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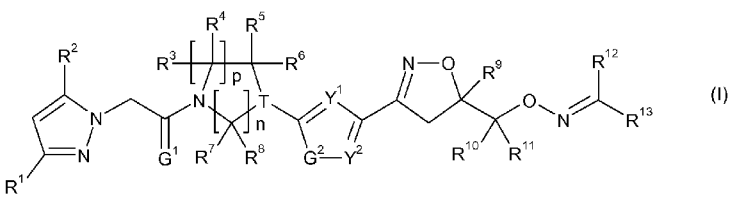

(I)

(57) Abstract: Compounds of the formula (I) wherein the substituents are as defined in claim 1, are useful as pesticides.

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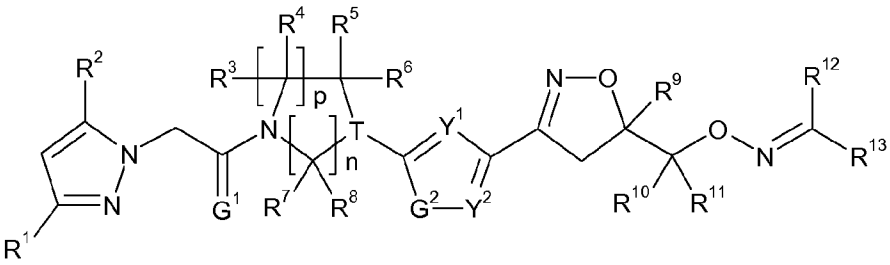
Microbiocidal Pyrazole Derivatives

The present invention relates to microbiocidal pyrazole derivatives, e.g. as active ingredients, which have microbiocidal activity, in particular fungicidal activity. The invention also relates to preparation of these pyrazole derivatives, to pyrazole derivatives used as intermediates in the preparation of these pyrazole derivatives, to preparation of these intermediates, to agrochemical compositions which comprise at least one of the pyrazole derivatives, to preparation of these compositions and to use of the pyrazole derivatives or compositions in agriculture or horticulture for controlling or preventing infestation of plants, harvested food crops, seeds or non-living materials by phytopathogenic microorganisms, preferably fungi.

Certain compounds for use as fungicides are described in WO 2007/014290, WO 2008/013622, WO 2008/013925, WO 2008/091580, WO 2008/091594 and WO 2009/055514.

The present invention provides compounds of formula I:



(I)

wherein,

G^1 and G^2 are independently O or S;

T is CR^{14} or N;

Y^1 and Y^2 are independently CR^{15} or N;

n is 1 or 2;

p is 1 or 2, providing that when n is 2, p is 1;

R^1 and R^2 each independently are C_1-C_4alkyl, C_1-C_4haloalkyl or C_3-C_5cycloalkyl;

R^3, R^4, R^5, R^6, R^7 and R^8 each independently are hydrogen, halogen, cyano, C_1-C_4alkyl, C_1-C_4alkoxy, C_1-C_4haloalkyl, C_3-C_5cycloalkyl or C_1-C_4alkylthio;

R^9 is aryl or heteroaryl, both optionally substituted by one or more R^{16};

R^{10}, R^{11} and R^{12} each independently are hydrogen, halogen, cyano, C_1-C_4alkyl, C_1-C_4haloalkyl, C_3-C_5cycloalkyl, aryl or heteroaryl, the aryl or heteroaryl optionally substituted by one or more R^{16}; or

R^{10} and R^{11} together with the carbon atom to which they are attached, independently form a saturated or partially unsaturated three- to five-membered alicyclic ring, optionally substituted by halogen, cyano, C_1-C_4alkyl, C_1-C_4alkoxy or C_1-C_4haloalkyl;

R^{13} is C_1-C_4alkyl, C_1-C_4haloalkyl, C_3-C_5cycloalkyl, C_1-C_4alkylcarbonyl, aryl, heteroaryl, the aryl or heteroaryl optionally substituted by one or more R^{16};

R^{14} is hydrogen, halogen or hydroxyl;

R^{15} is hydrogen, halogen or cyano;

R^{16} is halogen, cyano, hydroxyl, amino, formyl, C_1-C_4alkyl, C_1-C_4haloalkyl, C_3-C_5cycloalkyl, C_2-C_5alkenyl, C_2-C_5haloalkenyl, C_2-C_5alkynyl, C_2-C_5haloalkynyl, C_1-C_4alkoxy, C_1-C_4haloalkoxy, C_3-C_5cycloalkoxy, C_3-C_5alkenyloxy, C_3-C_5haloalkenyloxy, C_3-C_5alkynyloxy, C_3-C_5haloalkynyloxy, C_1-C_4alkylamino, C_1-C_4dialkylamino, C_1-C_4alkylcarbonyl, C_1-C_4haloalkylcarbonyl, C_3-C_5cycloalkylcarbonyl, C_1-C_4alkylcarbonyl O-C_1-C_4alkyloxime, C_1-C_4haloalkylcarbonyl O-C_1-C_4alkyloxime, C_3-C_5cycloalkylcarbonyl O-C_1-C_4alkyloxime, C_1-C_4alkylcarbonyloxy, C_1-C_4haloalkylcarbonyloxy, C_3-C_5cycloalkylcarbonyloxy, C_1-C_4alkoxycarbonyl, C_1-C_4haloalkoxycarbonyl, C_3-C_5cycloalkoxycarbonyl, aryl, heteroaryl, arylC_1-C_4alkyl or heteroarylC_1-C_4alkyl;

or a salt or a N-oxide thereof.

Where substituents are indicated as being optionally substituted, this means that they may or may not carry one or more identical or different substituents, e.g. one to five substituents, e.g. one to three substituents. Normally not more than three such optional substituents are present at the same time. Where a group is indicated as being substituted, e.g. alkyl, unless stated otherwise this includes those groups that are part of other groups, e.g. the alkyl in alkylthio.

The term "halogen" refers to fluorine, chlorine, bromine or iodine, preferably fluorine, chlorine or bromine.

Alkyl substituents may be straight-chained or branched. Alkyl on its own or as part of another substituent is, depending upon the number of carbon atoms mentioned, for example, methyl, ethyl, n-propyl, n-butyl, n-pentyl, n-hexyl and the isomers thereof, for example, iso-propyl, iso-butyl, sec-butyl, tert-butyl or iso-amyl.

Alkenyl substituents can be in the form of straight or branched chains, and the alkenyl moieties, where appropriate, can be of either the (E)- or (Z)-configuration. Examples are vinyl and allyl. The alkenyl groups are preferably C_2-C_6, more preferably C_2-C_4 and most preferably C_2-C_3 alkenyl groups.

Alkynyl substituents can be in the form of straight or branched chains. Examples are ethynyl and propargyl. The alkynyl groups are preferably C_2-C_6, more preferably C_2-C_4 and most preferably C_2-C_3 alkynyl groups.

Haloalkyl groups may contain one or more identical or different halogen atoms and, for example, may stand for CH_2Cl, $CHCl_2$, CCl_3, CH_2F, CHF_2, CF_3, CF_3CH_2, CH_3CF_2, CF_3CF_2 or CCl_3CCl_2.

Haloalkenyl groups are alkenyl groups, respectively, which are substituted with one or more of the same or different halogen atoms and are, for example, 2,2-difluorovinyl or 1,2-dichloro-2-fluoro-vinyl.

Haloalkynyl groups are alkynyl groups, respectively, which are substituted with one or more of the same or different halogen atoms and are, for example, 1-chloro-prop-2-ynyl.

Alkoxy means a radical -OR, where R is alkyl, e.g. as defined above. Alkoxy groups include, but are not limited to, methoxy, ethoxy, 1-methylethoxy, propoxy, butoxy, 1-methylpropoxy and 2-methylpropoxy.

Cyano means a –CN group.

Amino means an NH_2 group.

Hydroxyl or hydroxy stands for a –OH group.

Aryl means a ring system which may be mono-, bi- or tricyclic. Examples of such rings include phenyl, naphthalenyl, anthracenyl, indenyl or phenanthrenyl. A preferred aryl group is phenyl.

Heteroaryl stands for aromatic ring systems comprising mono-, bi- or tricyclic systems wherein at least one oxygen, nitrogen or sulfur atom is present as a ring member. Monocyclic and bicyclic aromatic ring systems are preferred, monocyclic ring systems are more preferred. For example, monocyclic heteoraryl may be a 5- to 7-membered aromatic ring containing one to three heteroatoms selected from oxygen, nitrogen and sulfur, more preferably selected from nitrogen and sulfur. Bicyclic heteroaryl may be a 9- to 11-membered bicyclic ring containing one to five heteroatoms, preferably one to three heteroatoms, selected from oxygen, nitrogen and sulfur. Examples are furyl, thienyl, pyrrolyl, imidazolyl, pyrazolyl, thiazolyl, isothiazolyl, oxazolyl, isoxazolyl, oxadiazolyl, thiadiazolyl, triazolyl, tetrazolyl, pyridyl, pyridazinyl, pyrimidinyl, pyrazinyl, triazinyl, tetrazinyl, indolyl, benzothiophenyl, benzofuranyl, benzimidazolyl, indazolyl, benzotriazolyl, benzothiazolyl, benzoxazolyl, imiazothiazoyl, quinolinyl, quinoxalinyl, isoquinolinyl, phthalazinyl, quinoxalinyl, quinazolinyl, cinnolinyl and naphthyridinyl, preferably pyridyl, pyrazinyl, pyridazinyl, pyrimidinyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, furanyl, thienyl thiazolyl or thiadiazolyl. Heteroaryl rings do not contain adjacent oxygen ring atoms, adjacent sulfur ring atoms or adjacent oxygen and sulfur ring atoms. A link to a heteroaryl group can be via a carbon atom or via a nitrogen atom.

The presence of one or more possible asymmetric carbon atoms in a compound of formula I means that the compounds may occur in optically isomeric forms, i.e. enantiomeric or diastereomeric forms. Also atropisomers may occur as a result of restricted rotation about a single bond. Formula I is intended to include all those possible isomeric forms and mixtures thereof. The present invention includes all those possible isomeric forms and mixtures thereof for a compound of formula I. Likewise, formula I is intended to include all possible tautomers. The present invention includes all possible tautomeric forms for a compound of formula I.

In each case, the compounds of formula I according to the invention are in free form, in oxidized form as a N-oxide or in salt form, e.g. an agronomically usable salt form.

N-oxides are oxidized forms of tertiary amines or oxidized forms of nitrogen containing heteroaromatic compounds. They are described for instance in the book "Heterocyclic N-oxides" by A. Albini and S. Pietra, CRC Press, Boca Raton 1991.

The following list provides definitions, including preferred definitions, for substituents R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, G^1, G^2, T, Y^1, Y^2, n and p with reference to compounds of formula I and other compounds of the invention carrying the same substituents. For any one of these substituents, any of the definitions given below may be combined with any definition of any other substituent given below or elsewhere in this document.

G^1 and G^2 are independently O or S.

G^1 is preferably O.

G^2 is preferably S.

T is CR^{14} or N, preferably CH or N, more preferably CH.

Y^1 and Y^2 are independently CR^{15} or N.

Y^1 is preferably CH or N, more preferably N.

Y^2 is preferably CH or N; more preferably CH.

n is 1 or 2, preferably 2.

p is 1 or 2, providing that when n is 2, p is 1, preferably p is 1.

Preferably, p is 1 and n is 2.

R^1 and R^2 each independently are C_1-C_4alkyl, C_1-C_4haloalkyl or C_3-C_5cycloalkyl. Preferably R^1 and R^2 are each independently methyl or halomethyl, more preferably methyl, difluoromethyl or trifluoromethyl.

Preferably R^1 is difluoromethyl or trifluoromethyl. Preferably R^2 is methyl or difluoromethyl. In one group of compounds R^1 is trifluoromethyl and R^2 is methyl. In another group of compounds R^1 and R^2 are both difluoromethyl.

R^3, R^4, R^5, R^6, R^7 and R^8 each independently are hydrogen, halogen, cyano, C_1-C_4alkyl, C_1-C_4alkoxy, C_1-C_4haloalkyl, C_3-C_5cycloalkyl or C_1-C_4alkylthio; preferably hydrogen, halogen, methyl, halomethyl or methylthio, more preferably hydrogen or methyl, even more preferably hydrogen.

R^9 is aryl or heteroaryl, both optionally substituted by one or more R^{16}; preferably phenyl which is optionally substituted by one or more R^{16}; more preferably phenyl, which is substituted by hydrogen, halogen, cyano, C_1-C_4alkyl, C_1-C_4haloalkyl or C_3-C_5alkynyloxy, even more preferably phenyl, which is substituted by hydrogen, halogen, or C_3-C_5alkynyloxy.

R^{10}, R^{11} and R^{12} each independently are hydrogen, halogen, cyano, C_1-C_4alkyl, C_1-C_4haloalkyl, C_3-C_5cycloalkyl, aryl or heteroaryl; preferably hydrogen, halogen, C_1-C_4alkyl, C_1-C_4haloalkyl or C_3-C_5cycloalkyl; more preferably hydrogen, halogen or C_1-C_4alkyl, even more preferably hydrogen or C_1-C_4alkyl.

R^{13} is C_1-C_4alkyl, C_1-C_4haloalkyl, C_3-C_5cycloalkyl, C_1-C_4alkylcarbonyl, aryl, heteroaryl, the aryl or heteroaryl optionally substituted by one or more R^{16}; preferably C_1-C_4alkyl, C_1-C_4haloalkyl, C_3-C_5cycloalkyl or phenyl which is optionally substituted by one or more R^{16}; more preferably C_1-C_4alkyl or C_3-C_5cycloalkyl.

R^{14} is hydrogen, halogen or hydroxyl; preferably hydrogen or hydroxyl, more preferably hydrogen.

R^{15} is hydrogen, halogen or cyano; preferably hydrogen or cyano, more preferably hydrogen.

Preferably the compound of formula I is a compound wherein:

G^1 is O

G^2 is S;

T is CH or N;

Y^1 and Y^2 are independently CH or N;

n is 1 or 2;

p is 1 or 2, providing that when n is 2, p is 1;

R^1 and R^2 each independently are methyl or halomethyl;

R^3, R^4, R^5, R^6, R^7 and R^8 each independently are hydrogen, halogen, cyano, C_1-C_4alkyl, C_1-C_4alkoxy, C_1-C_4haloalkyl, C_3-C_5cycloalkyl or C_1-C_4alkylthio;

R^9 is aryl or heteroaryl, both optionally substituted by one or more R^{16};

R^{10}, R^{11} and R^{12} each independently are hydrogen, halogen, cyano, C_1-C_4alkyl, C_1-C_4haloalkyl, C_3-C_5cycloalkyl, aryl or heteroaryl; or

R^{10} and R^{11} together with the carbon atom to which they are attached, independently form a saturated or partially unsaturated three- to five-membered alicyclic ring, optionally substituted by halogen, cyano, C_1-C_4alkyl, C_1-C_4alkoxy or C_1-C_4haloalkyl;

R^{13} is C_1-C_4alkyl, C_1-C_4haloalkyl, C_3-C_5cycloalkyl, C_1-C_4alkylcarbonyl, aryl, heteroaryl, the aryl or heteroaryl optionally substituted by one or more R^{16};

R^{14} is hydrogen, halogen or hydroxyl;

R^{15} is hydrogen, halogen or cyano;

or a salt or a N-oxide thereof.

Preferably the compound of formula I is a compound wherein:

G^1 is O

G^2 is S;

T is CH or N;

Y^1 and Y^2 are independently CH or N;

n is 1 or 2;

p is 1 or 2, providing that when n is 2, p is 1;

R^1 and R^2 each independently are methyl or halomethyl;

R^3, R^4, R^5, R^6, R^7 and R^8 each independently are hydrogen, halogen, methyl, halomethyl or methylthio;

R^9 is phenyl which is optionally substituted by one or more R^{16};

R^{10}, R^{11} and R^{12} each independently are hydrogen, halogen, C_1-C_4alkyl, C_1-C_4haloalkyl or C_3-C_5cycloalkyl;

R^{13} is C_1-C_4alkyl, C_1-C_4haloalkyl, C_3-C_5cycloalkyl or phenyl which is optionally substituted by one or more R^{16};

R^{14} is hydrogen, halogen or hydroxyl;

R^{15} is hydrogen, halogen or cyano;

or a salt or a N-oxide thereof.

Preferably the compound of formula I is a compound wherein:

G^1 is O

G^2 is S;

T is CH or N;

Y^1 and Y^2 are independently CH or N;

n is 1 or 2;

p is 1 or 2, providing that when n is 2, p is 1;

R^1 and R^2 each independently are methyl or halomethyl;

R^3, R^4, R^5, R^6, R^7 and R^8 each independently are hydrogen or methyl;

R^9 is phenyl, which is substituted by hydrogen, halogen, cyano, C_1-C_4alkyl, C_1-C_4haloalkyl or C_3-C_5alkynyloxy.

R^{10}, R^{11} and R^{12} each independently are hydrogen, halogen or C_1-C_4alkyl;

R^{13} is C_1-C_4alkyl or C_3-C_5cycloalkyl;

R^{14} is hydrogen, halogen or hydroxyl;

R^{15} is hydrogen, halogen or cyano;

or a salt or a N-oxide thereof.

Preferably the compound of formula I is a compound wherein:

G^1 is O

G^2 is S;

T is CH or N;

Y^1 and Y^2 are independently CH or N;

n is 1 or 2;

p is 1 or 2, providing that when n is 2, p is 1;

R^1 and R^2 each independently are methyl, difluoromethyl or trifluoromethyl;

R^3, R^4, R^5, R^6, R^7 and R^8 are hydrogen;

R^9 is phenyl, which is substituted by hydrogen, halogen or C_3-C_5alkynyloxy.

R^{10}, R^{11} and R^{12} each independently are hydrogen or C_1-C_4alkyl;

R^{13} is C_1-C_4alkyl or C_3-C_5cycloalkyl;

R^{14} is hydrogen or hydroxyl;

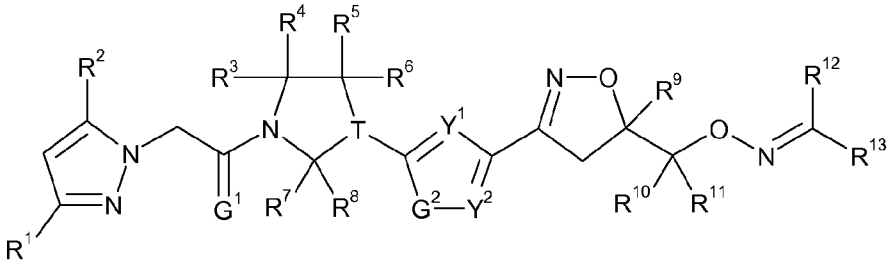
R^{15} is hydrogen or cyano;

or a salt or a N-oxide thereof.

Preferably the compound of formula I is a compound wherein G^1 is O, G^2 is S, T is CH, Y^1 is N, and Y^2 is CH.

Preferably the compound of formula I is a compound wherein R^1 and R^2 each independently are methyl, difluoromethyl or trifluoromethyl and R^3, R^4, R^5, R^6, R^7 and R^8 each independently are hydrogen, or methyl, and preferably hydrogen.

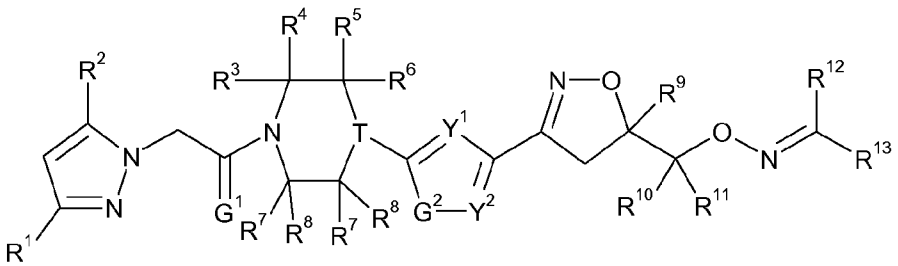
For the avoidance of doubt, when n is 1 and p is 1 compounds of formula I have the formula according to formula I-a:



(I-a)

in which R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, G^1, G^2, T, Y^1 and Y^2 have the definitions as described for formula I.

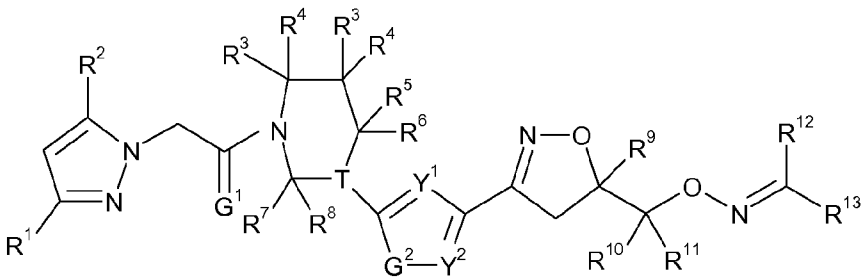
When n is 2 and p is 1 compounds of formula I have the formula according to formula I-b:



(I-b)

in which R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, G^1, G^2, T, Y^1 and Y^2 have the definitions as described for formula I.

When n is 1 and p is 2, compounds of formula I have the formula according to formula I-c:

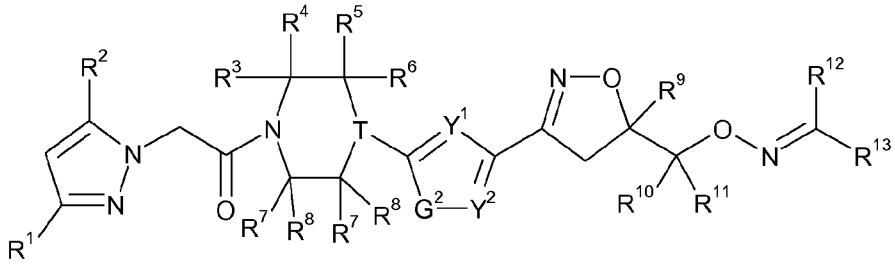


(I-c)

in which R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, G^1, G^2, T, Y^1 and Y^2 have the definitions as described for formula I.

The invention also relates to compounds of formula I-a, formula I-b and formula I-c as shown above.

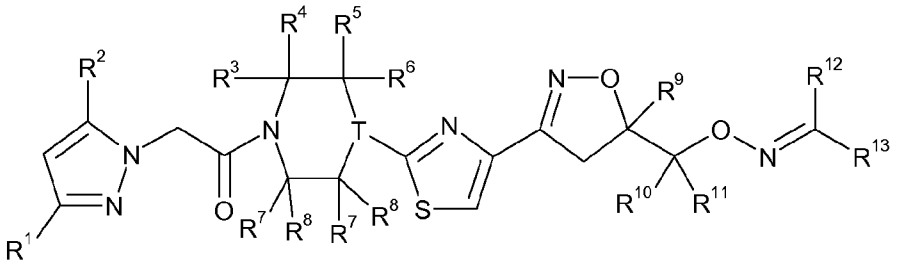
The invention also relates to compounds of formula I-d:



(I-d)

in which R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 have the definitions as described for formula I. Preferred definitions of R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined for formula I.

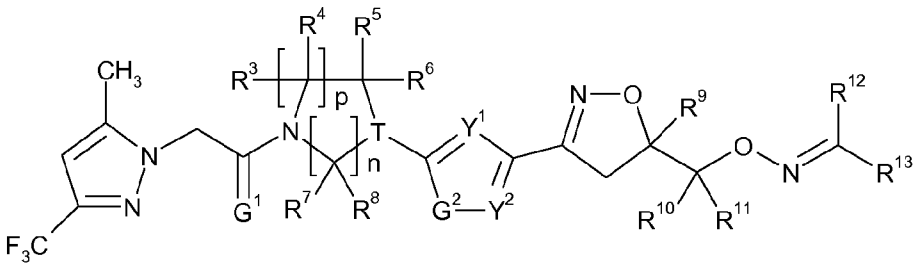
The invention also relates to compounds of formula I-e:



(I-e)

in which R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13} and T have the definitions as described for formula I. Preferred definitions of R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13} and T are as defined for formula I.

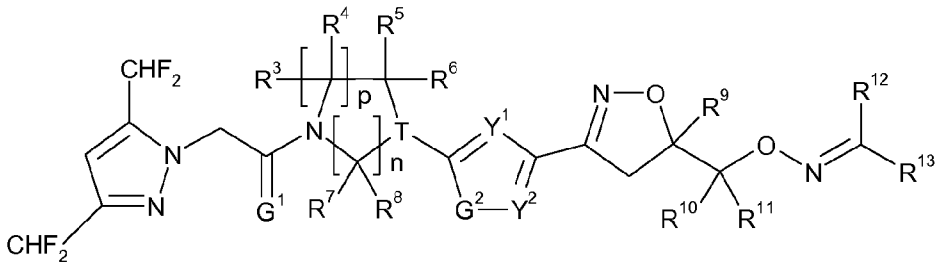
The invention also relates to compounds of formula I-f:



(I-f)

wherein R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, G^1, G^2, T, Y^1, Y^2, n and p have the definition as described for formula I. Preferred definitions of R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, G^1, G^2, T, Y^1, Y^2, n and p are as defined for formula I.

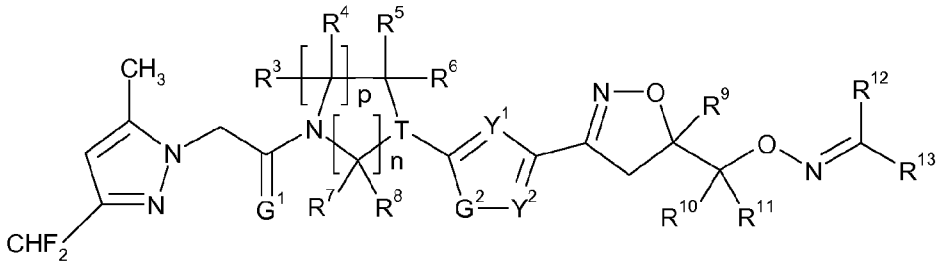
The invention also relates to compounds of formula I-g:



(I-g)

in which R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, G^1, G^2, T, Y^1, Y^2, n and p have the definitions as described for formula I. Preferred definitions of R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, G^1, G^2, T, Y^1, Y^2, n and p are as defined for formula I.

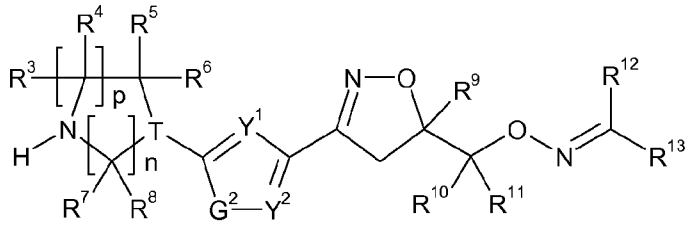
The invention also relates to compounds of formula I-h:



(I-h)

in which R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, G^1, G^2, T, Y^1, Y^2, n and p have the definitions as described for formula I. Preferred definitions of R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, G^1, G^2, T, Y^1, Y^2, n and p are as defined for formula I.

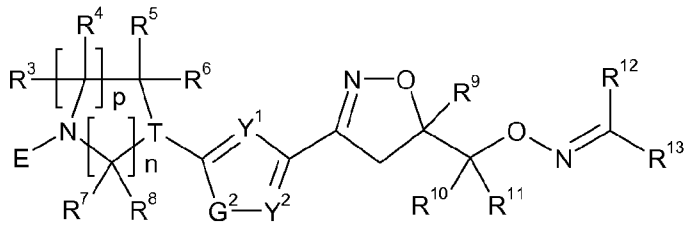
The invention includes compounds of formula II:



(II)

wherein R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, G^2, T, Y^1, Y^2 , n and p are as defined for a compound of formula I. These compounds, including salts and N-oxides thereof, are useful as intermediates in the synthesis of compounds of formula I. Preferred definitions of R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, G^2, T, Y^1, Y^2 , n and p are as defined for formula I.

The invention includes compounds of formula III:



(III)

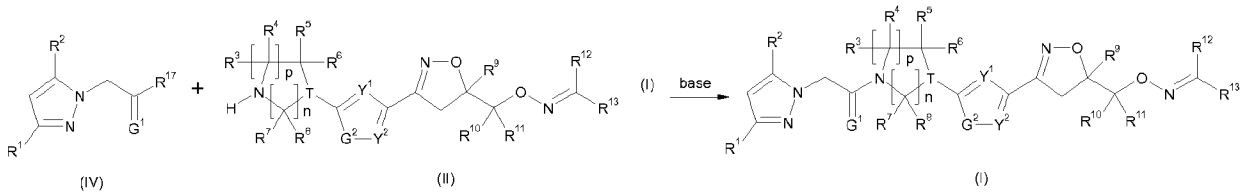
wherein R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, G^2, T, Y^1, Y^2 , n and p are as defined for a compound of formula I and E is a protecting group, such as C_1-C_4 alkylcarbonyl, benzyl or C_1-C_4 alkoxycarbonyl, in particular acetyl, benzyl or *tert*-butoxycarbonyl. These compounds,

including salts and N-oxides thereof, are useful as intermediates in the synthesis of compounds of formula I. Preferred definitions of R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, G^2, T, Y^1, Y^2 , n and p are as defined for formula I.

Compounds of the present invention can be made as shown in the following schemes.

The compounds of formula I, wherein R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, G^1, G^2, T, Y^1, Y^2, n and p are as defined for formula I can be obtained by transformation of a compound of formula IV, wherein R^1, R^2 and G^1 are as defined for formula I and R^{17} is hydroxy, halogen, preferably fluoro, chloro or bromo, or alkoxy, such as methoxy or ethoxy, with a compound of formula II, wherein R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, G^2, T, Y^1, Y^2, n and p are as defined for formula I, and a base or an activating agent. This is shown in Scheme 1.

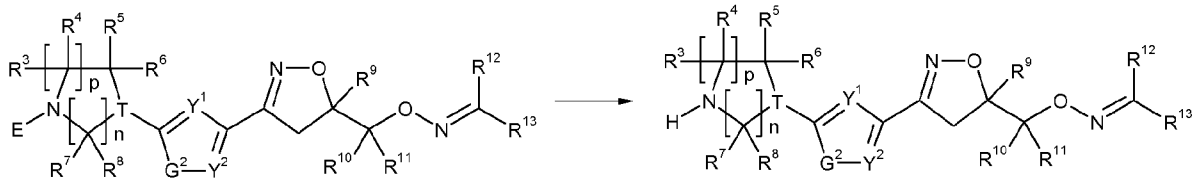
Scheme 1



(IV) (II) (I)

The compounds of formula II, wherein R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, G^2, T, Y^1, Y^2, n and p are as defined for formula I can be obtained by transformation of a compound of formula III, wherein R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, G^2, T, Y^1, Y^2, n and p are as defined for formula I and E is a protecting group such as acetyl, benzyl or *tert*-butoxycarbonyl, with a deprotecting agent such as a base, an acid or a hydrogenation system such as H_2/Pd. This is shown in Scheme 2.

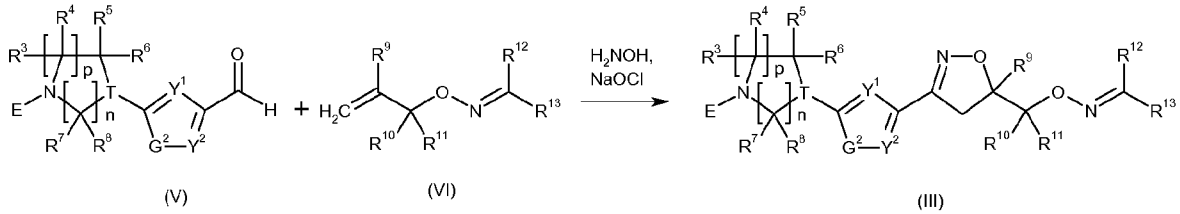
Scheme 2



(III) (II)

The compounds of formula III, wherein R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, G^2, T, Y^1, Y^2, n and p are as defined for formula I and E is a protecting group such as acetyl, benzyl or *tert*-butoxycarbonyl, can be obtained by transformation of a compound of formula V, wherein R^3, R^4, R^5, R^6, R^7, R^8, G^2, T, Y^1, Y^2, n and p are as defined for formula I and E is a protecting group such as acetyl, benzyl or *tert*-butoxycarbonyl, with a compound of formula VI, wherein R^9, R^{10}, R^{11}, R^{12} and R^{13} are as defined for formula I, and hydroxylamine and sodium hypochlorite. This is shown in Scheme 3.

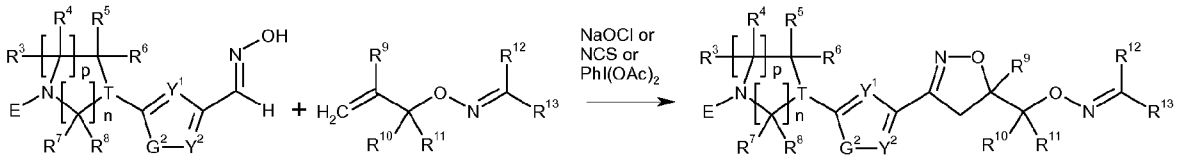
Scheme 3



(V) (VI) (III)

Alternatively, the compounds of formula III, wherein R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, G^2, T, Y^1, Y^2, n and p are as defined for formula I and E is a protecting group such as acetyl, benzyl or *tert*-butoxycarbonyl, can be obtained by transformation of a compound of formula VII, wherein R^3, R^4, R^5, R^6, R^7, R^8, G^2, T, Y^1, Y^2, n and p are as defined for formula I and E is a protecting group such as acetyl, benzyl or *tert*-butoxycarbonyl, with a compound of formula VI, wherein R^9, R^{10}, R^{11}, R^{12} and R^{13} are as defined for formula I, and an oxidant such as sodium hypochlorite, *N*-chlorosuccinimide or diacetoxyiodobenzene. This is shown in Scheme 4.

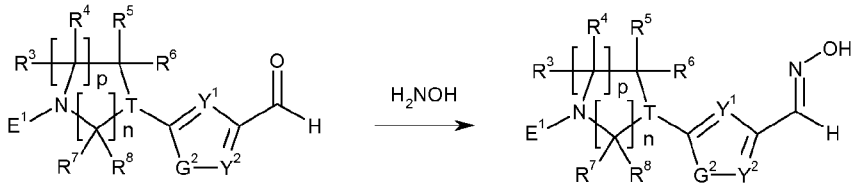
Scheme 4



(VII) (VI) (III)

The compounds of formula VII, wherein R^3, R^4, R^5, R^6, R^7, R^8, G^2, T, Y^1, Y^2, n and p are as defined for formula I and E is a protecting group such as acetyl, benzyl or *tert*-butoxycarbonyl, can be obtained by transformation of a compound of formula V, wherein R^3, R^4, R^5, R^6, R^7, R^8, G^2, T, Y^1, Y^2, n and p are as defined for formula I and E is a protecting group such as acetyl, benzyl or *tert*-butoxycarbonyl, with hydroxylamine. This is shown in Scheme 5.

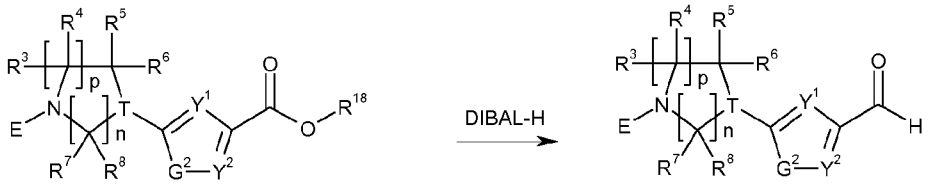
Scheme 5



(V) (VII)

The compounds of formula V, wherein R^3, R^4, R^5, R^6, R^7, R^8, G^2, T, Y^1, Y^2, n and p are as defined for formula I and E is a protecting group such as acetyl, benzyl or *tert*-butoxycarbonyl, can be obtained by transformation of a compound of formula VIII, wherein R^3, R^4, R^5, R^6, R^7, R^8, G^2, T, Y^1, Y^2, n and p are as defined for formula I, R^{18} is alkoxy, such as methoxy or ethoxy and E^1 is a protecting group such as acetyl, benzyl or *tert*-butoxycarbonyl, and a reducing agent, such as diisobutyllithium aluminium hydride. This is shown in Scheme 6.

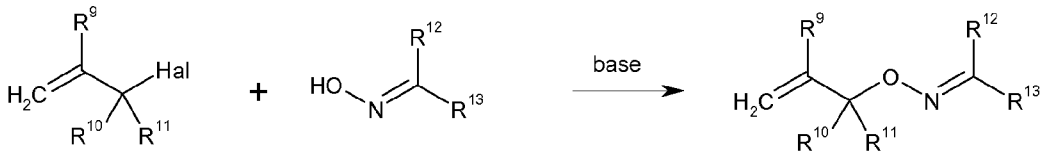
Scheme 6



(VIII) (V)

The compounds of formula VI, wherein R^9, R^{10}, R^{11}, R^{12} and R^{13} are as defined for formula I, can be obtained by transformation of a compound of formula IX, wherein R^9, R^{10} and R^{11} are as defined for formula I and Hal is halogen, preferably chloro or bromo, with a compound of formula X, wherein R^{12} and R^{13} are as defined for formula I, and a base. This is shown in Scheme 7.

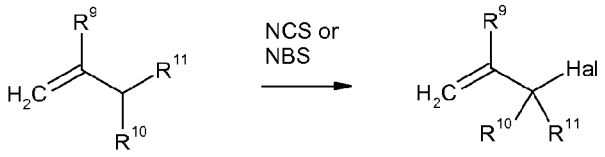
Scheme 7



(IX) (X) (VI)

The compounds of formula IX, wherein R^9, R^{10} and R^{11} are as defined for formula I and Hal is halogen, preferably chloro or bromo, can be obtained by transformation of a compound of formula XI, wherein R^9, R^{10} and R^{11} are as defined for formula I, and a halogenation agent, such as N-chlorosuccinimid or N-bromosuccinimid. This is shown in Scheme 8.

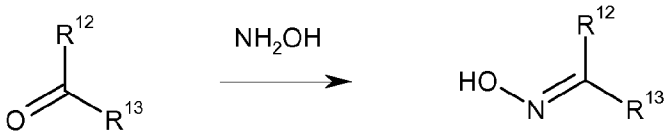
Scheme 8



(XI) (IX)

The compounds of formula X, wherein R^{12} and R^{13} are as defined for formula I can be obtained by transformation of a compound of formula XII, wherein R^{12} and R^{13} are as defined for formula I, and hydroxylamine. This is shown in Scheme 9.

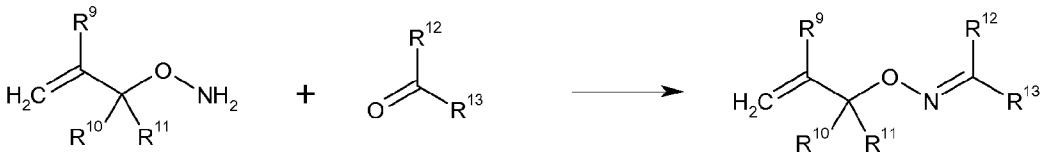
Scheme 9



(XII) (X)

Alternatively, the compounds of formula VI, wherein R^9, R^{10}, R^{11}, R^{12} and R^{13} are as defined for formula I, can be obtained by transformation of a compound of formula XIII, wherein R^9, R^{10} and R^{11} are as defined for formula I, with a compound of formula XII, wherein R^{12} and R^{13} are as defined for formula I. This is shown in Scheme 10.

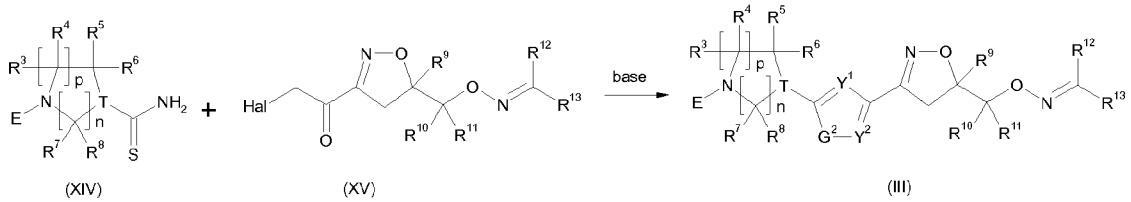
Scheme 10



(XIII) (XII) (VI)

Alternatively. the compounds of formula III, wherein R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, T, Y^1, Y^2, n and p are as defined for formula I, G^2 is S and E is a protecting group such as acetyl, benzyl or *tert*-butoxycarbonyl, can be obtained by transformation of a compound of formula XIV, wherein R^3, R^4, R^5, R^6, R^7, R^8, T, n and p are as defined for formula I and E is a protecting group such as acetyl, benzyl or *tert*-butoxycarbonyl, with a compound of formula XV, wherein R^9, R^{10}, R^{11}, R^{12} and R^{13} are as defined for formula I and Hal is halogen, preferably chloro or bromo, and a base. This is shown in Scheme 11.

Scheme 11



(XIV) (XV) (III)

Surprisingly, it has now been found that the novel compounds of formula I have, for practical purposes, a very advantageous level of biological activity for protecting plants against diseases that are caused by fungi.

The compounds of formula I can be used in the agricultural sector and related fields of use e.g. as active ingredients for controlling plant pests or on non-living materials for control of spoilage microorganisms or organisms potentially harmful to man. The novel compounds are distinguished by excellent activity at low rates of application, by being well tolerated by plants and by being environmentally safe. They have very useful curative, preventive and systemic properties and may be used for protecting numerous cultivated plants. The compounds of formula I can be used to inhibit or destroy the pests that occur on plants or parts of plants (fruit, blossoms, leaves, stems, tubers, roots) of different crops of useful plants, while at the same time protecting also those parts of the plants that grow later e.g. from phytopathogenic microorganisms.

It is also possible to use compounds of formula I as dressing agents for the treatment of plant propagation material, *e.g.*, seed, such as fruits, tubers or grains, or plant cuttings (for example rice), for the protection against fungal infections as well as against phytopathogenic fungi occurring in the soil. The propagation material can be treated with a composition comprising a compound of formula I before planting: seed, for example, can be dressed before being sown. The active ingredients according to the invention can also be applied to grains (coating), either by impregnating the seeds in a liquid formulation or by coating them with a solid formulation. The composition can also be applied to the planting site when the propagation material is being planted, for example, to the seed furrow during sowing. The invention relates also to such methods of treating plant propagation material and to the plant propagation material so treated.

Furthermore the compounds according to present invention can be used for controlling fungi in related areas, for example in the protection of technical materials, including wood and wood related technical products, in food storage, in hygiene management.

In addition, the invention could be used to protect non-living materials from fungal attack, e.g. lumber, wall boards and paint.

The compounds of formula I are, for example, effective against the phytopathogenic fungi of the following classes: Fungi imperfecti (e.g. *Alternaria* spp.), Basidiomycetes (e.g. *Corticium* spp., *Ceratobasidium* spp., *Waitea* spp., *Thanatephorus* spp., *Rhizoctonia* spp.,

Hemileia spp., *Puccinia* spp., *Phakopsora* spp., *Ustilago* spp., *Tilletia* spp.), Ascomycetes (e.g. *Venturia* spp., *Blumeria* spp., *Erysiphe* spp., *Podosphaera* spp., *Uncinula* spp., *Monilinia* spp., *Sclerotinia* spp., *Colletotrichum* spp., *Glomerella* spp., *Fusarium* spp., *Gibberella* spp., *Monographella* spp., *Phaeosphaeria* spp., *Mycosphaerella* spp., *Cercospora* spp., *Pyrenophora* spp., *Rhynchosporium* spp., *Magnaporthe* spp., *Gaeumannomyces* spp., *Oculimacula* spp., *Ramularia* spp., *Botryotinia* spp.) and Oomycetes (e.g. *Phytophthora* spp., *Pythium* spp., *Plasmopara* spp., *Peronospora* spp., *Pseudoperonospora* spp. *Bremia* spp). Outstanding activity is observed against downy mildew (e.g. *Plasmopara viticola*) and late blight (e.g. *Phytophthora infestans*). Furthermore, the novel compounds of formula I are effective against phytopathogenic gram negative and gram positive bacteria (e.g. *Xanthomonas* spp, *Pseudomonas* spp, *Erwinia amylovora, Ralstonia* spp.) and viruses (e.g. tobacco mosaic virus).

Within the scope of present invention, target crops and/or useful plants to be protected typically comprise the following species of plants: cereal (wheat, barley, rye, oat, rice, maize, sorghum and related species); beet (sugar beet and fodder beet); pomes, drupes and soft fruit (apples, pears, plums, peaches, almonds, cherries, strawberries, raspberries and blackberries); leguminous plants (beans, lentils, peas, soybeans); oil plants (rape, mustard, poppy, olives, sunflowers, coconut, castor oil plants, cocoa beans, groundnuts); cucumber plants (pumpkins, cucumbers, melons); fibre plants (cotton, flax, hemp, jute); citrus fruit (oranges, lemons, grapefruit, mandarins); vegetables (spinach, lettuce, asparagus, cabbages, carrots, onions, tomatoes, potatoes, paprika); lauraceae (avocado, cinnamomum, camphor) or plants such as tobacco, nuts, coffee, eggplants, sugar cane, tea, pepper, vines, hops, bananas and natural rubber plants, as well as turf and ornamentals.

The useful plants and / or target crops in accordance with the invention include conventional as well as genetically enhanced or engineered varieties such as, for example, insect resistant (e.g. Bt. and VIP varieties) as well as disease resistant, herbicide tolerant (e.g. glyphosate- and glufosinate-resistant maize varieties commercially available under the trade names RoundupReady® and LibertyLink®) and nematode tolerant varieties. By way of example, suitable genetically enhanced or engineered crop varieties include the Stoneville 5599BR cotton and Stoneville 4892BR cotton varieties.

The term "useful plants" and/or “target crops” is to be understood as including also useful plants that have been rendered tolerant to herbicides like bromoxynil or classes of herbicides (such as, for example, HPPD inhibitors, ALS inhibitors, for example primisulfuron, prosulfuron and trifloxysulfuron, EPSPS (5-enol-pyrovyl-shikimate-3-phosphate-synthase) inhibitors, GS (glutamine synthetase) inhibitors or PPO (protoporphyrinogen-oxidase) inhibitors) as a result of conventional methods of breeding or genetic engineering. An example of a crop that has been rendered tolerant to imidazolinones, e.g. imazamox, by conventional methods of breeding (mutagenesis) is Clearfield® summer rape (Canola).

Examples of crops that have been rendered tolerant to herbicides or classes of herbicides by genetic engineering methods include glyphosate- and glufosinate-resistant maize varieties commercially available under the trade names RoundupReady® , Herculex I® and LibertyLink®.

The term "useful plants" and/or “target crops” is to be understood as including also useful plants which have been so transformed by the use of recombinant DNA techniques that they are capable of synthesising one or more selectively acting toxins, such as are known, for example, from toxin-producing bacteria, especially those of the genus Bacillus.

The term "useful plants" and/or “target crops” is to be understood as including also useful plants which have been so transformed by the use of recombinant DNA techniques that they are capable of synthesising antipathogenic substances having a selective action, such as, for example, the so-called "pathogenesis-related proteins" (PRPs, see e.g. EP-A-0 392 225). Examples of such antipathogenic substances and transgenic plants capable of synthesising such antipathogenic substances are known, for example, from EP-A-0 392 225, WO 95/33818, and EP-A-0 353 191. The methods of producing such transgenic plants are generally known to the person skilled in the art and are described, for example, in the publications mentioned above.

The term “locus” of a plant as used herein is intended to embrace the place on which the plants are growing, where the plant propagation materials of the plants are sown or where the plant propagation materials of the plants will be placed into the soil. An example for such a locus is a field, on which crop plants are growing.

The term “plant propagation material” is understood to denote generative parts of the plant, such as seeds, which can be used for the multiplication of the latter, and vegetative material, such as cuttings or tubers, for example potatoes. There may be mentioned for example seeds (in the strict sense), roots, fruits, tubers, bulbs, rhizomes and parts of plants. Germinated plants and young plants which are to be transplanted after germination or after emergence from the soil, may also be mentioned. These young plants may be protected before transplantation by a total or partial treatment by immersion. Preferably “plant propagation material” is understood to denote seeds.

The compounds of formula I may be used in unmodified form or, preferably, together with the adjuvants conventionally employed in the art of formulation. To this end they may be conveniently formulated in known manner to emulsifiable concentrates, coatable pastes, directly sprayable or dilutable solutions or suspensions, dilute emulsions, wettable powders, soluble powders, dusts, granulates, and also encapsulations e.g. in polymeric substances. As with the type of the compositions, the methods of application, such as spraying, atomising, dusting, scattering, coating or pouring, are chosen in accordance with the intended objectives and the prevailing circumstances. The compositions may also contain

further adjuvants such as stabilizers, antifoams, viscosity regulators, binders or tackifiers as well as fertilizers, micronutrient donors or other formulations for obtaining special effects.

Suitable carriers and adjuvants, e.g. for agricultural use, can be solid or liquid and are substances useful in formulation technology, e.g. natural or regenerated mineral substances, solvents, dispersants, wetting agents, tackifiers, thickeners, binders or fertilizers. Such carriers are for example described in WO 97/33890.

The compounds of formula I are normally used in the form of compositions and can be applied to the crop area or plant to be treated, simultaneously or in succession with further compounds. These further compounds can be e.g. fertilizers or micronutrient donors or other preparations, which influence the growth of plants. They can also be selective herbicides or non-selective herbicides as well as insecticides, fungicides, bactericides, nematicides, molluscicides or mixtures of several of these preparations, if desired together with further carriers, surfactants or application promoting adjuvants customarily employed in the art of formulation.

The compounds of formula I may be used in the form of (fungicidal) compositions for controlling or protecting against phytopathogenic microorganisms, comprising as active ingredient at least one compound of formula I or of at least one preferred individual compound as above-defined, in free form or in agrochemically usable salt form, and at least one of the above-mentioned adjuvants.

The invention provides a composition, preferably a fungicidal composition, comprising at least one compound formula I an agriculturally acceptable carrier and optionally an adjuvant. An agricultural acceptable carrier is for example a carrier that is suitable for agricultural use. Agricultural carriers are well known in the art. Preferably said composition may comprise at least one or more pesticidally active compounds, for example an additional fungicidal active ingredient in addition to the compound of formula I.

The compound of formula (I) may be the sole active ingredient of a composition or it may be admixed with one or more additional active ingredients such as a pesticide, fungicide, synergist, herbicide or plant growth regulator where appropriate. An additional active ingredient may, in some cases, result in unexpected synergistic activities. Examples of suitable additional active ingredients include the following: Azoxystrobin (131860-33-8), Dimoxystrobin (149961-52-4), Enestrobin (238410-11-2), Fluoxastrobin (193740-76-0), Kresoxim-methyl (143390-89-0), Metominostrobin (133408-50-1), Orysastrobin (248593-16-0), Picoxystrobin (117428-22-5), Pyraclostrobin (175013-18-0), trifloxystrobin (141517-21-7), Azaconazole (60207-31-0), Bromuconazole (116255-48-2), Cyproconazole (94361-06-5), Difenoconazole (119446-68-3), Diniconazole (83657-24-3), Diniconazole-M (83657-18-5), Epoxiconazole (13385-98-8), Fenbuconazole (114369-43-6), Fluquinconazole (136426-54-5), Flusilazole (85509-19-9), Flutriafol (76674-21-0), Hexaconazole (79983-71-4), Imazalil (58594-72-2), Imibenconazole (86598-92-7), Ipconazole (125225-28-7), Metconazole

(125116-23-6), Myclobutanil (88671-89-0), Oxpoconazole (174212-12-5), Pefurazoate (58011-68-0), Penconazole (66246-88-6), Prochloraz (67747-09-5), Propiconazole (60207-90-1), Prothioconazole (178928-70-6), Simeconazole (149508-90-7), Tebuconazole (107534-96-3), Tetraconazole (112281-77-3), Triadimefon (43121-43-3), Triadimenol (55219-65-3), Triflumizole (99387-89-0), Triticonazole (131983-72-7), Diclobutrazol (76738-62-0), Etaconazole (60207-93-4), Fluconazole (86386-73-4), Fluconazole-cis (112839-32-4), Thiabendazole (148-79-8), Quinconazole (103970-75-8), Fenpiclonil (74738-17-3), Fludioxonil (131341-86-1), Cyprodinil (121552-61-2), Mepanipyrim (110235-47-7), Pyrimethanil (53112-28-0), Aldimorph (91315-15-0), Dodemorph (1593-77-7), Fenpropimorph (67564-91-4), Tridemorph (81412-43-3), Fenpropidin (67306-00-7), Spiroxamine (118134-30-8), Isopyrazam (881685-58-1), Sedaxane (874967-67-6), Bixafen (581809-46-3), Penthiopyrad (183675-82-3), Fluxapyroxad (907204-31-3), Boscalid (188425-85-6), Penflufen (494793-67-8), Fluopyram (658066-35-4), Mandipropamid (374726-62-2), Benthiavalicarb (413615-35-7), Dimethomorph (110488-70-5), Chlorothalonil (1897-45-6), Fluazinam (79622-59-6), Dithianon (3347-22-6), Metrafenone (220899-03-6), Tricyclazole (41814-78-2), Mefenoxam (70630-17-0), Metalaxyl (57837-19-1), Acibenzolar (126448-41-7) (Acibenzolar-S-methyl (126448-41-7)), Mancozeb (8018-01-7), Ametoctradine (865318-97-4) Cyflufenamid (180409-60-3), and Kresoxim-methyl (143390-89-0), Ipconazole (125225-28-7), Amisulbrom (348635-87-0), Cyflufenamid (180409-60-3), Ethaboxam (16650-77-3), Fluopicolide (239110-15-7), Fluthianil (304900-25-2), Isotianil (224049-04-1), Proquinazid (189278-12-4), Valiphenal (283159-90-0), 1-methyl-cyclopropene (3100-04-7), Trifloxystrobin (141517-21-7), Sulfur (7704-34-9), Copper ammoniumcarbonate (CAS 33113-08-5); Copper oleate (CAS 1120-44-1); Folpet (133-07-3), Quinoxyfen (124495-18-7), Captan (133-06-2), Fenhexamid (126833-17-8), Glufosinate and its salts (51276-47-2, 35597-44-5 (S-isomer)), Glyphosate (1071-83-6) and its salts (69254-40-6 (Diammonium), 34494-04-7 (Dimethylammonium), 38641-94-0 (Isopropylammonium), 40465-66-5 (Monoammonium), 70901-20-1 (Potassium), 70393-85-0 (Sesquisodium), 81591-81-3 (Trimesium)), 1-methyl-3-difluoromethyl-1H-pyrazole-4-carboxylic acid (2-dichloromethylene-3-ethyl-1-methyl-indan-4-yl)-amide (1072957-71-1), 1-methyl-3-difluoromethyl-1H-pyrazole-4-carboxylic acid (4'-methylsulfanyl-biphenyl-2-yl)-amide, 1-methyl-3-difluoromethyl-4H-pyrazole-4-carboxylic acid [2-(2,4-dichloro-phenyl)-2-methoxy-1-methyl-ethyl]-amide, (5-Chloro-2,4-dimethyl-pyridin-3-yl)-(2,3,4-trimethoxy-6-methyl-phenyl)-methanone, (5-Bromo-4-chloro-2-methoxy-pyridin-3-yl)-(2,3,4-trimethoxy-6-methyl-phenyl)-methanone, 2-{2-[(E)-3-(2,6-Dichloro-phenyl)-1-methyl-prop-2-en-(E)-ylideneaminooxymethyl]-phenyl}-2-[(Z)-methoxyimino]-N-methyl-acetamide, 3-[5-(4-Chloro-phenyl)-2,3-dimethyl-isoxazolidin-3-yl]-pyridine.

Another aspect of invention is related to the use of a compound of formula I or of a preferred individual compound as above-defined, of a composition comprising at least one compound of formula I or at least one preferred individual compound as above-defined, or of

a fungicidal mixture comprising at least one compound of formula I or at least one preferred individual compound as above-defined, in admixture with other fungicides, as described above, for controlling or preventing infestation of plants, e.g. useful plants such as crop plants, propagation material thereof, e.g. seeds, harvested crops, e.g. harvested food crops, or non-living materials by phytopathogenic microorganisms, preferably fungal organisms.

A further aspect of invention is related to a method of controlling or preventing an infestation of plants, e.g. useful plants such as crop plants, propagation material thereof, e.g. seeds, harvested crops, e.g. harvested food crops, or of non-living materials by phytopathogenic or spoilage microorganisms or organisms potentially harmful to man, especially fungal organisms, which comprises the application of a compound of formula I or of a preferred individual compound as above-defined as active ingredient to the plants, to parts of the plants or to the locus thereof, to the propagation material thereof, or to any part of the non-living materials.

Controlling or preventing means reducing infestation by phytopathogenic or spoilage microorganisms or organisms potentially harmful to man, especially fungal organisms, to such a level that an improvement is demonstrated.

A preferred method of controlling or preventing an infestation of crop plants by phytopathogenic microorganisms, especially fungal organisms, which comprises the application of a compound of formula I, or an agrochemical composition which contains at least one of said compounds, is foliar application. The frequency of application and the rate of application will depend on the risk of infestation by the corresponding pathogen. However, the compounds of formula I can also penetrate the plant through the roots via the soil (systemic action) by drenching the locus of the plant with a liquid formulation, or by applying the compounds in solid form to the soil, e.g. in granular form (soil application). In crops of water rice such granulates can be applied to the flooded rice field. The compounds of formula I may also be applied to seeds (coating) by impregnating the seeds or tubers either with a liquid formulation of the fungicide or coating them with a solid formulation.

A formulation, e.g. a composition containing the compound of formula I, and, if desired, a solid or liquid adjuvant or monomers for encapsulating the compound of formula I, may be prepared in a known manner, typically by intimately mixing and/or grinding the compound with extenders, for example solvents, solid carriers and, optionally, surface active compounds (surfactants).

The agrochemical formulations and/or compositions will usually contain from 0.1 to 99% by weight, preferably from 0.1 to 95% by weight, of the compound of formula I, 99.9 to 1% by weight, preferably 99.8 to 5% by weight, of a solid or liquid adjuvant, and from 0 to 25% by weight, preferably from 0.1 to 25% by weight, of a surfactant.

Advantageous rates of application are normally from 5g to 2kg of active ingredient (a.i.) per hectare (ha), preferably from 10g to 1kg a.i./ha, most preferably from 20g to 600g a.i./ha.

When used as seed drenching agent, convenient dosages are from 10mg to 1g of active substance per kg of seeds.

Whereas it is preferred to formulate commercial products as concentrates, the end user will normally use dilute formulations.

The following non-limiting example illustrates the above-described invention in more detail.

Example 1: This example illustrates the preparation of acetaldehyde O-[3-(2-{1-[2-(3,5-bis-difluoromethyl-pyrazol-1-yl)-acetyl]-piperidin-4-yl}-thiazol-4-yl)-5-(2-fluoro-phenyl)-4,5-dihydro-isoxazol-5-ylmethyl]-oxime (compound I.b.109)

a) Preparation of 1-(1-bromomethyl-vinyl)-2-fluoro-benzene

N-Bromosuccinimide (12.8 g, 73 mmol) is added to a solution of 1-fluoro-2-isopropenyl-benzene (9.9 g, 73 mmol) in 16 ml of tetrachloromethane. The mixture is heated to reflux for 48 h, then cooled to room temperature and filtered. The filtrate is concentrated under reduced pressure, the residue is purified by column chromatography on silica gel (cyclohexane / ethyl acetate 5 : 1) to give 1-(1-bromomethyl-vinyl)-2-fluoro-benzene as a colourless oil. ^{1}H-NMR (400 MHz, $CDCl_3$): δ = 4.39 (s, 2H), 5.42 (s, 1H), 5.61 (s, 1H), 7.08 (t, 1H), 7.17 (t, 1H), 7.29 – 7.37 (m, 2H). MS: m/z = 216 (M+1).

b) Preparation of acetaldehyde O-[2-(2-fluoro-phenyl)-allyl]-oxime

Sodium hydride (0.4 g, 10 mmol) was added in portions at 0 °C to a solution of acetaldehyde oxime (0.55 g, 9.3 mmol) in 16 ml of N,N-dimethylformamide. After the addition is complete, the reaction mixture is brought to room temperature, stirred for 30 mins and then cooled again to 0 °C. A solution of 1-(1-bromomethyl-vinyl)-2-fluoro-benzene (2.9 g, 10 mmol) in 10 ml of N,N-dimethylformamide is added slowly and the reaction mixture is warmed again to room temperature, stirred for 3 h, poured on water and extracted with ethyl acetate. The combined organic layer is washed with water and brine, dried over sodium sulphate and concentrated under reduced pressure. The remainder is purified by chromatography on silica gel (cyclohexane / ethyl acetate 9 : 1) to give acetaldehyde O-[2-(2-fluoro-phenyl)-allyl]-oxime as a colourless oil. ^{1}H-NMR (400 MHz, $CDCl_3$): δ = 1.75 (d, 3H), 4.93 (s, 2H), 5.49 (d, 2H), 6.76 (q, 1H), 7.02 – 7.13 (m, 2H), 7.22 – 7.34 (m, 2H). MS: m/z = 194 (M+1).

c) Preparation of 4-{4-[5-eth-(E)-ylideneaminooxymethyl-5-(2-fluoro-phenyl)-4,5-dihydro-isoxazol-3-yl]-thiazol-2-yl}-piperidine-1-carboxylic acid tert-butyl ester

A suspension of 4-[4-(hydroxyimino-methyl)-thiazol-2-yl]-piperidine-1-carboxylic acid

tert-butyl ester (0.47 g, 1.5 mmol) in 30 ml of methanol is added dropwise to a solution of acetaldehyde O-[2-(2-fluoro-phenyl)-allyl]-oxime (0.46 g, 2.4 mmol), (diacetoxy)iodobenzene (0.53 g, 1.6 mmol) and trifluoroacetic acid (43 mg, 0.37 mmol) in 15 ml of methanol. The reaction mixture is stirred for 6 h at room temperature, then concentrated under reduced pressure. The remainder is purified by chromatography on silica gel (cyclohexane / ethyl acetate 6 : 1) to give 4-{4-[5-eth-(E)-ylideneaminooxymethyl-5-(2-fluoro-phenyl)-4,5-dihydro-isoxazol-3-yl]-thiazol-2-yl}-piperidine-1-carboxylic acid tert-butyl ester. ^{1}H-NMR (400 MHz, $CDCl_3$): δ = 1.47 (s, 9H), 1.71 (dd, 2H), 1.75 (d, 2H), 2.09 (dd, 2H), 2.86 (t, 2H), 3.17 (dt, 1H), 3.56 (dd, 1H), 3.99 (dd, 1H), 4.13 – 4.22 (m, 2H), 4.53 (dd, 2H), 6.68 (q, 1H), 7.07 (t, 1H), 7.18 (t, 1H), 7.28 – 7.32 (m, 1H), 7.57 (s, 1H), 7.75 (t, 1H). MS: m/z = 503 (M+1).

d) Preparation of acetaldehyde O-[5-(2-fluoro-phenyl)-3-(2-piperidin-4-yl-thiazol-4-yl)-4,5-dihydro-isoxazol-5-ylmethyl]-oxime

2.9 ml of a 1.25 M solution of hydrochloric acid in ethanol are added to a solution of 4-{4-[5-eth-(E)-ylideneaminooxymethyl-5-(2-fluoro-phenyl)-4,5-dihydro-isoxazol-3-yl]-thiazol-2-yl}-piperidine-1-carboxylic acid tert-butyl ester (0.18 g, 0.36 mmol) in 3 ml of a 1 : 1 mixture of methanol and dichloromethane. The reaction mixture was stirred 16 h at room temperature, then concentrated under reduced pressure. The remainder was dried in high vacuum to deliver acetaldehyde O-[5-(2-fluoro-phenyl)-3-(2-piperidin-4-yl-thiazol-4-yl)-4,5-dihydro-isoxazol-5-ylmethyl]-oxime as a white foam. ^{1}H-NMR (400 MHz, $CDCl_3$): δ = 1.70 - 1.77 (m, 4H), 2.12 (dd, 2H), 2.91 (t, 2H), 3.14 (dt, 1H), 3.53 (dd, 1H), 4.01 (dd, 1H), 4.15 – 4.23 (m, 2H), 4.54 (dd, 2H), 6.70 (q, 1H), 7.08 (t, 1H), 7.19 (t, 1H), 7.26 – 7.33 (m, 1H), 7.56 (s, 1H), 7.72 (t, 1H). MS: m/z = 440 (M+1).

e) Preparation of acetaldehyde O-[3-(2-{1-[2-(3,5-bis-difluoromethyl-pyrazol-1-yl)-acetyl]-piperidin-4-yl}-thiazol-4-yl)-5-(2-fluoro-phenyl)-4,5-dihydro-isoxazol-5-ylmethyl]-oxime (compound I.b.109)

Acetaldehyde O-[5-(2-fluoro-phenyl)-3-(2-piperidin-4-yl-thiazol-4-yl)-4,5-dihydro-isoxazol-5-ylmethyl]-oxime (0.15 g, 0.34 mmol) is dissolved in 3 ml of N,N-dimethylformamide and the mixture is cooled to 0 °C. Diisoproplyethylamine (0.11 g, 0.86 mmol) is added and the reaction mixture is stirred for 10 min at 0 °C. (3,5-Bis-difluoromethyl-pyrazol-1-yl)-acetic acid (78 mg, 0.34 mmol) and (benzotriazol-1-yloxy)tris(dimethylamino) phosphonium hexafluorophosphate (BOP, Castro's reagent, 0.15 g, 0.34 mmol) are added, then the reaction mixture is stirred for further 10 min at 0 °C and 16 h at room temperature. Subsequently the reaction mixture is poured on water, and extracted with ethyl acetate. The organic layer is washed with saturated aqueous sodium hydrogencarbonate solution and brine, dried over sodium sulphate and concentrated under reduced pressure. The remainder is purified by chromatography on silica gel (cyclohexane / ethyl acetate 6 : 1) to give

acetaldehyde O-[3-(2-{1-[2-(3,5-bis-difluoromethyl-pyrazol-1-yl)-acetyl]-piperidin-4-yl}-thiazol-4-yl)-5-(2-fluoro-phenyl)-4,5-dihydro-isoxazol-5-ylmethyl]-oxime (Compound 1.b.109) as a white foam. ^{1}H-NMR (400 MHz, $CDCl_3$): δ = 1.72 – 1.89 (m, 5H), 2.21 (d, 1H), 2.29 (d, 1H), 2.93 (t, 1H), 3.35 (t, 2H), 3.61 (dd, 1H), 3.94 (d, 1H), 4.03 (d, 1H), 4.42 – 4.60 (m, 3H), 5.20 (s, 2H), 6.72 (dd, 1H), 6.80 (t, 1H), 6.87 (d, 1H), 7.11 (t, 1H), 7.20 (t, 1H), 7.32 (dd, 1H), 7.62 (s, 1H), 7.79 (t, 1H). MS: m/z = 611 (M+1).

Table 1 below illustrates examples of individual compounds of formula I according to the invention.

Table 1: individual compounds of formula I according to the invention

Comp. No.	R^1	R^2	T	Y^1	G^2	Y^2	R^{10}	R^{12}	R^{13}
001	F_3C	H_3C	CH	N	S	CH	H	H	CH_3
002	F_3C	H_3C	CH	N	S	CH	H	CH_3	CH_3
003	F_3C	H_3C	CH	N	S	CH	H	H	CF_3
004	F_3C	H_3C	CH	N	S	CH	H	H	CH_2CH_3
005	F_3C	H_3C	CH	N	S	CH	H	CH_3	cyclopropyl
006	F_3C	H_3C	CH	N	S	CH	CH_3	H	CH_3
007	F_3C	H_3C	CH	N	S	N	H	H	CH_3
008	F_3C	H_3C	CH	N	S	N	H	CH_3	CH_3
009	F_3C	H_3C	CH	N	S	N	H	H	CF_3
010	F_3C	H_3C	CH	N	S	N	H	H	CH_2CH_3
011	F_3C	H_3C	CH	N	S	N	H	CH_3	cyclopropyl
012	F_3C	H_3C	CH	N	S	N	CH_3	H	CH_3
013	F_3C	H_3C	CH	N	O	CH	H	H	CH_3
014	F_3C	H_3C	CH	N	O	CH	H	CH_3	CH_3
015	F_3C	H_3C	CH	N	O	CH	H	H	CF_3
016	F_3C	H_3C	CH	N	O	CH	H	H	CH_2CH_3
017	F_3C	H_3C	CH	N	O	CH	H	CH_3	cyclopropyl
018	F_3C	H_3C	CH	N	O	CH	CH_3	H	CH_3
019	F_3C	H_3C	N	N	S	CH	H	H	CH_3
020	F_3C	H_3C	N	N	S	CH	H	CH_3	CH_3
021	F_3C	H_3C	N	N	S	CH	H	H	CF_3
022	F_3C	H_3C	N	N	S	CH	H	H	CH_2CH_3
023	F_3C	H_3C	N	N	S	CH	H	CH_3	cyclopropyl

024	F_3C	H_3C	N	N	S	CH	CH_3	H	CH_3
025	F_3C	H_3C	N	N	S	N	H	H	CH_3
026	F_3C	H_3C	N	N	S	N	H	CH_3	CH_3
027	F_3C	H_3C	N	N	S	N	H	H	CF_3
028	F_3C	H_3C	N	N	S	N	H	H	CH_2CH_3
029	F_3C	H_3C	N	N	S	N	H	CH_3	cyclopropyl
030	F_3C	H_3C	N	N	S	N	CH_3	H	CH_3
031	F_3C	H_3C	N	N	O	CH	H	H	CH_3
032	F_3C	H_3C	N	N	O	CH	H	CH_3	CH_3
033	F_3C	H_3C	N	N	O	CH	H	H	CF_3
034	F_3C	H_3C	N	N	O	CH	H	H	CH_2CH_3
035	F_3C	H_3C	N	N	O	CH	H	CH_3	cyclopropyl
036	F_3C	H_3C	N	N	O	CH	CH_3	H	CH_3
037	H_3C	H_3C	CH	N	S	CH	H	H	CH_3
038	H_3C	H_3C	CH	N	S	CH	H	CH_3	CH_3
039	H_3C	H_3C	CH	N	S	CH	H	H	CF_3
040	H_3C	H_3C	CH	N	S	CH	H	H	CH_2CH_3
041	H_3C	H_3C	CH	N	S	CH	H	CH_3	cyclopropyl
042	H_3C	H_3C	CH	N	S	CH	CH_3	H	CH_3
043	H_3C	H_3C	CH	N	S	N	H	H	CH_3
044	H_3C	H_3C	CH	N	S	N	H	CH_3	CH_3
045	H_3C	H_3C	CH	N	S	N	H	H	CF_3
046	H_3C	H_3C	CH	N	S	N	H	H	CH_2CH_3
047	H_3C	H_3C	CH	N	S	N	H	CH_3	cyclopropyl
048	H_3C	H_3C	CH	N	S	N	CH_3	H	CH_3
049	H_3C	H_3C	CH	N	O	CH	H	H	CH_3
050	H_3C	H_3C	CH	N	O	CH	H	CH_3	CH_3
051	H_3C	H_3C	CH	N	O	CH	H	H	CF_3
052	H_3C	H_3C	CH	N	O	CH	H	H	CH_2CH_3
053	H_3C	H_3C	CH	N	O	CH	H	CH_3	cyclopropyl
054	H_3C	H_3C	CH	N	O	CH	CH_3	H	CH_3
055	H_3C	H_3C	N	N	S	CH	H	H	CH_3
056	H_3C	H_3C	N	N	S	CH	H	CH_3	CH_3
057	H_3C	H_3C	N	N	S	CH	H	H	CF_3
058	H_3C	H_3C	N	N	S	CH	H	H	CH_2CH_3
059	H_3C	H_3C	N	N	S	CH	H	CH_3	cyclopropyl
060	H_3C	H_3C	N	N	S	CH	CH_3	H	CH_3

061	H_3C	H_3C	N	N	S	N	H	H	CH_3
062	H_3C	H_3C	N	N	S	N	H	CH_3	CH_3
063	H_3C	H_3C	N	N	S	N	H	H	CF_3
064	H_3C	H_3C	N	N	S	N	H	H	CH_2CH_3
065	H_3C	H_3C	N	N	S	N	H	CH_3	cyclopropyl
066	H_3C	H_3C	N	N	S	N	CH_3	H	CH_3
067	H_3C	H_3C	N	N	O	CH	H	H	CH_3
068	H_3C	H_3C	N	N	O	CH	H	CH_3	CH_3
069	H_3C	H_3C	N	N	O	CH	H	H	CF_3
070	H_3C	H_3C	N	N	O	CH	H	H	CH_2CH_3
071	H_3C	H_3C	N	N	O	CH	H	CH_3	cyclopropyl
072	H_3C	H_3C	N	N	O	CH	CH_3	H	CH_3
073	F_2HC	H_3C	CH	N	S	CH	H	H	CH_3
074	F_2HC	H_3C	CH	N	S	CH	H	CH_3	CH_3
075	F_2HC	H_3C	CH	N	S	CH	H	H	CF_3
076	F_2HC	H_3C	CH	N	S	CH	H	H	CH_2CH_3
077	F_2HC	H_3C	CH	N	S	CH	H	CH_3	cyclopropyl
078	F_2HC	H_3C	CH	N	S	CH	CH_3	H	CH_3
079	F_2HC	H_3C	CH	N	S	N	H	H	CH_3
080	F_2HC	H_3C	CH	N	S	N	H	CH_3	CH_3
081	F_2HC	H_3C	CH	N	S	N	H	H	CF_3
082	F_2HC	H_3C	CH	N	S	N	H	H	CH_2CH_3
083	F_2HC	H_3C	CH	N	S	N	H	CH_3	cyclopropyl
084	F_2HC	H_3C	CH	N	S	N	CH_3	H	CH_3
085	F_2HC	H_3C	CH	N	O	CH	H	H	CH_3
086	F_2HC	H_3C	CH	N	O	CH	H	CH_3	CH_3
087	F_2HC	H_3C	CH	N	O	CH	H	H	CF_3
088	F_2HC	H_3C	CH	N	O	CH	H	H	CH_2CH_3
089	F_2HC	H_3C	CH	N	O	CH	H	CH_3	cyclopropyl
090	F_2HC	H_3C	CH	N	O	CH	CH_3	H	CH_3
091	F_2HC	H_3C	N	N	S	CH	H	H	CH_3
092	F_2HC	H_3C	N	N	S	CH	H	CH_3	CH_3
093	F_2HC	H_3C	N	N	S	CH	H	H	CF_3
094	F_2HC	H_3C	N	N	S	CH	H	H	CH_2CH_3
095	F_2HC	H_3C	N	N	S	CH	H	CH_3	cyclopropyl
096	F_2HC	H_3C	N	N	S	CH	CH_3	H	CH_3
097	F_2HC	H_3C	N	N	S	N	H	H	CH_3

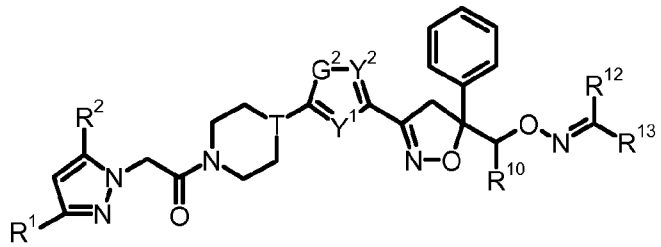
098	F_2HC	H_3C	N	N	S	N	H	CH_3	CH_3
099	F_2HC	H_3C	N	N	S	N	H	H	CF_3
100	F_2HC	H_3C	N	N	S	N	H	H	CH_2CH_3
101	F_2HC	H_3C	N	N	S	N	H	CH_3	cyclopropyl
102	F_2HC	H_3C	N	N	S	N	CH_3	H	CH_3
103	F_2HC	H_3C	N	N	O	CH	H	H	CH_3
104	F_2HC	H_3C	N	N	O	CH	H	CH_3	CH_3
105	F_2HC	H_3C	N	N	O	CH	H	H	CF_3
106	F_2HC	H_3C	N	N	O	CH	H	H	CH_2CH_3
107	F_2HC	H_3C	N	N	O	CH	H	CH_3	cyclopropyl
108	F_2HC	H_3C	N	N	O	CH	CH_3	H	CH_3
109	F_2HC	F_2HC	CH	N	S	CH	H	H	CH_3
110	F_2HC	F_2HC	CH	N	S	CH	H	CH_3	CH_3
111	F_2HC	F_2HC	CH	N	S	CH	H	H	CF_3
112	F_2HC	F_2HC	CH	N	S	CH	H	H	CH_2CH_3
113	F_2HC	F_2HC	CH	N	S	CH	H	CH_3	cyclopropyl
114	F_2HC	F_2HC	CH	N	S	CH	CH_3	H	CH_3
115	F_2HC	F_2HC	CH	N	S	N	H	H	CH_3
116	F_2HC	F_2HC	CH	N	S	N	H	CH_3	CH_3
117	F_2HC	F_2HC	CH	N	S	N	H	H	CF_3
118	F_2HC	F_2HC	CH	N	S	N	H	H	CH_2CH_3
119	F_2HC	F_2HC	CH	N	S	N	H	CH_3	cyclopropyl
120	F_2HC	F_2HC	CH	N	S	N	CH_3	H	CH_3
121	F_2HC	F_2HC	CH	N	O	CH	H	H	CH_3
122	F_2HC	F_2HC	CH	N	O	CH	H	CH_3	CH_3
123	F_2HC	F_2HC	CH	N	O	CH	H	H	CF_3
124	F_2HC	F_2HC	CH	N	O	CH	H	H	CH_2CH_3
125	F_2HC	F_2HC	CH	N	O	CH	H	CH_3	cyclopropyl
126	F_2HC	F_2HC	CH	N	O	CH	CH_3	H	CH_3
127	F_2HC	F_2HC	N	N	S	CH	H	H	CH_3
128	F_2HC	F_2HC	N	N	S	CH	H	CH_3	CH_3
129	F_2HC	F_2HC	N	N	S	CH	H	H	CF_3
130	F_2HC	F_2HC	N	N	S	CH	H	H	CH_2CH_3
131	F_2HC	F_2HC	N	N	S	CH	H	CH_3	cyclopropyl
132	F_2HC	F_2HC	N	N	S	CH	CH_3	H	CH_3
133	F_2HC	F_2HC	N	N	S	N	H	H	CH_3
134	F_2HC	F_2HC	N	N	S	N	H	CH_3	CH_3

135	F_2HC	F_2HC	N	N	S	N	H	H	CF_3
136	F_2HC	F_2HC	N	N	S	N	H	H	CH_2CH_3
137	F_2HC	F_2HC	N	N	S	N	H	CH_3	cyclopropyl
138	F_2HC	F_2HC	N	N	S	N	CH_3	H	CH_3
139	F_2HC	F_2HC	N	N	O	CH	H	H	CH_3
140	F_2HC	F_2HC	N	N	O	CH	H	CH_3	CH_3
141	F_2HC	F_2HC	N	N	O	CH	H	H	CF_3
142	F_2HC	F_2HC	N	N	O	CH	H	H	CH_2CH_3
143	F_2HC	F_2HC	N	N	O	CH	H	CH_3	cyclopropyl
144	F_2HC	F_2HC	N	N	O	CH	CH_3	H	CH_3
145	F_3C	F_3C	CH	N	S	CH	H	H	CH_3
146	F_3C	F_3C	CH	N	S	CH	H	CH_3	CH_3
147	F_3C	F_3C	CH	N	S	CH	H	H	CF_3
148	F_3C	F_3C	CH	N	S	CH	H	H	CH_2CH_3
149	F_3C	F_3C	CH	N	S	CH	H	CH_3	cyclopropyl
150	F_3C	F_3C	CH	N	S	CH	CH_3	H	CH_3
151	F_3C	F_3C	CH	N	S	N	H	H	CH_3
152	F_3C	F_3C	CH	N	S	N	H	CH_3	CH_3
153	F_3C	F_3C	CH	N	S	N	H	H	CF_3
154	F_3C	F_3C	CH	N	S	N	H	H	CH_2CH_3
155	F_3C	F_3C	CH	N	S	N	H	CH_3	cyclopropyl
156	F_3C	F_3C	CH	N	S	N	CH_3	H	CH_3
157	F_3C	F_3C	CH	N	O	CH	H	H	CH_3
158	F_3C	F_3C	CH	N	O	CH	H	CH_3	CH_3
159	F_3C	F_3C	CH	N	O	CH	H	H	CF_3
160	F_3C	F_3C	CH	N	O	CH	H	H	CH_2CH_3
161	F_3C	F_3C	CH	N	O	CH	H	CH_3	cyclopropyl
162	F_3C	F_3C	CH	N	O	CH	CH_3	H	CH_3
163	F_3C	F_3C	N	N	S	CH	H	H	CH_3
164	F_3C	F_3C	N	N	S	CH	H	CH_3	CH_3
165	F_3C	F_3C	N	N	S	CH	H	H	CF_3
166	F_3C	F_3C	N	N	S	CH	H	H	CH_2CH_3
167	F_3C	F_3C	N	N	S	CH	H	CH_3	cyclopropyl
168	F_3C	F_3C	N	N	S	CH	CH_3	H	CH_3
169	F_3C	F_3C	N	N	S	N	H	H	CH_3
170	F_3C	F_3C	N	N	S	N	H	CH_3	CH_3
171	F_3C	F_3C	N	N	S	CH	H	H	CF_3

172	F_3C	F_3C	N	N	S	CH	H	H	CH_2CH_3
173	F_3C	F_3C	N	N	S	CH	H	CH_3	cyclopropyl
174	F_3C	F_3C	N	N	S	CH	CH_3	H	CH_3
175	F_3C	F_3C	N	N	O	CH	H	H	CH_3
176	F_3C	F_3C	N	N	O	CH	H	CH_3	CH_3
177	F_3C	F_3C	N	N	O	CH	H	H	CF_3
178	F_3C	F_3C	N	N	O	CH	H	H	CH_2CH_3
179	F_3C	F_3C	N	N	O	CH	H	CH_3	cyclopropyl
180	F_3C	F_3C	N	N	O	CH	CH_3	H	CH_3

where

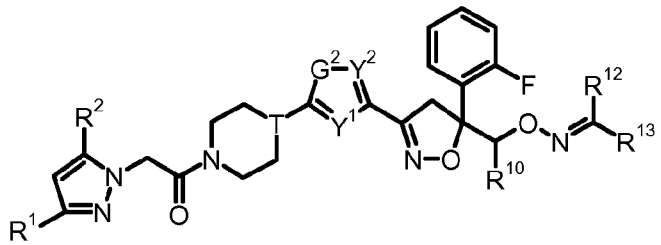
a) 180 compounds of formula (I.a):



(I.a)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

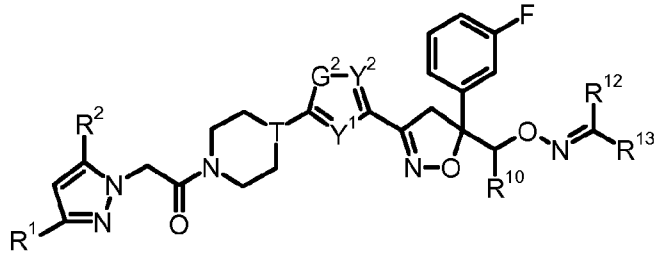
b) 180 compounds of formula (I.b):



(I.b)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

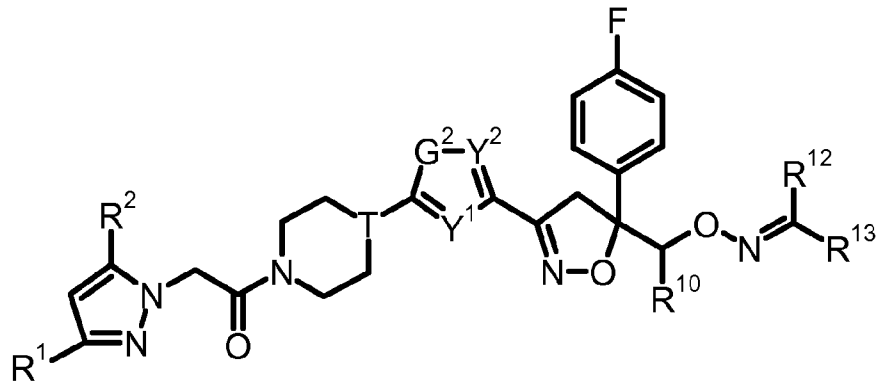
c) 180 compounds of formula (I.c):



(I.c)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

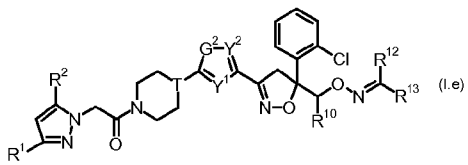
d) 180 compounds of formula (I.d):



(I.d)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

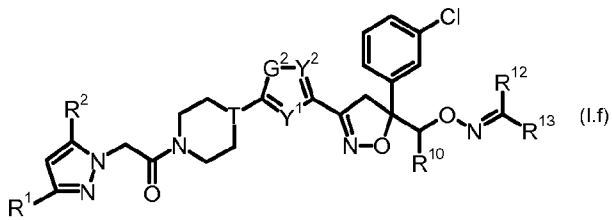
e) 180 compounds of formula (I.e):



(I.e)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

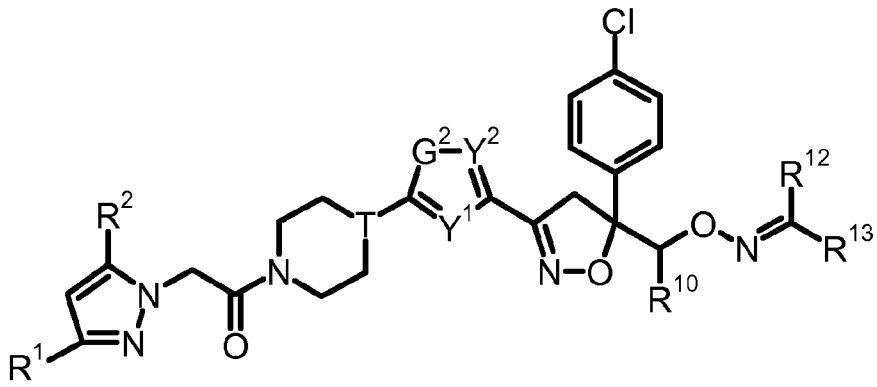
f) 180 compounds of formula (I.f):



(I.f)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

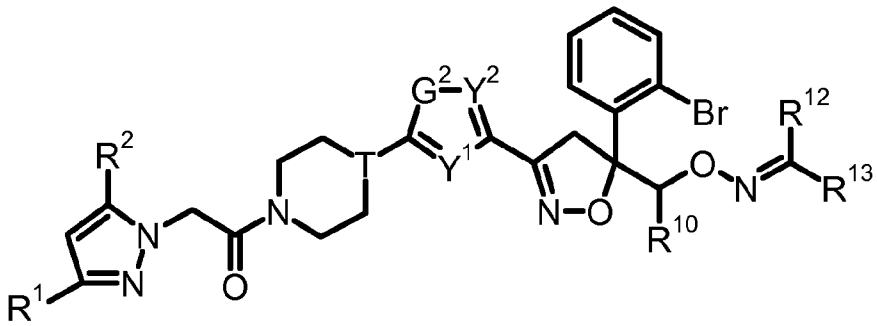
g) 180 compounds of formula (I.g):



(I.g)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

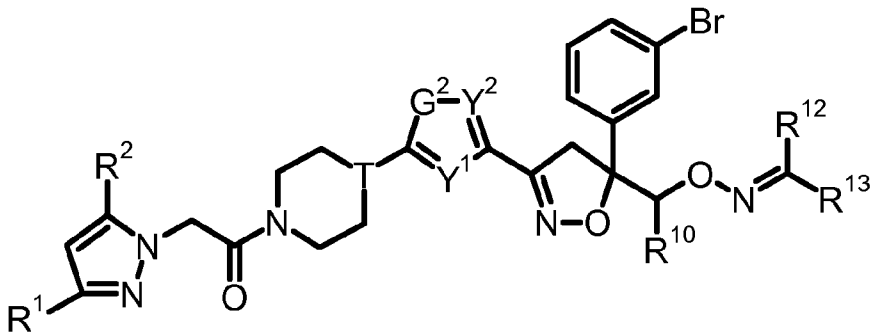
h) 180 compounds of formula (I.h):



(I.h)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

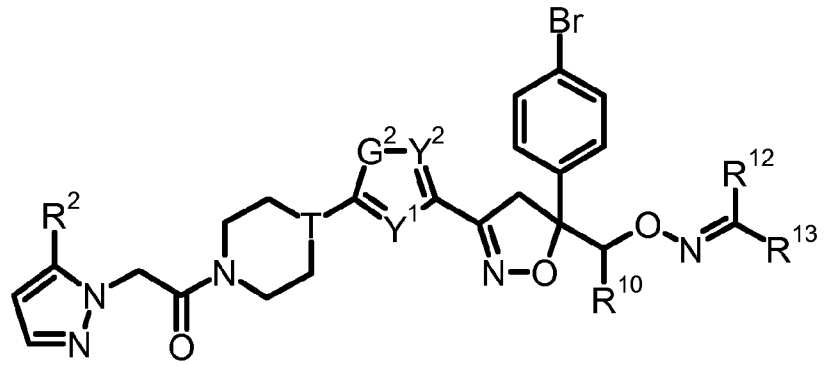
i) 180 compounds of formula (I.i):



(I.i)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

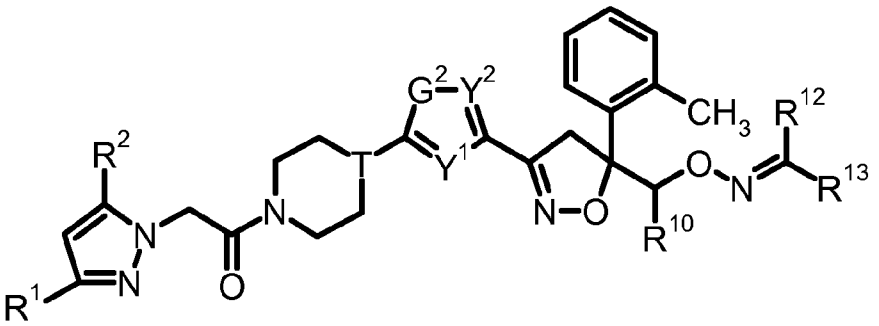
j) 180 compounds of formula (I.j):



(I.j)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

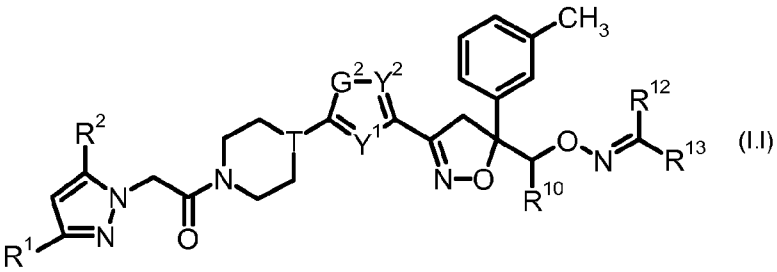
k) 180 compounds of formula (I.k):



(I.k)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

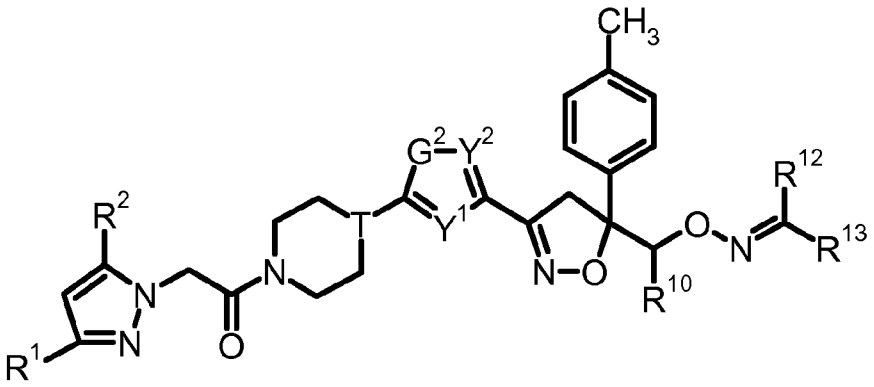
l) 180 compounds of formula (I.l):



(I.l)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

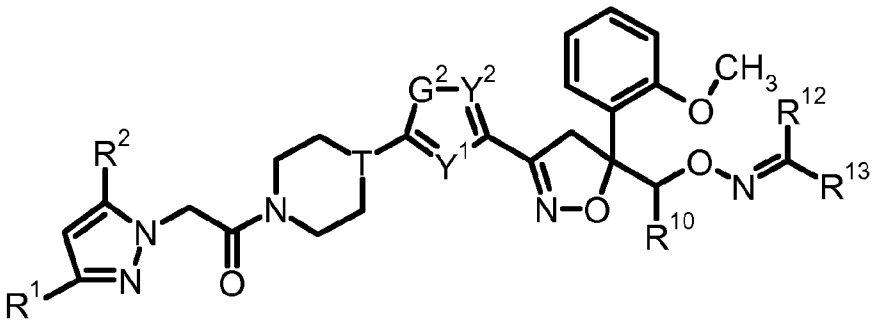
m) 180 compounds of formula (I.m):



(I.m)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

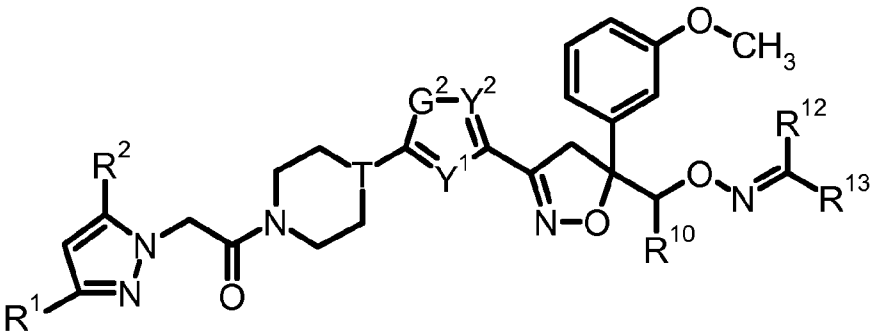
n) 180 compounds of formula (I.n):



(I.n)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

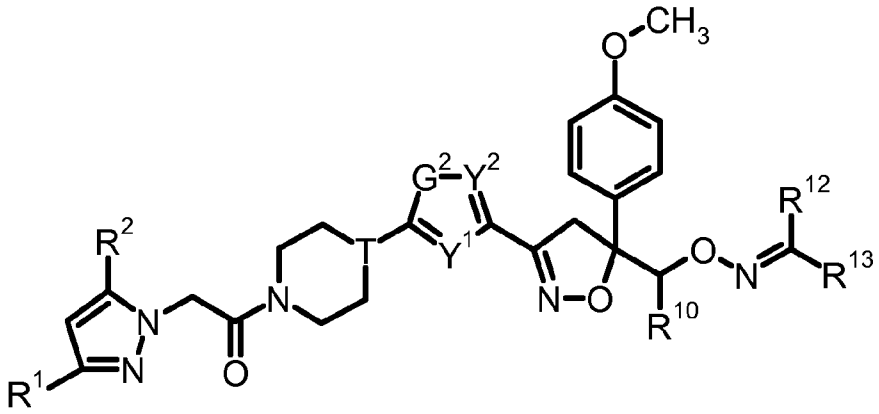
o) 180 compounds of formula (I.o):



(I.o)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

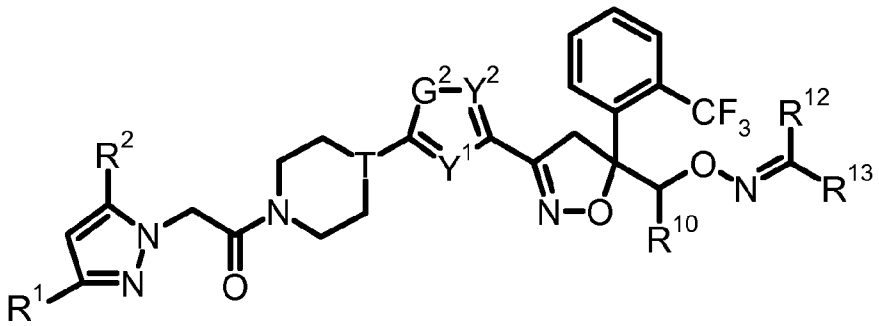
p) 180 compounds of formula (I.p):



(I.p)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

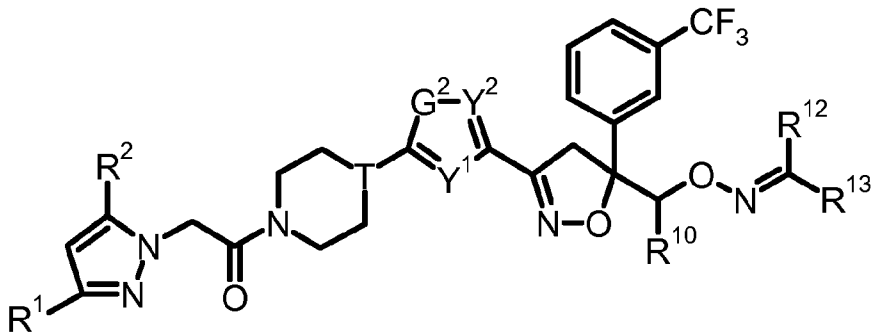
q) 180 compounds of formula (I.q):



(I.q)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

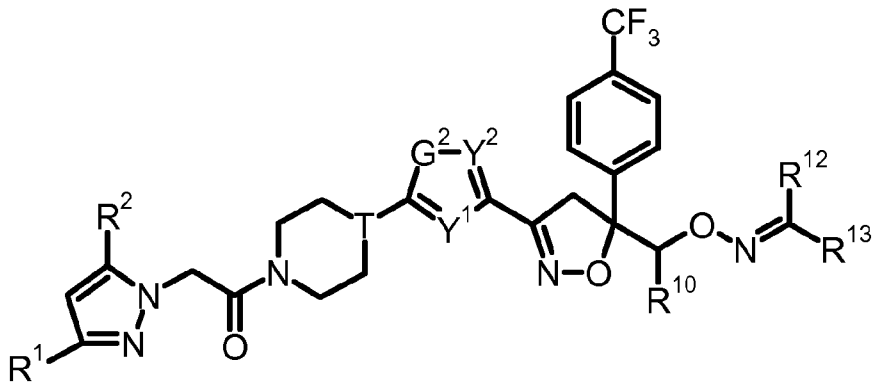
r) 180 compounds of formula (I.r):



(I.r)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

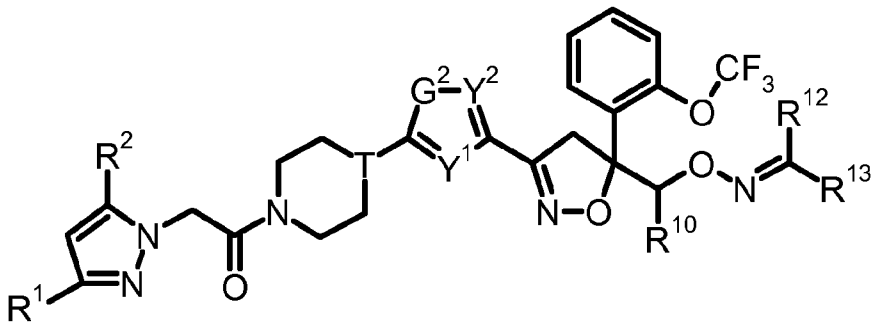
s) 180 compounds of formula (I.s):



(I.s)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

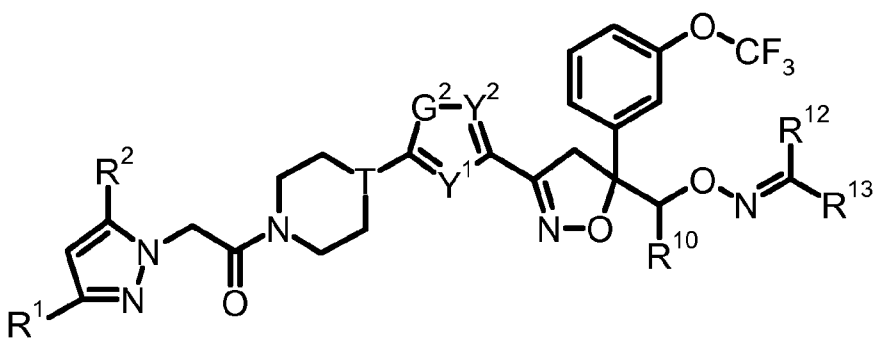
t) 180 compounds of formula (I.t):



(I.t)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

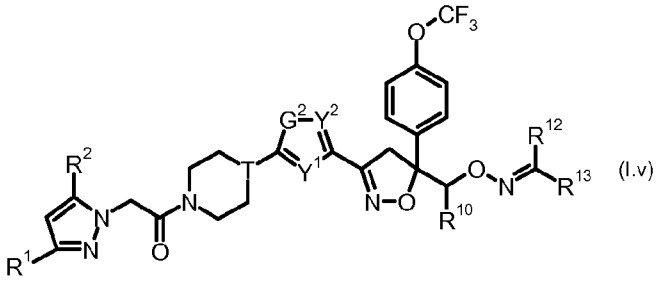
u) 180 compounds of formula (I.u):



(I.u)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

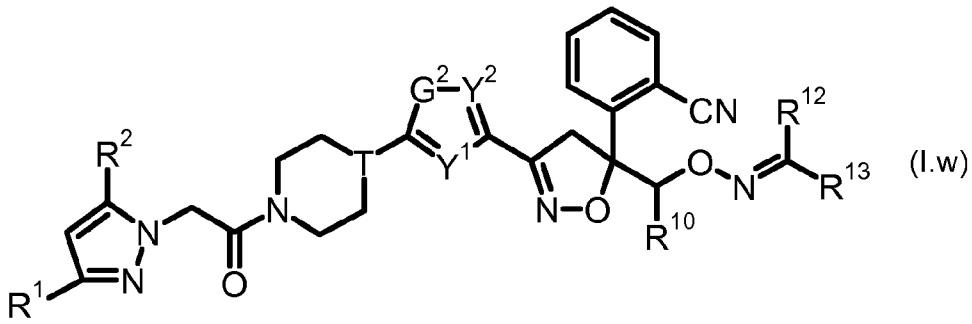
v) 180 compounds of formula (I.v):



(I.v)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

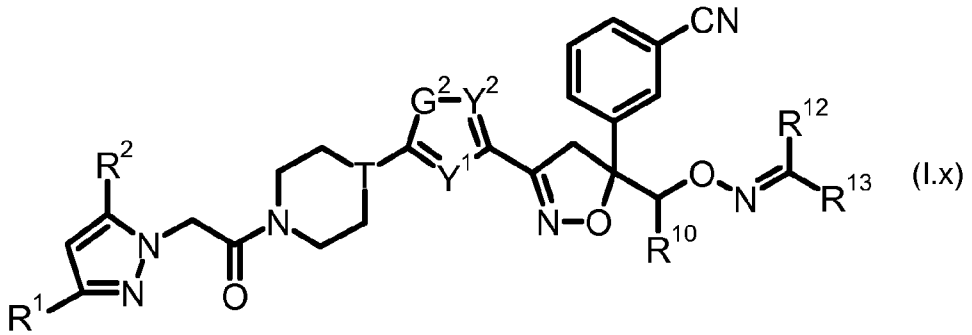
w) 180 compounds of formula (I.w):



(I.w)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

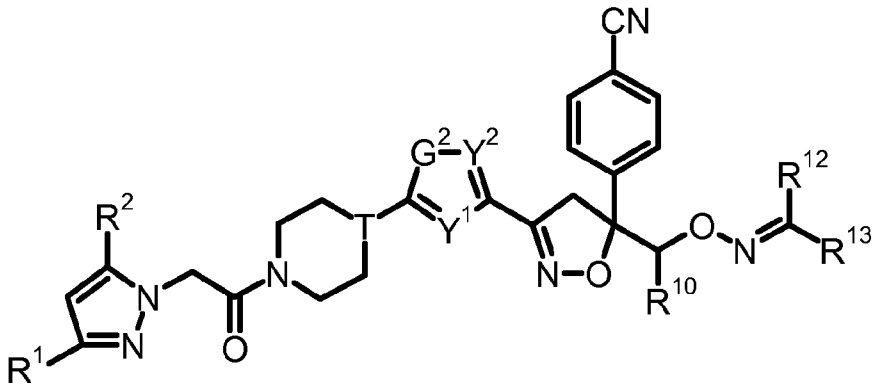
x) 180 compounds of formula (I.x):



(I.x)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

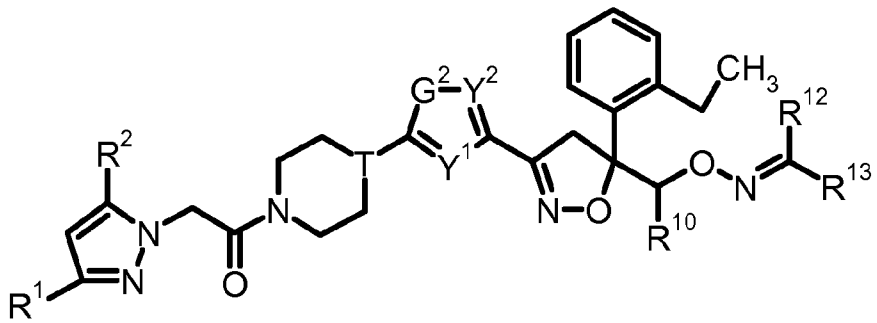
y) 180 compounds of formula (I.y):



(I.y)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

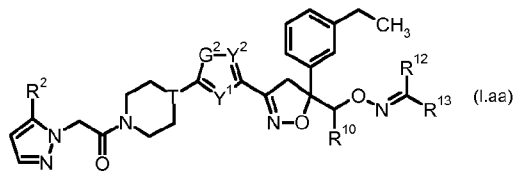
z) 180 compounds of formula (I.z):



(I.z)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

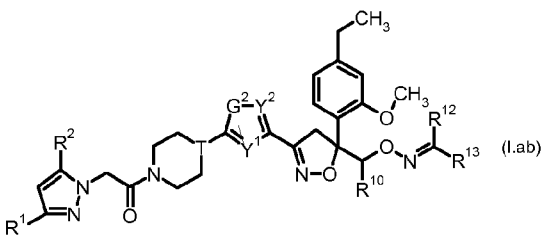
aa) 180 compounds of formula (I.aa):



(I.aa)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

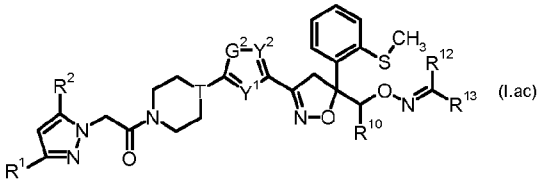
ab) 180 compounds of formula (I.ab):



(I.ab)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

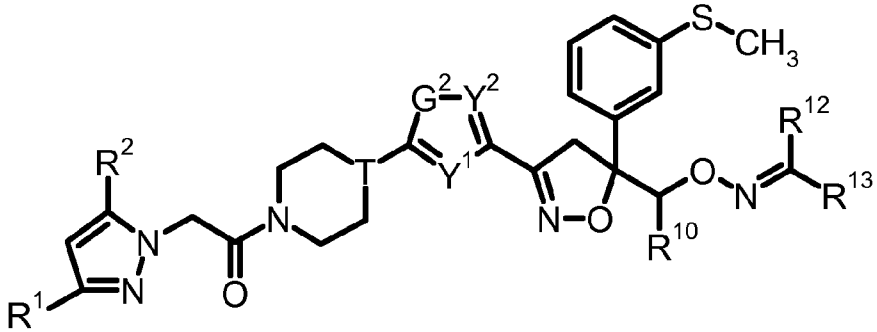
ac) 180 compounds of formula (I.ac):



(I.ac)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

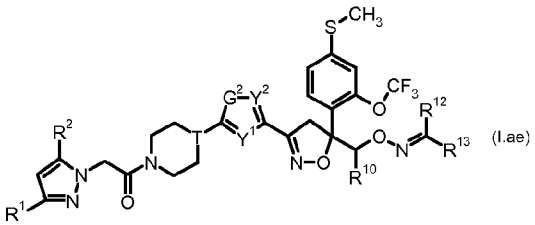
ad) 180 compounds of formula (I.ad):



(I.ad)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

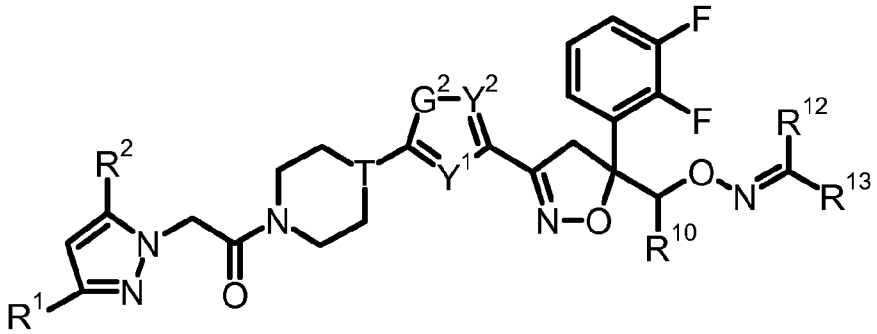
ae) 180 compounds of formula (I.ae):



(I.ae)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

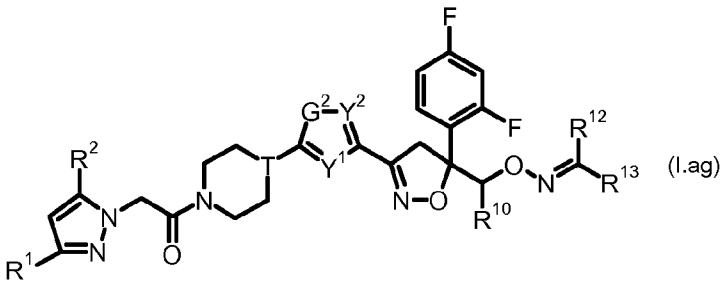
af) 180 compounds of formula (I.af):



(I.af)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

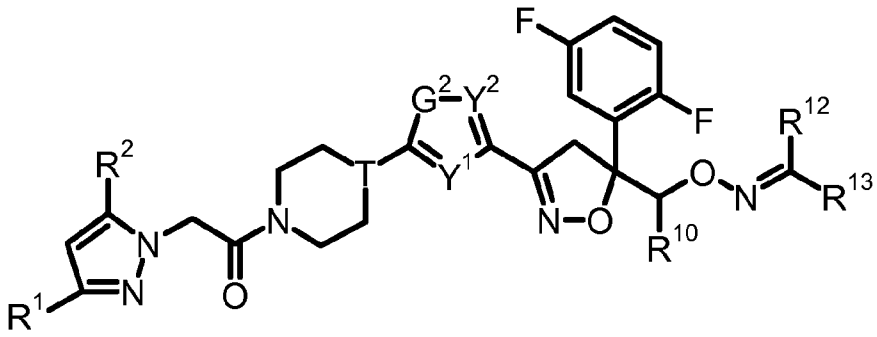
ag) 180 compounds of formula (I.ag):



(I.ag)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

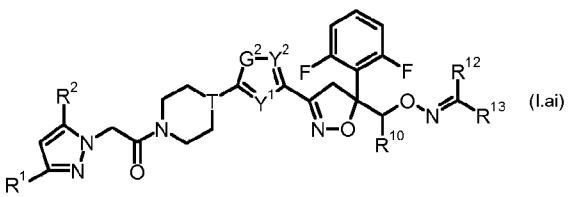
ah) 180 compounds of formula (I.ah):



(I.ah)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

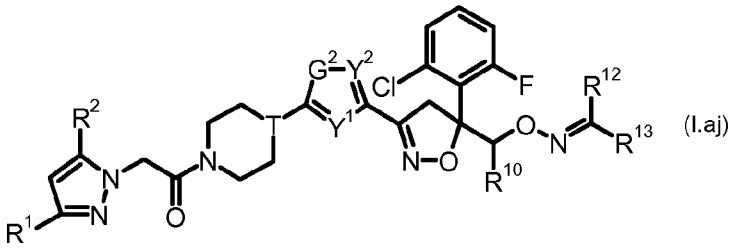
ai) 180 compounds of formula (I.ai):



(I.ai)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

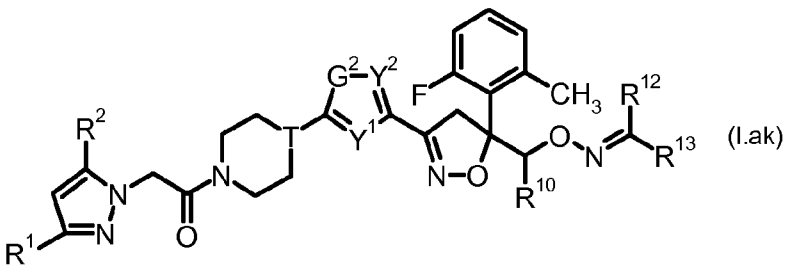
aj) 180 compounds of formula (I.aj):



(I.aj)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

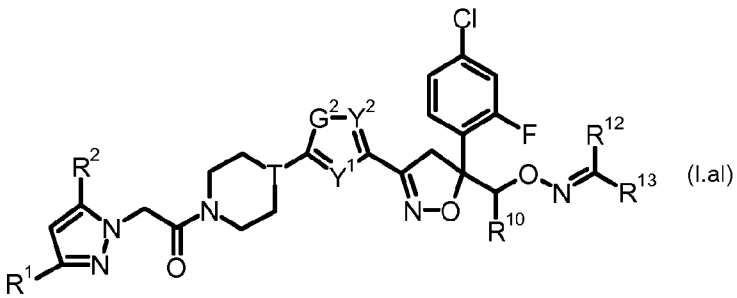
ak) 180 compounds of formula (I.ak):



(I.ak)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

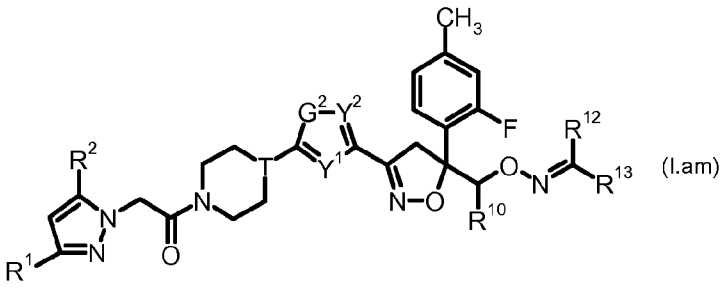
al) 180 compounds of formula (I.al):



(I.al)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

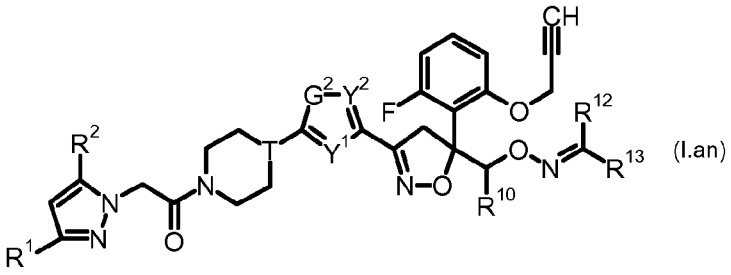
am) 180 compounds of formula (I.am):



(I.am)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

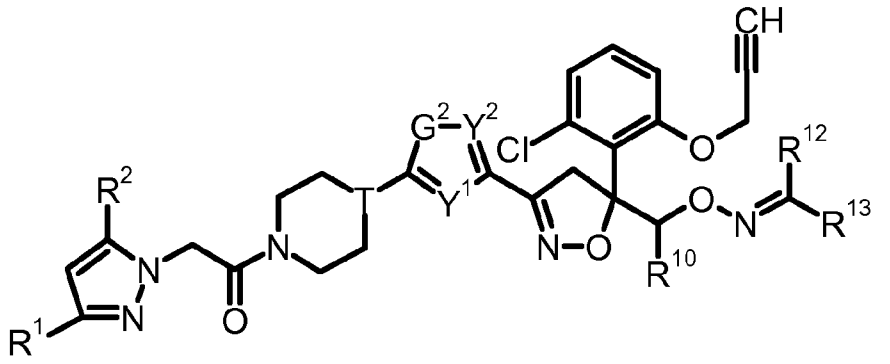
an) 180 compounds of formula (I.an):



(I.an)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

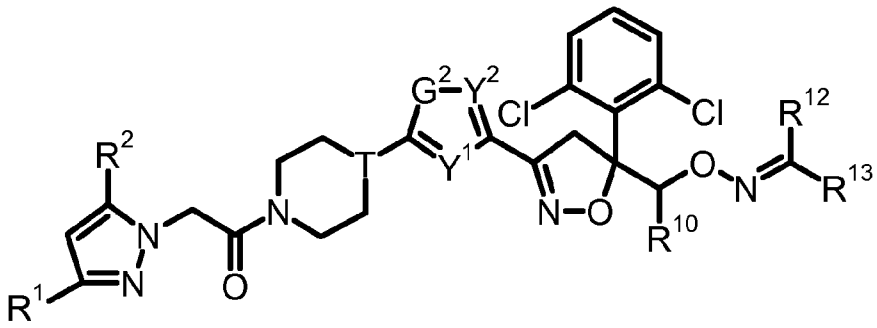
ao) 180 compounds of formula (I.ao):



(I.ao)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

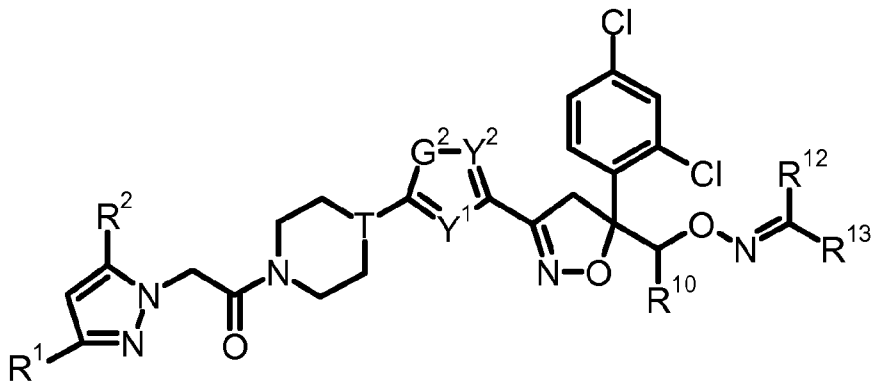
ap) 180 compounds of formula (I.ap):



(I.ap)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

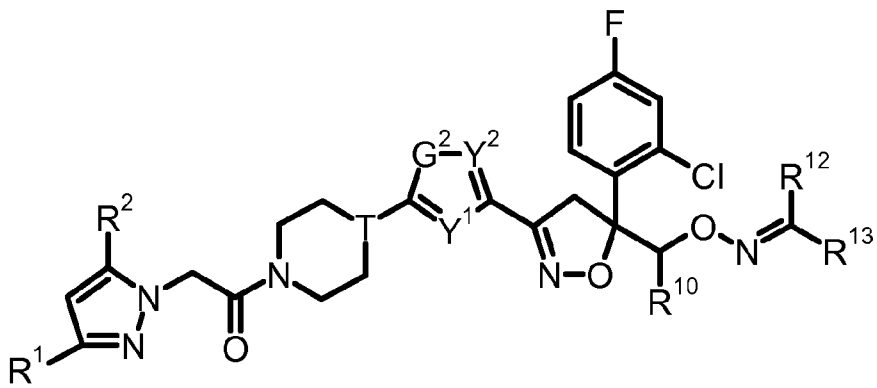
aq) 180 compounds of formula (I.aq):



(I.aq)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

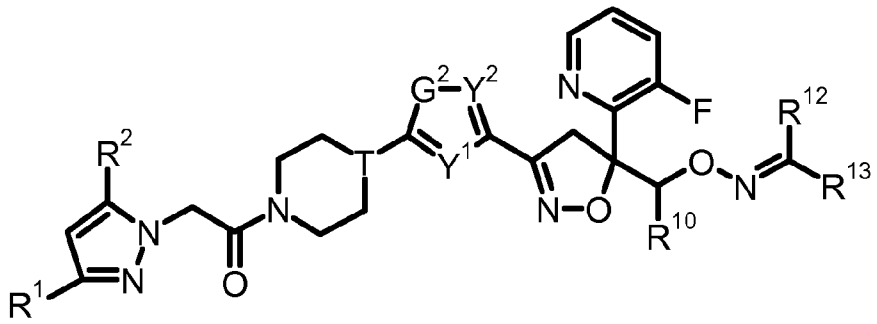
ar) 180 compounds of formula (I.ar):



(I.ar)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

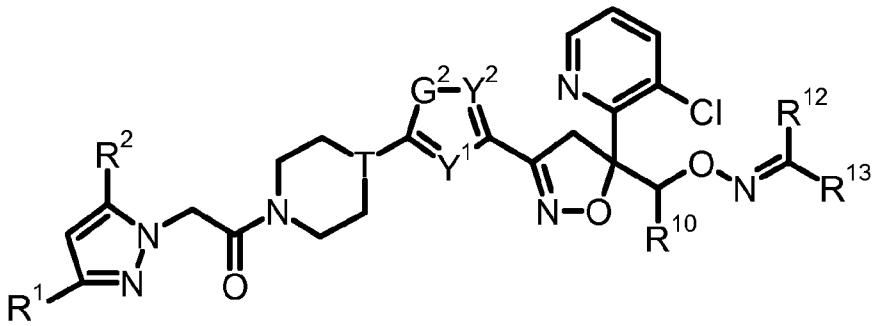
as) 180 compounds of formula (I.as):



(I.as)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

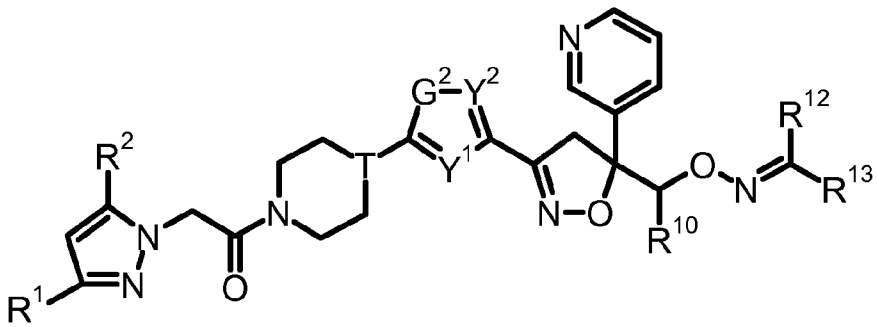
at) 180 compounds of formula (I.at):



(I.at)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

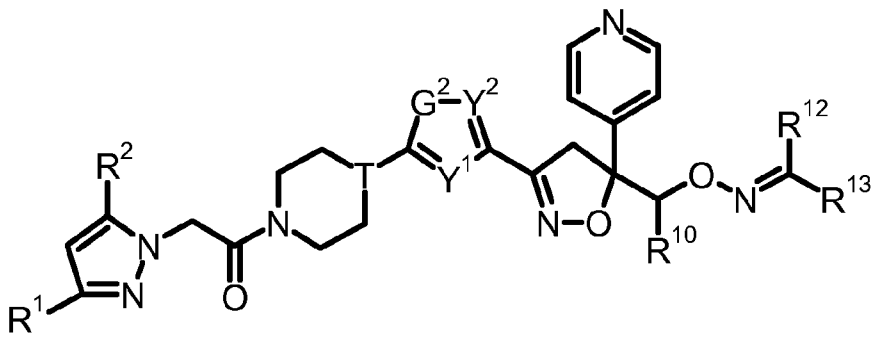
au) 180 compounds of formula (I.au):



(I.au)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

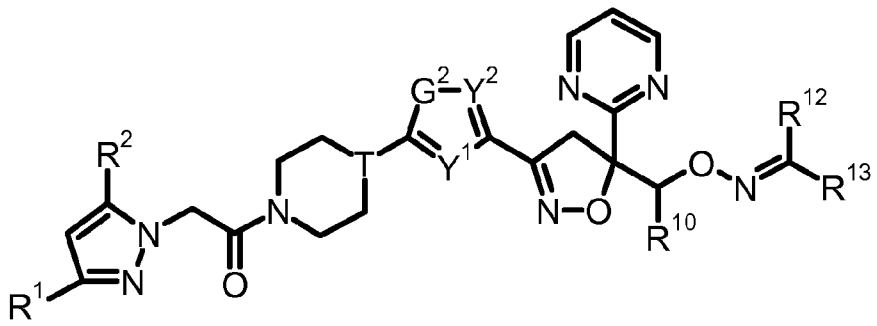
av) 180 compounds of formula (I.av):



(I.av)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

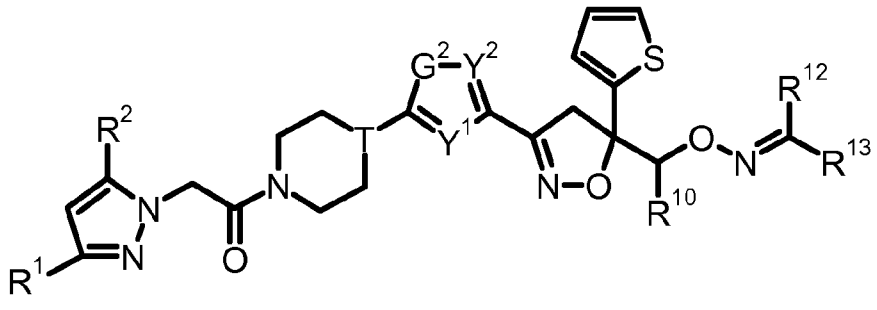
aw) 180 compounds of formula (I.aw):



(I.aw)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

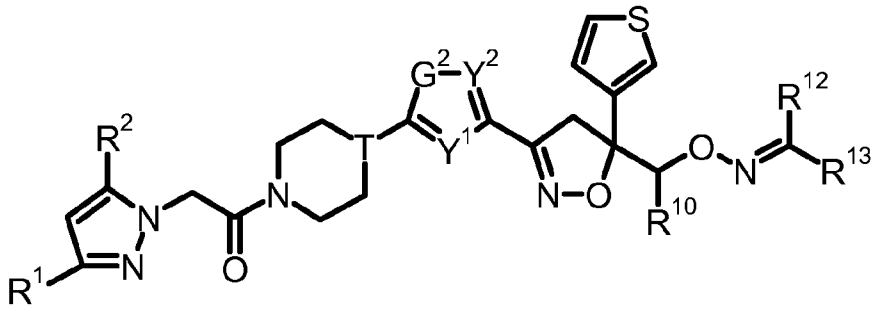
ax) 180 compounds of formula (I.ax):



(I.ax)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

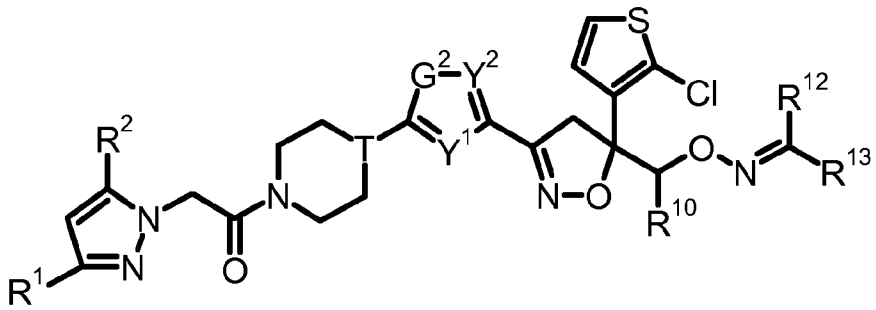
ay) 180 compounds of formula (I.ay):



(I.ay)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

az) 180 compounds of formula (I.az):



(I.az)

wherein R^1, R^2, R^{10}, R^{12}, R^{13}, G^2, T, Y^1 and Y^2 are as defined in Table 1.

Throughout this description, temperatures are given in degrees Celsius and "m.p." means melting point. LC/MS means Liquid Chromatography Mass Spectroscopy and the description of the apparatus and the method is:

Spectra were recorded on a Mass Spectrometer from Waters equipped with an electrospray source (Polarity: positive or negative ions, Capillary: 3.00 kV, Cone range: 30-60 V, Extractor: 2.00 V, Source Temperature: 150°C, Desolvation Temperature: 350°C, Cone Gas Flow: 0 L/Hr, Desolvation Gas Flow: 650 L/Hr, Mass range: 100 to 900 Da) and an Acquity UPLC from Waters: Binary pump, heated column compartment and diode-array detector. Solvent degasser, binary pump, heated column compartment and diode-array detector. Column: Waters UPLC HSS T3 , 1.8 µm, 30 x 2.1 mm, Temp: 60 °C, DAD Wavelength range (nm): 210 to 500, Solvent Gradient: A = water + 5% MeOH + 0.05 % HCOOH, B= Acetonitrile + 0.05 % HCOOH: gradient: gradient: 0 min 0% B, 100%A; 1.2-1.5min 100% B; Flow (ml/min) 0.85

Table 2: Melting point and LC/MS data for compounds of Table 1

Compound No.	Melting point (°C)	LC/MS
I.a.001		Rt = 1.75 min; MS: m/z 575 $[M+1]^+$
I.a.002		Rt = 1.83 min; MS: m/z 589 $[M+1]^+$
I.a.005		Rt = 1.95 min; MS: m/z 615 $[M+1]^+$
I.a.109		Rt = 1.72 min; MS: m/z 593 $[M+1]^+$
I.a.110		Rt = 1.80 min; MS: m/z 607 $[M+1]^+$
I.a.113		Rt = 1.92 min; MS: m/z 633 $[M+1]^+$
I.d.001		Rt = 1.80 min; MS: m/z 593 $[M+1]^+$
I.d.002		Rt = 1.84 min; MS: m/z 607 $[M+1]^+$
Id.005		Rt = 1.96 min; MS: m/z 633 $[M+1]^+$
I.d.109		Rt = 1.76 min; MS: m/z 611 $[M+1]^+$
I.d.110		Rt = 1.81 min; MS: m/z 625 $[M+1]^+$
I.d.113		Rt = 1.92 min; MS: m/z 651 $[M+1]^+$
I.b.109		Rt = 1.76 min; MS: m/z 611 $[M+1]^+$

The compounds according to the present invention can be prepared according to the above-mentioned reaction schemes, in which, unless otherwise stated, the definition of each variable is as defined above for a compound of formula (I).

Biological examples

Phytophthora infestans / tomato / leaf disc preventative (tomato late blight)

Tomato leaf disks are placed on water agar in multiwell plates (24-well format) and sprayed with the formulated test compound diluted in water. The leaf disks are inoculated with a spore suspension of the fungus 1 day after application. The inoculated leaf disks are incubated at 16°C and 75% rh under a light regime of 24 h darkness followed by 12 h light / 12 h darkness in a climate cabinet and the activity of a compound is assessed as percent disease control compared to untreated when an appropriate level of disease damage appears in untreated check leaf disks (5 – 7 days after application).

Compounds I.a.001, I.a.002, I.a.005, I.a.109, I.a.110, I.a.113, I.d.001, I.d.002, I.d.005, I.d.109, I.d.110, I.d.113 and I.b.109 at 200 ppm gives at least 80% disease control in this test when compared to untreated control plants under the same conditions, which show extensive disease development.

Phytophthora infestans / potato / preventative (potato late blight)

2-week old potato plants cv. Bintje are sprayed in a spray chamber with the formulated test compound diluted in water. The test plants are inoculated by spraying them with a sporangia

suspension 2 days after application. The inoculated test plants are incubated at 18° C with 14 h light/day and 100 % rh in a growth chamber and the percentage leaf area covered by disease is assessed when an appropriate level of disease appears on untreated check plants (5 – 7 days after application).

Compounds I.a.001, I.a.002, I.a.005, I.a.109, I.a.110, I.a.113, I.d.001, I.d.002, I.d.005, I.d.109, I.d.110, I.d.113 and I.b.109 at 200 ppm gives at least 80% disease control in this test when compared to untreated control plants under the same conditions, which show extensive disease development.

Phytophthora infestans / potato / curative (potato late blight)

2-week old potato plants cv. Bintje are inoculated by spraying them with a sporangia suspension one day before application. The inoculated plants are sprayed in a spray chamber with the formulated test compound diluted in water. The inoculated test plants are incubated at 18° C with 14 h light/day and 100 % rh in a growth chamber and the percentage leaf area covered by disease is assessed when an appropriate level of disease appears on untreated check plants (3 – 4 days after application).

Compounds I.a.001, I.a.002, I.a.005, I.a.109, I.a.110, I.a.113, I.d.001, I.d.002, I.d.005, I.d.109, I.d.110, I.d.113 and I.b.109 at 200 ppm gives at least 80% disease control in this test when compared to untreated control plants under the same conditions, which show extensive disease development.

Phytophthora infestans / potato / long lasting (potato late blight)

2-week old potato plants cv. Bintje are sprayed in a spray chamber with the formulated test compound diluted in water. The test plants are inoculated by spraying them with a sporangia suspension 6 days after application. The inoculated test plants are incubated at 18° C with 14 h light/day and 100 % rh in a growth chamber and the percentage leaf area covered by disease is assessed when an appropriate level of disease appears on untreated check plants (9 – 11 days after application).

Compounds I.a.001, I.a.002, I.a.005, I.a.109, I.a.110, I.a.113, I.d.001, I.d.002, I.d.005, I.d.109, I.d.110, I.d.113 and I.b.109 at 200 ppm gives at least 80% disease control in this test when compared to untreated control plants under the same conditions, which show extensive disease development.

Plasmopara viticola / grape / leaf disc preventative (grape downy mildew)

Grape vine leaf disks are placed on water agar in multiwell plates (24-well format) and sprayed with the formulated test compound diluted in water. The leaf disks are inoculated with a spore suspension of the fungus 1 day after application. The inoculated leaf disks are incubated at 19°C and 80% rh under a light regime of 12 h light / 12 h darkness in a climate cabinet and the activity of a compound is assessed as percent disease control compared to untreated when an appropriate level of disease damage appears in untreated check leaf disks (6 – 8 days after application).

Compounds I.a.001, I.a.002, I.a.005, I.a.109, I.a.110, I.a.113, I.d.001, I.d.002, I.d.005, I.d.109, I.d.110, I.d.113 and I.b.109 at 200 ppm gives at least 80% disease control in this test when compared to untreated control plants under the same conditions, which show extensive disease development.

Plasmopara viticola / grape / preventative (grape downy mildew)

5-week old grape seedlings cv. Gutedel are sprayed in a spray chamber with the formulated test compound diluted in water. The test plants plants are inoculated by spraying a sporangia suspension on their lower leaf surface one day after application. The inoculated test plants are incubated at 22° C and 100% rh in a greenhouse and the percentage leaf area covered by disease is assessed when an appropriate level of disease appears on untreated check plants (6 – 8 days after application).

Compounds I.a.001, I.a.002, I.a.005, I.a.109, I.a.110, I.a.113, I.d.001, I.d.002, I.d.005, I.d.109, I.d.110, I.d.113 and I.b.109 at 200 ppm gives at least 80% disease control in this test when compared to untreated control plants under the same conditions, which show extensive disease development.

Plasmopara viticola / grape / curative (grape downy mildew)

5-week-old grape seedlings cv. Gutedel are inoculated by spraying a sporangia suspension on their lower leaf surface one day before application. The inoculated grape plants are sprayed in a spray chamber with the formulated test compound diluted in water. The inoculated test plants are incubated at 22° C and 100% rh in a greenhouse and the percentage leaf area covered by disease is assessed when an appropriate level of disease appears on untreated check plants (4 – 6 days after application).

Compounds I.a.001, I.a.109, I.d.001, I.d.109 and I.b.109 at 200 ppm gives at least 80% disease control in this test when compared to untreated control plants under the same conditions, which show extensive disease development.

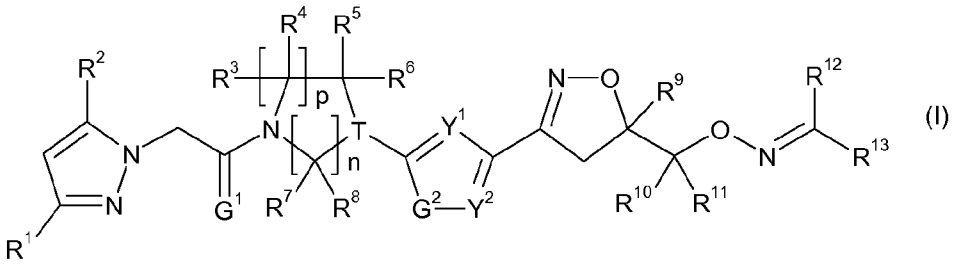
Plasmopara viticola / grape / long lasting (grape downy mildew)

5-week old grape seedlings cv. Gutedel are sprayed in a spray chamber with the formulated test compound diluted in water. The test plants are inoculated by spraying a sporangia suspension on their lower leaf surface 6 days after application. The inoculated test plants are incubated at 22° C and 100% rh in a greenhouse and the percentage leaf area covered by disease is assessed when an appropriate level of disease appears on untreated check plants (11 – 13 days after application).

Compounds I.a.001, I.a.002, I.a.109, I.a.110, I.d.001, I.d.002, I.d.109, I.d.110 and I.b.109 at 200 ppm gives at least 80% disease control in this test when compared to untreated control plants under the same conditions, which show extensive disease development.

What is claimed is:

1. A compound of formula I:



(I)

wherein,

G^1 and G^2 are independently O or S;

T is CR^{14} or N;

Y^1 and Y^2 are independently CR^{15} or N;

n is 1 or 2;

p is 1 or 2, providing that when n is 2, p is 1;

R^1 and R^2 each independently are C_1-C_4alkyl, C_1-C_4haloalkyl or C_3-C_5cycloalkyl;

R^3, R^4, R^5, R^6, R^7 and R^8 each independently are hydrogen, halogen, cyano, C_1-C_4alkyl, C_1-C_4alkoxy, C_1-C_4haloalkyl, C_3-C_5cycloalkyl or C_1-C_4alkylthio;

R^9 is aryl or heteroaryl, both optionally substituted by one or more R^{16};

R^{10}, R^{11} and R^{12} each independently are hydrogen, halogen, cyano, C_1-C_4alkyl, C_1-C_4haloalkyl, C_3-C_5cycloalkyl, aryl or heteroaryl, the aryl or heteroaryl optionally substituted by one or more R^{16}; or

R^{10} and R^{11} together with the carbon atom to which they are attached, independently form a saturated or partially unsaturated three- to five-membered alicyclic ring, optionally substituted by halogen, cyano, C_1-C_4alkyl, C_1-C_4alkoxy or C_1-C_4haloalkyl;

R^{13} is C_1-C_4alkyl, C_1-C_4haloalkyl, C_3-C_5cycloalkyl, C_1-C_4alkylcarbonyl, aryl, heteroaryl, the aryl or heteroaryl optionally substituted by one or more R^{16};

R^{14} is hydrogen, halogen or hydroxyl;

R^{15} is hydrogen, halogen or cyano;

R^{16} is halogen, cyano, hydroxyl, amino, formyl, C_1-C_4alkyl, C_1-C_4haloalkyl, C_3-C_5cycloalkyl, C_2-C_5alkenyl, C_2-C_5haloalkenyl, C_2-C_5alkynyl, C_2-C_5haloalkynyl, C_1-C_4alkoxy, C_1-C_4haloalkoxy, C_3-C_5cycloalkoxy, C_3-C_5alkenyloxy, C_3-C_5haloalkenyloxy, C_3-C_5alkynyloxy, C_3-C_5haloalkynyloxy, C_1-C_4alkylamino, C_1-C_4dialkylamino, C_1-C_4alkylcarbonyl, C_1-C_4haloalkylcarbonyl, C_3-C_5cycloalkylcarbonyl, C_1-C_4alkylcarbonyl O-C_1-C_4alkyloxime, C_1-C_4haloalkylcarbonyl O-C_1-C_4alkyloxime, C_3-C_5cycloalkylcarbonyl O-C_1-C_4alkyloxime, C_1-C_4alkylcarbonyloxy, C_1-C_4haloalkylcarbonyloxy, C_3-C_5cycloalkylcarbonyloxy, C_1-C_4alkoxycarbonyl, C_1-C_4haloalkoxycarbonyl, C_3-C_5cycloalkoxycarbonyl, aryl, heteroaryl, arylC_1-C_4alkyl or heteroarylC_1-C_4alkyl;

or a salt or a N-oxide thereof.

2. A compound according to claim 1 wherein R^9 is phenyl which is optionally substituted by one or more R^{16}.

3. A compound according to claim 1 wherein R^9 is phenyl, which is substituted by hydrogen, halogen, cyano, C_1-C_4alkyl, C_1-C_4haloalkyl or C_3-C_5alkynyloxy.

4. A compound according to claim 1 wherein R^{10}, R^{11} and R^{12} each independently are hydrogen, halogen, C_1-C_4alkyl, C_1-C_4haloalkyl or C_3-C_5cycloalkyl.

5. A compound according to claim 1 wherein:
G^1 is O
G^2 is S;
T is CH or N;
Y^1 and Y^2 are independently CH or N;
n is 1 or 2;
p is 1 or 2, providing that when n is 2, p is 1;
R^1 and R^2 each independently are methyl or halomethyl;
R^3, R^4, R^5, R^6, R^7 and R^8 each independently are hydrogen, halogen, cyano, C_1-C_4alkyl, C_1-C_4alkoxy, C_1-C_4haloalkyl, C_3-C_5cycloalkyl or C_1-C_4alkylthio;
R^9 is aryl or heteroaryl, both optionally substituted by one or more R^{16};
R^{10}, R^{11} and R^{12} each independently are hydrogen, halogen, cyano, C_1-C_4alkyl, C_1-C_4haloalkyl, C_3-C_5cycloalkyl, aryl or heteroaryl; or
R^{10} and R^{11} together with the carbon atom to which they are attached, independently form a saturated or partially unsaturated three- to five-membered alicyclic ring, optionally substituted by halogen, cyano, C_1-C_4alkyl, C_1-C_4alkoxy or C_1-C_4haloalkyl;
R^{13} is C_1-C_4alkyl, C_1-C_4haloalkyl, C_3-C_5cycloalkyl, C_1-C_4alkylcarbonyl, aryl, heteroaryl, the aryl or heteroaryl optionally substituted by one or more R^{16};
R^{14} is hydrogen, halogen or hydroxyl;
R^{15} is hydrogen, halogen or cyano;
or a salt or a N-oxide thereof.

6. A compound according to claim 1 wherein:
G^1 is O
G^2 is S;
T is CH or N;
Y^1 and Y^2 are independently CH or N;

n is 1 or 2;

p is 1 or 2, providing that when n is 2, p is 1;

R^1 and R^2 each independently are methyl or halomethyl;

R^3, R^4, R^5, R^6, R^7 and R^8 each independently are hydrogen, halogen, methyl, halomethyl or methylthio;

R^9 is phenyl which is optionally substituted by one or more R^{16};

R^{10}, R^{11} and R^{12} each independently are hydrogen, halogen, C_1-C_4alkyl, C_1-C_4haloalkyl or C_3-C_5cycloalkyl;

R^{13} is C_1-C_4alkyl, C_1-C_4haloalkyl, C_3-C_5cycloalkyl or phenyl which is optionally substituted by one or more R^{16};

R^{14} is hydrogen, halogen or hydroxyl;

R^{15} is hydrogen, halogen or cyano;

or a salt or a N-oxide thereof.

7. A compound according to claim 1 wherein:

G^1 is O

G^2 is S;

T is CH or N;

Y^1 and Y^2 are independently CH or N;

n is 1 or 2;

p is 1 or 2, providing that when n is 2, p is 1;

R^1 and R^2 each independently are methyl or halomethyl;

R^3, R^4, R^5, R^6, R^7 and R^8 each independently are hydrogen or methyl;

R^9 is phenyl, which is substituted by hydrogen, halogen, cyano, C_1-C_4alkyl, C_1-C_4haloalkyl or C_3-C_5alkynyloxy.

R^{10}, R^{11} and R^{12} each independently are hydrogen, halogen or C_1-C_4alkyl;

R^{13} is C_1-C_4alkyl or C_3-C_5cycloalkyl;

R^{14} is hydrogen, halogen or hydroxyl;

R^{15} is hydrogen, halogen or cyano;

or a salt or a N-oxide thereof.

8. A compound according to claim 1 wherein:

G^1 is O

G^2 is S;

T is CH or N;

Y^1 and Y^2 are independently CH or N;

n is 1 or 2;

p is 1 or 2, providing that when n is 2, p is 1;

R^1 and R^2 each independently are methyl, difluoromethyl or trifluoromethyl;

R^3, R^4, R^5, R^6, R^7 and R^8 are hydrogen;

R^9 is phenyl, which is substituted by hydrogen, halogen or C_3-C_5alkynyloxy.

R^{10}, R^{11} and R^{12} each independently are hydrogen or C_1-C_4alkyl;

R^{13} is C_1-C_4alkyl or C_3-C_5cycloalkyl;

R^{14} is hydrogen or hydroxyl;

R^{15} is hydrogen or cyano;

or a salt or a N-oxide thereof.

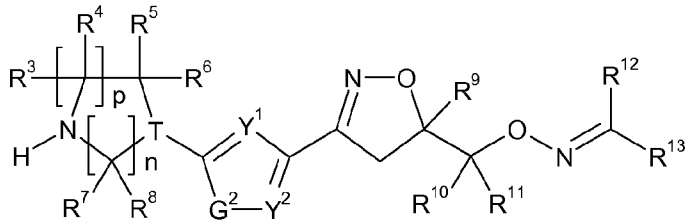
9. A compound according to any one of claims 1 to 8, wherein G^1, is O, G^2 is S, T is CH, Y^1 is N, and Y^2 is CH.

10. A compound according to any one of claims 1 to 9, wherein p is 1 and n is 2.

11. A compound according to any one of the claims 1 to 10, wherein R^1 and R^2 each independently are methyl, difluoromethyl or trifluoromethyl and R^3, R^4, R^5, R^6, R^7 and R^8 each independently are hydrogen, or methyl.

12. A compound according to anyone of claims 1 to 11, wherein R^3, R^4, R^5, R^6, R^7 and R^8 are hydrogen.

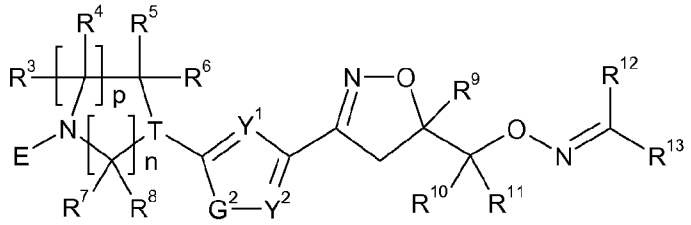
13. A compound of formula II:



(II)

wherein R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, G^2, T, Y^1, Y^2 , n and p are as defined in anyone of claims 1 to 12 for a compound of formula I, and salts and N-oxides thereof,

or a compound of formula III:



(III)

wherein R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, G^2, T, Y^1, Y^2 , n and p are as defined in anyone of claims 1 to 12 for a compound of formula I and E is a protecting group, such as

C_1-C_4 alkylcarbonyl, benzyl or C_1-C_4 alkoxycarbonyl, in particular acetyl, benzyl or *tert*-butoxycarbonyl, and salts and N-oxides thereof.

14. A composition comprising at least one compound as defined in any one of claims 1 to 12 and an agriculturally acceptable carrier, optionally comprising an adjuvant, and optionally comprising one or more additional pesticidally active compounds.

15. A method of controlling or preventing an infestation of plants, propagation material thereof, harvested crops or of non-living materials by phytopathogenic or spoilage microorganisms or organisms potentially harmful to man, which comprises the application of a compound as defined in any one of claims 1 to 12, to the plant, to parts of the plants or to the locus thereof, to propagation material thereof or to any part of the non-living materials.

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2014/055396

A. CLASSIFICATION OF SUBJECT MATTER
INV. C07D413/14 C07D417/14 A01N43/80 A01N43/836
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
C07D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2008/013622 A2 (DU PONT [US]; PASTERIS ROBERT JAMES [US]; HANAGAN MARY ANN [US]; SHAPI) 31 January 2008 (2008-01-31) cited in the application the whole document; in particular the claims and table A, e.g. compounds 100-103, 105-107, 112, 146, 147, 156, 159, 185	1-15

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[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
29 April 2014	21/05/2014

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Form PCT/ISA/210 (second sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2014/055396

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	ALAIN DELCOURT ET AL: "New polyazole derivatives from 2-(2,4-dichlorophenyl)-1,3-dioxolane. Antifungal activity. Structure-activity relationships", MYCOPATHOLOGIA, KLUWER ACADEMIC PUBLISHERS, DO, vol. 137, no. 1, 1 April 1997 (1997-04-01) , pages 27-32, XP019259223, ISSN: 1573-0832 the whole document; in particular table 1; p. 31, right-hand column	1-15
A	WO 2011/146182 A1 (DU PONT [US]; HANAGAN MARY ANN [US]; LIEPA ANDRIS JURIS [AU]; MARSHALL) 24 November 2011 (2011-11-24) the whole document, in particular index tables A and C on pages 121f	1-15

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/EP2014/055396

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