)-3-[2-(1-{[3,5-bis(difluoromethyl)-1H-pyrazol-1-yl]acetyl}piperidin-4-yl)-1,3-thiazol-4-yl]-4,5-dihydro-1,2-oxazol-5-yl}-3-chlorophenyl methanesulphonate, (15.041) 2-{2-[(7,8-difluoro-2-methylquinolin-3-yl)oxy]-6-fluorophenyl}propan-2-ol, (15.042) 2-{2-fluoro-6-[(8-fluoro-2-methylquinolin-3-yl)oxy]phenyl}propan-2-ol, (15.043) 2-{3-[2-(1-{[3,5-bis(difluoromethyl)-1H-pyrazol-1-yl]acetyl}piperidin-4-yl)-1,3-thiazol-4-yl]-4,5-dihydro-1,2-oxazol-5-yl}-3-chlorophenyl methanesulphonate, (15.044) 2-{3-[2-(1-{[3,5-bis(difluoromethyl)-1H-pyrazol-1-yl]acetyl}piperidin-4-yl)-1,3-thiazol-4-yl]-4,5-dihydro-1,2-oxazol-5-yl}phenyl methanesulphonate, (15.045) 2-phenylphenol and salts thereof, (15.046) 3-(4,4,5-trifluoro-3,3-dimethyl-3,4-dihydroisoquinolin-1-yl)quinoline, (15.047) 3-(4,4-difluoro-3,3-dimethyl-3,4-dihydroisoquinolin-1-yl)quinoline, (15.048) 4-amino-5-fluoropyrimidin-2-ol (tautomeric form: 4-amino-5-fluoropyrimidin-2(1H)-one), (15.049) 4-oxo-4-[(2-phenylethyl)amino]butyric acid, (15.050) 5-amino-1,3,4-thiadiazole-2-thiol, (15.051) 5-chloro-N'-phenyl-N'-(prop-2-yn-1-yl)thiophene 2-sulphonohydrazide, (15.052) 5-fluoro-2-[(4-fluorobenzyl)oxy]pyrimidin-4-amine, (15.053) 5-fluoro-2-[(4-methylbenzyl)oxy]pyrimidin-4-amine, (15.054) 9-fluoro-2,2-dimethyl-5-(quinolin-3-yl)-2,3-dihydro-1,4-benzoxazepine, (15.055) but-3-yn-1-yl {6-[({[(Z)-(1-methyl-1H-tetrazol-5-yl)(phenyl)methylene]amino}oxy)methyl]pyridin-2-yl}carbamate, (15.056) ethyl (2Z)-3-amino-2-cyano-3-phenylacrylate, (15.057) phenazine-1-carboxylic acid, (15.058) propyl 3,4,5-trihydroxybenzoate, (15.059) quinolin-8-ol, (15.060) quinolin-8-ol sulphate (2:1), (15.061) tert-butyl {6-[({[(1-methyl-1H-tetrazol-5-yl)(phenyl)methylene]amino}oxy)methyl]pyridin-2-yl}carbamate.

Biological pesticides as mixing components

The compounds of the formula (I) can be combined with biological pesticides.

Biological pesticides especially include bacteria, fungi, yeasts, plant extracts and products formed by microorganisms, including proteins and secondary metabolites.

Biological pesticides include bacteria such as spore-forming bacteria, root-colonizing bacteria and bacteria which act as biological insecticides, fungicides or nematicides.

Examples of such bacteria which are used or can be used as biological pesticides are:

Bacillus amyloliquefaciens, strain FZB42 (DSM 231179), or *Bacillus cereus,* especially *B. cereus*

strain CNCM I-1562 or *Bacillus firmus*, strain I-1582 (Accession number CNCM I-1582) or *Bacillus pumilus*, especially strain GB34 (Accession No. ATCC 700814) and strain QST2808 (Accession No. NRRL B-30087), or *Bacillus subtilis*, especially strain GB03 (Accession No. ATCC SD-1397), or *Bacillus subtilis* strain QST713 (Accession No. NRRL B-21661) or *Bacillus subtilis* strain OST 30002 (Accession No. NRRL B-50421), *Bacillus thuringiensis*, especially *B. thuringiensis* subspecies *israelensis* (serotype H-14), strain AM65-52 (Accession No. ATCC 1276), or *B. thuringiensis subsp. aizawai*, especially strain ABTS-1857 (SD-1372), or *B. thuringiensis subsp. kurstaki* strain HD-1, or *B. thuringiensis subsp. tenebrionis* strain NB 176 (SD-5428), *Pasteuria penetrans*, *Pasteuria spp.* (Rotylenchulus reniformis nematode)-PR3 (Accession Number ATCC SD-5834), *Streptomyces microflavus* strain AQ6121 (= QRD 31.013, NRRL B-50550), *Streptomyces galbus* strain AQ 6047 (Accession Number NRRL 30232).

Examples of fungi and yeasts which are used or can be used as biological pesticides are:

Beauveria bassiana, in particular strain ATCC 74040, *Coniothyrium minitans*, in particular strain CON/M/91-8 (Accession No. DSM-9660), *Lecanicillium spp.*, in particular strain HRO LEC 12, *Lecanicillium lecanii* (formerly known as *Verticillium lecanii*), in particular strain KV01, *Metarhizium anisopliae*, in particular strain F52 (DSM3884/ ATCC 90448), *Metschnikowia fructicola*, in particular strain NRRL Y-30752, *Paecilomyces fumosoroseus* (new: *Isaria fumosorosea*), in particular strain IFPC 200613, or strain Apopka 97 (Accession No. ATCC 20874), *Paecilomyces lilacinus*, in particular *P. lilacinus* strain 251 (AGAL 89/030550), *Talaromyces flavus*, in particular strain V117b, *Trichoderma atroviride*, in particular strain SC1 (Accession Number CBS 122089), *Trichoderma harzianum*, in particular *T. harzianum rifai* T39 (Accession Number CNCM I-952).

Examples of viruses which are used or can be used as biological pesticides are:

Adoxophyes orana (summer fruit tortrix) granulosis virus (GV), *Cydia pomonella* (codling moth) granulosis virus (GV), *Helicoverpa armigera* (cotton bollworm) nuclear polyhedrosis virus (NPV), *Spodoptera exigua* (beet armyworm) mNPV, *Spodoptera frugiperda* (fall armyworm) mNPV, *Spodoptera littoralis* (African cotton leafworm) NPV.

Also included are bacteria and fungi which are added as 'inoculant' to plants or plant parts or plant organs and which, by virtue of their particular properties, promote plant growth and plant health. Examples include:

Agrobacterium spp., *Azorhizobium caulinodans*, *Azospirillum spp.*, *Azotobacter spp.*, *Bradyrhizobium spp.*, *Burkholderia spp.*, especially *Burkholderia cepacia* (formerly known as *Pseudomonas cepacia*), *Gigaspora spp.*, or *Gigaspora monosporum*, *Glomus spp.*, *Laccaria spp.*, *Lactobacillus buchneri*, *Paraglomus spp.*, *Pisolithus tinctorus*, *Pseudomonas spp.*, *Rhizobium spp.*, especially *Rhizobium trifolii*, *Rhizopogon spp.*, *Scleroderma spp.*, *Suillus spp.*, *Streptomyces spp.*

Examples of plant extracts and products formed by microorganisms, including proteins and secondary metabolites, which are used or can be used as biological pesticides are:

Allium sativum, Artemisia absinthium, azadirachtin, Biokeeper WP, Cassia nigricans, Celastrus angulatus, Chenopodium anthelminticum, chitin, Armour-Zen, Dryopteris filix-mas, Equisetum arvense, Fortune Aza, Fungastop, Heads Up (Chenopodium quinoa saponin extract), pyrethrum/pyrethrins, Quassia amara, Quercus, Quillaja, Regalia, "Requiem ™ Insecticide", rotenone, ryania/ryanodine, Symphytum officinale, Tanacetum vulgare, thymol, Triact 70, TriCon, Tropaeulum majus, Urtica dioica, Veratrin, Viscum album, Brassicaceae extract, especially oilseed rape powder or mustard powder.

Safeners as mixing components

The compounds of the formula (I) can be combined with safeners, for example benoxacor, cloquintocet (-mexyl), cyometrinil, cyprosulfamide, dichlormid, fenchlorazole (-ethyl), fenclorim, flurazole, fluxofenim, furilazole, isoxadifen (-ethyl), mefenpyr (-diethyl), naphthalic anhydride, oxabetrinil, 2-methoxy-N-({4-[(methylcarbamoyl)amino]phenyl}sulphonyl)benzamide (CAS 129531-12-0), 4-(dichloroacetyl)-1-oxa-4-azaspiro[4.5]decane (CAS 71526-07-3), 2,2,5-trimethyl-3-(dichloroacetyl)-1,3-oxazolidine (CAS 52836-31-4).

Plants and plant parts

All plants and plant parts can be treated in accordance with the invention. Plants are understood here to mean all plants and populations of plants, such as desirable and undesirable wild plants or crop plants (including naturally occurring crop plants), for example cereals (wheat, rice, triticale, barley, rye, oats), maize, soya beans, potatoes, sugar beet, sugar cane, tomatoes, bell peppers, cucumbers, melons, carrots, water melons, onions, lettuce, spinach, leeks, beans,

Brassica oleracea (e.g. cabbage) and other vegetable species, cotton, tobacco, oilseed rape, and also fruit plants (the fruits being apples, pears, citrus fruits and grapes). Crop plants may be plants which can be obtained by conventional breeding and optimization methods or by biotechnological and genetic engineering methods or combinations of these methods, including the transgenic plants and including the plant cultivars which are protectable or non-protectable by plant breeders' rights. Plants shall be understood to mean all development stages such as seed, seedlings, young (immature) plants, up to and including mature plants. Plant parts shall be understood to mean all parts and organs of the plants above and below ground, such as shoot, leaf, flower and root, examples given being leaves, needles, stalks, stems, flowers, fruit bodies, fruits and seeds, and also roots, tubers and rhizomes. Plant parts also include harvested plants or harvested plant parts and vegetative and generative propagation material, for example cuttings, tubers, rhizomes, slips and seeds.

The treatment according to the invention of the plants and parts of plants with the compounds of the formula (I) is effected directly or by allowing the compounds to act on the surroundings, the habitat or the storage space thereof by the customary treatment methods, for example by dipping, spraying, evaporating, fogging, scattering, painting on, injecting, and, in the case of propagation material, especially in the case of seeds, also by applying one or more coats.

As already mentioned above, it is possible to treat all plants and their parts in accordance with the invention. In a preferred embodiment, wild plant species and plant cultivars, or those obtained by conventional biological breeding methods, such as crossing or protoplast fusion, and parts thereof, are treated. In a further preferred embodiment, transgenic plants and plant cultivars obtained by genetic engineering methods, if appropriate in combination with conventional methods (genetically modified organisms), and parts thereof are treated. The term "parts" or "parts of plants" or "plant parts" has been explained above. Particular preference is given in accordance with the invention to treating plants of the respective commercially customary plant cultivars or those that are in use. Plant cultivars are understood to mean plants having new properties ("traits") and which have been obtained by conventional breeding, by mutagenesis or by recombinant DNA techniques. They may be cultivars, varieties, biotypes or genotypes.

Transgenic plants, seed treatment and integration events

The preferred transgenic plants or plant cultivars (those obtained by genetic engineering) which are to be treated in accordance with the invention include all plants which, through the genetic modification, received genetic material which imparts particular advantageous useful properties

("traits") to these plants. Examples of such properties are better plant growth, increased tolerance to high or low temperatures, increased tolerance to drought or to levels of water or soil salinity, enhanced flowering performance, easier harvesting, accelerated ripening, higher harvest yields, higher quality and/or higher nutritional value of the harvested products, better capability for storage and/or processability of the harvested products. Further and particularly emphasized examples of such properties are increased resistance of the plants to animal and microbial pests, such as insects, arachnids, nematodes, mites, slugs and snails, owing, for example, to toxins formed in the plants, in particular those formed in the plants by the genetic material from Bacillus thuringiensis (for example by the genes CryIA(a), CryIA(b), CryIA(c), CryIIA, CryIIIA, CryIIIB2, Cry9c, Cry2Ab, Cry3Bb and CryIF and also combinations thereof), and also increased resistance of the plants to phytopathogenic fungi, bacteria and/or viruses caused, for example, by systemic acquired resistance (SAR), systemin, phytoalexins, elicitors and resistance genes and correspondingly expressed proteins and toxins, and also increased tolerance of the plants to certain active herbicidal ingredients, for example imidazolinones, sulphonylureas, glyphosate or phosphinothricin (for example the "PAT" gene). The genes which impart the desired properties ("traits") in question may also be present in combinations with one another in the transgenic plants. Examples of transgenic plants mentioned include the important crop plants, such as cereals (wheat, rice, triticale, barley, rye, oats), maize, soya beans, potatoes, sugar beet, sugar cane, tomatoes, peas and other types of vegetable, cotton, tobacco, oilseed rape and also fruit plants (the fruits being apples, pears, citrus fruits and grapevines), particular emphasis being given to maize, soya beans, wheat, rice, potatoes, cotton, sugar cane, tobacco and oilseed rape. Properties ("traits") which are particularly emphasized are the increased resistance of the plants to insects, arachnids, nematodes and slugs and snails.

Crop protection – types of treatment

The plants and plant parts are treated with the compounds of the formula (I) directly or by action on their surroundings, habitat or storage space using customary treatment methods, for example by dipping, spraying, atomizing, irrigating, evaporating, dusting, fogging, broadcasting, foaming, painting, spreading-on, injecting, watering (drenching), drip irrigating and, in the case of propagation material, in particular in the case of seed, additionally by dry seed treatment, liquid seed treatment, slurry treatment, by incrusting, by coating with one or more coats, etc. It is furthermore possible to apply the compounds of the formula (I) by the ultra-low volume method or to inject the application form or the compound of the formula (I) itself into the soil.

A preferred direct treatment of the plants is foliar application, meaning that the compounds of the formula (I) are applied to the foliage, in which case the treatment frequency and the application rate should be adjusted according to the level of infestation with the pest in question.

In the case of systemically active ingredients, the compounds of the formula (I) also access the plants via the root system. The plants are then treated by the action of the compounds of the formula (I) on the habitat of the plant. This can be accomplished, for example, by drenching, or by mixing into the soil or the nutrient solution, meaning that the locus of the plant (e.g. soil or hydroponic systems) is impregnated with a liquid form of the compounds of the formula (I), or by soil application, meaning that the compounds of the formula (I) according to the invention are introduced in solid form (e.g. in the form of granules) into the locus of the plants. In the case of paddy rice crops, this can also be accomplished by metering the compound of the formula (I) in a solid application form (for example as granules) into a flooded paddy field.

Seed treatment

The control of animal pests by the treatment of the seed of plants has long been known and is the subject of constant improvements. Nevertheless, the treatment of seed entails a series of problems which cannot always be solved in a satisfactory manner. Thus, it is desirable to develop methods for protecting the seed and the germinating plant which dispense with, or at least reduce considerably, the additional application of pesticides during storage, after sowing or after emergence of the plants. It is additionally desirable to optimize the amount of active ingredient used so as to provide optimum protection for the seed and the germinating plant from attack by animal pests, but without damage to the plant itself by the active ingredient used. In particular, methods for the treatment of seed should also take account of the intrinsic insecticidal or nematicidal properties of pest-resistant or -tolerant transgenic plants in order to achieve optimal protection of the seed and also the germinating plant with a minimum expenditure on pesticides.

The present invention therefore in particular also relates to a method for the protection of seed and germinating plants from attack by pests, by treating the seed with one of the compounds of the formula (I). The method according to the invention for protecting seed and germinating plants against attack by pests further comprises a method in which the seed is treated simultaneously in one operation or sequentially with a compound of the formula (I) and a mixing component. It further also comprises a method where the seed is treated at different times with a compound of the formula (I) and a mixing component.

The invention likewise relates to the use of the compounds of the formula (I) for the treatment of seed for protecting the seed and the resulting plant from animal pests.

The invention further relates to seed which has been treated with a compound of the formula (I) according to the invention for protection from animal pests. The invention also relates to seed which has been treated simultaneously with a compound of the formula (I) and a mixing component. The invention further relates to seed which has been treated at different times with a compound of the formula (I) and a mixing component. In the case of seed which has been treated at different times with a compound of the formula (I) and a mixing component, the individual substances may be present on the seed in different layers. In this case, the layers comprising a compound of the formula (I) and mixing components may optionally be separated by an intermediate layer. The invention also relates to seed in which a compound of the formula (I) and a mixing component have been applied as part of a coating or as a further layer or further layers in addition to a coating.

The invention further relates to seed which, after the treatment with a compound of the formula (I), is subjected to a film-coating process to prevent dust abrasion on the seed.

One of the advantages that occur when a compound of the formula (I) acts systemically is that the treatment of the seed protects not only the seed itself but also the plants resulting therefrom, after emergence, from animal pests. In this way, the immediate treatment of the crop at the time of sowing or shortly thereafter can be dispensed with.

A further advantage is that the treatment of the seed with a compound of the formula (I) can enhance germination and emergence of the treated seed.

It is likewise considered to be advantageous that compounds of the formula (I) can especially also be used for transgenic seed.

Furthermore, compounds of the formula (I) can be employed in combination with compositions of signalling technology, leading to better colonization by symbionts such as, for example, rhizobia, mycorrhizae and/or endophytic bacteria or fungi, and/or to optimized nitrogen fixation.

The compounds of the formula (I) are suitable for protection of seed of any plant variety which is used in agriculture, in the greenhouse, in forests or in horticulture. More particularly, this is the seed of cereals (for example wheat, barley, rye, millet and oats), maize, cotton, soya beans, rice, potatoes, sunflowers, coffee, tobacco, canola, oilseed rape, beets (for example sugar beets and

fodder beets), peanuts, vegetables (for example tomatoes, cucumbers, beans, cruciferous vegetables, onions and lettuce), fruit plants, lawns and ornamental plants. Of particular significance is the treatment of the seed of cereals (such as wheat, barley, rye and oats), maize, soya beans, cotton, canola, oilseed rape, vegetables and rice.

As already mentioned above, the treatment of transgenic seed with a compound of the formula (I) is also of particular importance. This involves the seed of plants which generally contain at least one heterologous gene which controls the expression of a polypeptide having insecticidal and/or nematicidal properties in particular. The heterologous genes in transgenic seed may originate from microorganisms such as Bacillus, Rhizobium, Pseudomonas, Serratia, Trichoderma, Clavibacter, Glomus or Gliocladium. The present invention is particularly suitable for treatment of transgenic seed which comprises at least one heterologous gene originating from Bacillus sp. The heterologous gene is more preferably derived from Bacillus thuringiensis.

In the context of the present invention, the compound of the formula (I) is applied to the seed. The seed is preferably treated in a state in which it is sufficiently stable for no damage to occur in the course of treatment. In general, the seed can be treated at any time between harvest and sowing. It is customary to use seed which has been separated from the plant and freed from cobs, shells, stalks, coats, hairs or the flesh of the fruits. For example, it is possible to use seed which has been harvested, cleaned and dried down to a moisture content which allows storage. Alternatively, it is also possible to use seed which, after drying, has been treated with, for example, water and then dried again, for example priming. In the case of rice seed, it is also possible to use seed which has been soaked, for example in water, until it reaches a certain stage of the rice embryo ("pigeon breast stage") which results in stimulation of germination and more uniform emergence.

When treating the seed, care must generally be taken that the amount of the compound of the formula (I) applied to the seed and/or the amount of further additives is chosen in such a way that the germination of the seed is not adversely affected, or that the resulting plant is not damaged. This has to be ensured particularly in the case of active ingredients which can exhibit phytotoxic effects at certain application rates.

In general, the compounds of the formula (I) are applied to the seed in the form of a suitable formulation. Suitable formulations and processes for seed treatment are known to the person skilled in the art.

The compounds of the formula (I) can be converted to the customary seed-dressing formulations, such as solutions, emulsions, suspensions, powders, foams, slurries or other coating compositions for seed, and also ULV formulations.

These formulations are prepared in a known manner, by mixing the compounds of the formula (I) with customary additives, for example customary extenders and solvents or diluents, dyes, wetting agents, dispersants, emulsifiers, antifoams, preservatives, secondary thickeners, adhesives, gibberellins, and also water.

Dyes which may be present in the seed-dressing formulations usable in accordance with the invention are all dyes which are customary for such purposes. It is possible to use either pigments, which are sparingly soluble in water, or dyes, which are soluble in water. Examples include the dyes known by the names Rhodamine B, C.I. Pigment Red 112 and C.I. Solvent Red 1.

Useful wetting agents which may be present in the seed-dressing formulations usable in accordance with the invention are all substances which promote wetting and which are customary for the formulation of active agrochemical ingredients. Usable with preference are alkyl naphthalenesulphonates, such as diisopropyl or diisobutyl naphthalenesulphonates.

Suitable dispersants and/or emulsifiers which may be present in the seed-dressing formulations usable in accordance with the invention are all nonionic, anionic and cationic dispersants customary for the formulation of active agrochemical ingredients. Nonionic or anionic dispersants or mixtures of nonionic or anionic dispersants can be used with preference. Suitable nonionic dispersants especially include ethylene oxide/propylene oxide block polymers, alkylphenol polyglycol ethers and tristyrylphenol polyglycol ethers, and the phosphated or sulphated derivatives thereof. Suitable anionic dispersants are especially lignosulphonates, polyacrylic acid salts and arylsulphonate-formaldehyde condensates.

Antifoams which may be present in the seed-dressing formulations usable in accordance with the invention are all foam-inhibiting substances customary for the formulation of active agrochemical ingredients. Silicone antifoams and magnesium stearate can be used with preference.

Preservatives which may be present in the seed-dressing formulations usable in accordance with the invention are all substances usable for such purposes in agrochemical compositions. Examples include dichlorophene and benzyl alcohol hemiformal.

Secondary thickeners which may be present in the seed-dressing formulations usable in accordance with the invention are all substances which can be used for such purposes in agrochemical compositions. Preferred examples include cellulose derivatives, acrylic acid derivatives, xanthan, modified clays and finely divided silica.

Useful stickers which may be present in the seed-dressing formulations usable in accordance with the invention are all customary binders usable in seed-dressing products. Preferred examples include polyvinylpyrrolidone, polyvinyl acetate, polyvinyl alcohol and tylose.

Gibberellins which may be present in the seed-dressing formulations usable in accordance with the invention are preferably the gibberellins A1, A3 (= gibberellic acid), A4 and A7; particular preference is given to using gibberellic acid. The gibberellins are known (cf. R. Wegler "Chemie der Pflanzenschutz- and Schädlingsbekämpfungsmittel", vol. 2, Springer Verlag, 1970, pp. 401-412).

The seed-dressing formulations usable in accordance with the invention can be used to treat a wide variety of different kinds of seed, either directly or after prior dilution with water. For instance, the concentrates or the preparations obtainable therefrom by dilution with water can be used to dress the seed of cereals, such as wheat, barley, rye, oats and triticale, and also the seed of maize, rice, oilseed rape, peas, beans, cotton, sunflowers, soya beans and beets, or else a wide variety of different vegetable seed. The seed-dressing formulations usable in accordance with the invention, or the dilute use forms thereof, can also be used to dress seed of transgenic plants.

For the treatment of seed with the seed-dressing formulations usable in accordance with the invention, or the use forms prepared therefrom through the addition of water, all mixing units usable customarily for the seed dressing are useful. Specifically, the procedure in seed dressing is to place the seed into a mixer in batchwise or continuous operation, to add the particular desired amount of seed-dressing formulations, either as such or after prior dilution with water, and to mix until the formulation is distributed homogeneously on the seed. If appropriate, this is followed by a drying operation.

The application rate of the seed-dressing formulations usable in accordance with the invention can be varied within a relatively wide range. It is guided by the particular content of the compounds of the formula (I) in the formulations and by the seed. The application rates of the compound of the formula (I) are generally between 0.001 and 50 g per kilogram of seed, preferably between 0.01 and 15 g per kilogram of seed.

Animal health

In the animal health field, i.e. the field of veterinary medicine, the compounds of the formula (I) are active against animal parasites, in particular ectoparasites or endoparasites. The term "endoparasite" includes especially helminths and protozoa, such as coccidia. Ectoparasites are typically and preferably arthropods, especially insects or acarids.

In the field of veterinary medicine, the compounds of the formula (I) having favourable endotherm toxicity are suitable for controlling parasites which occur in animal breeding and animal husbandry in livestock, breeding animals, zoo animals, laboratory animals, experimental animals and domestic animals. They are active against all or specific stages of development of the parasites.

Agricultural livestock include, for example, mammals, such as sheep, goats, horses, donkeys, camels, buffalo, rabbits, reindeer, fallow deer and especially cattle and pigs; or poultry such as turkeys, ducks, geese and especially chickens; or fish or crustaceans, for example in aquaculture; or, as the case may be, insects such as bees.

Domestic animals include, for example, mammals, such as hamsters, guinea pigs, rats, mice, chinchillas, ferrets, and particularly dogs, cats, caged birds; reptiles, amphibians or aquarium fish.

In a specific embodiment, the compounds of the formula (I) are administered to mammals.

In another specific embodiment, the compounds of the formula (I) are administered to birds, namely caged birds or particularly poultry.

Use of the compounds of the formula (I) for the control of animal parasites is intended to reduce or prevent illness, cases of death and reductions in performance (in the case of meat, milk, wool, hides, eggs, honey and the like), such that more economical and simpler animal husbandry is enabled and better animal well-being is achievable.

In relation to the field of animal health, the term "control" or "controlling" in the present context means that the compounds of the formula (I) are effective in reducing the incidence of the particular parasite in an animal infected with such parasites to an innocuous degree. More specifically, "controlling" in the present context means that the compounds of the formula (I) kill the respective parasite, inhibit its growth, or inhibit its proliferation.

The arthropods include, for example, but are not limited to,

from the order of Anoplurida, for example, Haematopinus spp., Linognathus spp., Pediculus spp., Phtirus spp. and Solenopotes spp.;

from the order of Mallophagida and the suborders Amblycerina and Ischnocerina, for example, Bovicola spp., Damalina spp., Felicola spp.; Lepikentron spp., Menopon spp., Trichodectes spp., Trimenopon spp., Trinoton spp., Werneckiella spp;

from the order of Diptera and the suborders Nematocerina and Brachycerina, for example, Aedes spp., Anopheles spp., Atylotus spp., Braula spp., Calliphora spp., Chrysomyia spp., Chrysops spp., Culex spp., Culicoides spp., Eusimulium spp., Fannia spp., Gasterophilus spp., Glossina spp., Haematobia spp., Haematopota spp., Hippobosca spp., Hybomitra spp., Hydrotaea spp., Hypoderma spp., Lipoptena spp., Lucilia spp., Lutzomyia spp., Melophagus spp., Morellia spp., Musca spp., Odagmia spp., Oestrus spp., Philipomyia spp., Phlebotomus spp., Rhinoestrus spp., Sarcophaga spp., Simulium spp., Stomoxys spp., Tabanus spp., Tipula spp., Wilhelmia spp., Wohlfahrtia spp.;

from the order of Siphonapterida, for example, Ceratophyllus spp., Ctenocephalides spp., Pulex spp., Tunga spp., Xenopsylla spp.;

from the order of Heteropterida, for example, Cimex spp., Panstrongylus spp., Rhodnius spp., Triatoma spp.; and also nuisance and hygiene pests from the order Blattarida.

In addition, in the case of the arthropods, mention should be made by way of example, without limitation, of the following Acari:

from the subclass of Acari (Acarina) and the order of Metastigmata, for example from the family of Argasidae such as Argas spp., Ornithodorus spp., Otobius spp., from the family of Ixodidae such as Amblyomma spp., Dermacentor spp., Haemaphysalis spp., Hyalomma spp., Ixodes spp., Rhipicephalus (Boophilus) spp., Rhipicephalus spp. (the original genus of multi-host ticks); from the order of Mesostigmata such as Dermanyssus spp., Ornithonyssus spp., Pneumonyssus spp., Raillietia spp., Sternostoma spp., Tropilaelaps spp., Varroa spp.; from the order of the Actinedida (Prostigmata), for example, Acarapis spp., Cheyletiella spp., Demodex spp., Listrophorus spp., Myobia spp., Neotrombicula spp., Ornithocheyletia spp., Psorergates spp., Trombicula spp.; and from the order of the Acaridida (Astigmata), for example, Acarus spp., Caloglyphus spp., Chorioptes spp., Cytodites spp., Hypodectes spp., Knemidocoptes spp., Laminosioptes spp., Notoedres spp., Otodectes spp., Psoroptes spp., Pterolichus spp., Sarcoptes spp., Trixacarus spp., Tyrophagus spp.

Examples of parasitic protozoa include, but are not limited to:

Mastigophora (Flagellata), such as:

Metamonada: from the order of Diplomonadida, for example, Giardia spp., Spironucleus spp.

Parabasala: from the order of Trichomonadida, for example, Histomonas spp., Pentatrichomonas spp., Tetratrichomonas spp., Trichomonas spp., Tritrichomonas spp.

Euglenozoa: from the order of Trypanosomatida, for example, Leishmania spp., Trypanosoma spp.

Sarcomastigophora (Rhizopoda) such as Entamoebidae, for example, Entamoeba spp., Centramoebidae, for example Acanthamoeba sp., Euamoebidae, e.g. Hartmanella sp.

Alveolata such as Apicomplexa (Sporozoa): e.g. Cryptosporidium spp.; from the order of Eimeriida, for example, Besnoitia spp., Cystoisospora spp., Eimeria spp., Hammondia spp., Isospora spp., Neospora spp., Sarcocystis spp., Toxoplasma spp.; from the order of Adeleida, for example, Hepatozoon spp., Klossiella spp.; from the order of Haemosporida, for example, Leucocytozoon spp., Plasmodium spp.; from the order of Piroplasmida, for example, Babesia spp., Ciliophora spp., Echinozoon spp., Theileria spp.; from the order of Vesibuliferida, for example, Balantidium spp., Buxtonella spp.

Microspora such as Encephalitozoon spp., Enterocytozoon spp., Globidium spp., Nosema spp., and also, for example, Myxozoa spp.

The helminths that are pathogenic to humans or animals include, for example, Acanthocephala, nematodes, Pentastoma and Platyhelminthes (e.g. Monogenea, cestodes and trematodes).

Illustrative helminths include, but are not limited to:

Monogenea: e.g. Dactylogyrus spp., Gyrodactylus spp., Microbothrium spp., Polystoma spp., Troglecephalus spp.;

Cestodes: from the order of Pseudophyllidea, for example: Bothridium spp., Diphyllobothrium spp., Diplogonoporus spp., Ichthyobothrium spp., Ligula spp., Schistocephalus spp., Spirometra spp.

From the order of Cyclophyllida, for example: Andyra spp., Anoplocephala spp., Avitellina spp., Bertiella spp., Cittotaenia spp., Davainea spp., Diorchis spp., Diplopylidium spp., Dipylidium spp., Echinococcus spp., Echinocotyle spp., Echinolepis spp., Hydatigera spp., Hymenolepis spp., Joyeuxiella spp., Mesocestoides spp., Moniezia spp., Paranoplocephala spp., Raillietina spp., Stilesia spp., Taenia spp., Thysaniezia spp., Thysanosoma spp.

Trematodes: from the class of Digenea, for example: Austrobilharzia spp., Brachylaima spp., Calicophoron spp., Catatropis spp., Clonorchis spp. Collyriclum spp., Cotylophoron spp., Cyclocoelum spp., Dicrocoelium spp., Diplostomum spp., Echinochasmus spp., Echinoparyphium spp., Echinostoma spp., Eurytrema spp., Fasciola spp., Fasciolides spp., Fasciolopsis spp., Fischoederius spp., Gastrothylacus spp., Gigantobilharzia spp., Gigantocotyle spp., Heterophyes spp., Hypoderaeum spp., Leucochloridium spp., Metagonimus spp., Metorchis spp., Nanophyetus spp., Notocotylus spp., Opisthorchis spp., Ornithobilharzia spp., Paragonimus spp., Paramphistomum spp., Plagiorchis spp., Posthodiplostomum spp., Prosthogonimus spp., Schistosoma spp., Trichobilharzia spp., Troglotrema spp., Typhlocoelum spp.

Nematodes: from the order of Trichinellida, for example: Capillaria spp., Trichinella spp., Trichomosoides spp., Trichuris spp.

From the order of Tylenchida, for example: Micronema spp., Parastrangyloides spp., Strongyloides spp.

From the order of Rhabditina, for example: Aelurostrongylus spp., Amidostomum spp., Ancylostoma spp., Angiostrongylus spp., Bronchonema spp., Bunostomum spp., Chabertia spp., Cooperia spp., Cooperioides spp., Crenosoma spp., Cyathostomum spp., Cyclococercus spp., Cyclodontostomum spp., Cylicocyclus spp., Cylicostephanus spp., Cylindropharynx spp., Cystocaulus spp., Dictyocaulus spp., Elaphostrongylus spp., Filaroides spp., Globocephalus spp., Graphidium spp., Gyalocephalus spp., Haemonchus spp., Heligmosomoides spp., Hyostrongylus spp., Marshallagia spp., Metastrongylus spp., Muellerius spp., Necator spp., Nematodirus spp., Neostrongylus spp., Nippostrongylus spp., Obeliscoides spp., Oesophagodontus spp., Oesophagostomum spp., Ollulanus spp.; Ornithostrongylus spp., Oslerus spp., Ostertagia spp., Paracooperia spp., Paracrenosoma spp., Parafilaroides spp., Parelaphostrongylus spp., Pneumocaulus spp., Pneumostrongylus spp., Poteriostomum spp., Protostrongylus spp., Spicocaulus spp., Stephanurus spp., Strongylus spp., Syngamus spp., Teladorsagia spp., Trichonema spp., Trichostrongylus spp., Triodontophorus spp., Troglostrongylus spp., Uncinaria spp.

From the order of Spirurida, for example: Acanthocheilonema spp., Anisakis spp., Ascaridia spp.; Ascaris spp., Ascarops spp., Aspiculuris spp., Baylisascaris spp., Brugia spp., Cercopithifilaria spp., Crassicauda spp., Dipetalonema spp., Dirofilaria spp., Dracunculus spp.; Draschia spp., Enterobius spp., Filaria spp., Gnathostoma spp., Gongylonema spp., Habronema spp., Heterakis spp.; Litomosoides spp., Loa spp., Onchocerca spp., Oxyuris spp., Parabronema spp., Parafilaria spp., Parascaris spp., Passalurus spp., Physaloptera spp., Probstmayria spp., Pseudofilaria spp., Setaria spp., Skjrabinema spp., Spirocerca spp., Stephanofilaria spp., Strongyluris spp., Syphacia spp., Thelazia spp., Toxascaris spp., Toxocara spp., Wuchereria spp.

Acanthocephala: from the order of Oligacanthorhynchida, for example: Macracanthorhynchus spp., Prosthenorchis spp.; from the order of Moniliformida, for example: Moniliformis spp.

From the order of Polymorphida, for example: Filicollis spp.; from the order of Echinorhynchida, for example Acanthocephalus spp., Echinorhynchus spp., Leptorhynchoides spp.

Pentastoma: from the order of Porocephalida, for example, Linguatula spp.

In the veterinary field and in animal husbandry, the compounds of the formula (I) are administered by methods generally known in the art, such as via the enteral, parenteral, dermal or nasal route in the form of suitable preparations. Administration may be prophylactic, metaphylactic or therapeutic.

Thus, one embodiment of the present invention refers to the compounds of the formula (I) for use as a medicament.

A further aspect relates to the compounds of the formula (I) for use as an antiendoparasitic agent.

A further specific aspect of the invention relates to the compounds of the formula (I) for use as an antithelminthic agent, especially for use as a nematicide, platyhelminthicide, acanthocephalicide or pentastomicide.

A further specific aspect of the invention relates to the compounds of the formula (I) for use as an antiprotozoic agent.

A further aspect relates to the compounds of the formula (I) for use as an antiectoparasitic agent, especially an arthropodicide, very particularly an insecticide or an acaricide.

Further aspects of the invention are veterinary medicine formulations comprising an effective amount of at least one compound of the formula (I) and at least one of the following: a

pharmaceutically acceptable excipient (e.g. solid or liquid diluents), a pharmaceutically acceptable auxiliary (e.g. surfactants), especially a pharmaceutically acceptable excipient used conventionally in veterinary medicine formulations and/or a pharmaceutically acceptable auxiliary conventionally used in veterinary medicine formulations.

A related aspect of the invention is a method for production of a veterinary medicine formulation as described here, which comprises the step of mixing at least one compound of the formula (I) with pharmaceutically acceptable excipients and/or auxiliaries, especially with pharmaceutically acceptable excipients used conventionally in veterinary medicine formulations and/or auxiliaries used conventionally in veterinary medicine formulations.

Another specific aspect of the invention is veterinary medicine formulations selected from the group of ectoparasiticidal and endoparasiticidal formulations, especially selected from the group of anthelmintic, antiprotozoic and arthropodicidal formulations, very particularly selected from the group of nematicidal, platyhelminthicidal, acanthocephalicidal, pentastomicidal, insecticidal and acaricidal formulations, according to the aspects mentioned, and methods for production thereof.

Another aspect relates to a method for treatment of a parasitic infection, especially an infection caused by a parasite selected from the group of the ectoparasites and endoparasites mentioned here, by use of an effective amount of a compound of the formula (I) in an animal, especially a nonhuman animal, having a need therefor.

Another aspect relates to a method for treatment of a parasitic infection, especially an infection caused by a parasite selected from the group of the ectoparasites and endoparasites mentioned here, by use of a veterinary medicine formulation as defined here in an animal, especially a nonhuman animal, having a need therefor.

Another aspect relates to the use of the compounds of the formula (I) in the treatment of a parasite infection, especially an infection caused by a parasite selected from the group of the ectoparasites and endoparasites mentioned here, in an animal, especially a nonhuman animal.

In the present context of animal health or veterinary medicine, the term "treatment" includes prophylactic, metaphylactic and therapeutic treatment.

In a particular embodiment, in this way, mixtures of at least one compound of the formula (I) with other active ingredients, especially with endo- and ectoparasiticides, are provided for the field of veterinary medicine.

In the field of animal health, "mixture" means not just that two (or more) different active compounds are formulated in a common formulation and are correspondingly employed together, but also relates to products comprising formulations separated for each active compound. Accordingly, when more than two active ingredients are to be employed, all active ingredients can be formulated in a common formulation or all active ingredients can be formulated in separate formulations; likewise conceivable are mixed forms in which some of the active ingredients are formulated together and some of the active ingredients are formulated separately. Separate formulations allow the separate or successive application of the active ingredients in question.

The active compounds specified here by their "common names" are known and are described, for example, in the "Pesticide Manual" (see above) or can be searched for on the Internet (e.g.: http://www.alanwood.net/pesticides).

Illustrative active ingredients from the group of the ectoparasiticides as mixing components, without any intention that this should constitute a restriction, include the insecticides and acaricides listed in detail above. Further usable active ingredients are listed below in accordance with the abovementioned classification based on the current IRAC Mode of Action Classification Scheme: (1) acetylcholinesterase (AChE) inhibitors; (2) GABA-gated chloride channel blockers; (3) sodium channel modulators; (4) nicotinic acetylcholine receptor (nAChR) competitive modulators; (5) nicotinic acetylcholine receptor (nAChR) allosteric modulators; (6) glutamate-gated chloride channel (GluCl) allosteric modulators; (7) juvenile hormone mimetics; (8) miscellaneous non-specific (multi-site) inhibitors; (9) chordotonal organ modulators; (10) mite growth inhibitors; (12) inhibitors of mitochondrial ATP synthase, such as ATP disruptors; (13) uncouplers of oxidative phosphorylation via disruption of the proton gradient; (14) nicotinic acetylcholine receptor channel blockers; (15) inhibitors of chitin biosynthesis, type 0; (16) inhibitors of chitin biosynthesis, type 1; (17) moulting disruptors (especially in Diptera); (18) ecdysone receptor agonists; (19) octopamine receptor agonists; (21) mitochondrial complex I electron transport inhibitors; (25) mitochondrial complex II electron transport inhibitors; (20) mitochondrial complex III electron transport inhibitors; (22) voltage-dependent sodium channel blockers; (23) inhibitors of acetyl CoA carboxylase; (28) ryanodine receptor modulators;

active ingredients having unknown or non-specific mechanisms of action, e.g. fentrifanil, fenoxacrim, cycloprene, chlorobenzilate, chlordimeform, flubenzimin, dicyclanil, amidoflumet, quinomethionat, triarathene, clothiazoben, tetrasul, potassium oleate, petroleum, metoxadiazone, gossyplur, flutenzine, brompropylate, cryolite;

compounds from other classes, for example butacarb, dimetilan, cloethocarb, phosphocarb, pirimiphos(-ethyl), parathion(-ethyl), methacrifos, isopropyl o-salicylate, trichlorfon, sulprofos, propaphos, sebufos, pyridathion, prothoate, dichlofenthion, demeton-S-methyl sulphone, isazofos, cyanofenphos, dialifos, carbophenothion, autathiofos, aromfenvinfos(-methyl), azinphos(-ethyl), chlorpyrifos(-ethyl), fosmethilan, iodofenphos, dioxabenzofos, formothion, fonofos, flupyrazofos, fensulfothion, etrimfos;

organochlorine compounds, for example camphechlor, lindane, heptachlor; or phenylpyrazoles, e.g. acetoprole, pyrafluprole, pyriprole, vaniliprole, sisapronil; or isoxazolines, e.g. sarolaner, afoxolaner, lotilaner, fluralaner;

pyrethroids, e.g. (cis-, trans-)metofluthrin, profluthrin, flufenprox, flubrocythrinate, fubfenprox, fenfluthrin, protrifenbut, pyresmethrin, RU15525, terallethrin, cis-resmethrin, heptafluthrin, bioethanomethrin, biopermethrin, fenpyrithrin, cis-cypermethrin, cis-permethrin, clocythrin, cyhalothrin (lambda-), chlovaporthrin, or halogenated hydrocarbon compounds (HCHs),

neonicotinoids, e.g. nithiazine

dicloromezotiaz, triflumezopyrim

macrocyclic lactones, e.g. nemadectin, ivermectin, latidectin, moxidectin, selamectin, eprinomectin, doramectin, emamectin benzoate; milbemycin oxime

triprene, epofenonane, diofenolan;

biologicals, hormones or pheromones, for example natural products, e.g. thuringiensin, codlemone or neem components

dinitrophenols, e.g. dinocap, dinobuton, binapacryl;

benzoylureas, e.g. fluazuron, penfluron,

amidine derivatives, e.g. chlormebuform, cymiazole, demiditraz

beehive varroa acaricides, for example organic acids, e.g. formic acid, oxalic acid.

Illustrative active ingredients from the group of the endoparasiticides, as mixing components, include, but are not limited to, active anthelmintic ingredients and active antiprotozoic ingredients.

The active anthelmintic ingredients include but are not limited to the following active nematicidal, trematicidal and/or cestocidal ingredients:

from the class of the macrocyclic lactones, for example: eprinomectin, abamectin, nemadectin, moxidectin, doramectin, selamectin, lepimectin, latidectin, milbemectin, ivermectin, emamectin, milbemycin;

from the class of the benzimidazoles and probenzimidazoles, for example: oxibendazole, mebendazole, triclabendazole, thiophanate, parbendazole, oxfendazole, netobimin, fenbendazole, febantel, thiabendazole, cyclobendazole, cambendazole, albendazole sulphoxide, albendazole, flubendazole;

from the class of the depsipeptides, preferably cyclic depsipeptides, especially 24-membered cyclic depsipeptides, for example: emodepside, PF1022A;

from the class of the tetrahydropyrimidines, for example: morantel, pyrantel, oxantel;

from the class of the imidazothiazoles, for example: butamisole, levamisole, tetramisole;

from the class of the aminophenylamidines, for example: amidantel, deacylated amidantel (dAMD), tribendimidine;

from the class of the aminoacetonitriles, for example: monepantel;

from the class of the paraherquamides, for example: paraherquamide, derquantel;

from the class of the salicylanilides, for example: tribromsalan, bromoxanide, brotianide, clioxanide, closantel, niclosamide, oxyclozanide, rafoxanide;

from the class of the substituted phenols, for example: nitroxynil, bithionol, disophenol, hexachlorophen, niclofolan, meniclopholan;

from the class of the organophosphates, for example: trichlorfon, naphthalofos, dichlorvos/DDVP, crufomate, coumaphos, haloxon;

from the class of the piperazinones/quinolines, for example: praziquantel, epsiprantel;

from the class of the piperazines, for example: piperazine, hydroxyzine;

from the class of the tetracyclines, for example: tetracycline, chlorotetracycline, doxycycline, oxytetracycline, rolitetracycline;

from various other classes, for example: bunamidine, niridazole, resorantel, omphalotin, oltipraz, nitroscanate, nitroxynil, oxamniquin, mirasan, miracil, lucanthon, hycanthon, hetolin, emetin, diethylcarbamazine, dichlorophen, diamfenetide, clonazepam, bephenium, amoscanate, clorsulon.

Active antiprotozoic ingredients include, but are not limited to, the following active ingredients:

from the class of the triazines, for example: diclazuril, ponazuril, letrazuril, toltrazuril;

from the class of polyether ionophores, for example: monensin, salinomycin, maduramicin, narasin;

from the class of the macrocyclic lactones, for example: milbemycin, erythromycin;

from the class of the quinolones, for example: enrofloxacin, pradofloxacin;

from the class of the quinines, for example: chloroquin;

from the class of the pyrimidines, for example: pyrimethamine;

from the class of the sulphonamides, for example: sulfaquinoxaline, trimethoprim, sulfaclozin;

from the class of the thiamines, for example: amprolium;

from the class of the lincosamides, for example: clindamycin;

from the class of the carbanilides, for example: imidocarb;

from the class of the nitrofurans, for example: nifurtimox;

from the class of the quinazolinone alkaloids, for example: halofuginone;

from various other classes, for example: oxamniquin, paromomycin;

from the class of the vaccines or antigens from microorganisms, for example: Babesia canis rossi, Eimeria tenella, Eimeria praecox, Eimeria necatrix, Eimeria mitis, Eimeria maxima, Eimeria brunetti, Eimeria acervulina, Babesia canis vogeli, Leishmania infantum, Babesia canis canis, Dictyocaulus viviparus.

All the mixing components mentioned, as the case may be, may also form salts with suitable bases or acids if they are capable of doing so on the basis of their functional groups.

Vector control

The compounds of the formula (I) can also be used in vector control. In the context of the present invention, a vector is an arthropod, especially an insect or arachnid, capable of transmitting pathogens, for example viruses, worms, single-cell organisms and bacteria, from a reservoir (plant, animal, human, etc.) to a host. The pathogens can be transmitted either mechanically (for example trachoma by non-stinging flies) onto a host or after injection into a host (for example malaria parasites by mosquitoes).

Examples of vectors and the diseases or pathogens they transmit are:

1) Mosquitoes

- Anopheles: malaria, filariasis;
- Culex: Japanese encephalitis, filariasis, other viral diseases, transmission of other worms;
- Aedes: yellow fever, dengue fever, further viral disorders, filariasis;
- Simuliidae: transmission of worms, especially Onchocerca volvulus;
- Psychodidae: transmission of leishmaniasis

2) Lice: skin infections, epidemic typhus;

3) Fleas: plague, endemic typhus, tapeworms;

4) Flies: sleeping sickness (trypanosomiasis); cholera, other bacterial diseases;

5) Mites: acariosis, epidemic typhus, rickettsialpox, tularaemia, Saint Louis encephalitis, tick-borne encephalitis (TBE), Crimean-Congo haemorrhagic fever, borreliosis;

6) Ticks: borellioses such as Borrelia bungdorferi sensu lato., Borrelia duttoni, tick-borne encephalitis, Q fever (Coxiella burnetii), babesioses (Babesia canis canis), ehrlichiosis.

Examples of vectors in the context of the present invention are insects, for example aphids, flies, leafhoppers or thrips, which can transmit plant viruses to plants. Other vectors capable of transmitting plant viruses are spider mites, lice, beetles and nematodes.

Further examples of vectors in the context of the present invention are insects and arachnids such as mosquitoes, especially of the genera Aedes, Anopheles, for example A. gambiae, A. arabiensis, A. funestus, A. dirus (malaria) and Culex, Psychodidae such as Phlebotomus, Lutzomyia, lice, fleas, flies, mites and ticks, which can transmit pathogens to animals and/or humans.

Vector control is also possible if the compounds of the formula (I) are resistance-breaking.

Compounds of the formula (I) are suitable for use in the prevention of diseases and/or pathogens transmitted by vectors. Thus, a further aspect of the present invention is the use of compounds of the formula (I) for vector control, for example in agriculture, in horticulture, in forests, in gardens and in leisure facilities, and also in the protection of materials and stored products.

Protection of industrial materials

The compounds of the formula (I) are suitable for protecting industrial materials against attack or destruction by insects, for example from the orders of Coleoptera, Hymenoptera, Isoptera, Lepidoptera, Psocoptera and Zygentoma.

Industrial materials in the present context are understood to mean inanimate materials, such as preferably plastics, adhesives, sizes, papers and cards, leather, wood, processed wood products and coating compositions. The use of the invention for protection of wood is particularly preferred.

In a further embodiment, the compounds of the formula (I) are used together with at least one further insecticide and/or at least one fungicide.

In a further embodiment, the compounds of the formula (I) take the form of a ready-to-use pesticide, meaning that they can be applied to the material in question without further modifications. Useful further insecticides or fungicides especially include those mentioned above.

Surprisingly, it has also been found that the compounds of the formula (I) can be employed for protecting objects which come into contact with saltwater or brackish water, in particular hulls, screens, nets, buildings, moorings and signalling systems, against fouling. It is equally possible to use the compounds of the formula (I), alone or in combinations with other active ingredients, as antifouling agents.

Control of animal pests in the hygiene sector

The compounds of the formula (I) are suitable for controlling animal pests in the hygiene sector. More particularly, the invention can be used in the domestic protection sector, in the hygiene protection sector and in the protection of stored products, particularly for control of insects, arachnids, ticks and mites encountered in enclosed spaces, for example dwellings, factory halls, offices, vehicle cabins, animal breeding facilities. For controlling animal pests, the compounds of the formula (I) are used alone or in combination with other active ingredients and/or auxiliaries. They are preferably used in domestic insecticide products. The compounds of the formula (I) are effective against sensitive and resistant species, and against all developmental stages.

These pests include, for example, pests from the class Arachnida, from the orders Scorpiones, Araneae and Opiliones, from the classes Chilopoda and Diplopoda, from the class Insecta the order Blattodea, from the orders Coleoptera, Dermaptera, Diptera, Heteroptera, Hymenoptera, Isoptera, Lepidoptera, Phthiraptera, Psocoptera, Saltatoria or Orthoptera, Siphonaptera and Zygentoma and from the class Malacostraca the order Isopoda.

Application is effected, for example, in aerosols, unpressurized spray products, for example pump and atomizer sprays, automatic fogging systems, foggers, foams, gels, evaporator products with evaporator tablets made of cellulose or plastic, liquid evaporators, gel and membrane evaporators, propeller-driven evaporators, energy-free, or passive, evaporation systems, moth papers, moth bags and moth gels, as granules or dusts, in baits for spreading or bait stations.

Preparation examples

The preparation and use examples which follow illustrate the invention without limiting it. The products were characterized by 1H NMR spectroscopy and/or LC-MS (Liquid Chromatography Mass Spectrometry).

The logP values were determined in accordance with OECD Guideline 117 (EC Directive 92/69/EEC) by HPLC (high-performance liquid chromatography) using reversed-phase (RP) columns (C18), by the following methods:

[a] The LC-MS determination in the acidic range was carried out at pH 2.7 with 0.1% aqueous formic acid and acetonitrile (contains 0.1% formic acid) as mobile phases; linear gradient from 10% acetonitrile to 95% acetonitrile.

[b] LC-MS determination in the neutral range was carried out at pH 7.8 with 0.001 molar aqueous ammonium hydrogencarbonate solution and acetonitrile as mobile phases; linear gradient from 10% acetonitrile to 95% acetonitrile.

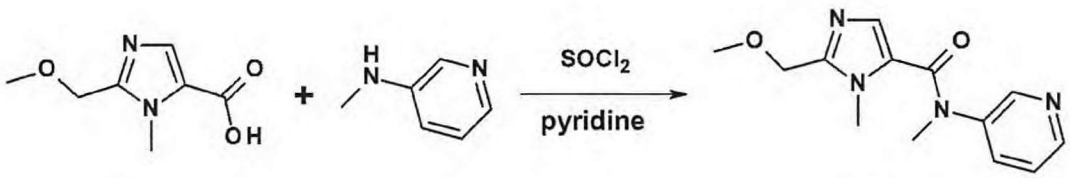
Calibration was carried out using unbranched alkan-2-ones (having 3 to 16 carbon atoms) with known logP values (logP values determined on the basis of the retention times by linear interpolation between two successive alkanones).

The NMR spectra were determined using a Bruker Avance 400 fitted with a flow probe head (volume 60 µl). In individual cases, the NMR spectra were measured with a Bruker Avance II 600.

The NMR data of selected examples are stated in classic form (δ values, multiplet splitting, number of hydrogen atoms). The splitting of the signals was described as follows: s (singlet), d (doublet), t (triplet), q (quartet), quint (quintuplet), m (multiplet), br (for broad signals). The solvents used were CD_3CN, $CDCl_3$ or d_6-DMSO, with tetramethylsilane (0.00 ppm) used as reference.

Process A

Example: 2-(Methoxymethyl)-N,1-dimethyl-N-(pyridin-3-yl)-1H-imidazole-5-carboxamide (I-1-22)



(V-1-22) *(VI-1)* *(I-1-22)*

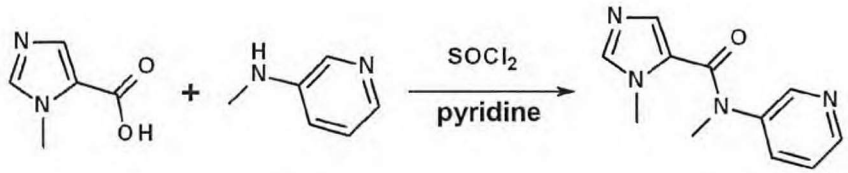
0.20 g (1.2 mmol) of 2-(methoxymethyl)-1-methyl-1H-imidazole-5-carboxylic acid (V-1-22, Ex. 29, US2006/0019949 A1) were stirred in 5 ml of thionyl chloride at 80°C until the evolution of gas had ended, concentrated, twice subjected to incipient dissolution with in each case 10 ml of toluene, concentrated, dissolved in a little tetrahydrofuran and added dropwise to a solution of 0.14 g (1.3 mmol) of 3-methylaminopyridine (VI-1) in 10 ml of pyridine at 0°C. The mixture was then stirred at room temperature for another 18 hours. The mixture was concentrated under reduced pressure and the residue was purified by RP medium pressure column chromatography using water/acetonitrile. Purification gave 159 mg (51.9% of theory).

logP[n]: 0.63;

^{1}H-NMR (CD_3CN, 400MHz); δ = 3.26 (s, 3H), 3.39 (s, 3H), 3.78 (s, 3H), 4.40 (s, 2H), 6.20 (s, 1H), 7.34-7.37 (m, 1H), 7.65-7.69 (m, 1H), 8.39-8.40 (d, 1H), 8.44-8.46 (m, 1H) ppm.

Process B-1

Example: N,1-Dimethyl-N-(pyridin-3-yl)-1H-imidazole-5-carboxamide (IX-1-1)



(VII-1-1) *(VI-1)* *(IX-1-1)*

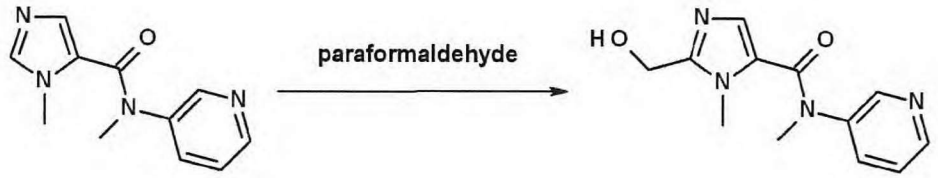
12.7 g (105 mmol) of thionyl chloride were added to a suspension of 12.0 g (95.2 mmol) of 1-methylimidazole-5-carboxylic acid (VII-1-1) in 72 ml of toluene, and the mixture was stirred at 130°C overnight. The reaction mixture was concentrated under reduced pressure. A solution of 10.3 g (95.2 mmol) of 3-methylaminopyridine (VI-1) in 72 ml of pyridine was added to the

residue, and the resulting reaction mixture was stirred at 115°C for 4 hours. This was followed by another concentration under reduced pressure. The residue was purified on silica gel by MPLC using the mobile phase acetonitrile/methanol. Purification gave 8.1 g (39.3% of theory).

logP[n] = 0.44;

^{1}H-NMR (CD_3CN, 400MHz); δ = 3.39 (s, 3H), 3.81 (s, 3H), 6.17 (s, 1H), 7.36-7.40 (m, 2H), 7.67-7.70 (m, 1H), 8.41 (m, 1H), 8.47 (m, 1H) ppm.

Example: 2-(Hydroxymethyl)-N,1-dimethyl-N-(pyridin-3-yl)-1H-imidazole-5-carboxamide (I-1-7)



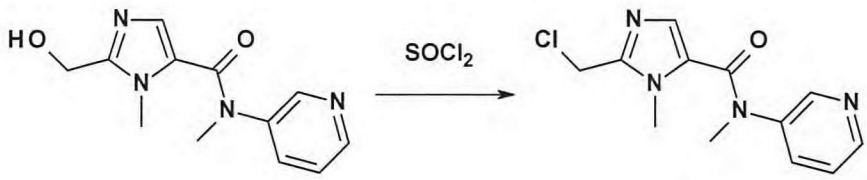
(IX-1-1) *(I-1-7)*

4.33 g (20 mmol) of N,1-dimethyl-N-(pyridin-3-yl)-1H-imidazole-5-carboxamide (IX-1-1) and 1.8 g (60 mmol) of paraformaldehyde in 20 ml of acetonitrile were stirred together in a 50-ml-autoclave at an argon pressure of 10 bar and 120°C for 48 hours. The solvent was evaporated. The residue was purified on silica gel by MPLC using the mobile phase dichloromethane/methanol. Purification gave 2.7 g (54% of theory).

logP[n] = 0.28;

^{1}H-NMR (CD_3CN, 400MHz); δ = 3.39 (s 3H), 3.80 (s, 3H), 4.51 (s, 2H), 6.17 (s, 1H), 7.35-7.38 (m, 1H), 7.67-7.70 (m, 1H), 8.396-8.402 (d, 1H), 8.44-8.46 (m, 1H) ppm.

Example: 2-(Chloromethyl)-N,1-dimethyl-N-(pyridin-3-yl)-1H-imidazole-5-carboxamide (III-1-1)



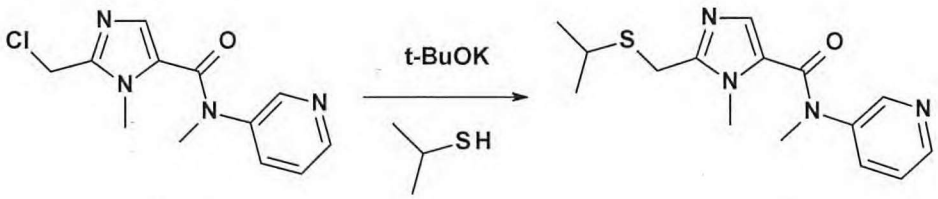
(I-1-7) *(III-1-1)*

2.3 g (9.34 mmol) of 2-(hydroxymethyl)-N,1-dimethyl-N-(pyridin-3-yl)-1H-imidazole-5-carboxamide (I-1-7) were initially charged in 2000 ml of methylene chloride, 1.48 g (18.7 mmol) of pyridine were added, 3.33 g (28 mmol) of thionyl chloride were added dropwise at 0°C and the mixture was stirred at room temperature overnight. The mixture was concentrated under reduced pressure on a rotary evaporator and the residue was taken up in 10 ml of sodium bicarbonate solution and 20 ml of methanol and once more concentrated on a rotary evaporator. The residue was purified on silica gel by MPLC using the mobile phase acetonitrile/methanol. Purification gave 1.7 g (67% of theory).

logP[n] = 0.89;

^{1}H-NMR (CD_3CN, 400MHz); δ = 3.50 (s, 3H), 3.94 (s, 3H), 5.10 (s, 2H), 7.18 (s, 1H), 7.91-7.95 (m, 1H), 8.36-8.38 (m, 1H), 8.585-8.598 (d, 1H), 8.79-8.80 (d, 1H) ppm.

Example: 2-[(Isopropylsulphanyl)methyl]-N,1-dimethyl-N-(pyridin-3-yl)-1H-imidazole-5-carboxamide (I-1-29)



(III-1-1) *(IX-29)* *(I-1-29)*

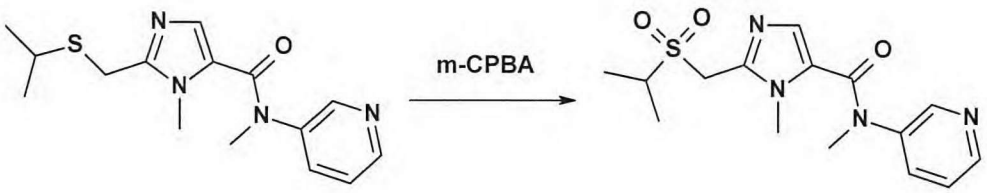
114 mg (1.5 mmol) of 2-propanethiol (IX-29) and 0.185 mg (1.65 mmol) of potassium tert-butoxide were initially charged in 5 ml of acetonitrile and stirred briefly, and 265 mg (1.0 mmol) of 2-(chloromethyl)-N,1-dimethyl-N-(pyridin-3-yl)-1H-imidazole-5-carboxamide (III-1-1) were added at room temperature. The mixture was stirred for about 5 minutes and concentrated under reduced pressure and the residue was purified by RP medium pressure column chromatography using water/acetonitrile. Purification gave 26 mg (8.5% of theory).

logP[a] = 0.76; logP[n] = 1.50;

^{1}H-NMR (CD_3CN, 400MHz); δ = 1.17 (6H, d), 2.79 (m, 1H), 3.39 (s, 3H), 3.76 (s, 2H), 3.79 (s, 3H), 6.17 (s, 1H), 7.33-7.36 (m, 1H), 7.64-7.67 (m, 1H), 8.387-8.393 (d, 1H), 8.43-8.45 (m, 1H) ppm.

Process B-2

Example: 2-[(Isopropylsulphonyl)methyl]-N,1-dimethyl-N-(pyridin-3-yl)-1H-imidazole-5-carboxamide (I-1-30)



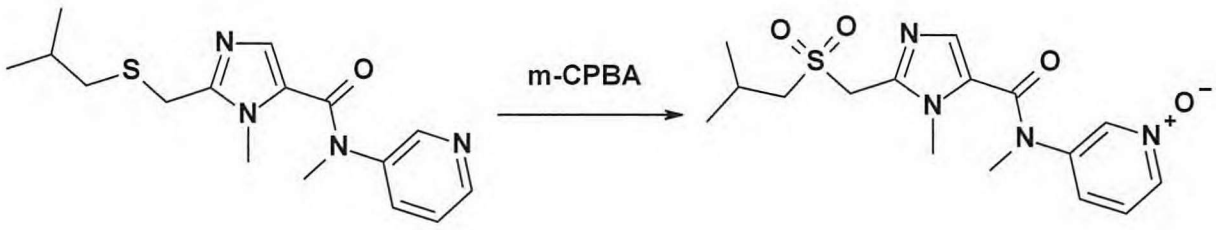
(I-1-29) *(I-1-30)*

0.127 g (0.42 mmol) of 2-[(isopropylsulphanyl)methyl]-N,1-dimethyl-N-(pyridin-3-yl)-1H-imidazole-5-carboxamide (I-1-29) were initially charged in 5 ml of methylene chloride, 0.16 ml of (2.1 mmol) trifluoroacetic acid were added, the mixture was stirred briefly, and 0.257 g (1.04 mmol) of meta-chloroperbenzoic acid (about 70% strength) were added at 0°C and stirring was continued with monitoring by TLC. Once no more starting material was detectable, excess peroxide was destroyed, the mixture was concentrated under reduced pressure and the residue was purified by RP medium pressure column chromatography using water/acetonitrile. Purification gave 0,108 g (77% of theory).

logP[a]: 0.56; logP[n]: 0.88;

^{1}H-NMR (CD_3CN, 400MHz): see Table 2.

Example: 2-[(Isobutylsulphonyl)methyl]-N,1-dimethyl-N-(1-oxidopyridin-3-yl)-1H-imidazole-5-carboxamide (I-1-55)



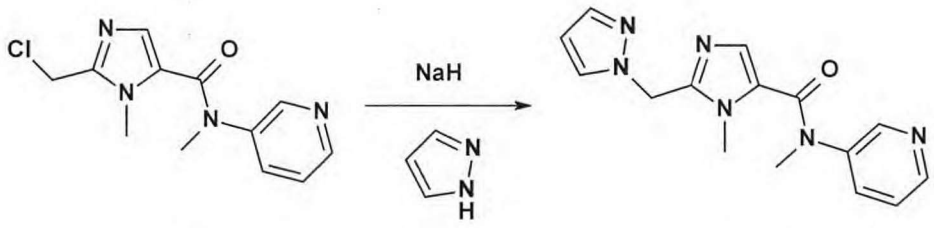
(I-1-31) *(I-1-55)*

2.90 g (9.11 mmol) of 2-[(isobutylsulphanyl)methyl]-N,1-dimethyl-N-(pyridin-3-yl)-1H-imidazole-5-carboxamide (I-1-31) were initially charged in 79.1 ml of methylene chloride, 3.51 ml of (45.5 mmol) trifluoroacetic acid were added, the mixture was stirred briefly, and 5.61 g (22.8 mmol) of meta-chloroperbenzoic acid (about 70% strength) were added at 0°C and stirring was continued with monitoring by TLC. Once no more starting material was detectable, excess peroxide was destroyed, the mixture was concentrated under reduced pressure and the residue was purified by RP medium pressure column chromatography using water/acetonitrile. Purification gave 0.21 g (5.5% of theory).

logP[a]: 0.68; logP[n]: 0.77;

^{1}H-NMR (CD_3CN, 400MHz): see Table 2.

Example: N,1-Dimethyl-2-(1H-pyrazol-1-ylmethyl)-N-(pyridin-3-yl)-1H-imidazole-5-carboxamide (I-1-43)



(III-1-1) *(IX-43)* *(I-1-43)*

A solution of 84.9 mg (1.25 mmol) of 1H-pyrazole (X-43) and 49.9 mg (1.25 mmol) of sodium hydride in 11.3 ml of N,N-dimethylformamide was stirred at 30°C for 10 minutes. 300 mg (1.13 mmol) of 2-(chloromethyl)-N,1-dimethyl-N-(pyridin-3-yl)-1H-imidazole-5-carboxamide (III-1-1) were added and the solution was stirred at 60°C for 18 hours. The reaction was quenched with 2 ml of concentrated ammonium chloride solution and concentrated. The residue was purified on

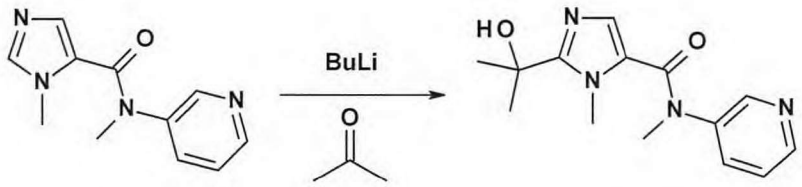
silica gel by MPLC using the mobile phase acetonitrile/methanol. Purification gave 210 mg (62.5% of theory).

logP[a]: 0.35; logP[n]: 0.81;

^{1}H-NMR (d_6-DMSO, 400MHz); δ = 3.36 (s, 3H), 3.77 (s, 3H), 5.42 (s, 2H), 6.23-6.25 (m, 2H), 7.42-7.44 (m, 2H), 7.70-7.71 (m, 1H), 7.825-7.845 (m, 1H), 8.46-8.47 (m, 1H), 8.480-8.484 (m, 1H) ppm.

Process C

Example: 2-(2-Hydroxypropan-2-yl)-N,1-dimethyl-N-(pyridin-3-yl)-1H-imidazole-5-carboxamide (I-1-10)



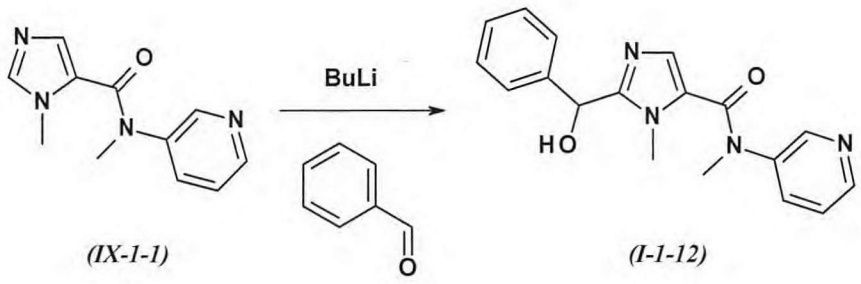
(IX-1-1) *(I-1-10)*

0.300 g (1.39 mmol) of N,1-dimethyl-N-(pyridin-3-yl)-1H-imidazole-5-carboxamide (IX-1-1) were dissolved in 10 ml of THF and cooled to -90°C. During the reaction, the temperature was kept between -85°C and -90°C. At -90°C, 0.58 ml (1.45 mmol) of a 2.5 molar solution of *n*-BuLi in *n*-hexane were added dropwise over a period of 5 minutes, and the mixture was stirred for another 5 minutes. 0.242 g of acetone (4.16 mmol), dissolved in 3 ml of THF, was then added dropwise over 5 minutes. The mixture was stirred at -80°C for a further 30 minutes and then warmed to room temperature over 1 h. The mixture was extracted with semiconcentrated sodium bicarbonate solution/dichloromethane. The aqueous phase was extracted three more times with dichloromethane. The organic phases were combined, washed with a little water, dried with sodium sulphate, filtered and concentrated. The residue was purified on silica gel by MPLC using the mobile phase ethyl acetate/methanol. Purification gave 33.0 mg (8.7% of theory).

logP[n]: 0.57;

^{1}H-NMR (CD_3CN, 400MHz); δ = 1.51 (s, 6H), 3.39 (s, 3H), 3.96 (s, 3H), 6.20 (s, 1H), 7.33-7.37 (m, 1H), 7.65-7.68 (m, 1H), 8.367-8.374 (m, 1H), 8.42-8.43 (m, 1H) ppm.

Example: 2-[Hydroxy(phenyl)methyl]-N,1-dimethyl-N-(pyridin-3-yl)-1H-imidazole-5-carboxamide (I-1-12)



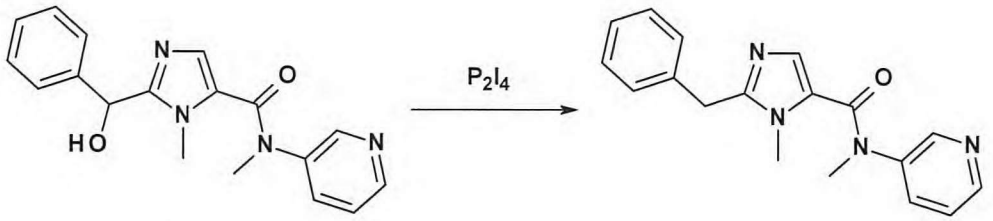
(IX-1-1) *(I-1-12)*

0.300 g (1.39 mmol) of N,1-dimethyl-N-(pyridin-3-yl)-1H-imidazole-5-carboxamide (IX-1-1) were dissolved in 5 ml of THF and cooled to -90°C. During the reaction, the temperature was kept between -85°C and -90°C. At -90°C, 0.58 ml (1.45 mmol) of a 2.5 molar solution of *n*-BuLi in *n*-hexane were added dropwise over a period of 5 minutes, and the mixture was stirred for another 5 minutes. Over 5 minutes, 0.423 ml of benzaldehyde (4.16 mmol) was then added dropwise over a period of 30 minutes, and the mixture was warmed to room temperature. The mixture was extracted with semiconcentrated sodium bicarbonate solution/dichloromethane. The aqueous phase was extracted three more times with dichloromethane. The organic phases were combined, washed with a little water, dried with sodium sulphate, filtered and concentrated. The residue was purified on silica gel by MPLC using the mobile phase ethyl acetate/methanol. Purification gave 227 mg (50.8% of theory).

logP[a]: 0.52; logP[n]: 1.23;

^{1}H-NMR (CD_3CN, 400MHz); δ = 3.38 (s, 3H), 3.64 (s, 3H), 4.28-4.30 (d, 1H), 5.84-5.85 (d, 1H), 6.25 (s, 1H), 7.26-7.37 (m, 6H), 7.64-7.67 (m, 1H), 8.378-8.385 (m, 1H), 8.44-8.47 (m, 1H) ppm.

Example: 2-Benzyl-N,1-dimethyl-N-(pyridin-3-yl)-1H-imidazole-5-carboxamide (I-1-3)



(I-1-12) *(I-1-3)*

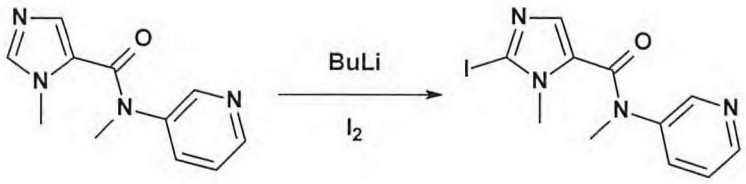
A suspension of 50.0 mg (0.152 mmol) of 2-[hydroxy(phenyl)methyl]-N,1-dimethyl-N-(pyridin-3-yl)-1H-imidazole-5-carboxamide (I-1-12) and 170 mg (0.298 mmol) of tetraiododiphosphane in 2 ml of dichloromethane was stirred at 40°C for 48 hours. The mixture was extracted with semiconcentrated sodium bicarbonate solution/dichloromethane. The aqueous phase was extracted three more times with dichloromethane. The organic phases were combined, dried over sodium sulphate, filtered and concentrated. The residue was purified on silica gel by MPLC using the mobile phase ethyl acetate/methanol. Purification gave 12.0 mg (24.5% of theory).

logP[a]: 0.64; logP[n]: 1.48;

^{1}H-NMR (CD_3CN, 400MHz); δ = 3.38 (s, 3H), 3.63 (s, 3H), 4.02 (s, 2H), 6.23 (s, 1H), 7.10-7.12 (m, 2H), 7.20-7.24 (m, 1H), 7.27-7.31 (m, 2H), 7.34-7.37 (m, 1H), 7.64-7.67 (m, 1H), 8.39-8.40 (m, 1H), 8.44-8.45 (m, 1H) ppm.

Process D

Example: 2-Iodo-N,1-dimethyl-N-(pyridin-3-yl)-1H-imidazole-5-carboxamide (X-1-1)



(IX-1-1) *(X-1-1)*

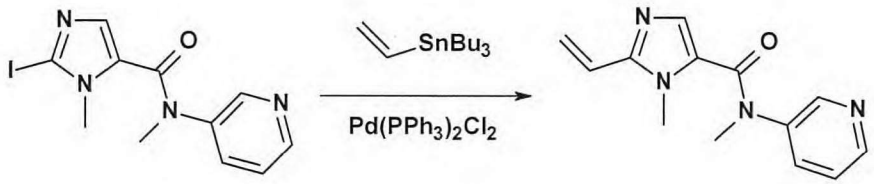
5.00 g (23.1 mmol) of N,1-dimethyl-N-(pyridin-3-yl)-1H-imidazole-5-carboxamide (IX-1-1) were dissolved in 150 ml of THF and cooled to -90°C. During the reaction, the temperature was kept between -85°C and -90°C. At -90°C, 9.68 ml (24.2 mmol) of a 2.5 molar solution of *n*-BuLi in *n*-hexane were added dropwise over a period of 30 minutes, and the mixture was stirred for another 5 minutes. 0.242 g of iodine (69.4 mmol), dissolved in 50 ml of THF, was then added

dropwise over 20 minutes. The mixture was stirred at -80°C for a further 30 minutes and then warmed to room temperature over 1 h. The mixture was extracted with semiconcentrated sodium bicarbonate solution/dichloromethane. The aqueous phase was extracted three more times with dichloromethane. The organic phases were combined, washed with a little water, dried with sodium sulphate, filtered and concentrated. The residue was purified on silica gel by MPLC using the mobile phase ethyl acetate/methanol. Purification gave 4.35 g (55.0% of theory).

logP[a]: 0.66; logP[n]: 0.97;

^{1}H-NMR (d_6-DMSO, 400MHz); δ = 3.37 (s, 3H), 3.74 (s, 3H), 6.27 (s, 1H), 7.42-7.45 (m, 1H), 7.82-7.85 (m, 1H), 8.465-8.495 (m, 2H) ppm.

Example: N,1-Dimethyl-N-(pyridin-3-yl)-2-vinyl-1H-imidazole-5-carboxamide (I-1-6)



(X-1-1) *(I-1-6)*

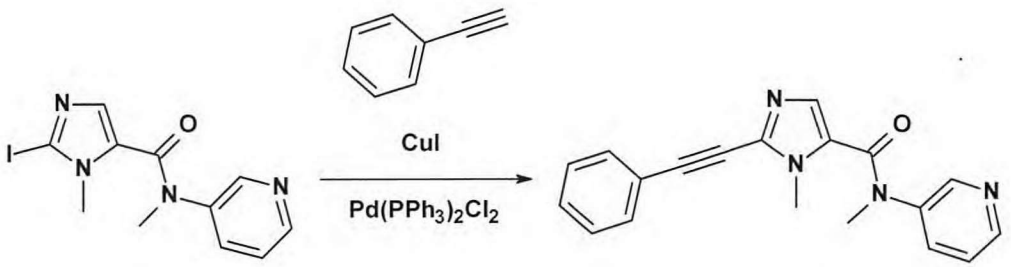
A solution of 400 mg (1.17 mmol) of 2-iodo-N,1-dimethyl-N-(pyridin-3-yl)-1H-imidazole-5-carboxamide (X-1-1) and 535 mg (1.64 mmol) of tributyl(vinyl)stannane in 12 ml of N,N-dimethylformamide was degassed with argon. 8.2 mg (0.012 mmol) of palladiumbis(triphenylphosphine) dichloride were added and the solution was stirred at 70°C for 18 hours. 535 mg (1.64 mmol) of tributyl(vinyl)stannane and 8.2 mg (0.012 mmol) of palladiumbis(triphenylphosphine) dichloride were added and the solution was stirred at 70°C for another 18 hours. The mixture was concentrated. The residue was purified on silica gel by MPLC using the mobile phase ethyl acetate/methanol. Purification gave 200 mg (70.6% of theory).

logP[n]: 0.82;

^{1}H-NMR (CD_3CN, 400MHz); δ = 3.395 (s, 3H), 3.78 (s, 3H), 5.42-5.46 (dd, 1H), 6.06-6.11 (dd, 1H), 6.27 (s, 1H), 6.65-6.72 (dd, 1H), 7.34-7.37 (m, 1H), 7.66-7.68 (m, 1H), 8.397-8.403 (m, 1H), 8.44-8.45 (m, 1H) ppm.

Process E

Example: N,1-Dimethyl-2-(phenylethinyl)-N-(pyridin-3-yl)-1H-imidazole-5-carboxamide (IV-1-1)



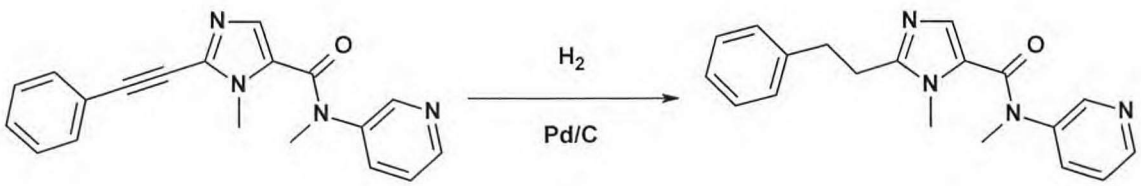
(X-1-1) *(IV-1-1)*

A solution of 400 mg (1.17 mmol) of 2-iodo-N,1-dimethyl-N-(pyridin-3-yl)-1H-imidazole-5-carboxamide (X-1-1) and 239 mg (2.34 mmol) of phenylacetylene in 6 ml of triethylamine was degassed with argon. 41 mg (0.058 mmol) of palladiumbis(triphenylphosphine) dichloride and 22.3 mg of copper(I) iodide (0.117 mmol) were added and the solution was stirred at room temperature for 2 hours. The mixture was extracted with ethyl acetate and the extract was washed twice with water and once with concentrated sodium chloride solution, dried with sodium sulphate, filtered and concentrated. The residue was purified on silica gel by MPLC using the mobile phase cyclohexane/ethyl acetate/methanol. Purification gave 200 mg (54.1% of theory).

logP[a]: 1.86; logP[n]: 1.98;

^{1}H-NMR (d_6-DMSO, 400MHz); δ = 3.40 (s, 3H), 3.92 (s, 3H), 6.32 (s, 1H), 7.45-7.50 (m, 4H), 7.63-7.66 (m, 2H), 7.86-7.88 (m, 1H), 8.50-8.57 (m, 2H) ppm.

Example: N,1-Dimethyl-2-(phenylethyl)-N-(pyridin-3-yl)-1H-imidazole-5-carboxamide (I-1-5)



(IV-1-1) *(I-1-5)*

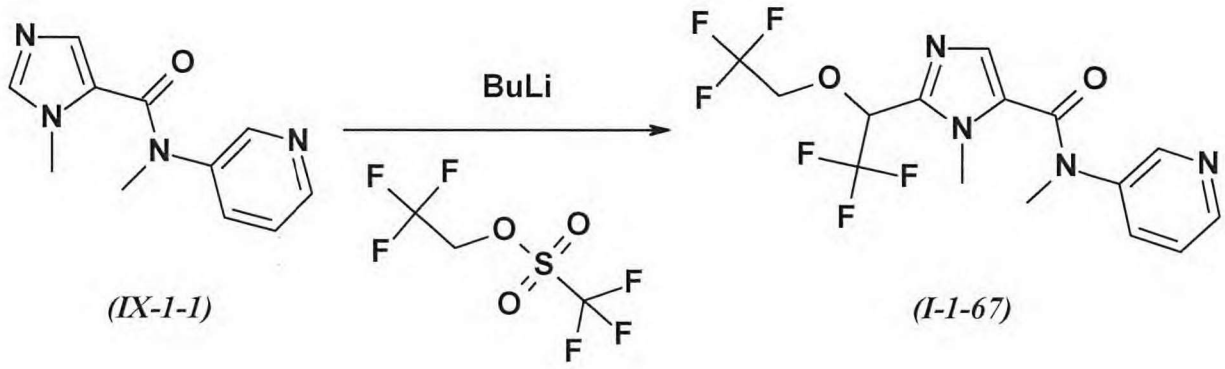
A suspension of 40.0 mg (0.619 mmol) of N,1-dimethyl-2-(phenylethynyl)-N-(pyridin-3-yl)-1H-imidazole-5-carboxamide (IV-1-1) and 20.0 mg of palladium on activated carbon 10% in 20 ml of methanol was stirred at room temperature and under 10 bar of hydrogen for 16 hours. 20.0 mg of palladium on activated carbon 10% were added and the suspension was once more stirred at room temperature and under 10 bar of hydrogen for 18 hours. The mixture was filtered through Celite and concentrated. The residue was purified on silica gel by MPLC using the mobile phase cyclohexane/ethyl acetate. Purification gave 99.0 mg (48.9% of theory).

logP[a]: 0.66; logP[n]: 1.58;

^{1}H-NMR (d_6-DMSO, 400MHz); δ = 2.89 (m, 4H), 3.35 (s, 3H), 3.565 (s, 3H), 6.15 (s, 1H), 7.14-7.21 (m, 3H), 7.25-7.29 (m, 2H), 7.43-7.46 (m, 1H), 7.80-7.83 (m, 1H), 8.44-8.45 (m, 1H), 8.46-8.48 (m, 1H) ppm.

Process F

Example: N,1-Dimethyl-N-(pyridin-3-yl)-2-[2,2,2-trifluoro-1-(2,2,2-trifluoroethoxy)ethyl]-1H-imidazole-5-carboxamide (I-1-67)



(IX-1-1) *(I-1-67)*

200 mg (0.925 mmol) of N,1-dimethyl-N-(pyridin-3-yl)-1H-imidazole-5-carboxamide (IX-1-1) were dissolved in 7.5 ml of THF and cooled to -90°C. During the reaction, the temperature was kept between -85°C and -90°C. At -90°C, 0.41 ml (1.02 mmol) of a 2.5 molar solution of *n*-BuLi in *n*-hexane were added dropwise over a period of 5 minutes, and the mixture was stirred for another 5 minutes. 644 mg (2.77 mmol) of 2,2,2-trifluoroethyl trifluoromethanesulphonate, dissolved in 2.5 ml of THF, were then added dropwise over 5 minutes. The mixture was stirred at -80°C for a further 30 minutes and then warmed to room temperature over 1 h. The mixture was extracted with semiconcentrated sodium bicarbonate solution/dichloromethane. The aqueous

phase was extracted three more times with dichloromethane. The organic phases were combined, washed with a little water, dried with sodium sulphate, filtered and concentrated. The residue was purified on silica gel by MPLC using the mobile phase ethyl acetate/methanol. The desired fraction was purified by RP medium pressure column chromatography with water/acetonitrile. Purification gave 27 mg (7.2% of theory).

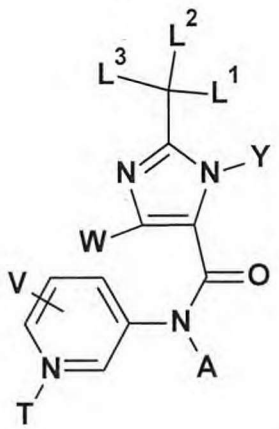
logP[a]: 1.72; logP[n]: 1.86;

^{1}H-NMR ($CDCl_3$, 400MHz); δ = 3.485 (s, 3H), 3.92-4.01 (m, 2H), 3.955 (s, 3H), 5.11-5.14 (q, 1H), 6.36 (s, 1H), 7.33-7.35 (m, 1H), 7.51-7.53 (m, 1H), 8.43-8.44 (m, 1H), 8.54-8.55 (m, 1H) ppm.

Further compounds of the formula (I) or (I-1), which were prepared analogously to the examples given above, are listed in Table 1.

Table 1

Compounds of the formula (I-1)



(I-1)

Ex. No.	L^1	L^2	L^3	W	Y	A	V	T
I-1-3	phenyl-	H	H	H	CH_3	CH_3	H	electron pair

I-1-4	2-pyrimidyl-	H	H	H	CH_3	CH_3	H	electron pair
I-1-5	benzyl-	H	H	H	CH_3	CH_3	H	electron pair
I-1-6	vinyl-		H	H	CH_3	CH_3	H	electron pair
I-1-7	H	H	OH	H	CH_3	CH_3	H	electron pair
I-1-8	H	H	OH	H	CH_3	ethyl	H	electron pair
I-1-9	CH_3	H	OH	H	CH_3	CH_3	H	electron pair
I-1-10	CH_3	CH_3	OH	H	CH_3	CH_3	H	electron pair
I-1-11	isopropyl-	H	OH	H	CH_3	CH_3	H	electron pair
I-1-12	phenyl-	H	OH	H	CH_3	CH_3	H	electron pair
I-1-13	2-chlorophenyl-	H	OH	H	CH_3	CH_3	H	electron pair
I-1-14	3-chlorophenyl-	H	OH	H	CH_3	CH_3	H	electron pair
I-1-15	4-chlorophenyl-	H	OH	H	CH_3	CH_3	H	electron pair
I-1-16	3,4-dichlorophenyl-	H	OH	H	CH_3	CH_3	H	electron pair
I-1-17	2-pyridinyl-	H	OH	H	CH_3	CH_3	H	electron pair
I-1-18	3-pyridinyl-	H	OH	H	CH_3	CH_3	H	electron pair
I-1-19	4-pyridinyl-	H	OH	H	CH_3	CH_3	H	electron pair
I-1-20	4-chloropyridin-3-yl-	H	OH	H	CH_3	CH_3	H	electron pair
I-1-21	2-pyrimidyl-	H	OH	H	CH_3	CH_3	H	electron pair
I-1-22	H	H	methoxy-	H	CH_3	CH_3	H	electron pair
I-1-23	H	H	cyclopropyl-methoxy-	H	CH_3	CH_3	H	electron pair
I-1-24	H	H	3-chlorophenoxy-	H	CH_3	CH_3	H	electron pair
I-1-25	H	H	benzyloxy-	H	CH_3	CH_3	H	electron pair
I-1-26	H	H	methylsulphanyl-	H	CH_3	CH_3	H	electron pair
I-1-27	H	H	ethylsulphanyl-	H	CH_3	CH_3	H	electron pair

I-1-28	H	H	ethylsulphonyl-	H	CH_3	CH_3	H	electron pair
I-1-29	H	H	isopropylsulphanyl-	H	CH_3	CH_3	H	electron pair
I-1-30	H	H	isopropylsulphonyl-	H	CH_3	CH_3	H	electron pair
I-1-31	H	H	isobutylsulphanyl-	H	CH_3	CH_3	H	electron pair
I-1-32	H	H	isobutylsulphonyl-	H	CH_3	CH_3	H	electron pair
I-1-33	H	H	tert-butylsulphanyl-	H	CH_3	CH_3	H	electron pair
I-1-34	H	H	tert-butylsulphonyl-	H	CH_3	CH_3	H	electron pair
I-1-35	H	H	cyclopropylmethyl sulphanyl-	H	CH_3	CH_3	H	electron pair
I-1-36	H	H	2,2-dimethylpropyl-sulphanyl-	H	CH_3	CH_3	H	electron pair
I-1-37	H	H	2-methoxy-2-oxoethylsulphanyl-	H	CH_3	CH_3	H	electron pair
I-1-38	H	H	phenylsulphanyl-	H	CH_3	CH_3	H	electron pair
I-1-39	H	H	(2-chlorophenyl) sulphanyl-	H	CH_3	CH_3	H	electron pair
I-1-40	H	H	(3-chlorophenyl) sulphanyl-	H	CH_3	CH_3	H	electron pair
I-1-41	H	H	(4-chlorophenyl) sulphanyl-	H	CH_3	CH_3	H	electron pair
I-1-42	H	H	(2-pyrimidinyl) sulphanyl-	H	CH_3	CH_3	H	electron pair
I-1-43	H	H	1H-pyrazol-1-yl-	H	CH_3	H	H	electron pair
I-1-44	H	H	3-(trifluoromethyl)-1H-pyrazol-1-yl-	H	CH_3	CH_3	H	electron pair
I-1-45	H	H	4-(trifluoromethyl)-1H-pyrazol-1-yl-	H	CH_3	CH_3	H	electron pair
I-1-46	H	H	1H-1,2,3-triazol -1-yl-	H	CH_3	CH_3	H	electron pair
I-1-47	H	H	2H-1,2,3-triazol -2-yl-	H	CH_3	CH_3	H	electron pair
I-1-48	H	H	cyclopropylmethyl sulphonyl-	H	CH_3	CH_3	H	electron pair
I-1-49	H	H	ethylsulphanyl-	H	CH_3	ethyl	H	electron pair
I-1-50	H	H	isopropylsulphanyl-	H	CH_3	ethyl	H	electron pair
I-1-51	H	H	isobutylsulphanyl-	H	CH_3	ethyl	H	electron pair
I-1-52	H	H	tert-butylsulphanyl-	H	CH_3	ethyl	H	electron pair

I-1-53	H	H	cyclopropylmethyl sulphanyl-	H	CH_3	ethyl	H	electron pair
I-1-54	H	H	2,2-dimethylpropyl-sulphanyl-	H	CH_3	ethyl	H	electron pair
I-1-55	H	H	isobutylsulphonyl-	H	CH_3	CH_3	H	oxygen
I-1-56	vinyl-		H	H	CH_3	ethyl	H	electron pair
I-1-57	prop-1-en-2-yl-		H	H	CH_3	CH_3	H	electron pair
I-1-58	(1*E*)-prop-1-en-1-yl-		H	H	CH_3	CH_3	H	electron pair
I-1-59	(1*Z*)-prop-1-en-1-yl-		H	H	CH_3	CH_3	H	electron pair
I-1-60	isobutyl-	H	OH	H	CH_3	CH_3	H	electron pair
I-1-61	Isopentyl-	H	OH	H	CH_3	CH_3	H	electron pair
I-1-62	H	H	4-chlorophenoxy-	H	CH_3	CH_3	H	electron pair
I-1-63	H	H	2,2,2-trifluoroethoxy-	H	CH_3	CH_3	H	electron pair
I-1-64	H	H	ethoxy-	H	CH_3	CH_3	H	electron pair
I-1-65	H	H	isopropoxy-	H	CH_3	CH_3	H	electron pair
I-1-66	H	H	OH	H	CH_3	cyclo propyl	H	electron pair
I-1-67	trifluoromethyl-	H	2,2,2-trifluoroethoxy-	H	CH_3	CH_3	H	electron pair
I-1-68	trichloromethyl-	H	OH	H	CH_3	CH_3	H	electron pair
I-1-69	H	H	4-cyclopropyl-5-oxo-4,5-dihydro-1H-1,2,4-triazol-1-yl-	H	CH_3	CH_3	H	electron pair
I-1-70	H	H	4-methyl-5-oxo-4,5-dihydro-1H-1,2,4-triazol-1-yl-	H	CH_3	CH_3	H	electron pair
I-1-71	cyclopropyl-		H	H	CH_3	CH_3	H	electron pair

Table 2

Analytical data for the compounds listed in Table 1

The ^{1}H NMR data of selected examples are stated in the form of ^{1}H NMR peak lists. For each signal peak, first the δ value in ppm and then the signal intensity in round brackets are listed. The

pairs of δ value–signal intensity numbers for different signal peaks are listed with separation from one another by semicolons.

The peak list for one example therefore takes the form of:

δ_1 (intensity$_1$); δ_2 (intensity$_2$);.....; δ_i (intensity$_i$);.....; δ_n (intensity$_n$)

The intensity of sharp signals correlates with the height of the signals in a printed example of an NMR spectrum in cm and shows the true ratios of the signal intensities. In the case of broad signals, several peaks or the middle of the signal and the relative intensity thereof may be shown in comparison to the most intense signal in the spectrum.

For calibration of the chemical shift of ^{1}H NMR spectra, we use tetramethylsilane and/or the chemical shift of the solvent, particularly in the case of spectra which are measured in DMSO. Therefore, the tetramethylsilane peak may but need not occur in NMR peak lists.

The lists of the ^{1}H NMR peaks are similar to the conventional 1H NMR printouts and thus usually contain all peaks listed in a conventional NMR interpretation.

In addition, like conventional 1H NMR printouts, they may show solvent signals, signals of stereoisomers of the target compounds, which likewise form part of the subject-matter of the invention, and/or peaks of impurities.

In the reporting of compound signals within the delta range of solvents and/or water, our lists of ^{1}H NMR peaks show the standard solvent peaks, for example peaks of DMSO in d_6-DMSO and the peak of water, which usually have a high intensity on average.

The peaks of stereoisomers of the target compounds and/or peaks of impurities usually have a lower intensity on average than the peaks of the target compounds (for example with a purity of > 90%).

Such stereoisomers and/or impurities may be typical of the particular preparation process. Their peaks can thus help in identifying reproduction of our preparation process with reference to "by-product fingerprints".

An expert calculating the peaks of the target compounds by known methods (MestreC, ACD simulation, but also with empirically evaluated expected values) can, if required, isolate the peaks of the target compounds, optionally using additional intensity filters. This isolation would be similar to the peak picking in question in conventional ^{1}H NMR interpretation.

Further details of ^{1}H NMR peak lists can be found in the Research Disclosure Database Number 564025.

Ex. No.	logP[n]	logP[a]	^{1}H-NMR; δ (ppm)
I-1-4	0.68		Example I-1-4: ^{1}H-NMR(400.0 MHz, CD_3CN): δ = 8.664(4.0);8.651(4.1);8.452(1.2);8.448(1.3);8.440(1.3);8.436(1.3);8.406(1.7);8.400(1.7);7.689(0.8);7.685(0.8);7.683(0.8);7.679(0.8);7.669(0.9);7.665(0.9);7.662(0.9);7.658(0.8);7.377(1.0);7.375(1.0);7.365(1.0);7.363(1.0);7.356(0.9);7.355(0.9);7.344(0.9);7.343(0.9);7.262(1.1);7.250(2.1);7.237(1.0);6.198(3.2);4.321(7.9);3.719(14.3);3.389(16.0);2.170(82.6);2.107(0.4);1.964(1.6);1.958(3.6);1.952(20.3);1.946(36.9);1.940(49.6);1.934(33.7);1.927(17.1);0.080(0.4);0.000(9.0)
I-1-8	0.63	-0.16	Example I-1-8: ^{1}H-NMR(400.0 MHz, CD_3CN): δ = 8.476(1.4);8.472(1.4);8.464(1.5);8.460(1.4);8.367(1.9);8.362(1.9);7.680(0.8);7.676(0.9);7.674(0.9);7.670(0.7);7.660(0.9);7.656(1.1);7.654(1.0);7.650(0.8);7.392(1.0);7.391(1.0);7.380(1.0);7.372(1.0);7.360(0.9);6.118(2.9);4.497(8.1);4.444(0.5);3.912(1.2);3.894(3.6);3.876(3.6);3.858(1.3);3.819(0.4);3.793(16.0);3.766(1.0);2.202(10.2);2.122(0.3);1.965(0.5);1.958(1.3);1.953(8.1);1.947(15.1);1.940(21.0);1.934(14.6);1.928(7.4);1.887(0.9);1.271(0.5);1.170(3.6);1.152(7.4);1.135(3.6);0.000(1.2)
I-1-9	0.45		Example I-1-9: ^{1}H-NMR(400.0 MHz, CD_3CN): δ = 8.451(1.3);8.448(1.3);8.439(1.3);8.436(1.3);8.393(1.8);8.387(1.8);7.690(0.8);7.686(1.0);7.684(0.9);7.680(0.8);7.669(0.9);7.666(1.1);7.663(1.0);7.659(0.8);7.377(1.1);7.365(1.1);7.357(1.0);7.345(0.9);6.195(0.7);4.830(0.4);3.806(14.6);3.431(0.7);3.388(16.0);2.173(43.1);1.964(0.7);1.952(10.0);1.946(18.5);1.940(25.6);1.933(17.8);1.927(9.0);1.460(4.1);1.444(4.0);0.146(0.4);0.008(3.5);0.000(78.5);-0.008(3.4);-0.149(0.4)
I-1-11		0.18	Example I-1-11: ^{1}H-NMR(400.0 MHz, CD_3CN): δ = 8.443(1.7);8.431(1.8);8.386(2.3);8.380(2.3);7.679(1.0);7.676(1.1);7.670(0.8);7.659(1.1);7.656(1.2);7.369(1.2);7.357(1.2);7.348(1.1);7.337(1.0);6.244(3.8);4.319(1.9);4.299(1.9);3.782(15.9);3.406(0.4);3.391(16.0);2.263(0.4);2.260(0.4);2.196(109.9);2.130(0.6);2.113(1.0);2.095(1.2);2.079(1.1);2.061(0.7);1.964(0.9);1.952(11.7);1.946(21.5);1.940(29.2);1.934(20.4);1.928(10.6);1.271(0.4);0.969(7.2);0.952(7.0);0.739(7.3);0.722(7.2);0.000(17.0)
I-1-13		0.85	Example I-1-13: ^{1}H-NMR(400.0 MHz, d_6-DMSO): δ = 8.465(2.3);8.459(2.3);8.445(1.6);8.441(1.8);8.433(1.8);8.429(1.8);7.822(0.8);7.818(1.0);7.815(1.0);7.812(0.9);7.802(1.0);7.798(1.1);7.795(1.1);7.791(1.0);7.689(1.2);7.673(1.3);7.670(1.3);7.425(1.2);7.413(1.2);7.405(1.1);7.393(1.1);7.386(0.6);7.382(0.7);7.364(1.4);7.349(0.8);7.345(1.0);7.339(0.8);7.335(1.0);7.319(2.6);7.315(1.9);7.302(1.4);7.298(1.4);7.285(1.0);7.281(1.1);7.265(0.4);7.261(0.4);6.333(1.8);6.319(1.9);6.097(3.2);5.992(2.0);5.977(1.9);5.753(2.2);3.876(16.0);3.696(1.3);3.367(15.9);3.333(70.6);3.326(59.7);2.675(0.4);2.671(0.5);2.666(0.3);2.524(1.1);2.510(29.5);2.506(62.4);2.501(83.8);2.497(60.1);2.492(28.4);2.333(0.4);2.328(0.5);2.324(0.4);1.988(0.6);1.235(0.4);1.175(0.4);0.852(0.5);0.835(1.0);0.817(0.5);0.008(0.8);0.000(24.9);-0.009(0.9)
I-1-14	1.56	1.01	Example I-1-14: ^{1}H-NMR(400.0 MHz, $CDCl_3$): δ = 8.527(1.6);8.523(1.6);8.515(1.6);8.511(1.5);8.400(2.2);8.394(2.2)

			;7.548(0.8);7.544(0.9);7.542(0.9);7.538(0.7);7.528(1.0);7.524(1.1);7.522(1.1);7.518(0.9);7.353(1.2);7.341(1.2);7.332(1.1);7.321(1.0);7.303(2.3);7.287(0.4);7.274(3.8);7.271(3.8);7.267(9.8);7.263(1.8);7.259(2.3);7.239(0.3);7.105(0.8);7.101(0.9);7.092(1.0);7.084(0.7);7.080(0.6);6.227(3.2);5.770(3.6);5.300(5.3);4.129(1.0);4.112(1.0);4.094(0.3);3.776(0.8);3.650(16.0);3.445(15.6);2.044(4.2);1.818(0.4);1.276(1.2);1.258(2.4);1.241(1.2);0.888(0.6);0.070(1.1);0.000(6.1)
I-1-15	1.56	1.11	Example I-1-15: ^{1}H-NMR(400.0 MHz, $CDCl_3$): δ = 8.539(1.4);8.536(1.5);8.527(1.5);8.524(1.6);8.398(2.1);8.391(2.2);7.559(0.7);7.555(0.9);7.553(0.9);7.549(0.8);7.539(0.9);7.535(1.1);7.533(1.1);7.529(1.0);7.359(1.2);7.347(1.2);7.338(1.1);7.324(3.6);7.319(1.4);7.307(1.5);7.302(4.7);7.263(13.0);7.229(0.3);7.197(3.7);7.176(2.8);6.226(3.0);5.769(3.8);5.300(4.8);3.786(0.7);3.640(15.1);3.619(0.3);3.607(0.5);3.445(16.0);3.412(0.5);2.044(1.2);1.277(0.4);1.259(0.7);1.241(0.4);0.891(0.5);0.000(7.6);-0.008(0.4)
I-1-16	1.87	1.42	Example I-1-16: ^{1}H-NMR(400.0 MHz, CD_3CN): δ = 8.447(1.4);8.444(1.4);8.435(1.4);8.432(1.4);8.382(1.9);8.376(1.9);7.666(0.8);7.662(0.9);7.660(0.9);7.656(0.7);7.646(0.9);7.642(1.0);7.639(1.0);7.636(0.8);7.488(2.4);7.478(2.3);7.474(2.2);7.467(2.8);7.365(1.1);7.353(1.1);7.344(1.0);7.332(0.9);7.197(1.3);7.193(1.2);7.176(1.1);7.172(1.0);6.228(2.6);5.840(1.1);4.496(0.5);4.068(0.7);4.050(0.7);3.706(16.0);3.382(15.9);2.169(33.2);1.971(3.2);1.964(1.1);1.958(2.1);1.952(12.4);1.946(23.0);1.939(31.8);1.933(21.8);1.927(11.2);1.221(0.8);1.204(1.6);1.186(0.8);0.000(0.5)
I-1-17	0.71	0.02	Example I-1-17: ^{1}H-NMR(400.0 MHz, d_6-DMSO): δ = 8.476(2.4);8.470(2.4);8.460(1.7);8.457(1.8);8.449(1.8);8.445(1.8);8.424(1.3);8.414(1.3);8.412(1.3);7.840(0.9);7.836(1.7);7.833(1.5);7.830(1.2);7.817(2.3);7.813(2.6);7.798(0.9);7.794(0.9);7.613(1.8);7.593(1.5);7.445(1.3);7.433(1.3);7.425(1.2);7.413(1.1);7.282(0.9);7.269(1.0);7.265(0.9);7.253(0.8);6.400(1.7);6.386(1.8);6.135(3.4);5.839(1.9);5.826(1.8);3.744(16.0);3.357(15.7);3.335(39.0);2.510(7.1);2.506(14.8);2.501(20.5);2.497(15.4);2.493(7.4);0.008(0.4);0.000(9.8)
I-1-18	0.60		Example I-1-18: ^{1}H-NMR(400.0 MHz, d_6-DMSO): δ = 8.489(2.4);8.483(2.5);8.476(2.8);8.470(2.8);8.465(1.9);8.461(3.4);8.458(2.3);8.453(2.0);8.449(3.4);8.446(2.2);7.841(0.9);7.838(1.1);7.835(1.1);7.831(0.9);7.821(1.0);7.817(1.1);7.815(1.2);7.811(1.0);7.712(0.8);7.708(1.2);7.693(0.9);7.688(1.4);7.442(1.4);7.430(1.4);7.422(1.3);7.410(1.2);7.363(1.3);7.351(1.3);7.343(1.2);7.331(1.1);6.434(0.9);6.421(0.9);6.167(3.4);5.932(1.4);5.922(1.4);4.103(0.8);3.797(0.4);3.781(16.0);3.364(15.4);3.335(6.6);3.170(7.1);2.510(4.2);2.506(8.9);2.502(12.4);2.497(9.4);2.493(4.7);0.007(0.4);0.000(11.2);-0.008(0.5)
I-1-19	0.54		Example I-1-19: ^{1}H-NMR(400.0 MHz, d_6-DMSO): δ = 8.514(4.3);8.499(4.4);8.470(3.8);8.465(4.9);8.456(2.2);7.834(1.1);7.830(1.4);7.814(1.2);7.810(1.5);7.447(1.6);7.435(1.6);7.426(1.5);7.415(1.4);7.268(4.1);7.253(4.0);6.545(1.9);6.531(1.9);6.187(3.7);5.888(2.0);5.875(1.9);4.119(1.2);4.107(3.1);4.094(3.1);4.081(1.2);3.799(0.3);3.718(16.0);3.415(0.6);3.361(16.2);3.340(15.2);3.3

			17(0.3);3.178(15.8);3.166(15.9);2.507(9.7);2.503(12.6);0.008(0.6);0.000(10.0)
I-1-20	1.07	0.59	Example I-1-20: ^{1}H-NMR(400.0 MHz, d_6-DMSO): δ = 8.474(2.4);8.467(2.5);8.459(1.7);8.456(1.8);8.447(1.8);8.444(1.8);8.331(2.3);8.325(2.3);7.843(0.9);7.840(1.0);7.837(1.0);7.833(0.9);7.823(1.0);7.819(1.1);7.817(1.1);7.813(0.9);7.789(1.3);7.783(1.3);7.768(1.4);7.762(1.4);7.485(2.7);7.465(2.4);7.442(1.3);7.430(1.3);7.422(1.2);7.410(1.1);6.487(2.7);6.472(2.8);6.144(3.3);5.961(2.0);5.947(1.9);4.042(0.3);3.812(16.0);3.365(15.5);3.319(42.8);2.524(0.7);2.510(16.5);2.506(35.1);2.501(49.3);2.497(36.7);2.492(17.5);0.008(1.4);0.000(45.6);-0.008(1.5)
I-1-21	0.40		Example I-1-21: ^{1}H-NMR(400.0 MHz, CD_3CN): δ = 8.760(4.6);8.748(4.6);8.446(1.3);8.443(1.3);8.434(1.4);8.431(1.3);8.396(1.7);8.390(1.7);7.680(0.7);7.676(0.8);7.674(0.8);7.670(0.7);7.660(0.8);7.656(0.9);7.653(0.9);7.650(0.7);7.3663(1.9);7.3655(1.9);7.354(2.9);7.347(1.0);7.345(1.0);7.342(1.1);7.335(0.9);7.333(0.8);6.167(2.8);5.924(1.0);5.910(1.0);4.774(0.6);4.759(0.6);3.788(16.0);3.383(15.8);2.214(39.1);1.965(0.3);1.958(0.7);1.953(4.6);1.947(8.5);1.940(11.6);1.934(7.9);1.928(3.9);0.008(0.5);0.000(15.0);-0.009(0.5)
I-1-23	1.29	0.67	Example I-1-23: ^{1}H-NMR(400.0 MHz, CD_3CN): δ = 8.297(0.6);8.293(0.6);8.285(0.6);8.281(0.6);8.238(0.8);8.233(0.8);7.529(0.4);7.525(0.4);7.523(0.4);7.509(0.4);7.505(0.5);7.502(0.4);7.498(0.3);7.215(0.4);7.203(0.5);7.195(0.4);7.183(0.4);6.033(1.2);4.301(3.8);3.640(6.8);3.234(6.7);3.077(1.8);3.060(1.9);2.010(16.6);1.806(0.4);1.794(6.4);1.788(11.8);1.781(16.0);1.775(11.0);1.769(5.5);1.113(0.7);0.329(0.8);0.325(0.8);0.314(0.4);0.309(0.8);0.305(0.7);0.000(0.9);-0.004(0.9);-0.012(0.9);-0.016(0.9);-0.159(0.8)
I-1-24	2.02	1.69	Example I-1-24: ^{1}H-NMR(400.0 MHz, CD_3CN): δ = 8.460(1.3);8.456(1.3);8.448(1.4);8.444(1.3);8.410(1.7);8.404(1.8);7.684(0.8);7.680(0.9);7.678(0.8);7.674(0.7);7.664(0.9);7.660(1.0);7.657(1.0);7.653(0.8);7.368(1.0);7.356(1.0);7.347(0.9);7.335(0.9);7.293(1.1);7.273(2.2);7.253(1.4);7.090(1.2);7.085(2.2);7.079(1.5);7.014(1.1);7.012(1.2);7.010(1.1);6.994(0.9);6.992(1.0);6.990(0.9);6.975(1.1);6.973(1.0);6.969(1.0);6.954(0.9);6.952(0.9);6.948(0.9);6.265(2.5);5.078(9.2);3.811(16.0);3.396(15.7);2.146(10.5);1.963(0.7);1.957(1.7);1.952(9.9);1.945(18.1);1.939(24.3);1.933(16.5);1.927(8.4);1.272(0.6);0.000(1.8)
I-1-25	1.63	1.10	Example I-1-25: ^{1}H-NMR(400.0 MHz, CD_3CN): δ = 8.451(1.3);8.448(1.3);8.439(1.4);8.436(1.3);8.404(1.8);8.398(1.8);7.686(0.7);7.682(0.9);7.680(0.8);7.676(0.7);7.666(0.8);7.662(1.0);7.659(0.9);7.656(0.8);7.379(0.6);7.370(1.2);7.369(1.2);7.361(2.0);7.358(2.4);7.357(2.4);7.350(1.5);7.348(1.4);7.344(3.3);7.338(1.6);7.327(4.4);7.310(1.7);7.305(1.6);6.213(3.1);4.505(9.6);4.466(7.3);3.785(16.0);3.392(16.0);2.173(6.3);1.963(0.4);1.957(1.1);1.951(5.9);1.945(10.8);1.939(14.5);1.932(9.8);1.926(5.0);0.008(1.3);0.000(27.5);-0.009(0.9)
I-1-26	0.98	-0.04	Example I-1-26: ^{1}H-NMR(400.0 MHz, CD_3CN): δ = 8.450(1.6);8.447(1.5);8.438(1.6);8.395(2.2);8.389(2.2);7.676(0.9)

			;7.673(1.1);7.656(1.0);7.652(1.2);7.370(1.2);7.358(1.2);7.349(1.1);7.337(1.0);6.181(3.6);3.764(16.0);3.691(10.0);3.389(16.0);2.156(55.4);2.119(0.3);2.112(0.3);2.107(0.4);1.970(16.3);1.951(17.7);1.945(32.0);1.939(43.3);1.933(29.8);1.927(15.3);0.000(4.0)
I-1-27	1.18	0.46	Example I-1-27: ^{1}H-NMR(400.0 MHz, CD_3CN): δ = 8.478(1.5);8.476(1.6);8.466(1.6);8.464(1.6);8.426(2.4);8.419(2.4);7.705(0.8);7.701(1.1);7.695(0.8);7.685(1.0);7.680(1.2);7.675(0.9);7.397(1.3);7.385(1.4);7.377(1.2);7.365(1.1);6.206(3.8);3.798(15.4);3.797(15.8);3.763(10.3);3.418(15.5);3.417(16.0);2.478(1.2);2.460(3.7);2.441(3.8);2.423(1.3);2.242(21.0);2.222(63.0);1.994(0.9);1.988(2.0);1.982(8.9);1.977(15.5);1.976(15.8);1.970(20.9);1.969(21.0);1.964(14.5);1.958(7.5);1.174(3.9);1.156(7.5);1.137(3.6)
I-1-28	0.65	0.35	Example I-1-28: ^{1}H-NMR(400.0 MHz, CD_3CN): δ = 8.488(1.3);8.484(1.5);8.476(1.4);8.472(1.5);8.424(2.0);8.417(1.8);7.712(0.8);7.709(0.9);7.706(0.9);7.702(0.8);7.692(0.9);7.688(1.0);7.685(1.0);7.682(0.9);7.401(1.1);7.390(1.1);7.381(1.0);7.369(0.9);6.364(2.4);4.437(7.4);4.426(0.5);3.855(16.0);3.809(0.7);3.432(15.8);3.423(1.0);3.288(0.6);3.075(0.9);3.056(2.8);3.038(2.9);3.019(1.0);2.533(0.7);2.181(60.2);2.150(0.3);2.144(0.3);2.138(0.4);1.995(1.5);1.989(3.4);1.983(15.7);1.976(28.0);1.970(37.7);1.964(26.0);1.958(13.3);1.305(3.8);1.287(7.6);1.268(3.6)
I-1-30	0.88	0.56	Example I-1-30: ^{1}H-NMR(400.0 MHz, CD_3CN): δ = 8.456(1.3);8.452(1.4);8.444(1.4);8.441(1.4);8.415(0.3);8.395(1.9);8.389(1.9);7.680(0.9);7.676(0.9);7.670(0.7);7.659(0.9);7.654(1.0);7.650(0.8);7.370(1.2);7.358(1.1);7.349(1.0);7.338(0.9);6.334(2.5);5.286(0.3);4.585(1.0);4.422(8.6);3.827(15.5);3.811(2.3);3.800(0.9);3.778(0.4);3.401(16.0);3.391(0.7);3.251(0.4);3.234(1.0);3.217(1.3);3.200(1.0);3.183(0.4);2.631(0.6);2.529(0.5);2.503(1.3);2.464(0.4);2.452(0.3);2.419(0.5);2.407(1.2);2.375(0.3);2.337(0.5);2.310(0.7);2.305(0.8);2.291(0.6);2.282(0.7);2.252(0.6);2.239(1.3);2.225(1.7);2.218(0.8);2.195(1.3);2.183(2.2);2.154(0.7);2.146(0.5);2.141(1.2);2.116(0.7);2.107(0.6);2.080(0.8);2.058(0.4);2.043(0.4);2.023(0.6);1.989(0.6);1.964(0.8);1.957(1.7);1.952(9.5);1.945(17.2);1.939(23.8);1.933(16.7);1.927(8.8);1.671(0.9);1.517(0.3);1.469(0.4);1.294(14.4);1.277(14.3);1.235(0.5);1.218(0.4);1.213(0.4);1.184(0.4);1.169(0.7);1.153(0.6);1.142(0.5);1.124(0.5);0.000(0.9)
I-1-31	1.84	1.18	Example I-1-31: ^{1}H-NMR(400.0 MHz, CD_3CN): δ = 8.449(1.4);8.445(1.5);8.437(1.5);8.433(1.5);8.392(2.2);8.386(2.1);7.674(0.8);7.670(0.9);7.668(1.0);7.664(0.8);7.653(0.9);7.650(1.0);7.647(1.1);7.643(0.9);7.365(1.3);7.353(1.3);7.344(1.2);7.332(1.1);6.163(3.7);3.777(15.8);3.700(10.2);3.385(16.0);2.310(5.0);2.293(5.2);2.202(35.5);1.964(0.6);1.958(1.2);1.952(5.3);1.946(9.4);1.940(12.5);1.934(8.6);1.928(4.4);1.627(0.5);1.610(0.9);1.593(1.1);1.577(0.9);1.560(0.5);0.875(15.2);0.859(14.6);0.000(1.6)
I-1-32	1.26	1.05	Example I-1-32: ^{1}H-NMR(400.0 MHz, CD_3CN): δ = 8.456(1.6);8.452(2.0);8.444(1.6);8.441(1.8);8.388(2.3);8.382(2.1);7.680(0.9);7.676(1.1);7.674(1.2);7.670(1.1);7.660(1.0);7.656(1.2);7.653(1.2);7.650(1.0);7.368(1.4);7.357(1.4);7.348(1.2);7.336(1.0);6.332(2.8);4.993(0.4);4.396(8.4);3.822(16.0);3.801(0.8);3.796(0.9);3.777(0.7);3.700(0.5);3.663(0.3);3.402(16.0);3.390(1.4);3.38

			6(1.5);2.957(4.3);2.941(4.5);2.501(0.9);2.222(0.5);2.205(1.0);2.189(1.3);2.172(1.5);2.138(45.5);2.113(0.7);2.107(0.6);2.100(0.5);1.963(3.3);1.957(6.6);1.952(27.1);1.945(47.2);1.939(62.6);1.933(43.4);1.927(22.4);1.768(0.4);1.050(0.8);1.026(15.7);1.009(15.2);0.989(0.4);0.984(0.4);0.876(0.8);0.860(0.8);0.000(7.8)
I-1-33	1.67	0.97	Example I-1-33: ^{1}H-NMR(400.0 MHz, CD_3CN): δ = 8.444(0.5);8.440(0.5);8.432(0.5);8.428(0.5);8.389(0.6);8.383(0.6);7.643(0.3);7.641(0.3);7.358(0.4);7.346(0.5);7.345(0.5);7.338(0.4);7.326(0.5);6.162(1.1);3.804(3.5);3.788(5.9);3.595(0.5);3.381(5.9);2.199(14.4);1.958(0.5);1.953(3.2);1.946(5.9);1.940(8.0);1.934(5.5);1.928(2.9);1.422(3.2);1.309(0.3);1.253(16.0);0.000(5.3)
I-1-34	1.03	0.75	Example I-1-34: ^{1}H-NMR(400.0 MHz, CD_3CN): δ = 8.458(0.5);8.454(0.5);8.446(0.5);8.442(0.5);8.401(0.6);8.395(0.7);7.670(0.4);7.379(0.4);7.367(0.4);7.358(0.4);7.346(0.3);6.347(1.0);4.464(3.2);3.840(5.9);3.402(5.9);2.301(0.4);1.957(0.6);1.951(3.3);1.945(6.0);1.939(8.2);1.933(5.6);1.927(2.9);1.353(16.0);0.000(1.1)
I-1-35	1.57	0.96	Example I-1-35: ^{1}H-NMR(600.1 MHz, CD_3CN): δ = 8.444(0.8);8.442(0.8);8.436(0.8);8.434(0.7);8.381(1.0);8.377(1.0);7.668(0.5);7.666(0.5);7.664(0.5);7.662(0.4);7.655(0.5);7.652(0.6);7.651(0.5);7.648(0.5);7.358(0.6);7.357(0.6);7.350(0.6);7.349(0.6);7.344(0.6);7.343(0.5);7.336(0.6);7.335(0.5);6.168(1.4);3.778(16.0);3.385(10.2);2.353(2.7);2.342(2.8);2.173(0.3);1.956(0.5);1.951(0.6);1.948(3.1);1.943(5.2);1.939(7.5);1.935(5.1);1.931(2.6);0.830(0.4);0.502(0.4);0.495(1.1);0.492(1.2);0.488(0.5);0.485(0.5);0.481(1.2);0.478(1.1);0.471(0.4);0.163(0.4);0.156(1.3);0.153(1.2);0.148(1.2);0.145(1.3);0.138(0.4);0.000(1.5)
I-1-36	2.06	1.42	Example I-1-36: ^{1}H-NMR(400.0 MHz, CD_3CN): δ = 8.449(0.5);8.445(0.5);8.437(0.5);8.434(0.5);8.391(0.7);8.385(0.7);7.649(0.3);7.645(0.4);7.642(0.4);7.364(0.4);7.363(0.4);7.352(0.4);7.351(0.4);7.344(0.3);7.342(0.3);7.330(0.3);6.159(1.2);3.781(6.2);3.703(3.7);3.384(6.2);2.396(3.3);2.195(6.0);1.952(1.5);1.946(2.7);1.940(3.7);1.934(2.6);1.928(1.3);0.864(16.0)
I-1-37	1.04	0.35	Example I-1-37: ^{1}H-NMR(400.0 MHz, CD_3CN): δ = 8.454(1.5);8.451(1.5);8.442(1.5);8.439(1.5);8.402(2.2);8.396(2.2);7.681(0.9);7.678(1.1);7.675(1.0);7.671(0.8);7.661(1.0);7.657(1.1);7.655(1.1);7.651(0.9);7.375(1.2);7.363(1.2);7.354(1.1);7.343(1.0);6.186(3.4);4.307(0.4);4.281(0.4);4.038(0.4);3.830(9.5);3.797(0.9);3.770(15.6);3.756(0.9);3.701(1.1);3.693(3.3);3.687(1.2);3.675(0.7);3.634(0.6);3.617(15.6);3.404(0.7);3.389(16.0);3.377(1.6);3.275(1.9);3.242(9.8);3.232(0.5);3.140(0.5);2.197(67.4);2.114(0.5);2.107(0.4);2.101(0.5);2.049(2.4);1.964(1.4);1.958(3.0);1.952(15.3);1.946(27.9);1.940(38.3);1.934(27.2);1.928(14.0);1.775(0.3);0.000(53.0)
I-1-38	1.73	1.14	Example I-1-38: ^{1}H-NMR(400.0 MHz, CD_3CN): δ = 8.458(1.5);8.454(1.5);8.446(1.5);8.443(1.5);8.389(2.2);8.383(2.2);7.665(0.8);7.662(1.0);7.660(1.0);7.656(0.8);7.645(0.9);7.641(1.1);7.639(1.1);7.636(0.9);7.366(1.2);7.354(1.2);7.346(1.1);7.333(2.3);7.313(3.4);7.302(1.3);7.298(1.6);7.293(0.7);7.282(3.3);7.263(1.8);7.255(1.7);7.246(0.5);7.238(1.2);6.125(3.5);4.133(9.8);3.732(

			15.8);3.660(0.4);3.376(16.0);2.173(1.4);1.963(0.7);1.951(7.6);1.945(14.0);1.939(19.2);1.933(13.3);1.927(6.7);0.146(0.3);0.008(3.3);0.000(68.6);-0.149(0.3)
I-1-39	1.99	1.41	Example I-1-39: ^{1}H-NMR(400.0 MHz, CD_3CN): δ = 8.450(1.4);8.446(1.5);8.438(1.4);8.435(1.4);8.391(2.0);8.385(2.0);7.660(0.8);7.656(0.9);7.653(0.9);7.650(0.7);7.639(0.9);7.635(1.0);7.633(1.0);7.629(0.8);7.512(1.2);7.507(1.3);7.493(1.2);7.488(1.5);7.408(1.2);7.404(1.1);7.389(1.6);7.385(1.5);7.355(1.1);7.343(1.1);7.334(1.0);7.323(0.9);7.267(0.4);7.263(0.6);7.248(1.4);7.244(1.4);7.230(1.6);7.228(1.8);7.225(1.6);7.223(1.6);7.209(1.3);7.204(1.3);7.190(0.5);7.186(0.4);6.122(3.3);4.190(9.4);3.791(16.0);3.376(16.0);2.501(0.6);2.239(0.5);1.964(0.5);1.957(0.8);1.952(4.3);1.946(7.9);1.939(10.9);1.933(7.5);1.927(3.8);0.008(1.8);0.000(37.8);-0.009(1.4)
I-1-40	2.11	1.55	Example I-1-40: ^{1}H-NMR(400.0 MHz, CD_3CN): δ = 8.452(1.6);8.448(1.5);8.440(1.7);8.437(1.5);8.403(0.6);8.391(1.9);8.385(1.8);7.660(0.8);7.657(0.9);7.654(0.9);7.650(0.7);7.640(0.8);7.636(1.0);7.634(0.9);7.630(0.8);7.437(1.3);7.434(1.9);7.432(2.2);7.358(1.3);7.348(1.4);7.347(1.3);7.340(1.1);7.338(1.1);7.328(1.0);7.326(1.0);7.256(0.5);7.241(4.6);7.240(4.3);7.237(3.7);7.231(2.2);7.227(1.2);7.223(0.6);6.144(2.9);4.516(0.6);4.186(8.8);4.123(0.4);3.884(0.9);3.819(1.6);3.792(1.9);3.763(16.0);3.409(0.5);3.390(4.0);3.378(15.7);3.274(0.5);2.171(34.0);2.120(0.4);2.113(0.4);2.107(0.4);1.972(0.3);1.964(1.1);1.958(2.3);1.952(15.8);1.946(29.5);1.940(41.8);1.933(29.1);1.927(14.9);0.146(0.7);0.008(5.6);0.000(158.3);-0.009(6.8);-0.150(0.7)
I-1-41	2.07	1.57	Example I-1-41: ^{1}H-NMR(400.0 MHz, CD_3CN): δ = 8.461(1.2);8.452(1.1);8.449(1.2);8.386(1.6);8.380(1.7);8.037(1.5);7.668(0.8);7.666(0.8);7.662(0.7);7.651(0.7);7.647(0.9);7.645(0.9);7.642(0.7);7.372(1.0);7.360(1.0);7.351(0.9);7.340(0.8);7.284(16.0);6.127(2.6);4.137(7.1);3.754(12.3);3.389(0.3);3.377(12.3);2.508(1.9);2.453(0.4);1.964(0.4);1.958(0.7);1.952(4.3);1.946(8.0);1.940(11.2);1.933(8.1);1.927(4.3);0.008(1.5);0.000(39.5)
I-1-42	1.01	0.27	Example I-1-42: ^{1}H-NMR(400.0 MHz, CD_3CN): δ = 8.579(0.4);8.567(5.0);8.555(4.9);8.443(1.8);8.440(1.5);8.431(1.8);8.428(1.4);8.395(2.4);8.389(2.4);7.940(0.7);7.934(0.8);7.833(0.6);7.821(0.7);7.676(1.0);7.673(1.2);7.670(1.1);7.667(0.8);7.656(1.1);7.652(1.4);7.650(1.2);7.646(0.9);7.361(1.3);7.349(1.3);7.341(1.2);7.329(1.1);7.240(0.5);7.227(0.5);7.219(0.5);7.207(0.5);7.130(1.4);7.120(2.1);7.118(2.7);7.108(1.0);7.106(1.3);7.085(0.4);7.082(0.4);7.078(0.4);7.061(0.3);6.209(3.5);4.452(9.7);3.908(0.4);3.829(11.4);3.826(15.9);3.386(11.5);3.384(16.0);3.057(0.5);3.032(0.4);2.777(5.3);2.313(4.0);1.964(1.0);1.952(9.6);1.948(12.7);1.946(17.4);1.942(17.8);1.940(23.2);1.936(13.8);1.933(16.4);1.930(7.8);1.927(8.5);1.282(0.3);0.000(0.6)
I-1-44	1.64	1.46	Example I-1-44: ^{1}H-NMR(600.1 MHz, d_6-DMSO): δ = 8.490(2.1);8.486(2.1);8.464(1.6);8.462(1.6);8.456(1.6);8.454(1.6);7.959(1.8);7.957(1.8);7.837(0.8);7.835(1.0);7.833(1.0);7.830(0.8);7.823(1.0);7.821(1.1);7.819(1.0);7.817(0.9);7.434(1.2);7.426(1.2);7.4202(1.1);7.4195(1.1);7.412(1.1);6.737(2.0);6.733(2.0);6.24

			0(1.4);5.562(7.2);3.796(0.5);3.786(16.0);3.368(15.8);3.333(1.0);3.169(3.1);2.507(7.1);2.505(14.8);2.502(20.2);2.499(14.6);2.496(6.9)
I-1-45	1.59	1.34	Example I-1-45: ^{1}H-NMR(400.0 MHz, d_6-DMSO): δ = 8.485(2.3);8.479(2.4);8.465(1.6);8.461(1.8);8.453(1.7);8.449(1.7);8.421(3.0);7.894(3.4);7.846(0.9);7.842(1.1);7.839(1.0);7.836(0.9);7.825(1.0);7.821(1.1);7.819(1.1);7.815(0.9);7.442(1.3);7.430(1.3);7.422(1.2);7.410(1.2);6.231(2.8);5.507(8.0);3.814(16.0);3.378(0.6);3.368(15.5);3.323(9.6);3.175(0.4);3.164(0.3);2.524(0.5);2.511(9.4);2.507(18.8);2.502(24.9);2.498(18.6);2.494(9.5);2.073(0.4);0.008(1.0);0.000(26.6);-0.008(1.1)
I-1-46	0.42	0.05	Example I-1-46: ^{1}H-NMR(400.0 MHz, d_6-DMSO): δ = 8.486(2.3);8.480(2.5);8.465(1.6);8.462(1.8);8.453(1.7);8.450(1.7);8.077(3.7);8.075(3.7);7.846(0.9);7.842(1.1);7.840(1.1);7.836(1.0);7.826(1.1);7.822(1.2);7.819(1.2);7.816(1.0);7.732(3.5);7.731(3.6);7.441(1.4);7.429(1.3);7.420(1.3);7.409(1.1);6.230(2.6);6.130(0.4);5.745(8.9);4.438(0.4);4.424(0.4);3.809(16.0);3.788(1.8);3.368(16.9);3.322(10.4);2.524(0.5);2.506(21.6);2.502(28.8);2.497(21.8);0.008(1.0);0.000(28.0)
I-1-47	0.75	0.35	Example I-1-47: ^{1}H-NMR(400.0 MHz, CD_3CN): δ = 8.454(1.0);8.450(1.1);8.442(1.1);8.438(1.1);8.384(1.2);8.383(1.3);8.378(1.2);8.376(1.3);7.680(0.7);7.676(0.8);7.674(0.8);7.670(0.8);7.659(1.6);7.656(5.4);7.649(1.0);7.370(0.8);7.368(0.8);7.358(0.8);7.356(0.9);7.349(0.7);7.348(0.8);7.338(0.7);7.336(0.8);6.249(1.7);5.647(0.5);5.622(8.6);5.446(0.9);3.860(1.1);3.771(16.0);3.384(15.5);2.787(0.5);2.776(0.5);2.138(31.4);1.963(1.1);1.957(2.2);1.951(12.9);1.945(23.9);1.939(33.1);1.933(22.8);1.926(11.5);1.271(1.2);0.000(1.2)
I-1-48	1.04	0.71	Example I-1-48: ^{1}H-NMR(400.0 MHz, d_6-DMSO): δ= 8.4757(2.8);8.4692(4.6);8.4568(2.1);8.4537(2.0);7.8413(1.0);7.8377(1.3);7.8352(1.2);7.8210(1.2);7.8173(1.5);7.8148(1.4);7.4461(1.4);7.4343(1.5);7.4258(1.4);7.4140(1.3);6.3345(3.1);5.7552(2.3);4.7070(7.8);3.8114(16.0);3.3792(15.7);3.3382(2.4);3.0669(4.2);3.0489(4.2);2.5409(3.1);2.5058(15.0);2.5017(19.1);1.0740(0.6);1.0669(0.6);1.0550(0.9);1.0432(0.6);1.0363(0.6);1.0247(0.4);0.6200(0.7);0.6085(2.3);0.6041(2.6);0.5883(2.4);0.5843(2.3);0.5735(0.9);0.4233(0.9);0.4118(3.0);0.3972(2.8);0.3855(0.7);0.0078(1.0);-0.0002(20.6)
I-1-49		0.71	Example I-1-49: ^{1}H-NMR(400.0 MHz, d_6-DMSO): δ= 8.4865(1.7);8.4831(1.7);8.4747(1.8);8.4712(1.7);8.4322(2.4);8.4264(2.5);7.8107(0.9);7.8069(1.1);7.8046(1.0);7.8008(0.9);7.7905(1.0);7.7865(1.2);7.7843(1.2);7.7805(1.0);7.4526(1.2);7.4407(1.3);7.4323(1.2);7.4205(1.1);6.0959(3.9);5.7560(1.1);3.8697(1.0);3.8519(3.1);3.8341(3.2);3.8164(1.1);3.7848(9.1);3.7459(16.0);3.3328(0.5);2.5066(11.6);2.5023(15.1);2.4979(11.0);2.4005(1.3);2.3822(4.1);2.3638(4.2);2.3455(1.4);1.9236(0.9);1.1185(3.4);1.1008(7.6);1.0913(5.0);1.0830(3.7);1.0730(9.0);1.0546(4.2);0.0078(0.8);-0.0002(17.4);-0.0083(0.9)
I-1-50	1.73	1.10	Example I-1-50: ^{1}H-NMR(400.0 MHz, d_6-DMSO): δ= 8.4833(1.4);8.4798(1.4);8.4714(1.5);8.4680(1.4);8.4275(2.0);8.42

			18(2.0);7.8038(0.8);7.8000(0.9);7.7976(0.9);7.7938(0.7);7.7835(0.9);7.7797(1.0);7.7773(1.0);7.7736(0.8);7.4475(1.0);7.4356(1.1);7.4272(1.0);7.4153(0.9);6.0975(3.1);3.8682(0.8);3.8504(2.5);3.8326(2.7);3.8073(7.3);3.7438(13.4);3.3263(1.5);2.7934(0.4);2.7767(0.9);2.7598(1.2);2.7431(0.9);2.7264(0.4);2.5063(17.1);2.5019(22.0);2.4976(16.0);1.1340(13.8);1.1173(16.0);1.1001(6.3);1.0823(2.8);-0.0002(10.9)
I-1-51	2.05	1.32	Example I-1-51: ^{1}H-NMR(400.0 MHz, d_6-DMSO): δ= 8.4846(1.2);8.4814(1.1);8.4728(1.2);8.4695(1.0);8.4198(1.6);8.4136(1.6);7.8078(0.6);7.8041(0.8);7.7876(0.7);7.7838(0.8);7.7814(0.7);7.4501(0.9);7.4383(0.9);7.4298(0.8);7.4179(0.8);6.0956(2.6);3.8671(0.6);3.8495(2.0);3.8317(2.0);3.8140(0.7);3.7488(16.0);3.3198(6.7);2.5057(31.8);2.5015(39.1);2.4972(27.2);2.2658(3.4);2.2488(3.6);1.9739(0.6);1.5820(0.3);1.5653(0.6);1.5486(0.8);1.5318(0.6);1.5150(0.3);1.2604(0.6);1.2359(0.5);1.1169(2.3);1.0991(5.0);1.0814(2.2);0.8289(11.0);0.8123(10.4);0.0079(1.0);-0.0002(24.3);-0.0084(1.0)
I-1-52	1.93	1.29	Example I-1-52: ^{1}H-NMR(400.0 MHz, d_6-DMSO): δ= 8.4769(0.6);8.4733(0.6);8.4649(0.6);8.4614(0.6);8.4187(0.8);8.4128(0.8);7.7952(0.3);7.7914(0.4);7.7888(0.4);7.7751(0.4);7.7709(0.4);7.7688(0.4);7.4370(0.4);7.4258(0.4);7.4174(0.4);7.4056(0.4);6.0898(1.4);3.8632(0.4);3.8454(1.2);3.8354(3.3);3.8278(1.3);3.8101(0.4);3.7573(6.0);3.3239(21.4);2.5060(16.0);2.5016(21.1);2.4971(15.2);2.4930(7.4);1.2872(0.4);1.2353(0.4);1.1966(16.0);1.1135(1.2);1.0957(2.7);1.0780(1.2);-0.0002(3.2)
I-1-53	1.82	1.19	Example I-1-53: ^{1}H-NMR(400.0 MHz, d_6-DMSO): δ= 8.4829(1.7);8.4795(1.7);8.4711(1.8);8.4676(1.6);8.4163(2.3);8.4101(2.3);7.8111(0.9);7.8072(1.0);7.8048(1.0);7.8011(0.8);7.7908(1.0);7.7868(1.1);7.7845(1.1);7.7808(0.8);7.4492(1.3);7.4373(1.3);7.4290(1.2);7.4171(1.1);6.0970(3.7);3.8665(1.1);3.8584(0.8);3.8489(3.2);3.8308(4.0);3.8226(8.6);3.8142(1.4);3.7508(16.0);3.3235(2.7);2.5411(1.8);2.5241(0.6);2.5063(30.5);2.5019(38.8);2.4975(27.5);2.3287(4.6);2.3110(4.5);2.0488(0.7);1.9869(3.0);1.2357(0.7);1.1164(3.7);1.1089(1.1);1.0986(7.5);1.0809(3.2);0.8195(0.5);0.8122(0.4);0.8002(0.8);0.7883(0.5);0.7816(0.5);0.5003(0.4);0.4844(0.4);0.4801(0.4);0.4707(0.9);0.4602(2.2);0.4558(2.3);0.4454(1.1);0.4400(2.2);0.4360(2.0);0.4256(0.8);0.1474(0.8);0.1369(2.5);0.1336(2.4);0.1250(2.3);0.1216(2.4);0.1106(0.6);0.0079(0.4);-0.0002(11.7);-0.0084(0.5)
I-1-54	2.34	1.68	Example I-1-54: ^{1}H-NMR(400.0 MHz, d_6-DMSO): δ= 8.4858(0.6);8.4826(0.7);8.4740(0.7);8.4708(0.7);8.4167(0.9);8.4112(0.9);7.8019(0.3);7.7982(0.4);7.7958(0.4);7.7921(0.4);7.7817(0.4);7.7779(0.5);7.7755(0.5);7.7718(0.4);7.4462(0.5);7.4344(0.5);7.4259(0.4);7.4141(0.4);6.0945(1.5);3.8657(0.4);3.8480(1.1);3.8302(1.1);3.8125(0.4);3.7531(7.4);3.3245(6.4);2.5060(7.5);2.5018(9.9);2.4976(7.5);2.3500(3.5);1.1147(1.2);1.0970(2.7);1.0792(1.2);0.8167(16.0);-0.0002(1.8)
I-1-55	0.77	0.68	Example I-1-55: ^{1}H-NMR(400.0 MHz, d_6-DMSO): δ= 8.4144(2.6);8.4126(2.6);8.1384(0.9);8.1340(1.0);8.1278(1.6);8.1222(1.2);8.1204(1.2);8.1159(0.9);7.6126(0.3);7.5203(0.4);7.3980(3.3);7.3930(2.4);7.3894(3.9);7.3870(3.6);6.6537(5.0);4.7475(7.0)

			;3.8754(0.9);3.8679(1.0);3.8065(1.0);3.7958(15.0);3.3799(0.8);3.3636(0.8);3.3477(15.0);3.3253(6.5);3.1250(0.4);3.1088(0.4);3.0695(4.4);3.0531(4.5);2.7295(0.4);2.7180(0.4);2.5410(3.8);2.5060(21.3);2.5016(27.2);2.4973(20.2);2.1990(0.5);2.1822(1.0);2.1655(1.2);2.1489(1.0);2.1322(0.5);1.0299(1.5);1.0131(1.6);0.9978(16.0);0.9810(15.5);0.9587(0.4);-0.0002(5.2)
I-1-56	1.10	0.18	Example I-1-56: ^{1}H-NMR(400.0 MHz, d_6-DMSO): δ= 8.4882(1.6);8.4849(1.7);8.4764(1.7);8.4730(1.7);8.4461(2.3);8.4398(2.4);7.8333(0.8);7.8274(1.0);7.8233(0.9);7.8131(0.9);7.8072(1.2);7.8032(0.9);7.4617(1.2);7.4494(1.3);7.4412(1.2);7.4295(1.1);6.8077(1.1);6.7800(1.2);6.7650(1.3);6.7372(1.3);6.1965(4.1);6.0326(1.5);6.0276(1.5);5.9901(1.3);5.9850(1.4);5.4609(1.5);5.4556(1.4);5.4331(1.4);5.4281(1.4);3.8813(1.0);3.8634(3.1);3.8457(3.2);3.8279(1.1);3.7854(16.0);3.6807(0.3);3.3206(42.8);2.6703(0.7);2.5055(91.8);2.5013(121.0);2.4971(90.6);2.3278(0.7);1.2354(0.4);1.1205(3.4);1.1028(7.3);1.0850(3.3);0.0077(0.9);-0.0002(23.2)
I-1-57	1.05	0.10	Example I-1-57: ^{1}H-NMR(400.0 MHz, d_6-DMSO): δ= 8.4937(2.1);8.4875(2.2);8.4734(1.5);8.4700(1.7);8.4616(1.6);8.4581(1.7);7.8623(0.8);7.8585(1.0);7.8560(1.0);7.8521(0.9);7.8419(0.9);7.8382(1.0);7.8356(1.1);7.8318(0.9);7.4602(1.2);7.4484(1.2);7.4399(1.2);7.4280(1.1);6.2709(3.4);5.6691(0.3);5.6655(0.3);5.5036(2.3);5.5008(1.8);5.3168(2.8);5.0872(0.3);5.0833(0.3);3.7919(16.0);3.6841(0.5);3.3817(15.5);3.3641(0.3);3.3561(0.7);3.3424(0.4);3.3202(33.7);2.6703(0.4);2.5098(21.0);2.5057(42.1);2.5012(56.5);2.4968(43.0);2.4927(22.4);2.3277(0.3);2.0241(8.8);1.9417(0.4);1.9310(1.0);1.9272(1.8);1.9236(1.1);1.5004(0.6);1.4796(1.1);1.4607(0.9);1.4552(0.5);1.4404(0.4);1.3080(1.0);1.2893(1.5);1.2708(1.4);1.2528(0.8);1.2350(0.4);0.9063(1.5);0.8857(1.8);0.8788(3.4);0.8663(2.0);0.8605(6.0);0.8422(2.6);0.0079(1.1);-0.0002(28.6);-0.0084(1.4)
I-1-58	1.08		Example I-1-58: ^{1}H-NMR(400.0 MHz, d_6-DMSO): δ= 8.4775(2.6);8.4710(2.7);8.4621(2.3);8.4587(2.1);8.4502(2.1);8.4470(1.7);7.8355(1.0);7.8318(1.2);7.8291(1.1);7.8256(1.0);7.8153(1.2);7.8113(1.3);7.8090(1.2);7.8053(1.0);7.4458(1.6);7.4339(1.6);7.4255(1.5);7.4136(1.4);6.5818(0.6);6.5655(0.6);6.5610(0.4);6.5434(1.4);6.5272(1.5);6.5119(0.5);6.4840(2.0);6.4455(0.8);6.1944(4.2);6.1187(0.4);3.7460(16.0);3.6825(1.8);3.3772(0.8);3.3638(15.6);3.3556(2.6);3.3197(44.0);2.6747(0.5);2.6703(0.6);2.5870(0.4);2.5669(0.4);2.5055(80.8);2.5012(99.9);2.4969(73.4);2.3320(0.5);2.3280(0.6);1.8716(5.0);1.8555(5.1);1.5775(0.3);1.3154(0.4);1.2982(0.5);1.2862(0.4);1.2348(0.6);1.1068(0.3);0.8909(0.6);0.8850(0.7);0.8725(1.2);0.8665(1.2);0.8542(0.7);0.8479(0.6);0.0014(2.8);-0.0002(4.0)
I-1-59	1.11		Example I-1-59: ^{1}H-NMR(400.0 MHz, d_6-DMSO): δ= 8.4866(2.3);8.4802(2.3);8.4702(1.6);8.4669(1.6);8.4583(1.6);8.4550(1.6);7.8525(0.8);7.8483(1.0);7.8427(0.8);7.8322(0.9);7.8263(1.1);7.8223(0.9);7.4556(1.3);7.4438(1.3);7.4352(1.2);7.4234(1.1);6.3495(1.0);6.3452(1.0);6.3200(1.5);6.3140(4.7);6.0543(0.4);6.0364(1.1);6.0249(0.3);6.0185(1.2);6.0072(1.0);6.0008(0.4);5.9894(1.0);3.7345(16.0);3.3775(15.6);3.3208(23.6);2.5057(32.0);2.5014(41.9);2.4970(31.2);2.0326(4.4);2.0284(4.3);2.0147(4.3);2.0106

			(4.3);1.5973(0.3);1.3171(0.4);1.2989(0.4);1.2345(0.4);1.1287(0.3);1.1081(0.4);0.8921(0.7);0.8738(1.3);0.8554(0.7);-0.0002(1.6)
I-1-60	1.26	0.60	Example I-1-60: ^{1}H-NMR(400.0 MHz, d_6-DMSO): δ= 8.4672(2.2);8.4605(3.2);8.4513(1.5);8.4478(1.5);7.8376(0.7);7.8339(0.9);7.8314(0.9);7.8276(0.8);7.8173(0.8);7.8136(1.0);7.8110(1.0);7.8072(0.8);7.4458(1.0);7.4339(1.0);7.4254(1.0);7.4136(1.0);6.1536(3.1);5.7558(16.0);5.3458(2.4);5.3299(2.6);4.6615(0.4);4.6468(0.8);4.6406(0.6);4.6318(0.6);4.6258(0.7);4.6110(0.4);3.8110(12.7);3.6974(0.7);3.3650(12.2);3.3253(3.0);2.5061(7.4);2.5017(9.8);2.4973(7.3);1.9887(1.0);1.7361(0.4);1.7160(0.8);1.7052(0.5);1.6964(0.6);1.6838(0.7);1.6449(0.5);1.6281(0.6);1.6141(0.5);1.5995(0.9);1.5857(0.8);1.5684(0.7);1.5548(0.5);1.5503(0.3);1.1749(0.6);0.8752(5.2);0.8594(5.0);0.8404(5.2);0.8248(5.1)
I-1-61	1.53	0.92	Example I-1-61: ^{1}H-NMR(400.0 MHz, d_6-DMSO): δ= 8.4656(2.7);8.4607(3.7);8.4523(1.6);8.4488(1.6);7.8386(0.7);7.8347(0.9);7.8326(0.9);7.8286(0.8);7.8183(0.8);7.8144(1.0);7.8121(1.0);7.8083(0.8);7.4472(1.1);7.4348(1.2);7.4273(1.1);7.4147(1.0);6.1624(3.7);5.7557(16.0);5.3600(1.9);5.3444(2.0);4.5494(0.4);4.5330(1.0);4.5152(1.1);4.4990(0.4);3.7962(13.5);3.6992(0.9);3.3652(13.3);3.3251(1.4);2.5061(8.0);2.5017(10.6);2.4973(7.8);1.7907(0.4);1.7754(0.8);1.7603(0.9);1.7498(1.0);1.7444(0.7);1.7331(0.8);1.7187(0.7);1.6989(0.4);1.5225(0.3);1.5058(0.7);1.4891(0.9);1.4725(0.8);1.4560(0.4);1.2800(0.3);1.2622(0.5);1.2455(0.7);1.2366(0.6);1.2287(0.5);1.2210(0.5);1.2045(0.3);1.0894(0.3);1.0728(0.5);1.0649(0.4);1.0564(0.5);1.0482(0.6);1.0408(0.4);1.0312(0.5);1.0144(0.4);0.8528(0.6);0.8379(11.1);0.8214(10.1)
I-1-62	2.00	1.63	Example I-1-62: ^{1}H-NMR(400.0 MHz, d_6-DMSO): δ= 19.9882(0.4);8.5088(2.4);8.5031(2.4);8.4809(1.6);8.4778(1.7);8.4693(1.7);8.3160(0.4);7.8552(1.1);7.8344(1.2);7.4523(1.2);7.4407(1.3);7.4316(1.2);7.4198(1.2);7.3508(3.8);7.3454(1.6);7.3283(4.7);7.1959(0.5);7.0796(4.5);7.0572(3.8);6.6803(0.3);6.6561(0.5);6.2502(2.9);5.3363(0.6);5.3244(1.0);5.3127(0.7);5.1176(8.1);3.7956(16.0);3.3772(15.6);3.3178(130.2);2.6749(3.5);2.6701(4.8);2.6656(3.5);2.5054(638.3);2.5010(839.2);2.4966(614.5);2.4253(0.5);2.3322(3.7);2.3278(4.8);2.3236(3.7);2.0257(1.2);2.0080(2.1);1.9894(2.0);1.9730(1.1);1.4912(0.4);1.4555(0.8);1.2355(14.4);0.8710(1.1);0.8539(3.0);0.8365(1.2);0.1460(4.5);0.0077(45.1);-0.0001(1009.1);-0.0080(52.4);-0.1498(4.6)
I-1-63	1.36	0.84	Example I-1-63: ^{1}H-NMR(400.0 MHz, d_6-DMSO): δ= 8.4969(2.5);8.4906(2.6);8.4758(1.7);8.4727(1.7);8.4639(1.7);8.4609(1.7);7.8545(0.9);7.8498(1.1);7.8447(0.9);7.8340(1.0);7.8285(1.2);7.8244(0.9);7.4511(1.4);7.4393(1.4);7.4308(1.3);7.4190(1.2);6.2285(2.9);4.6739(8.4);4.1194(1.2);4.0961(3.8);4.0728(3.9);4.0494(1.3);3.7684(16.0);3.3772(15.9);3.3419(1.1);2.5053(40.4);2.5011(52.0);2.4968(37.3);1.2356(1.0);0.0070(0.6);-0.0002(13.5);-0.0084(0.6)
I-1-64	0.92	0.18	Example I-1-64: ^{1}H-NMR(400.0 MHz, d_6-DMSO): δ= 8.4861(2.3);8.4800(2.4);8.4723(1.8);8.4689(1.9);8.4605(1.7);8.4569(1.8);7.8480(1.0);7.8442(1.1);7.8380(0.9);7.8277(1.0);7.8239(1.1);7.8216(1.1);7.8180(0.9);7.4499(1.3);7.4381(1.3);7.4296(1.2);7.4177(1.2);6.7698(0.5);6.1773(2.9);5.9735(0.4);4.4769(0.7);4.4

			316(8.5);3.8383(1.5);3.7867(0.8);3.7776(0.5);3.7554(16.0);3.4852(0.4);3.4726(1.6);3.4534(0.6);3.4419(1.3);3.4244(4.0);3.4069(4.1);3.3894(1.5);3.3789(2.2);3.3707(15.4);3.3210(6.8);2.6702(0.7);2.6656(0.5);2.5054(94.5);2.5010(124.6);2.4965(90.6);2.3318(0.6);2.3279(0.8);2.3231(0.6);1.2352(1.5);1.1324(0.5);1.1148(1.1);1.1090(4.3);1.0914(8.3);1.0739(4.0);0.8539(0.4);0.0077(2.2);-0.0003(61.2);-0.0085(2.8)
I-1-65	1.20	0.42	Example I-1-65: ^{1}H-NMR(400.0 MHz, CD_3CN): δ= 8.4547(1.6);8.4517(1.6);8.4430(1.6);8.4399(1.6);8.3992(2.3);8.3933(2.2);7.6864(0.9);7.6828(1.1);7.6803(1.1);7.6765(0.9);7.6660(1.0);7.6624(1.2);7.6599(1.2);7.6562(0.9);7.3730(1.2);7.3612(1.2);7.3530(1.1);7.3421(1.0);6.1868(3.4);4.4392(9.8);3.7854(15.9);3.6263(0.5);3.6110(1.2);3.5958(1.6);3.5805(1.2);3.5651(0.5);3.3907(15.9);2.1690(38.8);1.9517(9.0);1.9456(16.3);1.9395(21.7);1.9333(15.2);1.9272(7.9);1.2712(0.9);1.1176(16.0);1.1024(15.8);-0.0003(57.8)
I-1-66	0.61		Example I-1-66: ^{1}H-NMR(400.0 MHz, CD_3CN): δ= 8.4668(1.7);8.4636(1.7);8.4550(1.8);8.4517(1.6);8.4276(2.5);8.4217(2.5);7.6842(0.9);7.6805(1.2);7.6751(0.9);7.6640(1.1);7.6601(1.4);7.6549(1.0);7.3951(1.4);7.3832(1.4);7.3749(1.3);7.3629(1.2);6.6561(3.8);5.4481(2.3);4.5848(0.4);4.5446(8.9);3.8043(0.9);3.7928(1.2);3.7821(16.0);3.2908(0.4);3.2810(0.8);3.2728(1.0);3.2634(1.5);3.2541(1.0);3.2458(0.8);3.2360(0.4);2.2039(13.2);2.1134(0.4);2.1077(0.4);1.9721(0.5);1.9642(0.6);1.9526(7.0);1.9464(12.7);1.9403(17.5);1.9342(12.3);1.9280(6.4);0.8760(0.6);0.8579(2.6);0.8442(2.7);0.8404(2.2);0.8271(0.8);0.5849(0.8);0.5717(2.3);0.5673(2.5);0.5620(2.3);0.5580(2.2);0.5444(0.6);0.0079(2.6);-0.0002(47.1)
I-1-68	1.21	1.02	Example I-1-68: ^{1}H-NMR(400.0 MHz, d_6-DMSO): δ= 8.4770(2.5);8.4710(2.6);8.4614(1.8);8.4578(1.8);8.4494(1.9);8.4460(1.7);8.3133(0.9);7.8387(1.0);7.8347(1.1);7.8323(1.1);7.8287(0.9);7.8182(1.1);7.8143(1.2);7.8118(1.2);7.8082(0.9);7.4427(1.4);7.4306(1.6);7.4229(3.0);7.4089(1.7);7.4048(2.1);6.3597(2.8);5.4071(2.4);5.3887(2.4);4.0234(0.3);3.8850(16.0);3.8220(0.5);3.4053(0.6);3.3810(16.1);3.3251(771.6);2.6752(2.1);2.6708(2.8);2.6662(2.0);2.5061(362.3);2.5017(458.9);2.4973(336.0);2.3329(2.1);2.3285(2.8);2.3241(2.0);1.9883(1.2);1.2591(0.4);1.2433(0.4);1.1925(0.3);1.1750(0.6);1.1572(0.3);-0.0002(15.4)
I-1-69	0.59	0.22	Example I-1-69: ^{1}H-NMR(400.0 MHz, CD_3CN): δ= 8.4738(1.4);8.4706(1.5);8.4619(1.5);8.4585(1.5);8.4137(2.0);8.4076(2.0);7.7287(0.8);7.7249(1.0);7.7228(0.9);7.7191(0.8);7.7084(0.9);7.7045(1.0);7.7023(1.0);7.6986(0.9);7.4685(4.5);7.4115(1.2);7.3997(1.2);7.3911(1.0);7.3792(1.0);6.3373(3.0);4.9329(9.3);3.8949(0.4);3.8660(0.4);3.7943(15.7);3.4202(0.4);3.4114(0.7);3.3921(16.0);3.1813(0.3);3.0110(0.3);3.0042(0.3);3.0001(0.4);2.9738(0.4);2.9699(0.4);2.9614(0.4);2.9413(0.4);2.9102(0.7);2.9006(1.0);2.8923(1.3);2.8830(1.4);2.8791(1.1);2.8736(1.1);2.8655(1.0);2.8558(0.7);2.8268(0.4);2.5033(7.2);1.9640(0.4);1.9523(6.0);1.9461(11.4);1.9400(16.0);1.9338(11.1);1.9277(5.8);0.9241(0.4);0.9062(1.8);0.8907(2.0);0.8763(1.6);0.8597(1.2);0.8488(3.0);0.8428(2.0);0.8373(1.7);0.8178(0.5);0.0079(1.8);-0.0002(46.7);-0.0083(2.3)

I-1-70	0.37		Example I-1-70: ^{1}H-NMR(400.0 MHz, d_6-DMSO): δ= 8.4753(2.8);8.4685(4.1);8.4563(2.0);8.4529(1.9);7.8922(5.4);7.8411(1.0);7.8375(1.2);7.8311(1.0);7.8208(1.2);7.8168(1.3);7.8108(1.0);7.4476(1.3);7.4357(1.4);7.4274(1.3);7.4154(1.2);6.1647(3.2);6.1285(0.4);4.9192(8.6);4.4368(0.3);4.4234(0.3);4.0653(0.5);3.7868(1.6);3.7667(15.7);3.3978(0.6);3.3594(15.7);3.3213(54.7);3.1626(16.0);3.1216(0.4);2.6699(0.5);2.6659(0.4);2.5405(33.6);2.5054(68.7);2.5011(89.0);2.4968(66.1);2.3280(0.6);2.3238(0.4);0.1457(0.4);-0.0002(77.3);-0.0082(3.7);-0.1497(0.4)
I-1-71	0.95		Example I-1-71: ^{1}H-NMR(400.0 MHz, d_6-DMSO): δ= 8.4740(2.6);8.4680(3.0);8.4618(2.6);8.4500(2.0);7.8232(1.3);7.8034(1.4);7.4446(1.3);7.4331(1.4);7.4244(1.4);7.4122(1.4);6.0499(2.6);3.9530(0.4);3.9317(0.4);3.8400(0.8);3.8062(16.0);3.7625(0.4);3.6898(1.1);3.3519(16.8);3.3199(35.5);2.6701(1.8);2.6005(0.4);2.5798(0.3);2.5050(240.0);2.5011(294.6);2.4971(216.1);2.3281(1.6);2.0033(0.6);1.9942(0.7);1.9821(1.2);1.9703(0.8);1.9622(0.7);1.9504(0.4);1.2589(0.4);1.2350(0.5);0.9222(0.6);0.9128(1.8);0.9059(2.3);0.8918(1.9);0.8855(2.4);0.8769(0.9);0.8678(0.8);0.8492(0.4);0.7766(0.9);0.7677(2.4);0.7618(2.3);0.7558(2.4);0.7503(2.1);0.7388(0.6);-0.0003(52.9)

Biological Examples

Myzus persicae – spray test

Solvent: 78 parts by weight of acetone

1.5 parts by weight of dimethylformamide

Emulsifier: alkylaryl polyglycol ether

To produce a suitable active compound preparation, 1 part by weight of active compound is dissolved using the stated parts by weight of solvent and made up with water containing an emulsifier concentration of 1000 ppm until the desired concentration is attained. To produce further test concentrations, the formulation is diluted with emulsifier-containing water.

Discs of Chinese cabbage leaves (*Brassica pekinensis*) infested by all stages of the green peach aphid (*Myzus persicae*) are sprayed with an active ingredient formulation of the desired concentration.

After 5-6 days, the efficacy in % is determined. 100% means that all the aphids have been killed; 0% means that no aphids have been killed.

In this test, for example, the following compounds from the preparation examples show an efficacy of 100% at an application rate of 500 g/ha: I-1-3, I-1-4 , I-1-5, I-1-6, I-1-7, I-1-9, I-1-13, I-1-15, I-1-16, I-1-17, I-1-21, I-1-22, I-1-23, I-1-24, I-1-26, I-1-28, I-1-31, I-1-33, I-1-34, I-1-35, I-1-37, I-1-42, I-1-43, I-1-44, I-1-46, I-1-47, I-1-48, I-1-51, I-1-53, I-1-62, I-1-64

In this test, for example, the following compounds from the preparation examples show an efficacy of 90% at an application rate of 500 g/ha: I-1-10, I-1-11, I-1-12, I-1-14, I-1-18, I-1-19, I-1-20, I-1-25, I-1-27, I-1-29, I-1-30, I-1-32, I-1-36, I-1-38, I-1-39, I-1-40, I-1-41, I-1-45, I-1-49, I-1-50, I-1-52, I-1-54, I-1-56, I-1-57, I-1-58, I-1-59, I-1-60, I-1-61, I-1-63, I-1-65, I-1-71

In this test, for example, the following compounds from the preparation examples show an efficacy of 70% at an application rate of 500 g/ha: I-1-67, I-1-69

Myzus persicae – oral test

Solvent: 100 parts by weight of acetone

To produce a suitable preparation of active compound, 1 part by weight of active compound is dissolved using the specified parts by weight of solvent and made up with water until the desired concentration is attained.

50 µl of the active compound preparation are transferred into microtitre plates and made up to a final volume of 200 µl with 150 µl of IPL41 insect medium (33% + 15% sugar). Subsequently, the plates are sealed with parafilm, which a mixed population of green peach aphids (*Myzus persicae*) within a second microtitre plate is able to puncture and imbibe the solution through it.

After 5 days, the efficacy in % is determined. 100% means that all the aphids have been killed; 0% means that no aphids have been killed.

In this test, for example, the following compound from the preparation examples shows an efficacy of 100% at an application rate of 20 ppm: I-1-4, I-1-5, I-1-6, I-1-7, I-1-9, I-1-11, I-1-12, I-1-13, I-1-14, I-1-15, I-1-16, I-1-17, I-1-18, I-1-19, I-1-20, I-1-21, I-1-22, I-1-23, I-1-25, I-1-26, I-1-27, I-1-28, I-1-29, I-1-30, I-1-31, I-1-32, I-1-33, I-1-34, I-1-35, I-1-36, I-1-37, I-1-39, I-1-40, I-1-41, I-1-42, I-1-43, I-1-44, I-1-45, I-1-46, I-1-47, I-1-48, I-1-49, I-1-50, I-1-51, I-1-52, I-1-53, I-1-54, I-1-60, I-1-61, I-1-62, I-1-63, I-1-64, I-1-65, I-1-71

In this test, for example, the following compound from the preparation examples shows an efficacy of 90% at an application rate of 20 ppm: I-1-3, I-1-8, I-1-24, I-1-38, I-1-56

In this test, for example, the following compound from the preparation examples shows an efficacy of 70% at an application rate of 20 ppm: I-1-10, I-1-66

Deposition examples

Myzus persicae - spray test (MYZUPE)

Solvent: 78.0 parts by weight of acetone
1.5 parts by weight of dimethylformamide

Emulsifier: alkylaryl polyglycol ether

To produce a suitable active compound preparation, 1 part by weight of active compound is dissolved using the stated parts by weight of solvent and made up with water containing an emulsifier concentration of 1000 ppm until the desired concentration is attained. To produce further test concentrations, the formulation is diluted with emulsifier-containing water.

Discs of Chinese cabbage leaves (*Brassica pekinensis*) infested by all stages of the green peach aphid (*Myzus persicae*) are sprayed with an active compound preparation of the desired concentration.

After the desired period of time, the efficacy in % is determined. 100% means that all the aphids have been killed; 0% means that no aphids have been killed.

In this test, for example, the following compounds of the Preparation Examples show superior efficacy to the prior art: see Table 3.

Myzus persicae – oral test (MYZUPE O)

Solvent: 100 parts by weight of acetone

To produce a suitable preparation of active compound, 1 part by weight of active compound is dissolved using the specified parts by weight of solvent and made up with water until the desired concentration is attained.

50 µl of the active compound preparation are transferred into microtitre plates and made up to a final volume of 200 µl with 150 µl of IPL41 insect medium (33% + 15% sugar). Subsequently, the plates are sealed with parafilm, which a mixed population of green peach aphids (*Myzus persicae*) within a second microtitre plate is able to puncture and imbibe the solution through it.

After the desired period of time, the efficacy in % is determined. 100% means that all the aphids have been killed; 0% means that no aphids have been killed.

In this test, for example, the following compounds of the Preparation Examples show superior efficacy to the prior art: see Table 3.

Myzus persicae - spray test (MYZUPE S)

Solvent: 14 parts by weight of dimethylformamide
Emulsifier: alkylaryl polyglycol ether

To produce a suitable active compound preparation, 1 part by weight of active compound is dissolved with the specified parts by weight of solvent and made up with water containing an emulsifier concentration of 1000 ppm until the desired concentration is attained. To produce further test concentrations, the formulation is diluted with emulsifier-containing water. If the addition of ammonium salts or/and penetrants is required, these are each added in a concentration of 1000 ppm to the formulation solution.

Bell pepper plants (*Capsicum annuum*) severely infested with the green peach aphid (*Myzus persicae*) are treated by spraying with the active ingredient formulation in the desired concentration.

After the desired time, the kill in % is determined. 100% means that all the animals have been killed; 0% means that no animals have been killed.

In this test, for example, the following compounds of the Preparation Examples show superior efficacy to the prior art: see Table 3.

Myzus persicae - drench test (MYZUPE D)

Solvent: 7 parts by weight of dimethylformamide
Emulsifier: 2 parts by weight of alkylaryl polyglycol ether

To produce a suitable active compound preparation, 1 part by weight of active compound is mixed with the specified amounts of solvent and emulsifier, and the concentrate is diluted with water to the desired concentration, it being necessary to include the volume of soil which is drenched in the calculation. It should be ensured that a concentration of 40 ppm of emulsifier in the soil is not exceeded. To produce further test concentrations, water is used for dilution.

Savoy cabbage (*Brassica oleracea*) in pots with soil and infested by all stages of the green peach aphid (*Myzus persicae*) is watered with an active compound preparation of the desired concentration.

After the desired period of time, the efficacy in % is determined. 100% means that all the aphids have been killed; 0% means that no aphids have been killed.

In this test, for example, the following compounds of the Preparation Examples show superior efficacy to the prior art: see Table 3.

Aphis gossypii – spray test (APHIGO S)

Solvent: 14 parts by weight of dimethylformamide
Emulsifier: alkylaryl polyglycol ether

To produce a suitable active compound preparation, 1 part by weight of active compound is dissolved using the stated parts by weight of solvent and made up with water containing an emulsifier concentration of 1000 ppm until the desired concentration is attained. To produce further test concentrations, the formulation is diluted with emulsifier-containing water. If the addition of ammonium salts or/and penetrants is required, these are each added in a concentration of 1000 ppm to the formulation solution.

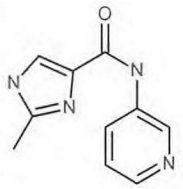
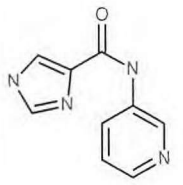
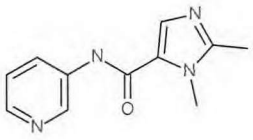
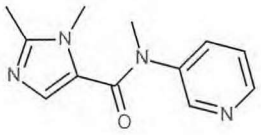
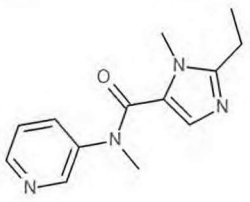
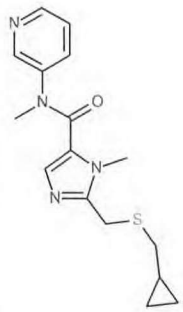
Cotton plants (*Gossypium hirsutum*) heavily infested by the cotton aphid (*Aphis gossypii*) are sprayed with an active ingredient formulation of the desired concentration.

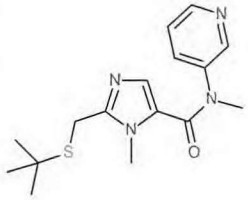
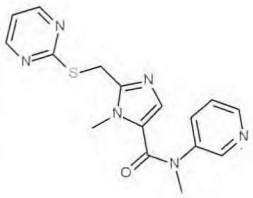
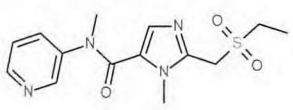
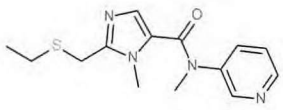
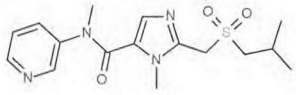
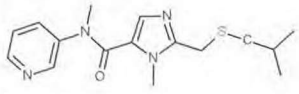
After the desired time, the kill in % is determined. 100% means that all the aphids have been killed; 0% means that no aphids have been killed.

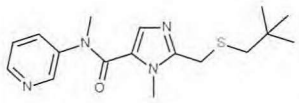
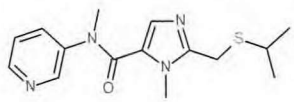
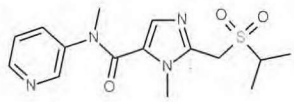
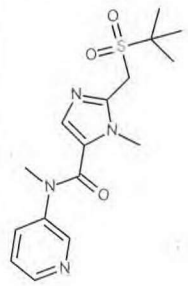
In this test, for example, the following compounds of the Preparation Examples show superior efficacy to the prior art: see Table 3.

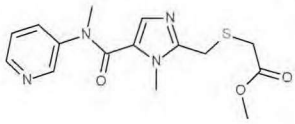
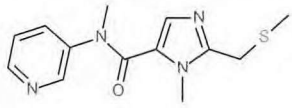
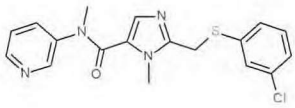
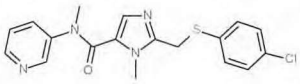
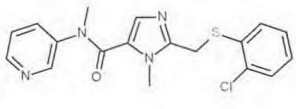
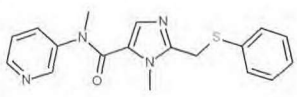
Table 3

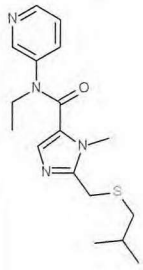
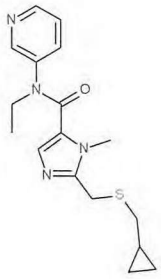
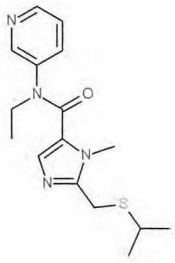
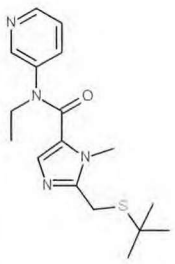
Substance	Structure	Object	Concentration	% efficacy dat

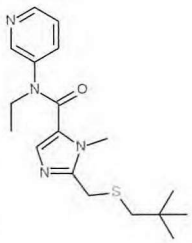
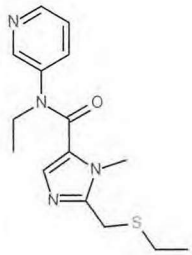
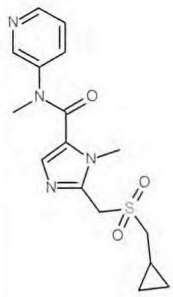
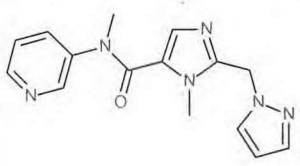
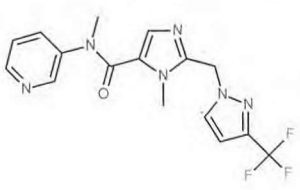
Prior art *WO 2011/009804 (Ex. 14)*		MYZUPE MYZUPE O	100 g of ai/ha 20 g of ai/ha 4 ppm	0 0 0	5 dat 5 dat 5 dat
Prior art *WO 2011/009804 (Ex. 13)*		MYZUPE MYZUPE O	100 g of ai/ha 20 g of ai/ha 4 ppm	0 0 0	6 dat 6 dat 6 dat
Prior art *Dragovic et al., Bioorganic & Medicinal Chemistry Letters, Vol. 24, No. 3, pp. 954-962 (Table 2, Comp. 20)*		MYZUPE	100 g of ai/ha 20 g of ai/ha	70 0	5 dat 5 dat
Prior art *according to* *WO 2011/009804*		MYZUPE S MYZUPE D APHIGO S	0.16 ppm 0.16 ppm 4 ppm 0.8 ppm	0 30 40 0	6 dat 10 dat 6 dat 6 dat
Prior art *according to* *WO 2011/009804*		MYZUPE S MYZUPE D APHIGO S	0.16 ppm 0.16 ppm 4 ppm 0.8 ppm	0 0 45 0	6 dat 10 dat 6 dat 6 dat
Example No. I-1-35 according to the invention		MYZUPE MYZUPE O MYZUPE S MYZUPE D APHIGO S	100 g of ai/ha 20 g of ai/ha 4 ppm 0.16 ppm 0.16 ppm 4 ppm 0.8 ppm	90 90 100 100 98 100 99	5 dat 5 dat 5 dat 6 dat 10 dat 6 dat 6 dat

Example No. I-1-33 according to the invention		MYZUPE MYZUPE O MYZUPE D APHIGO S	100 g of ai/ha 20 g of ai/ha 4 ppm 0.16 ppm 4 ppm	90 100 100 90 75	5 dat 5 dat 5 dat 10 dat 6 dat
Example No. I-1-42 according to the invention		MYZUPE MYZUPE O	100 g of ai/ha 4 ppm	70 90	5 dat 5 dat
Example No. I-1-28 according to the invention		MYZUPE MYZUPE O MYZUPE S MYZUPE D APHIGO S	100 g of ai/ha 20 g of ai/ha 4 ppm 0.16 ppm 0.16 ppm 4 ppm 0.8 ppm	90 100 100 95 95 100 98	5 dat 5 dat 5 dat 6 dat 10 dat 6 dat 6 dat
Example No. I-1-27 according to the invention		MYZUPE MYZUPE O MYZUPE D APHIGO S	100 g of ai/ha 20 g of ai/ha 4 ppm 0.16 ppm 4 ppm 0.8 ppm	90 90 100 98 100 98	5 dat 5 dat 5 dat 10 dat 6 dat 6 dat
Example No. I-1-32 according to the invention		MYZUPE MYZUPE O MYZUPE S MYZUPE D APHIGO S	100 g of ai/ha 4 ppm 0.16 ppm 0.16 ppm 4 ppm 0.8 ppm	70 100 98 98 97 98	5 dat 5 dat 6 dat 10 dat 6 dat 6 dat
Example No. I-1-31 according to the		MYZUPE	100 g of ai/ha 20 g of ai/ha	90 90	5 dat 5 dat

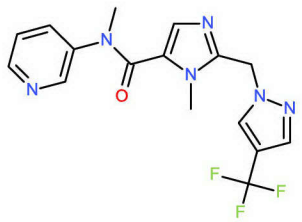
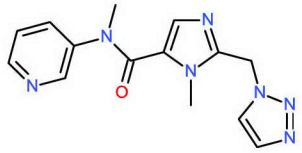
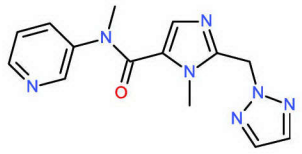
invention		MYZUPE O	4 ppm	100	5 dat
		MYZUPE S	0.16 ppm	99	6 dat
		MYZUPE D	0.16 ppm	95	10 dat
		APHIGO S	4 ppm	100	6 dat
			0.8 ppm	100	6 dat
Example No. I-1-36		MYZUPE	100 g of ai/ha	90	5 dat
			20 g of ai/ha	90	5 dat
according to the invention		MYZUPE O	4 ppm	100	5 dat
		MYZUPE S	0.16 ppm	75	6 dat
		MYZUPE D	0.16 ppm	80	10 dat
		APHIGO S	4 ppm	98	6 dat
			0.8 ppm	98	6 dat
Example No. I-1-29		MYZUPE	100 g of ai/ha	90	5 dat
		MYZUPE O	4 ppm	100	5 dat
according to the invention		MYZUPE S	0.16 ppm	99	6 dat
		MYZUPE D	0.16 ppm	98	10 dat
		APHIGO S	4 ppm	100	6 dat
			0.8 ppm	98	6 dat
Example No. I-1-30		MYZUPE	100 g of ai/ha	90	5 dat
			20 g of ai/ha	90	5 dat
according to the invention		MYZUPE O	4 ppm	100	5 dat
		MYZUPE S	0.16 ppm	98	6 dat
		MYZUPE D	0.16 ppm	98	10 dat
		APHIGO S	4 ppm	100	6 dat
			0.8 ppm	100	6 dat
Example No. I-1-34		MYZUPE	100 g of ai/ha	90	5 dat
			20 g of ai/ha	90	5 dat
according to the invention		MYZUPE O	4 ppm	100	5 dat
		MYZUPE S	0.16 ppm	45	6 dat
		MYZUPE D	0.16 ppm	90	10 dat
		APHIGO S	4 ppm	95	6 dat

			0.8 ppm	85	6 dat
Example No. I-1-37 according to the invention		MYZUPE O	4 ppm	100	5 dat
Example No. I-1-26 according to the invention		MYZUPE MYZUPE O MYZUPE S MYZUPE D APHIGO S	100 g of ai/ha 20 g of ai/ha 4 ppm 0.16 ppm 0.16 ppm 4 ppm 0.8 ppm	90 90 100 95 90 98 30	5 dat 5 dat 5 dat 6 dat 10 dat 6 dat 6 dat
Example No. I-1-40 according to the invention		MYZUPE MYZUPE O	100 g of ai/ha 4 ppm	90 100	5 dat 5 dat
Example No. I-1-41 according to the invention		MYZUPE MYZUPE O APHIGO S	100 g of ai/ha 20 g of ai/ha 4 ppm 4 ppm 0.8 ppm	90 70 100 100 35	5 dat 5 dat 5 dat 6 dat 6 dat
Example No. I-1-39 according to the invention		MYZUPE MYZUPE O APHIGO S	100 g of ai/ha 20 g of ai/ha 4 ppm 4 ppm 0.8 ppm	90 90 100 95 30	5 dat 5 dat 5 dat 6 dat 6 dat
Example No. I-1-38 according to the		MYZUPE O APHIGO S	4 ppm 4 ppm 0.8 ppm	100 100 60	5 dat 6 dat 6 dat

invention					
Example No. I-1-51 according to the invention		MYZUPE MYZUPE O MYZUPE S MYZUPE D APHIGO S	100 g of ai/ha 20 g of ai/ha 4 ppm 0.16 ppm 0.16 ppm 4 ppm 0.8 ppm	90 90 100 99 98 99 99	5 dat 5 dat 5 dat 6 dat 10 dat 6 dat 6 dat
Example No. I-1-53 according to the invention		MYZUPE MYZUPE O MYZUPE S MYZUPE D APHIGO S	100 g of ai/ha 20 g of ai/ha 4 ppm 0.16 ppm 0.16 ppm 4 ppm 0.8 ppm	100 100 100 99 90 97 98	5 dat 5 dat 5 dat 6 dat 10 dat 6 dat 6 dat
Example No. I-1-50 according to the invention		MYZUPE MYZUPE O MYZUPE S MYZUPE D APHIGO S	100 g of ai/ha 20 g of ai/ha 4 ppm 0.16 ppm 0.16 ppm 4 ppm 0.8 ppm	90 70 100 100 98 95 90	5 dat 5 dat 5 dat 6 dat 10 dat 6 dat 6 dat
Example No. I-1-52 according to the invention		MYZUPE MYZUPE O MYZUPE S MYZUPE D APHIGO S	100 g of ai/ha 20 g of ai/ha 4 ppm 0.16 ppm 0.16 ppm 4 ppm	90 70 100 99 95 90	5 dat 5 dat 5 dat 6 dat 10 dat 6 dat

Example No. I-1-54 according to the invention		MYZUPE	100 g of ai/ha	90	5 dat
			20 g of ai/ha	90	5 dat
		MYZUPE O	4 ppm	100	5 dat
		MYZUPE S	0.16 ppm	99	6 dat
		MYZUPE D	0.16 ppm	90	10 dat
		APHIGO S	4 ppm	95	6 dat
			0.8 ppm	90	6 dat
Example No. I-1-49 according to the invention		MYZUPE	100 g of ai/ha	70	5 dat
			20 g of ai/ha	70	5 dat
		MYZUPE O	4 ppm	100	5 dat
		MYZUPE S	0.16 ppm	95	6 dat
		MYZUPE D	0.16 ppm	95	10 dat
		APHIGO S	4 ppm	100	6 dat
			0.8 ppm	98	6 dat
Example No. I-1-48 according to the invention		MYZUPE	100 g of ai/ha	100	5 dat
			20 g of ai/ha	100	5 dat
		MYZUPE O	4 ppm	100	5 dat
		MYZUPE S	0.16 ppm	99	6 dat
		MYZUPE D	0.16 ppm	90	10 dat
		APHIGO S	4 ppm	100	6 dat
			0.8 ppm	100	6 dat
Example No. I-1-43 according to the invention		MYZUPE	100 g of ai/ha	90	4 dat
			20 g of ai/ha	90	4 dat
		MYZUPE O	4 ppm	100	5 dat
		MYZUPE D	0.16 ppm	70	10 dat
		APHIGO S	4 ppm	98	6 dat
			0.8 ppm	30	6 dat
Example No. I-1-44 according to the invention		MYZUPE	100 g of ai/ha	90	4 dat
			20 g of ai/ha	90	4 dat
		MYZUPE O	4 ppm	100	5 dat
		MYZUPE D	0.16 ppm	90	10 dat

2017256505 01 Dec 2020

		APHIGO S	4 ppm 0.8 ppm	99 55	6 dat 6 dat
Example No. I-1-45 according to the invention		MYZUPE MYZUPE O MYZUPE D APHIGO S	100 g of ai/ha 4 ppm 0.16 ppm 4 ppm 0.8 ppm	100 100 80 100 98	4 dat 5 dat 10 dat 6 dat 6 dat
Example No. I-1-46 according to the invention		MYZUPE MYZUPE O	100 g of ai/ha 20 g of ai/ha 4 ppm	90 90 100	6 dat 6 dat 6 dat
Example No. I-1-47 according to the invention		MYZUPE MYZUPE O MYZUPE S MYZUPE D APHIGO S	100 g of ai/ha 4 ppm 0.16 ppm 0.16 ppm 4 ppm 0.8 ppm	90 100 90 90 100 100	6 dat 6 dat 6 dat 10 dat 6 dat 6 dat

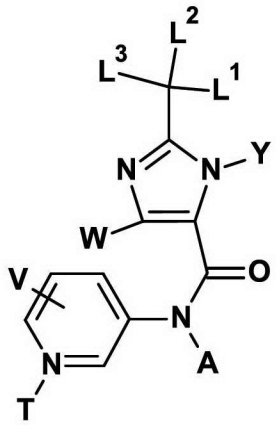
The reference in this specification to any prior publication (or information derived from it), or to any matter which is known, is not, and should not be taken as an acknowledgment or admission or any form of suggestion that that prior publication (or information derived from it) or known matter forms part of the common general knowledge in the field of endeavour to which this specification relates.

Throughout this specification and the claims which follow, unless the context requires otherwise, the word “comprise”, and variations such as “comprises” and “comprising”, will be understood to imply the inclusion of a stated integer or step or group of integers or steps but not the exclusion of any other integer or step or group of integers or steps.

2017256505 25 Jan 2021

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A compound of formula (I-1)



(I-1)

where

V represents a radical from the group consisting of hydrogen, fluorine, chlorine, methyl and cyano,

W represents a radical from the group consisting of hydrogen, fluorine, chlorine, bromine, methyl, ethyl and cyano,

Y represents a radical from the group consisting of hydrogen; methyl, ethyl, propyl, allyl and propargyl, optionally mono- to trisubstituted independently of one another by fluorine, methoxy, ethoxy and cyano,

A represents a radical from the group consisting of hydrogen; methyl, ethyl, propyl, allyl, propargyl, cyclopropyl and cyclopropylmethyl, optionally mono- to trisubstituted independently of one another by fluorine, methoxy, ethoxy and cyano,

T represents an electron pair or oxygen,

L^1 represents a radical from the group consisting of hydrogen, methyl, trifluoromethyl, trichloromethyl, isopropyl, isobutyl, isopentyl, phenyl, 2-chlorophenyl, 3-chlorophenyl, 4-chlorophenyl, 3,4-dichlorophenyl, 2-pyridinyl, 3-pyridinyl, 4-pyridinyl, 4-chloropyridin-3-yl, 2-pyrimidyl and benzyl,

2017256505 25 Jan 2021

L^2 represents hydrogen or methyl,

or

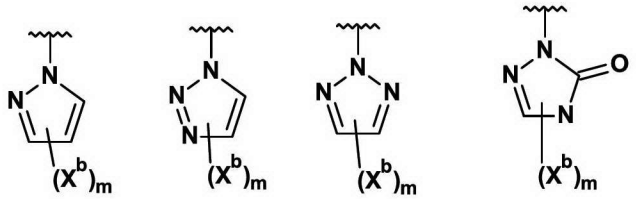
L^1 and L^2 together represent vinyl, prop-1-en-2-yl, (1*E*)-prop-1-en-1-yl, (1*Z*)-prop-1-en-1-yl or cyclopropyl,

L^3 represents a radical from the group consisting of hydrogen, $S(O)_nR^{1a}$, OR^{1b} and $N(R^2)(R^3)$, where in the case that L^1 represents hydrogen, methyl, trifluoromethyl, trichloromethyl, isopropyl, isobutyl or isopentyl and/or L^2 represents hydrogen or methyl, L^3 represents a radical from the group consisting of $S(O)_nR^{1a}$, OR^{1b} and $N(R^2)(R^3)$,

R^{1a} represents a radical from the group consisting of methyl, ethyl, isopropyl, isobutyl, tert-butyl, cyclopropylmethyl, 2,2-dimethylpropyl, 2-methoxy-2-oxoethyl, phenyl, 2-chlorophenyl, 3-chlorophenyl, 4-chlorophenyl and 2-pyrimidyl,

R^{1b} represents a radical from the group consisting of hydrogen, methyl, ethyl, 2,2,2-trifluoroethyl, isopropyl, cyclopropylmethyl, benzyl, 3-chlorophenyl and 4-chlorophenyl,

R^2 and R^3 together with N represent a heterocycle from the group consisting of U-2, U-4, U-5 and U-13,



U-2 U-4 U-5 U-13

X^b represents trifluoromethyl, methyl or cyclopropyl,

m represents a number 0 or 1,

n represents a number 0 or 2,

or a salt thereof.

2017256505 25 Jan 2021

2. A compound according to Claim 1, wherein

L^3 represents a radical from the group consisting of $S(O)_nR^{1a}$, OR^{1b} and $N(R^2)(R^3)$.

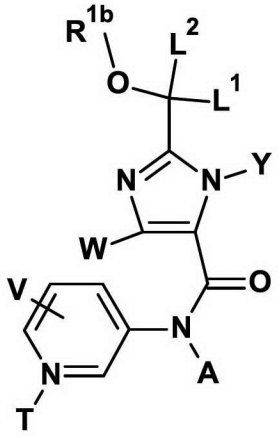
3. A compound according to Claim 1, wherein

L^3 represents a radical from the group consisting of $S(O)_nR^{1a}$ and $N(R^2)(R^3)$.

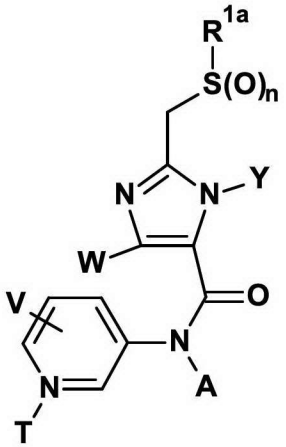
4. A compound according to Claim 1, wherein

L^3 represents a radical $S(O)_nR^{1a}$.

5. A compound according to Claim 1, wherein the compound is a compound of formulae (I-1a), (I-1c) or (I-1d).

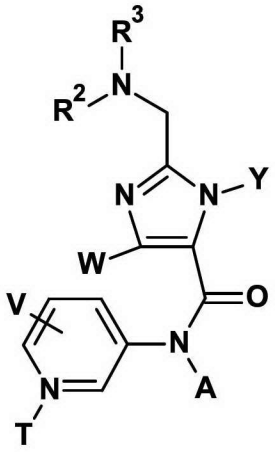


(I-1a)



(I-1c)

2017256505 25 Jan 2021



(I-1d).

6. A compound according to Claim 5, wherein the compound is a compound of formula (I-1c).

7. A composition comprising at least one compound according to any one of Claims 1 to 6 and a customary extender and/or surfactant in particular for controlling animal pests.

8. A method for controlling an aphid pest, where at least one compound according to any one of Claims 1 to 6 or a composition according to Claim 7 is allowed to act on the aphid pest and/or their habitat.

9. Use of at least one compound according to any one of Claims 1 to 6 or a composition according to Claim 7 for controlling aphid pests.

10. The method according to Claim 8 or use according to Claim 9, where the surgical, therapeutic and diagnostic treatment of the human or animal body is excluded.

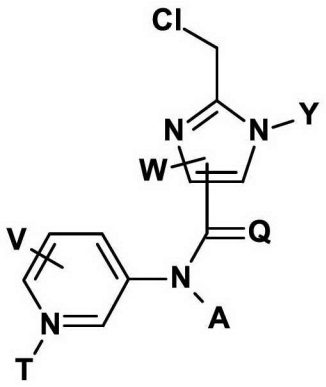
11. Use of at least one compound according to any one of Claims 1 to 6 for protecting the propagation material of plants from an aphid pest.

12. An agrochemical formulation comprising at least one compound according to any one of Claims 1 to 6 in a biologically effective amount of from 0.00000001 to 98% by weight based on the weight of the agrochemical formulation, and also an extender and/or surfactant.

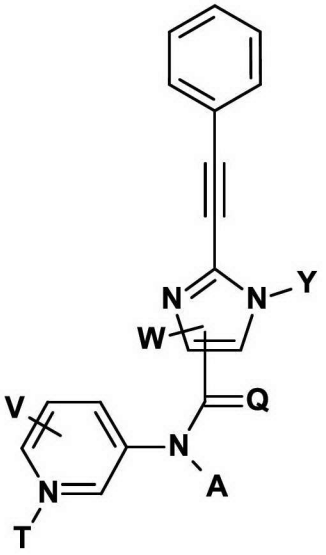
13. The agrochemical formulation according to Claim 12, additionally comprising a further agrochemically active compound.

14. An intermediate of formulae (II) or (III)

2017256505 25 Jan 2021



(II),



(III),

where the radicals have the meanings according to Claim 1.