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(54) Title: HETEROCYCLIC COMPOUNDS FOR THE CONTROL OF UNWANTED MICROORGANISMS

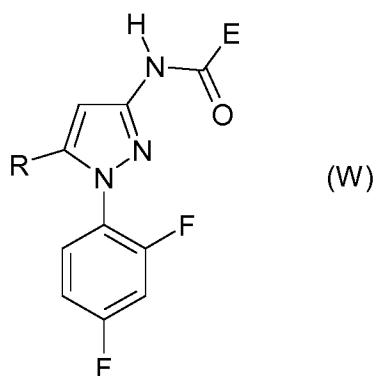
(57) Abstract: The present application relates to the use of heterocyclic compounds according to formula (I) for controlling harmful microorganisms in plants, compositions comprising these compounds and to processes for preparation these fungicidal compositions.



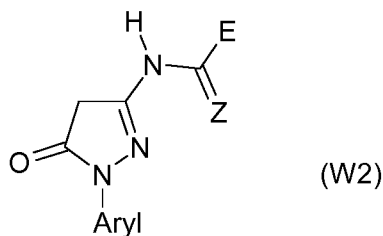
Heterocyclic compounds for the control of unwanted microorganisms

The present application relates to the use of heterocyclic compounds for controlling harmful
 5 microorganisms in plants, compositions comprising these compounds and to processes for preparation of
 suitable compositions for the control of harmful microorganisms.

The heterocyclic compounds of the formulae (W) and (W2) are known (cf. for the compounds of the
 formula (W) Registry Numbers 1189645-25-7, 1189474-83-6, 1193202-69-5, 1172407-07-6, 1185158-
 40-0, 1185036-12-7, 1170986-74-9, 1193179-17-7, 1189458-68-1, 1189956-23-7, 1189915-26-1,
 10 1170047-96-7). A use of these compounds has not been described.



No.	R	E
W-1	ethyl	2-(trifluoromethyl)phenyl
W-2	ethyl	2-bromophenyl
W-3	ethyl	2-fluorophenyl
W-4	ethyl	3-methyl-2-thienyl
W-5	ethyl	2,5-dimethyl-3-furanyl
W-6	H	2,4-dimethoxyphenyl
W-7	H	2-(trifluoromethyl)phenyl
W-8	H	2,4-difluorophenyl
W-9	methyl	2-bromophenyl
W-10	ethyl	2,4-difluorophenyl
W-11	H	2,5-dimethyl-3-furanyl
W-12	methyl	2,4-dimethoxyphenyl



No.	CAS-No.	Reference	Z	E	aryl
W2-1	74202-18-9	Research Disclosure 1980 , 193011,165.)	O	2-nitrophenyl	3,4-dichloro-2,5-dimethoxyphenyl
W2-2	612092-81-6	Bioorg. Med. Chem. 2003 , 2285.	S	2,4-dihydroxyphenyl	2,4,6-trichlorophenyl
W2-3	111243-44-8	JP 62-090657	O	2-chloro-4-aminophenyl	2,4,6-trichlorophenyl
W2-4	101750-33-8	JP 60-218646	O	2-chloro-5-(acryloylamino)phenyl	2,4,6-trichlorophenyl
W2-5	87756-39-6	DE 3226163	O	2-chloro-5-aminophenyl	2,4,6-trichlorophenyl
W2-6	87756-30-7	DD 159875	O	2-chloro-5-nitrophenyl	2,4,6-trichlorophenyl
W2-7	86025-05-0	DE 3226163	O	2-chloro-5-(methacryloylamino)phenyl	2,4,6-trichlorophenyl

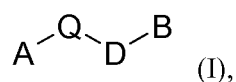
In EP 274642, is described the preparation of 4-(aminomethylene)-2-pyrazolin-5-ones as herbicides and fungicides, which are not part of the herein-disclosed invention, 118031-35-9, Ex. VI-136 is described but no biological data are provided.

However the ecological and economic demands made on modern active ingredients, for example fungicides, are increasing constantly, for example with respect to activity spectrum, toxicity, selectivity, application rate, formation of residues and favourable manufacture.

Thus, there is a constant need for developing new, alternative plant protection products which in some areas at least help to fulfill the above-mentioned requirements. In view of this, it was in particular an object of the present invention to provide compounds which exhibit activity against harmful microorganisms in plants, in the protection of materials. Moreover, it was a further particular object of the present invention, to reduce the application rates and broaden the activity spectrum of the fungicides, and thereby to provide compounds which, preferably at a reduced total amount of active compound applied, has improved activity against harmful microorganisms. In particular, it was a further object of the present invention to provide compounds which, when applied to a crop, results in a decreased amount of residues in the crop, and nevertheless provides efficient control of unwanted microorganisms.

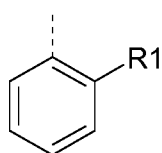
PCT/EP2013/07031 describes the compounds as shown below as pesticides being active against animal pests including insects and nematodes. As animal pests and harmful microorganisms are very different in many aspects such as physiology, genetics and lifestyle the skilled person would not expect that compounds showing pesticidal activity would also be active against unwanted microorganisms.

- 5 This object, and further objects which are not stated explicitly but can be discerned or derived from the connections discussed herein, are achieved by the use of known compounds of the formula (I)

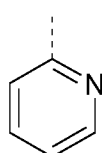


in which

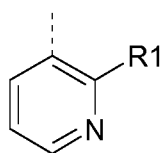
A represents a radical from the group consisting of



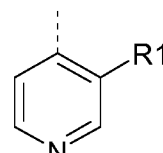
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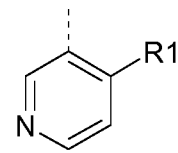
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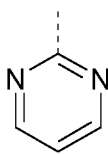
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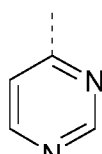
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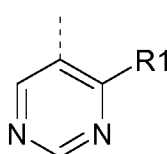
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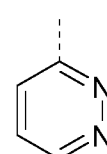
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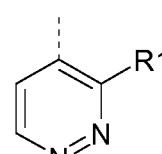
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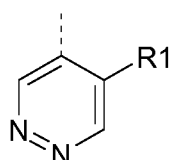
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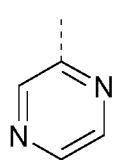
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A-10



A-11

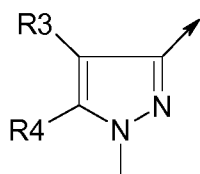


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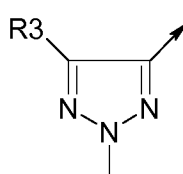
10

in which the broken line represents the bond to Q and in which A furthermore carries m substituents R2,

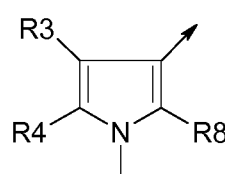
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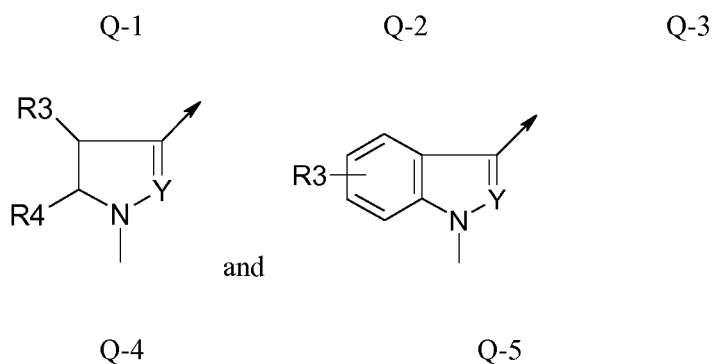
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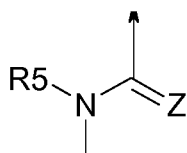


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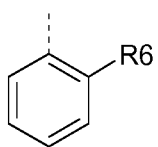
in which the nitrogen is attached to ring A and the arrow in each case represents the bond to D
and

D represents the radical of the formula

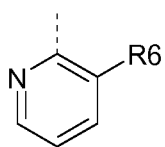


in which the nitrogen is attached to Q and the arrow represents the bond to B,

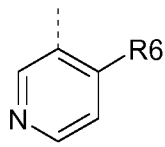
B represents a radical from the group consisting of



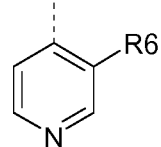
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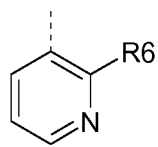
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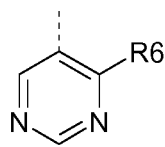
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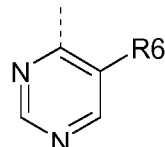
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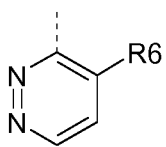
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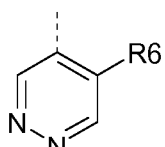
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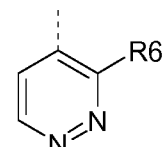
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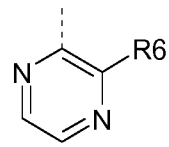
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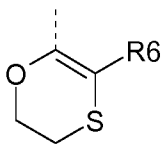
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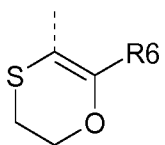
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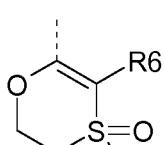
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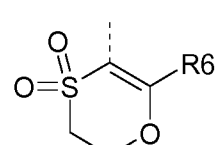
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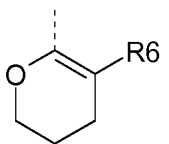
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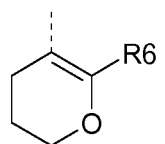
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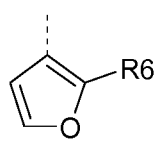
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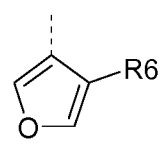
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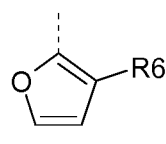
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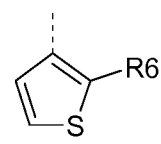
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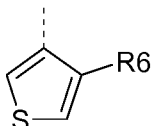
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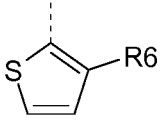
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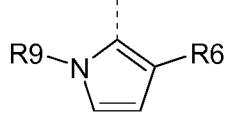
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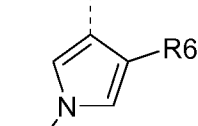
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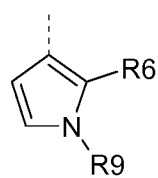
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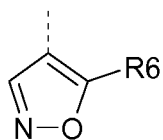
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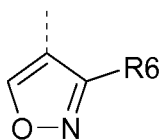
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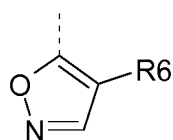
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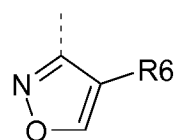
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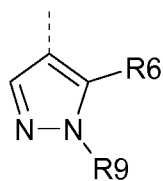
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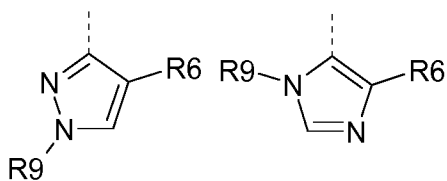
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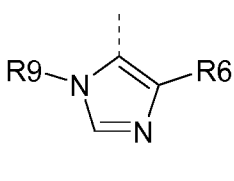
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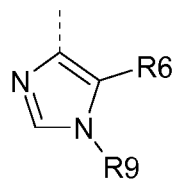
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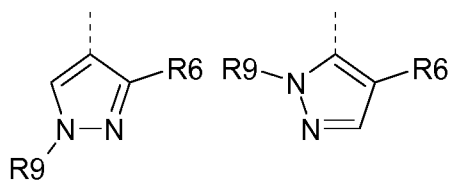
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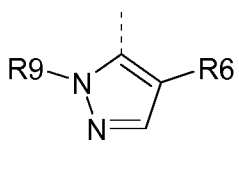
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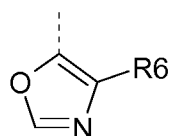
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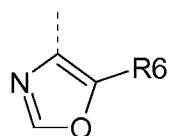
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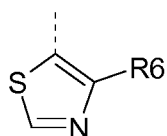
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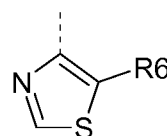
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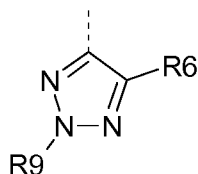
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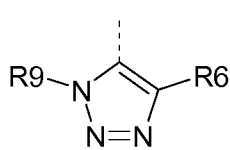
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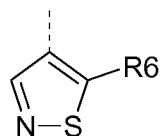
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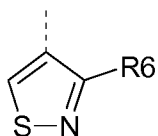
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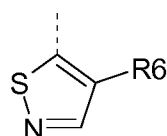
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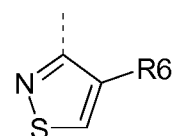
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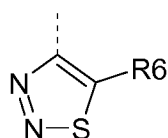
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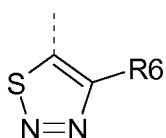
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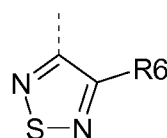
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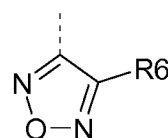
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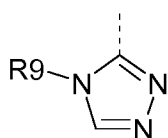
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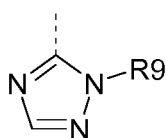
B-50



B-51



B-52



B-53

in which the broken line represents the bond to D and in which B furthermore carries n substituents R7,

Y represents CR8 or represents nitrogen,

5 Z represents oxygen or sulphur,

R1 represents a radical from the group consisting of halogen, cyano, nitro, amino, hydroxy, represents C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₆-cycloalkyl, C₁-C₆-alkoxy, C₃-C₆-alkenyloxy, C₃-C₆-alkynyloxy, C₃-C₆-cycloalkyloxy, C₁-C₆-alkylcarbonyloxy, C₂-C₆-alkenylcarbonyloxy, C₂-C₆-alkynylcarbonyloxy, C₃-C₆-cycloalkylcarbonyloxy, C₁-C₆-alkoxycarbonyloxy, C₁-C₆-alkylsulphonyloxy, C₁-C₆-alkylamino, C₃-C₆-alkenylamino, C₃-C₆-alkynylamino, C₃-C₆-cycloalkylamino, C₁-C₆-alkylcarbonylamino, C₂-C₆-alkenylcarbonylamino, C₂-C₆-alkynylcarbonylamino, C₃-C₆-cycloalkylcarbonylamino, C₁-C₆-alkoxycarbonylamino, C₁-C₆-alkylsulphonylamino, C₁-C₆-alkylthio, C₃-C₆-alkenylthio, C₃-C₆-alkynylthio, C₃-C₆-

- 5 cycloalkylthio, C₁-C₆-alkylsulphinyl, C₁-C₆-alkylsulphonyl, C₁-C₆-alkylcarbonyl, C₁-C₆-alkoxyimino-C₁-C₆-alkyl, C₁-C₆-alkoxycarbonyl, aminocarbonyl, C₁-C₆-alkylaminocarbonyl, di-(C₁-C₆-alkyl)-aminocarbonyl, aminothiocarbonyl, C₁-C₆-alkylaminosulphonyl, C₁-C₆-alkylsulphonylamino, C₁-C₆-alkylcarbonylamino, C₁-C₆-alkylthiocarbonylamino, C₄-C₁₂-bicycloalkyl, aryl, aryloxy, arylamino, arylthio, heteroaryl, heteroaryloxy, heteroarylamino and heteroarylthio, each of which is optionally substituted by one or more identical or different substituents, where the substituents independently of one another are selected from the group consisting of halogen, cyano, nitro, hydroxy, amino, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₃-C₆-cycloalkyl, C₁-C₆-haloalkoxy, C₁-C₆-alkylthio, aryl, aryloxy, arylthio, heteroaryl, heteroaryloxy and heteroarylthio,
- 10
- R2 represents a radical from the group consisting of halogen, cyano, nitro, amino, hydroxy, represents C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₆-cycloalkyl, C₁-C₆-alkoxy, C₃-C₆-alkenoxy, C₃-C₆-alkynoxy, C₃-C₆-cycloalkoxy, C₁-C₆-alkylcarbonyloxy, C₂-C₆-alkenylcarbonyloxy, C₂-C₆-alkynylcarbonyloxy, C₃-C₆-cycloalkylcarbonyloxy, C₁-C₆-alkoxycarbonyloxy, C₁-C₆-alkylsulphonyloxy, C₁-C₆-alkylamino, di-(C₁-C₆-alkyl)-amino, C₃-C₆-alkenylamino, C₃-C₆-alkynylamino, C₃-C₆-cycloalkylamino, C₁-C₆-alkylcarbonylamino, C₂-C₆-alkenylcarbonylamino, C₂-C₆-alkynylcarbonylamino, C₃-C₆-cycloalkylcarbonylamino, C₁-C₆-alkoxycarbonylamino, C₁-C₆-alkylsulphonylamino, C₁-C₆-alkylthio, C₃-C₆-alkenylthio, C₃-C₆-alkynylthio, C₃-C₆-cycloalkylthio, C₁-C₆-alkylsulphinyl, C₁-C₆-alkylsulphonyl, C₁-C₆-alkylcarbonyl, C₁-C₆-alkoxyimino-C₁-C₆-alkyl, C₁-C₆-alkoxycarbonyl, aminocarbonyl, C₁-C₆-alkylaminocarbonyl, di-(C₁-C₆-alkyl)-aminocarbonyl, aminothiocarbonyl, C₁-C₆-alkylaminosulphonyl, C₁-C₆-alkylsulphonylamino, C₁-C₆-alkylcarbonylamino, C₁-C₆-alkylthiocarbonylamino, C₄-C₁₂-bicycloalkyl, aryl, aryloxy, arylamino, arylthio, heteroaryl, heteroaryloxy, heteroarylamino and heteroarylthio, each of which is optionally substituted by one or more identical or different substituents, where the substituents independently of one another are selected from the group consisting of halogen, cyano, nitro, hydroxy, amino, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₃-C₆-cycloalkyl, C₁-C₆-haloalkoxy and C₁-C₆-alkylthio, aryl, aryloxy, arylthio, heteroaryl, heteroaryloxy and heteroarylthio,
- 15
- 20
- 25
- R3 represents a radical from the group consisting of hydrogen, halogen, cyano, nitro, amino, hydroxy, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkyl and C₁-C₆-haloalkoxy,
- 30
- R4 represents a radical from the group consisting of hydrogen, halogen, amino, hydroxy, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkyl and C₁-C₆-haloalkoxy,
- R5 represents a radical from the group consisting of hydrogen, C₁-C₆-alkyl, C₃-C₆-cycloalkyl, C₁-C₆-haloalkyl, C₂-C₆-alkenyl, C₃-C₆-alkynyl, C₃-C₆-cycloalkyl-C₁-C₆-alkyl, cyano-C₁-C₆-alkyl, C₁-C₆-alkylcarbonyl, C₂-C₆-alkenylcarbonyl, C₁-C₆-haloalkylcarbonyl, C₂-C₆-
- 35

haloalkenylcarbonyl, C₁-C₆-alkoxy-C₁-C₆-alkyl, C₁-C₆-alkoxycarbonyl, C₁-C₆-alkylsulphonyl and C₁-C₆-haloalkylsulphonyl or represents C(=O)-B,

- R6 represents a radical from the group consisting of hydrogen (only in the radicals B-26, B-33, B-36 and B-42), halogen, cyano, nitro, amino, hydroxy, carboxyl, represents C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₆-cycloalkyl, C₁-C₆-alkoxy, C₃-C₆-alkenoxy, C₃-C₆-alkynoxy, C₃-C₆-cycloalkoxy, C₁-C₆-alkylcarbonyloxy, C₂-C₆-alkenylcarbonyloxy, C₂-C₆-alkynylcarbonyloxy, C₃-C₆-cycloalkylcarbonyloxy, C₁-C₆-alkoxycarbonyloxy, C₁-C₆-alkylsulphonyloxy, C₁-C₆-alkylcarbonylamino, C₂-C₆-alkenylcarbonylamino, C₂-C₆-alkynylcarbonylamino, C₃-C₆-cycloalkylcarbonylamino, C₁-C₆-alkoxycarbonylamino, C₁-C₆-alkylsulphonylamino, C₁-C₆-alkylthio, C₁-C₆-alkylsulphanyl, C₁-C₆-alkylsulphonyl, C₁-C₆-alkylcarbonyl, C₁-C₆-alkoxyimino-C₁-C₆-alkyl, C₁-C₆-alkoxycarbonyl, aminocarbonyl, C₁-C₆-alkylaminocarbonyl, di-(C₁-C₆-alkyl)-aminocarbonyl, aminothiocarbonyl, C₁-C₆-alkylaminosulphonyl, C₁-C₆-alkylsulphonylamino, C₁-C₆-alkylcarbonylamino, C₁-C₆-haloalkylcarbonylamino, C₁-C₆-alkylthiocarbonylamino, C₄-C₁₂-bicycloalkyl, aryl, aryloxy, heteroaryl, heteroaryloxy, each of which is optionally substituted by one or more identical or different substituents, where the substituents independently of one another are selected from the group consisting of halogen, cyano, nitro, hydroxy, amino, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₃-C₆-cycloalkyl, C₁-C₆-haloalkoxy and C₁-C₆-alkylthio,
- R7 represents a radical from the group consisting of halogen, nitro, cyano, amino, hydroxy, represents C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₆-cycloalkyl, C₁-C₆-alkoxy, C₃-C₆-alkenoxy, C₃-C₆-alkynoxy, C₃-C₆-cycloalkoxy, C₁-C₆-alkylcarbonyloxy, C₂-C₆-alkenylcarbonyloxy, C₂-C₆-alkynylcarbonyloxy, C₃-C₆-cycloalkylcarbonyloxy, C₁-C₆-alkoxycarbonyloxy, C₁-C₆-alkylsulphonyloxy, C₁-C₆-alkylcarbonylamino, C₂-C₆-alkenylcarbonylamino, C₂-C₆-alkynylcarbonylamino, C₃-C₆-cycloalkylcarbonylamino, C₁-C₆-alkoxycarbonylamino, C₁-C₆-alkylsulphonylamino, C₁-C₆-alkylthio, C₁-C₆-alkylsulphanyl, C₁-C₆-alkylsulphonyl, C₁-C₆-alkylcarbonyl, C₁-C₆-alkoxyimino-C₁-C₆-alkyl, C₁-C₆-alkoxycarbonyl, aminocarbonyl, C₁-C₆-alkylaminocarbonyl, di-(C₁-C₆-alkyl)-aminocarbonyl, aminothiocarbonyl, C₁-C₆-alkylaminosulphonyl, C₁-C₆-alkylsulphonylamino, C₁-C₆-alkylcarbonylamino, C₁-C₆-alkylthiocarbonylamino, aryl, aryloxy, heteroaryl, heteroaryloxy, C₄-C₁₂-bicycloalkyl, each of which is optionally substituted by one or more identical or different substituents, where the substituents independently of one another are selected from the group consisting of halogen, cyano, nitro, hydroxy, amino, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₃-C₆-cycloalkyl, C₁-C₆-haloalkoxy and C₁-C₆-alkylthio,
- R8 represents a radical from the group consisting of hydrogen, halogen, amino, hydroxy, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkyl and C₁-C₆-haloalkoxy,

R9 represents a radical from the group consisting of hydrogen, C₁-C₆-alkyl, C₃-C₆-cycloalkyl, haloalkyl, C₃-C₆-alkenyl, C₃-C₆-alkynyl, C₃-C₆-cycloalkyl-C₁-C₆-alkyl, cyano-C₁-C₆-alkyl, C₁-C₆-alkylcarbonyl, C₂-C₆-alkenylcarbonyl, C₁-C₆-haloalkylcarbonyl, C₂-C₆-haloalkenylcarbonyl, C₁-C₆-alkoxy-C₁-C₆-alkyl, C₁-C₆-alkoxycarbonyl, C₁-C₆-alkylsulphonyl and C₁-C₆-haloalkylsulphonyl,

m represents a number from the group consisting of 0, 1, 2 and 3, where for m > 1 the radicals R₂ may be identical or different and

n represents a number from the group consisting of 0, 1, 2 and 3, where for n > 1 the radicals R₇ may be identical or different,

for controlling unwanted microorganisms.

It has been found that the known compounds of the formula (I) have pronounced biological properties and are suitable especially for controlling unwanted microorganisms, in particular phytopathogenic fungi, phytopathogenic bacteria, phytopathogenic oomycetes, and phytopathogenic viruses, encountered in agriculture, in forests, in the protection of stored products and materials.

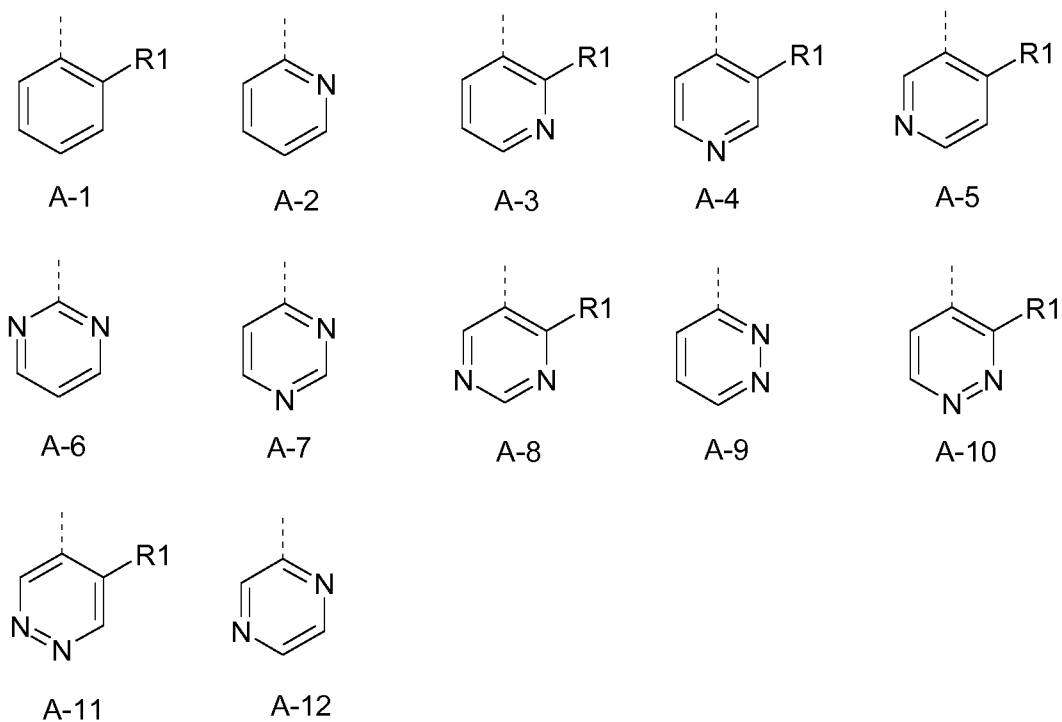
The invention also comprises a method for preparing an agricultural composition comprising adding agriculturally suitable components such as suitable extenders, solvents, spontaneity promoters, carriers, emulsifiers, dispersants, frost protectants, thickeners, adjuvants or the like to the composition according to the invention. Furthermore the invention comprises a method for reducing damage of plants and plant parts or losses in harvested fruits or vegetables caused by harmful microorganisms by controlling such harmful microorganisms, comprising applying the compounds to the plant or the harmful microorganisms or the habitat of the plant or the habitat of the harmful microorganisms.

In view of this, the problem underlying the present invention has been solved by using known compounds which exhibit fungicidal activity against harmful microorganisms in plants, in the protection of materials. Moreover, the novel compositions according to the invention enable reduced application rates and broaden the activity spectrum of the fungicides. Finally the new use of the known compounds provide improved activity harmful microorganisms and consequently provide efficient disease control for reducing damage of plants and plant parts or losses in harvested fruits or vegetables.

The compounds of the formula (I) may, where appropriate, depending on the nature of the substituents, be in the form of geometric and/or optically active isomers or corresponding isomer mixtures of varying composition. The invention relates both to the use of the pure isomers and to that of the isomer mixtures.

Preferred substituents or ranges for the radicals shown in the compounds of the formula (I) to be used for controlling harmful microorganisms are illustrated below.

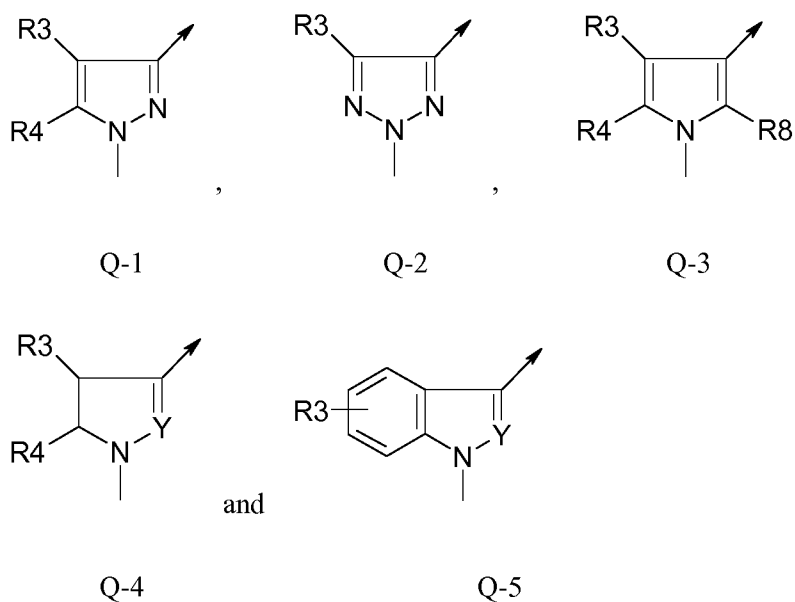
A represents a radical from the group consisting of



5

in which the broken line represents the bond to Q and where A furthermore carries m substituents R₂,

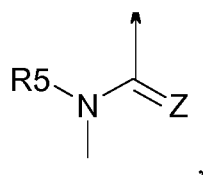
Q represents a radical from the group consisting of



10

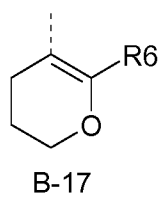
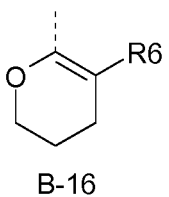
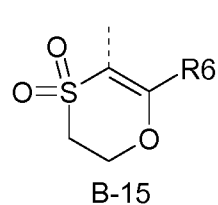
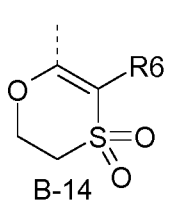
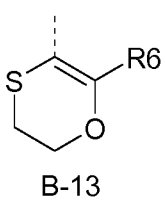
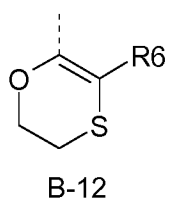
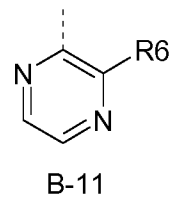
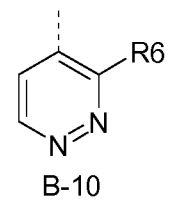
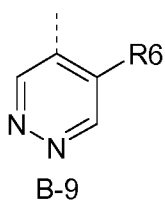
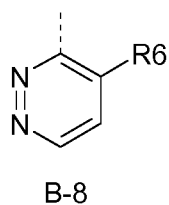
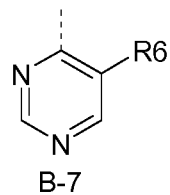
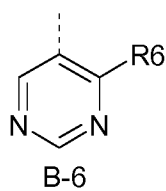
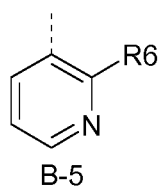
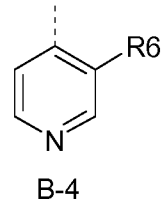
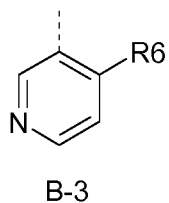
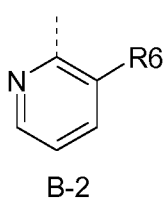
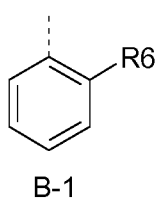
in which the nitrogen is attached to ring A and the arrow in each case represents the bond to D,

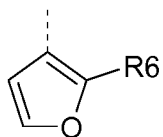
D represents the radical of the formula



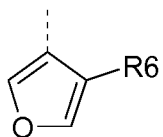
in which the nitrogen is attached to Q and the arrow represents the bond to B.

5 B represents a radical from the group consisting of

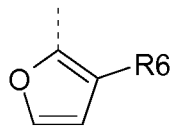




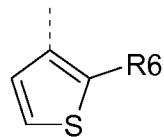
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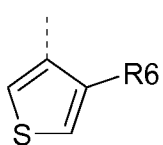
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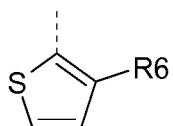
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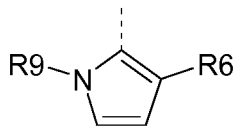
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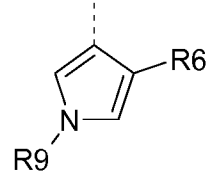
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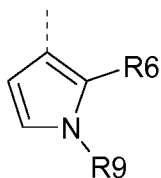
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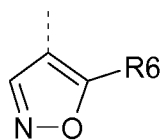
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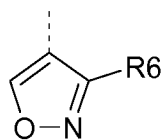
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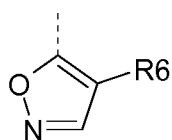
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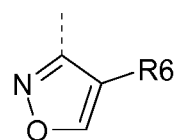
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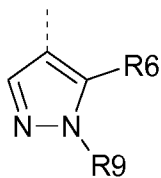
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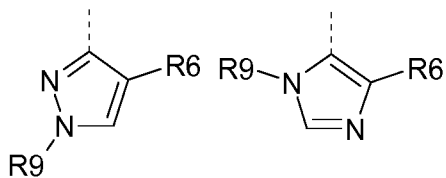
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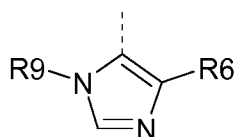
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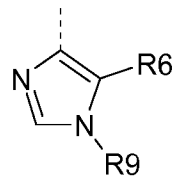
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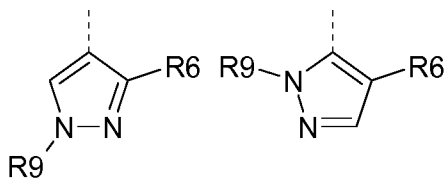
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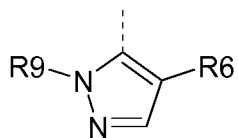
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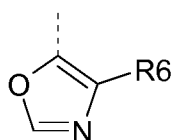
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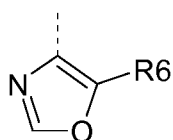
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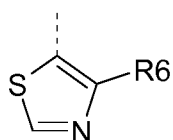
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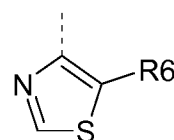
B-37



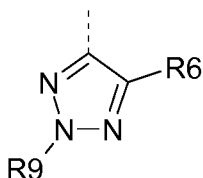
B-38



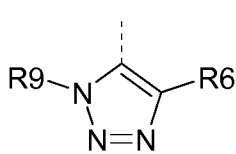
B-39



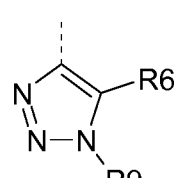
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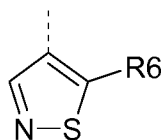
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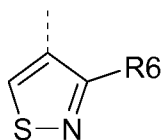
B-42



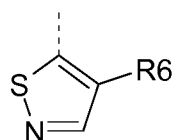
B-43 R9



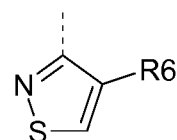
B-44



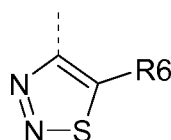
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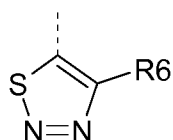
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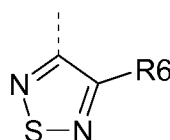
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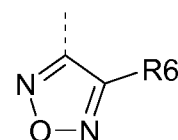
B-48



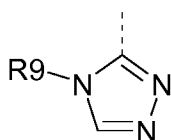
B-49



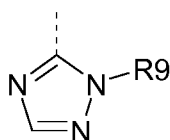
B-50



B-51



B-52



B-53

in which the broken line represents the bond to D and in which B furthermore carries n substituents R7.

Y represents CR8 or represents nitrogen.

5 Z represents oxygen or sulphur.

R1 represents a radical from the group consisting of halogen, cyano, nitro, amino, hydroxy, C₁-C₆-alkyl, C₁-C₆-haloalkyl, cyano-C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₆-cycloalkyl, C₃-C₆-cycloalkyl-C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₃-C₆-alkenyloxy, C₃-C₆-alkynyloxy, C₃-C₆-cycloalkyloxy, C₁-C₆-alkylcarbonyloxy, C₂-C₆-alkenylcarbonyloxy, C₂-C₆-alkynylcarbonyloxy, C₃-C₆-cycloalkylcarbonyloxy, C₁-C₆-alkoxycarbonyloxy, C₁-C₆-alkylsulphonyloxy, C₁-C₆-alkylamino, C₃-C₆-alkenylamino, C₃-C₆-alkynylamino, C₃-C₆-cycloalkylamino, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₃-C₆-alkenylthio, C₃-C₆-alkynylthio,

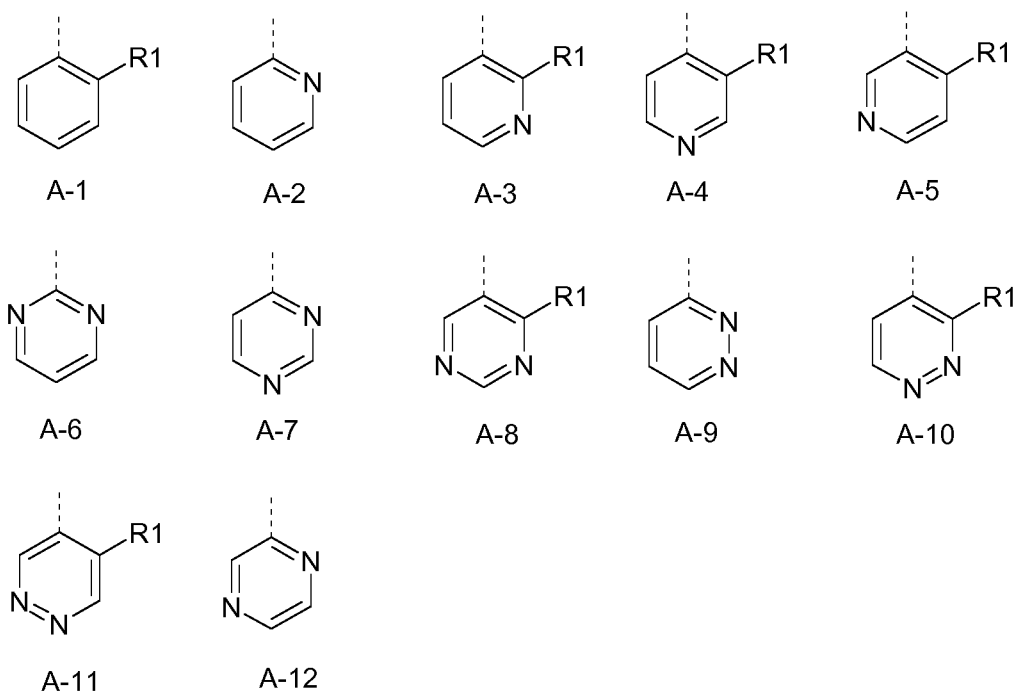
- 5 C₃-C₆-cycloalkylthio, C₁-C₆-alkylsulphiny, C₁-C₆-alkylsulphonyl, C₁-C₆-alkylcarbonyl, C₁-C₆-alkoxyimino-C₁-C₆-alkyl, C₁-C₆-alkoxycarbonyl, aminocarbonyl, C₁-C₆-alkylaminocarbonyl, di-(C₁-C₆-alkyl)-aminocarbonyl, aminothiocarbonyl, C₁-C₆-alkylaminosulphonyl, C₁-C₆-alkylsulphonylamino, C₁-C₆-alkylcarbonylamino, C₁-C₆-alkylthiocarbonylamino, aryl, aryloxy, heteroaryl and heteroaryloxy.
- 10 R2 represents a radical from the group consisting of halogen, cyano, nitro, amino, hydroxy, C₁-C₆-alkyl, C₁-C₆-haloalkyl, cyano-C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₆-cycloalkyl, C₃-C₆-cycloalkyl-C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₃-C₆-alkenyloxy, C₃-C₆-alkynyloxy, C₃-C₆-cycloalkyloxy, C₁-C₆-alkylcarbonyloxy, C₂-C₆-alkenylcarbonyloxy, C₂-C₆-alkynylcarbonyloxy, C₃-C₆-cycloalkylcarbonyloxy, C₁-C₆-alkoxycarbonyloxy, C₁-C₆-alkylsulphonyloxy, C₁-C₆-alkylamino, di-(C₁-C₆-alkyl)-amino, C₃-C₆-alkenylamino, C₃-C₆-alkynylamino, C₃-C₆-cycloalkylamino, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₃-C₆-alkenylthio, C₃-C₆-alkynylthio, C₃-C₆-cycloalkylthio, C₁-C₆-alkylsulphiny, C₁-C₆-alkylsulphonyl, C₁-C₆-alkylcarbonyl, C₁-C₆-alkoxyimino-C₁-C₆-alkyl, C₁-C₆-alkoxycarbonyl, aminocarbonyl, C₁-C₆-alkylaminocarbonyl, di-(C₁-C₆-alkyl)-aminocarbonyl, aminothiocarbonyl, C₁-C₆-alkylaminosulphonyl, C₁-C₆-alkylsulphonylamino, C₁-C₆-alkylcarbonylamino, C₁-C₆-alkylthiocarbonylamino, aryl, aryloxy, heteroaryl and heteroaryloxy.
- 15 R3 represents a radical from the group consisting of hydrogen, halogen, cyano, nitro, amino, C₁-C₆-alkyl and C₁-C₆-haloalkyl.
- 20 R4 represents a radical from the group consisting of hydrogen, halogen, amino, hydroxy, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkyl and C₁-C₆-haloalkoxy.
- 25 R5 represents a radical from the group consisting of hydrogen, C₁-C₆-alkyl, C₁-C₆-haloalkyl, cyano-C₁-C₆-alkyl, C₂-C₆-alkenyl, C₃-C₆-alkynyl, C₃-C₆-cycloalkyl, C₃-C₆-cycloalkyl-C₁-C₆-alkyl, C₁-C₆-alkylcarbonyl, C₂-C₆-alkenylcarbonyl, C₁-C₆-haloalkylcarbonyl, C₂-C₆-haloalkenylcarbonyl, C₁-C₆-alkoxy-C₁-C₆-alkyl, C₁-C₆-alkoxycarbonyl, C₁-C₆-alkylsulphonyl, C₁-C₆-haloalkylsulphonyl and C(=O)-B.
- 30 R6 represents a radical from the group consisting of hydrogen (only in the radicals B-26, B-33, B-36 and B-42), halogen, cyano, nitro, amino, hydroxy, carboxyl, C₁-C₆-alkyl, C₁-C₆-haloalkyl, cyano-C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₆-cycloalkyl, C₃-C₆-cycloalkyl-C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₃-C₆-alkenyloxy, C₃-C₆-alkynyloxy, C₃-C₆-cycloalkyloxy, C₁-C₆-alkylcarbonyloxy, C₂-C₆-alkenylcarbonyloxy, C₂-C₆-alkynylcarbonyloxy, C₃-C₆-cycloalkylcarbonyloxy, C₁-C₆-alkoxycarbonyloxy, C₁-C₆-alkylsulphonyloxy, C₁-C₆-alkylamino, C₃-C₆-alkenylamino, C₃-C₆-alkynylamino, C₃-C₆-cycloalkylamino, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₃-C₆-alkenylthio, C₃-C₆-alkynylthio, C₃-C₆-cycloalkylthio, C₁-C₆-

- alkylsulphinyl, C₁-C₆-alkylsulphonyl, C₁-C₆-alkylcarbonyl, C₁-C₆-alkoxyimino-C₁-C₆-alkyl, C₁-C₆-alkoxycarbonyl, aminocarbonyl, C₁-C₆-alkylaminocarbonyl, di-(C₁-C₆-alkyl)-aminocarbonyl, aminothiocabonyl, C₁-C₆-alkylaminosulphonyl, C₁-C₆-alkylsulphonylamino, C₁-C₆-alkylcarbonylamino, C₁-C₄-haloalkylcarbonylamino, C₁-C₆-alkylthiocarbonylamino, aryl, aryloxy, heteroaryl and heteroaryloxy.
- 5
- R7 represents a radical from the group consisting of halogen, cyano, nitro, amino, hydroxy, C₁-C₆-alkyl, C₁-C₆-haloalkyl, cyano-C₁-C₆-alkyl, C₂-C₆-alkenyl, C₃-C₆-alkynyl, C₃-C₆-cycloalkyl, C₃-C₆-cycloalkyl-C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₃-C₆-alkenyloxy, C₃-C₆-alkynyloxy, C₃-C₆-cycloalkyloxy, C₁-C₆-alkylcarbonyloxy, C₂-C₆-alkenylcarbonyloxy, C₂-C₆-alkynyloxy, C₃-C₆-cycloalkylcarbonyloxy, C₁-C₆-alkoxycarbonyloxy, C₁-C₆-alkylsulphonyloxy, C₁-C₆-alkylamino, C₃-C₆-alkenylamino, C₃-C₆-alkynylamino, C₃-C₆-cycloalkylamino, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₃-C₆-alkenylthio, C₃-C₆-alkynylthio, C₃-C₆-cycloalkylthio, C₁-C₆-alkylsulphinyl, C₁-C₆-alkylsulphonyl, C₁-C₆-alkylcarbonyl, C₁-C₆-alkoxyimino-C₁-C₆-alkyl, C₁-C₆-alkoxycarbonyl, aminocarbonyl, C₁-C₆-alkylaminocarbonyl, di-(C₁-C₆-alkyl)-aminocarbonyl, aminothiocabonyl, C₁-C₆-alkylaminosulphonyl, C₁-C₆-alkylsulphonylamino, C₁-C₆-alkylcarbonylamino, C₁-C₆-alkylthiocarbonylamino, aryl, aryloxy, heteroaryl and heteroaryloxy.
- 10
- 15
- R8 represents a radical from the group consisting of hydrogen, halogen, amino, hydroxy, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkyl and C₁-C₆-haloalkoxy.
- 20
- R9 represents a radical from the group consisting of hydrogen, C₁-C₆-alkyl, C₃-C₆-cycloalkyl, C₁-C₆-haloalkyl, C₃-C₆-alkenyl, C₃-C₆-alkynyl, C₃-C₆-cycloalkyl-C₁-C₆-alkyl, cyano-C₁-C₆-alkyl, C₁-C₆-alkylcarbonyl, C₂-C₆-alkenylcarbonyl, C₁-C₆-haloalkylcarbonyl, C₂-C₆-haloalkenylcarbonyl, C₁-C₆-alkoxy-C₁-C₆-alkyl, C₁-C₆-alkoxycarbonyl, C₁-C₆-alkylsulphonyl and C₁-C₆-haloalkylsulphonyl.
- 25
- m represents a number from the group consisting of 0, 1, 2 and 3, where for m > 1 the radicals R2 may be identical or different.
- n represents a number from the group consisting of 0, 1, 2 and 3, where for n > 1 the radicals R7 may be identical or different.

Particularly preferred substituents or ranges for the radicals shown in the compounds of the formula (I) to be used for controlling harmful microorganisms are illustrated below.

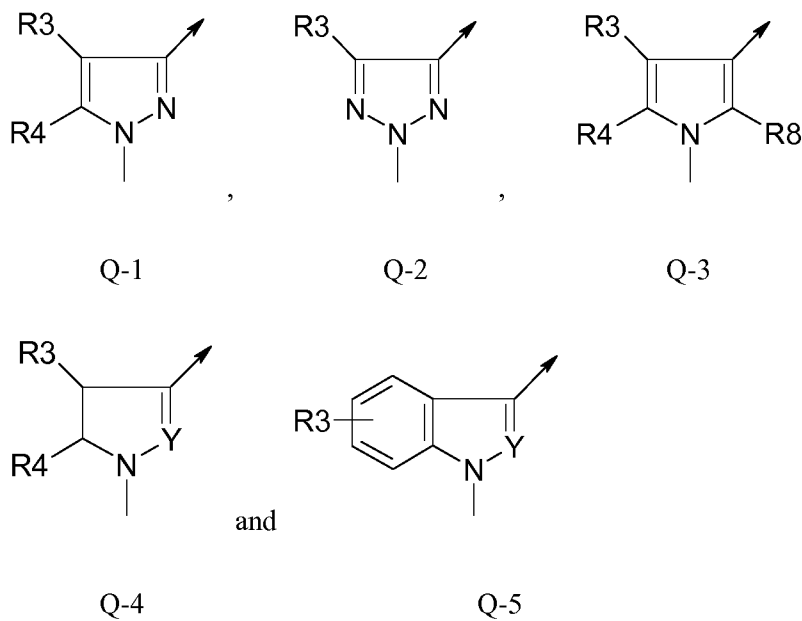
30

A represents a radical from the group consisting of



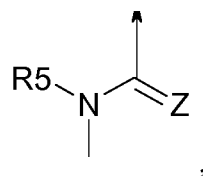
in which the broken line represents the bond to Q and where A furthermore carries m substituents R2.

Q represents a radical from the group consisting of



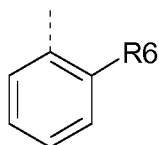
in which the nitrogen is attached to ring A and the arrow in each case represents the bond to D.

10 D represents the radical of the formula

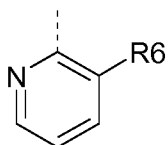


in which the nitrogen is attached to Q and the arrow represents the bond to B.

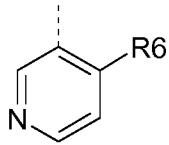
B represents a radical from the group consisting of



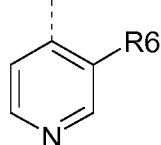
B-1



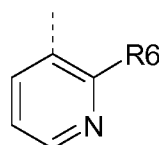
B-2



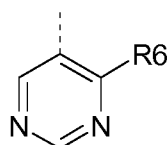
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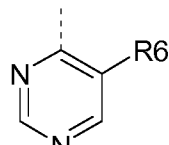
B-4



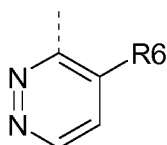
B-5



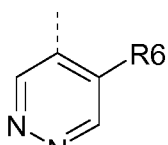
B-6



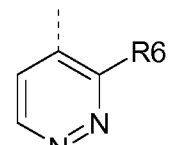
B-7



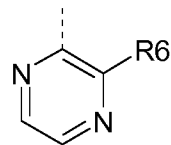
B-8



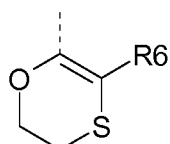
B-9



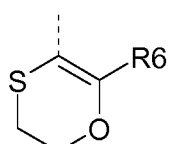
B-10



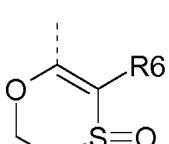
B-11



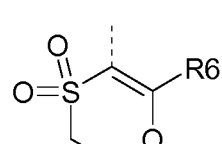
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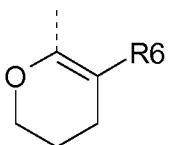
B-13



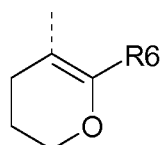
B-14



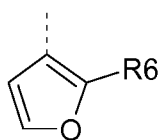
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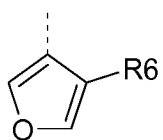
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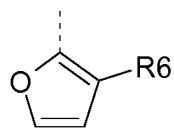
B-17



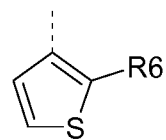
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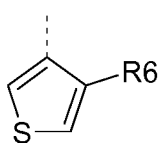
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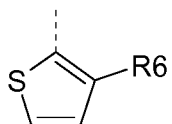
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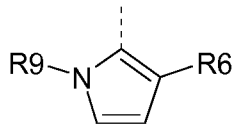
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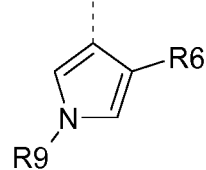
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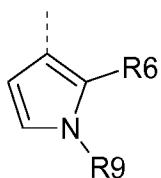
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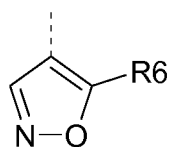
B-24



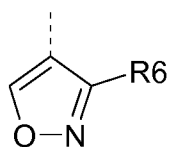
B-25



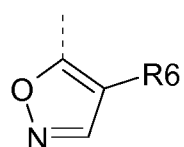
B-26



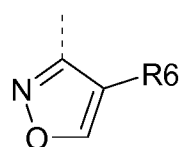
B-27



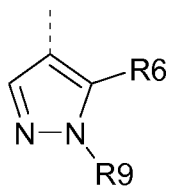
B-28



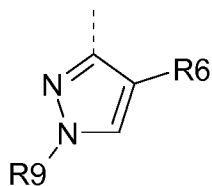
B-29



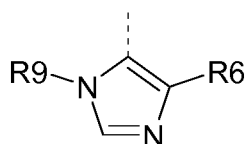
B-30



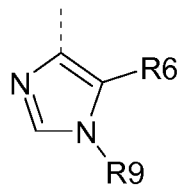
B-31



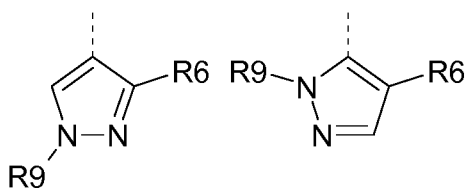
B-32



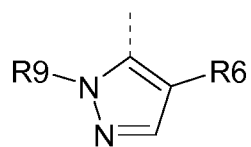
B-33



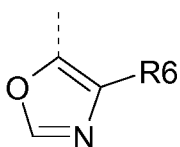
B-34



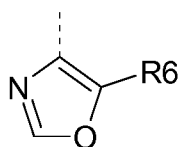
B-35



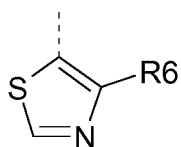
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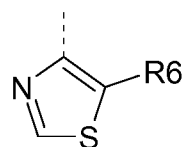
B-37



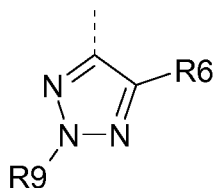
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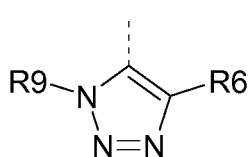
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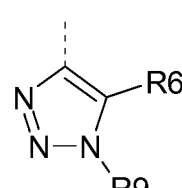
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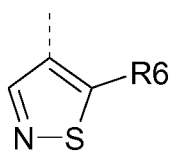
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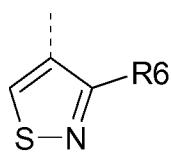
B-42



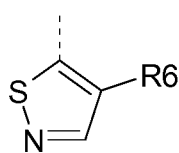
B-43



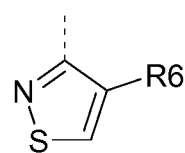
B-44



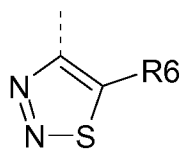
B-45



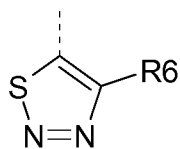
B-46



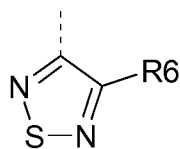
B-47



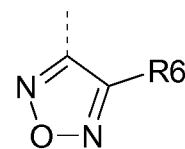
B-48



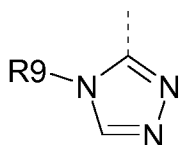
B-49



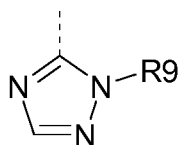
B-50



B-51



B-52



B-53

in which the broken line represents the bond to D and in which B furthermore carries n substituents R7.

Y represents CR8 or represents nitrogen.

5 Z represents oxygen or sulphur.

R1 represents a radical from the group consisting of halogen, cyano, nitro, C₁-C₆-alkyl, C₁-C₆-haloalkyl, cyano-C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₆-cycloalkyl, C₃-C₆-cycloalkyl-C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₃-C₆-alkenyloxy, C₃-C₆-alkynyloxy, C₃-C₆-cycloalkyloxy, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₁-C₆-alkylsulphinyl, C₁-C₆-alkylsulphonyl, C₁-C₆-alkoxyimino-C₁-

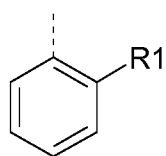
10 C₆-alkyl, aryl, aryloxy, heteroaryl and heteroaryloxy.

- R2 represents a radical from the group consisting of halogen, cyano, nitro, amino, C₁-C₆-alkyl, C₁-C₆-haloalkyl, cyano-C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₆-cycloalkyl, C₃-C₆-cycloalkyl-C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₃-C₆-alkenyloxy, C₃-C₆-alkynyloxy, C₃-C₆-cycloalkyloxy, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₁-C₆-alkylsulphinyl, C₁-C₆-alkylsulphonyl, C₁-C₆-alkylcarbonyl, di-(C₁-C₆-alkyl)-amino, C₁-C₆-alkoxyimino-C₁-C₆-alkyl, aryl, aryloxy, heteroaryl and heteroaryloxy.
- R3 represents a radical from the group consisting of hydrogen, halogen, cyano, nitro, amino, C₁-C₆-alkyl and C₁-C₆-haloalkyl.
- R4 represents a radical from the group consisting of hydrogen, halogen, amino, hydroxy, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkyl and C₁-C₆-haloalkoxy.
- 10 R5 represents a radical from the group consisting of hydrogen, C₁-C₆-alkyl, C₁-C₆-haloalkyl, cyano-C₁-C₆-alkyl, C₂-C₆-alkenyl, C₃-C₆-alkynyl, C₃-C₆-cycloalkyl, C₃-C₆-cycloalkyl-C₁-C₆-alkyl, C₁-C₆-alkylcarbonyl, C₂-C₆-alkenylcarbonyl, C₁-C₆-haloalkylcarbonyl, C₂-C₆-haloalkenylcarbonyl, C₁-C₆-alkoxy-C₁-C₆-alkyl, C₁-C₆-alkoxycarbonyl, C₁-C₆-alkylsulphonyl, C₁-C₆-haloalkylsulphonyl and C(=O)-B.
- 15 R6 represents a radical from the group consisting of hydrogen (only in the radicals B-26, B-33, B-36 and B-42), halogen, cyano, nitro, hydroxy, carboxyl, C₁-C₆-alkyl, C₁-C₆-haloalkyl, cyano-C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₆-cycloalkyl, C₃-C₆-cycloalkyl-C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₃-C₆-alkenyloxy, C₃-C₆-alkynyloxy, C₃-C₆-cycloalkyloxy, C₁-C₆-alkylsulphinyl, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₁-C₆-alkylsulphonyl, C₁-C₆-alkylcarbonyl, C₁-C₆-alkoxyimino-C₁-C₆-alkyl, C₁-C₆-alkylcarbonylamino, C₁-C₆-haloalkylcarbonylamino, aryl, aryloxy, heteroaryl and heteroaryloxy.
- 20 R7 represents a radical from the group consisting of halogen, cyano, nitro, hydroxy, C₁-C₆-alkyl, C₁-C₆-haloalkyl, cyano-C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₆-cycloalkyl, C₃-C₆-cycloalkyl-C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₃-C₆-alkenyloxy, C₃-C₆-alkynyloxy, C₃-C₆-cycloalkyloxy, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₁-C₆-alkylsulphinyl, C₁-C₆-alkylsulphonyl, C₁-C₆-alkoxyimino-C₁-C₆-alkyl, aryl, aryloxy, heteroaryl and heteroaryloxy.
- 25 R8 represents a radical from the group consisting of hydrogen, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkyl and C₁-C₆-haloalkoxy.
- R9 represents a radical from the group consisting of hydrogen, C₁-C₆-alkyl, C₃-C₆-cycloalkyl and C₁-C₆-haloalkyl.
- 30 m represents a number from the group consisting of 0, 1, 2 and 3, where for m > 1 the radicals R2 may be identical or different.

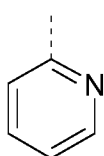
n represents a number from the group consisting of 0, 1, 2 and 3, where for $n > 1$ the radicals R7 may be identical or different.

Very particularly preferred substituents or ranges of the radicals shown in the compounds of the formula (I) to be used for controlling harmful microorganisms are elucidated below.

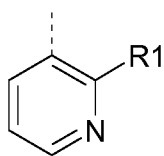
5 A represents a radical from the group consisting of



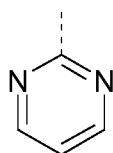
A-1



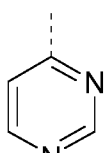
A-2



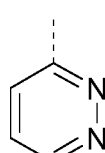
A-3



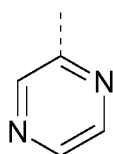
A-6



A-7



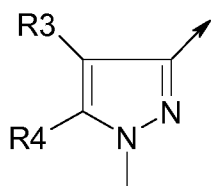
A-9



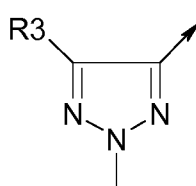
A-12

in which the broken line represents the bond to Q and where A furthermore carries m substituents R2.

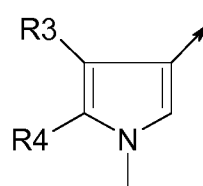
Q represents a radical from the group consisting of



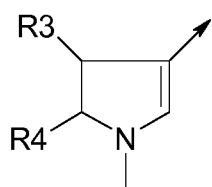
Q-1



Q-2

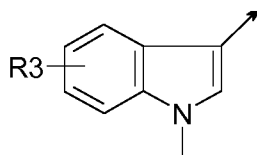


Q-3



Q-4

and

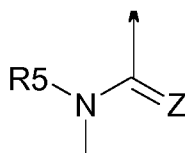


Q-5

,

in which the nitrogen is attached to ring A and the arrow in each case represents the bond to D.

D represents the radical of the formula

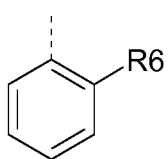


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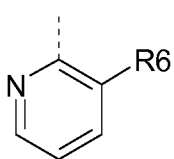
5

in which the nitrogen is attached to Q and the arrow represents the bond to B.

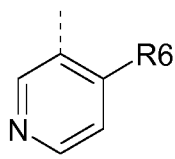
B represents a radical from the group consisting of



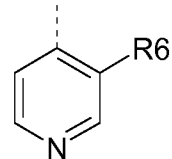
B-1



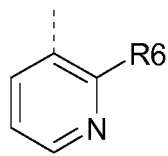
B-2



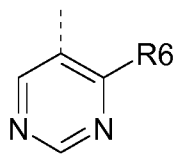
B-3



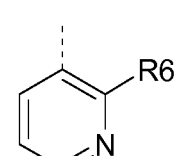
B-4



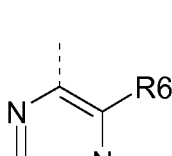
B-5



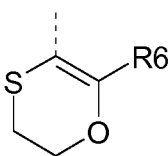
B-6



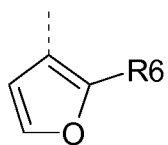
B-10



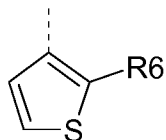
B-11



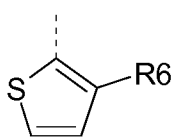
B-13



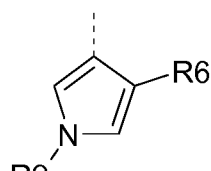
B-18



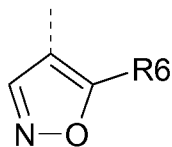
B-21



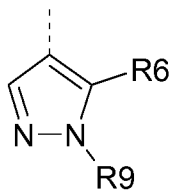
B-23



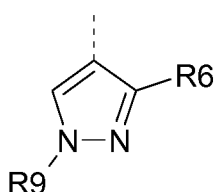
B-25



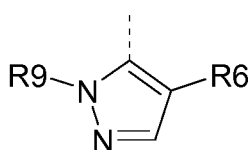
B-27



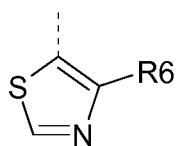
B-31



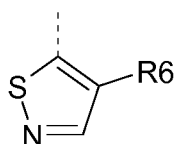
B-35



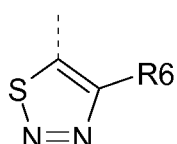
B-36



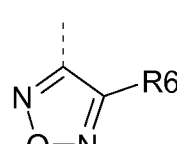
B-39



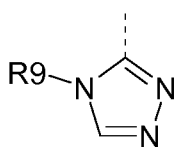
B-46



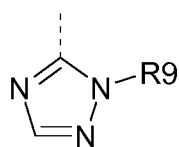
B-49



B-51



B-52



B-53

in which the broken line represents the bond to D and in which B furthermore carries n
5 substituents R7.

Z represents oxygen or sulphur.

R1 represents a radical from the group consisting of halogen, cyano, nitro, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy and C₁-C₄-alkylsulphonyl.

R2 represents a radical from the group consisting of halogen, C₁-C₄-alkyl and C₁-C₄-alkoxy.

10 R3 represents a radical from the group consisting of hydrogen and halogen.

R4 represents a radical from the group consisting of hydrogen and C₁-C₄-alkyl.

R5 represents a radical from the group consisting of hydrogen, C₁-C₄-alkyl, C₃-C₄-alkenyl, C₃-C₄-alkynyl, C₃-C₆-cycloalkyl-C₁-C₄-alkyl, C₁-C₄-alkylcarbonyl, cyano-C₁-C₄-alkyl and C(=O)-B.

R6 represents a radical from the group consisting of halogen, nitro, hydroxy, C₁-C₄-alkyl, C₁-C₄-alkoxy, C₁-C₄-alkylthio, C₁-C₄-alkylsulphonyl, C₁-C₄-haloalkyl, C₁-C₄-haloalkoxy, C₁-C₄-haloalkylthio and heteroaryl.

R7 represents a radical from the group consisting of halogen, C₁-C₄-alkyl and C₁-C₄-haloalkyl.

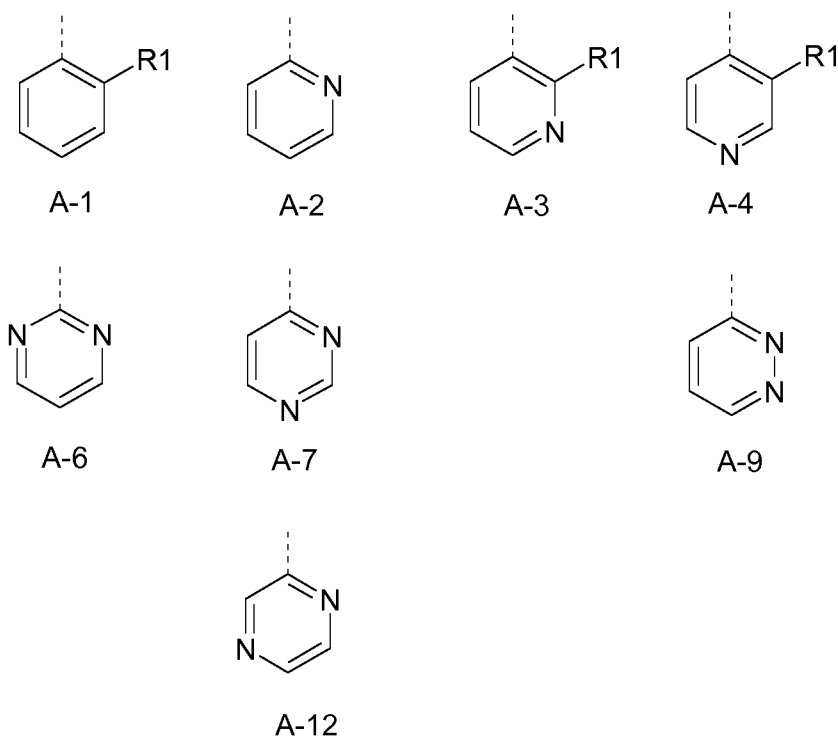
5 R9 represents a radical from the group consisting of C₁-C₄-alkyl.

m represents a number from the group consisting of 0, 1, 2 and 3, where for m > 1 the radicals R2 may be identical or different.

n represents a number from the group consisting of 0 and 1.

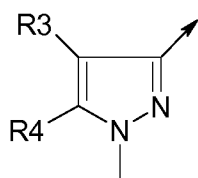
10 A further group of very particularly preferred substituents or ranges of the radicals shown in the compounds of the formula (I) to be used for controlling harmful microorganisms are illustrated below.

A represents a radical from the group consisting of

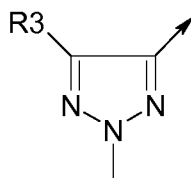


15 in which the broken line represents the bond to Q and where A furthermore carries m substituents R2,

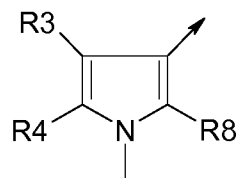
Q represents a radical from the group consisting of



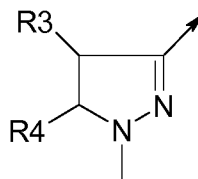
Q-1



Q-2

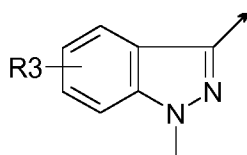


Q-3



Q-4

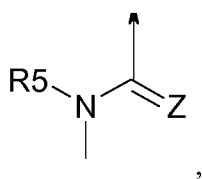
and



Q-5

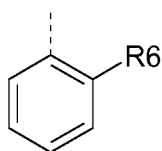
5 in which the nitrogen is attached to ring A and the arrow in each case represents the bond to D.

D represents the radical of the formula

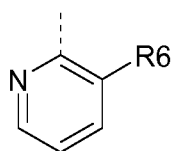


in which the nitrogen is attached to Q and the arrow represents the bond to B.

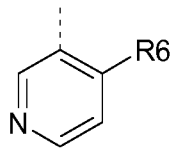
B represents a radical from the group consisting of



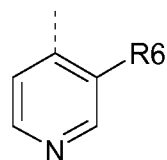
B-1



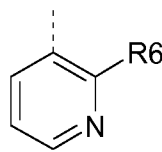
B-2



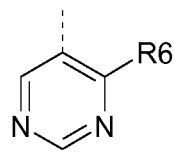
B-3



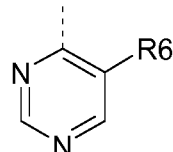
B-4



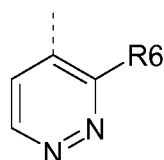
B-5



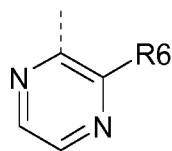
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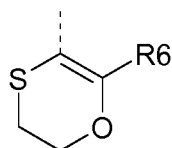
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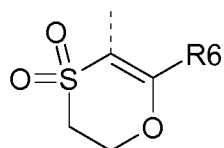
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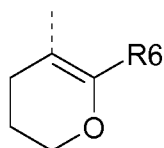
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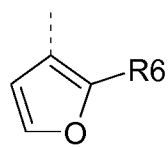
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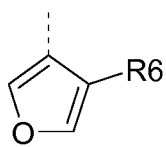
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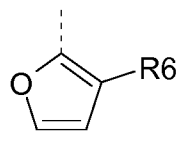
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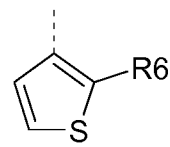
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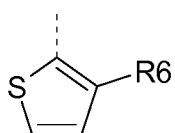
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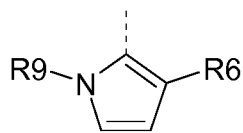
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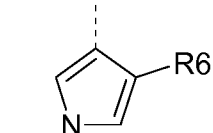
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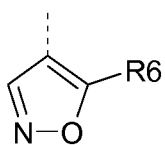
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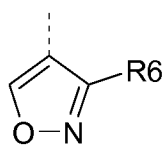
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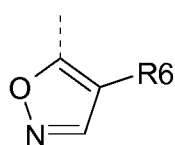
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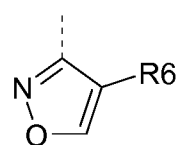
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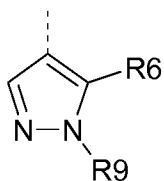
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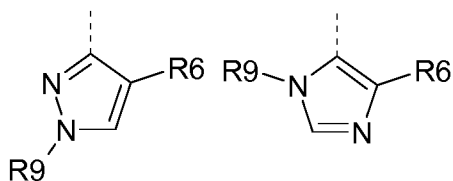
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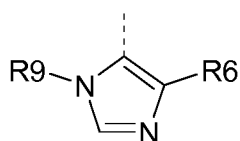
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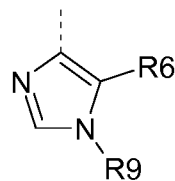
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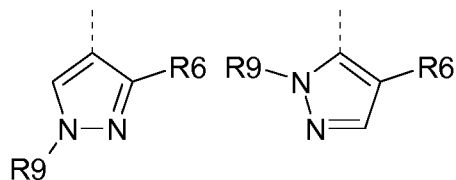
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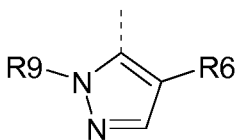
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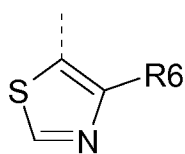
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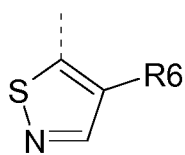
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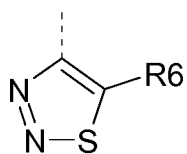
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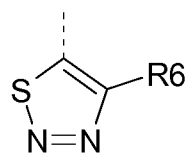
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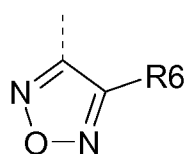
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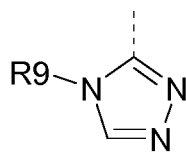
B-48



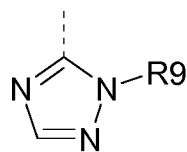
B-49



B-51



B-52



B-53

in which the broken line represents the bond to D and in which B furthermore carries n substituents R7.

5 Z represents oxygen or sulphur.

R1 represents a radical from the group consisting of halogen, cyano, nitro, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy and C₁-C₄-alkylsulphonyl.

R2 represents a radical from the group consisting of halogen, cyano, nitro, amino, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₃-C₆-cycloalkyl, C₁-C₄-alkoxy, di-(C₁-C₆-alkyl)-amino, acetyl, aryl.

5 R3 represents a radical from the group consisting of hydrogen, halogen, cyano, nitro, C₁-C₄-alkyl.

R4 represents a radical from the group consisting of hydrogen, amino, C₁-C₄-alkyl.

R5 represents a radical from the group consisting of hydrogen, C₁-C₄-alkyl, C₃-C₄-alkenyl, C₃-C₄-alkynyl, C₃-C₆-cycloalkyl-C₁-C₄-alkyl, C₁-C₄-alkylcarbonyl, cyano-C₁-C₄-alkyl and C(=O)-B.

10 R6 represents a radical from the group consisting of hydrogen (only in the radicals B-33 and B-36), halogen, cyano, nitro, hydroxy, carboxyl, C₁-C₄-alkyl, C₁-C₄-alkoxy, C₁-C₄-alkylthio, C₁-C₄-alkylsulphonyl, C₁-C₄-haloalkyl, C₃-C₆-cycloalkyl, C₁-C₄-haloalkoxy, C₁-C₄-haloalkylthio, acetyl, C₁-C₄-alkylcarbonylamino, C₁-C₄-haloalkylcarbonylamino and heteroaryl.

R7 represents a radical from the group consisting of halogen, cyano, nitro, hydroxy, C₁-C₄-alkyl, C₁-C₄-haloalkyl and C₁-C₄-alkoxy.

15 R9 represents a radical from the group consisting of C₁-C₄-alkyl and C₁-C₄-haloalkyl.

m represents a number from the group consisting of 0, 1, 2 and 3, where for m > 1 the radicals R2 may be identical or different.

n represents a number from the group consisting of 0, 1, 2 and 3, where for n > 1 the radicals R7 may be identical or different.

20 In the preferred definitions, unless stated otherwise,

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

aryl (including as part of a larger unit, for example arylalkyl) is selected from the group of phenyl, naphthyl, anthryl, phenanthrenyl, and is preferably in turn phenyl,

25 hetaryl (having the same meaning as heteroaryl, also as part of a relatively large unit such as, for example, heteroaryloxy) is selected from the group consisting of furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, 1,2,3-triazolyl, 1,2,4-triazolyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, 1,2,3-oxadiazolyl, 1,2,4-oxadiazolyl, 1,3,4-oxadiazolyl, 1,2,5-oxadiazolyl, 1,2,3-thiadiazolyl, 1,2,4-thiadiazolyl, 1,3,4-thiadiazolyl, 1,2,5-thiadiazolyl, pyridyl, pyrimidinyl, pyridazinyl and pyrazinyl.

In the particularly preferred definitions, unless stated otherwise,

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

aryl (including as part of a larger unit, for example arylalkyl) is selected from the group of phenyl,
5 naphthyl, anthryl, phenanthrenyl, and is preferably in turn phenyl,

het(ero)aryl (also as part of a relatively large unit such as, for example, heteroaryloxy) is selected from the group consisting of furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, oxadiazolyl, 1,2,3-triazolyl, 1,2,4-triazolyl, oxazolyl, isoxazolyl and thiazolyl.

In the very particularly preferred definitions, unless stated otherwise,

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

het(ero)aryl (also as part of a relatively large unit such as, for example, heteroaryloxy) represents 1,2,4-triazolyl.

15 Halogen-substituted radicals, for example haloalkyl, are mono- or polyhalogenated, up to the maximum number of possible substituents. In the case of polyhalogenation, the halogen atoms may be identical or different. Halogen denotes fluorine, chlorine, bromine and iodine, in particular fluorine, chlorine and bromine.

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

Optionally substituted radicals may be mono- or polysubstituted, where the substituents in the case of polysubstitution may be the same or different.

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

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

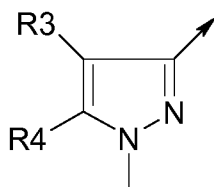
30 Particular preference according to the invention is given to using compounds of the formula (I) which contain a combination of the meanings listed above as being particularly preferred.

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

The present invention also provides novel compounds of the formula (I) in which A, Q, D and B have the meanings mentioned above, except for the compounds W and W2 described above, in particular W-1 to W-12, W2-1 to W2-3, W2-5 and W2-6. The general or preferred radical definitions or elucidations listed above also apply to the novel compounds of the formula (I). If compounds to be used in accordance with the invention are mentioned in the present application, this includes, unless indicated otherwise, in each case both the compounds of the formula (I) and the novel compounds of the formula (I).

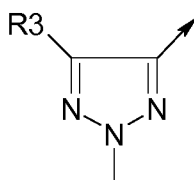
10 In the groups of compounds below, the individual radicals R and Z have the meanings given above.

In a particular group of compounds of the formula (I) to be used in accordance with the invention, Q represents Q-1



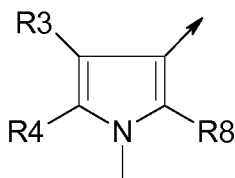
Q-1

15 In a further particular group of compounds of the formula (I) to be used in accordance with the invention, Q represents Q-2



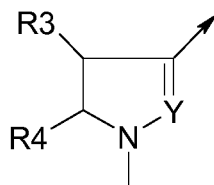
Q-2

20 In a further particular group of compounds of the formula (I) to be used in accordance with the invention, Q represents Q-3



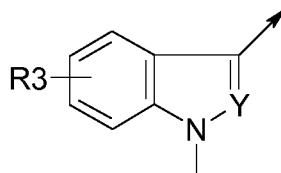
Q-3

In a further particular group of compounds of the formula (I) to be used in accordance with the invention, Q represents Q-4



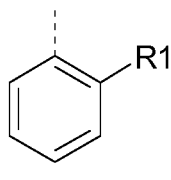
Q-4

- 5 In a further particular group of compounds of the formula (I) to be used in accordance with the invention, Q represents Q-5



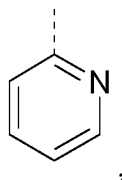
Q-5

- 10 In a further particular group of compounds of the formula (I) to be used in accordance with the invention, A represents



where this radical carries m substituents R2.

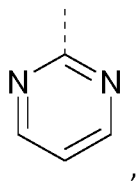
In a further particular group of compounds of the formula (I) to be used in accordance with the invention, A represents



15

where this radical carries m substituents R2.

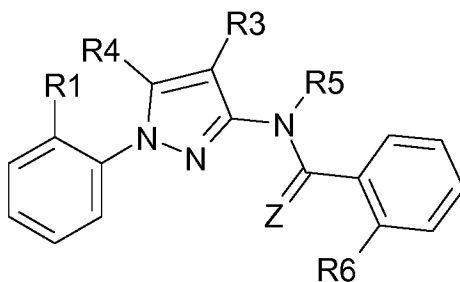
In a further particular group of compounds of the formula (I) to be used in accordance with the invention, A represents



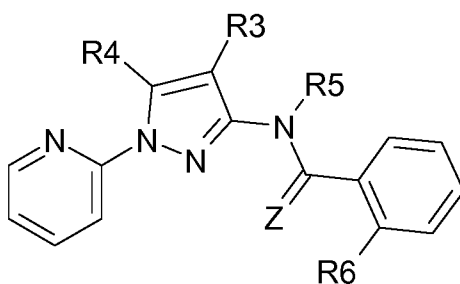
where this radical carries m substituents R₂.

- 5 In the particular groups of compounds of the formula (I) below, all of which represent preferred embodiments, the radicals A and B may carry further substituents R₂ and R₇, respectively, as specified above.

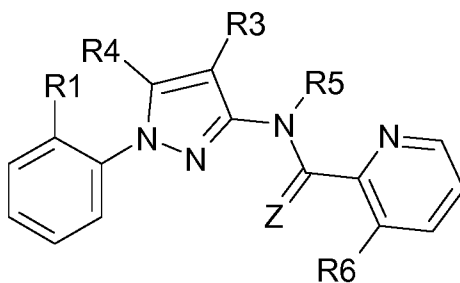
A particular group of compounds of the formula (I) are compounds of the formula (A-1)-(Q-1)-D-(B-1)



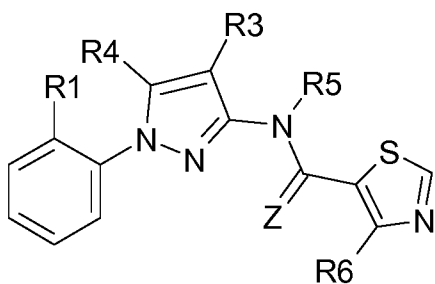
- 10 A further particular group of compounds of the formula (I) are compounds of the formula (A-2)-(Q-1)-D-(B-1)



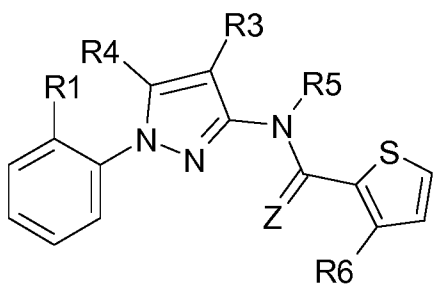
A further particular group of compounds of the formula (I) are compounds of the formula (A-1)-(Q-1)-D-(B-2)



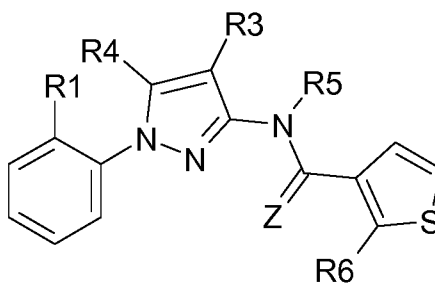
A further particular group of compounds of the formula (I) are compounds of the formula (A-1)-(Q-1)-D-(B-39)



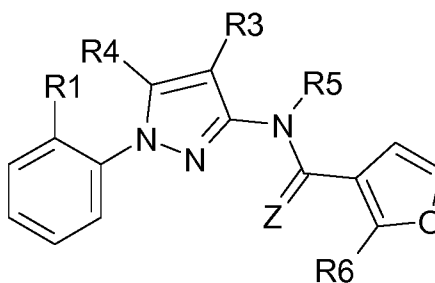
5 A further particular group of compounds of the formula (I) are compounds of the formula (A-1)-(Q-1)-D-(B-23)



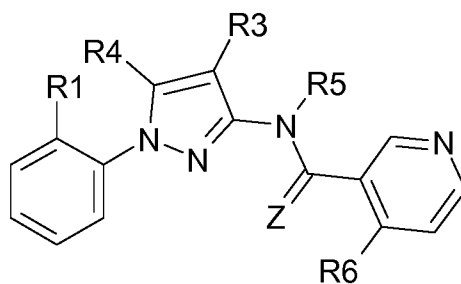
A further particular group of compounds of the formula (I) are compounds of the formula (A-1)-(Q-1)-D-(B-21)



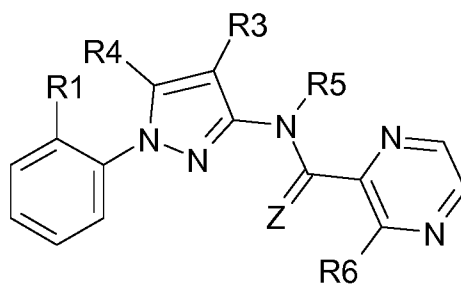
10 A further particular group of compounds of the formula (I) are compounds of the formula (A-1)-(Q-1)-D-(B-18)



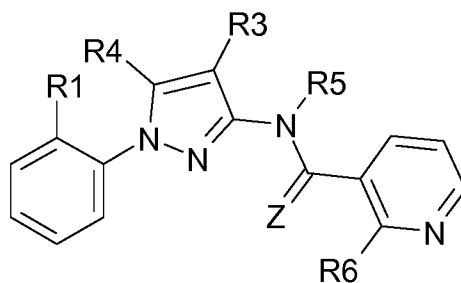
A further particular group of compounds of the formula (I) are compounds of the formula (A-1)-(Q-1)-D-(B-3)



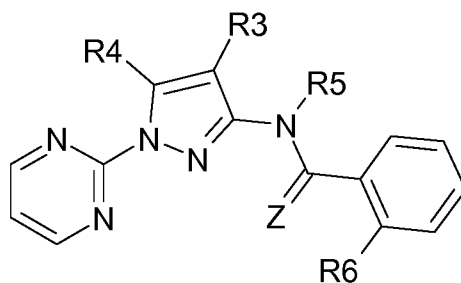
5 A further particular group of compounds of the formula (I) are compounds of the formula (A-1)-(Q-1)-D-(B-11)



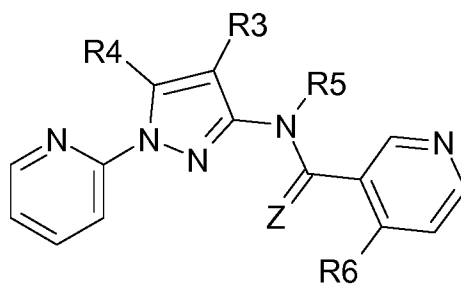
A further particular group of compounds of the formula (I) are compounds of the formula (A-1)-(Q-1)-D-(B-5)



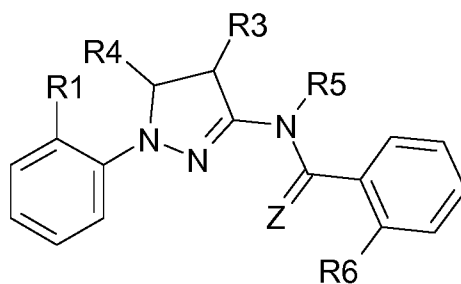
10 A further particular group of compounds of the formula (I) are compounds of the formula (A-6)-(Q-1)-D-(B-1)



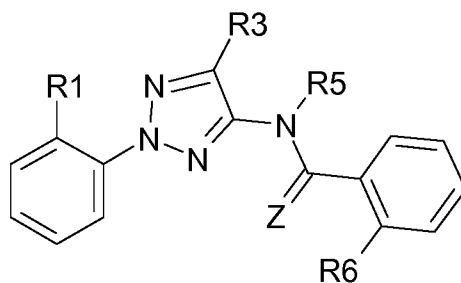
A further particular group of compounds of the formula (I) are compounds of the formula (A-2)-(Q-1)-D-(B-3)



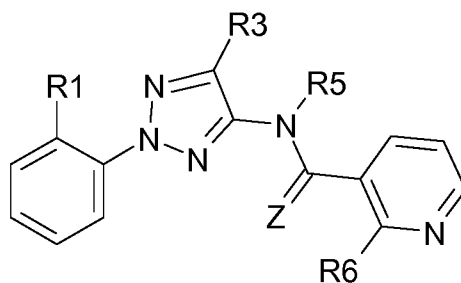
5 A further particular group of compounds of the formula (I) are compounds of the formula (A-1)-(Q-4)-D-(B-1)



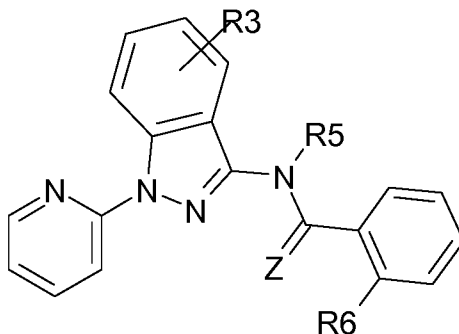
A further particular group of compounds of the formula (I) are compounds of the formula (A-1)-(Q-2)-D-(B-1)



10 A further particular group of compounds of the formula (I) are compounds of the formula (A-1)-(Q-2)-D-(B-5)



A further particular group of compounds of the formula (I) are compounds of the formula (A-2)-(Q-5)-D-(B-1)



In the same manner as for the particular groups of compounds above, the respective structural formulae
5 may be constructed in a simple manner for the groups of compounds below.

A further particular group of compounds of the formula (I) are compounds of the formula (A-3)-(Q-1)-D-(B-1).

A further particular group of compounds of the formula (I) are compounds of the formula (A-1)-(Q-1)-D-(B-36).

10 A further particular group of compounds of the formula (I) are compounds of the formula (A-1)-(Q-1)-D-(B-46).

A further particular group of compounds of the formula (I) are compounds of the formula (A-1)-(Q-1)-D-(B-1).

15 A further particular group of compounds of the formula (I) are compounds of the formula (A-1)-(Q-1)-D-(B-27).

A further particular group of compounds of the formula (I) are compounds of the formula (A-1)-(Q-1)-D-(B-51).

A further particular group of compounds of the formula (I) are compounds of the formula (A-1)-(Q-1)-D-(B-4).

20 A further particular group of compounds of the formula (I) are compounds of the formula (A-1)-(Q-1)-D-(B-13).

A further particular group of compounds of the formula (I) are compounds of the formula (A-1)-(Q-1)-D-(B-31).

A further particular group of compounds of the formula (I) are compounds of the formula (A-1)-(Q-1)-D-(B-35).

A further particular group of compounds of the formula (I) are compounds of the formula (A-1)-(Q-1)-D-(B-27).

- 5 A further particular group of compounds of the formula (I) are compounds of the formula (A-1)-(Q-1)-D-(B-10).

A further particular group of compounds of the formula (I) are compounds of the formula (A-1)-(Q-1)-D-(B-51).

- 10 A further particular group of compounds of the formula (I) are compounds of the formula (A-12)-(Q-1)-D-(B-1).

A further particular group of compounds of the formula (I) are compounds of the formula (A-12)-(Q-1)-D-(B-2).

A further particular group of compounds of the formula (I) are compounds of the formula (A-2)-(Q-1)-D-(B-49).

- 15 A further particular group of compounds of the formula (I) are compounds of the formula (A-2)-(Q-1)-D-(B-46).

A further particular group of compounds of the formula (I) are compounds of the formula (A-2)-(Q-1)-D-(B-13).

- 20 A further particular group of compounds of the formula (I) are compounds of the formula (A-2)-(Q-1)-D-(B-4).

A further particular group of compounds of the formula (I) are compounds of the formula (A-2)-(Q-1)-D-(B-6).

A further particular group of compounds of the formula (I) are compounds of the formula (A-2)-(Q-1)-D-(B-25).

- 25 A further particular group of compounds of the formula (I) are compounds of the formula (A-2)-(Q-1)-D-(B-31).

A further particular group of compounds of the formula (I) are compounds of the formula (A-2)-(Q-1)-D-(B-35).

A further particular group of compounds of the formula (I) are compounds of the formula (A-2)-(Q-1)-D-(B-27).

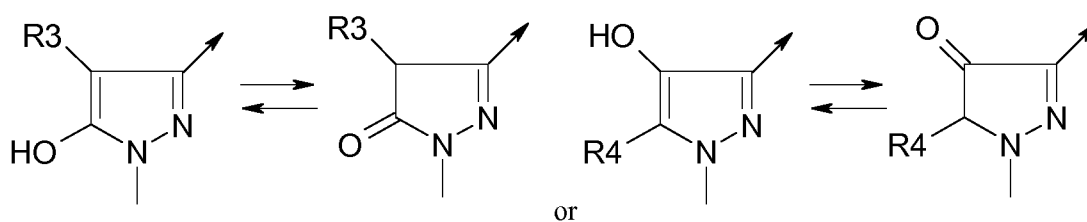
A further particular group of compounds of the formula (I) are compounds of the formula (A-7)-(Q-1)-D-(B-1).

- 5 A further particular group of compounds of the formula (I) are compounds of the formula (A-9)-(Q-1)-D-(B-1).

A further particular group of compounds of the formula (I) are compounds of the formula (A-2)-(Q-1)-D-(B-31).

- 10 A further particular group of compounds of the formula (I) are compounds of the formula (A-2)-(Q-1)-D-(B-35).

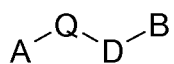
If R4 or R3 in group Q-1 represents hydroxy, Q-1 may also be present in the keto form:



The compounds of the formula (I) can be obtained by the processes described in PCT/EP2013/070371.

- 15 The compounds according to formula (I) are prepared by processes

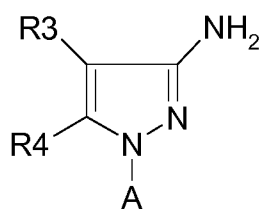
in which Z represents O,



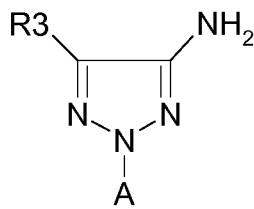
(I) ,

where A, Q, D and B have the meanings described above,

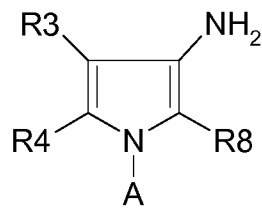
by reacting amines of the formulae (II-1) to (II-5)



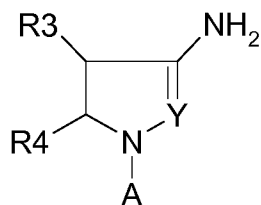
(II-1)



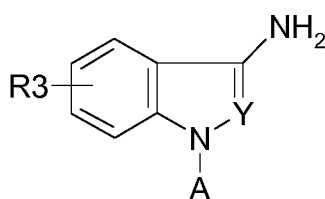
(II-2)



(II-3)



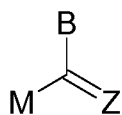
(II-4)



(II-5)

and

with carboxylic acids or carbonyl halides of the formula (III)



(III)

5 in which

M represents halogen, hydroxy, alkoxy, alkylsulphonyl, acyloxy, sulphonyloxy, N-heterocyclyl (e.g. imidazolyl) or represents hydroxy,

B has the meanings given above and

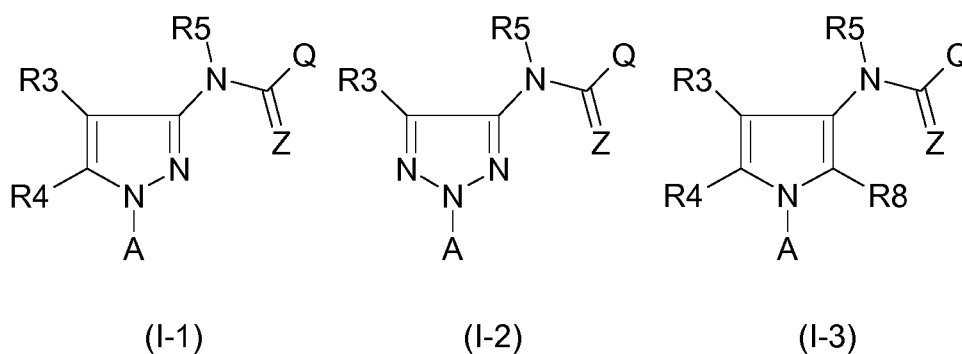
Z represents O.

- 10 Here, compounds of the formula (III) can be preactivated or be activated *in situ*. Compounds of the formula (III) can be employed, for example, as acid halides (e.g. M = chlorine). In this case, the reaction is advantageously carried out in the presence of a base such as, for example, triethylamine or sodium hydroxide. However, it is also possible to use carboxylic acids (M = OH) in the presence of coupling reagents such as, for example dicyclohexylcarbodiimide and additives such as 1-hydroxy-1-H-
 15 benzotriazole (W. König, R. Geiger, *Chem. Ber.* **1970**, 103, 788). Use may furthermore be made of coupling reagents such as 1-ethyl-3-(3-dimethylaminopropyl)carbodiimide, 1,1'-carbonyl-1H-imidazole, O-(benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate and similar compounds. Suitable coupling reagents for carrying out the preparation process are, in principle, all compounds which allow an amide bond to be formed (cf., for example, E. Valeur, M. Bradley *Chem. Soc. Rev.* **2009**,

38, 606; S.-Y. Han, Y.-A. Kim *Tetrahedron* **2004**, 60, 2447). Use may furthermore also be made of symmetric or mixed anhydrides for preparing compounds of the formula (I) (G. W. Anderson, J. E. Zimmerman, F. M. Calahan, *J. Am. Chem. Soc.* **1967**, 89, 5012). Here, various chloroformic esters may be employed, for example isobutyl chloroformate and *sec*-butyl chloroformate. Isovaleryl chloride and
 5 pivaloyl chloride, for example, may likewise be used.

b) The compounds of the formula (I) in which Z represents O (oxygen atom) can then optionally be reacted with a sulphurizing agent such as diphosphorus pentasulphide or Lawesson's reagent (cf. C. P. Dell in *Comprehensive Organic Functional Group Transformations*, Vol. 5, eds.: A. L. Katritzky, O. Meth-Cohn, C. W. Rees, Pergamon, Oxford, **1995**, S. 565; M. Jesberger, T. P. Davis, L. Barner,
 10 *Synthesis* **2003**, 13, 1929), to give compounds of the formula (I) in which Z represents S (sulphur atom).

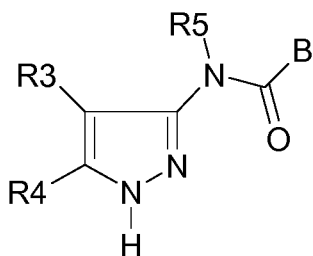
c) Compounds of the formulae (I-1), (I-2) and (I-3)



in which R3 represents halogen can be obtained either via the preparation route described above from the corresponding amines of the formulae (II-1), (II-2) and (II-3) in which R3 represents halogen (F, Cl,
 15 Br or I), or be synthesized from amides of the formulae (I-1), (I-2) and (I-3) in which R3 represents H (hydrogen) by reaction with a halogenating agent such as N-halosuccinimides (cf. for example, WO2008/092888, Z.-G. Zhao, Z.-X. Wang, *Synth. Comm.* **2007**, 37, 137) or 1-chloromethyl-4-fluorodiazoniabicyclo[2.2.2]octane bis(tetrafluoroborate) (P. T. Nyffeler, S. Gonzalez Durón, M. D. Burkart, S. P. Vincent, C-H. Wong, *Angew. Chem. Int. Ed.* **2005**, 44, 192).

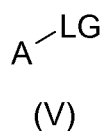
20 d) Compounds of the formulae (I-1), (I-2) and (I-3) in which R5 represents hydrogen, can be converted in the presence of a base (for example sodium hydride) and an alkylating (for example methyl iodide) or acylating agent (for example acetic anhydride) into compounds of the formulae (I-1), (I-2) and (I-3) in which R5 represents alkyl or acyl (cf., for example, WO 2005/092863).

e) Compounds of the formula (I-1) can alternatively also be obtained by reacting 1H-pyrazoles of the
 25 formula (IV-1)



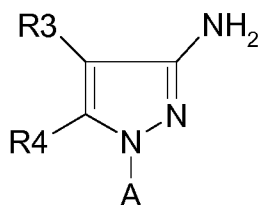
(IV-1)

with aromatics or heteroaromatics of the formula (V)



which are substituted by a suitable group LG. The reaction can be carried out either in the presence of a
 5 base (for example potassium carbonate for, for instance, LG = fluorine (cf. WO 2011/060035) or optionally a catalyst (for example CuI/1,2-cyclohexanediamine, potassium carbonate for, for instance, LG = bromine (cf. WO 2007/039146) or Cu(OAc)₂/pyridine for, for instance, LG = B(OH)₂ (cf. WO 2005/092863)).

Amines of the formula (II-1)

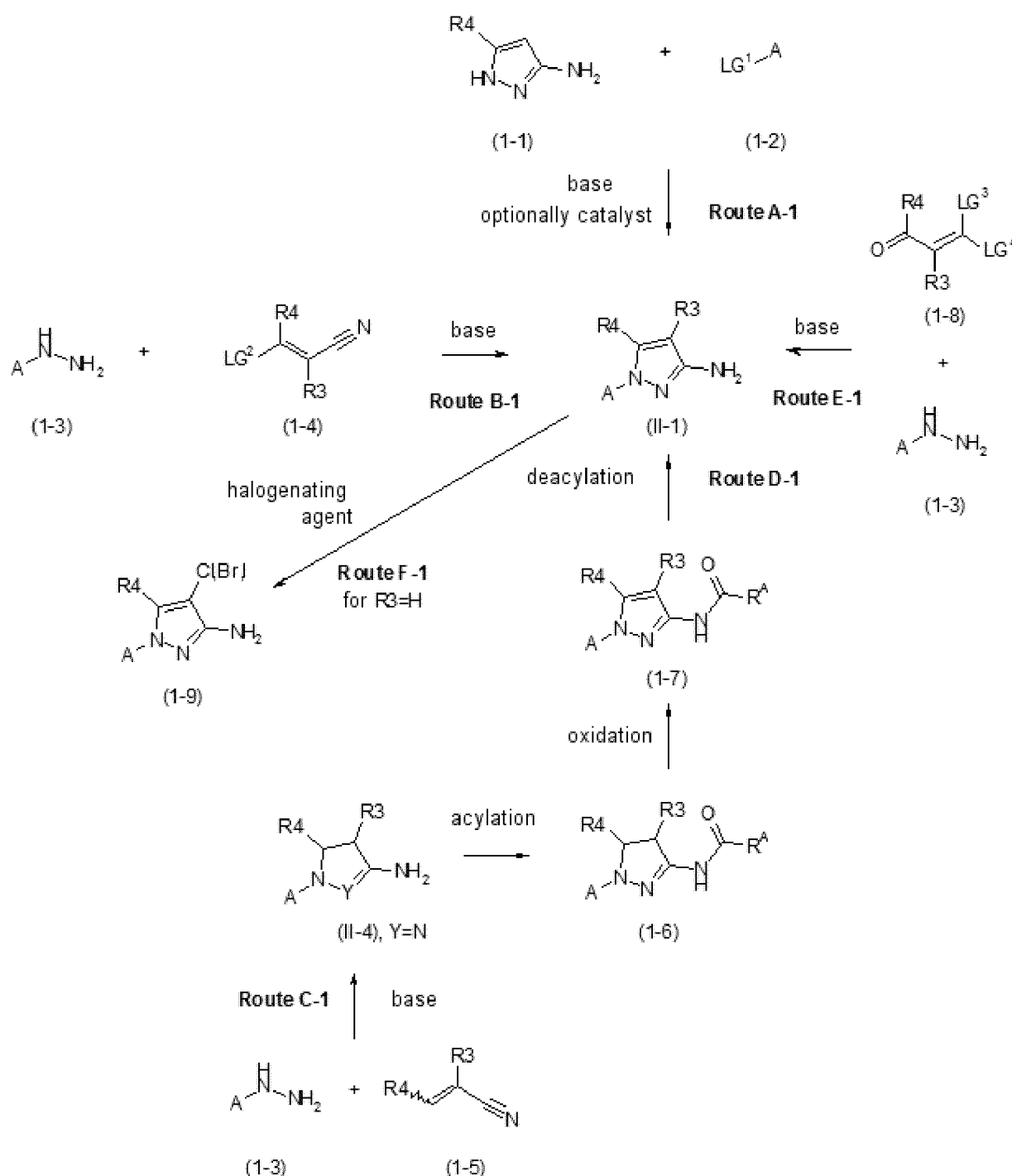


(II-1)

10

are commercially available or known from the literature, or they can be synthesized by processes known from the literature.

The 1H-pyrazole-3-amines of the formula (II-1) can be obtained as shown in Synthesis Scheme 1.

Synthesis Scheme 1

According to route A-1, 1H-pyrazole-3-amines of the formula (1-1) can be reacted with aromatics or heteroaromatics of the formula (1-2) substituted with a suitable group LG¹ to react, in the presence of a base (for example potassium *tert*-butoxide for, for instance, LG¹ = chlorine (cf. WO 2009/012482) or, for example, caesium carbonate for, for instance, LG¹ = chlorine (cf. WO 2007/056155)) and optionally a catalyst (for example CuI/N,N-dimethylethane-1,2-diamine, potassium carbonate for, for instance, LG¹ = iodine (cf. WO2008/153042) or Pd₂(dba)₃/xantphos, sodium carbonate for, for instance, LG¹ =

chlorine (cf. Z. Shen, Y. Hong, X. He, W. Mo, B. Hu, N. Sun, X. Hu, *Org. Lett.* **2010**, *12*, 552)) to give compounds of the formula (II-1).

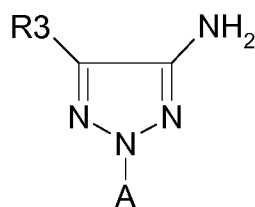
In an alternative route B-1, an aryl- or hetarylhydrazine of the formula (1-3), which may be present as free hydrazine or as a salt (for example as hydrochloride) can be reacted with an acrylonitrile of the formula (1-4) which is substituted by a leaving group LG^2 (for instance $LG^2 = OR$ where $R = \text{alkyl, acyl, sulphonyl, etc.}$; $LG^2 = SR$ where $R = \text{alkyl, acyl, etc.}$; $LG^2 = NHR$ or NR_2 where $R = \text{alkyl, acyl, sulphonyl}$; $LG^2 = \text{halogen or cyano}$) in the presence of a suitable base (for example sodium ethoxide, cf., for instance, WO 2004/037794 or potassium *tert*-butoxide, cf., for instance, WO 2008/046527) to give the 1H-pyrazole-3-amine of the formula (II-1).

4,5-Dihydro-1H-pyrazole-3-amines of the formula (II-4) in which Y represents N can be prepared via route C-1 from aryl- or hetarylhydrazines (1-3) which can be present as free hydrazines or salts (for example as hydrochlorides) using acrylonitriles of the formula (1-5) in the presence of a suitable base (for example choline) (cf. C. Albert, C. Tironi, *Farmaco Sci.* **1964**, *19*, 618). Compounds of the formula (II-4) in which Y represents N can likewise be reacted in a sequence of acylation with a suitable acylating agent (for example acetic anhydride for $R^A = \text{methyl}$), oxidation with an appropriate oxidizing agent (for example 2,3-dichloro-5,6-dicyano-1,4-benzoquinone) and removal of the acyl group by suitable methods (for example heating in hydrochloric acid, cf. *Greene's protective groups in organic synthesis*, 4th ed., P.G.M. Wuts, T.W. Greene, John Wiley & Sons, Inc., Hoboken, New Jersey, **2007**), to give 1H-pyrazole-3-amines of the formula (II-1).

Access to 1H-pyrazole-3-amines of the formula (II-1) is also provided via route E-1 starting with keto compounds of the formula (1-8) substituted with a leaving group $LG^{3/4}$ (for example $LG^{3/4} = OR$ where $R = \text{alkyl, acyl, sulphonyl, etc.}$; $LG^{3/4} = SR$ where $R = \text{alkyl, acyl, etc.}$; $LG^{3/4} = NHR$ or NR_2 where $R = \text{hydrogen, alkyl, acyl, sulphonyl}$; $LG^{3/4} = \text{halogen}$). These are initially activated with ammonia via β -enaminoketones ($LG^3 = NH_2/LG^4 = \text{alkoxy}$) (cf. M. A. P. Martins, W. Cunico, S. Brondani, R. L. Peres, N. Zimmermann, F. A. Rosa, G. F. Fiss, N. Zanatta, H. G. Bonacorso *Synthesis* **2006**, 1485) and then, in the presence of suitable bases (for example triethylamine) reacted with free hydrazines or salts thereof (for example hydrochlorides) to give 1H-pyrazole-3-amines of the formula (II-1).

1H-Pyrazole-3-amines of the formula (II-1) can optionally be halogenated via route F-1 if R_3 represents H (hydrogen), using suitable halogenating agents (for example N-halosuccinimides) in the 3-position to give compounds of the formula (1-8) in which R_3 represents chlorine, bromine or iodine (cf. J. Velcicky, R. Feifel, S. Hawtin, R. Heng, C. Huppertz, G. Koch, M. Kroemer, H. Moebitz, L. Revesz, C. Scheufler, A. Schlapbach *Bioorg. Med. Chem. Letters* **2010**, *20*, 1293).

Amines of the formula (II-2)

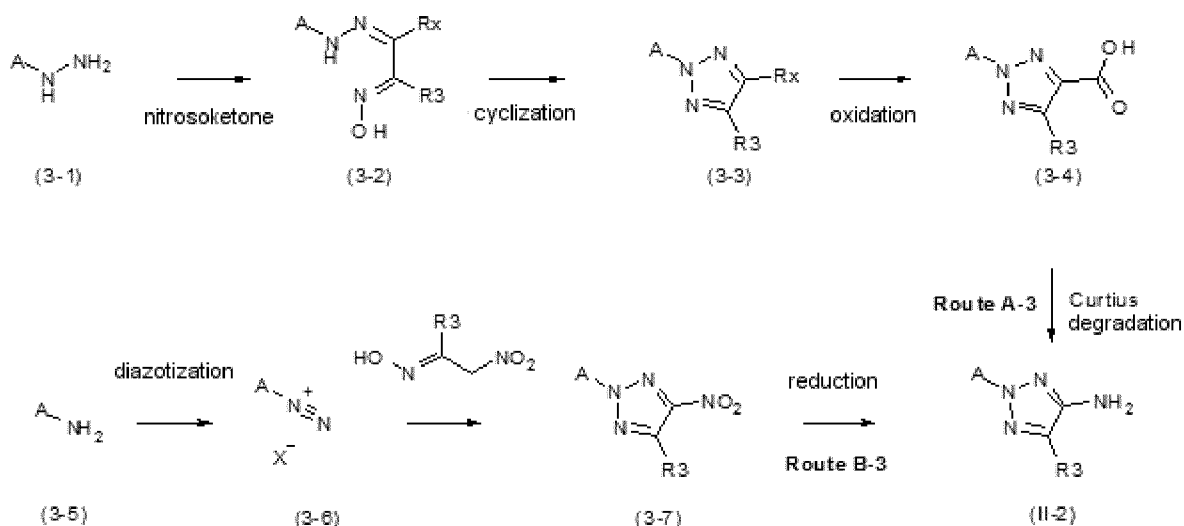


(II-2)

are likewise commercially available.

The amines of the formula (II-2) can be obtained according to Synthesis Scheme 3:

5 Synthesis Scheme 3

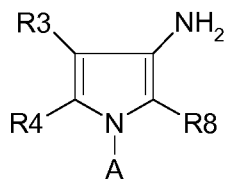


Via route A-3, aromatic hydrazines of the formula (3-1) can be reacted, for example, with a nitrosoketone (for example nitrosoacetone for R3=H, cf. M. Begtrup, J. Holm *J. Chem. Soc., Perkin Trans. 1*, **1981**, 503) and then cyclized with the aid of condensing agents (for example acetic anhydride, cf. D. L. Swartz, A. R. Karash, L. A. Berry, D. L. Jaeger *J. Heterocyclic Chem.* **1983**, 20, 1561) to give 2H-1,2,3-triazoles of the formula (3-3). Oxidation (for example with sodium chromate(VI) cf. Comprehensive Organic Transformations: A Guide to Functional Group Preparations; Larock, R. C., Ed.; Wiley-VCH: New York, **1999**) of (3-3) affords the carboxylic acid (3-4) which can then be converted by Curtius degradation into the 4-amino-2H-1,2,3-triazole (II-2) (cf. P. A. S. Smith *Org. React.* **1946**, 337).

Alternatively, route B-3 can also be followed for preparing the 4-amino-2H-1,2,3-triazoles (II-2) (cf. V. M. Nikitin, A. V. Zavodov, L. I. Vereshchagin *Zhurnal Organicheskoi Khimii* **1992**, 28, 2334). To this end, an aromatic amine (3-5) is diazotized and the diazonium salt (3-6) is reacted, for example, with

metazonic acid (for R³=H). The resulting 4-nitro-2H-1,2,3-triazole (3-7) can then be reduced with, for example, tin(II) chloride to give 4-amino-2H-1,2,3-triazole (II-2).

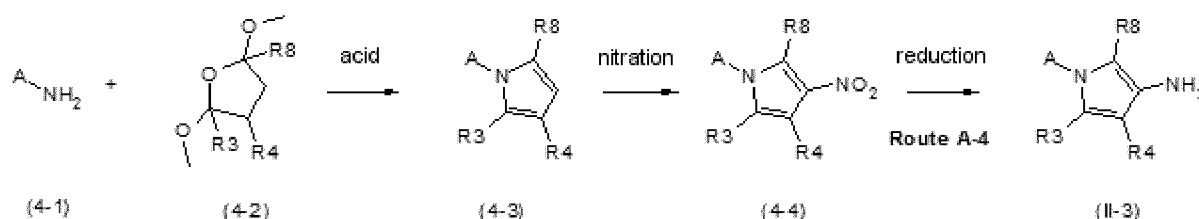
Amines of the formula (II-3)



(II-3)

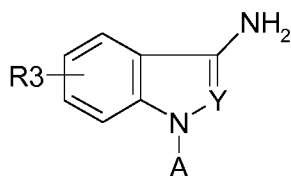
5 can be obtained via Synthesis Scheme 4.

Synthesis Scheme 4



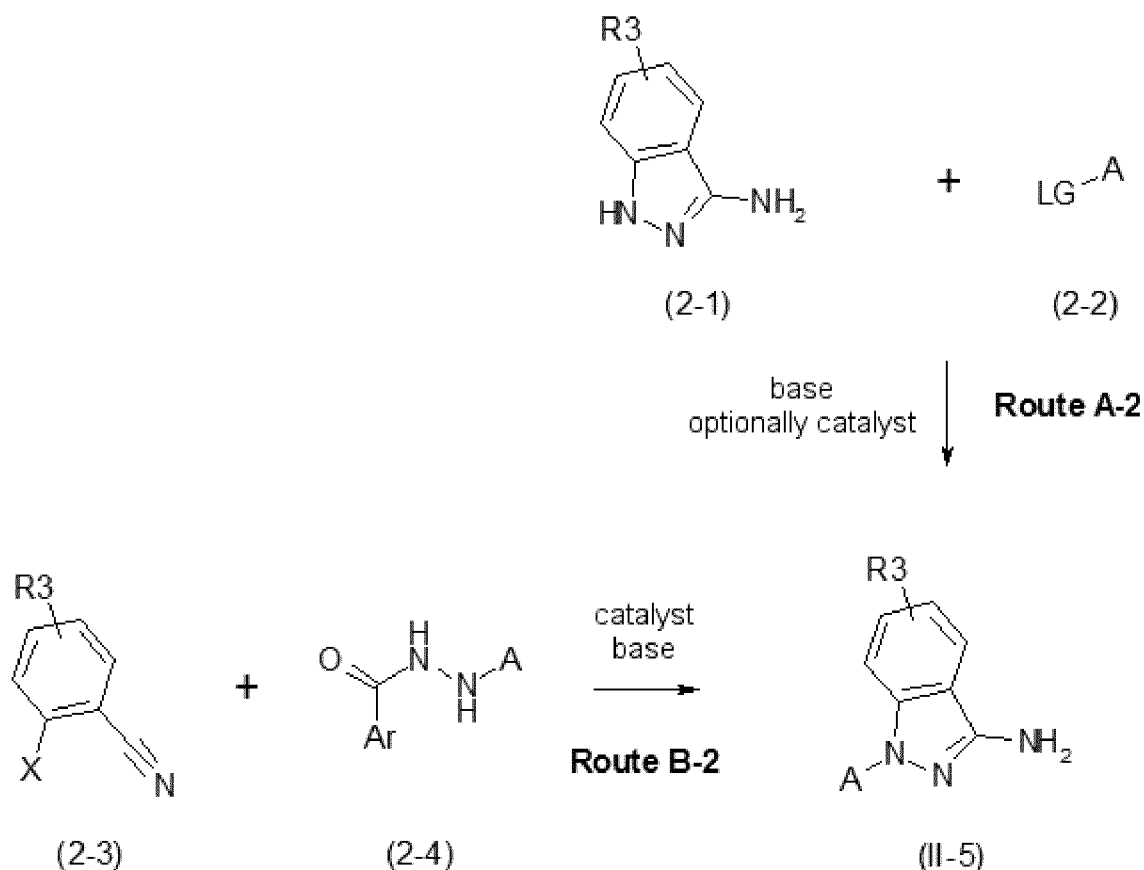
To this end, aromatic amines of the formula (4-1) are reacted, for example, with cyclic acetals of the formula (4-2) under acidic conditions to give the pyrrole (4-3) (for example FeCl₃ cf. N. Azizi, A. Khajeh-Amiria, H. Ghafurib, M. Bolourtchiana, M. R. Saidi *Synlett* **2009**, 14, 2245). Nitration of the pyrrole (4-3) to 3-nitro-1H-pyrrole (4-4) (for example with acetyl nitrate, cf. D. Korakas, G. Varvounis *J. Heterocyclic Chem.* **1996**, 33, 611) and subsequent reduction (for example with SnCl₂, cf. WO 2009/136995) affords the 3-amino-1H-pyrrole (II-3).

Amines of the formula (II-5)



(II-5)

are likewise commercially available. Novel 1H-Indazole-3-amines of the formula (II-5) can be obtained according to Synthesis Scheme 2.

Synthesis Scheme 2

Here, compounds of the formula (2-1) are reacted via route A-2 with aromatics or heteroaromatics of the formula (2-2) substituted by a suitable leaving group LG, to react in the presence of a base (for example sodium hydride for, for instance, LG = chlorine (cf. WO 2008/068171)) and optionally a catalyst (for example CuI/N,N-dimethylethane-1,2-diamine, potassium carbonate for, for instance, LG = bromine (cf. WO 2010/098367) or Pd₂(dba)₃/X-Phos, caesium carbonate for, for instance, LG = chlorine (cf. DE 10 2009/004245)) to give compounds of the formula (II-5). 1H-Indazole-3-amines of the formula (2-1) and aromatics or heteroaromatics of the formula (2-2) are commercially available or can be obtained by known processes.

Via route B-2, it is alternatively possible to convert ortho-halobenzonitriles of the formula (2-3) with hydrazides of the formula (2-4) in the presence of a catalyst and a base (for example copper(I) bromide/4-hydroxy-L-proline; potassium carbonate for X=Br or I and Ar=phenyl, cf. L. Xu, Y. Peng, Q. Pan, Y. Jiang, D. Ma *J. Org. Chem.* **2013**, 78, 3400) to give 1H-indazole-3-amines of the formula (II-5).

The processes according to the invention for preparation of the novel compounds of the formula (I) are preferably performed using a diluent. Useful diluents for performance of the processes according to the invention are, as well as water, all inert solvents. Examples include: halohydrocarbons (for example chlorohydrocarbons such as tetrachloroethylene, tetrachloroethane, dichloropropane, methylene

chloride, dichlorobutane, chloroform, carbon tetrachloride, trichloroethane, trichloroethylene, pentachloroethane, difluorobenzene, 1,2-dichloroethane, chlorobenzene, bromobenzene, dichlorobenzene, chlorotoluene, trichlorobenzene), alcohols (for example methanol, ethanol, isopropanol, butanol), ethers (for example ethyl propyl ether, methyl tert-butyl ether, anisole, phenetole, 5 cyclohexyl methyl ether, dimethyl ether, diethyl ether, dipropyl ether, diisopropyl ether, di-n-butyl ether, diisobutyl ether, diisoamyl ether, ethylene glycol dimethyl ether, tetrahydrofuran, 1,4-dioxane, dichlorodiethyl ether and polyethers of ethylene oxide and/or propylene oxide), amines (for example trimethyl-, triethyl-, tripropyl-, tributylamine, N-methylmorpholine, pyridine and tetramethylenediamine), nitrohydrocarbons (for example nitromethane, nitroethane, nitropropane, 10 nitrobenzene, chloronitrobenzene, o-nitrotoluene); nitriles (for example acetonitrile, propionitrile, butyronitrile, isobutyronitrile, benzonitrile, m-chlorobenzonitrile), tetrahydrothiophene dioxide, dimethyl sulphoxide, tetramethylene sulphoxide, dipropyl sulphoxide, benzyl methyl sulphoxide, diisobutyl sulphoxide, dibutyl sulphoxide, diisoamyl sulphoxide, sulphones (for example dimethyl, diethyl, dipropyl, dibutyl, diphenyl, dihexyl, methyl ethyl, ethyl propyl, ethyl isobutyl and 15 pentamethylene sulphone), aliphatic, cycloaliphatic or aromatic hydrocarbons (for example pentane, hexane, heptane, octane, nonane and technical hydrocarbons), and also what are called "white spirits" with components having boiling points in the range from, for example, 40°C to 250°C, cymene, petroleum fractions within a boiling range from 70°C to 190°C, cyclohexane, methylcyclohexane, petroleum ether, ligroin, benzene, toluene, xylene, esters (for example methyl, ethyl, butyl and isobutyl 20 acetate, dimethyl, dibutyl and ethylene carbonate); amides (for example hexamethylphosphoric triamide, formamide, N-methylformamide, *N,N*-dimethylformamide, *N,N*-dipropylformamide, *N,N*-dibutylformamide, N-methylpyrrolidine, N-methylcaprolactam, 1,3-dimethyl-3,4,5,6-tetrahydro-2(1H)-pyrimidine, octylpyrrolidone, octylcaprolactam, 1,3-dimethyl-2-imidazolidinedione, N-formylpiperidine, *N,N'*-diformylpiperazine) and ketones (for example acetone, acetophenone, methyl ethyl ketone, methyl 25 butyl ketone).

It is of course also possible to perform the process according to the invention in mixtures of the solvents and diluents mentioned.

When performing the process according to the invention, the reaction temperatures can be varied within a relatively wide range. In general, the temperatures employed are between -30°C and +150°C, 30 preferably between -10°C and +100 °C.

The process according to the invention is generally performed under atmospheric pressure. However, it is also possible to perform the process according to the invention under elevated or reduced pressure – generally at absolute pressures between 0.1 bar and 15 bar.

To perform the process according to the invention, the starting materials are generally used in 35 approximately equimolar amounts. However, it is also possible to use one of the components in a

relatively large excess. The reaction is generally carried out in a suitable diluent in the presence of a reaction auxiliary, optionally also under a protective gas atmosphere (for example under nitrogen, argon or helium) and the reaction mixture is generally stirred at the temperature required for several hours. The workup is performed by customary methods (cf. the Preparation Examples).

- 5 The basic reaction auxiliaries used to perform the process according to the invention may be all suitable acid binders. Examples include: alkaline earth metal or alkali metal compounds (e.g. hydroxides, hydrides, oxides and carbonates of lithium, sodium, potassium, magnesium, calcium and barium), amidine bases or guanidine bases (e.g. 7-methyl-1,5,7-triazabicyclo[4.4.0]dec-5-ene (MTBD); diazabicyclo[4.3.0]nonene (DBN), diazabicyclo[2.2.2]octane (DABCO), 1,8-
- 10 diazabicyclo[5.4.0]undecene (DBU), cyclohexyltetraethylguanidine (CyTBG), cyclohexyltetramethylguanidine (CyTMG), N,N,N,N-tetramethyl-1,8-naphthalenediamine, pentamethylpiperidine) and amines, especially tertiary amines (e.g. triethylamine, trimethylamine, tribenzylamine, triisopropylamine, tributylamine, tricyclohexylamine, triamylamine, trihexylamine, N,N-dimethylaniline, N,N-dimethyltoluidine, N,N-dimethyl-p-aminopyridine, N-methylpyrrolidine, N-
- 15 methylpiperidine, N-methylimidazole, N-methylpyrazole, N-methylmorpholine, N-methylhexamethylenediamine, pyridine, 4-pyrrolidinopyridine, 4-dimethylaminopyridine, quinoline, 2-picoline, 3-picoline, pyrimidine, acridine, N,N,N',N'-tetramethylenediamine, N,N,N',N'-tetraethylenediamine, quinoxaline, N-propyldiisopropylamine, N-ethyldiisopropylamine, N,N'-dimethylcyclohexylamine, 2,6-lutidine, 2,4-lutidine or triethylenediamine).
- 20 The acidic reaction auxiliaries used to perform the process according to the invention include all mineral acids (e.g. hydrohalic acids such as hydrofluoric acid, hydrochloric acid, hydrobromic acid or hydriodic acid, and also sulphuric acid, phosphoric acid, phosphorous acid, nitric acid), Lewis acids (e.g. aluminium(III) chloride, boron trifluoride or its etherate, titanium(IV) chloride, tin(IV) chloride) and organic acids (e.g. formic acid, acetic acid, propionic acid, malonic acid, lactic acid, oxalic acid, fumaric
- 25 acid, adipic acid, stearic acid, tartaric acid, oleic acid, methanesulphonic acid, benzoic acid, benzenesulphonic acid or para-toluenesulphonic acid).

Definitions

- In the context of the present invention “harmful microorganisms” are phytopathogenic fungi, phytopathogenic bacteria, phytopathogenic oomycetes, and phytopathogenic viruses. “Phytopathogenic”
- 30 means that the respective organism is capable of infesting plants or plant parts.

In the context of the present invention, “control of harmful microorganisms” means a reduction in infestation by harmful microorganisms, compared with the untreated plant or plant part as defined below measured as fungicidal efficacy, preferably a reduction by 25-50 %, compared with the untreated plant (100 %), more preferably a reduction by 40-79 %, compared with the untreated plant (100 %); even

more preferably, the infection by harmful microorganisms is entirely suppressed (by 70-100 %). The control may be curative, i.e. for treatment of already infected plants, or protective, for protection of plants which have not yet been infected.

An “effective but non-phytotoxic amount” means an amount of the compounds according to formula (I) which is sufficient to control the fungal disease of the plant in a satisfactory manner or to eradicate the fungal disease completely, and which, at the same time, does not cause any significant symptoms of phytotoxicity. In general, this application rate may vary within a relatively wide range. It depends on several factors, for example on the fungus to be controlled, the plant, the climatic conditions and the ingredients of the inventive compositions.

10 Formulations

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

Customary formulations are, for example, water-soluble liquids (SL), emulsion concentrates (EC), emulsions in water (EW), suspension concentrates (SC, SE, FS, OD), water-dispersible granules (WG), granules (GR) and capsule concentrates (CS); these and further possible formulation types are described, for example, by Crop Life International and in Pesticide Specifications, Manual on development and use of FAO and WHO specifications for pesticides, FAO Plant Production and Protection Papers – 173, prepared by the FAO/WHO Joint Meeting on Pesticide Specifications, 2004, ISBN: 9251048576. The formulations, in addition to one or more compounds of the formula (I), optionally comprise further agrochemically active compounds.

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

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

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

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

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

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

- 30 In principle, it is possible to use all suitable carriers. Useful carriers include especially: for example ammonium salts and ground natural minerals such as kaolins, clays, talc, chalk, quartz, attapulgite, montmorillonite or diatomaceous earth, and ground synthetic materials such as finely divided silica, alumina and natural or synthetic silicates, resins, waxes and/or solid fertilizers. Mixtures of such carriers can likewise be used. Useful carriers for granules include: for example crushed and fractionated natural

rocks such as calcite, marble, pumice, sepiolite, dolomite, and synthetic granules of inorganic and organic meals, and also granules of organic material such as sawdust, paper, coconut shells, corn cobs and tobacco stalks.

Liquefied gaseous extenders or solvents can also be used. Particularly suitable extenders or carriers are those which are gaseous at ambient temperature and under atmospheric pressure, for example aerosol propellant gases, such as halohydrocarbons, and also butane, propane, nitrogen and carbon dioxide.

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

It is possible to use colorants such as inorganic pigments, for example iron oxide, titanium oxide and Prussian Blue, and organic dyes such as alizarin dyes, azo dyes and metal phthalocyanine dyes, and nutrients and trace nutrients such as salts of iron, manganese, boron, copper, cobalt, molybdenum and zinc as further auxiliaries in the formulations and the use forms derived therefrom.

Additional components may be stabilizers, such as low-temperature stabilizers, preservatives, antioxidants, light stabilizers or other agents which improve chemical and/or physical stability. Foam formers or antifoams may also be present.

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

Optionally, further auxiliaries may be present in the formulations and the use forms derived therefrom.

Examples of such additives include fragrances, protective colloids, binders, adhesives, thickeners, thixotropic agents, penetrants, retention promoters, stabilizers, sequestrants, complexing agents, humectants, spreaders. In general, the compounds of the formula (I) can be combined with any solid or liquid additive commonly used for formulation purposes.

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

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

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

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

Plant/Crop Protection

The compounds according to the invention have potent microbicidal activity and can be used for control of harmful microorganisms, such as fungi and bacteria, in crop protection and in the protection of materials.

The invention also relates to a method for controlling harmful microorganisms, characterized in that the compounds according to the invention are applied to the harmful microorganisms and/or their habitat.

The compounds according to the invention can be used in crop protection for control of phytopathogenic fungi. They are characterized by an outstanding efficacy against a broad spectrum of phytopathogenic fungi, including soilborne pathogens, which are in particular members of the classes Plasmodiophoromycetes, Peronosporomycetes (Syn. Oomycetes), Chytridiomycetes, Zygomycetes, Ascomycetes, Basidiomycetes and Deuteromycetes (Syn. Fungi imperfecti). Some fungicides are

systemically active and can be used in plant protection as foliar, seed dressing or soil fungicide. Furthermore, they are suitable for controlling fungi, which inter alia infest wood or roots of plant.

The compounds according to the invention can be used in crop protection for control of phytopathogenic bacteria. They are characterized by an outstanding efficacy against a broad spectrum of
5 phytopathogenic bacteria, including Pseudomonadaceae, Rhizobiaceae, Enterobacteriaceae, Corynebacteriaceae and Streptomycetaceae.

Non-limiting examples of pathogens of fungal diseases which can be treated in accordance with the invention include:

diseases caused by powdery mildew pathogens, for example Blumeria species, for example Blumeria
10 graminis; Podosphaera species, for example Podosphaera leucotricha; Sphaerotheca species, for example Sphaerotheca fuliginea; Uncinula species, for example Uncinula necator;

diseases caused by rust disease pathogens, for example Gymnosporangium species, for example Gymnosporangium sabinae; Hemileia species, for example Hemileia vastatrix; Phakopsora species, for example Phakopsora pachyrhizi and Phakopsora meibomia; Puccinia species, for example Puccinia
15 recondite, P. tritici, P. graminis or P. striiformis; Uromyces species, for example Uromyces appendiculatus;

diseases caused by pathogens from the group of the Oomycetes, for example Albugo species, for example Albugo candida; Bremia species, for example Bremia lactucae; Peronospora species, for example Peronospora pisi or P. brassicae; Phytophthora species, for example Phytophthora infestans;
20 Plasmopara species, for example Plasmopara viticola; Pseudoperonospora species, for example Pseudoperonospora humuli or Pseudoperonospora cubensis; Pythium species, for example Pythium ultimum;

leaf blotch diseases and leaf wilt diseases caused, for example, by Alternaria species, for example Alternaria solani; Cercospora species, for example Cercospora beticola; Cladosporium species, for example Cladosporium cucumerinum; Cochliobolus species, for example Cochliobolus sativus (conidia form: Drechslera, Syn: Helminthosporium), Cochliobolus miyabeanus; Colletotrichum species, for example Colletotrichum lindemuthianum; Cycloconium species, for example Cycloconium oleaginum; Diaporthe species, for example Diaporthe citri; Elsinoe species, for example Elsinoe fawcettii; Gloeosporium species, for example Gloeosporium laeticolor; Glomerella species, for example
25 Glomerella cingulata; Guignardia species, for example Guignardia bidwelli; Leptosphaeria species, for example Leptosphaeria maculans, Leptosphaeria nodorum; Magnaporthe species, for example Magnaporthe grisea; Microdochium species, for example Microdochium nivale; Mycosphaerella species, for example Mycosphaerella graminicola, M. arachidicola and M. fijiensis; Phaeosphaeria species, for example Phaeosphaeria nodorum; Pyrenophora species, for example Pyrenophora teres,

Pyrenophora tritici repentis; *Ramularia* species, for example *Ramularia collo-cygni*, *Ramularia areola*; *Rhynchosporium* species, for example *Rhynchosporium secalis*; *Septoria* species, for example *Septoria apii*, *Septoria lycopersii*; *Typhula* species, for example *Typhula incarnata*; *Venturia* species, for example *Venturia inaequalis*;

- 5 root and stem diseases caused, for example, by *Corticium* species, for example *Corticium graminearum*; *Fusarium* species, for example *Fusarium oxysporum*; *Gaeumannomyces* species, for example *Gaeumannomyces graminis*; *Rhizoctonia* species, such as, for example *Rhizoctonia solani*; *Sarocladium* diseases caused for example by *Sarocladium oryzae*; *Sclerotium* diseases caused for example by *Sclerotium oryzae*; *Tapesia* species, for example *Tapesia acuformis*; *Thielaviopsis* species, for example
10 *Thielaviopsis basicola*;

- ear and panicle diseases (including corn cobs) caused, for example, by *Alternaria* species, for example *Alternaria* spp.; *Aspergillus* species, for example *Aspergillus flavus*; *Cladosporium* species, for example *Cladosporium cladosporioides*; *Claviceps* species, for example *Claviceps purpurea*; *Fusarium* species, for example *Fusarium culmorum*; *Gibberella* species, for example *Gibberella zeae*; *Monographella*
15 species, for example *Monographella nivalis*; *Septoria* species, for example *Septoria nodorum*;

diseases caused by smut fungi, for example *Sphacelotheca* species, for example *Sphacelotheca reiliana*; *Tilletia* species, for example *Tilletia caries*, *T. controversa*; *Urocystis* species, for example *Urocystis occulta*; *Ustilago* species, for example *Ustilago nuda*, *U. nuda tritici*;

- fruit rot caused, for example, by *Aspergillus* species, for example *Aspergillus flavus*; *Botrytis* species,
20 for example *Botrytis cinerea*; *Penicillium* species, for example *Penicillium expansum* and *P. purpurogenum*; *Sclerotinia* species, for example *Sclerotinia sclerotiorum*; *Verticillium* species, for example *Verticillium alboatrum*;

- seed and soilborne decay, mould, wilt, rot and damping-off diseases caused, for example, by *Alternaria* species, caused for example by *Alternaria brassicicola*; *Aphanomyces* species, caused for example by
25 *Aphanomyces euteiches*; *Ascochyta* species, caused for example by *Ascochyta lentis*; *Aspergillus* species, caused for example by *Aspergillus flavus*; *Cladosporium* species, caused for example by *Cladosporium herbarum*; *Cochliobolus* species, caused for example by *Cochliobolus sativus*; (Conidiaform: *Drechslera*, *Bipolaris* Syn: *Helminthosporium*); *Colletotrichum* species, caused for example by *Colletotrichum coccodes*; *Fusarium* species, caused for example by *Fusarium culmorum*;
30 *Gibberella* species, caused for example by *Gibberella zeae*; *Macrophomina* species, caused for example by *Macrophomina phaseolina*; *Monographella* species, caused for example by *Monographella nivalis*; *Penicillium* species, caused for example by *Penicillium expansum*; *Phoma* species, caused for example by *Phoma lingam*; *Phomopsis* species, caused for example by *Phomopsis sojae*; *Phytophthora* species, caused for example by *Phytophthora cactorum*; *Pyrenophora* species, caused for example by

Pyrenophora graminea; Pyricularia species, caused for example by Pyricularia oryzae; Pythium species, caused for example by Pythium ultimum; Rhizoctonia species, caused for example by Rhizoctonia solani; Rhizopus species, caused for example by Rhizopus oryzae; Sclerotium species, caused for example by Sclerotium rolfsii; Septoria species, caused for example by Septoria nodorum; Typhula species, caused for example by Typhula incarnata; Verticillium species, caused for example by Verticillium dahliae;

cancers, galls and witches' broom caused, for example, by Nectria species, for example Nectria galligena;

wilt diseases caused, for example, by Monilinia species, for example Monilinia laxa;

10 leaf blister or leaf curl diseases caused, for example, by Exobasidium species, for example Exobasidium vexans;

Taphrina species, for example Taphrina deformans;

15 decline diseases of wooden plants caused, for example, by Esca disease, caused for example by Phaemoniella clamydospora, Phaeoacremonium aleophilum and Fomitiporia mediterranea; Eutypa dyebark, caused for example by Eutypa lata; Ganoderma diseases caused for example by Ganoderma boninense; Rigidoporus diseases caused for example by Rigidoporus lignosus;

diseases of flowers and seeds caused, for example, by Botrytis species, for example Botrytis cinerea;

diseases of plant tubers caused, for example, by Rhizoctonia species, for example Rhizoctonia solani; Helminthosporium species, for example Helminthosporium solani;

20 Club root caused, for example, by Plasmodiophora species, for example Plasmodiophora brassicae;

diseases caused by bacterial pathogens, for example Xanthomonas species, for example Xanthomonas campestris pv. oryzae; Pseudomonas species, for example Pseudomonas syringae pv. lachrymans; Erwinia species, for example Erwinia amylovora.

The following diseases of soya beans can be controlled with preference:

25 Fungal diseases on leaves, stems, pods and seeds caused, for example, by Alternaria leaf spot (Alternaria spec. atrans tenuissima), Anthracnose (Colletotrichum gloeosporoides dematium var. truncatum), brown spot (Septoria glycines), cercospora leaf spot and blight (Cercospora kikuchii), choanephora leaf blight (Choanephora infundibulifera trisporea (Syn.)), dactuliophora leaf spot (Dactuliophora glycines), downy mildew (Peronospora manshurica), drechslera blight (Drechslera glycini), frog-eye leaf spot (Cercospora sojae), leptosphaerulina leaf spot (Leptosphaerulina trifolii), phyllosticta leaf spot (Phyllosticta sojaecola), pod and stem blight (Phomopsis sojae), powdery mildew (Microsphaera diffusa),

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pyrenochaeta leaf spot (*Pyrenochaeta glycines*), rhizoctonia aerial, foliage, and web blight (*Rhizoctonia solani*), rust (*Phakopsora pachyrhizi*, *Phakopsora meibomia*), scab (*Sphaceloma glycines*), stemphylium leaf blight (*Stemphylium botryosum*), target spot (*Corynespora cassicola*).

Fungal diseases on roots and the stem base caused, for example, by black root rot (*Calonectria crotalariae*), charcoal rot (*Macrophomina phaseolina*), fusarium blight or wilt, root rot, and pod and collar rot (*Fusarium oxysporum*, *Fusarium orthoceras*, *Fusarium semitectum*, *Fusarium equiseti*), mycoleptodiscus root rot (*Mycoleptodiscus terrestris*), neocosmospora (*Neocosmospora vasinfecta*), pod and stem blight (*Diaporthe phaseolorum*), stem canker (*Diaporthe phaseolorum* var. *caulivora*), phytophthora rot (*Phytophthora megasperma*), brown stem rot (*Phialophora gregata*), pythium rot (*Pythium aphanidermatum*, *Pythium irregulare*, *Pythium debaryanum*, *Pythium myriotylum*, *Pythium ultimum*), rhizoctonia root rot, stem decay, and damping-off (*Rhizoctonia solani*), sclerotinia stem decay (*Sclerotinia sclerotiorum*), sclerotinia southern blight (*Sclerotinia rolfsii*), thielaviopsis root rot (*Thielaviopsis basicola*).

The compounds according to the invention, compositions comprising these compounds are suitable for controlling the following plant diseases:

Albugo spp. (white rust) on ornamental plants, vegetable crops (e.g. *A. candida*) and sunflowers (e.g. *A. tragopogonis*); Alternaria spp. (black spot disease, black blotch) on vegetables, oilseed rape (e.g. *A. brassicola* or *A. brassicae*), sugar beet (e.g. *A. tenuis*), fruit, rice, soybeans and also on potatoes (e.g. *A. solani* or *A. alternata*) and tomatoes (e.g. *A. solani* or *A. alternata*) and Alternaria spp. (black head) on wheat; Aphanomyces spp. on sugar beet and vegetables; Ascochyta spp. on cereals and vegetables, e.g. *A. tritici* (*Ascochyta* leaf blight) on wheat and *A. hordei* on barley; Bipolaris and Drechslera spp. (teleomorph: *Cochliobolus* spp.), e.g. leaf spot diseases (*D. maydis* and *B. zeicola*) on corn, e.g. glume blotch (*B. sorokiniana*) on cereals and e.g. *B. oryzae* on rice and on lawn; Blumeria (old name: Erysiphe) graminis (powdery mildew) on cereals (e.g. wheat or barley); Botryosphaeria spp. ('Slack Dead Arm Disease') on grapevines (e.g. *B. obtusa*); Botrytis cinerea (teleomorph: Botryotinia fuckeliana: gray mold, gray rot) on soft fruit and pomaceous fruit (inter alia strawberries), vegetables (inter alia lettuce, carrots, celeriac and cabbage), oilseed rape, flowers, grapevines, forest crops and wheat (ear mold); Bremia lactucae (downy mildew) on lettuce; Ceratocystis (syn. Ophiostoma) spp. (blue stain fungus) on deciduous trees and coniferous trees, e.g. *C. ulmi* (Dutch elm disease) on elms; Cercospora spp. (Cereospora leaf spot) on corn (e.g. *C. zea-maydis*), rice, sugar beet (e.g. *C. beticola*), sugar cane, vegetables, coffee, soybeans (e.g. *C. sojae* or *C. kikuchii*) and rice; Cladosporium spp. on tomato (e.g. *C. fulvum*: tomato leaf mold) and cereals, e.g. *C. herbarum* (ear rot) on wheat; Claviceps purpurea (ergot) on cereals; Cochliobolus (anamorph: Helminthosporium or Bipolaris) spp. (leaf spot) on corn (e.g. *C. carbonum*), cereals (e.g. *C. sativus*, anamorph: *B. sorokiniana*: glume blotch) and rice (for example *C. miyabeanus*, anamorph: *H. oryzae*); Colletotrichum (teleomorph: Glomerella) spp. (anthracnosis) on cotton (e.g. *C. gossypii*), corn (e.g. *C. graminicola*: stem rot and anthracnosis), soft

fruit, potatoes (e.g. *C. coccodes*: wilt disease), beans (e.g. *C. lindemuthianum*) and soybeans (e.g. *C. truncatum*); *Corticium* spp., e.g. *C. sasakii* (sheath blight) on rice; *Corynespora cassiicola* (leaf spot) on soybeans and ornamental plants; *Cycloconium* spp., e.g. *C. oleaginum* on olives; *Cylindrocarpon* spp. (e.g. fruit tree cancer or black foot disease of grapevine, teleomorph: *Nectria* or *Neonectria* spp.) on fruit

5 trees, grapevines (e.g. *C. liriodendri*; teleomorph: *Neonectria liriodendri*, black foot disease) and many ornamental trees; *Dematophora* (teleomorph: *Rosellinia*) *necatrix* (root/stem rot) on soybeans; *Diaporthe* spp. e.g. *D. phaseolorum* (stem disease) on soybeans; *Drechslera* (syn. *Helminthosporium*, teleomorph: *Pyrenophora*) spp. on corn, cereals, such as barley (e.g. *D. teres*, net blotch) and on wheat (e.g. *D. tritici-repentis*: DTR leaf spot), rice and lawn; Esca disease (dieback of grapevine, apoplexia) on grapevines,

10 caused by *Formitiporia* (syn. *Phellinus*) *punctata*, *F. mediterranea*. *Phaeomoniella chlamydospora* (old name *Phaeoacremonium chlamydosporum*), *Phaeoacremonium aleophilum* and/or *Botryosphaeria obtusa*; *Elsinoe* spp. on pome fruit (*E. pyri*) and soft fruit (*E. veneta*: anthracnosis) and also grapevines (*E. ampelina*: anthracnosis); *Entyloma oryzae* (leaf smut) on rice; *Epicoccum* spp. (black head) on wheat; *Erysiphe* spp. (powdery mildew) on sugar beet (*E. betae*), vegetables (e.g. *E. pisi*), such as

15 cucumber species (e.g. *E. cichoracearum*) and cabbage species, such as oilseed rape (e.g. *E. cruciferarum*); *Eutypa fata* (*Eutypa* cancer or dieback, anamorph: *Cytosporina lata*, syn. *Libertella blepharis*) on fruit trees, grapevines and many ornamental trees; *Exserohilum* (syn. *Helminthosporium*) spp. on corn (e.g. *E. turcicum*); *Fusarium* (teleomorph: *Gibberella*) spp. (wilt disease, root and stem rot) on various plants, such as e.g. *F. graminearum* or *F. culmorum* (root rot and silver-top) on cereals (e.g.

20 wheat or barley), *F. oxysporum* on tomatoes, *F. solani* on soybeans and *F. verticillioides* on corn; *Gaeumannomyces graminis* (takeall) on cereals (e.g. wheat or barley) and corn; *Gibberella* spp. on cereals (e.g. *G. zeae*) and rice (e.g. *G. fujikuroi*: bakanae disease); *Glomerella cingulata* on grapevines, pomaceous fruit and other plants and *G. gossypii* on cotton; grainstaining complex on rice; *Guignardia bidwellii* (black rot) on grapevines; *Gymno-sporangium* spp. on Rosaceae and juniper, e.g. *G. sabinae*

25 (pear rust) on pears; *Helminthosporium* spp. (syn. *Drechslera*, teleomorph: *Cochliobolus*) on corn, cereals and rice; *Hemileia* spp., e.g. *H. vastatrix* (coffee leaf rust) on coffee; *Isariopsis clavispora* (syn. *Cladosporium vitis*) on grapevines; *Macrophomina phaseolina* (syn. *phaseoli*) (root/stem rot) on soybeans and cotton; *Microdochium* (syn. *Fusarium*) *nivale* (pink snow mold) on cereals (e.g. wheat or barley); *Microsphaera diffusa* (powdery mildew) on soybeans; *Monilinia* spp., e.g. *M. laxa*. *M.*

30 *fruticola* and *M. fructigena* (blossom and twig blight) on stone fruit and other Rosaceae; *Mycosphaerella* spp. on cereals, bananas, soft fruit and peanuts, such as e.g. *M. graminicola* (anamorph: *Septoria tritici*, *Septoria* leaf blotch) on wheat or *M. fijiensis* (Sigatoka disease) on bananas; *Peronospora* spp. (downy mildew) on cabbage (e.g. *P. brassicae*), oilseed rape (e.g. *P. parasitica*), bulbous plants (e.g. *P. destructor*), tobacco (*P. tabacina*) and soybeans (e.g. *P. manshurica*); *Phakopsora pachyrhizi* and *P.*

35 *meibomia* (soybean rust) on soybeans; *Phialophora* spp. e.g. on grapevines (e.g. *P. tracheiphila* and *P. tetraspora*) and soybeans (e.g. *P. gregata*: stem disease); *Phoma lingam* (root and stem rot) on oilseed rape and cabbage and *P. betae* (leaf spot) on sugar beet; *Phomopsis* spp. on sunflowers, grapevines (e.g. *P. viticola*: dead-arm disease) and soybeans (e.g. stem canker/stem blight: *P. phaseoli*, teleomorph:

Diaporthe phaseolorum); Physoderma maydis (brown spot) on corn; Phytophthora spp. (wilt disease, root, leaf, stem and fruit rot) on various plants, such as on bell peppers and cucumber species (e.g. *P. capsici*), soybeans (e.g. *P. megasperma*, syn. *P. sojae*), potatoes and tomatoes (e.g. *P. infestans*, late blight and brown rot) and deciduous trees (e.g. *P. ramorum* sudden oak death); Plasmodiophora
 5 brassicae (club-root) on cabbage, oilseed rape, radish and other plants; Plasmopara spp., e.g. *P. viticola* (peronospora of grapevines, downy mildew) on grapevines and *P. halstedii* on sunflowers; Podosphaera spp. (powdery mildew) on Rosaceae, hops, pomaceous fruit and soft fruit, e.g. *P. leucotricha* on apple; Polymyxa spp., e.g. on cereals, such as barley and wheat (*P. graminis*) and sugar beet (*P. betae*) and the viral diseases transmitted thereby; Pseudocercospora herpotrichoides (eyespot/stem break,
 10 teleomorph: Tapesia yallundae) on cereals, e.g. wheat or barley; Pseudoperonospora (downy mildew) on various plants, e.g. *P. cubensis* on cucumber species or *P. humili* on hops; Pseudopeziza tracheiphila (angular leaf scorch, anamorph Phialophora) on grapevines; Puccinia spp. (rust disease) on various plants, e.g. *P. tritici* (brown rust of wheat), *P. striiformis* (yellow rust), *P. hordei* (dwarf leaf rust), *P. graminis* (black rust) or *P. recondita* (brown rust of rye) on cereals, such as e.g. wheat, barley or rye. *P.*
 15 kuehnii on sugar cane and, e.g., on asparagus (e.g. *P. asparagi*); Pyrenophora (anamorph: Drechslera) tritici-repentis (speckled leaf blotch) on wheat or *P. teres* (net blotch) on barley; Pyricularia spp., e.g. *P. oryzae* (teleomorph: Magnaporthe grisea, rice blast) on rice and *P. grisea* on lawn and cereals; Pythium spp. (damping-off disease) on lawn, rice, corn, wheat, cotton, oilseed rape, sunflowers, sugar beet, vegetables and other plants (e.g. *P. ultimum* or *P. aphanidermatum*); Ramularia spp., e.g. *R. collo-*
 20 *cygni* (Ramularia leaf and lawn spot/physiological leaf spot) on barley and *R. beticola* on sugar beet; Rhizoctonia spp. on cotton, rice, potatoes, lawn, corn, oilseed rape, potatoes, sugar beet, vegetables and on various other plants, for example *R. solani* (root and stem rot) on soybeans, *R. solani* (sheath blight) on rice or *R. cerealis* (sharp eyespot) on wheat or barley; Rhizopus stolonifer (soft rot) on strawberries, carrots, cabbage, grapevines and tomato; Rhynchosporium secalis (leaf spot) on barley, rye and triticale;
 25 Sarocladium oryzae and *S. attenuatum* (sheath rot) on rice; Sclerotinia spp. (stem or white rot) on vegetable and field crops, such as oilseed rape, sunflowers (e.g. *Sclerotinia sclerotiorum*) and soybeans (e.g. *S. rolfsii*), • Septoria spp. on various plants, e.g. *S. glycines* (leaf spot) on soybeans, *S. tritici* (Septoria leaf blotch) on wheat and *S.* (syn. Stagonospora) nodorum (leaf blotch and glume blotch) on cereals; Uncinula (syn. Erysiphe) necator (powdery mildew, anamorph: Oidium tuckeri) on grapevines;
 30 Setosphaeria spp. (leaf spot) on corn (e.g. *S. turcicum*, syn. Helminthosporium turcicum) and lawn; Sphacelotheca spp. (head smut) on corn, (e.g. *S. reiliana*: kernel smut), millet and sugar cane; Sphaerotheca fuliginea (powdery mildew) on cucumber species; Spongospora subterranea (powdery scab) on potatoes and the viral diseases transmitted thereby; Stagonospora spp. on cereals, e.g. *S.*
 35 *nodorum* (leaf blotch and glume blotch, teleomorph: Leptosphaeria [syn. Phaeosphaeria] nodorum) on wheat; Synchytrium endobioticum on potatoes (potato wart disease); Taphrina spp., e.g. *T. deformans* (curly-leaf disease) on peach and *T. pruni* (plum-pocket disease) on plums; Thielaviopsis spp. (black root rot) on tobacco, pome fruit, vegetable crops, soybeans and cotton, e.g. *T. basicola* (syn. Chalara elegans); Tilletia spp. (bunt or stinking smut) on cereals, such as e.g. *T. tritici* (syn. *T. caries*, wheat

bunt) and *T. controversa* (dwarf bunt) on wheat; *Typhula incarnata* (gray snow mold) on barley or wheat; *Urocystis* spp., e.g. *U. occulta* (flag smut) on rye; *Uromyces* spp. (rust) on vegetable plants, such as beans (e.g. *U. appendiculatus*, syn. *U. phaseoli*) and sugar beet (e.g. *U. betae*); *Ustilago* spp. (loose smut) on cereals (e.g. *U. nuda* and *U. avenae*), corn (e.g. *U. maydis*: corn smut) and sugar cane; 5 *Venturia* spp. (scab) on apples (e.g. *V. inaequalis*) and pears and *Verticillium* spp. (leaf and shoot wilt) on various plants, such as fruit trees and ornamental trees, grapevines, soft fruit, vegetable and field crops, such as e.g. *V. dahliae* on strawberries, oilseed rape, potatoes and tomatoes. The compounds according to the invention can be used for curative or protective/preventive control of harmful microorganisms. The invention therefore also relates to curative and protective methods for controlling 10 harmful microorganisms by the use of the compounds according to the invention, which are applied to the seed, the plant or plant parts, the fruit or the soil in which the plants grow.

The fact that the compounds according to the invention are well tolerated by plants at the concentrations required for controlling harmful microorganisms allows the treatment of above-ground parts of plants, of propagation stock and seeds, and of the soil.

15 **Plant and Plant Parts**

All plants and plant parts can be treated in accordance with the invention. Here, plants are to be understood to mean all plants and plant parts such as wanted and unwanted wild plants or crop plants (including naturally occurring crop plants), for example cereals (wheat, rice, triticale, barley, rye, oats), maize, soya bean, potato, sugar beet, sugar cane, tomatoes, peas and other vegetable species, cotton, 20 tobacco, oilseed rape, and also fruit plants (with the fruits apples, pears, citrus fruits and grapevines). Crop plants can be plants which can be obtained by conventional breeding and optimization methods or by biotechnological and genetic engineering methods or combinations of these methods, including the transgenic plants and including the plant varieties which can or cannot be protected by varietal property rights. Plant parts should be understood to mean all parts and organs of the plants above and below 25 ground, such as shoot, leaf, flower and root, examples given being leaves, needles, stalks, stems, flowers, fruit bodies, fruits and seeds, and also tubers, roots and rhizomes. Parts of plants also include harvested plants and vegetative and generative propagation material, for example seedlings, tubers, rhizomes, cuttings and seeds.

Treatment according to the invention of the plants and plant parts with the compounds of the formula (I) 30 is carried out directly or by allowing the compounds to act on the surroundings, environment or storage space by the customary treatment methods, for example by immersion, spraying, evaporation, fogging, scattering, painting on, injection and, in the case of propagation material, in particular in the case of seeds, also by applying one or more coats.

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

The compounds to be used in accordance with the invention can preferably be employed in the following plants, the enumeration which follows not being limiting.

Preferred plants are those from the group of the useful plants, ornamentals, turfs, generally used trees which are employed as ornamentals in the public and domestic sectors, and forestry trees. Forestry trees comprise trees for the production of timber, cellulose, paper and products made from parts of the trees.

The term useful plants as used in the present context refers to crop plants which are employed as plants for obtaining foodstuffs, feedstuffs, fuels or for industrial purposes.

The useful plants include, for example, the following types of plants: turf, vines, cereals, for example wheat, barley, rye, oats, triticale, rice, maize and millet/sorghum; beet, for example sugar beet and fodder beet; fruits, for example pome fruit, stone fruit and soft fruit, for example apples, pears, plums, peaches, almonds, cherries and berries, for example strawberries, raspberries, blackberries; legumes, for example beans, lentils, peas and soya beans; oil crops, for example oilseed rape, mustard, poppies, olives, sunflowers, coconuts, castor oil plants, cacao beans and peanuts; cucurbits, for example pumpkin/squash, cucumbers and melons; fibre plants, for example cotton, flax, hemp and jute; citrus fruit, for example oranges, lemons, grapefruit and tangerines; vegetables, for example spinach, lettuce, asparagus, cabbage species, carrots, onions, tomatoes, potatoes and bell peppers; Lauraceae, for example avocado, Cinnamomum, camphor, or also plants such as tobacco, nuts, coffee, aubergine, sugar cane, tea, pepper, grapevines, hops, bananas, latex plants and ornamentals, for example flowers, shrubs, deciduous trees and coniferous trees such as conifers. This enumeration does not constitute a limitation.

Particularly suitable target crops are the plants below: cotton, aubergine, turf, pome fruit, stone fruit, soft fruit, maize, wheat, barley, cucumber, tobacco, vines, rice, cereals, pear, beans, soya beans, oilseed rape, tomato, bell pepper, melons, cabbage, potatoes and apples.

Examples of trees include: *Abies* sp., *Eucalyptus* sp., *Picea* sp., *Pinus* sp., *Aesculus* sp., *Platanus* sp., *Tilia* sp., *Acer* sp., *Tsuga* sp., *Fraxinus* sp., *Sorbus* sp., *Betula* sp., *Crataegus* sp., *Ulmus* sp., *Quercus* sp., *Fagus* sp., *Salix* sp., *Populus* sp.

Preferred trees which may be mentioned are: from the tree species *Aesculus*: *A. hippocastanum*, *A. pariflora*, *A. carnea*; from the tree species *Platanus*: *P. aceriflora*, *P. occidentalis*, *P. racemosa*; from the tree species *Picea*: *P. abies*; from the tree species *Pinus*: *P. radiata*, *P. ponderosa*, *P. contorta*, *P. sylvestre*, *P. elliotii*, *P. monticola*, *P. albicaulis*, *P. resinosa*, *P. palustris*, *P. taeda*, *P. flexilis*, *P. jeffregii*, *P. baksiana*, *P. strobes*; from the tree species *Eucalyptus*: *E. grandis*, *E. globulus*, *E. camadensis*, *E. nitens*, *E. obliqua*, *E. regnans*, *E. pilularis*.

- 10 Particularly preferred trees which may be mentioned are: from the tree species *Pinus*: *P. radiata*, *P. ponderosa*, *P. contorta*, *P. sylvestre*, *P. strobes*; from the tree species *Eucalyptus*: *E. grandis*, *E. globulus*, *E. camadensis*.

Very particularly preferred trees which may be mentioned are: horse chestnut, *Platanaceae*, linden tree, maple tree.

- 15 The present invention can also be applied to any turfgrasses, including cool-season turfgrasses and warm-season turfgrasses. Examples of cool-season turfgrasses are bluegrasses (*Poa spp.*), such as Kentucky bluegrass (*Poa pratensis* L.), rough bluegrass (*Poa trivialis* L.), Canada bluegrass (*Poa compressa* L.), annual bluegrass (*Poa annua* L.), upland bluegrass (*Poa glaucantha* Gaudin), wood bluegrass (*Poa nemoralis* L.) and bulbous bluegrass (*Poa bulbosa* L.); bentgrasses (*Agrostis spp.*) such as creeping bentgrass (*Agrostis palustris* Huds.), colonial bentgrass (*Agrostis tenuis* Sibth.), velvet bentgrass (*Agrostis canina* L.), South German Mixed Bentgrass (*Agrostis spp.* including *Agrostis tenuis* Sibth., *Agrostis canina* L., and *Agrostis palustris* Huds.), and redtop (*Agrostis alba* L.);

- 25 fescues (*Festuca spp.*), such as red fescue (*Festuca rubra* L. *spp. rubra*), creeping fescue (*Festuca rubra* L.), chewings fescue (*Festuca rubra commutata* Gaud.), sheep fescue (*Festuca ovina* L.), hard fescue (*Festuca longifolia* Thuill.), hair fescue (*Festuca capillata* Lam.), tall fescue (*Festuca arundinacea* Schreb.) and meadow fescue (*Festuca elanor* L.);

ryegrasses (*Lolium spp.*), such as annual ryegrass (*Lolium multiflorum* Lam.), perennial ryegrass (*Lolium perenne* L.) and italian ryegrass (*Lolium multiflorum* Lam.);

- 30 and wheatgrasses (*Agropyron spp.*), such as fairway wheatgrass (*Agropyron cristatum* (L.) Gaertn.), crested wheatgrass (*Agropyron desertorum* (Fisch.) Schult.) and western wheatgrass (*Agropyron smithii* Rydb.).

Examples of further cool-season turfgrasses are beachgrass (*Ammophila breviligulata* Fern.), smooth brome grass (*Bromus inermis* Leyss.), cattails such as Timothy (*Phleum pratense* L.), sand cattail

(*Phleum subulatum* L.), orchard grass (*Dactylis glomerata* L.), weeping alkaligrass (*Puccinellia distans* (L.) Parl.) and crested dog's-tail (*Cynosurus cristatus* L.).

Examples of warm-season turfgrasses are Bermuda grass (*Cynodon spp.* L. C. Rich), zoysia grass (*Zoysia spp.* Willd.), St. Augustine grass (*Stenotaphrum secundatum* Walt Kuntze), centipede grass
5 (*Eremochloa ophiuroides* Munro Hack.), carpet grass (*Axonopus affinis* Chase), Bahia grass (*Paspalum notatum* Flugge), Kikuyu grass (*Pennisetum clandestinum* Hochst. ex Chiov.), buffalo grass (*Buchloe dactyloids* (Nutt.) Engelm.), Blue gramma (*Bouteloua gracilis* (H.B.K.) Lag. ex Griffiths), seashore
paspalum (*Paspalum vaginatum* Swartz) and sideoats grama (*Bouteloua curtipendula* (Michx. Torr.). Cool-season turfgrasses are generally preferred for the use in accordance with the invention. Particular
10 preference is given to bluegrass, bentgrass and redtop, fescues and ryegrasses. Bentgrass is especially preferred.

Particularly useful transgenic plants which may be treated according to the invention are plants containing transformation events, or a combination of transformation events, and that are listed for example in the databases for various national or regional regulatory agencies including Event 531/ PV-
15 GHBK04 (cotton, insect control, described in WO 2002/040677), Event 1143-14A (cotton, insect control, not deposited, described in WO 06/128569); Event 1143-51B (cotton, insect control, not deposited, described in WO 06/128570); Event 1445 (cotton, herbicide tolerance, not deposited, described in US-A 2002-120964 or WO 02/034946); Event 17053 (rice, herbicide tolerance, deposited as PTA-9843, described in WO 10/117737); Event 17314 (rice, herbicide tolerance, deposited as PTA-
20 9844, described in WO 10/117735); Event 281-24-236 (cotton, insect control - herbicide tolerance, deposited as PTA-6233, described in WO 05/103266 or US-A 2005-216969); Event 3006-210-23 (cotton, insect control - herbicide tolerance, deposited as PTA-6233, described in US-A 2007-143876 or WO 05/103266); Event 3272 (corn, quality trait, deposited as PTA-9972, described in WO 06/098952 or US-A 2006-230473); Event 33391 (wheat, herbicide tolerance, deposited as PTA-2347, described in
25 WO 2002/027004), Event 40416 (corn, insect control - herbicide tolerance, deposited as ATCC PTA-11508, described in WO 11/075593); Event 43A47 (corn, insect control - herbicide tolerance, deposited as ATCC PTA-11509, described in WO 11/075595); Event 5307 (corn, insect control, deposited as ATCC PTA-9561, described in WO 10/077816); Event ASR-368 (bent grass, herbicide tolerance, deposited as ATCC PTA-4816, described in US-A 2006-162007 or WO 04/053062); Event B16 (corn,
30 herbicide tolerance, not deposited, described in US-A 2003-126634); Event BPS-CV127-9 (soybean, herbicide tolerance, deposited as NCIMB No. 41603, described in WO 10/080829); Event BLR1 (oilseed rape, restoration of male sterility, deposited as NCIMB 41193, described in WO 2005/074671), Event CE43-67B (cotton, insect control, deposited as DSM ACC2724, described in US-A 2009-217423 or WO 06/128573); Event CE44-69D (cotton, insect control, not deposited, described in US-A 2010-
35 0024077); Event CE44-69D (cotton, insect control, not deposited, described in WO 06/128571); Event CE46-02A (cotton, insect control, not deposited, described in WO 06/128572); Event COT102 (cotton,

insect control, not deposited, described in US-A 2006-130175 or WO 04/039986); Event COT202 (cotton, insect control, not deposited, described in US-A 2007-067868 or WO 05/054479); Event COT203 (cotton, insect control, not deposited, described in WO 05/054480);); Event DAS21606-3 / 1606 (soybean, herbicide tolerance, deposited as PTA-11028, described in WO 012/033794), Event
5 DAS40278 (corn, herbicide tolerance, deposited as ATCC PTA-10244, described in WO 11/022469); Event DAS-44406-6 / pDAB8264.44.06.1 (soybean, herbicide tolerance, deposited as PTA-11336, described in WO 2012/075426), Event DAS-14536-7 /pDAB8291.45.36.2 (soybean, herbicide tolerance, deposited as PTA-11335, described in WO 2012/075429), Event DAS-59122-7 (corn, insect control - herbicide tolerance, deposited as ATCC PTA 11384 , described in US-A 2006-070139); Event
10 DAS-59132 (corn, insect control - herbicide tolerance, not deposited, described in WO 09/100188); Event DAS68416 (soybean, herbicide tolerance, deposited as ATCC PTA-10442, described in WO 11/066384 or WO 11/066360); Event DP-098140-6 (corn, herbicide tolerance, deposited as ATCC PTA-8296, described in US-A 2009-137395 or WO 08/112019); Event DP-305423-1 (soybean, quality trait, not deposited, described in US-A 2008-312082 or WO 08/054747); Event DP-32138-1 (corn,
15 hybridization system, deposited as ATCC PTA-9158, described in US-A 2009-0210970 or WO 09/103049); Event DP-356043-5 (soybean, herbicide tolerance, deposited as ATCC PTA-8287, described in US-A 2010-0184079 or WO 08/002872); Event EE-1 (brinjal, insect control, not deposited, described in WO 07/091277); Event FI117 (corn, herbicide tolerance, deposited as ATCC 209031, described in US-A 2006-059581 or WO 98/044140); Event FG72 (soybean, herbicide tolerance, deposited as PTA-11041, described in WO 2011/063413), Event GA21 (corn, herbicide tolerance, deposited as ATCC 209033, described in US-A 2005-086719 or WO 98/044140); Event GG25 (corn, herbicide tolerance, deposited as ATCC 209032, described in US-A 2005-188434 or WO 98/044140); Event GHB119 (cotton, insect control - herbicide tolerance, deposited as ATCC PTA-8398, described in WO 08/151780); Event GHB614 (cotton, herbicide tolerance, deposited as ATCC PTA-6878, described
25 in US-A 2010-050282 or WO 07/017186); Event GJ11 (corn, herbicide tolerance, deposited as ATCC 209030, described in US-A 2005-188434 or WO 98/044140); Event GM RZ13 (sugar beet, virus resistance , deposited as NCIMB-41601, described in WO 10/076212); Event H7-1 (sugar beet, herbicide tolerance, deposited as NCIMB 41158 or NCIMB 41159, described in US-A 2004-172669 or WO 04/074492); Event JOPLIN1 (wheat, disease tolerance, not deposited, described in US-A 2008-064032); Event LL27 (soybean, herbicide tolerance, deposited as NCIMB41658, described in WO 06/108674 or US-A 2008-320616); Event LL55 (soybean, herbicide tolerance, deposited as NCIMB 41660, described in WO 06/108675 or US-A 2008-196127); Event LLcotton25 (cotton, herbicide tolerance, deposited as ATCC PTA-3343, described in WO 03/013224 or US-A 2003-097687); Event LLRICE06 (rice, herbicide tolerance, deposited as ATCC 203353, described in US 6,468,747 or WO
30 00/026345); Event LLRice62 (rice, herbicide tolerance, deposited as ATCC 203352, described in WO 2000/026345), Event LLRICE601 (rice, herbicide tolerance, deposited as ATCC PTA-2600, described in US-A 2008-2289060 or WO 00/026356); Event LY038 (corn, quality trait, deposited as ATCC PTA-5623, described in US-A 2007-028322 or WO 05/061720); Event MIR162 (corn, insect control,

deposited as PTA-8166, described in US-A 2009-300784 or WO 07/142840); Event MIR604 (corn, insect control, not deposited, described in US-A 2008-167456 or WO 05/103301); Event MON15985 (cotton, insect control, deposited as ATCC PTA-2516, described in US-A 2004-250317 or WO 02/100163); Event MON810 (corn, insect control, not deposited, described in US-A 2002-102582);

5 Event MON863 (corn, insect control, deposited as ATCC PTA-2605, described in WO 04/011601 or US-A 2006-095986); Event MON87427 (corn, pollination control, deposited as ATCC PTA-7899, described in WO 11/062904); Event MON87460 (corn, stress tolerance, deposited as ATCC PTA-8910, described in WO 09/111263 or US-A 2011-0138504); Event MON87701 (soybean, insect control, deposited as ATCC PTA-8194, described in US-A 2009-130071 or WO 09/064652); Event MON87705

10 (soybean, quality trait - herbicide tolerance, deposited as ATCC PTA-9241, described in US-A 2010-0080887 or WO 10/037016); Event MON87708 (soybean, herbicide tolerance, deposited as ATCC PTA-9670, described in WO 11/034704); Event MON87712 (soybean, yield, deposited as PTA-10296, described in WO 2012/051199), Event MON87754 (soybean, quality trait, deposited as ATCC PTA-9385, described in WO 10/024976); Event MON87769 (soybean, quality trait, deposited as ATCC PTA-

15 8911, described in US-A 2011-0067141 or WO 09/102873); Event MON88017 (corn, insect control - herbicide tolerance, deposited as ATCC PTA-5582, described in US-A 2008-028482 or WO 05/059103); Event MON88913 (cotton, herbicide tolerance, deposited as ATCC PTA-4854, described in WO 04/072235 or US-A 2006-059590); Event MON88302 (oilseed rape, herbicide tolerance, deposited as PTA-10955, described in WO 2011/153186), Event MON88701 (cotton, herbicide tolerance, deposited as PTA-11754, described in WO 2012/134808), Event MON89034 (corn, insect control, deposited as ATCC PTA-7455, described in WO 07/140256 or US-A 2008-260932); Event MON89788 (soybean, herbicide tolerance, deposited as ATCC PTA-6708, described in US-A 2006-282915 or WO 06/130436); Event MS11 (oilseed rape, pollination control - herbicide tolerance, deposited as ATCC PTA-850 or PTA-2485, described in WO 01/031042); Event MS8 (oilseed rape, pollination control -

25 herbicide tolerance, deposited as ATCC PTA-730, described in WO 01/041558 or US-A 2003-188347); Event NK603 (corn, herbicide tolerance, deposited as ATCC PTA-2478, described in US-A 2007-292854); Event PE-7 (rice, insect control, not deposited, described in WO 08/114282); Event RF3 (oilseed rape, pollination control - herbicide tolerance, deposited as ATCC PTA-730, described in WO 01/041558 or US-A 2003-188347); Event RT73 (oilseed rape, herbicide tolerance, not deposited, described in WO 02/036831 or US-A 2008-070260); Event SYHT0H2 / SYN-000H2-5 (soybean, herbicide tolerance, deposited as PTA-11226, described in WO 2012/082548), Event T227-1 (sugar beet, herbicide tolerance, not deposited, described in WO 02/44407 or US-A 2009-265817); Event T25 (corn, herbicide tolerance, not deposited, described in US-A 2001-029014 or WO 01/051654); Event T304-40 (cotton, insect control - herbicide tolerance, deposited as ATCC PTA-8171, described in US-A

35 2010-077501 or WO 08/122406); Event T342-142 (cotton, insect control, not deposited, described in WO 06/128568); Event TC1507 (corn, insect control - herbicide tolerance, not deposited, described in US-A 2005-039226 or WO 04/099447); Event VIP1034 (corn, insect control - herbicide tolerance, deposited as ATCC PTA-3925., described in WO 03/052073), Event 32316 (corn, insect control-

herbicide tolerance, deposited as PTA-11507, described in WO 11/084632), Event 4114 (corn, insect control-herbicide tolerance, deposited as PTA-11506, described in WO 11/084621), event EE-GM3 / FG72 (soybean, herbicide tolerance, ATCC Accession N° PTA-11041, WO 2011/063413A2), event DAS-68416-4 (soybean, herbicide tolerance, ATCC Accession N° PTA-10442, WO 2011/066360A1),
5 event DAS-68416-4 (soybean, herbicide tolerance, ATCC Accession N° PTA-10442, WO 2011/066384A1), event DP-040416-8 (corn, insect control, ATCC Accession N° PTA-11508, WO 2011/075593A1), event DP-043A47-3 (corn, insect control, ATCC Accession N° PTA-11509, WO 2011/075595A1), event DP-004114-3 (corn, insect control, ATCC Accession N° PTA-11506, WO 2011/084621A1), event DP-032316-8 (corn, insect control, ATCC Accession N° PTA-11507, WO
10 2011/084632A1), event MON-88302-9 (oilseed rape, herbicide tolerance, ATCC Accession N° PTA-10955, WO 2011/153186A1), event DAS-21606-3 (soybean, herbicide tolerance, ATCC Accession No. PTA-11028, WO 2012/033794A2), event MON-87712-4 (soybean, quality trait, ATCC Accession N°. PTA-10296, WO 2012/051199A2), event DAS-44406-6 (soybean, stacked herbicide tolerance, ATCC Accession N°. PTA-11336, WO 2012/075426A1), event DAS-14536-7 (soybean, stacked herbicide
15 tolerance, ATCC Accession N°. PTA-11335, WO 2012/075429A1), event SYN-000H2-5 (soybean, herbicide tolerance, ATCC Accession N°. PTA-11226, WO 2012/082548A2), event DP-061061-7 (oilseed rape, herbicide tolerance, no deposit N° available, WO 2012071039A1), event DP-073496-4 (oilseed rape, herbicide tolerance, no deposit N° available, US2012131692), event 8264.44.06.1 (soybean, stacked herbicide tolerance, Accession N° PTA-11336, WO 2012075426A2), event
20 8291.45.36.2 (soybean, stacked herbicide tolerance, Accession N°. PTA-11335, WO 2012075429A2), event SYHT0H2 (soybean, ATCC Accession N°. PTA-11226, WO 2012/082548A2), event MON88701 (cotton, ATCC Accession N° PTA-11754, WO 2012/134808A1), event KK179-2 (alfalfa, ATCC Accession N° PTA-11833, WO2013003558A1), event pDAB8264.42.32.1 (soybean, stacked herbicide tolerance, ATCC Accession N° PTA-11993, WO 2013010094A1), event MZDT09Y (corn, ATCC
25 Accession N° PTA-13025, WO 2013012775A1), event KK179-2 (alfalfa, ATCC Accession N° PTA-11833, WO2013003558A1), event pDAB8264.42.32.1 (soybean, stacked herbicide tolerance, ATCC Accession N° PTA-1 1993, WO2013010094A1), event MZDT09Y (corn, ATCC Accession N° PTA-13025, WO2013012775A1), event VCO-01981-5 (corn, herbicide tolerance, NCIMB Accession N° 41842, WO2013014241A1), event DAS-81419-2 X DAS-68416-4 (soybean stacked insect resistance
30 and herbicide tolerance, ATCC Accession N° PTA- 10442, WO2013016516A1), event DAS-81419-2 (soybean stacked insect resistance and herbicide tolerance, ATCC Accession N° PTA-12006, WO2013016527A1), event HCEM485 (corn, herbicide tolerance, ATCC Accession N° PTA-12014, WO2013025400A1), event pDAB4468.18.07.1 (cotton, herbicide tolerance, ATCC Accession N° PTA-12456, WO2013112525A2), event pDAB4468.19.10.3 (cotton, herbicide tolerance, ATCC Accession
35 N° PTA-12457, WO2013112527A1).

Crop protection – types of treatment

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

A preferred direct treatment of the plants is foliar application, i.e. the compounds of the formula (I) are applied to the foliage, where treatment frequency and the application rate should be adjusted according to the level of infestation with the harmful microorganism in question.

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

Application Rates and Timing

When using the compounds according to the invention as fungicides, the application rates can be varied within a relatively wide range, depending on the kind of application. The application rate of the compounds according to the invention is

- in the case of treatment of plant parts, for example leaves: from 0.1 to 10 000 g/ha, preferably from 10 to 1000 g/ha, more preferably from 10 to 800 g/ha, even more preferably from 50 to 300 g/ha (in the case of application by watering or dripping, it is even possible to reduce the application rate, especially when inert substrates such as rockwool or perlite are used);
- in the case of seed treatment: from 2 to 200 g per 100 kg of seed, preferably from 3 to 150 g per 100 kg of seed, more preferably from 2.5 to 25 g per 100 kg of seed, even more preferably from 2.5 to 12.5 g per 100 kg of seed;
- in the case of soil treatment: from 0.1 to 10 000 g/ha, preferably from 1 to 5000 g/ha.

These application rates are merely by way of example and are not limiting for the purposes of the invention.

The compounds according to the invention can thus be used to protect plants from attack by the pathogens mentioned for a certain period of time after treatment. The period for which protection is provided extends generally for 1 to 28 days, preferably for 1 to 14 days, more preferably for 1 to 10 days, most preferably for 1 to 7 days, after the treatment of the plants with the active ingredients, or for up to 200 days after a seed treatment.

Mycotoxins

In addition, the inventive treatment can reduce the mycotoxin content in the harvested material and the foods and feeds prepared therefrom. Mycotoxins include particularly, but not exclusively, the following: deoxynivalenol (DON), nivalenol, 15-Ac-DON, 3-Ac-DON, T2- and HT2-toxin, fumonisins, zearalenon, moniliformin, fusarin, diacetoxyscirpenol (DAS), beauvericin, enniatin, fusaroproliferin, fusarenol, ochratoxins, patulin, ergot alkaloids and aflatoxins which can be produced, for example, by the following fungi: *Fusarium* spec., such as *F. acuminatum*, *F. asiaticum*, *F. avenaceum*, *F. crookwellense*, *F. culmorum*, *F. graminearum* (*Gibberella zeae*), *F. equiseti*, *F. fujikuroi*, *F. musarum*, *F. oxysporum*, *F. proliferatum*, *F. poae*, *F. pseudograminearum*, *F. sambucinum*, *F. scirpi*, *F. semitectum*, *F. solani*, *F. sporotrichoides*, *F. langsethiae*, *F. subglutinans*, *F. tricinctum*, *F. verticillioides* etc., and also by *Aspergillus* spec., such as *A. flavus*, *A. parasiticus*, *A. nomius*, *A. ochraceus*, *A. clavatus*, *A. terreus*, *A. versicolor*, *Penicillium* spec., such as *P. verrucosum*, *P. viridicatum*, *P. citrinum*, *P. expansum*, *P. claviforme*, *P. roqueforti*, *Claviceps* spec., such as *C. purpurea*, *C. fusiformis*, *C. paspali*, *C. africana*, *Stachybotrys* spec. and others.

Material Protection

The compounds according to the invention can also be used in the protection of materials, for protection of industrial materials against attack and destruction by unwanted microorganisms, for example fungi, and insects.

In addition, the inventive compounds can be used as antifouling compositions, alone or in combinations with other active ingredients.

Industrial materials in the present context are understood to mean inanimate materials which have been prepared for use in industry. For example, industrial materials which are to be protected by compounds according to the invention from microbial alteration or destruction may be adhesives, glues, paper, wallpaper and board/cardboard, textiles, carpets, leather, wood, fibers and tissues, paints and plastic articles, cooling lubricants and other materials which can be infected with or destroyed by microorganisms. Parts of production plants and buildings, for example cooling-water circuits, cooling

and heating systems and ventilation and air-conditioning units, which may be impaired by the proliferation of microorganisms may also be mentioned within the scope of the materials to be protected. Industrial materials within the scope of the present invention preferably include adhesives, sizes, paper and card, leather, wood, paints, cooling lubricants and heat transfer fluids, more preferably wood.

- 5 The compounds according to the invention may prevent adverse effects, such as rotting, decay, discoloration, decoloration or formation of mould.

In the case of treatment of wood the compounds/compositions according to the invention may also be used against fungal diseases liable to grow on or inside timber. The term "timber" means all types of species of wood, and all types of working of this wood intended for construction, for example solid
10 wood, high density wood, laminated wood, and plywood. The method for treating timber according to the invention mainly consists in contacting one or more compounds according to the invention or a compounds according to the invention; this includes for example direct application, spraying, dipping, injection or any other suitable means.

In addition, the inventive compounds can be used to protect objects which come into contact with
15 saltwater or brackish water, especially hulls, screens, nets, buildings, moorings and signalling systems, from fouling.

The inventive method for controlling unwanted microorganisms can also be employed for protecting storage goods. Storage goods are understood to mean natural substances of vegetable or animal origin or processed products thereof which are of natural origin, and for which long-term protection is desired.
20 Storage goods of vegetable origin, for example plants or plant parts, such as stems, leaves, tubers, seeds, fruits, grains, can be protected freshly harvested or after processing by (pre)drying, moistening, comminuting, grinding, pressing or roasting. Storage goods also include timber, both unprocessed, such as construction timber, electricity poles and barriers, or in the form of finished products, such as furniture. Storage goods of animal origin are, for example, hides, leather, furs and hairs. The
25 compositions according to the invention may prevent adverse effects, such as rotting, decay, discoloration, decoloration or formation of mould.

Microorganisms capable of degrading or altering the industrial materials include, for example, bacteria, fungi, yeasts, algae and slime organisms. The compounds according to the invention preferably act against fungi, especially moulds, wood-discoloring and wood-destroying fungi (Ascomycetes,
30 Basidiomycetes, Deuteromycetes and Zygomycetes), and against slime organisms and algae. Examples include microorganisms of the following genera: *Alternaria*, such as *Alternaria tenuis*; *Aspergillus*, such as *Aspergillus niger*; *Chaetomium*, such as *Chaetomium globosum*; *Coniophora*, such as *Coniophora puetana*; *Lentinus*, such as *Lentinus tigrinus*; *Penicillium*, such as *Penicillium glaucum*; *Polyporus*, such as *Polyporus versicolor*; *Aureobasidium*, such as *Aureobasidium pullulans*; *Sclerophoma*, such as

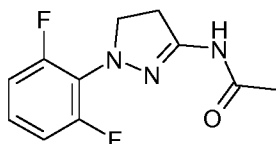
Sclerophoma pityophila; Trichoderma, such as Trichoderma viride; Ophiostoma spp., Ceratocystis spp., Humicola spp., Petriella spp., Trichurus spp., Coriolus spp., Gloeophyllum spp., Pleurotus spp., Poria spp., Serpula spp. and Tyromyces spp., Cladosporium spp., Paecilomyces spp. Mucor spp., Escherichia, such as Escherichia coli; Pseudomonas, such as Pseudomonas aeruginosa; Staphylococcus, such as
5 Staphylococcus aureus, Candida spp. and Saccharomyces spp., such as Saccharomyces cerevisiae.

The Preparation and Use Examples which follow illustrate the invention without limiting it.

Synthesis Example 1

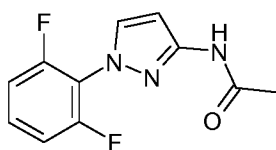
N-[1-(2,6-Difluorophenyl)-1H-pyrazol-3-yl]-3-(trifluoromethyl)pyridine-2-carboxamide (Compound I-1-91 in Table 1)

10 Step 1: *N-[1-(2,6-Difluorophenyl)-4,5-dihydro-1H-pyrazol-3-yl]acetamide*



With ice cooling, 1-(2,6-difluorophenyl)-4,5-dihydro-1H-pyrazole-3-amine (1.40 g as a crude mixture from Synthesis Example 6, Step 1) was dissolved in acetic anhydride (6 ml) and stirred at room temperature overnight. The mixture was then diluted with ethyl acetate, washed with water, dried over
15 sodium sulphate and concentrated to dryness under reduced pressure. The residue was purified by column chromatography on silica gel using the mobile phase cyclohexane/ethyl acetate (gradient = 2 h from 100% cyclohexane to 100% ethyl acetate). This gave 537 mg of the title compound. HPLC-MS: logP = 1.46; mass (m/z): 240.0 (M+H)⁺; ¹H-NMR (DMSO-D₆) 1.99 (s, 3H), 3.26 (t, 2H), 3.65 (t, 2H), 7.04 – 7.10 (m, 2H), 7.11 – 7.18 (m, 1H), 10.59 (br. s, 1H).

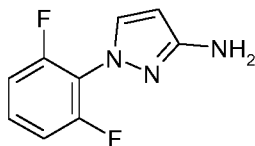
20 Step 2: *N-[1-(2,6-Difluorophenyl)-1H-pyrazol-3-yl]acetamide*



N-[1-(2,6-Difluorophenyl)-4,5-dihydro-1H-pyrazol-3-yl]acetamide (200 mg) was initially charged in 1,4-dioxane (1 ml), 2,3-dichloro-5,6-dicyano-1,4-benzoquinone (209 mg) was added and the mixture was stirred at room temperature for 30 min. The reaction mixture was filtered and the filtrate was
25 concentrated to dryness under reduced pressure. The residue was purified by column chromatography on silica gel using the mobile phase cyclohexane/ethyl acetate (gradient = 2 h from 100% cyclohexane to 100% ethyl acetate). This gave 140 mg of the title compound. HPLC-MS: logP = 1.33; mass (m/z):

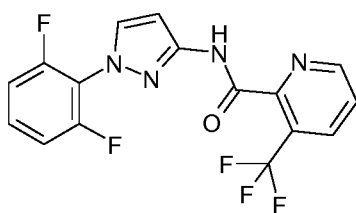
238.0 (M+H)⁺; ¹H-NMR (CD₃CN) 2.07 (s, 3H), 6.84 (d, 1H), 7.14 – 7.20 (m, 2H), 7.47 – 7.53 (m, 1H), 7.65 – 7.66 (m, 1H), 8.76 (br. s, 1H).

Step 3: *1-(2,6-Difluorophenyl)-1H-pyrazole-3-amine (via route D-1)*



- 5 N-[1-(2,6-Difluorophenyl)-1H-pyrazol-3-yl]acetamide (50 mg) was initially charged in water (1 ml), concentrated hydrochloric acid (0.07 ml) was added and the mixture was heated under reflux for 8 h. The reaction mixture was then made alkaline with concentrated aqueous sodium hydroxide solution and extracted with dichloromethane. The organic phase was concentrated to dryness under reduced pressure. This gave 25 mg of the title compound. HPLC-MS: logP = 1.13; mass (m/z): 196.1 (M+H)⁺; ¹H-NMR
10 (CD₃CN) 4.12 (br. s, 2H), 5.83 (d, 1H), 7.09 – 7.16 (m, 2H), 7.37 – 7.44 (m, 1H), 7.46 – 7.47 (m, 1H).

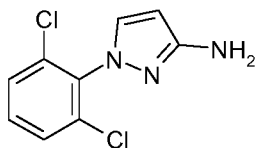
Step 4: *N-[1-(2,6-Difluorophenyl)-1H-pyrazol-3-yl]-3-(trifluoromethyl)pyridine-2-carboxamide*



- 3-(Trifluoromethyl)pyridine-2-carboxylic acid (76 mg) was initially charged in dichloromethane (2 ml), 1-ethyl-3-(3-dimethylaminopropyl)carbodiimide (95 mg) and 1-hydroxy-1H-benzotriazole (67 mg) were
15 added at 0°C and the mixture was stirred for 1 h. A solution of 1-(2,6-difluorophenyl)-1H-pyrazole-3-amine (66 mg) in dichloromethane (1 ml) was then added, and the mixture was stirred at room temperature overnight. The reaction mixture was then diluted with dichloromethane, washed with water, dried over sodium sulphate and concentrated to dryness under reduced pressure. The residue was initially purified by column chromatography on silica gel using the mobile phase cyclohexane/ethyl
20 acetate (gradient = 2 h from 100% cyclohexane to 100% ethyl acetate) and then chromatographed by preparative HPLC using the mobile phase water/acetonitrile (gradient = 40 min from 10% acetonitrile in water to 100% acetonitrile). This gave 55 mg of the title compound. HPLC-MS: logP = 2.22; mass (m/z): 369.0 (M+H)⁺; ¹H-NMR (CD₃CN) 6.98 – 6.99 (m, 1H), 7.17 – 7.21 (m, 2H), 7.48 – 7.55 (m, 1H), 7.66 – 7.73 (m, 1H), 7.76 – 7.77 (m, 1H), 8.08 – 8.10 (m, 1H), 8.80 – 8.82 (m, 1H), 9.30 (br. s, 1H).

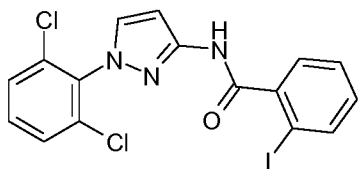
Synthesis Example 2**N-[1-(2,6-Dichlorophenyl)-1H-pyrazol-3-yl]-2-iodobenzamide** (Compound I-1-123 in Table 1)

Step 1: *1-(2,6-Dichlorophenyl)-1H-pyrazole-3-amine* (via route B-1)



- 5 2,6-Dichlorophenylhydrazine (10.0 g) was initially charged in ethanol (65 ml), sodium methoxide solution (3.04 g in 35 ml of ethanol) and 3-ethoxyacrylonitrile (6.82 g) were added, and the mixture was stirred at 80°C for 12 h and at room temperature for 2 d. The reaction mixture was then concentrated under reduced pressure, taken up in ethyl acetate, washed with water, dried over sodium sulphate and concentrated to dryness under reduced pressure. The residue was purified by column chromatography on
10 silica gel using the mobile phase cyclohexane/ethyl acetate (gradient = 2 h from 100% cyclohexane to 100% ethyl acetate). This gave 832 mg of the title compound. HPLC-MS: logP = 1.47; mass (m/z): 228.1 (M+H)⁺; ¹H-NMR (CD₃CN) 4.09 (br. s, 2H), 5.81 (d, 1H), 7.35 – 7.43 (m, 2H), 7.51 – 7.53 (m, 2H).

Step 2: *N-[1-(2,6-Dichlorophenyl)-1H-pyrazol-3-yl]-2-iodobenzamide*

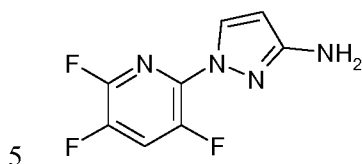


- 15 1-(2,6-Dichlorophenyl)-1H-pyrazole-3-amine (150 mg) was initially charged in dichloromethane (2 ml), triethylamine (0.28 ml) and a solution of 2-iodobenzoyl chloride (175 mg) in dichloromethane (1 ml) were added at 0°C and the mixture was stirred at room temperature overnight. The reaction mixture was then diluted with dichloromethane, washed with water, dried over sodium sulphate and concentrated to
20 dryness under reduced pressure. The residue was purified by column chromatography on silica gel using the mobile phase cyclohexane/ethyl acetate (gradient = 2 h from 100% cyclohexane to 100% ethyl acetate). This gave 150 mg of the title compound. HPLC-MS: logP = 3.04; mass (m/z): 457.9 (M+H)⁺; ¹H-NMR (CD₃CN) 6.99 – 7.00 (m, 1H), 7.18 – 7.23 (m, 1H), 7.46 – 7.52 (m, 3H), 7.56 – 7.58 (m, 2H), 7.66 – 7.67 (m, 1H), 7.94 – 7.96 (m, 1H), 9.16 (br. s, 1H).

Synthesis Example 3

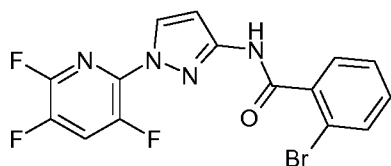
2-Bromo-N-[1-(3,5,6-trifluoropyridin-2-yl)-1H-pyrazol-3-yl]benzamide (Compound I-1-164 in Table 1)

Step 1: *1-(3,5,6-Trifluoropyridin-2-yl)-1H-pyrazole-3-amine* (via route A-1)



1H-Pyrazole-3-amine (2.00 g) was initially charged in acetonitrile (75 ml), 2,3,5,6-tetrafluoropyridine (3.64 g) and potassium carbonate (6.65 g) were added and the mixture was heated under reflux overnight. The reaction mixture was subsequently triturated with tert-butyl methyl ether and filtered. The filtrate was concentrated to dryness under reduced pressure. What remained were 2.51 g of the title compound. HPLC-MS: logP = 1.15; mass (m/z): 215.1 (M+H)⁺; ¹H-NMR (DMSO-D₆) 5.35 (br. s, 2H), 5.86 (d, 1H), 8.00 (d, 1H), 8.40 – 8.45 (m, 1H).

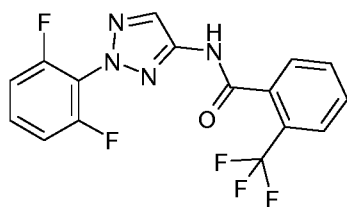
Step 2: *2-Bromo-N-[1-(3,5,6-trifluoropyridin-2-yl)-1H-pyrazol-3-yl]benzamide*



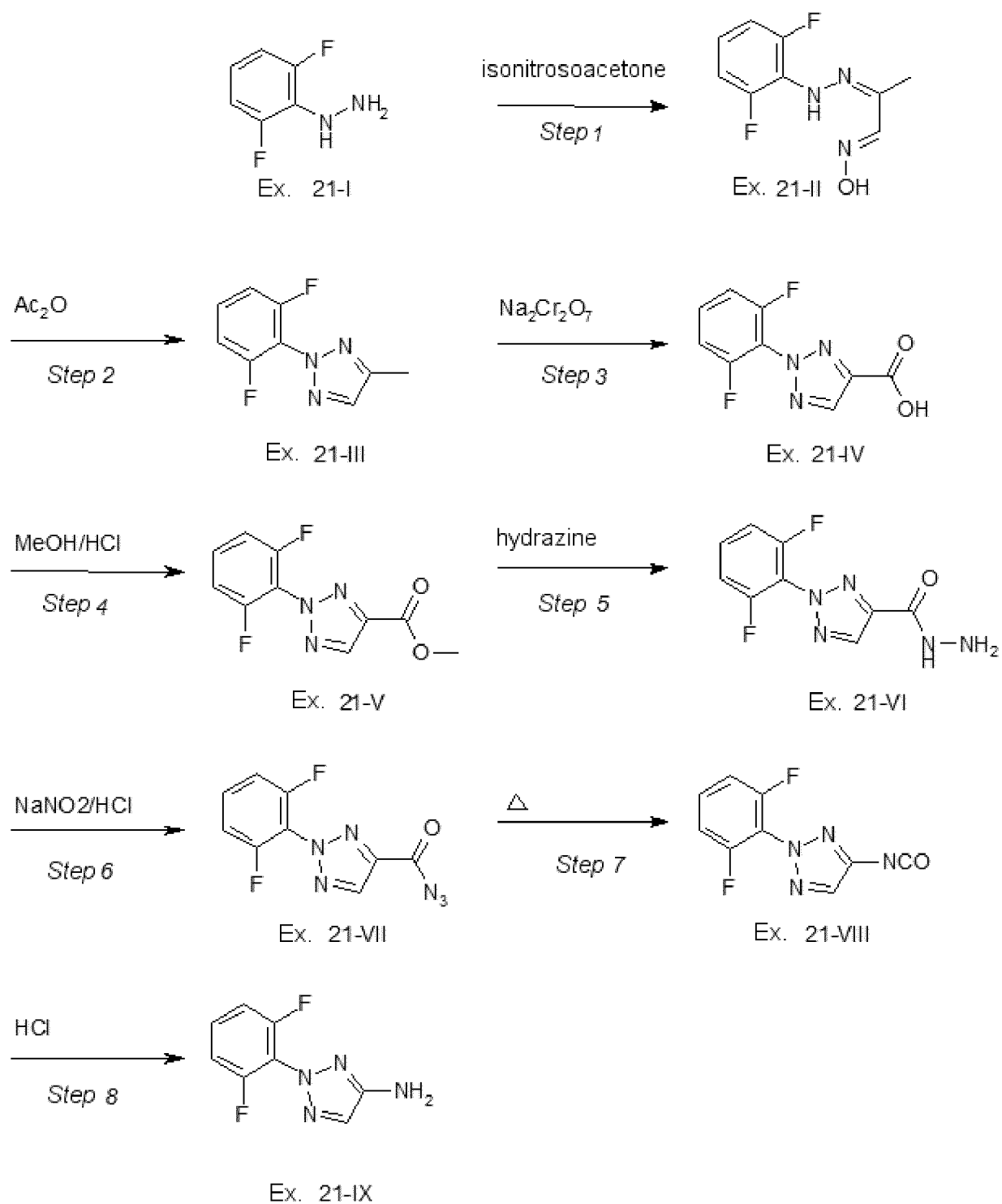
Analogously to Synthesis Example 9 Step 2, 1-(3,5,6-trifluoropyridin-2-yl)-1H-pyrazole-3-amine (150 mg) was reacted with 2-bromobenzoyl chloride (169 mg) and triethylamine (0.29 ml) in dichloromethane. Purification by column chromatography gave 145 mg of the title compound. HPLC-MS: logP = 2.68; mass (m/z): 396.9 (M+H)⁺; ¹H-NMR [DMSO-D₆] 7.02 (d, 1H), 7.38 – 7.43 (m, 1H), 7.45 – 7.49 (m, 1H), 7.53 – 7.55 (m, 1H), 7.68 – 7.70 (m, 1H), 8.32 (d, 1H), 8.55 – 8.61 (m, 1H), 11.41 (s, 1H).

20 Synthesis Example 5

N-[2-(2,6-Difluorophenyl)-2H-1,2,3-triazol-4-yl]-2-(trifluoromethyl)benzamide (Compound I-2-35 in Table 5)



Synthesis scheme for the intermediate 2-(2,6-difluorophenyl)-2H-1,2,3-triazole-4-amine (IX) (via route A-3)



Step 1: 2-[2-(2,6-Difluorophenyl)hydrazinylidene]propanal oxime (Ex. 21-II)

0.1 mol of 2,6-difluorophenylhydrazine (Ex. 21-I) and 0.12 mol of isonitrosoacetone were heated under reflux in ethanol for 3 h. After cooling to room temperature, the precipitated solid was filtered off, washed with ethanol and dried. This gave 75% of theory of the hydrazone oxime (Ex. 21-II).

5 Step 2: 2-(2,6-Difluorophenyl)-4-methyl-2H-1,2,3-triazole (Ex. 21-III)

A solution of 0.1 mol of the hydrazone oxime (Ex. 21-II) in acetic anhydride was heated slowly to 120°C and stirred at this temperature for 2 h. Excess acetic anhydride was removed on a rotary evaporator. The methyltriazole formed (Ex. 21-III) (65% of theory) was processed further without further work-up.

10 Step 3: 2-(2,6-Difluorophenyl)-2H-1,2,3-triazole-4-carboxylic acid (Ex. 21-IV)

A little at a time, 0.2 mol of sodium dichromate was added to a well-stirred solution of 0.1 mol of methyltriazole (Ex. 21-III) in 66% strength sulphuric acid. Each individual portion of dichromate was added only after the yellow-orange colour of the Cr^{6+} in the flask had disappeared. Moreover, the portions were added such that the temperature in the flask remained at about 80-90°C. The mixture was
15 then heated on a steam bath for 1 h. After cooling, the mixture was poured into about the same amount of ice and allowed to stand overnight. The precipitated acid (Ex. 21-IV) was filtered off, washed with water and dried. This gave 50% of theory of the acid (Ex. 21-IV).

Step 4: Methyl 2-(2,6-difluorophenyl)-2H-1,2,3-triazole-4-carboxylate (Ex. 21-V)

Hydrogen chloride was bubbled for 2 h through a boiling solution of the acid (Ex. 21-IV) in methanol.
20 After cooling, white crystals of the ester (Ex. 21-V) were filtered off (85% of theory).

Step 5: 2-(2,6-Difluorophenyl)-2H-1,2,3-triazole-4-carbohydrazide (Ex. 21-VI)

The ester (Ex. 21-V) was boiled with an excess of 1.5 eq. of hydrazine hydrate in ethanol for 4 h. After cooling, the crystals of the hydrazide (Ex. 21-VI) were boiled with water and dried. This gave 90% of theory.

25 Step 6: 2-(2,6-Difluorophenyl)-2H-1,2,3-triazole-4-carbonyl azide (Ex. 21-VII)

An aqueous solution of sodium nitrite was added to a suspension of the hydrazide (Ex. 21-VI) in 20% strength aqueous hydrochloric acid. After further stirring at 10°C, the crystals of the acyl azide (Ex. 21-VII) were filtered off, washed with water and dried at room temperature under reduced pressure. This gave 75% of theory.

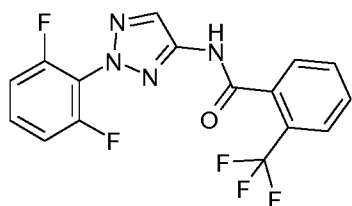
Step 7: 2-(2,6-Difluorophenyl)-2H-1,2,3-triazole-4-carbonyl isocyanate (Ex. 21-VIII)

The dried acyl azide (Ex. 21-VII) was boiled in toluene until the evolution of gas had ended (about 2 h). The toluene was then removed on a rotary evaporator and the viscous residue of the isocyanate (Ex. 21-VIII) was directly reacted further without further purification. This gave about 90% of theory.

5 *Step 8: 2-(2,6-Difluorophenyl)-2H-1,2,3-triazole-4-amine (Ex. 21-IX)*

The isocyanate (Ex. 21-VIII) was hydrolysed by 30 min of boiling in hydrochloric acid. Residual volatile substances were removed on a rotary evaporator, and the residue was treated with sodium carbonate solution. The precipitated crystals were filtered off, washed with water and recrystallized from hexane. This gave 70% of theory of the amine (Ex. 21-IX). HPLC-MS: logP = 1.16; mass (m/z): 197.0 (M+H)⁺; ¹H-NMR (CD₃CN) 5.46 (b, 2H), 7.33 – 7.38 (m, 3H), 7.56 – 7.64 (m, 1H).

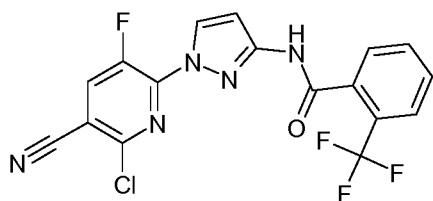
N-[2-(2,6-Difluorophenyl)-2H-1,2,3-triazol-4-yl]-2-(trifluoromethyl)benzamide (Compound I-2-35 in Table 5)



Analogously to Synthesis Example 9 Step 2, 2-(2,6-difluorophenyl)-2H-1,2,3-triazole-4-amine (150 mg) was reacted with 2-(trifluoromethyl)benzoyl chloride (160 mg) and triethylamine (0.21 ml) in 3.9 ml of dichloromethane. Purification by column chromatography and preparative HPLC gave 143 mg of the title compound. HPLC-MS: logP = 2.80; mass (m/z): 369.1 (M+H)⁺; ¹H-NMR (CD₃CN) 7.45 – 7.49 (m, 2H), 7.70 – 7.77 (m, 4H), 7.78 – 7.88 (m, 1H), 8.45 (s, 1H), 11.83 (s, 1H).

Synthesis Example 6:

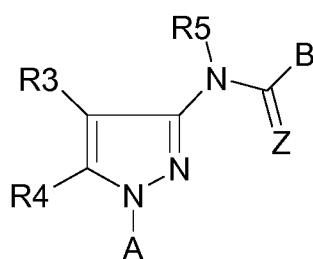
20 **N-[1-(6-Chloro-5-cyano-3-fluoropyridin-2-yl)-1H-pyrazol-3-yl]-2-(trifluoromethyl)benzamide**
(Compound (I-1-606) in Table 1)



Analogously to Synthesis Example 25, Step 2, starting with 2,6-dichloro-5-fluoronicotinonitrile: HPLC-MS: logP = 2.94; mass (m/z): 410.0/411.9 (M+H)⁺; ¹H-NMR (DMSO-D₆) 7.11 (m, 1H), 7.70 (m, 2H), 7.77 (m, 1H), 7.83 (m, 1H), 8.52 (m, 1H), 8.80 (m, 1H), 8.85 (m, 1H), 11.89 (s, 1H).

The compounds for the formulae (I-1), (I-4), (I-2), (I-5) and (I-3) described in Tables 1 to 5 are likewise preferred compounds which are used in experiments showing activity in controlling harmful microorganisms.

Table 1



(I-1)

Compound No.	A	B	R3	R4	R5	Z
I-1-1 Synthesis Example 1	2-methylphenyl	2-bromophenyl	H	H	H	O
I-1-2	2-methoxyphenyl	2-bromophenyl	H	H	H	O
I-1-3	2-methoxyphenyl	2,5-dimethyl-3-furanyl	H	H	H	O
I-1-4	2-(trifluoromethyl)phenyl	2-chlorophenyl	H	H	H	O
I-1-5	2-(trifluoromethyl)phenyl	2-iodophenyl	H	H	H	O
I-1-6	2-(trifluoromethyl)phenyl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-7	2-(trifluoromethyl)phenyl	1-(difluoromethyl)-1H-pyrazol-5-yl	H	H	H	O
I-1-8	2-cyanophenyl	2-chlorophenyl	H	H	H	O
I-1-9	2-cyanophenyl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-10	2-fluorophenyl	2-bromophenyl	H	H	H	O
I-1-11	2-chlorophenyl	2-methylphenyl	H	H	H	O
I-1-12	2-chlorophenyl	2-ethylphenyl	H	H	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-13	2-chlorophenyl	2-difluoromethylphenyl	H	H	H	O
I-1-14	2-chlorophenyl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-15 Synthesis Example 17	2-chlorophenyl	2-(trifluoromethyl)phenyl	Cl	H	H	O
I-1-16 Synthesis Example 18	2-chlorophenyl	2-(trifluoromethyl)phenyl	Br	H	H	O
I-1-17 Synthesis Example 19	2-chlorophenyl	2-(trifluoromethyl)phenyl	I	H	H	O
I-1-18	2-chlorophenyl	2-trifluoromethoxyphenyl	H	H	H	O
I-1-19	2-chlorophenyl	2-fluorophenyl	H	H	H	O
I-1-20 Synthesis Example 14	2-chlorophenyl	2-chlorophenyl	H	H	H	O
I-1-21 Synthesis Example 15	2-chlorophenyl	2-chlorophenyl	H	H	methyl	O
I-1-22	2-chlorophenyl	2-chlorophenyl	H	H	ethyl	O
I-1-23	2-chlorophenyl	2-chlorophenyl	H	H	1-propyn-2-yl	O
I-1-24	2-chlorophenyl	2-chlorophenyl	H	H	cyclopropyl methyl	O
I-1-25	2-chlorophenyl	2-chlorophenyl	H	H	cyanomethyl	O
I-1-26	2-chlorophenyl	2-chlorophenyl	H	H	allyl	O
I-1-27 Synthesis Example 16	2-chlorophenyl	2-chlorophenyl	F	H	H	O
I-1-28	2-chlorophenyl	2-chlorophenyl	Cl	H	H	O
I-1-29	2-chlorophenyl	2-chlorophenyl	Br	H	H	O
I-1-30	2-chlorophenyl	2-chlorophenyl	I	H	H	O
I-1-31	2-chlorophenyl	2-chlorophenyl	H	methyl	H	O
I-1-32	2-chlorophenyl	2-bromophenyl	H	H	H	O
I-1-33	2-chlorophenyl	2-iodophenyl	H	H	H	O
I-1-34	2-chlorophenyl	2-iodophenyl	Cl	H	H	O
I-1-35	2-chlorophenyl	2-iodophenyl	H	methyl	H	O
I-1-36	2-chlorophenyl	2,6-difluorophenyl	H	H	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-37	2-chlorophenyl	2-chloro-6-fluorophenyl	H	H	H	O
I-1-38	2-chlorophenyl	3-methylpyridin-2-yl	H	H	H	O
I-1-39	2-chlorophenyl	3-trifluoromethylpyridin-2-yl	H	H	H	O
I-1-40	2-chlorophenyl	3-chloropyridin-2-yl	H	H	H	O
I-1-41	2-chlorophenyl	2-methylpyridin-3-yl	H	H	H	O
I-1-42	2-chlorophenyl	2-(trifluoromethyl)pyridin-3-yl	H	H	H	O
I-1-43	2-chlorophenyl	2-chloropyridin-3-yl	H	H	H	O
I-1-44	2-chlorophenyl	3-trifluoromethyl-2-pyrazinyl	H	H	H	O
I-1-45	2-chlorophenyl	2,5-dimethyl-3-furanyl	H	H	H	O
I-1-46	2-chlorophenyl	3-methyl-2-thienyl	H	H	H	O
I-1-47	2-chlorophenyl	2-iodo-3-thienyl	H	H	H	O
I-1-48	2-chlorophenyl	5-chloro-1,3-dimethyl-1H-pyrazol-4-yl	H	H	H	O
I-1-49	2-chlorophenyl	3-difluoromethyl-5-fluor-1-methyl-1H-pyrazol-4-yl	H	H	H	O
I-1-50	2-bromophenyl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-51	2-bromophenyl	2-chlorophenyl	H	H	H	O
I-1-52	2-bromophenyl	2-bromophenyl	H	H	H	O
I-1-53	2-bromophenyl	2-iodophenyl	H	H	H	O
I-1-54	2-bromophenyl	3-(trifluoromethyl)pyridine-2-yl	H	H	H	O
I-1-55	2-bromophenyl	3-chloropyridin-2-yl	H	H	H	O
I-1-56	2-bromophenyl	2-(trifluoromethyl)pyridin-3-yl	H	H	H	O
I-1-57	2-bromophenyl	2-chloropyridin-3-yl	H	H	H	O
I-1-58	2-bromophenyl	3-difluoromethyl-5-fluor-1-methyl-1H-pyrazol-4-yl	H	H	H	O
I-1-59	2-bromophenyl	5-fluor-1-methyl-3-trifluoromethyl-1H-pyrazol-4-yl	H	H	H	O
I-1-60	2-bromophenyl	3-methyl-2-thienyl	H	H	H	O
I-1-61 Synthesis Example 2	2,6-dimethylphenyl	2-chlorophenyl	H	H	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-62	2,3-difluorophenyl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-63 Synthesis Example 3	2,3-difluorophenyl	2-bromophenyl	H	H	H	O
I-1-64	2,4-difluorophenyl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-65	2,5-difluorophenyl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-66	2,5-difluorophenyl	2-chlorophenyl	H	H	H	O
I-1-67	2,5-difluorophenyl	2-iodophenyl	H	H	H	O
I-1-68	2,5-difluorophenyl	3-(trifluoromethyl)pyridin-2-yl	H	H	H	O
I-1-69	2,5-difluorophenyl	2-methylpyridin-3-yl	H	H	H	O
I-1-70	2,5-difluorophenyl	2-(trifluoromethyl)pyridin-3-yl	H	H	H	O
I-1-71	2,5-difluorophenyl	3-methyl-2-thienyl	H	H	H	O
I-1-72 Synthesis Example 4	2,5-difluorophenyl	5-fluor-1-methyl-3-trifluoromethyl-1H-pyrazol-4-yl	H	H	H	O
I-1-73	2,6-difluorophenyl	2-methylphenyl	H	H	H	O
I-1-74	2,6-difluorophenyl	2-difluoromethylphenyl	H	H	H	O
I-1-75	2,6-difluorophenyl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-76	2,6-difluorophenyl	2-(trifluoromethyl)phenyl	F	H	H	O
I-1-77	2,6-difluorophenyl	2-(trifluoromethyl)phenyl	H	H	H	S
I-1-78	2,6-difluorophenyl	2-ethylphenyl	H	H	H	O
I-1-79	2,6-difluorophenyl	2-trifluoromethoxyphenyl	H	H	H	O
I-1-80	2,6-difluorophenyl	2-(methylsulphonyl)phenyl	H	H	H	O
I-1-81	2,6-difluorophenyl	2-chlorophenyl	H	H	H	O
I-1-82	2,6-difluorophenyl	2-bromophenyl	H	H	H	O
I-1-83	2,6-difluorophenyl	2-iodophenyl	H	H	H	O
I-1-84	2,6-difluorophenyl	2,6-difluorophenyl	H	H	H	O
I-1-85	2,6-difluorophenyl	2-chloro-6-fluorophenyl	H	H	H	O
I-1-86	2,6-difluorophenyl	2-nitrophenyl	H	H	H	O
I-1-87	2,6-difluorophenyl	2-hydroxyphenyl	H	H	H	O
I-1-88	2,6-difluorophenyl	2-[(trifluoromethyl)sulphan-yl]phenyl	H	H	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-89	2,6-difluorophenyl	2-(1H-1,2,4-triazol-1-yl)phenyl	H	H	H	O
I-1-90	2,6-difluorophenyl	3-methylpyridin-2-yl	H	H	H	O
I-1-91 Synthesis Example 7	2,6-difluorophenyl	3-(trifluoromethyl)pyridin-2-yl	H	H	H	O
I-1-92	2,6-difluorophenyl	3-chloropyridin-2-yl	H	H	H	O
I-1-93	2,6-difluorophenyl	2-(trifluoromethyl)pyridin-3-yl	H	H	H	O
I-1-94	2,6-difluorophenyl	4-(trifluoromethyl)pyridin-3-yl	H	H	H	O
I-1-95	2,6-difluorophenyl	2-chloropyridin-3-yl	H	H	H	O
I-1-96	2,6-difluorophenyl	2-bromopyridin-3-yl	H	H	H	O
I-1-97	2,6-difluorophenyl	3-(trifluoromethyl)pyridine-4-yl	H	H	H	O
I-1-98	2,6-difluorophenyl	3-ethylpyridazin-4-yl	H	H	H	O
I-1-99	2,6-difluorophenyl	3-(trifluoromethyl)pyrazin-2-yl	H	H	H	O
I-1-100	2,6-difluorophenyl	3-chloropyrazin-2-yl	H	H	H	O
I-1-101	2,6-difluorophenyl	2-methyl-5,6-dihydro-1,4-oxathiin-3-yl	H	H	H	O
I-1-102	2,6-difluorophenyl	2-(trifluoromethyl)-5,6-dihydro-1,4-oxathiin-3-yl	H	H	H	O
I-1-103	2,6-difluorophenyl	3-methyl-2-thienyl	H	H	H	O
I-1-104	2,6-difluorophenyl	3-iodo-2-thienyl	H	H	H	O
I-1-105	2,6-difluorophenyl	2-iodo-3-thienyl	H	H	H	O
I-1-106	2,6-difluorophenyl	5-(difluoromethyl)-3-methyl-1,2-oxazol-4-yl	H	H	H	O
I-1-107	2,6-difluorophenyl	1,3-dimethyl-1H-pyrazol-4-yl	H	H	H	O
I-1-108	2,6-difluorophenyl	3-iodo-1-methyl-1H-pyrazol-4-yl	H	H	H	O
I-1-109	2,6-difluorophenyl	1,3,5-trimethyl-1H-pyrazol-4-yl	H	H	H	O
I-1-110	2,6-difluorophenyl	1,3-dimethyl-5-fluor-1H-pyrazol-4-yl	H	H	H	O
I-1-111	2,6-difluorophenyl	1-(difluoromethyl)-1H-pyrazol-5-yl	H	H	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-112	2,6-difluorophenyl	5-fluoro-1-methyl-3-(trifluormethyl)-1H-pyrazol-4-yl	H	H	H	O
I-1-113	2,6-difluorophenyl	2,4-dimethyl-1,3-thiazol-5-yl	H	H	H	O
I-1-114	2,6-difluorophenyl	2-methyl-4-trifluormethyl-1,3-thiazol-5-yl	H	H	H	O
I-1-115	2,6-difluorophenyl	3,4-dichloro-1,2-thiazol-5-yl	H	H	H	O
I-1-116	2,6-difluorophenyl	4-methyl-1,2,5-oxadiazol-3-yl	H	H	H	O
I-1-117 Synthesis Example 5	2-ethoxy-6-fluorophenyl	2-chlorophenyl	H	H	H	O
I-1-118	2,5-dichlorophenyl	2-chlorophenyl	H	H	H	O
I-1-119	2,5-dichlorophenyl	2-bromophenyl	H	H	H	O
I-1-120	2,6-dichlorophenyl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-121	2,6-dichlorophenyl	2-chlorophenyl	H	H	H	O
I-1-122	2,6-dichlorophenyl	2-bromophenyl	H	H	H	O
I-1-123 Synthesis Example 8	2,6-dichlorophenyl	2-iodophenyl	H	H	H	O
I-1-124	2,6-dichlorophenyl	2-(trifluoromethyl)pyridin-3-yl	H	H	H	O
I-1-125	2-nitrophenyl	2-chlorophenyl	H	H	H	O
I-1-126	2-(methylsulphonyl)phenyl	2-chlorophenyl	H	H	H	O
I-1-127	2-pyridyl	2-bromophenyl	H	H	H	O
I-1-128	3-fluoropyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-129	3-fluoropyridin-2-yl	2-chlorophenyl	H	H	H	O
I-1-130	3-fluoropyridin-2-yl	2-bromophenyl	H	H	H	O
I-1-131	3-fluoropyridin-2-yl	2-iodophenyl	H	H	H	O
I-1-132	3-fluoropyridin-2-yl	2,6-difluorophenyl	H	H	H	O
I-1-133	3-fluoropyridin-2-yl	2-(trifluoromethyl)pyridin-3-yl	H	H	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-134	3-fluoropyridin-2-yl	2-(trifluoromethyl)pyridin-3-yl	H	H	2-(trifluoromethyl)-pyridin-3-ylcarbonyl	O
I-1-135	3-chloropyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-136	3-chloropyridin-2-yl	2-chlorophenyl	H	H	H	O
I-1-137	3-chloropyridin-2-yl	2-bromophenyl	H	H	H	O
I-1-138	3-chloropyridin-2-yl	2-iodophenyl	H	H	H	O
I-1-139 Synthesis Example 11	2-chloropyridin-3-yl	2-iodophenyl	H	H	H	O
I-1-140	3,5-difluoropyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-141	3,5-difluoropyridin-2-yl	2-(trifluoromethyl)phenyl	I	H	H	O
I-1-142	3,5-difluoropyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	Acetyl	O
I-1-143	3,5-difluoropyridin-2-yl	2-chlorophenyl	H	H	H	O
I-1-144	3,5-difluoropyridin-2-yl	2-bromophenyl	H	H	H	O
I-1-145	3,5-difluoropyridin-2-yl	2-iodophenyl	H	H	H	O
I-1-146 Synthesis Example 9	3,5-difluoropyridin-2-yl	2,6-difluorophenyl	H	H	H	O
I-1-147	3,5-difluoropyridin-2-yl	2-nitrophenyl	H	H	H	O
I-1-148	3,5-difluoropyridin-2-yl	2-hydroxyphenyl	H	H	H	O
I-1-149	3,5-difluoropyridin-2-yl	2-[(trifluoromethyl)sulphan-yl]phenyl	H	H	H	O
I-1-150	3,5-difluoropyridin-2-yl	2-(1H-1,2,4-triazol-1-yl)phenyl	H	H	H	O
I-1-151	3,5-difluoropyridin-2-yl	2-(trifluoromethyl)pyridin-3-yl	H	H	H	O
I-1-152	3,5-difluoropyridin-2-yl	2-chloropyridin-3-yl	H	H	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-153	3,5-difluoropyridin-2-yl	3-(trifluoromethyl)pyridin-4-yl	H	H	H	O
I-1-154	3,5-difluoropyridin-2-yl	4-(trifluoromethyl)pyrimidin-5-yl	H	H	H	O
I-1-155	3,5-difluoropyridin-2-yl	2-(trifluoromethyl)-5,6-dihydro-1,4-oxathiin-3-yl	H	H	H	O
I-1-156	3,5-difluoropyridin-2-yl	1-methyl-4-(trifluoromethyl)-1H-pyrrol-3-yl	H	H	H	O
I-1-157	3,5-difluoropyridin-2-yl	5-(difluoromethyl)-3-methyl-1,2-oxazol-4-yl	H	H	H	O
I-1-158	3,5-difluoropyridin-2-yl	5-fluoro-1-methyl-3-(trifluoromethyl)-1H-pyrazol-4-yl	H	H	H	O
I-1-159	3,5-difluoropyridin-2-yl	3,4-dichloro-1,2-thiazol-5-yl	H	H	H	O
I-1-160	3,5-difluoropyridin-2-yl	4-methyl-1,2,3-thiadiazol-5-yl	H	H	H	O
I-1-161	2,5-difluoropyridin-3-yl	2-iodophenyl	H	H	H	O
I-1-162	3,5,6-trifluoropyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-163	3,5,6-trifluoropyridin-2-yl	2-chlorophenyl	H	H	H	O
I-1-164 Synthesis Example 10	3,5,6-trifluoropyridin-2-yl	2-bromophenyl	H	H	H	O
I-1-165	3,5,6-trifluoropyridin-2-yl	2-iodophenyl	H	H	H	O
I-1-166	3,5,6-trifluoropyridin-2-yl	2,6-difluorophenyl	H	H	H	O
I-1-167	3,5,6-trifluoropyridin-2-yl	3-(trifluoromethyl)pyridin-2-yl	H	H	H	O
I-1-168	2-pyrimidinyl	2-bromophenyl	H	H	H	O
I-1-169 Synthesis Example 12	5,6-difluoropyrimidin-4-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-170	5,6-difluoropyrimidin-4-yl	2-bromophenyl	H	H	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-171	5,6-difluoropyrimidin-4-yl	2,6-difluorophenyl	H	H	H	O
I-1-172	3-pyridazinyl	2-chlorophenyl	H	H	H	O
I-1-173	3-fluoropyrazin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-174 Synthesis Example 13	3-fluoropyrazin-2-yl	2-chlorophenyl	H	H	H	O
I-1-175	3-fluoropyrazin-2-yl	2-bromophenyl	H	H	H	O
I-1-176	3-fluoropyrazin-2-yl	2-iodophenyl	H	H	H	O
I-1-177	3-fluoropyrazin-2-yl	2,6-difluorophenyl	H	H	H	O
I-1-178	3-fluoropyrazin-2-yl	3-(trifluoromethyl)pyridin-2-yl	H	H	H	O
I-1-179	2-(methylsulphonyl)phenyl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-180	2-(methylsulphonyl)phenyl	2-(trifluoromethyl)pyridin-3-yl	H	H	H	O
I-1-181	2-(methylsulphonyl)phenyl	2,6-difluorophenyl	H	H	H	O
I-1-182	2-(methylsulphonyl)phenyl	2-bromophenyl	H	H	H	O
I-1-183	3-chloro-5-fluoropyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-184	2-(methylsulphonyl)phenyl	2-iodophenyl	H	H	H	O
I-1-185	2-(trifluoromethyl)phenyl	1,3,5-trimethyl-1H-pyrazol-4-yl	H	H	H	O
I-1-186	2-(trifluoromethyl)phenyl	2-bromophenyl	H	H	H	O
I-1-187	2,3-dichlorophenyl	2-bromophenyl	H	H	H	O
I-1-188	2,3-dichlorophenyl	2-chlorophenyl	H	H	H	O
I-1-189	2,3-difluorophenyl	2-chlorophenyl	H	H	H	O
I-1-190	2,3-difluorophenyl	2-iodophenyl	H	H	H	O
I-1-191	2,4,5-trifluorophenyl	2-(trifluoromethyl)phenyl	H	H	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-192	2,4,5-trifluorophenyl	2-(trifluoromethyl)pyridin-3-yl	H	H	H	O
I-1-193	2,4,5-trifluorophenyl	2,6-difluorophenyl	H	H	H	O
I-1-194	2,4,5-trifluorophenyl	2-bromophenyl	H	H	H	O
I-1-195	2,4,5-trifluorophenyl	2-chlorophenyl	H	H	H	O
I-1-196	2,4,5-trifluorophenyl	2-iodophenyl	H	H	H	O
I-1-197	2,4-dichlorophenyl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-198	2,4-dichlorophenyl	2,6-difluorophenyl	H	H	H	O
I-1-199	2,4-dichlorophenyl	2-bromophenyl	H	H	H	O
I-1-200	2,4-dichlorophenyl	2-chlorophenyl	H	H	H	O
I-1-201	2,4-difluorophenyl	2-(trifluoromethyl)phenyl	H	ethyl	H	O
I-1-202	2,4-difluorophenyl	2-(trifluoromethyl)phenyl	H	methyl	H	O
I-1-203	2,4-difluorophenyl	2-(trifluoromethyl)pyridin-3-yl	H	methyl	H	O
I-1-204	2,4-difluorophenyl	2-(trifluoromethyl)pyridin-3-yl	H	ethyl	H	O
I-1-205	2,4-difluorophenyl	2,4-difluorophenyl	H	H	H	O
I-1-206	2,4-difluorophenyl	2,6-difluorophenyl	H	methyl	H	O
I-1-207	2,4-difluorophenyl	2,6-difluorophenyl	H	ethyl	H	O
I-1-208	2,4-difluorophenyl	2-bromophenyl	H	methyl	H	O
I-1-209	2,4-difluorophenyl	2-bromophenyl	H	H	H	O
I-1-210	2,4-difluorophenyl	2-bromopyridin-3-yl	H	methyl	H	O
I-1-211	2,4-difluorophenyl	2-chlorophenyl	H	H	H	O
I-1-212	2,4-difluorophenyl	2-chlorophenyl	H	methyl	H	O
I-1-213	2,4-difluorophenyl	2-chlorophenyl	H	ethyl	H	O
I-1-214	2,4-difluorophenyl	2-iodophenyl	H	methyl	H	O
I-1-215	2,4-difluorophenyl	2-iodophenyl	H	ethyl	H	O
I-1-216	2,4-difluorophenyl	3-methyl-2-thienyl	H	ethyl	H	O
I-1-217	2,5-difluoro-4-methylpyridin-3-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-218	2,5-difluorophenyl	2-chloropyridin-3-yl	H	H	H	O
I-1-219	2,5-difluorophenyl	2-iodo-3-thienyl	H	H	H	O
I-1-220	2,5-difluorophenyl	3-chloropyridin-2-yl	H	H	H	O
I-1-221	2,5-difluorophenyl	3-iodo-2-thienyl	H	H	H	O
I-1-222	2,5-difluorophenyl	3-iodofuran-2-yl	H	H	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-223	2,5-difluorophenyl	5-fluoro-1-methyl-3-(difluormethyl)-1H-pyrazol-4-yl	H	H	H	O
I-1-224	2,5-difluoropyridin-3-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-225	2,5-difluoropyridin-3-yl	2-chlorophenyl	H	H	H	O
I-1-226	2,6-dichlorophenyl	2-(trifluoromethoxy)pyridin-3-yl	H	H	H	O
I-1-227 Synthesis Example 41	2,6-difluoro-4-aminophenyl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-228 Synthesis Example 28	2,6-difluoro-4-cyanophenyl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-229 Synthesis Example 26	2,6-difluoro-4-nitrophenyl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-230 Synthesis Example 27	2,6-difluoro-4-(trifluormethyl)phenyl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-231	2,6-difluorophenyl	1-(difluoromethyl)-4-fluor-3-methyl-1H-pyrazol-5-yl	H	H	H	O
I-1-232	2,6-difluorophenyl	1,3-dimethyl-1H-pyrazol-5-yl	H	H	H	O
I-1-233	2,6-difluorophenyl	1,3-dimethyl-4-nitro-1H-pyrazol-5-yl	H	H	H	O
I-1-234	2,6-difluorophenyl	1,5-dimethyl-4-nitro-1H-pyrazol-3-yl	H	H	H	O
I-1-235	2,6-difluorophenyl	1-ethyl-4-iodo-1H-pyrazol-5-yl	H	H	H	O
I-1-236	2,6-difluorophenyl	1-methyl-1H-1,2,4-triazol-5-yl	H	H	H	O
I-1-237	2,6-difluorophenyl	1-methyl-3-(pentafluorethyl)-4-(trifluormethyl)-1H-pyrazol-5-yl	H	H	H	O
I-1-238	2,6-difluorophenyl	1-methyl-3,5-bis(trifluormethyl)-1H-pyrazol-4-yl	H	H	H	O
I-1-239	2,6-difluorophenyl	1-methyl-3-nitro-1H-pyrrol-2-yl	H	H	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-240	2,6-difluorophenyl	1-methyl-4-(trifluormethyl)-1H-pyrrol-3-yl	H	H	H	O
I-1-241	2,6-difluorophenyl	1-methyl-4-nitro-1H-pyrazol-3-yl	H	H	H	O
I-1-242	2,6-difluorophenyl	1-methyl-5-nitro-1H-imidazol-4-yl	H	H	H	O
I-1-243	2,6-difluorophenyl	1-oxido-2-(trifluormethyl)pyridin-3-yl	H	H	H	O
I-1-244	2,6-difluorophenyl	1-sec-butyl-4-chloro-1H-pyrazol-5-yl	H	H	H	O
I-1-245	2,6-difluorophenyl	1-sec-butyl-4-iodo-1H-pyrazol-5-yl	H	H	H	O
I-1-246	2,6-difluorophenyl	2-(2,2,2-trifluoroethyl)pyridin-3-yl	H	H	H	O
I-1-247	2,6-difluorophenyl	2-(difluoromethoxy)phenyl	H	H	H	O
I-1-248	2,6-difluorophenyl	2-(difluoromethyl)pyridin-3-yl	H	H	H	O
I-1-249	2,6-difluorophenyl	2-(methylsulphanyl)pyridin-3-yl	H	H	H	O
I-1-250	2,6-difluorophenyl	2-(trifluoromethoxy)pyridin-3-yl	H	H	H	O
I-1-251	2,6-difluorophenyl	2-(trifluoromethyl)phenyl	Cl	H	H	O
I-1-252	2,6-difluorophenyl	2-(trifluoromethyl)phenyl	Br	H	H	O
I-1-253	2,6-difluorophenyl	2-(trifluoromethyl)phenyl	H	H	methyl	O
I-1-254	2,6-difluorophenyl	2-(trifluoromethyl)phenyl	H	H	ethyl	O
I-1-255	2,6-difluorophenyl	2-(trifluoromethyl)phenyl	H	H	allyl	O
I-1-256	2,6-difluorophenyl	2-(trifluoromethyl)phenyl	H	H	1-propyn-2-yl	O
I-1-257	2,6-difluorophenyl	2-(trifluoromethyl)phenyl	I	H	H	O
I-1-258	2,6-difluorophenyl	2-(trifluoromethyl)phenyl	H	H	cyclopropylmethyl	O
I-1-259	2,6-difluorophenyl	2-(trifluoromethyl)phenyl	H	H	cyanomethyl	O
I-1-260	2,6-difluorophenyl	2-(trifluoromethyl)phenyl	H	H	2-propyl	O
I-1-261	2,6-difluorophenyl	2-(trifluoromethyl)phenyl	H	H	1-propyl	O

Compound No.	A	B	R3	R4	R5	Z
I-1-262	2,6-difluorophenyl	2-(trifluoromethyl)phenyl	H	H	ethoxymethyl	O
I-1-263	2,6-difluorophenyl	2-(trifluoromethyl)phenyl	H	H	but-2-yn-1-yl	O
I-1-264	2,6-difluorophenyl	2-(trifluoromethyl)phenyl	H	H	2,2-difluoroethyl	O
I-1-265	2,6-difluorophenyl	2-(trifluoromethyl)phenyl	H	H	2,2,2-trifluoroethyl	O
I-1-266	2,6-difluorophenyl	2,3-dichlorophenyl	H	H	H	O
I-1-267	2,6-difluorophenyl	2,6-dichlorophenyl	H	H	H	O
I-1-268	2,6-difluorophenyl	2,6-dimethylphenyl	H	H	H	O
I-1-269	2,6-difluorophenyl	2-acetamidophenyl	H	H	H	O
I-1-270	2,6-difluorophenyl	2-acetylphenyl	H	H	H	O
I-1-271	2,6-difluorophenyl	2-chloro-6-methoxyphenyl	H	H	H	O
I-1-272	2,6-difluorophenyl	2-cyanophenyl	H	H	H	O
I-1-273	2,6-difluorophenyl	2-cyclopropylphenyl	H	H	H	O
I-1-274	2,6-difluorophenyl	2-ethyl-6-fluorophenyl	H	H	H	O
I-1-275	2,6-difluorophenyl	2-ethylpyridin-3-yl	H	H	H	O
I-1-276	2,6-difluorophenyl	2-fluoro-6-(trifluoromethyl)phenyl	H	H	H	O
I-1-277	2,6-difluorophenyl	2-fluoro-6-iodophenyl	H	H	H	O
I-1-278	2,6-difluorophenyl	2-fluorophenyl	H	H	H	O
I-1-279	2,6-difluorophenyl	2-fluoropyridin-3-yl	H	H	H	O
I-1-280	2,6-difluorophenyl	2-methoxyphenyl	H	H	H	O
I-1-281	2,6-difluorophenyl	2-methyl-3-furanyl	H	H	H	O
I-1-282	2,6-difluorophenyl	3-(difluoromethyl)-2-thienyl	H	H	H	O
I-1-283	2,6-difluorophenyl	3-(difluoromethyl)-5-fluor-1-methylpyrazol-4-yl	H	H	H	O
I-1-284	2,6-difluorophenyl	3-(trifluoromethyl)-2-thienyl	H	H	H	O
I-1-285	2,6-difluorophenyl	3-ethylpyrazin-2-yl	H	H	H	O
I-1-286	3-chloro-5-fluoropyridin-2-yl	2,6-difluorophenyl	H	H	H	O
I-1-287	2,6-difluorophenyl	3-fluoro-2-(trifluoromethyl)phenyl	H	H	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-288	2,6-difluorophenyl	3-iodo-2-furanyl	H	H	H	O
I-1-289	2,6-difluorophenyl	3-isobutyl-1-methyl-4-nitro-1H-pyrazol-5-yl	H	H	H	O
I-1-290	2,6-difluorophenyl	3-isopropyl-1-methyl-4-nitro-1H-pyrazol-5-yl	H	H	H	O
I-1-291	2,6-difluorophenyl	3-methyl-5-(trifluormethyl)-1,2-oxazol-4-yl	H	H	H	O
I-1-292	2,6-difluorophenyl	3-tert-butyl-1-methyl-4-nitro-1H-pyrazol-5-yl	H	H	H	O
I-1-293	2,6-difluorophenyl	3-tert-butyl-4-chloro-1-methyl-1H-pyrazol-5-yl	H	H	H	O
I-1-294	2,6-difluorophenyl	4-(difluoromethyl)-1,3-dimethyl-1H-pyrazol-5-yl	H	H	H	O
I-1-295	2,6-difluorophenyl	4-(trifluoromethyl)pyrimidin-5-yl	H	H	H	O
I-1-296	2,6-difluorophenyl	4,5,6-trifluoro-2-(trifluormethyl)phenyl	H	H	H	O
I-1-297	2,6-difluorophenyl	4,5-dimethyl-1,2-oxazol-3-yl	H	H	H	O
I-1-298	2,6-difluorophenyl	4-bromo-1,3-dimethyl-1H-pyrazol-5-yl	H	H	H	O
I-1-299	2,6-difluorophenyl	4-bromo-1-ethyl-1H-pyrazol-5-yl	H	H	H	O
I-1-300	2,6-difluorophenyl	4-bromo-1-ethyl-3-methyl-1H-pyrazol-5-yl	H	H	H	O
I-1-301	2,6-difluorophenyl	4-bromo-1-methyl-1H-pyrazol-3-yl	H	H	H	O
I-1-302	2,6-difluorophenyl	4-bromo-1-methyl-1H-pyrazol-5-yl	H	H	H	O
I-1-303	2,6-difluorophenyl	4-bromo-1-methyl-3-(trifluormethyl)-1H-pyrazol-5-yl	H	H	H	O
I-1-304	2,6-difluorophenyl	4-bromo-2,5-dimethyl-3-furanyl	H	H	H	O
I-1-305	2,6-difluorophenyl	4-bromothiophen-3-yl	H	H	H	O
I-1-306	2,6-difluorophenyl	4-chloro-1-(difluormethyl)-3-methyl-1H-pyrazol-5-yl	H	H	H	O
I-1-307	2,6-difluorophenyl	4-chloro-1,3-dimethyl-1H-pyrazol-5-yl	H	H	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-308	2,6-difluorophenyl	4-chloro-1-ethyl-1H-pyrazol-5-yl	H	H	H	O
I-1-309	2,6-difluorophenyl	4-chloro-1-ethyl-3-methyl-1H-pyrazol-5-yl	H	H	H	O
I-1-310	2,6-difluorophenyl	4-chloro-1-isopropyl-3-nitro-1H-pyrazol-5-yl	H	H	H	O
I-1-311	2,6-difluorophenyl	4-chloro-1-methyl-1H-pyrazol-5-yl	H	H	H	O
I-1-312	2,6-difluorophenyl	4-chloro-1-methyl-3-nitro-1H-pyrazol-5-yl	H	H	H	O
I-1-313	2,6-difluorophenyl	4-chloro-1-methyl-3-propyl-1H-pyrazol-5-yl	H	H	H	O
I-1-314	2,6-difluorophenyl	4-chloro-1-methyl-5-propyl-1H-pyrazol-3-yl	H	H	H	O
I-1-315	2,6-difluorophenyl	4-chloro-1-propyl-1H-pyrazol-3-yl	H	H	H	O
I-1-316	2,6-difluorophenyl	4-chloro-3-ethyl-1-methyl-1H-pyrazol-5-yl	H	H	H	O
I-1-317	2,6-difluorophenyl	4-cyano-1-methyl-3-(pentafluorethyl)-1H-pyrazol-5-yl	H	H	H	O
I-1-318	2,6-difluorophenyl	4-cyano-1-methyl-3-(trifluormethyl)-1H-pyrazol-5-yl	H	H	H	O
I-1-319	2,6-difluorophenyl	4-cyclopropyl-1,2,3-thiadiazol-5-yl	H	H	H	O
I-1-320	2,6-difluorophenyl	4-fluoro-1,3-dimethyl-1H-pyrazol-5-yl	H	H	H	O
I-1-321	2,6-difluorophenyl	4-fluoro-1-methyl-1H-pyrazol-5-yl	H	H	H	O
I-1-322	2,6-difluorophenyl	4-fluoro-2-(trifluoromethyl)phenyl	H	H	H	O
I-1-323	2,6-difluorophenyl	4-iodo-1-isobutyl-1H-pyrazol-5-yl	H	H	H	O
I-1-324	2,6-difluorophenyl	4-iodo-1-methyl-1H-pyrazol-5-yl	H	H	H	O
I-1-325	2,6-difluorophenyl	4-iodo-1-propyl-1H-pyrazol-5-yl	H	H	H	O
I-1-326	2,6-difluorophenyl	4-methyl-1,2,3-thiadiazol-5-yl	H	H	H	O
I-1-327	2,6-difluorophenyl	4-methyl-1,2-oxazol-5-yl	H	H	H	O
I-1-328	2,6-difluorophenyl	4-methyl-4H-1,2,4-triazol-3-yl	H	H	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-329	2,6-difluorophenyl	5-chloro-2-(trifluoromethyl)phenyl	H	H	H	O
I-1-330	2,6-difluorophenyl	5-chloropyrimidin-4-yl	H	H	H	O
I-1-331	2,6-difluorophenyl	5-fluoro-2-(trifluoromethyl)phenyl	H	H	H	O
I-1-332	2,6-difluorophenyl	5-methyl-1,2,3-thiadiazol-4-yl	H	H	H	O
I-1-333	2,6-difluorophenyl	6-methyl-3,4-dihydro-2H-pyran-5-yl	H	H	H	O
I-1-334	2-bromophenyl	2,6-difluorophenyl	H	H	H	O
I-1-335	2-bromophenyl	2-fluoro-6-(trifluoromethyl)phenyl	H	H	H	O
I-1-336	2-bromophenyl	3-methylpyridin-2-yl	H	H	H	O
I-1-337	2-chloro-3-cyanopyridin-4-yl Synthesis Example 37	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-338	2-chloro-4-methylphenyl	2-bromophenyl	H	H	H	O
I-1-339	2-chloro-4-methylphenyl	2-chlorophenyl	H	H	H	O
I-1-340	2-chloro-6-ethoxyphenyl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-341	2-chlorophenyl	2-(methylsulphonyl)phenyl	H	H	H	O
I-1-342	2-chlorophenyl	2-(methylsulphonyl)phenyl	H	methyl	H	O
I-1-343	2-chlorophenyl	2-(trifluoromethoxy)phenyl	H	methyl	H	O
I-1-344	2-chlorophenyl	2-(trifluoromethoxy)pyridin-3-yl	H	H	H	O
I-1-345	2-chlorophenyl	2-(trifluoromethyl)phenyl	methyl	H	H	O
I-1-346	2-chlorophenyl	2-(trifluoromethyl)phenyl	cya no	H	H	O
I-1-347	2-chlorophenyl	2-(trifluoromethyl)phenyl	H	methyl	H	O
I-1-348	2-chlorophenyl	2-(trifluoromethyl)pyridin-3-yl	met hyl	H	H	O
I-1-349	2-chlorophenyl	2-(trifluoromethyl)pyridin-3-yl	H	methyl	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-350	2-chlorophenyl	2,3-dichlorophenyl	H	H	H	O
I-1-351	2-chlorophenyl	2,6-dichlorophenyl	H	H	H	O
I-1-352	2-chlorophenyl	2,6-difluorophenyl	met hyl	H	H	O
I-1-353	2-chlorophenyl	2,6-dimethylphenyl	H	H	H	O
I-1-354	2-chlorophenyl	2-bromophenyl	met hyl	H	H	O
I-1-355	2-chlorophenyl	2-bromophenyl	H	amino	H	O
I-1-356	2-chlorophenyl	2-bromophenyl	H	methyl	H	O
I-1-357	2-chlorophenyl	2-bromopyridin-3-yl	met hyl	H	H	O
I-1-358	2-chlorophenyl	2-bromopyridin-3-yl	H	H	H	O
I-1-359	2-chlorophenyl	2-bromopyridin-3-yl	H	methyl	H	O
I-1-360	2-chlorophenyl	2-chlorophenyl	met hyl	H	H	O
I-1-361	2-chlorophenyl	2-chlorophenyl	H	amino	H	O
I-1-362	2-chlorophenyl	2-chlorophenyl	cya no	H	H	O
I-1-363	2-chlorophenyl	2-chloropyrazin-3-yl	H	H	H	O
I-1-364	2-chlorophenyl	2-fluoropyridin-3-yl	H	H	H	O
I-1-365	2-chlorophenyl	2-iodophenyl	met hyl	H	H	O
I-1-366	2-chlorophenyl	2-iodophenyl	Br	H	H	O
I-1-367	2-chlorophenyl	2-iodophenyl	I	H	H	O
I-1-368	2-chlorophenyl	2-iodophenyl	cya no	H	H	O
I-1-369	2-chlorophenyl	2-iodopyridin-3-yl	H	H	H	O
I-1-370	2-chlorophenyl	2-methyl-3-furanyl	H	H	H	O
I-1-371	2-chlorophenyl	2-methyl-4-(trifluoromethyl)-1,3-thiazol-5-yl	H	H	H	O
I-1-372	2-chlorophenyl	2-methyl-5,6-dihydro-1,4-oxathiin-3-yl	H	H	H	O
I-1-373	2-chlorophenyl	2-tert-butylphenyl	H	H	H	O
I-1-374	2-chlorophenyl	3-(difluoromethyl)-2-thienyl	H	H	H	O
I-1-375	2-chlorophenyl	3-(trifluoromethyl)-2-thienyl	H	H	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-376	2-chlorophenyl	3-(trifluoromethyl)pyridin-2-yl	H	methyl	H	O
I-1-377	2-chlorophenyl	3-chloro-2-thienyl	H	H	H	O
I-1-378	2-chlorophenyl	3-iodo-2-furanyl	H	H	H	O
I-1-379	2-chlorophenyl	3-iodo-2-thienyl	H	H	H	O
I-1-380	2-chlorophenyl	4-(trifluoromethyl)pyridin-3-yl	H	methyl	H	O
I-1-381	2-chlorophenyl	4-chloropyridin-3-yl	H	H	H	O
I-1-382	2-chlorophenyl	5-fluoro-1,3-dimethyl-1H-pyrazol-4-yl	H	H	H	O
I-1-383	2-chlorophenyl	5-fluoro-1-methyl-3-(trifluoromethyl)-1H-pyrazol-4-yl	H	H	H	O
I-1-384	2-chlorophenyl	6-fluoro-2-(trifluoromethyl)phenyl	H	H	H	O
I-1-385	2-chloropyrazin-5-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-386	2-chloropyrazin-5-yl	2-(trifluoromethyl)pyridin-3-yl	H	H	H	O
I-1-387	2-chloropyrazin-5-yl	2,6-difluorophenyl	H	H	H	O
I-1-388	2-chloropyrazin-5-yl	2-bromophenyl	H	H	H	O
I-1-389	2-chloropyrazin-5-yl	2-chlorophenyl	H	H	H	O
I-1-390	2-chloropyrazin-5-yl	2-iodophenyl	H	H	H	O
I-1-391	2-chloropyridin-3-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-392	2-chloropyridin-3-yl	2-chlorophenyl	H	H	H	O
I-1-393 Synthesis Example 29	2-cyano-4,6-difluorophenyl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-394	2-cyanophenyl	2-iodophenyl	H	H	H	O
I-1-395	2-ethoxy-3-chlorophenyl	2-(trifluoromethyl)pyridin-3-yl	H	H	H	O
I-1-396	2-ethoxy-3-fluorophenyl	2-bromophenyl	H	H	H	O
I-1-397	2-ethoxy-3-fluorophenyl	2-chlorophenyl	H	H	H	O
I-1-398	2-chloro-6-ethoxyphenyl	2-bromophenyl	H	H	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-399	2-ethoxy-6-fluorophenyl	2-bromophenyl	H	H	H	O
I-1-400	2-fluorophenyl	2,5-dimethylfuran-3-yl	H	H	H	O
I-1-401	2-fluoropyrazin-6-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-402	2-fluoropyrazin-6-yl	2-(trifluoromethyl)pyridin-3-yl	H	H	H	O
I-1-403	2-fluoropyrazin-6-yl	2,6-difluorophenyl	H	H	H	O
I-1-404	2-fluoropyrazin-6-yl	2-bromopyridin-3-yl	H	H	H	O
I-1-405	2-fluoropyrazin-6-yl	2-iodophenyl	H	H	H	O
I-1-406	2-methoxyphenyl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-407	2-methoxyphenyl	2-(trifluoromethyl)pyridin-3-yl	H	H	H	O
I-1-408	2-methoxyphenyl	2,6-difluorophenyl	H	H	H	O
I-1-409	2-methoxyphenyl	2-bromopyridin-3-yl	H	H	H	O
I-1-410	2-methoxyphenyl	2-chlorophenyl	H	H	H	O
I-1-411	2-methoxyphenyl	2-iodophenyl	H	H	H	O
I-1-412	2-methoxypyrazin-3-yl	2,5-dimethylfuran-3-yl	H	H	H	O
I-1-413	2-methoxypyrazin-3-yl	2-bromophenyl	H	H	H	O
I-1-414	2-methylphenyl	2,5-dimethylfuran-3-yl	H	H	H	O
I-1-415	2-nitrophenyl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-416	2-nitrophenyl	2-(trifluoromethyl)pyridin-3-yl	H	H	H	O
I-1-417	2-nitrophenyl	2,6-difluorophenyl	H	H	H	O
I-1-418	2-nitrophenyl	2-bromophenyl	H	H	H	O
I-1-419	2-nitrophenyl	2-iodophenyl	H	H	H	O
I-1-420	2-pyridyl	2-chlorophenyl	H	H	H	O
I-1-421	3-chloro-5-(trifluoromethyl)pyridin-2-yl	2-iodophenyl	H	H	H	O
I-1-422	3-(trifluoromethyl)pyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-423	3-(trifluoromethyl)pyridin-2-yl	2,6-difluorophenyl	H	H	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-424	3-(trifluoromethyl)pyridin-2-yl	2-bromophenyl	H	H	H	O
I-1-425	3-(trifluoromethyl)pyridin-2-yl	2-chlorophenyl	H	H	H	O
I-1-426	3-(trifluoromethyl)pyridin-2-yl	2-(trifluoromethyl)pyridin-3-yl	H	H	H	O
I-1-427	3-(trifluoromethyl)pyridin-2-yl	2-iodophenyl	H	H	H	O
I-1-428	3,5-dichloropyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-429	3,5-dichloropyridin-2-yl	2,6-difluorophenyl	H	H	H	O
I-1-430	3,5-dichloropyridin-2-yl	2-bromophenyl	H	H	H	O
I-1-431	3,5-dichloropyridin-2-yl	2-bromopyridin-3-yl	H	H	H	O
I-1-432	3,5-dichloropyridin-2-yl	2-chlorophenyl	H	H	H	O
I-1-433	3,5-dichloropyridin-2-yl	2-iodophenyl	H	H	H	O
I-1-434	3,5-dichloropyridin-2-yl	3-fluoro-2-(trifluoromethyl)phenyl	H	H	H	O
I-1-435	3,5-dichloropyridin-2-yl	3-iodo-1-methyl-1H-pyrazol-4-yl	H	H	H	O
I-1-436	3,5-dichloropyridin-2-yl	4-fluoro-2-(trifluoromethyl)phenyl	H	H	H	O
I-1-437	3,5-dichloropyridin-2-yl	5-chloro-2-(trifluoromethyl)phenyl	H	H	H	O
I-1-438	3,5-difluoro-1-oxidopyridin-2-yl Synthesis Example 48	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-439	3,5-difluoro-6-methylpyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-440	3,5-difluoro-6-methylpyridin-2-yl	2-(trifluoromethyl)pyridin-3-yl	H	H	H	O
I-1-441	3,5-difluoro-6-methylpyridin-2-yl	2,6-difluorophenyl	H	H	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-442	3,5-difluoro-6-methylpyridin-2-yl	2-bromophenyl	H	H	H	O
I-1-443	3,5-difluoropyridin-2-yl	1-(difluoromethyl)-1H-pyrazol-5-yl	H	H	H	O
I-1-444	3,5-difluoropyridin-2-yl	1-(difluoromethyl)-4-fluor-3-methyl-1H-pyrazol-5-yl	H	H	H	O
I-1-445	3,5-difluoropyridin-2-yl	1,3,5-trimethyl-1H-pyrazol-4-yl	H	H	H	O
I-1-446	3,5-difluoropyridin-2-yl	1,3-dimethyl-1H-pyrazol-4-yl	H	H	H	O
I-1-447	3,5-difluoropyridin-2-yl	1,3-dimethyl-4-nitro-1H-pyrazol-5-yl	H	H	H	O
I-1-448	3,5-difluoropyridin-2-yl	1,5-dimethyl-4-nitro-1H-pyrazol-3-yl	H	H	H	O
I-1-449	3,5-difluoropyridin-2-yl	1-methyl-1H-1,2,4-triazol-5-yl	H	H	H	O
I-1-450	3,5-difluoropyridin-2-yl	1-methyl-3-(pentafluorethyl)-4-(trifluormethyl)-1H-pyrazol-5-yl	H	H	H	O
I-1-451	3,5-difluoropyridin-2-yl	1-methyl-3,5-bis(trifluormethyl)-1H-pyrazol-4-yl	H	H	H	O
I-1-452	3,5-difluoropyridin-2-yl	1-methyl-3-nitro-1H-pyrrol-2-yl	H	H	H	O
I-1-453	3,5-difluoropyridin-2-yl	1-methyl-4-nitro-1H-pyrazol-3-yl	H	H	H	O
I-1-454	3,5-difluoropyridin-2-yl	1-methyl-5-nitro-1H-imidazol-4-yl	H	H	H	O
I-1-455	3,5-difluoropyridin-2-yl	1-sec-butyl-4-chloro-1H-pyrazol-5-yl	H	H	H	O
I-1-456	3,5-difluoropyridin-2-yl	1-sec-butyl-4-iodo-1H-pyrazol-5-yl	H	H	H	O
I-1-457	3,5-difluoropyridin-2-yl	2-(2,2,2-trifluoroethyl)pyridin-3-yl	H	H	H	O
I-1-458	3,5-difluoropyridin-2-yl	2-(difluoromethoxy)phenyl	H	H	H	O
I-1-459	3,5-difluoropyridin-2-yl	2-(difluoromethyl)phenyl	H	H	H	O
I-1-460	3,5-difluoropyridin-2-yl	2-(difluoromethyl)pyridin-3-yl	H	H	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-461	3,5-difluoropyridin-2-yl	2-(methylsulphanyl)pyridin-3-yl	H	H	H	O
I-1-462	3,5-difluoropyridin-2-yl	2-(methylsulphonyl)phenyl	H	H	H	O
I-1-463	3,5-difluoropyridin-2-yl	2-(trifluoromethoxy)phenyl	H	H	H	O
I-1-464	3,5-difluoropyridin-2-yl	2-(trifluoromethoxy)pyridin-3-yl	H	H	H	O
I-1-465	3,5-difluoropyridin-2-yl	2-(trifluoromethyl)phenyl	F	H	H	O
I-1-466	3,5-difluoropyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	S
I-1-467	3,5-difluoropyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	methyl	O
I-1-468	3,5-difluoropyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	ethyl	O
I-1-469	3,5-difluoropyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	allyl	O
I-1-470	3,5-difluoropyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	1-propyn-2-yl	O
I-1-471	3,5-difluoropyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	cyclopropyl methyl	O
I-1-472	3,5-difluoropyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	cyanomethyl	O
I-1-473	3,5-difluoropyridin-2-yl	2-(trifluoromethyl)phenyl	Cl	H	H	O
I-1-474	3,5-difluoropyridin-2-yl	2-(trifluoromethyl)phenyl	Br	H	H	O
I-1-475	3,5-difluoropyridin-2-yl	2-(trifluoromethyl)phenyl	nitro	H	H	O
I-1-476	3,5-difluoropyridin-2-yl	2,3-dichlorophenyl	H	H	H	O
I-1-477	3,5-difluoropyridin-2-yl	2,3-dichlorophenyl	H	H	2,3-dichlorophenylcarbonyl	O
I-1-478	3,5-difluoropyridin-2-yl	2,4-dimethyl-1,3-thiazol-5-yl	H	H	H	O
I-1-479	3,5-difluoropyridin-2-yl	2,6-dichlorophenyl	H	H	H	O
I-1-480	3,5-difluoropyridin-2-yl	2,6-dimethylphenyl	H	H	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-481	3,5-difluoropyridin-2-yl	2-acetylphenyl	H	H	H	O
I-1-482	3,5-difluoropyridin-2-yl	2-bromopyridin-3-yl	H	H	H	O
I-1-483	3,5-difluoropyridin-2-yl	2-chloro-5-methoxyphenyl	H	H	H	O
I-1-484	3,5-difluoropyridin-2-yl	2-chloro-6-fluorophenyl	H	H	H	O
I-1-485	3,5-difluoropyridin-2-yl	2-chloropyrazin-3-yl	H	H	H	O
I-1-486	3,5-difluoropyridin-2-yl	2-cyclopropylphenyl	H	H	H	O
I-1-487	3,5-difluoropyridin-2-yl	2-ethyl-6-fluorophenyl	H	H	H	O
I-1-488	3,5-difluoropyridin-2-yl	2-ethylphenyl	H	H	H	O
I-1-489	3,5-difluoropyridin-2-yl	2-ethylpyrazin-3-yl	H	H	H	O
I-1-490	3,5-difluoropyridin-2-yl	2-ethylpyridin-3-yl	H	H	H	O
I-1-491	3,5-difluoropyridin-2-yl	2-fluoro-6-(trifluormethyl)phenyl	H	H	H	O
I-1-492	3,5-difluoropyridin-2-yl	2-fluoro-6-iodophenyl	H	H	H	O
I-1-493	3,5-difluoropyridin-2-yl	2-fluorophenyl	H	H	H	O
I-1-494	3,5-difluoropyridin-2-yl	2-iodo-3-thienyl	H	H	H	O
I-1-495	3,5-difluoropyridin-2-yl	2-iodopyridin-3-yl	H	H	H	O
I-1-496	3,5-difluoropyridin-2-yl	2-methoxyphenyl	H	H	H	O
I-1-497	3,5-difluoropyridin-2-yl	2-methyl-4-(trifluormethyl)-1,3-thiazol-5-yl	H	H	H	O
I-1-498	3,5-difluoropyridin-2-yl	2-methyl-5,6-dihydro-1,4-oxathiin-3-yl	H	H	H	O
I-1-499	3,5-difluoropyridin-2-yl	2-methylphenyl	H	H	H	O
I-1-500	3,5-difluoropyridin-2-yl	3-(difluoromethyl)-5-fluor-1-methylpyrazol-4-yl	H	H	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-501	3,5-difluoropyridin-2-yl	3-(trifluoromethyl)pyrazin-2-yl	H	H	H	O
I-1-502	3,5-difluoropyridin-2-yl	3-(trifluoromethyl)pyridin-2-yl	H	H	H	O
I-1-503	3,5-difluoropyridin-2-yl	3-chloro-2-thienyl	H	H	H	O
I-1-504	3,5-difluoropyridin-2-yl	3-chloropyridin-2-yl	H	H	H	O
I-1-505	3,5-difluoropyridin-2-yl	3-ethylpyridazin-4-yl	H	H	H	O
I-1-506	3,5-difluoropyridin-2-yl	3-fluoro-6-(trifluormethyl)phenyl	H	H	H	O
I-1-507	3,5-difluoropyridin-2-yl	3-iodo-2-thienyl	H	H	H	O
I-1-508	3,5-difluoropyridin-2-yl	3-isobutyl-1-methyl-4-nitro-1H-pyrazol-5-yl	H	H	H	O
I-1-509	3,5-difluoropyridin-2-yl	3-isopropyl-1-methyl-4-nitro-1H-pyrazol-5-yl	H	H	H	O
I-1-510	3,5-difluoropyridin-2-yl	3-methyl-2-thienyl	H	H	H	O
I-1-511	3,5-difluoropyridin-2-yl	3-methyl-5-(trifluormethyl)-1,2-oxazol-4-yl	H	H	H	O
I-1-512	3,5-difluoropyridin-2-yl	3-tert-butyl-1-methyl-4-nitro-1H-pyrazol-5-yl	H	H	H	O
I-1-513	3,5-difluoropyridin-2-yl	3-tert-butyl-4-chloro-1-methyl-1H-pyrazol-5-yl	H	H	H	O
I-1-514	3,5-difluoropyridin-2-yl	4-(difluoromethyl)-1,3-dimethyl-1H-pyrazol-5-yl	H	H	H	O
I-1-515	3,5-difluoropyridin-2-yl	4-(trifluoromethyl)pyridin-3-yl	H	H	H	O
I-1-516	3,5-difluoropyridin-2-yl	4,5,6-trifluoro-2-(trifluormethyl)phenyl	H	H	H	O
I-1-517	3,5-difluoropyridin-2-yl	4-bromo-1,3-dimethyl-1H-pyrazol-5-yl	H	H	H	O
I-1-518	3,5-difluoropyridin-2-yl	4-bromo-1-ethyl-1H-pyrazol-5-yl	H	H	H	O
I-1-519	3,5-difluoropyridin-2-yl	4-bromo-1-ethyl-3-methyl-1H-pyrazol-5-yl	H	H	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-520	3,5-difluoropyridin-2-yl	4-bromo-1-methyl-1H-pyrazol-3-yl	H	H	H	O
I-1-521	3,5-difluoropyridin-2-yl	4-bromo-1-methyl-1H-pyrazol-5-yl	H	H	H	O
I-1-522	3,5-difluoropyridin-2-yl	4-bromo-1-methyl-3-(trifluormethyl)-1H-pyrazol-5-yl	H	H	H	O
I-1-523	3,5-difluoropyridin-2-yl	4-bromo-2,5-dimethyl-3-furanyl	H	H	H	O
I-1-524	3,5-difluoropyridin-2-yl	4-bromothiophen-3-yl	H	H	H	O
I-1-525	3,5-difluoropyridin-2-yl	4-chloro-1-(difluormethyl)-3-methyl-1H-pyrazol-5-yl	H	H	H	O
I-1-526	3,5-difluoropyridin-2-yl	4-chloro-1-ethyl-1H-pyrazol-5-yl	H	H	H	O
I-1-527	3,5-difluoropyridin-2-yl	4-chloro-1-ethyl-3-methyl-1H-pyrazol-5-yl	H	H	H	O
I-1-528	3,5-difluoropyridin-2-yl	4-chloro-1-isopropyl-3-nitro-1H-pyrazol-5-yl	H	H	H	O
I-1-529	3,5-difluoropyridin-2-yl	4-chloro-1-methyl-1H-pyrazol-5-yl	H	H	H	O
I-1-530	3,5-difluoropyridin-2-yl	4-chloro-1-methyl-3-nitro-1H-pyrazol-5-yl	H	H	H	O
I-1-531	3,5-difluoropyridin-2-yl	4-chloro-1-methyl-3-propyl-1H-pyrazol-5-yl	H	H	H	O
I-1-532	3,5-difluoropyridin-2-yl	4-chloro-1-methyl-5-propyl-1H-pyrazol-3-yl	H	H	H	O
I-1-533	3,5-difluoropyridin-2-yl	4-chloro-1-propyl-1H-pyrazol-3-yl	H	H	H	O
I-1-534	3,5-difluoropyridin-2-yl	4-chloro-3-ethyl-1-methyl-1H-pyrazol-5-yl	H	H	H	O
I-1-535	3,5-difluoropyridin-2-yl	4-cyano-1-methyl-3-(pentafluorethyl)-1H-pyrazol-5-yl	H	H	H	O
I-1-536	3,5-difluoropyridin-2-yl	4-cyano-1-methyl-3-(trifluormethyl)-1H-pyrazol-5-yl	H	H	H	O
I-1-537	3,5-difluoropyridin-2-yl	4-cyclopropyl-1,2,3-thiadiazol-5-yl	H	H	H	O
I-1-538	3,5-difluoropyridin-2-yl	4-fluoro-1-methyl-1H-pyrazol-5-yl	H	H	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-539	3,5-difluoropyridin-2-yl	4-iodo-1-isobutyl-1H-pyrazol-5-yl	H	H	H	O
I-1-540	3,5-difluoropyridin-2-yl	4-iodo-1-methyl-1H-pyrazol-5-yl	H	H	H	O
I-1-541	3,5-difluoropyridin-2-yl	4-iodo-1-propyl-1H-pyrazol-5-yl	H	H	H	O
I-1-542	3,5-difluoropyridin-2-yl	4-methyl-1,2,5-oxadiazol-3-yl	H	H	H	O
I-1-543	3,5-difluoropyridin-2-yl	4-methyl-1,2-oxazol-5-yl	H	H	H	O
I-1-544	3,5-difluoropyridin-2-yl	4-methyl-4H-1,2,4-triazol-3-yl	H	H	H	O
I-1-545	3,5-difluoropyridin-2-yl	5-chloropyrimidin-4-yl	H	H	H	O
I-1-546	3,5-difluoropyridin-2-yl	5-methyl-1,2,3-thiadiazol-4-yl	H	H	H	O
I-1-547	3,5-difluoropyridin-2-yl	5-methyl-1,2-oxazol-4-yl	H	H	H	O
I-1-548	3,5-difluoropyridin-2-yl	6-methyl-3,4-dihydro-2H-pyran-5-yl	H	H	H	O
I-1-549	3-bromopyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-550	3-bromopyridin-2-yl	2-(trifluoromethyl)pyridin-3-yl	H	H	H	O
I-1-551	3-bromopyridin-2-yl	2,6-difluorophenyl	H	H	H	O
I-1-552	3-bromopyridin-2-yl	2-bromophenyl	H	H	H	O
I-1-553	3-bromopyridin-2-yl	2-chlorophenyl	H	H	H	O
I-1-554	3-bromopyridin-2-yl	2-iodophenyl	H	H	H	O
I-1-555	3-chloro-2-fluorophenyl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-556	3-chloro-2-fluorophenyl	2,6-difluorophenyl	H	H	H	O
I-1-557	3-chloro-2-fluorophenyl	2-bromophenyl	H	H	H	O
I-1-558	3-chloro-2-fluorophenyl	2-bromopyridin-3-yl	H	H	H	O
I-1-559	3-chloro-2-fluorophenyl	2-chlorophenyl	H	H	H	O
I-1-560	3-chloro-5-(trifluoromethyl)pyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-561	3-chloro-5-(trifluormethyl)pyridin-2-yl	2-chlorophenyl	H	H	H	O
I-1-562	3-chloropyridin-2-yl	2-(trifluoromethyl)pyridin-3-yl	H	H	H	O
I-1-563	3-chloropyridin-2-yl	2,5-dimethylfuran-3-yl	H	H	H	O
I-1-564	3-chloropyridin-2-yl	2,6-difluorophenyl	H	H	H	O
I-1-565	3-chloropyridin-2-yl	2-bromopyridin-3-yl	H	H	H	O
I-1-566	3-chloropyridin-2-yl	2-iodo-3-thienyl	H	H	H	O
I-1-567	3-cyano-4,6-dimethylpyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-568 Synthesis Example 36	3-cyano-6-(diethylamino)pyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-569 Synthesis Example 31	3-cyano-6-(trifluormethyl)pyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-570 Synthesis Example 40	3-cyano-6-cyclopropyl-4-(trifluormethyl)pyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-571 Synthesis Example 33	3-cyano-6-methyl-4-(trifluormethyl)pyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-572	3-cyano-6-methylpyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-573 Synthesis Example 39	3-cyano-6-propylpyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-574 Synthesis Example 43	3-cyanopyrazin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-575 Synthesis Example 25	3-cyanopyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-576	3-fluoro-4-iodopyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-577	3-fluoropyridin-2-yl	2-(trifluoromethoxy)pyridin-3-yl	H	H	H	O
I-1-578	3-fluoropyridin-2-yl	2-bromopyridin-3-yl	H	H	H	O
I-1-579	3-fluoropyridin-2-yl	2-chloropyridin-3-yl	H	H	H	O

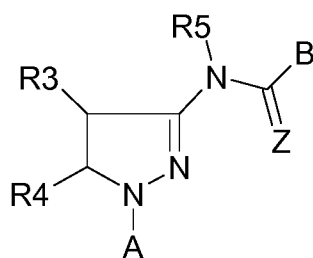
Compound No.	A	B	R3	R4	R5	Z
I-1-580	3-fluoropyridin-2-yl	2-fluoro-6-(trifluoromethyl)phenyl	H	H	H	O
I-1-581	3-fluoropyridin-2-yl	2-iodo-3-thienyl	H	H	H	O
I-1-582	3-fluoropyridin-2-yl	3-iodo-2-furanyl	H	H	H	O
I-1-583 Synthesis Example 42	4-acetamido-2,6-difluorophenyl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-584 Synthesis Example 30	4-acetyl-2,6-difluorophenyl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-585 Synthesis Example 37	2-chloro-3-cyanopyridin-4-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-586 Synthesis Example 38	4-chloro-3-cyanopyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-587	5-chloro-3-fluoropyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-588	5-chloro-3-fluoropyridin-2-yl	2,6-difluorophenyl	H	H	H	O
I-1-589	5-chloro-3-fluoropyridin-2-yl	2-bromophenyl	H	H	H	O
I-1-590	5-chloro-3-fluoropyridin-2-yl	2-chlorophenyl	H	H	H	O
I-1-591	5-chloro-3-fluoropyridin-2-yl	2-fluoro-6-(trifluoromethyl)phenyl	H	H	H	O
I-1-592	5-chloro-3-fluoropyridin-2-yl	2-iodo-3-thienyl	H	H	H	O
I-1-593	5-chloro-3-fluoropyridin-2-yl	2-iodophenyl	H	H	H	O
I-1-594	5-cyanopyrimidin-4-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-595	5-cyanopyrimidin-4-yl	2,6-difluorophenyl	H	H	H	O
I-1-596	5-fluoropyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-597	5-fluoropyridin-2-yl	2-(trifluoromethyl)pyridin-3-yl	H	H	H	O
I-1-598	5-fluoropyridin-2-yl	2,6-difluorophenyl	H	H	H	O
I-1-599	5-fluoropyridin-2-yl	2-iodophenyl	H	H	H	O
I-1-600	5-fluoropyrimidin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-601	5-fluoropyrimidin-2-yl	2-(trifluoromethyl)pyridin-3-yl	H	H	H	O
I-1-602	5-fluoropyrimidin-2-yl	2,6-difluorophenyl	H	H	H	O
I-1-603	5-fluoropyrimidin-2-yl	2-bromophenyl	H	H	H	O
I-1-604	5-fluoropyrimidin-2-yl	2-chlorophenyl	H	H	H	O
I-1-605	5-fluoropyrimidin-2-yl	2-iodophenyl	H	H	H	O
I-1-606 Synthesis Example 44	6-chloro-5-cyan-3-fluorpyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-607 Synthesis Example 34	6-chloro-3-cyanpyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-608 Synthesis Example 35	6-chloro-5-cyanpyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-609	pyrimidin-2-yl	2,5-dimethylfuran-3-yl	H	H	H	O
I-1-610	2,6-difluorophenyl	2-(2,2,2-trifluoroethyl)phenyl	H	H	H	O
I-1-611	2,6-difluorophenyl	2-(difluoromethyl)-5,6-dihydro-1,4-oxathiin-3-yl	H	H	H	O
I-1-612	2,6-difluorophenyl	2-[(trifluoroacetyl)amino]phenyl	H	H	H	O
I-1-613	2,6-difluorophenyl	2-bromo-6-fluorophenyl	H	H	H	O
I-1-614	2,6-difluorophenyl	2-chloro-6-(trifluoromethyl)phenyl	H	H	H	O
I-1-615	2,6-difluorophenyl	3-methyl-5,6-dihydro-1,4-dioxin-2-yl	H	H	H	O
I-1-616	2,6-difluorophenyl	2-methyl-5,6-dihydro-4,4-dioxo-1,4-oxathiin-3-yl	H	H	H	O
I-1-617	2-cyano-3-fluorophenyl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-618	2-cyano-3-fluorophenyl	2-(trifluoromethyl)pyridin-3-yl	H	H	H	O
I-1-619	2-cyano-3-fluorophenyl	2,6-difluorophenyl	H	H	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-620	2-cyano-3-fluorophenyl	2-bromophenyl	H	H	H	O
I-1-621	2-cyano-3-fluorophenyl	2-chlorophenyl	H	H	H	O
I-1-622	2-cyano-3-fluorophenyl	2-chloropyridin-3-yl	H	H	H	O
I-1-623	2-cyano-3-fluorophenyl	2-fluoro-6-(trifluormethyl)phenyl	H	H	H	O
I-1-624	2-cyano-3-fluorophenyl	2-iodo-3-thienyl	H	H	H	O
I-1-625	2-cyano-3-fluorophenyl	2-iodophenyl	H	H	H	O
I-1-626	2-cyano-4-fluorophenyl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-627	2-cyano-4-fluorophenyl	2-(trifluoromethyl)pyridin-3-yl	H	H	H	O
I-1-628	2-cyano-4-fluorophenyl	2,6-difluorophenyl	H	H	H	O
I-1-629	2-cyano-4-fluorophenyl	2-bromophenyl	H	H	H	O
I-1-630	2-cyano-4-fluorophenyl	2-chlorophenyl	H	H	H	O
I-1-631	2-cyano-4-fluorophenyl	2-chloropyridin-3-yl	H	H	H	O
I-1-632	2-cyano-4-fluorophenyl	2-fluoro-6-(trifluormethyl)phenyl	H	H	H	O
I-1-633	2-cyano-4-fluorophenyl	2-iodo-3-thienyl	H	H	H	O
I-1-634	2-cyano-4-fluorophenyl	2-iodophenyl	H	H	H	O
I-1-635	3,5-difluoropyridin-2-yl	2-(2,2,2-trifluoroethyl)phenyl	H	H	H	O
I-1-636	3,5-difluoropyridin-2-yl	2-(difluoromethyl)-5,6-dihydro-1,4-oxathiin-3-yl	H	H	H	O
I-1-637	3,5-difluoropyridin-2-yl	2-bromo-6-fluorophenyl	H	H	H	O
I-1-638	3,5-difluoropyridin-2-yl	2-chloro-6-(trifluormethyl)phenyl	H	H	H	O
I-1-639	3,5-difluoropyridin-2-yl	3-methyl-5,6-dihydro-1,4-dioxin-2-yl	H	H	H	O

Compound No.	A	B	R3	R4	R5	Z
I-1-640 Synthesis Example 23	3,5-difluoropyridin-2-yl	2-methyl-5,6-dihydro-4,4-dioxo-1,4-oxathiin-3-yl	H	H	H	O
I-1-641 Synthesis Example 32	3-cyano-4-(4-fluorophenyl)pyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-642	3-fluoro-4-(4-fluorophenyl)pyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	H	O
I-1-643 Synthesis Example 24	4-amino-2,6-difluorophenyl	2-carboxyphenyl	H	H	H	O
I-1-644	2,6-difluorophenyl	1-methyl-1H-imidazol-5-yl	H	H	H	O
I-1-645	2,6-difluorophenyl	1-methyl-1H-pyrrol-2-yl	H	H	H	O
I-1-646	3,5-difluoropyridin-2-yl	1-methyl-1H-imidazol-5-yl	H	H	H	O
I-1-647	3,5-difluoropyridin-2-yl	1-methyl-1H-pyrrol-2-yl	H	H	H	O

Table 2

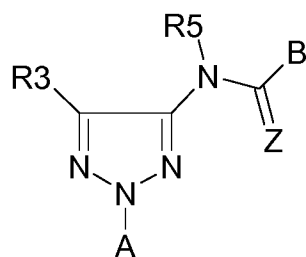


(I-4)

Compound No.	A	B	R3	R4	R5	Z
I-4-1	2,6-difluorophenyl	2-chlorophenyl	H	H	H	O
I-4-2 Synthesis Example 6	2,6-difluorophenyl	2-bromophenyl	H	H	H	O
I-4-3	2,6-difluorophenyl	2,6-difluorophenyl	H	H	H	O
I-4-4	2,6-difluorophenyl	2-iodophenyl	H	H	H	O
I-4-5	2,6-difluorophenyl	2-methylphenyl	H	H	H	O

Compound No.	A	B	R ₃	R ₄	R ₅	Z
I-4-6	2,6-difluorophenyl	2-methylphenyl	H	H	2-methylpyridin-3-ylcarbonyl	O
I-4-7	2,6-difluorophenyl	2-(trifluoromethyl)phenyl	H	H	H	O
I-4-8	2-chlorophenyl	2-bromophenyl	H	H	H	O

Table 3



(I-2)

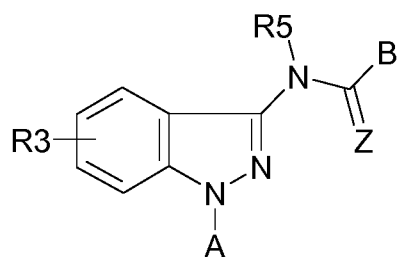
Compound No.	A	B	R ₃	R ₅	Z
I-2-1 Synthesis Example 20	2-chlorophenyl	2-(trifluoromethyl)phenyl	H	H	O
I-2-2	2-chlorophenyl	2-chlorophenyl	H	H	O
I-2-3	2-chlorophenyl	2-iodophenyl	H	H	O
I-2-4	2-chlorophenyl	2-(trifluoromethyl)pyridin-3-yl	H	H	O
I-2-5	2-chlorophenyl	2-chloropyridin-3-yl	H	H	O
I-2-6	2-bromophenyl	2-(trifluoromethyl)phenyl	H	H	O
I-2-7	2-bromophenyl	2-chlorophenyl	H	H	O
I-2-8	2-bromophenyl	2-(trifluoromethyl)pyridin-3-yl	H	H	O
I-2-9	2-bromophenyl	2-chloropyridin-3-yl	H	H	O
I-2-10	3-chloropyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	O
I-2-11	3-chloropyridin-2-yl	2-(trifluoromethyl)phenyl	Cl	H	O
I-2-12	3-chloropyridin-2-yl	2-chlorophenyl	H	H	O
I-2-13	3-chloropyridin-2-yl	2-bromophenyl	H	H	O
I-2-14	3-chloropyridin-2-yl	2-iodophenyl	H	H	O
I-2-15	3-chloropyridin-2-yl	2,6-difluorophenyl	H	H	O

Compound No.	A	B	R3	R5	Z
I-2-16	3-chloropyridin-2-yl	5-fluoro-1-methyl-3-(trifluoromethyl)-1H-pyrazol-4-yl	H	H	O
I-2-17	3-bromopyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	O
I-2-18	3-bromopyridin-2-yl	2-iodophenyl	H	H	O
I-2-19	2-chlorophenyl	2-(trifluoromethyl)phenyl	Cl	H	O
I-2-20	2-chlorophenyl	2-(trifluoromethyl)phenyl	Cl	2-(trifluoromethyl)phenylcarbonyl	O
I-2-21	2-chlorophenyl	2-(trifluoromethyl)phenyl	methyl	H	O
I-2-22	2-chlorophenyl	2-(trifluoromethyl)phenyl	methyl	2-(trifluoromethyl)phenylcarbonyl	O
I-2-23	2-bromophenyl	2-chloropyridin-3-yl	Cl	2-chloropyridin-3-ylcarbonyl	O
I-2-24	2-chlorophenyl	2-iodophenyl	methyl	H	O
I-2-25	2-chlorophenyl	2-iodophenyl	methyl	2-iodophenylcarbonyl	O
I-2-26	2-bromophenyl	2-(trifluoromethyl)phenyl	Cl	H	O
I-2-27	2-bromophenyl	2-(trifluoromethyl)phenyl	Cl	2-(trifluoromethyl)phenylcarbonyl	O
I-2-28	2-bromophenyl	2-(trifluoromethyl)pyridin-3-yl	Cl	H	O
I-2-29	2-bromophenyl	2-chlorophenyl	Cl	H	O
I-2-30	2-bromophenyl	2-chlorophenyl	Cl	2-chlorophenylcarbonyl	O
I-2-31	2-bromophenyl	2-chloropyridin-3-yl	Cl	H	O
I-2-32	2-bromophenyl	2-iodophenyl	Cl	H	O
I-2-33	2-bromophenyl	2-iodophenyl	H	H	O
I-2-34	2-bromophenyl	2-iodophenyl	Cl	2-iodophenylcarbonyl	O
I-2-35 Synthesis Example 21	2,6-difluorophenyl	2-(trifluoromethyl)phenyl	H	H	O
I-2-36	2,6-difluorophenyl	2-bromophenyl	H	H	O

Compound No.	A	B	R3	R5	Z
I-2-37	2,6-difluorophenyl	2-bromopyridin-3-yl	H	H	O
I-2-38	2,6-difluorophenyl	2-chlorophenyl	H	H	O
I-2-39	2,6-difluorophenyl	2-fluoro-6-(trifluoromethyl)phenyl	H	H	O
I-2-40	2,6-difluorophenyl	2-iodo-3-thienyl	H	H	O
I-2-41	2,6-difluorophenyl	2-iodophenyl	H	H	O
I-2-42	5-(trifluoromethyl)pyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	O
I-2-43	5-(trifluoromethyl)pyridin-2-yl	2-iodophenyl	H	H	O
I-2-44	3-fluoropyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	O
I-2-45	3-fluoropyridin-2-yl	2-(trifluoromethyl)pyridin-3-yl	H	H	O
I-2-46	3-fluoropyridin-2-yl	2-bromophenyl	H	H	O
I-2-47	3-fluoropyridin-2-yl	2-bromopyridin-3-yl	H	H	O
I-2-48	3-fluoropyridin-2-yl	2-chlorophenyl	H	H	O
I-2-49	3-fluoropyridin-2-yl	2-fluoro-6-(trifluoromethyl)phenyl	H	H	O
I-2-50	3-fluoropyridin-2-yl	2-iodo-3-thienyl	H	H	O
I-2-51	3-fluoropyridin-2-yl	2-iodophenyl	H	H	O
I-2-52	3-chloropyridin-2-yl	2-(trifluoromethyl)phenyl	H	2-(trifluoromethyl)phenylcarbonyl	O
I-2-53	3-chloropyridin-2-yl	2-(trifluoromethyl)phenyl	methyl	H	O
I-2-54	3-chloropyridin-2-yl	2-(trifluoromethyl)phenyl	methyl	2-(trifluoromethyl)phenylcarbonyl	O
I-2-55	3-chloropyridin-2-yl	2-(trifluoromethyl)pyridin-3-yl	H	H	O
I-2-56	3-chloropyridin-2-yl	2-chloropyridin-3-yl	H	H	O
I-2-57	3-chloropyridin-2-yl	2-fluoro-6-(trifluoromethyl)phenyl	H	H	O
I-2-58	3-chloropyridin-2-yl	2-iodo-3-thienyl	H	H	O
I-2-59	3-chloropyridin-2-yl	2-iodophenyl	methyl	H	O
I-2-60	3-chloropyridin-2-yl	2-iodophenyl	Cl	H	O
I-2-61	3-chloropyridin-2-yl	2-iodophenyl	methyl	2-iodophenylcarbonyl	O

Compound No.	A	B	R3	R5	Z
I-2-62	2,5-difluoropyridin-3-yl	2-(trifluoromethyl)phenyl	H	H	O
I-2-63 Synthesis Example 45	3,5-dichloropyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	O
I-2-64	3,5-dichloropyridin-2-yl	2-(trifluoromethyl)pyridin-3-yl	H	H	O
I-2-65	3,5-dichloropyridin-2-yl	2-iodophenyl	H	H	O
I-2-66	3,5-difluoropyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	O
I-2-67	3,5-difluoropyridin-2-yl	2-(trifluoromethyl)pyridin-3-yl	H	H	O
I-2-68	3,5-difluoropyridin-2-yl	2-bromophenyl	H	H	O
I-2-69	3,5-difluoropyridin-2-yl	2-bromopyridin-3-yl	H	H	O
I-2-70	3,5-difluoropyridin-2-yl	2-chlorophenyl	H	H	O
I-2-71	3,5-difluoropyridin-2-yl	2-fluoro-6-(trifluoromethyl)phenyl	H	H	O
I-2-72	3,5-difluoropyridin-2-yl	2-iodo-3-thienyl	H	H	O
I-2-73	3,5-difluoropyridin-2-yl	2-iodophenyl	H	H	O
I-2-74	3-chloro-5-(trifluoromethyl)pyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	O
I-2-75	3-chloro-5-(trifluoromethyl)pyridin-2-yl	2-iodophenyl	H	H	O
I-2-76	2,6-difluorophenyl	2-(trifluoromethyl)pyridin-3-yl	H	H	O
I-2-77	2,6-difluorophenyl	2,6-difluorophenyl	H	H	O
I-2-78	2,6-difluorophenyl	3-(difluoromethyl)-1-methyl-1H-pyrazol-4-yl	H	H	O
I-2-79	2,6-difluorophenyl	3-(trifluoromethyl)pyrazin-2-yl	H	H	O
I-2-80	2,6-difluorophenyl	3-(trifluoromethyl)pyridin-2-yl	H	H	O
I-2-81	2,6-difluorophenyl	3-(trifluoromethyl)pyridin-4-yl	H	H	O
I-2-82	2,6-difluorophenyl	3-(trifluoromethyl)thiophen-2-yl	H	H	O
I-2-83	2,6-difluorophenyl	4-(trifluoromethyl)pyridin-3-yl	H	H	O
I-2-84	3,5-difluoropyridin-2-yl	3-(trifluoromethyl)pyridin-2-yl	H	H	O
I-2-85	3,5-difluoropyridin-2-yl	3-(trifluoromethyl)thiophen-2-yl	H	H	O

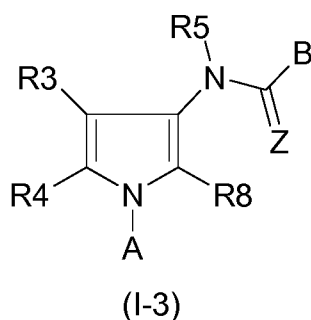
Table 4



(I-5)

Compound No.	A	B	R3	R5	Z
I-5-1	3,5-difluoropyridin-2-yl	2-(trifluoromethyl)phenyl	H	H	O
I-5-2 Synthesis Example 22	3,5-difluoropyridin-2-yl	2-(trifluoromethyl)phenyl	5-F	H	O
I-5-3	3,5-difluoropyridin-2-yl	2-bromophenyl	H	H	O
I-5-4	3-fluoropyridin-2-yl	2-bromophenyl	H	H	O
I-5-5	3-chloro-5-(trifluoromethyl)pyridin-2-yl	2-bromophenyl	H	H	O
I-5-6	2,5-difluoropyridin-3-yl	2-bromophenyl	H	H	O
I-5-7	2,5-difluoropyridin-3-yl	2-(trifluoromethyl)phenyl	5-F	H	O
I-5-8 Synthesis Example 47	2-chlorophenyl	2-(trifluoromethyl)phenyl	H	H	O
I-5-9	2-chlorophenyl	2-(trifluoromethyl)pyridin-3-yl	H	H	O
I-5-10	2,5-difluoro-4-cyanophenyl	2-(trifluoromethyl)phenyl	4-F	H	O
I-5-11	2,5-difluoro-4-cyanophenyl	2,6-difluorophenyl	4-F	H	O

Table5



Compound No.	A	B	R3	R4	R5	R8	Z
I-3-1 Synthesis Example 46	2,6- difluorophenyl	2-(trifluoromethyl)phenyl	H	H	H	H	O
I-3-2	2,6- difluorophenyl	2,6-difluorophenyl	H	H	H	H	O
I-3-3	2,6- difluorophenyl	2-iodophenyl	H	H	H	H	O
I-3-4	2,6- difluorophenyl	2-chloro-4-methoxyphenyl	H	H	H	H	O
I-3-5	2,6- difluorophenyl	2-(trifluoromethyl)pyridin- 3-yl	H	H	H	H	O
I-3-6	2,6- difluorophenyl	3-iodo-2-furanyl	H	H	H	H	O
I-3-7	2,6- difluorophenyl	2-iodo-3-thienyl	H	H	H	H	O

Use examples

- 5 The examples which follow demonstrate the fungicidal action of the compounds according to the invention. Said compounds according to the invention relate to the compounds listed in Tables 1 to 5 with the corresponding reference numerals, for example I-1-1.

The examples should not be considered as limiting the invention.

10 Example 1: **In vivo preventive test on *Alternaria brassicae* (leaf spot on radish)**

The tested active ingredients are prepared by homogenization in a mixture of Acetone/Dimethyl sulfoxide/tween[®] 80, and then diluted with water to obtain the desired active material concentration.

The young plants of radish are treated by spraying the active ingredient prepared as described above. Control plants are treated only with an aqueous solution of acetone/Dimethyl sulfoxide/tween® 80.

After 24 hours, the plants are contaminated by spraying the leaves with an aqueous suspension of *Alternaria brassicae* spores. The contaminated radish plants are incubated for 6 days at 20°C and at
5 100% relative humidity.

The test is evaluated 6 days after the inoculation. 0% means an efficacy which corresponds to that of the control plants while an efficacy of 100% means that no disease is observed.

In this test, under these conditions, at a concentration of 500 ppm of active ingredient, the following compounds according to the invention showed biological efficacy higher than or equal to 70%:

10 I-1-53; I-1-164; I-1-194; I-1-209; I-1-284; I-1-479; I-1-606; I-2-1; I-2-73; I-2-79

Example 2: In vivo preventive test on *Botrytis cinerea* (grey mould)

The tested active ingredients are prepared by homogenization in a mixture of Acetone/Dimethyl sulfoxide/tween® 80, and then diluted with water to obtain the desired active material concentration.

The young plants of radish are treated by spraying the active ingredient prepared as described above.
15 Control plants are treated only with an aqueous solution of acetone/Dimethyl sulfoxide/tween® 80.

After 24 hours, the plants are contaminated by spraying the leaves with an aqueous suspension of *Botrytis cinerea* spores. The contaminated gherkin plants are incubated for 4 to 5 days at 17°C and at 90% relative humidity.

The test is evaluated 4 to 5 days after the inoculation. 0% means an efficacy which corresponds to that
20 of the control plants while an efficacy of 100% means that no disease is observed.

In this test, under these conditions, at a concentration of 500 ppm of active ingredient, the following compounds according to the invention showed biological efficacy higher than or equal to 70%:

I-1-32; I-1-49; I-1-64; I-1-65; I-1-67; I-1-70; I-1-91; I-1-99; I-1-102; I-1-108; I-1-114; I-1-118; I-1-127;
25 I-1-145; I-1-152; I-1-164; I-1-165; I-1-183; I-1-190; I-1-191; I-1-218; I-1-219; I-1-221; I-1-248; I-1-277; I-1-284; I-1-358; I-1-442; I-1-479; I-1-484; I-1-485; I-1-487; I-1-490; I-1-491; I-1-492; I-1-494; I-1-501; I-1-507; I-1-558; I-1-578; I-1-581; I-1-587; I-1-593; I-1-596; I-1-599; I-1-606; I-2-35; I-2-36; I-2-37; I-2-40; I-2-41; I-2-76; I-2-79; I-2-80; I-3-7

Example 3: In vivo preventive test on *Puccinia recondita* (brown rust on wheat)

The tested active ingredients are prepared by homogenization in a mixture of Acetone/Dimethyl sulfoxide/tween® 80, and then diluted with water to obtain the desired active material concentration.

The young plants of radish are treated by spraying the active ingredient prepared as described above. Control plants are treated only with an aqueous solution of acetone/Dimethyl sulfoxide/tween® 80.

- 5 After 24 hours, the plants are contaminated by spraying the leaves with an aqueous suspension of *Puccinia recondita* spores. The contaminated wheat plants are incubated for 24 hours at 20°C and at 100% relative humidity and then for 10 days at 20°C and at 70-80% relative humidity.

The test is evaluated 11 days after the inoculation. 0% means an efficacy which corresponds to that of the control plants while an efficacy of 100% means that no disease is observed.

- 10 In this test, under these conditions, at a concentration of 500 ppm of active ingredient, the following compounds according to the invention showed biological efficacy higher than or equal to 70%:

I-1-5; I-1-10; I-1-11; I-1-14; I-1-32; I-1-33; I-1-34; I-1-41; I-1-43; I-1-44; I-1-47; I-1-48; I-1-49; I-1-52; I-1-53; I-1-65; I-1-66; I-1-67; I-1-69; I-1-70; I-1-78; I-1-83; I-1-96; I-1-99; I-1-100; I-1-104; I-1-105; I-1-108; I-1-113; I-1-118; I-1-123; I-1-138; I-1-145; I-1-161; I-1-165; I-1-176; I-1-183; I-1-191; I-1-192;
15 I-1-194; I-1-195; I-1-196; I-1-218; I-1-219; I-1-221; I-1-240; I-1-248; I-1-274; I-1-275; I-1-277; I-1-284; I-1-285; I-1-369; I-1-370; I-1-419; I-1-507; I-1-578; I-1-581; I-2-37; I-2-40; I-2-41; I-2-73; I-2-76; I-2-79

Example 4: In vivo preventive test on *Pyrenophora teres* (net blotch on barley)

- 20 The tested active ingredients are prepared by homogenization in a mixture of Acetone/Dimethyl sulfoxide/tween® 80, and then diluted with water to obtain the desired active material concentration.

The young plants of radish are treated by spraying the active ingredient prepared as described above. Control plants are treated only with an aqueous solution of acetone/Dimethyl sulfoxide/tween® 80.

- After 24 hours, the plants are contaminated by spraying the leaves with an aqueous suspension of *Pyrenophora teres* spores. The contaminated barley plants are incubated for 48 hours at 20°C and at
25 100% relative humidity and then for 12 days at 20°C and at 70-80% relative humidity.

The test is evaluated 14 days after the inoculation. 0% means an efficacy which corresponds to that of the control plants while an efficacy of 100% means that no disease is observed.

In this test, under these conditions, at a concentration of 500 ppm of active ingredient, the following compounds according to the invention showed biological efficacy higher than or equal to 70%:

I-1-65; I-1-67; I-1-83; I-1-87; I-1-93; I-1-99; I-1-102; I-1-104; I-1-105; I-1-118; I-1-145; I-1-148; I-1-156; I-1-183; I-1-191; I-1-192; I-1-194; I-1-219; I-1-221; I-1-240; I-1-248; I-1-276; I-1-277; I-1-284; I-1-566; I-1-578; I-1-581; I-1-606; I-2-14; I-2-39; I-2-40; I-2-41; I-2-50; I-2-58; I-2-62; I-2-73; I-2-76; I-2-78; I-2-79; I-2-82

5 Example 5: **In vivo preventive test on *Pyricularia oryzae* (rice blast)**

The tested active ingredients are prepared by homogenization in a mixture of Acetone/Dimethyl sulfoxide/tween® 80, and then diluted with water to obtain the desired active material concentration.

The young plants of radish are treated by spraying the active ingredient prepared as described above. Control plants are treated only with an aqueous solution of acetone/Dimethyl sulfoxide/tween® 80.

- 10 After 24 hours, the plants are contaminated by spraying the leaves with an aqueous suspension of *Pyricularia oryzae* spores. The contaminated rice plants are incubated at 25°C and at 80% relative humidity.

The test is evaluated 6 days after the inoculation. 0% means an efficacy which corresponds to that of the control plants while an efficacy of 100% means that no disease is observed.

- 15 In this test, under these conditions, at a concentration of 500 ppm of active ingredient, the following compounds according to the invention showed biological efficacy higher than or equal to 70%:

I-1-20; I-1-114; I-1-121; I-1-123

Example 6: **In vivo preventive test on *Septoria tritici* (leaf spot on wheat)**

- 20 The tested active ingredients are prepared by homogenization in a mixture of Acetone/Dimethyl sulfoxide/tween® 80, and then diluted with water to obtain the desired active material concentration.

The young plants of radish are treated by spraying the active ingredient prepared as described above. Control plants are treated only with an aqueous solution of acetone/Dimethyl sulfoxide/tween® 80.

- 25 After 24 hours, the plants are contaminated by spraying the leaves with an aqueous suspension of *Septoria tritici* spores. The contaminated wheat plants are incubated for 72 hours at 18°C and at 100% relative humidity and then for 21 days at 20°C and at 90% relative humidity.

The test is evaluated 24 days after the inoculation. 0% means an efficacy which corresponds to that of the control plants while an efficacy of 100% means that no disease is observed.

In this test, under these conditions, at a concentration of 500 ppm of active ingredient, the following compounds according to the invention showed biological efficacy higher than or equal to 70%:

I-1-20; I-1-32; I-1-53; I-1-60; I-1-65; I-1-66; I-1-67; I-1-69; I-1-70; I-1-99; I-1-101; I-1-104; I-1-105; I-1-107; I-1-108; I-1-110; I-1-118; I-1-121; I-1-122; I-1-123; I-1-175; I-1-183; I-1-186; I-1-195; I-1-199; I-1-218; I-1-232; I-1-240; I-1-276; I-1-281; I-1-284; I-1-288; I-1-356; I-1-366; I-1-378; I-1-433; I-1-435; I-1-498; I-1-581; I-1-582; I-1-596; I-2-18; I-2-40; I-2-41; I-2-50; I-2-62; I-2-73; I-2-76; I-2-79

- 5 In this test, under these conditions, at a concentration of 1200 g/ha of active ingredient, the following compounds according to the invention showed biological efficacy higher than or equal to 70%: I-1-209

Example 7: *in vivo* preventive test on *Sphaerotheca fuliginea* (powdery mildew on cucurbits)

The tested active ingredients are prepared by homogenization in a mixture of Acetone/Dimethyl sulfoxide/tween® 80, and then diluted with water to obtain the desired active material concentration.

- 10 The young plants of radish are treated by spraying the active ingredient prepared as described above. Control plants are treated only with an aqueous solution of acetone/Dimethyl sulfoxide/tween® 80.

After 24 hours, the plants are contaminated by spraying the leaves with an aqueous suspension of *Sphaerotheca fuliginea* spores. The contaminated gherkin plants are incubated for 72 hours at 18°C and at 100% relative humidity and then for 12 days at 20°C and at 70-80% relative humidity.

- 15 The test is evaluated 15 days after the inoculation. 0% means an efficacy which corresponds to that of the control plants while an efficacy of 100% means that no disease is observed.

In this test, under these conditions, at a concentration of 500 ppm of active ingredient, the following compounds according to the invention showed biological efficacy higher than or equal to 70%:

- I-1-32; I-1-65; I-1-66; I-1-67; I-1-96; I-1-104; I-1-183; I-1-195; I-1-218; I-1-219; I-1-232; I-2-40; I-2-41; I-2-79

Example 8: *In vivo* preventive test on *Uromyces appendiculatus* (bean rust)

The tested active ingredients are prepared by homogenization in a mixture of Acetone/Dimethyl sulfoxide/tween® 80, and then diluted with water to obtain the desired active material concentration.

The young plants of radish are treated by spraying the active ingredient prepared as described above.

- 25 Control plants are treated only with an aqueous solution of acetone/Dimethyl sulfoxide/tween® 80.

After 24 hours, the plants are contaminated by spraying the leaves with an aqueous suspension of *Uromyces appendiculatus* spores. The contaminated bean plants are incubated for 24 hours at 20°C and at 100% relative humidity and then for 10 days at 20°C and at 70-80% relative humidity.

- 30 The test is evaluated 11 days after the inoculation. 0% means an efficacy which corresponds to that of the control plants while an efficacy of 100% means that no disease is observed.

In this test, under these conditions, at a concentration of 500 ppm of active ingredient, the following compounds according to the invention showed biological efficacy higher than or equal to 70%:

I-1-11; I-1-33; I-1-41; I-1-43; I-1-47; I-1-48; I-1-52; I-1-53; I-1-65; I-1-67; I-1-69; I-1-70; I-1-82; I-1-83; I-1-96; I-1-104; I-1-108; I-1-119; I-1-123; I-1-196; I-1-219; I-1-248; I-1-274; I-1-275; I-1-277; I-1-284; I-1-379; I-1-593; I-2-40; I-2-41; I-2-79

Example 9

Leptosphaeria test (wheat) / preventive

Solvent: 49 parts by weight of N,N-dimethylformamide

Emulsifier: 1 part by weight of alkylaryl polyglycol ether

10 To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amounts of solvent and emulsifier, and the concentrate is diluted with water to the desired concentration. To test for preventive activity, young plants are sprayed with a preparation of active compound at the stated rate of application. One day after this treatment, the plants are inoculated with an aqueous spore suspension of *Leptosphaeria nodorum*. The plants remain for 48 hours in an incubation cabinet at 22 °C and a relative atmospheric humidity of 100%. Then the plants are placed in a greenhouse at a temperature of approximately 22 °C and a relative atmospheric humidity of approximately 90%. The test is evaluated 7-9 days after the inoculation. 0% means an efficacy which corresponds to that of the untreated control, while an efficacy of 100% means that no disease is observed.

20 In this test, under these conditions, at a concentration of 500 ppm of active ingredient, the following compounds according to the invention showed biological efficacy higher than or equal to 70%:

I-1-33; I-1-82; I-1-118

Example 10

Pyricularia test (rice) / preventive

25 Solvent: 49 parts by weight of N,N-dimethylformamide

Emulsifier: 1 part by weight of alkylaryl polyglycol ether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amounts of solvent and emulsifier, and the concentrate is diluted with water to the desired concentration. To test for preventive activity, young plants are sprayed with a preparation of active compound at the stated rate of application. One day after this treatment, the plants are inoculated

with an aqueous spore suspension of *Pyricularia oryzae*. The plants remain for 48 hours in an incubation cabinet at 24 °C and a relative atmospheric humidity of 100%. Then the plants are placed in a greenhouse at a temperature of approximately 24 °C and a relative atmospheric humidity of approximately 80%. The test is evaluated 7 days after the inoculation. 0% means an efficacy which corresponds to that of the untreated control, while an efficacy of 100% means that no disease is observed.

In this test, under these conditions, at a concentration of 500 ppm of active ingredient, the following compounds according to the invention showed biological efficacy higher than or equal to 70%:

I-1-32; I-1-51; I-1-52; I-1-211; I-1-339

10 Example 11

Pyrenophora test (barley) / preventive

Solvent: 49 parts by weight of N,N-dimethylformamide

Emulsifier: 1 part by weight of alkylaryl polyglycol ether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amounts of solvent and emulsifier, and the concentrate is diluted with water to the desired concentration. To test for preventive activity, young plants are sprayed with the preparation of active compound at the stated rate of application. One day after this treatment, the plants are inoculated with an aqueous spore suspension of *Pyrenophora teres*. The plants remain for 48 hours in an incubation cabinet at 22 °C and a relative atmospheric humidity of 100%. Then the plants are placed in a greenhouse at a temperature of approximately 20 °C and a relative atmospheric humidity of approximately 80%. The test is evaluated 7-9 days after the inoculation. 0% means an efficacy which corresponds to that of the untreated control while an efficacy of 100% means that no disease is observed.

In this test, under these conditions, at a concentration of 500 ppm of active ingredient, the following compounds according to the invention showed biological efficacy higher than or equal to 70%:

25 I-1-2; I-1-10; I-1-19; I-1-32; I-1-33; I-1-81; I-1-82; I-1-118; I-1-119; I-1-377; I-1-413

Example 12

Leptosphaeria nodorum test (wheat) / preventive

Solvent: 49 parts by weight of N,N-dimethylacetamide

Emulsifier: 1 part by weight of alkylaryl polyglycol ether

To produce a suitable preparation of active compound, 1 part by weight of active compound or active compound combination is mixed with the stated amounts of solvent and emulsifier, and the concentrate is diluted with water to the desired concentration. To test for preventive activity, young plants are sprayed with the preparation of active compound or active compound combination at the stated rate of application. After the spray coating has been dried, the plants are sprayed with a spore suspension of *Leptosphaeria nodorum*. The plants remain for 48 hours in an incubation cabinet at approximately 20 °C and a relative atmospheric humidity of approximately 100%. The plants are placed in the greenhouse at a temperature of approximately 22 °C and a relative atmospheric humidity of approximately 80%. The test is evaluated 8 days after the inoculation. 0% means an efficacy which corresponds to that of the untreated control, while an efficacy of 100% means that no disease is observed.

In this test, under these conditions, at a concentration of 1000 ppm of active ingredient, the following compounds according to the invention showed biological efficacy higher than or equal to 70%:

I-1-75; I-1-82; I-1-284

Example 13

15 Puccinia triticina-test (wheat) / preventive

Solvent: 49 parts by weight of N,N-dimethylacetamide

Emulsifier: 1 part by weight of alkylaryl polyglycol ether

To produce a suitable preparation of active compound, 1 part by weight of active compound or active compound combination is mixed with the stated amounts of solvent and emulsifier, and the concentrate is diluted with water to the desired concentration. To test for preventive activity, young plants are sprayed with the preparation of active compound or active compound combination at the stated rate of application. After the spray coating has been dried, the plants are sprayed with a spore suspension of *Puccinia triticina*. The plants remain for 48 hours in an incubation cabinet at approximately 20 °C and a relative atmospheric humidity of approximately 100%. The plants are placed in the greenhouse at a temperature of approximately 20 °C and a relative atmospheric humidity of approximately 80%. The test is evaluated 8 days after the inoculation. 0% means an efficacy which corresponds to that of the untreated control, while an efficacy of 100% means that no disease is observed.

In this test, under these conditions, at a concentration of 1000 ppm of active ingredient, the following compounds according to the invention showed biological efficacy higher than or equal to 70%:

I-1-33; I-1-82; I-1-118; I-1-119; I-1-140

Example 14**Pyrenophora teres-test (barley) / preventive**

Solvent: 49 parts by weight of N,N-dimethylacetamide

Emulsifier: 1 part by weight of alkylaryl polyglycol ether

- 5 To produce a suitable preparation of active compound, 1 part by weight of active compound or active compound combination is mixed with the stated amounts of solvent and emulsifier, and the concentrate is diluted with water to the desired concentration. To test for preventive activity, young plants are sprayed with the preparation of active compound or active compound combination at the stated rate of application. After the spray coating has been dried, the plants are sprayed with a spore suspension of
- 10 *Pyrenophora teres*. The plants remain for 48 hours in an incubation cabinet at approximately 20 °C and a relative atmospheric humidity of approximately 100%. The plants are placed in the greenhouse at a temperature of approximately 20 °C and a relative atmospheric humidity of approximately 80%. The test is evaluated 8 days after the inoculation. 0% means an efficacy which corresponds to that of the untreated control, while an efficacy of 100% means that no disease is observed.
- 15 In this test, under these conditions, at a concentration of 1000 ppm of active ingredient, the following compounds according to the invention showed biological efficacy higher than or equal to 70%:

I-1-33; I-1-75; I-1-119; I-1-140; I-1-284; I-2-35

Example 15**Pyricularia oryzae-test (rice) / preventive**

20 Solvent: 49 parts by weight of N,N-dimethylacetamide

Emulsifier: 1 part by weight of alkylaryl polyglycol ether

- To produce a suitable preparation of active compound, 1 part by weight of active compound or active compound combination is mixed with the stated amounts of solvent and emulsifier, and the concentrate is diluted with water to the desired concentration. To test for preventive activity, young plants are
- 25 sprayed with the preparation of active compound or active compound combination at the stated rate of application. After the spray coating has been dried, the plants are sprayed with a spore suspension of *Pyricularia oryzae*. The plants remain for 25 hours in an incubation cabinet at approximately 25°C and a relative atmospheric humidity of approximately 100%. The plants are placed in the greenhouse under a translucent incubations cabinet at a temperature of approximately 25°C and a relative atmospheric
- 30 humidity of approximately 100%. The test is evaluated 8 days after the inoculation. 0% means an

efficacy which corresponds to that of the control, while an efficacy of 100% means that no disease is observed.

In this test, under these conditions, at a concentration of 1000 ppm of active ingredient, the following compounds according to the invention showed biological efficacy higher than or equal to 70%:

5 I-1-75; I-1-284

Example 16

Septoria tritici-test (wheat) / preventive

Solvent: 49 parts by weight of N,N-dimethylacetamide

Emulsifier: 1 part by weight of alkylaryl polyglycol ether

- 10 To produce a suitable preparation of active compound, 1 part by weight of active compound or active compound combination is mixed with the stated amounts of solvent and emulsifier, and the concentrate is diluted with water to the desired concentration. To test for preventive activity, young plants are sprayed with the preparation of active compound or active compound combination at the stated rate of application. After the spray coating has been dried, the plants are sprayed with a spore suspension of
- 15 *Septoria tritici*. The plants remain for 48 hours in an incubation cabinet at approximately 20 °C and a relative atmospheric humidity of approximately 100% and afterwards for 60 hours at approximately 15 °C in a translucent incubation cabinet at a relative atmospheric humidity of approximately 100%. The plants are placed in the greenhouse at a temperature of approximately 15 °C and a relative atmospheric humidity of approximately 80%. The test is evaluated 21 days after the inoculation. 0% means an
- 20 efficacy which corresponds to that of the untreated control, while an efficacy of 100% means that no disease is observed.

In this test, under these conditions, at a concentration of 1000 ppm of active ingredient, the following compounds according to the invention showed biological efficacy higher than or equal to 70%:

I-1-140; I-1-284; I-2-35

25 Example 17

Phakopsora test (soybeans) / preventive

Solvent: 24.5 parts by weight of acetone

24.5 parts by weight of dimethylacetamide

Emulsifier: 1 part by weight of alkylaryl polyglycol ether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amounts of solvent and emulsifier, and the concentrate is diluted with water to the desired concentration. To test for preventive activity, young plants are sprayed with the preparation of active compound at the stated rate of application. After the spray coating has dried on, the plants are
5 inoculated with an aqueous spore suspension of the causal agent of soybean rust (*Phakopsora pachyrhizi*) and stay for 24h without light in an incubation cabinet at approximately 24°C and a relative atmospheric humidity of 95 %. The plants remain in the incubation cabinet at approximately 24°C and a relative atmospheric humidity of approximately 80 % and a day / night interval of 12h. The test is evaluated 7 days after the inoculation. 0% means an efficacy which corresponds to that of the untreated
10 control, while an efficacy of 100% means that no disease is observed.

In this test, under these conditions, at a concentration of 10 ppm of active ingredient, the following compounds according to the invention showed biological efficacy higher than or equal to 70%:

I-1-248

Example 18

15 **Venturia test (apples) / preventive**

Solvent: 24.5 parts by weight of acetone

 24.5 parts by weight of dimethylacetamide

Emulsifier: 1 part by weight of alkylaryl polyglycol ether

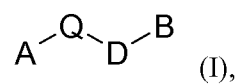
To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed
20 with the stated amounts of solvent and emulsifier, and the concentrate is diluted with water to the desired concentration. To test for preventive activity, young plants are sprayed with the preparation of active compound at the stated rate of application. After the spray coating has dried on, the plants are inoculated with an aqueous conidia suspension of the causal agent of apple scab (*Venturia inaequalis*) and then remain for 1 day in an incubation cabinet at approximately 20 °C and a relative atmospheric
25 humidity of 100%. The plants are then placed in a greenhouse at approximately 21 °C and a relative atmospheric humidity of approximately 90%. The test is evaluated 10 days after the inoculation. 0% means an efficacy which corresponds to that of the untreated control, while an efficacy of 100% means that no disease is observed.

In this test, under these conditions, at a concentration of 100 ppm of active ingredient, the following
30 compounds according to the invention showed biological efficacy higher than or equal to 70%:

I-1-75; I-1-140; I-1-284; I-2-35

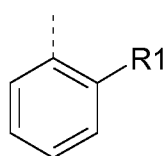
Claims

1. Use of compounds of the formula (I)

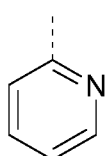


in which

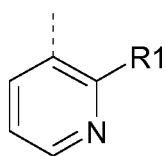
5 A represents a radical from the group consisting of



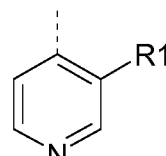
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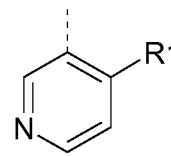
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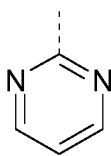
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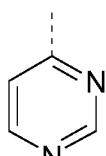
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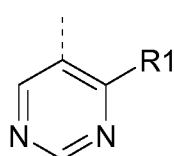
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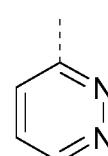
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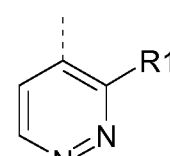
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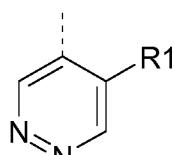
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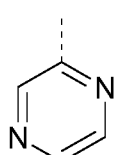
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A-10



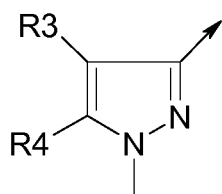
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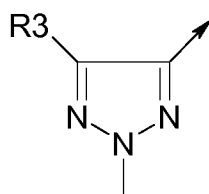
A-12

in which the broken line represents the bond to Q and in which A furthermore carries m substituents R2,

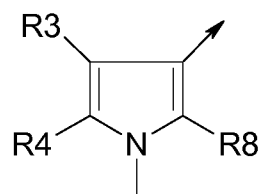
Q represents a radical from the group consisting of



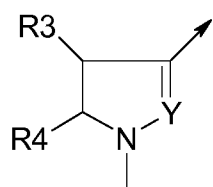
Q-1



Q-2

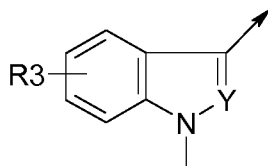


Q-3



Q-4

and

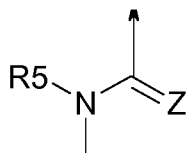


Q-5

in which the nitrogen is attached to ring A and the arrow in each case represents the bond to D
and

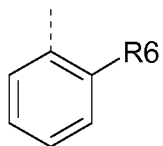
5

D represents the radical of the formula

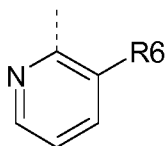


in which the nitrogen is attached to Q and the arrow represents the bond to B,

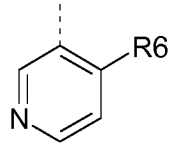
B represents a radical from the group consisting of



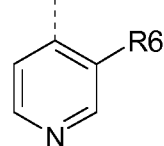
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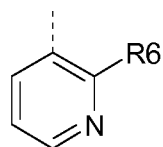
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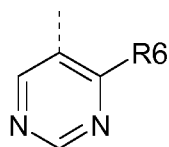
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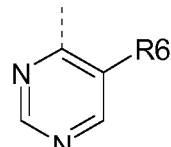
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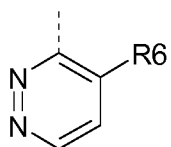
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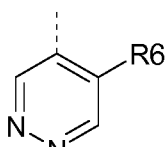
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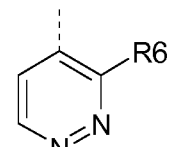
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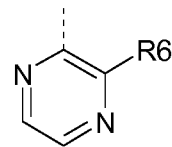
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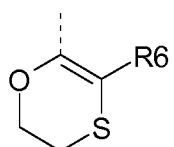
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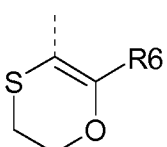
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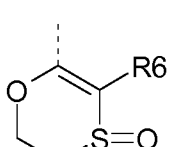
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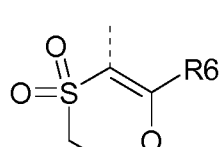
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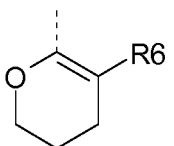
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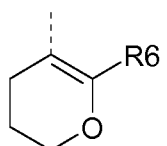
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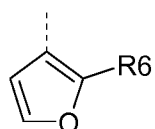
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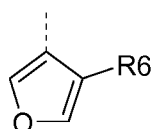
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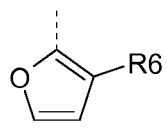
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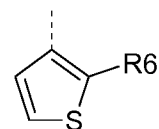
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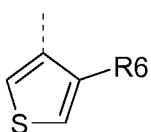
B-19



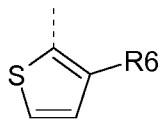
B-20



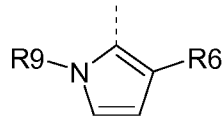
B-21



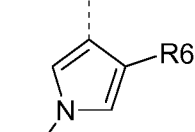
B-22



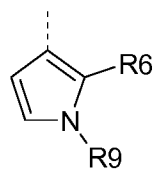
B-23



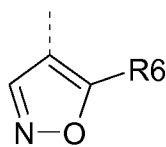
B-24



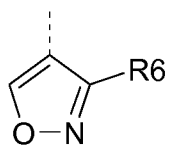
B-25



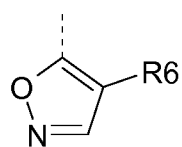
B-26



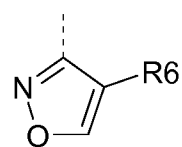
B-27



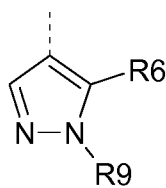
B-28



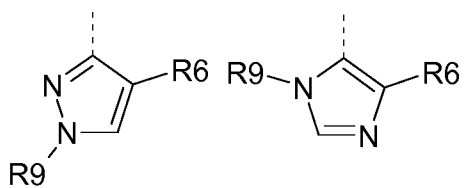
B-29



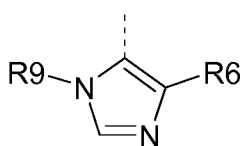
B-30



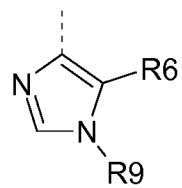
B-31



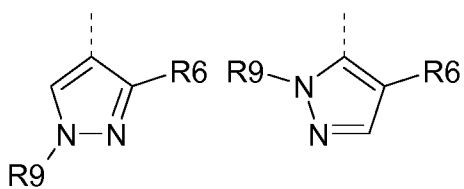
B-32



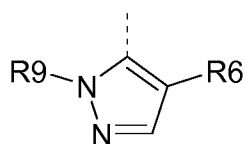
B-33



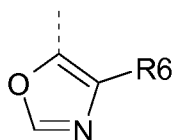
B-34



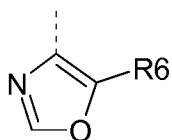
B-35



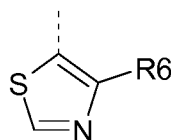
B-36



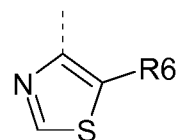
B-37



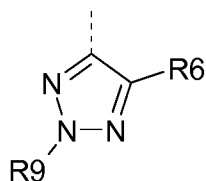
B-38



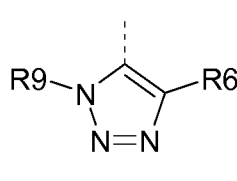
B-39



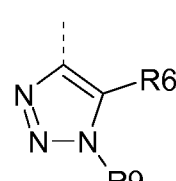
B-40



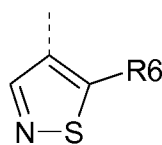
B-41



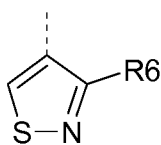
B-42



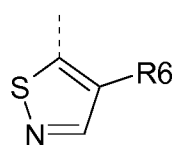
B-43



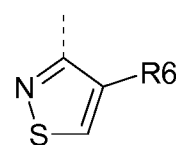
B-44



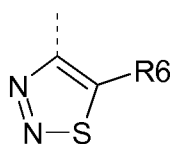
B-45



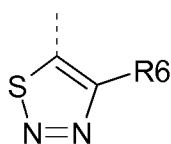
B-46



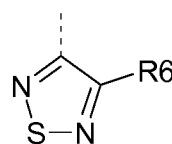
B-47



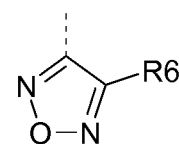
B-48



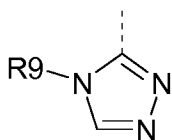
B-49



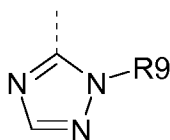
B-50



B-51



B-52



B-53

in which the broken line represents the bond to D and in which B furthermore carries n substituents R7,

Y represents CR8 or represents nitrogen,

5 Z represents oxygen or sulphur,

R1 represents a radical from the group consisting of halogen, cyano, nitro, amino, hydroxy, represents C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₆-cycloalkyl, C₁-C₆-alkoxy, C₃-C₆-alkenyloxy, C₃-C₆-alkynyloxy, C₃-C₆-cycloalkyloxy, C₁-C₆-alkylcarbonyloxy, C₂-C₆-alkenylcarbonyloxy, C₂-C₆-alkynylcarbonyloxy, C₃-C₆-cycloalkylcarbonyloxy, C₁-C₆-alkoxycarbonyloxy, C₁-C₆-alkylsulphonyloxy, C₁-C₆-alkylamino, C₃-C₆-alkenylamino, C₃-C₆-alkynylamino, C₃-C₆-cycloalkylamino, C₁-C₆-alkylcarbonylamino, C₂-C₆-alkenylcarbonylamino, C₂-C₆-alkynylcarbonylamino, C₃-C₆-cycloalkylcarbonylamino, C₁-C₆-alkoxycarbonylamino, C₁-

- C₆-alkylsulphonylamino, C₁-C₆-alkylthio, C₃-C₆-alkenylthio, C₃-C₆-alkynylthio, C₃-C₆-cycloalkylthio, C₁-C₆-alkylsulphinyl, C₁-C₆-alkylsulphonyl, C₁-C₆-alkylcarbonyl, C₁-C₆-alkoxyimino-C₁-C₆-alkyl, C₁-C₆-alkoxycarbonyl, aminocarbonyl, C₁-C₆-alkylaminocarbonyl, di-(C₁-C₆-alkyl)-aminocarbonyl, aminothiocarbonyl, C₁-C₆-alkylaminosulphonyl, C₁-C₆-alkylsulphonylamino, C₁-C₆-alkylcarbonylamino, C₁-C₆-alkylthiocarbonylamino, C₄-C₁₂-bicycloalkyl, aryl, aryloxy, arylamino, arylthio, heteroaryl, heteroaryloxy, heteroarylamino and heteroarylthio, each of which is optionally substituted by one or more identical or different substituents, where the substituents independently of one another are selected from the group consisting of halogen, cyano, nitro, hydroxy, amino, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₃-C₆-cycloalkyl, C₁-C₆-haloalkoxy, C₁-C₆-alkylthio, aryl, aryloxy, arylthio, heteroaryl, heteroaryloxy and heteroarylthio,
- 5
 10
 R2 represents a radical from the group consisting of halogen, cyano, nitro, amino, hydroxy, represents C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₆-cycloalkyl, C₁-C₆-alkoxy, C₃-C₆-alkenoxy, C₃-C₆-alkynoxy, C₃-C₆-cycloalkoxy, C₁-C₆-alkylcarbonyloxy, C₂-C₆-alkenylcarbonyloxy, C₂-C₆-alkynylcarbonyloxy, C₃-C₆-cycloalkylcarbonyloxy, C₁-C₆-alkoxycarbonyloxy, C₁-C₆-alkylsulphonyloxy, C₁-C₆-alkylamino, di-(C₁-C₆-alkyl)-amino, C₁-C₆-alkenylamino, C₃-C₆-alkynylamino, C₃-C₆-cycloalkylamino, C₁-C₆-alkylcarbonylamino, C₂-C₆-alkenylcarbonylamino, C₂-C₆-alkynylcarbonylamino, C₃-C₆-cycloalkylcarbonylamino, C₁-C₆-alkoxycarbonylamino, C₁-C₆-alkylsulphonylamino, C₁-C₆-alkylthio, C₃-C₆-alkenylthio, C₃-C₆-alkynylthio, C₃-C₆-cycloalkylthio, C₁-C₆-alkylsulphinyl, C₁-C₆-alkylsulphonyl, C₁-C₆-alkylcarbonyl, C₁-C₆-alkoxyimino-C₁-C₆-alkyl, C₁-C₆-alkoxycarbonyl, aminocarbonyl, C₁-C₆-alkylaminocarbonyl, di-(C₁-C₆-alkyl)-aminocarbonyl, aminothiocarbonyl, C₁-C₆-alkylaminosulphonyl, C₁-C₆-alkylsulphonylamino, C₁-C₆-alkylcarbonylamino, C₁-C₆-alkylthiocarbonylamino, C₄-C₁₂-bicycloalkyl, aryl, aryloxy, arylamino, arylthio, heteroaryl, heteroaryloxy, heteroarylamino and heteroarylthio, each of which is optionally substituted by one or more identical or different substituents, where the substituents independently of one another are selected from the group consisting of halogen, cyano, nitro, hydroxy, amino, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₃-C₆-cycloalkyl, C₁-C₆-haloalkoxy and C₁-C₆-alkylthio, aryl, aryloxy, arylthio, heteroaryl, heteroaryloxy and heteroarylthio,
- 15
 20
 25
 30 R3 represents a radical from the group consisting of hydrogen, halogen, cyano, nitro, amino, hydroxy, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkyl and C₁-C₆-haloalkoxy,
- R4 represents a radical from the group consisting of hydrogen, halogen, amino, hydroxy, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkyl and C₁-C₆-haloalkoxy,
- R5 represents a radical from the group consisting of hydrogen, C₁-C₆-alkyl, C₃-C₆-cycloalkyl, C₁-C₆-haloalkyl, C₂-C₆-alkenyl, C₃-C₆-alkynyl, C₃-C₆-cycloalkyl-C₁-C₆-alkyl, cyano-C₁-C₆-alkyl,
- 35

C₁-C₆-alkylcarbonyl, C₂-C₆-alkenylcarbonyl, C₁-C₆-haloalkylcarbonyl, C₂-C₆-haloalkenylcarbonyl, C₁-C₆-alkoxy-C₁-C₆-alkyl, C₁-C₆-alkoxycarbonyl, C₁-C₆-alkylsulphonyl and C₁-C₆-haloalkylsulphonyl or represents C(=O)-B,

- 5 R6 represents a radical from the group consisting of hydrogen (only in the radicals B-26, B-33, B-36 and B-42), halogen, cyano, nitro, amino, hydroxy, carboxyl, represents C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₆-cycloalkyl, C₁-C₆-alkoxy, C₃-C₆-alkenoxy, C₃-C₆-alkynoxy, C₃-C₆-cycloalkoxy, C₁-C₆-alkylcarbonyloxy, C₂-C₆-alkenylcarbonyloxy, C₂-C₆-alkynylcarbonyloxy, C₃-C₆-cycloalkylcarbonyloxy, C₁-C₆-alkoxycarbonyloxy, C₁-C₆-alkylsulphonyloxy, C₁-C₆-alkylcarbonylamino, C₂-C₆-alkenylcarbonylamino, C₂-C₆-alkynylcarbonylamino, C₃-C₆-cycloalkylcarbonylamino, C₁-C₆-alkoxycarbonylamino, C₁-C₆-alkylsulphonylamino, C₁-C₆-alkylthio, C₁-C₆-alkylsulphinyl, C₁-C₆-alkylsulphonyl, C₁-C₆-alkylcarbonyl, C₁-C₆-alkoxyimino-C₁-C₆-alkyl, C₁-C₆-alkoxycarbonyl, aminocarbonyl, C₁-C₆-alkylaminocarbonyl, di-(C₁-C₆-alkyl)-aminocarbonyl, aminothiocarbonyl, C₁-C₆-alkylaminosulphonyl, C₁-C₆-alkylsulphonylamino, C₁-C₆-alkylcarbonylamino, C₁-C₆-haloalkylcarbonylamino, C₁-C₆-alkylthiocarbonylamino, C₄-C₁₂-bicycloalkyl, aryl, aryloxy, heteroaryl, heteroaryloxy, each of which is optionally substituted by one or more identical or different substituents, where the substituents independently of one another are selected from the group consisting of halogen, cyano, nitro, hydroxy, amino, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₃-C₆-cycloalkyl, C₁-C₆-haloalkoxy and C₁-C₆-alkylthio,
- 10
- 15
- 20 R7 represents a radical from the group consisting of halogen, nitro, cyano, amino, hydroxy, represents C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₆-cycloalkyl, C₁-C₆-alkoxy, C₃-C₆-alkenoxy, C₃-C₆-alkynoxy, C₃-C₆-cycloalkoxy, C₁-C₆-alkylcarbonyloxy, C₂-C₆-alkenylcarbonyloxy, C₂-C₆-alkynylcarbonyloxy, C₃-C₆-cycloalkylcarbonyloxy, C₁-C₆-alkoxycarbonyloxy, C₁-C₆-alkylsulphonyloxy, C₁-C₆-alkylcarbonylamino, C₂-C₆-alkenylcarbonylamino, C₂-C₆-alkynylcarbonylamino, C₃-C₆-cycloalkylcarbonylamino, C₁-C₆-alkoxycarbonylamino, C₁-C₆-alkylsulphonylamino, C₁-C₆-alkylthio, C₁-C₆-alkylsulphinyl, C₁-C₆-alkylsulphonyl, C₁-C₆-alkylcarbonyl, C₁-C₆-alkoxyimino-C₁-C₆-alkyl, C₁-C₆-alkoxycarbonyl, aminocarbonyl, C₁-C₆-alkylaminocarbonyl, di-(C₁-C₆-alkyl)-aminocarbonyl, aminothiocarbonyl, C₁-C₆-alkylaminosulphonyl, C₁-C₆-alkylsulphonylamino, C₁-C₆-alkylcarbonylamino, C₁-C₆-alkylthiocarbonylamino, aryl, aryloxy, heteroaryl, heteroaryloxy, C₄-C₁₂-bicycloalkyl, each of which is optionally substituted by one or more identical or different substituents, where the substituents independently of one another are selected from the group consisting of halogen, cyano, nitro, hydroxy, amino, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₃-C₆-cycloalkyl, C₁-C₆-haloalkoxy and C₁-C₆-alkylthio,
- 25
- 30
- 35 R8 represents a radical from the group consisting of hydrogen, halogen, amino, hydroxy, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkyl and C₁-C₆-haloalkoxy,

R9 represents a radical from the group consisting of hydrogen, C₁-C₆-alkyl, C₃-C₆-cycloalkyl, haloalkyl, C₃-C₆-alkenyl, C₃-C₆-alkynyl, C₃-C₆-cycloalkyl-C₁-C₆-alkyl, cyano-C₁-C₆-alkyl, C₁-C₆-alkylcarbonyl, C₂-C₆-alkenylcarbonyl, C₁-C₆-haloalkylcarbonyl, C₂-C₆-haloalkenylcarbonyl, C₁-C₆-alkoxy-C₁-C₆-alkyl, C₁-C₆-alkoxycarbonyl, C₁-C₆-alkylsulphonyl and C₁-C₆-haloalkylsulphonyl,

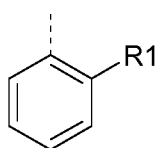
m represents a number from the group consisting of 0, 1, 2 and 3, where for m > 1 the radicals R₂ may be identical or different and

n represents a number from the group consisting of 0, 1, 2 and 3, where for n > 1 the radicals R₇ may be identical or different,

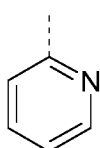
for controlling harmful microorganisms.

2. Use of compounds of the formula (I) according to Claim 1 in which

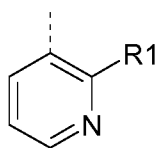
A represents a radical from the group consisting of



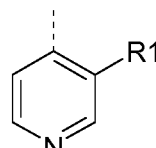
A-1



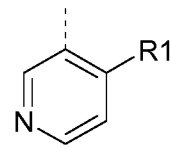
A-2



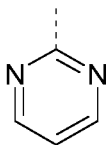
A-3



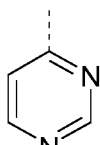
A-4



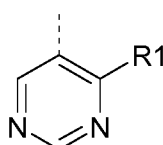
A-5



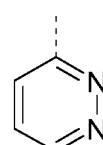
A-6



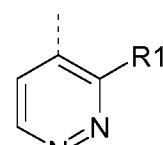
A-7



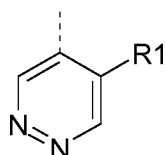
A-8



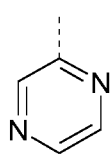
A-9



A-10



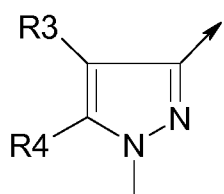
A-11



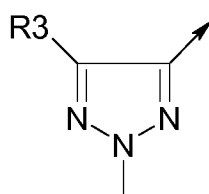
A-12

in which the broken line represents the bond to Q and where A furthermore carries m substituents R₂,

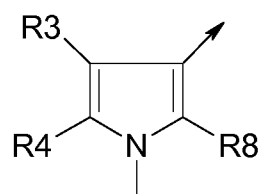
Q represents a radical from the group consisting of



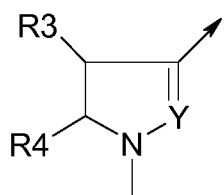
Q-1



Q-2

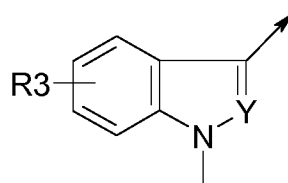


Q-3



Q-4

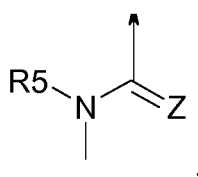
and



Q-5

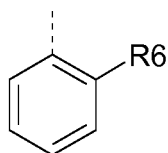
5 in which the nitrogen is attached to ring A and the arrow in each case represents the bond to D,

D represents the radical of the formula

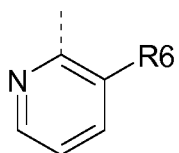


in which the nitrogen is attached to Q and the arrow represents the bond to B,

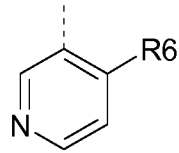
B represents a radical from the group consisting of



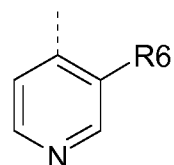
B-1



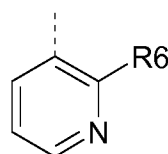
B-2



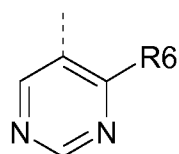
B-3



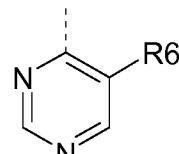
B-4



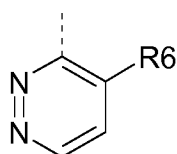
B-5



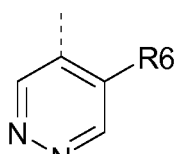
B-6



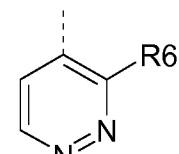
B-7



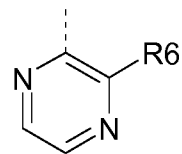
B-8



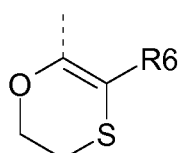
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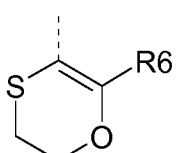
B-10



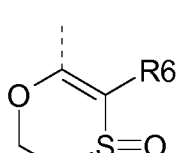
B-11



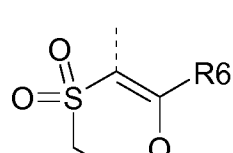
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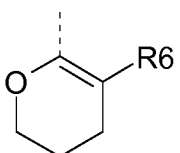
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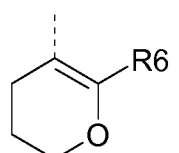
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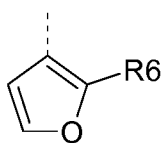
B-15



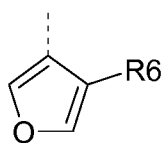
B-16



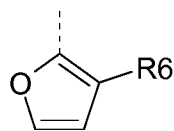
B-17



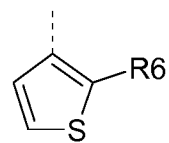
B-18



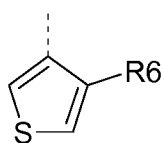
B-19



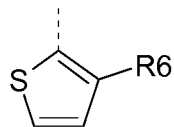
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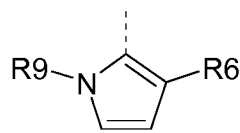
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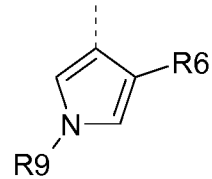
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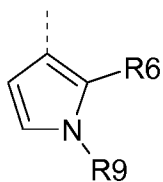
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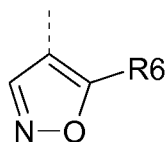
B-24



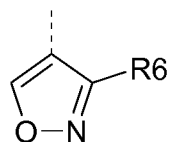
B-25



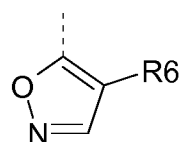
B-26



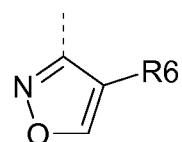
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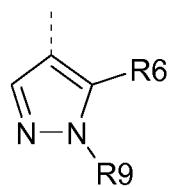
B-28



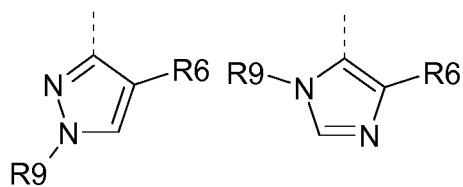
B-29



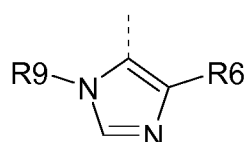
B-30



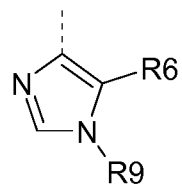
B-31



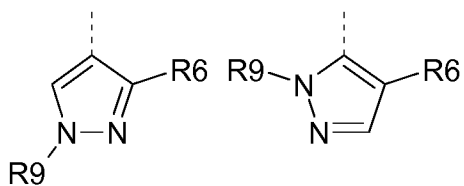
B-32



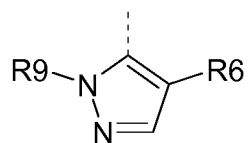
B-33



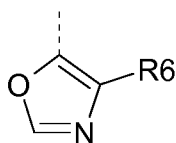
B-34



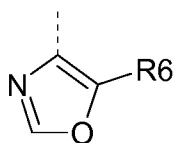
B-35



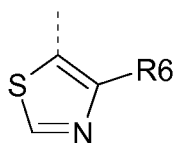
B-36



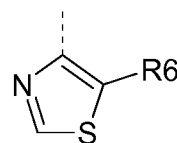
B-37



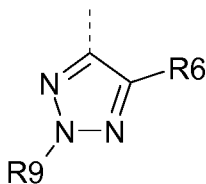
B-38



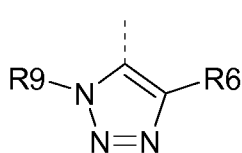
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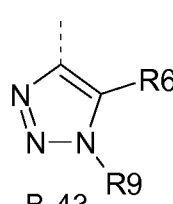
B-40



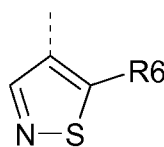
B-41



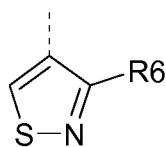
B-42



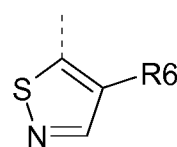
B-43 R9



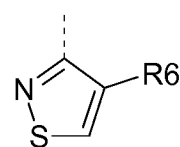
B-44



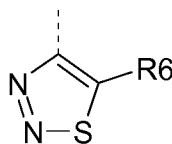
B-45



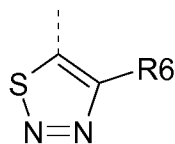
B-46



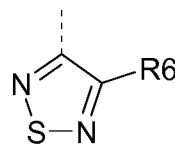
B-47



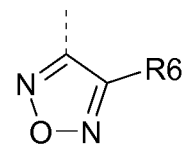
B-48



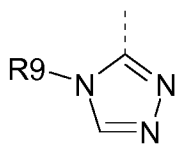
B-49



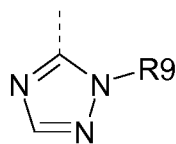
B-50



B-51



B-52



B-53

in which the broken line represents the bond to D and in which B furthermore carries n substituents R7,

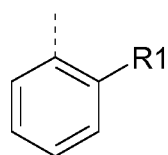
Y represents CR8 or represents nitrogen,

5 Z represents oxygen or sulphur,

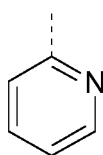
R1 represents a radical from the group consisting of halogen, cyano, nitro, amino, hydroxy, C₁-C₆-alkyl, C₁-C₆-haloalkyl, cyano-C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₆-cycloalkyl, C₃-C₆-cycloalkyl-C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₃-C₆-alkenyloxy, C₃-C₆-alkynyloxy, C₃-C₆-cycloalkyloxy, C₁-C₆-alkylcarbonyloxy, C₂-C₆-alkenylcarbonyloxy, C₂-C₆-alkynylcarbonyloxy, C₃-C₆-cycloalkylcarbonyloxy, C₁-C₆-alkoxycarbonyloxy, C₁-C₆-alkylsulphonyloxy, C₁-C₆-alkylamino, C₃-C₆-alkenylamino, C₃-C₆-alkynylamino, C₃-C₆-cycloalkylamino, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₃-C₆-alkenylthio, C₃-C₆-alkynylthio,

- 5 C₃-C₆-cycloalkylthio, C₁-C₆-alkylsulphinyl, C₁-C₆-alkylsulphonyl, C₁-C₆-alkylcarbonyl, C₁-C₆-alkoxyimino-C₁-C₆-alkyl, C₁-C₆-alkoxycarbonyl, aminocarbonyl, C₁-C₆-alkylaminocarbonyl, di-(C₁-C₆-alkyl)-aminocarbonyl, aminothiocabonyl, C₁-C₆-alkylaminosulphonyl, C₁-C₆-alkylsulphonylamino, C₁-C₆-alkylcarbonylamino, C₁-C₆-alkylthiocarbonylamino, aryl, aryloxy, heteroaryl and heteroaryloxy,
- 10 R2 represents a radical from the group consisting of halogen, cyano, nitro, amino, hydroxy, C₁-C₆-alkyl, C₁-C₆-haloalkyl, cyano-C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₆-cycloalkyl, C₃-C₆-cycloalkyl-C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₃-C₆-alkenyloxy, C₃-C₆-alkynyloxy, C₃-C₆-cycloalkyloxy, C₁-C₆-alkylcarbonyloxy, C₂-C₆-alkenylcarbonyloxy, C₂-C₆-alkynylcarbonyloxy, C₃-C₆-cycloalkylcarbonyloxy, C₁-C₆-alkoxycarbonyloxy, C₁-C₆-alkylsulphonyloxy, C₁-C₆-alkylamino, di-(C₁-C₆-alkyl)-amino, C₃-C₆-alkenylamino, C₃-C₆-alkynylamino, C₃-C₆-cycloalkylamino, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₃-C₆-alkenylthio, C₃-C₆-alkynylthio, C₃-C₆-cycloalkylthio, C₁-C₆-alkylsulphinyl, C₁-C₆-alkylsulphonyl, C₁-C₆-alkylcarbonyl, C₁-C₆-alkoxyimino-C₁-C₆-alkyl, C₁-C₆-alkoxycarbonyl, aminocarbonyl, C₁-C₆-alkylaminocarbonyl, di-(C₁-C₆-alkyl)-aminocarbonyl, aminothiocabonyl, C₁-C₆-alkylaminosulphonyl, C₁-C₆-alkylsulphonylamino, C₁-C₆-alkylcarbonylamino, C₁-C₆-alkylthiocarbonylamino, aryl, aryloxy, heteroaryl and heteroaryloxy,
- 15 R3 represents a radical from the group consisting of hydrogen, halogen, cyano, nitro, amino, C₁-C₆-alkyl and C₁-C₆-haloalkyl,
- 20 R4 represents a radical from the group consisting of hydrogen, halogen, amino, hydroxy, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkyl and C₁-C₆-haloalkoxy,
- 25 R5 represents a radical from the group consisting of hydrogen, C₁-C₆-alkyl, C₁-C₆-haloalkyl, cyano-C₁-C₆-alkyl, C₂-C₆-alkenyl, C₃-C₆-alkynyl, C₃-C₆-cycloalkyl, C₃-C₆-cycloalkyl-C₁-C₆-alkyl, C₁-C₆-alkylcarbonyl, C₂-C₆-alkenylcarbonyl, C₁-C₆-haloalkylcarbonyl, C₂-C₆-haloalkenylcarbonyl, C₁-C₆-alkoxy-C₁-C₆-alkyl, C₁-C₆-alkoxycarbonyl, C₁-C₆-alkylsulphonyl, C₁-C₆-haloalkylsulphonyl and C(=O)-B,
- 30 R6 represents a radical from the group consisting of hydrogen (only in the radicals B-26, B-33, B-36 and B-42), halogen, cyano, nitro, amino, hydroxy, carboxyl, C₁-C₆-alkyl, C₁-C₆-haloalkyl, cyano-C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₆-cycloalkyl, C₃-C₆-cycloalkyl-C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₃-C₆-alkenyloxy, C₃-C₆-alkynyloxy, C₃-C₆-cycloalkyloxy, C₁-C₆-alkylcarbonyloxy, C₂-C₆-alkenylcarbonyloxy, C₂-C₆-alkynylcarbonyloxy, C₃-C₆-cycloalkylcarbonyloxy, C₁-C₆-alkoxycarbonyloxy, C₁-C₆-alkylsulphonyloxy, C₁-C₆-alkylamino, C₃-C₆-alkenylamino, C₃-C₆-alkynylamino, C₃-C₆-cycloalkylamino, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₃-C₆-alkenylthio, C₃-C₆-alkynylthio, C₃-C₆-cycloalkylthio, C₁-C₆-

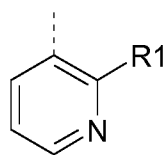
- alkylsulphinyl, C₁-C₆-alkylsulphonyl, C₁-C₆-alkylcarbonyl, C₁-C₆-alkoxyimino-C₁-C₆-alkyl, C₁-C₆-alkoxycarbonyl, aminocarbonyl, C₁-C₆-alkylaminocarbonyl, di-(C₁-C₆-alkyl)-aminocarbonyl, aminothiocarbonyl, C₁-C₆-alkylaminosulphonyl, C₁-C₆-alkylsulphonylamino, C₁-C₆-alkylcarbonylamino, C₁-C₄-haloalkylcarbonylamino, C₁-C₆-alkylthiocarbonylamino, aryl, aryloxy, heteroaryl and heteroaryloxy,
- 5
- R7 represents a radical from the group consisting of halogen, cyano, nitro, amino, hydroxy, C₁-C₆-alkyl, C₁-C₆-haloalkyl, cyano-C₁-C₆-alkyl, C₂-C₆-alkenyl, C₃-C₆-alkynyl, C₃-C₆-cycloalkyl, C₃-C₆-cycloalkyl-C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₃-C₆-alkenyloxy, C₃-C₆-alkynyloxy, C₃-C₆-cycloalkyloxy, C₁-C₆-alkylcarbonyloxy, C₂-C₆-alkenylcarbonyloxy, C₂-C₆-alkynyloxy, C₃-C₆-cycloalkylcarbonyloxy, C₁-C₆-alkoxycarbonyloxy, C₁-C₆-alkylsulphonyloxy, C₁-C₆-alkylamino, C₃-C₆-alkenylamino, C₃-C₆-alkynylamino, C₃-C₆-cycloalkylamino, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₃-C₆-alkenylthio, C₃-C₆-alkynylthio, C₃-C₆-cycloalkylthio, C₁-C₆-alkylsulphinyl, C₁-C₆-alkylsulphonyl, C₁-C₆-alkylcarbonyl, C₁-C₆-alkoxyimino-C₁-C₆-alkyl, C₁-C₆-alkoxycarbonyl, aminocarbonyl, C₁-C₆-alkylaminocarbonyl, di-(C₁-C₆-alkyl)-aminocarbonyl, aminothiocarbonyl, C₁-C₆-alkylaminosulphonyl, C₁-C₆-alkylsulphonylamino, C₁-C₆-alkylcarbonylamino, C₁-C₆-alkylthiocarbonylamino, aryl, aryloxy, heteroaryl and heteroaryloxy,
- 10
- 15
- R8 represents a radical from the group consisting of hydrogen, halogen, amino, hydroxy, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkyl and C₁-C₆-haloalkoxy,
- 20
- R9 represents a radical from the group consisting of hydrogen, C₁-C₆-alkyl, C₃-C₆-cycloalkyl, C₁-C₆-haloalkyl, C₃-C₆-alkenyl, C₃-C₆-alkynyl, C₃-C₆-cycloalkyl-C₁-C₆-alkyl, cyano-C₁-C₆-alkyl, C₁-C₆-alkylcarbonyl, C₂-C₆-alkenylcarbonyl, C₁-C₆-haloalkylcarbonyl, C₂-C₆-haloalkenylcarbonyl, C₁-C₆-alkoxy-C₁-C₆-alkyl, C₁-C₆-alkoxycarbonyl, C₁-C₆-alkylsulphonyl and C₁-C₆-haloalkylsulphonyl,
- 25
- m represents a number from the group consisting of 0, 1, 2 and 3, where for m > 1 the radicals R2 may be identical or different and
- n represents a number from the group consisting of 0, 1, 2 and 3, where for n > 1 the radicals R7 may be identical or different.
3. Use of compounds of the formula (I) according to Claim 1 in which
- 30
- A represents a radical from the group consisting of



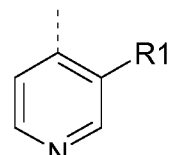
A-1



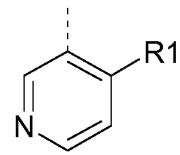
A-2



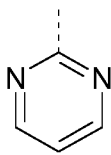
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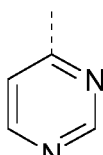
A-4



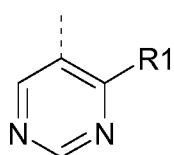
A-5



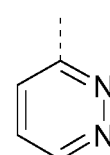
A-6



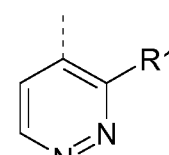
A-7



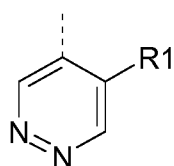
A-8



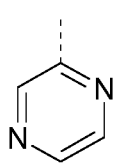
A-9



A-10



A-11

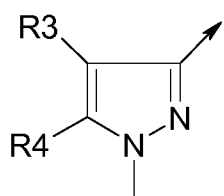


A-12

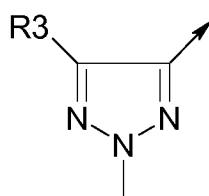
in which the broken line represents the bond to Q and where A furthermore carries m substituents R₂,

Q represents a radical from the group consisting of

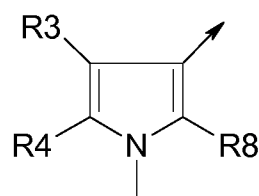
5



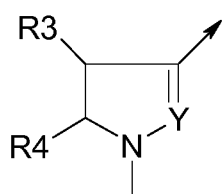
Q-1



Q-2

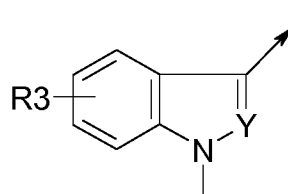


Q-3



Q-4

and

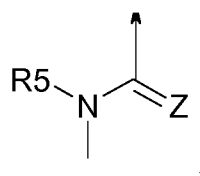


Q-5

10

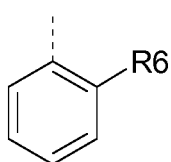
in which the nitrogen is attached to ring A and the arrow in each case represents the bond to D,

D represents the radical of the formula

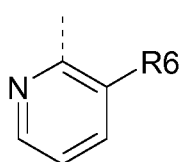


in which the nitrogen is attached to Q and the arrow represents the bond to B,

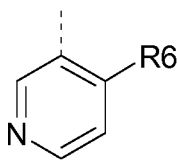
B represents a radical from the group consisting of



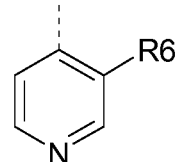
B-1



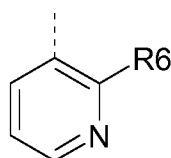
B-2



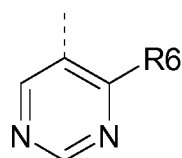
B-3



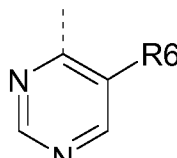
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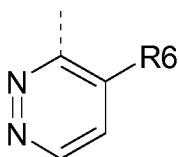
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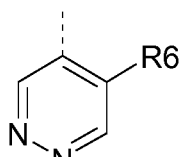
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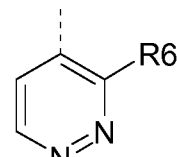
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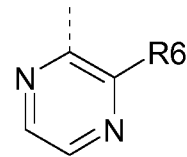
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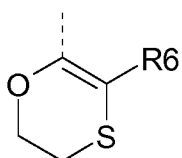
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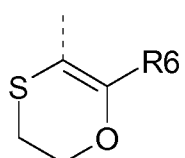
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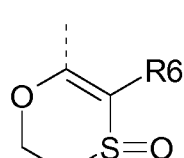
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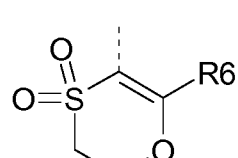
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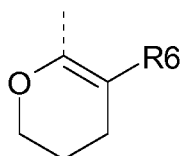
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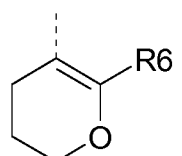
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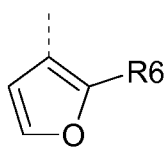
B-15



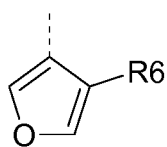
B-16



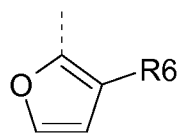
B-17



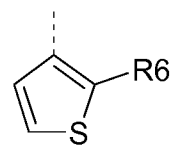
B-18



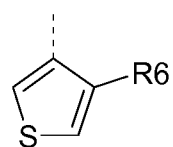
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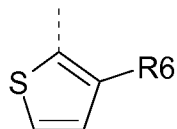
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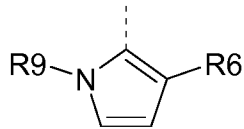
B-21



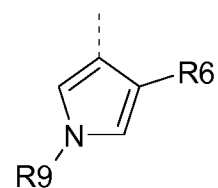
B-22



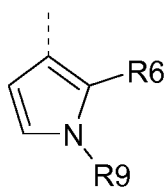
B-23



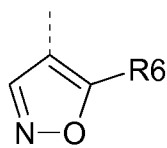
B-24



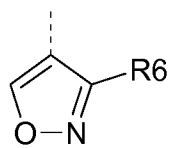
B-25



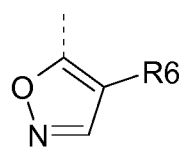
B-26



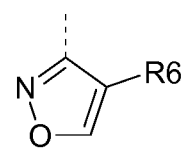
B-27



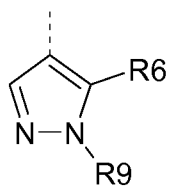
B-28



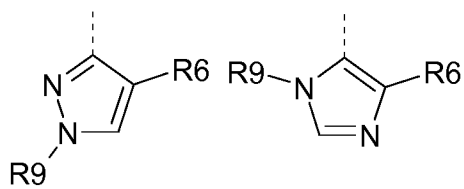
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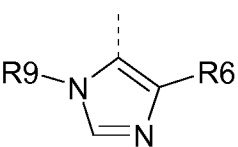
B-30



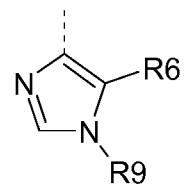
B-31



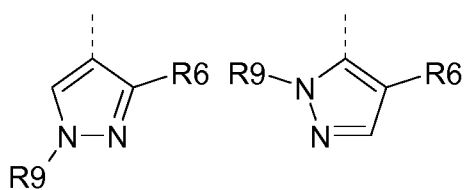
B-32



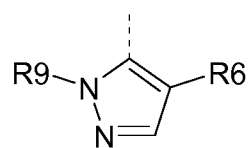
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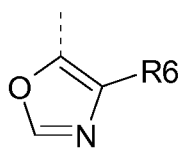
B-34



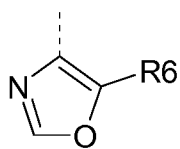
B-35



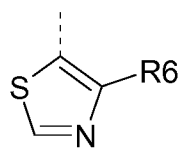
B-36



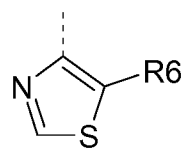
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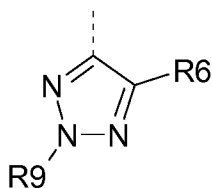
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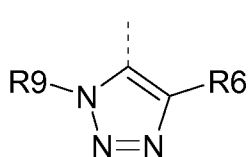
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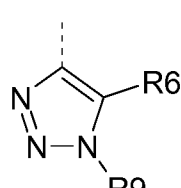
B-40



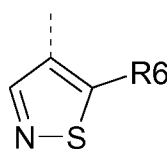
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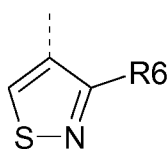
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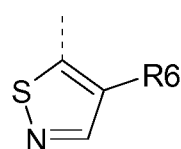
B-43



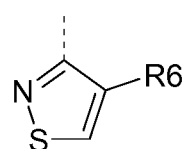
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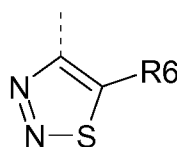
B-45



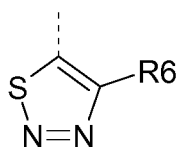
B-46



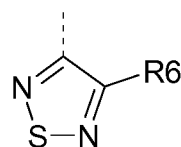
B-47



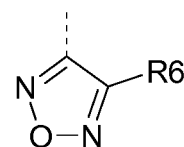
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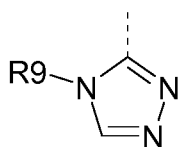
B-49



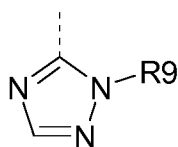
B-50



B-51



B-52



B-53

in which the broken line represents the bond to D and in which B furthermore carries n substituents R7,

Y represents CR8 or represents nitrogen,

5 Z represents oxygen or sulphur,

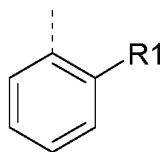
R1 represents a radical from the group consisting of halogen, cyano, nitro, C₁-C₆-alkyl, C₁-C₆-haloalkyl, cyano-C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₆-cycloalkyl, C₃-C₆-cycloalkyl-C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₃-C₆-alkenyloxy, C₃-C₆-alkynyloxy, C₃-C₆-cycloalkyloxy, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₁-C₆-alkylsulphanyl, C₁-C₆-alkylsulphonyl, C₁-C₆-alkoxyimino-C₁-C₆-alkyl, aryl, aryloxy, heteroaryl and heteroaryloxy,

- R2 represents a radical from the group consisting of halogen, cyano, nitro, amino, C₁-C₆-alkyl, C₁-C₆-haloalkyl, cyano-C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₆-cycloalkyl, C₃-C₆-cycloalkyl-C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₃-C₆-alkenyloxy, C₃-C₆-alkynyloxy, C₃-C₆-cycloalkyloxy, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₁-C₆-alkylsulphinyl, C₁-C₆-alkylsulphonyl, C₁-C₆-alkylcarbonyl, di-(C₁-C₆-alkyl)-amino, C₁-C₆-alkoxyimino-C₁-C₆-alkyl, aryl, aryloxy, heteroaryl and heteroaryloxy,
- R3 represents a radical from the group consisting of hydrogen, halogen, cyano, nitro, amino, C₁-C₆-alkyl and C₁-C₆-haloalkyl,
- R4 represents a radical from the group consisting of hydrogen, halogen, amino, hydroxy, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkyl and C₁-C₆-haloalkoxy,
- R5 represents a radical from the group consisting of hydrogen, C₁-C₆-alkyl, C₁-C₆-haloalkyl, cyano-C₁-C₆-alkyl, C₂-C₆-alkenyl, C₃-C₆-alkynyl, C₃-C₆-cycloalkyl, C₃-C₆-cycloalkyl-C₁-C₆-alkyl, C₁-C₆-alkylcarbonyl, C₂-C₆-alkenylcarbonyl, C₁-C₆-haloalkylcarbonyl, C₂-C₆-haloalkenylcarbonyl, C₁-C₆-alkoxy-C₁-C₆-alkyl, C₁-C₆-alkoxycarbonyl, C₁-C₆-alkylsulphonyl, C₁-C₆-haloalkylsulphonyl and C(=O)-B,
- R6 represents a radical from the group consisting of hydrogen (only in the radicals B-26, B-33, B-36 and B-42), halogen, cyano, nitro, hydroxy, carboxyl, C₁-C₆-alkyl, C₁-C₆-haloalkyl, cyano-C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₆-cycloalkyl, C₃-C₆-cycloalkyl-C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₃-C₆-alkenyloxy, C₃-C₆-alkynyloxy, C₃-C₆-cycloalkyloxy, C₁-C₆-alkylsulphinyl, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₁-C₆-alkylsulphonyl, C₁-C₆-alkylcarbonyl, C₁-C₆-alkoxyimino-C₁-C₆-alkyl, C₁-C₆-alkylcarbonylamino, C₁-C₆-haloalkylcarbonylamino, aryl, aryloxy, heteroaryl and heteroaryloxy,
- R7 represents a radical from the group consisting of halogen, cyano, nitro, hydroxy, C₁-C₆-alkyl, C₁-C₆-haloalkyl, cyano-C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₆-cycloalkyl, C₃-C₆-cycloalkyl-C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₃-C₆-alkenyloxy, C₃-C₆-alkynyloxy, C₃-C₆-cycloalkyloxy, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₁-C₆-alkylsulphinyl, C₁-C₆-alkylsulphonyl, C₁-C₆-alkoxyimino-C₁-C₆-alkyl, aryl, aryloxy, heteroaryl and heteroaryloxy,
- R8 represents a radical from the group consisting of hydrogen, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkyl and C₁-C₆-haloalkoxy,
- R9 represents a radical from the group consisting of hydrogen, C₁-C₆-alkyl, C₃-C₆-cycloalkyl and C₁-C₆-haloalkyl,
- m represents a number from the group consisting of 0, 1, 2 and 3, where for m > 1 the radicals R2 may be identical or different and

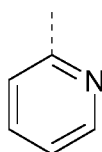
n represents a number from the group consisting of 0, 1, 2 and 3, where for $n > 1$ the radicals R7 may be identical or different.

4. Use of compounds of the formula (I) according to Claim 1 in which

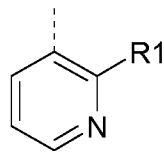
A represents a radical from the group consisting of



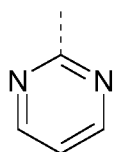
A-1



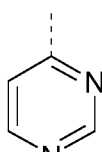
A-2



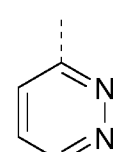
A-3



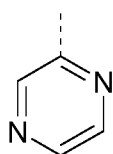
A-6



A-7



A-9

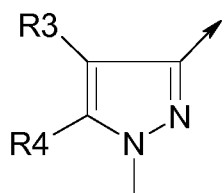


A-12

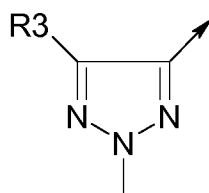
5

in which the broken line represents the bond to Q and where A furthermore carries m substituents R2,

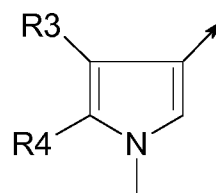
Q represents a radical from the group consisting of



Q-1

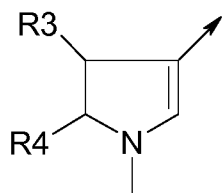


Q-2

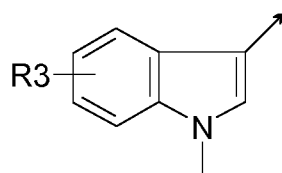


Q-3

10



and



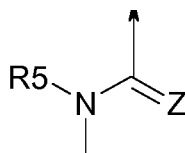
Q-4

Q-5

,

in which the nitrogen is attached to ring A and the arrow in each case represents the bond to D,

D represents the radical of the formula

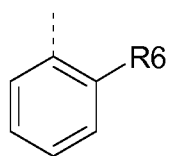


5

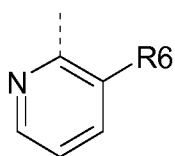
,

in which the nitrogen is attached to Q and the arrow represents the bond to B,

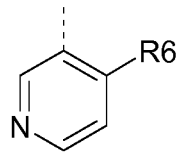
B represents a radical from the group consisting of



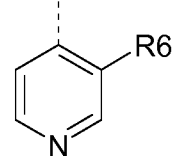
B-1



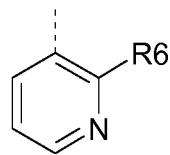
B-2



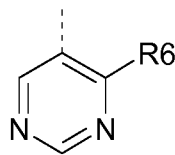
B-3



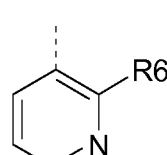
B-4



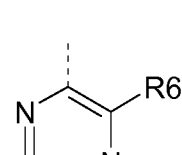
B-5



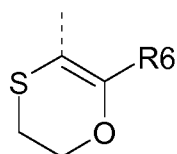
B-6



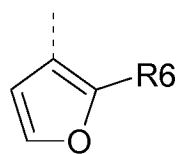
B-10



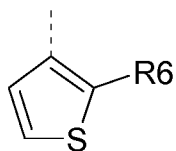
B-11



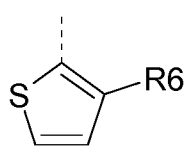
B-13



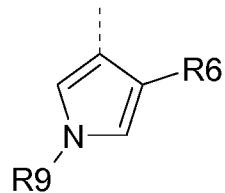
B-18



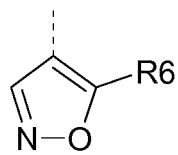
B-21



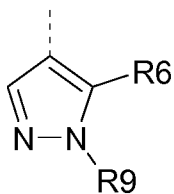
B-23



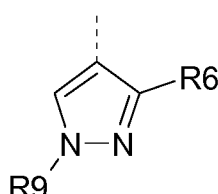
B-25



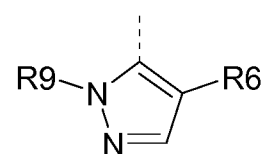
B-27



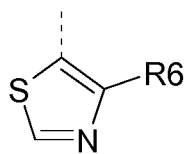
B-31



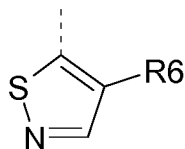
B-35



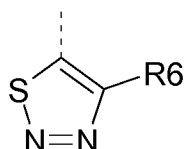
B-36



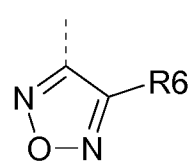
B-39



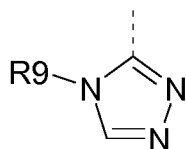
B-46



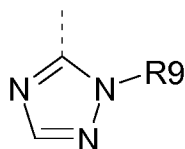
B-49



B-51



B-52



B-53

in which the broken line represents the bond to D and in which B furthermore carries n substituents R7,

Z represents oxygen or sulphur,

R1 represents a radical from the group consisting of halogen, cyano, nitro, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy and C₁-C₄-alkylsulphonyl,

R2 represents a radical from the group consisting of halogen, C₁-C₄-alkyl and C₁-C₄-alkoxy,

R3 represents a radical from the group consisting of hydrogen and halogen,

R4 represents a radical from the group consisting of hydrogen and C₁-C₄-alkyl,

R5 represents a radical from the group consisting of hydrogen, C₁-C₄-alkyl, C₃-C₄-alkenyl, C₃-C₄-alkynyl, C₃-C₆-cycloalkyl-C₁-C₄-alkyl, C₁-C₄-alkylcarbonyl, cyano-C₁-C₄-alkyl and C(=O)-B,

R6 represents a radical from the group consisting of halogen, nitro, hydroxy, C₁-C₄-alkyl, C₁-C₄-alkoxy, C₁-C₄-alkylthio, C₁-C₄-alkylsulphonyl, C₁-C₄-haloalkyl, C₁-C₄-haloalkoxy, C₁-C₄-haloalkylthio and heteroaryl,

R7 represents a radical from the group consisting of halogen, C₁-C₄-alkyl and C₁-C₄-haloalkyl,

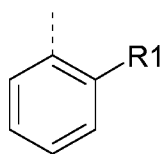
R9 represents a radical from the group consisting of C₁-C₄-alkyl,

m represents a number from the group consisting of 0, 1, 2 and 3, where for m > 1 the radicals R2 may be identical or different and

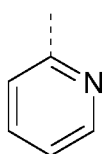
n represents a number from the group consisting of 0 and 1.

Use of compounds of the formula (I) according to Claim 1 in which

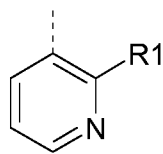
A represents a radical from the group consisting of



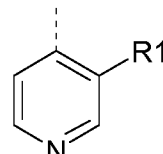
A-1



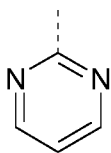
A-2



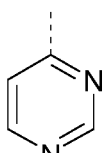
A-3



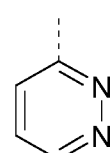
A-4



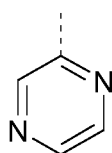
A-6



A-7



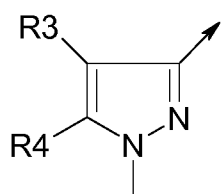
A-9



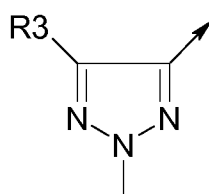
A-12

in which the broken line represents the bond to Q and where A furthermore carries m substituents R2,

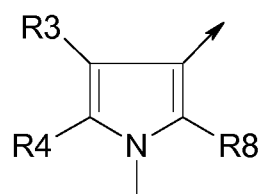
Q represents a radical from the group consisting of



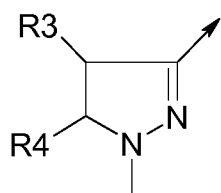
Q-1



Q-2

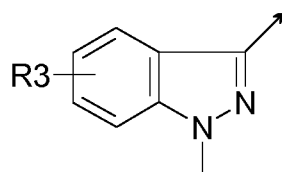


Q-3



Q-4

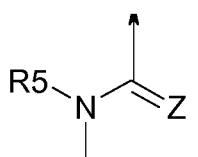
and



Q-5

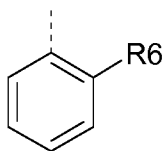
5 in which the nitrogen is attached to ring A and the arrow in each case represents the bond to D,

D represents the radical of the formula

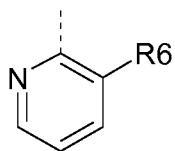


in which the nitrogen is attached to Q and the arrow represents the bond to B,

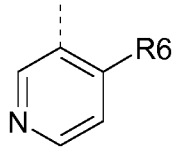
B represents a radical from the group consisting of



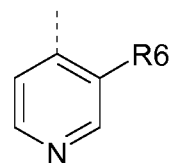
B-1



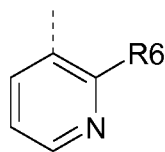
B-2



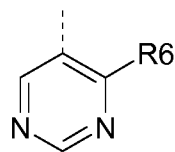
B-3



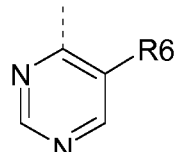
B-4



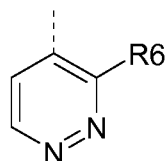
B-5



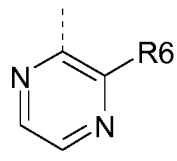
B-6



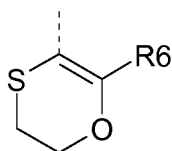
B-7



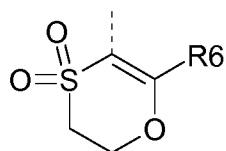
B-10



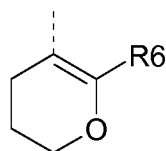
B-11



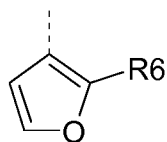
B-13



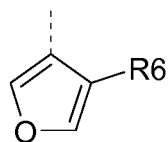
B-15



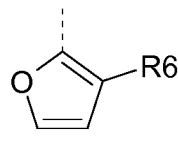
B-17



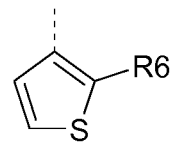
B-18



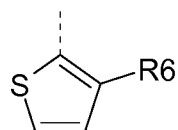
B-19



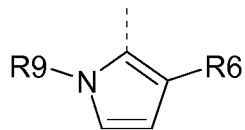
B-20



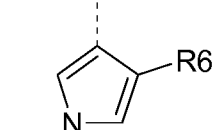
B-21



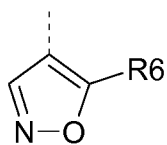
B-23



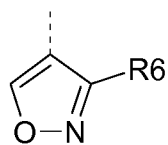
B-24



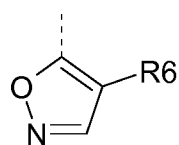
B-25



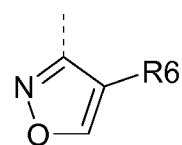
B-27



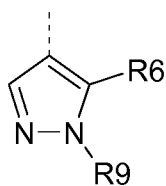
B-28



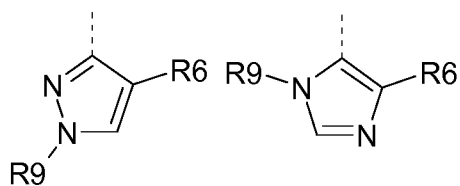
B-29



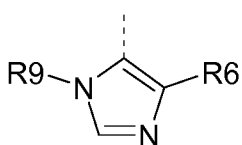
B-30



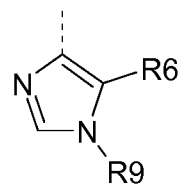
B-31



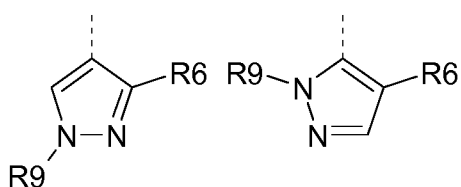
B-32



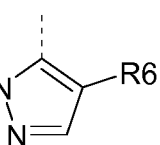
B-33



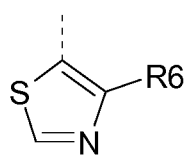
B-34



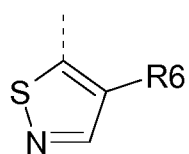
B-35



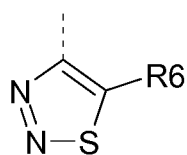
B-36



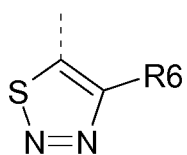
B-39



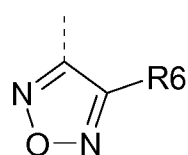
B-46



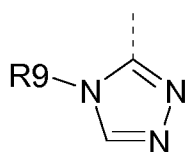
B-48



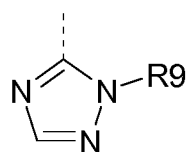
B-49



B-51



B-52



B-53

in which the broken line represents the bond to D and in which B furthermore carries n substituents R7,

- R1 represents a radical from the group consisting of halogen, cyano, nitro, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy and C₁-C₄-alkylsulphonyl,
- R2 represents a radical from the group consisting of halogen, cyano, nitro, amino, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₃-C₆-cycloalkyl, C₁-C₄-alkoxy, di-(C₁-C₆-alkyl)-amino, C₁-C₄-alkylcarbonyl, aryl,
- R3 represents a radical from the group consisting of hydrogen, halogen, cyano, nitro, C₁-C₄-alkyl,
- R4 represents a radical from the group consisting of hydrogen, amino, C₁-C₄-alkyl,
- R5 represents a radical from the group consisting of hydrogen, C₁-C₄-alkyl, C₃-C₄-alkenyl, C₃-C₄-alkynyl, C₃-C₆-cycloalkyl-C₁-C₄-alkyl, C₁-C₄-alkylcarbonyl, cyano-C₁-C₄-alkyl and C(=O)-B,
- 10 R6 represents a radical from the group consisting of hydrogen (only in the radicals B-33 and B-36), halogen, cyano, nitro, hydroxy, carboxyl, C₁-C₄-alkyl, C₁-C₄-alkoxy, C₁-C₄-alkylthio, C₁-C₄-alkylsulphonyl, C₁-C₄-haloalkyl, C₃-C₆-cycloalkyl, C₁-C₄-haloalkoxy, C₁-C₄-haloalkylthio, C₁-C₄-alkylcarbonyl, C₁-C₄-alkylcarbonylamino, C₁-C₄-haloalkylcarbonylamino and heteroaryl,
- 15 R7 represents a radical from the group consisting of halogen, cyano, nitro, hydroxy, C₁-C₄-alkyl, C₁-C₄-haloalkyl and C₁-C₄-alkoxy,
- R9 represents a radical from the group consisting of C₁-C₄-alkyl and C₁-C₄-haloalkyl,
- m represents a number from the group consisting of 0, 1, 2 and 3, where for m > 1 the radicals R2 may be identical or different and
- n represents a number from the group consisting of 0, 1, 2 and 3, where for n > 1 the radicals R7 may be identical or different.
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6. Compositions for controlling unwanted microorganisms, characterized in that they comprise at least one compound of the formula (I) as described in any of Claim 1 to 5 and further comprising surfactants and/or extenders.
7. Method for controlling harmful microorganisms, characterized in that one or more compound of the formula (I) according to any of Claim 1 to 5 or a composition according to Claim 6 are applied to the harmful microorganisms or their habitat.
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8. Use of one or more compounds according to any of Claim 1 to 5 or a composition according to Claim 6 for control of harmful phytopathogenic fungi.

9. Process for producing compositions for controlling harmful microorganisms, characterized in that one or more compounds according to any of Claims 1 to 5 are mixed with auxiliaries, solvents, carriers, surfactants and/or extenders .
10. Use of one or more compounds which are defined according to any of Claims 1 to 5 or a
5 composition as defined according to Claim 6 for treatment of transgenic plants.