N-(CYCLOPROPYLMETHYL)-5-(METHYLSULFONYL)-N-{1-[1-(PYRIMIDIN-2-YL)-1H-1,2,4-TRIAZOL-5-YL]ETHYL}BENZAMIDE DERIVATIVES AND THE CORRESPONDING PYRIDINE-CARBOXAMIDE DERIVATIVES AS PESTICIDES

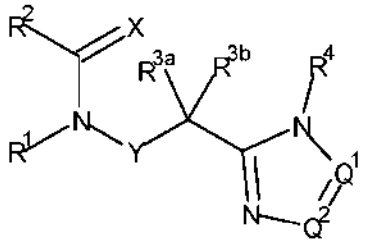
The present invention relates to novel heteroaryl-triazole and heteroaryl-tetrazole compounds, to formulations and compositions comprising such compounds and to their use in the control of animal pests including arthropods and insects in plant protection and to their use for the control of ectoparasites on animals.

Certain heteroaryl-triazole and heteroaryl-tetrazole compounds of formula I (R^{3b} = hydrogen) are disclosed for the use in controlling ectoparasites on animals in WO 2017/192385.

Modern plant protection products and veterinary ectoparasiticides have to meet many demands, for example in relation to efficacy, persistence, spectrum and resistance breaking properties. Questions of toxicity, the combinability with other active compounds or formulation auxiliaries play a role, as well as the question of the expense that the synthesis of an active compound requires. Furthermore, resistances may occur. For all these reasons, the search for novel crop protection compositions or veterinary ectoparasiticides cannot be considered to be complete, and there is a constant need for novel compounds having properties which, compared to the known compounds, are improved at least in respect of individual aspects.

It was an object of the present invention to provide compounds which widen the spectrum of the pesticides in various aspects.

The present invention therefore provides compounds of the general formula (I)



(I),

in which (Configuration 1-1):

X is O or S;

Q^1 and Q^2 are independently CR^5 or N, provided at least one of Q^1 and Q^2 is N;

Y is a direct bond or CH_2;

R^1 is hydrogen; C_1-C_6alkyl optionally substituted with one substituent selected from -CN, -$CONH_2$, -COOH, -NO_2 and -$Si(CH_3)_3$; C_1-C_6haloalkyl; C_2-C_6alkenyl; C_2-C_6haloalkenyl; C_2-C_6alkynyl; C_2-C_6haloalkynyl; C_3-C_4cycloalkyl-C_1-C_2alkyl- wherein the C_3-C_4cycloalkyl is optionally substituted with one or two halogen atoms; oxetan-3-yl-CH_2- or benzyl optionally substituted with halogen or C_1-C_3haloalkyl;

R^2 is phenyl, pyridine, pyrimidine, pyrazine or pyridazine, wherein the phenyl, pyridine, pyrimidine, pyrazine or pyridazine is substituted with one to five substituents, provided at least one substituent is on either carbon adjacent to the carbon bonded to the C=X group, each independently selected from the group consisting of halogen, hydroxy, -NH_2, -CN, -SF_5, -COOH, -$CONH_2$, -NO_2, or in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl, C_3-C_6cycloalkyl-C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_1-C_3haloalkylthio, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl, phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, -NH(C_1-C_4alkyl), -N(C_1-C_4alkyl)$_2$, -NHCO-C_1-C_4alkyl, -N(C_1-C_4alkyl)CO-C_1-C_4alkyl, -NHCO-phenyl, -CO_2C_1-C_4alkyl, -CONH(C_1-C_4alkyl), -CON(C_1-C_4alkyl)$_2$, -CONH(C_3-C_6cycloalkyl), -CON(C_1-C_4alkyl)(C_3-C_6cycloalkyl), -C(=NOC_1-C_4alkyl)H, -C(=NOC_1-C_4alkyl)-C_1-C_4alkyl; phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, in each case optionally substituted C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

or

R^2 is phenyl, pyridine, pyrimidine, pyrazine or pyridazine, wherein the phenyl, pyridine, pyrimidine, pyrazine or pyridazine is substituted with a total of one to three substituents, provided the substituent(s) are not on either carbon adjacent to the carbon bonded to the C=X group and at least one and up to three substituent(s) are independently selected from group A consisting of C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl, in each case optionally substituted C_3-C_6cycloalkyl, phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, -NH(C_1-C_4alkyl), -N(C_1-C_4alkyl)$_2$, -NHCO-C_1-C_4alkyl, -N(C_1-C_4alkyl)CO-C_1-C_4alkyl -NHCO-phenyl, -CO_2C_1-C_4alkyl, -CONH(C_1-C_4alkyl), -CON(C_1-C_4alkyl)$_2$, -CONH(C_3-C_6cycloalkyl), -CON(C_1-C_4alkyl)(C_3-C_6cycloalkyl), -C(=NOC_1-C_4alkyl)H, -C(=NOC_1-C_4alkyl)-C_1-C_4alkyl; phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is

optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, in each case optionally substituted C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy and C_1-C_4haloalkoxy;

the other one to two optional substituent(s) are each independently selected from group B consisting of halogen, hydroxy, $-NH_2$, -CN, $-SF_5$, -COOH, $-CONH_2$, $-NO_2$, in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl, C_3-C_6cycloalkyl-C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl, phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, $-NH(C_1$-C_4alkyl), $-N(C_1$-C_4alkyl)$_2$, $-NHCO$-C_1-C_4alkyl, $-N(C_1$-C_4alkyl)CO-C_1-C_4alkyl, -NHCO-phenyl, $-CO_2C_1$-C_4alkyl, $-CONH(C_1$-C_4alkyl), $-CON(C_1$-C_4alkyl)$_2$, $-CONH(C_3$-C_6cycloalkyl), $-CON(C_1$-C_4alkyl)(C_3-C_6cycloalkyl), $-C(=NOC_1$-C_4alkyl)H, $-C(=NOC_1$-C_4alkyl)-C_1-C_4alkyl; phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, in each case optionally substituted C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

or

R^2 is naphthyl optionally substituted by one to three substituents independently selected from the group consisting of halogen, hydroxy, -CN, -COOH, $-CONH_2$, $-NO_2$, $-SF_5$, $-NH_2$, in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl, C_3-C_6cycloalkyl-C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl, phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, $-NH(C_1$-C_4alkyl), $-N(C_1$-C_4alkyl)$_2$, $-NHCO$-C_1-C_4alkyl, $-N(C_1$-C_4alkyl)CO-C_1-C_4alkyl, -NHCO-phenyl, $-CO_2C_1$-C_4alkyl, $-CONH(C_1$-C_4alkyl), $-CON(C_1$-C_4alkyl)$_2$, $-C(=NOC_1$-C_4alkyl)H, $-C(=NOC_1$-C_4alkyl)-C_1-C_4alkyl; phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, in each case optionally substituted C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

or

R^2 is a heterocyclic ring which is selected from the group consisting of 4- to 10-membered saturated and partially unsaturated heterocyclyl, 5-membered heteroaryl, 9-membered heteroaryl and 10-membered heteroaryl, each of which is optionally substituted by one to

three substituents independently selected from the group consisting of halogen, =O (oxo), hydroxy, -CN, -COOH, $-CONH_2$, $-NO_2$, $-SF_5$, $-NH_2$, in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl, C_3-C_6cycloalkyl-C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl,C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl, phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, -NH(C_1-C_4alkyl), -N(C_1-C_4alkyl)$_2$, -NHCO-C_1-C_4alkyl, -N(C_1-C_4alkyl)CO-C_1-C_4alkyl, -NHCO-phenyl, $-CO_2C_1$-C_4alkyl, -CONH(C_1-C_4alkyl), -CON(C_1-C_4alkyl)$_2$, -C(=NOC_1-C_4alkyl)H, -C(=NOC_1-C_4alkyl)-C_1-C_4alkyl; phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, in each case optionally substituted C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

or

R^2 is in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl or C_1-C_6haloalkyl;

R^{3a}, R^{3b} are independently selected from the group consisting of hydrogen; halogen; -CN; C_1-C_6alkyl optionally substituted by one to three substituents independently selected from the group consisting of halogen, hydroxy, -CN, -COOH, $-CONH_2$, $-NO_2$, $-NH_2$, in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_4alkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, -NH(C_1-C_4alkyl), -N(C_1-C_4alkyl)$_2$, -NHCO-C_1-C_4alkyl, -N(C_1-C_4alkyl)CO-C_1-C_4alkyl, $-CO_2C_1$-C_4alkyl, -CONH(C_1-C_4alkyl), and -CON(C_1-C_4alkyl)$_2$; optionally substituted C_3-C_6cycloalkyl; optionally substituted C_1-C_6haloalkyl; optionally substituted C_2-C_6alkenyl; optionally substituted C_2-C_6haloalkenyl; optionally substituted C_2-C_6alkynyl; benzyl wherein the phenyl substituent is optionally substituted with one to five substituents, each independently selected from the group consisting of halogen, hydroxy, -CN, -COOH, $-CONH_2$, $-NO_2$, $-NH_2$, $-SF_5$, in each case optionally substituted C_1-C_6alkyl, C_1-C_4alkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, and C_1-C_3alkylsulfonyl; heterocyclyl-C_1-C_6alkyl wherein the heterocyclyl substituent is selected from the group consisting of 4- to 10-membered saturated and partially unsaturated heterocyclyl, 5-membered heteroaryl and 6-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of halogen, =O (oxo), hydroxy, -CN, -COOH, $-CONH_2$, $-NO_2$, $-NH_2$, in each case optionally substituted C_1-C_6alkyl, and C_1-C_4alkoxy; phenyl optionally substituted with one to five substituents, each independently selected from the group consisting of halogen, hydroxy, -CN, -COOH, $-CONH_2$, $-NO_2$, $-NH_2$, $-SF_5$, in each case optionally substituted C_1-

C_6alkyl, C_1-C_4alkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, and C_1-C_3alkylsulfonyl; or heterocyclyl wherein the heterocyclyl substituent is selected from the group consisting of 4- to 10-membered saturated and partially unsaturated heterocyclyl, 5-membered heteroaryl and 6-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of halogen, =O (oxo), hydroxy, -CN, -COOH, $-CONH_2$, $-NO_2$, $-NH_2$, in each case optionally substituted C_1-C_6alkyl, and C_1-C_4alkoxy;

or

R^{3a}, R^{3b} form together with the carbon to which they are connected a C_3-C_6-carbocyclic or 3- to 6-membered heterocyclic ring system, optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, in each case optionally substituted C_1-C_6alkyl, C_1-C_4alkoxy and C_1-C_3haloalkoxy;

R^4 is pyridine, pyrimidine, pyrazine, pyridazine or 5-membered heteroaryl, wherein the pyridine, pyrimidine, pyrazine, pyridazine or 5-membered heteroaryl is optionally substituted with one to three substituents selected from the group consisting of halogen, hydroxy, -CN, -COOH, $-CONH_2$, $-CSNH_2$, $-NO_2$, $-NH_2$, in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl, $-NH(C_1$-C_4alkyl), $-N(C_1$-C_4alkyl)$_2$, -NHCO-C_1-C_4alkyl, -NHCO-C_3-C_6cycloalkyl, -NHCO-phenyl, $-N(C_1$-C_4alkyl)CO-C_1-C_4alkyl, $-N(C_1$-C_4alkyl)CO-C_3-C_6cycloalkyl, $-N(C_1$-C_4alkyl)CO-phenyl, $-N(SO_2C_1$-C_3alkyl)$_2$, $-NH(SO_2C_1$-C_3alkyl), $-N(C_1$-C_4alkyl)(SO_2C_1-C_3alkyl), $-CO_2C_1$-C_4alkyl, $-CONH(C_1$-C_4alkyl), $-CON(C_1$-C_4alkyl)$_2$, $-C(=NOC_1$-C_4alkyl)H and $-C(=NOC_1$-C_4alkyl)-C_1-C_4alkyl;

R^5 is hydrogen, halogen, -CN, or in each case optionally substituted C_1-C_3alkyl, C_3-C_4cycloalkyl, C_1-C_3alkoxy, C_1-C_3alkoxyC(O)-, $(C_1$-C_3alkoxy)$_2$CH-, $-CO_2C_1$-C_4alkyl, $-CONH(C_1$-C_4alkyl), $-CON(C_1$-C_4alkyl)$_2$, -NHCO-C_1-C_4alkyl, $-N(C_1$-C_4alkyl)CO-C_1-C_4alkyl, $-C(=NOC_1$-C_4alkyl)H, or $-C(=NOC_1$-C_4alkyl)-C_1-C_4alkyl.

The present invention furthermore provides compounds of the general formula (I)

in which (Configuration 1-2)

X is O or S;

Q^1 and Q^2 are independently CR^5 or N, provided at least one of Q^1 and Q^2 is N;

Y is a direct bond or optionally substituted CH_2;

R^1 is hydrogen; C_1-C_6alkyl optionally substituted with one substituent selected from -CN, -$CONH_2$, -COOH, -NO_2 and -$Si(CH_3)_3$; C_1-C_6haloalkyl; C_2-C_6alkenyl; C_2-C_6haloalkenyl; C_2-C_6alkynyl; C_2-C_6haloalkynyl; C_3-C_4cycloalkyl-C_1-C_2alkyl- wherein the C_3-C_4cycloalkyl is optionally substituted with one or two halogen atoms; oxetan-3-yl-CH_2- or benzyl optionally substituted with halogen or C_1-C_3haloalkyl;

R^2 is phenyl, pyridine, pyrimidine, pyrazine or pyridazine, wherein the phenyl, pyridine, pyrimidine, pyrazine or pyridazine is substituted with one to five substituents, provided at least one substituent is on either carbon adjacent to the carbon bonded to the C=X group, each independently selected from the group consisting of

halogen, hydroxy, -NH_2, -CN, -SF_5, -COOH, -$CONH_2$, -NO_2,

and in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl, C_3-C_6cycloalkyl-C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_1-C_6haloalkylthio, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_1-C_6haloalkylsulfinyl, C_1-C_6haloalkylsulfonyl, phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, -$NH(C_1$-C_6alkyl), -$N(C_1$-C_6alkyl)$_2$, -NHCO-C_1-C_6alkyl, -$N(C_1$-C_6alkyl)CO-C_1-C_6alkyl, -NHCO-phenyl, -CO_2C_1-C_6alkyl, -$CONH(C_1$-C_6alkyl), -$CON(C_1$-C_6alkyl)$_2$, -$CONH(C_3$-C_6cycloalkyl), -$CON(C_1$-C_6alkyl)(C_3-C_6cycloalkyl), -$C(=NOC_1$-C_6alkyl)H, -$C(=NOC_1$-C_6alkyl)-C_1-C_6alkyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, in each case optionally substituted C_1-C_6alkyl, C_1-C_6haloalkyl and C_1-C_6alkoxy;

and an optionally substituted 4- to 6-membered saturated or partially unsaturated heterocyclic ring;

or

R^2 is phenyl, pyridine, pyrimidine, pyrazine or pyridazine, wherein the phenyl, pyridine, pyrimidine, pyrazine or pyridazine is substituted with a total of one to three substituents, provided the substituent(s) are not on either carbon adjacent to the carbon bonded to the

C=X group and at least one and up to three substituent(s) are independently selected from group A consisting of

optionally substituted C_4-C_6alkyl;

C_1-C_6alkylthio, optionally substituted by one to three substituents independently selected from the group consisting of -NH_2, -OH, -NO_2, -CN, -SH, CO_2C_1-C_4alkyl, -$CONH_2$, SF_5, -SO_2NH_2, C_1-C_4alkyl, C_3-C_4cycloalkyl, C_2-C_4alkenyl, C_5-C_6cycloalkenyl, C_2-C_4alkynyl, -NH(C_1-C_6alkyl), -N(C_1-C_6alkyl)$_2$, *N*-C_1-C_4alkanoylamino, C_1-C_4alkoxy, C_1-C_4haloalkoxy, C_2-C_4alkenyloxy, C_2-C_4alkynyloxy, C_3-C_4cycloalkoxy, C_5-C_6cycloalkenyloxy, C_1-C_4alkoxycarbonyl, C_2-C_4alkenyloxycarbonyl, C_2-C_4alkynyloxycarbonyl, C_6-,C_{10}-,C_{14}-aryloxycarbonyl, C_1-C_4alkanoyl, C_2-C_4alkenylcarbonyl, C_2-C_4alkynylcarbonyl, C_6-,C_{10}-,C_{14}-arylcarbonyl, C_1-C_4alkylthio, C_1-C_4haloalkylthio, C_3-C_4cycloalkylthio, C_2-C_4alkenylthio, C_5-C_6cycloalkenylthio, C_2-C_4alkynylthio, C_1-C_4alkylsulfinyl, C_1-C_4haloalkylsulfinyl, C_1-C_4alkylsulfonyl, C_1-C_4haloalkylsulfonyl, -SO_2-NH(C_1-C_6alkyl), -SO_2-N(C_1-C_6alkyl)$_2$, C_1-C_4alkylphosphinyl, C_1-C_4alkylphosphonyl, *N*-C_1-C_4alkylaminocarbonyl, *N*,*N*-di-C_1-C_4alkylaminocarbonyl, *N*-C_1-C_4alkanoylaminocarbonyl, *N*-C_1-C_4alkanoyl-N-C_1-C_4alkylaminocarbonyl, C_6-,C_{10}-,C_{14}-aryl, C_6-,C_{10}-,C_{14}-aryloxy, benzyl, benzyloxy, benzylthio, C_6-,C_{10}-,C_{14}-arylthio, C_6-,C_{10}-,C_{14}-arylamino, benzylamino, heterocyclyl, heteroaryl and trialkylsilyl, substituents bonded via a double bond, such as C_1-C_4alkylidene (e.g. methylidene or ethylidene), an oxo group, an imino group and a substituted imino group;

and in each case optionally substituted C_4-C_6haloalkylthio, C_4-C_6haloalkoxy, C_4-C_6alkoxy, C_4-C_6haloalkyl, C_3-C_6cycloalkyl, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_1-C_6haloalkylsulfinyl, C_1-C_6haloalkylsulfonyl, C_2-C_6alkenylsulfanyl, C_2-C_6alkenylsulfinyl, C_2-C_6alkenylsulfonyl, C_2-C_6alkinylsulfanyl, C_2-C_6alkinylsulfinyl, C_2-C_6alkinylsulfonyl, phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, heterocyclylsulfanyl, heterocyclylsulfinyl, heterocyclylsulfonyl, heteroarylsulfanyl, heteroarylsulfinyl, heteroarylsulfonyl, S-C_1-C_6alkylsulfinimidoyl, S-C_3-C_6cycloalkylsulfinimidoyl, S-C_2-C_6alkenylsulfinimidoyl, S-C_2-C_6alkinylsulfinimidoyl, S-phenylsulfinimidoyl, S-heterocyclylsulfinimidoyl, S-heteroarylsulfinimidoyl, S-C_1-C_6alkylsulfonimidoyl, S-C_3-C_6cycloalkylsulfonimidoyl, S-C_2-C_6alkenylsulfonimidoyl, S-C_2-C_6alkinylsulfonimidoyl, S-phenylsulfonimidoyl, S-heterocyclylsulfonimidoyl, S-heteroarylsulfonimidoyl, -NH(C_1-C_6alkyl), -N(C_1-C_6alkyl)$_2$, -NHCO-C_1-C_6alkyl, -N(C_1-C_6alkyl)CO-C_1-C_6alkyl, -N(C_3-C_6cycloalkyl)CO-C_1-C_6alkyl, -NHCO-phenyl, -N(C_1-C_6alkyl)CO-phenyl, -N(C_3-

C_6cycloalkyl)CO-phenyl, -NHCO-C_3-C_6cycloalkyl, -N(C_1-C_6alkyl)CO-(C_3-C_6cycloalkyl), -N(C_3-C_6cycloalkyl)CO-(C_3-C_6cycloalkyl), -NHCO-heteroaryl, -N(C_1-C_6alkyl)CO-heteroaryl, -N(C_3-C_6cycloalkyl)CO-heteroaryl, -NHCO-heterocyclyl, -N(C_1-C_6alkyl)CO-heterocyclyl, -N(C_3-C_6cycloalkyl)CO-heterocyclyl, -$CO_2$$C_1$-$C_6$alkyl, -CONH($C_1$-$C_6$alkyl), -CON($C_1$-$C_6$alkyl)$_2$, -CONH($C_3$-$C_6$cycloalkyl), -CON($C_1$-$C_6$alkyl)($C_3$-$C_6$cycloalkyl), -CON($C_3$-$C_6$cycloalkyl)$_2$, -CONH-phenyl, -CON($C_1$-$C_6$alkyl)phenyl, -CON($C_3$-$C_6$cycloalkyl)phenyl, -CONH-heteroaryl, -CON(C_1-C_6alkyl)heteroaryl, -CON(C_3-C_6cycloalkyl)heteroaryl, -CONH-heterocyclyl, -CON(C_1-C_6alkyl)heterocyclyl, -CON(C_3-C_6cycloalkyl)heterocyclyl, -C(=NOC_1-C_6alkyl)H, -C(=NOC_1-C_6alkyl)-C_1-C_6alkyl, -NHSO_2-C_1-C_6alkyl, -N(C_1-C_6alkyl)SO_2-C_1-C_6alkyl, -N(C_3-C_6cycloalkyl)SO_2-C_1-C_6alkyl, -NHSO_2-phenyl, -N(C_1-C_6alkyl)SO_2-phenyl, -N(C_3-C_6cycloalkyl)SO_2-phenyl, -NHSO_2-C_3-C_6cycloalkyl, -N(C_1-C_6alkyl)SO_2-(C_3-C_6cycloalkyl), -N(C_3-C_6cycloalkyl)SO_2-(C_3-C_6cycloalkyl), -NHSO_2-heterocyclyl, -N(C_1-C_4alkyl)SO_2-heterocyclyl, -N(C_3-C_6cycloalkyl)SO_2-heterocyclyl, -NHSO_2-heteroaryl, -N(C_1-C_6alkyl)SO_2-heteroaryl, -N(C_3-C_6cycloalkyl)SO_2-heteroaryl, -SO_2NH(C_1-C_6alkyl), -SO_2N(C_1-C_6alkyl)$_2$, -SO_2N(C_1-C_6alkyl)(C_3-C_6cycloalkyl), -SO_2NH(C_3-C_6cycloalkyl), -SO_2N(C_3-C_6cycloalkyl)$_2$, -SO_2NH(phenyl), -SO_2N(C_1-C_6alkyl)(phenyl), -SO_2N(C_1-C_4cycloalkyl)(phenyl), -SO_2NH(heteroaryl), -SO_2N(C_1-C_6alkyl)(heteroaryl), -SO_2N(C_3-C_6cycloalkyl)(heteroaryl), -SO_2NH(heterocyclyl), -SO_2N(C_1-C_4alkyl)(heterocyclyl), -SO_2N(C_3-C_6cycloalkyl)(heterocyclyl);

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, in each case optionally substituted C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6alkoxy and C_1-C_6haloalkoxy;

and an optionally substituted 4- to 6-membered saturated or partially unsaturated heterocyclic ring;

and -SO_2NH_2;

and the other one to two optional substituent(s) are each independently selected from group B consisting of

halogen, hydroxy, -NH_2, -CN, -SF_5, -COOH, -CONH_2, -NO_2,

and in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl, C_3-C_6cycloalkyl-C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_1-C_6haloalkylthio, C_1-C_6haloalkylsulfinyl, C_1-

C_6haloalkylsulfonyl, phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, -NH(C_1-C_6alkyl), -N(C_1-C_6alkyl)$_2$, -NHCO-C_1-C_6alkyl, -N(C_1-C_6alkyl)CO-C_1-C_6alkyl, -NHCO-phenyl, -CO_2C_1-C_6alkyl, -CONH(C_1-C_6alkyl), -CON(C_1-C_6alkyl)$_2$, -CONH(C_3-C_6cycloalkyl), -CON(C_1-C_6alkyl)(C_3-C_6cycloalkyl), -C(=NOC_1-C_6alkyl)H, -C(=NOC_1-C_6alkyl)-C_1-C_6alkyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, in each case optionally substituted C_1-C_6alkyl, C_1-C_6haloalkyl and C_1-C_6alkoxy;

or

R^2 is naphthyl optionally substituted by one to three substituents independently selected from the group consisting of

halogen, hydroxy, -CN, -COOH, -$CONH_2$, -NO_2, -SF_5, -NH_2,

and in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl, C_3-C_6cycloalkyl-C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_1-C_6haloalkylthio, C_1-C_6haloalkylsulfinyl, C_1-C_6haloalkylsulfonyl, phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, -NH(C_1-C_6alkyl), -N(C_1-C_6alkyl)$_2$, -NHCO-C_1-C_6alkyl, -N(C_1-C_6alkyl)CO-C_1-C_6alkyl, -NHCO-phenyl, -CO_2C_1-C_6alkyl, -CONH(C_1-C_6alkyl), -CON(C_1-C_6alkyl)$_2$, -C(=NOC_1-C_6alkyl)H, -C(=NOC_1-C_6alkyl)-C_1-C_6alkyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, in each case optionally substituted C_1-C_6alkyl, C_1-C_6haloalkyl and C_1-C_6alkoxy;

or

R^2 is a heterocyclic ring which is selected from the group consisting of 4- to 10-membered saturated and partially unsaturated heterocyclyl, 5-membered heteroaryl, 9-membered heteroaryl and 10-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of

halogen, =O (oxo), hydroxy, -CN, -COOH, -$CONH_2$, -NO_2, -SF_5, -NH_2,

and in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl, C_3-C_6cycloalkyl-C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_1-C_6haloalkylthio, C_1-C_6haloalkylsulfinyl, C_1-C_6haloalkylsulfonyl, phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, -NH(C_1-C_6alkyl), -N(C_1-C_6alkyl)$_2$, -NHCO-C_1-C_6alkyl, -N(C_1-C_6alkyl)CO-C_1-C_6alkyl, -NHCO-phenyl, -$CO_2$$C_1$-$C_6$alkyl, -CONH($C_1$-$C_6$alkyl), -CON($C_1$-$C_6$alkyl)$_2$, -C(=NO$C_1$-$C_6$alkyl)H, -C(=NO$C_1$-$C_6$alkyl)-$C_1$-$C_6$alkyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, in each case optionally substituted C_1-C_6alkyl, C_1-C_6haloalkyl and C_1-C_6alkoxy;

or

R^2 is in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl or C_1-C_6haloalkyl;

R^{3a}, R^{3b} are independently selected from the group consisting of hydrogen; halogen; -CN; C_1-C_6alkyl optionally substituted by one to three substituents independently selected from the group consisting of halogen, hydroxy, -CN, -COOH, -$CONH_2$, -NO_2, -NH_2, in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_6alkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, -NH(C_1-C_6alkyl), -N(C_1-C_6alkyl)$_2$, -NHCO-C_1-C_6alkyl, -N(C_1-C_6alkyl)CO-C_1-C_6alkyl, -$CO_2$$C_1$-$C_6$alkyl, -CONH($C_1$-$C_6$alkyl), and -CON($C_1$-$C_6$alkyl)$_2$; optionally substituted C_3-C_6cycloalkyl; optionally substituted C_1-C_6haloalkyl; optionally substituted C_2-C_6alkenyl; optionally substituted C_2-C_6haloalkenyl; optionally substituted C_2-C_6alkynyl; benzyl wherein the phenyl substituent is optionally substituted with one to five substituents, each independently selected from the group consisting of halogen, hydroxy, -CN, -COOH, -$CONH_2$, -NO_2, -NH_2, -SF_5, in each case optionally substituted C_1-C_6alkyl, C_1-C_6alkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, and C_1-C_6alkylsulfonyl; heterocyclyl-C_1-C_6alkyl wherein the heterocyclyl substituent is selected from the group consisting of 4- to 10-membered saturated and partially unsaturated heterocyclyl, 5-membered heteroaryl and 6-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of halogen, =O (oxo), hydroxy, -CN, -COOH, -$CONH_2$, -NO_2, -NH_2, in each case optionally substituted C_1-C_6alkyl, and C_1-C_6alkoxy; phenyl optionally substituted with one to five substituents, each independently selected from the group consisting of halogen, hydroxy, -CN, -COOH, -$CONH_2$, -NO_2, -NH_2, -SF_5, in each case optionally substituted C_1-C_6alkyl, C_1-C_6alkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, and C_1-C_6alkylsulfonyl; or

heterocyclyl wherein the heterocyclyl substituent is selected from the group consisting of 4- to 10-membered saturated and partially unsaturated heterocyclyl, 5-membered heteroaryl and 6-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of halogen, =O (oxo), hydroxy, -CN, -COOH, $-CONH_2$, $-NO_2$, $-NH_2$, in each case optionally substituted C_1-C_6alkyl, and C_1-C_6alkoxy;

or

R^{3a}, R^{3b} form together with the carbon to which they are connected a C_3-C_6-carbocyclic or 3- to 6-membered heterocyclic ring system, optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, in each case optionally substituted C_1-C_6alkyl, C_1-C_6alkoxy and C_1-C_6haloalkoxy;

R^4 is pyridine, pyrimidine, pyrazine, pyridazine or 5-membered heteroaryl, wherein the pyridine, pyrimidine, pyrazine, pyridazine or 5-membered heteroaryl is optionally substituted with one to three substituents selected from the group consisting of halogen, hydroxy, -CN, -COOH, $-CO_2$-C_1-C_6alkyl, $-SO_2NH_2$, $-CONH_2$, $-CSNH_2$, $-NO_2$, $-NH_2$, in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_6haloalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_1-C_6haloalkylthio, C_1-C_6haloalkylsulfinyl, C_1-C_6haloalkylsulfonyl, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_2-C_4alkenylsulfanyl, C_2-C_4alkenylsulfinyl, C_2-C_4alkenylsulfonyl, C_2-C_4alkinylsulfanyl, C_2-C_4alkinylsulfinyl, C_2-C_4alkinylsulfonyl, phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, S-C_1-C_6alkylsulfinimidoyl, S-C_3-C_6cycloalkylsulfinimidoyl, S-C_2-C_6alkenylsulfinimidoyl, S-C_2-C_6alkinylsulfinimidoyl, S-phenylsulfinimidoyl, S-C_1-C_6alkylsulfonimidoyl, S-C_3-C_6cycloalkylsulfonimidoyl, S-C_2-C_6alkenylsulfonimidoyl, S-C_2-C_6alkinylsulfonimidoyl, S-phenylsulfonimidoyl, $-NH(C_1$-C_6alkyl), $-N(C_1$-C_6alkyl)$_2$, $-NHCO$-C_1-C_6alkyl, $-N(C_1$-C_6alkyl)CO-C_1-C_6alkyl, $-N(C_3$-C_6cycloalkyl)CO-C_1-C_6alkyl, $-NHCO$-C_3-C_6cycloalkyl, $-N(C_1$-C_6alkyl)CO-(C_3-C_6cycloalkyl), $-N(C_3$-C_6cycloalkyl)CO-(C_3-C_6cycloalkyl), $-N(C_1$-C_6alkyl)CO-phenyl, $-N(C_3$-C_6cycloalkyl)CO-phenyl, -NHCO-phenyl, $-N(CO$-C_1-C_6alkyl)$_2$, $-N(CO$-C_3-C_6cycloalkyl)$_2$, $-N(CO$-phenyl)$_2$, $-N(CO$-C_3-C_6cycloalkyl)(CO-C_1-C_6alkyl), $-N(CO$-C_3-C_6cycloalkyl)(CO-phenyl), $-N(CO$-C_1-C_6alkyl)(CO-phenyl), $-CONH(C_1$-C_6alkyl), $-CON(C_1$-C_6alkyl)$_2$, $-CONH(C_3$-C_6cycloalkyl), $-CON(C_1$-C_6alkyl)(C_3-C_6cycloalkyl), $-CON(C_3$-C_6cycloalkyl)$_2$, $-CONH$-SO_2-C_1-C_6alkyl, -CONH-SO_2-phenyl, $-CONH$-SO_2-(C_3-C_6cycloalkyl), $-CON(C_1$-C_6alkyl)-SO_2-C_1-C_6alkyl, $-CON(C_1$-C_6alkyl)-SO_2-phenyl, $-CON(C_1$-C_6alkyl)-SO_2-(C_3-C_6cycloalkyl), -CONH-phenyl, $-CON(C_1$-C_6alkyl)phenyl, $-CON(C_3$-C_6cycloalkyl)phenyl, $-N(SO_2C_1$-C_6alkyl)$_2$, $-N(SO_2C_1$-

C_6haloalkyl)$_2$, -N(SO_2C_3-C_6cycloalkyl)$_2$, -N(SO_2C_1-C_6alkyl)SO_2-phenyl, -N(SO_2C_3-C_6cycloalkyl)SO_2-phenyl, -NHSO_2-C_1-C_6alkyl, -NHSO_2-C_1-C_6haloalkyl, -N(C_1-C_6alkyl)SO_2-C_1-C_6alkyl, -N(C_3-C_6cycloalkyl)SO_2-C_1-C_6alkyl, -NHSO_2-phenyl, -N(C_1-C_6alkyl)SO_2-phenyl, -N(C_3-C_6cycloalkyl)SO_2-phenyl, -NHSO_2-C_3-C_6cycloalkyl, -N(C_1-C_6alkyl)SO_2-(C_3-C_6cycloalkyl), -N(C_3-C_6cycloalkyl)SO_2-(C_3-C_6cycloalkyl), -SO_2NH(C_1-C_6alkyl), -SO_2N(C_1-C_6alkyl)$_2$, -SO_2N(C_1-C_6alkyl)(C_3-C_6cycloalkyl), -SO_2NH(C_3-C_6cycloalkyl), -SO_2N(C_3-C_6cycloalkyl)$_2$, -SO_2NH(phenyl), -SO_2N(C_1-C_6alkyl)(phenyl), -SO_2N(C_1-C_4cycloalkyl)(phenyl), -C(=NOC_1-C_6alkyl)H and -C(=NOC_1-C_6alkyl)-C_1-C_6alkyl;

R^5 is hydrogen, halogen, -CN, or in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_6alkoxy, C_1-C_6alkoxyC(O)-, (C_1-C_6alkoxy)$_2$CH-, -CO_2C_1-C_6alkyl, -CONH(C_1-C_6alkyl), -CON(C_1-C_6alkyl)$_2$, -NHCO-C_1-C_6alkyl, -N(C_1-C_6alkyl)CO-C_1-C_6alkyl, -C(=NOC_1-C_6alkyl)H, or -C(=NOC_1-C_6alkyl)-C_1-C_6alkyl.

The compounds of the formula (I) likewise encompass any diastereomers or enantiomers and E/Z isomers which exist, and also salts and N-oxides of compounds of the formula (I), and the use thereof for control of animal pests.

Preferred radical definitions for the formulae specified above and hereinafter are given below.

Preference (Configuration 2-1) is given to the compounds of the formula (I) in which

X is O or S;

Q^1 and Q^2 are independently CR^5 or N, provided at least one of Q^1 and Q^2 is N;

Y is a direct bond or CH_2;

R^1 is hydrogen; C_1-C_6alkyl optionally substituted with one substituent selected from -CN, -$CONH_2$, -COOH, -NO_2 and -Si(CH_3)$_3$; C_1-C_6haloalkyl; C_2-C_6alkenyl; C_2-C_6haloalkenyl; C_2-C_6alkynyl; C_2-C_6haloalkynyl; C_3-C_4cycloalkyl-C_1-C_2alkyl- wherein the C_3-C_4cycloalkyl is optionally substituted with one or two halogen atoms; oxetan-3-yl-CH_2-; or benzyl optionally substituted with halogen or C_1-C_3haloalkyl;

R^2 is phenyl, pyridine, pyrimidine, pyrazine or pyridazine, wherein the phenyl, pyridine, pyrimidine, pyrazine or pyridazine is substituted with one to five substituents, provided at

least one substituent is on either carbon adjacent to the carbon bonded to the C=X group, each independently selected from the group consisting of halogen, hydroxy, $-NH_2$, -CN, $-SF_5$, -COOH, $-CONH_2$, $-NO_2$, C_1-C_6alkyl, optionally substituted C_3-C_6cycloalkyl; C_3-C_6cycloalkyl-C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl; phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, wherein in each case the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl; $-NH(C_1$-C_4alkyl), $-N(C_1$-C_4alkyl)$_2$, $-NHCO-C_1$-C_4alkyl, $-N(C_1$-C_4alkyl)$CO-C_1$-C_4alkyl; -NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl; $-CO_2C_1$-C_4alkyl, $-CONH(C_1$-C_4alkyl), $-CON(C_1$-C_4alkyl)$_2$, $-CONH(C_3$-C_6cycloalkyl), $-CON(C_1$-C_4alkyl)(C_3-C_6cycloalkyl), $-C(=NOC_1$-C_4alkyl)H, $-C(=NOC_1$-C_4alkyl)-C_1-C_4alkyl; phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

or

R^2 is phenyl, pyridine, pyrimidine, pyrazine or pyridazine, wherein the phenyl, pyridine, pyrimidine, pyrazine or pyridazine is substituted with a total of one to three substituents, provided the substituent(s) are not on either carbon adjacent to the carbon bonded to the C=X group and at least one and up to three substituent(s) are independently selected from group A consisting of C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl; phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, wherein in each case the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_6alkyl and C_1-C_3haloalkyl; optionally substituted C_3-C_6cycloalkyl; $-NH(C_1$-C_4alkyl), $-N(C_1$-C_4alkyl)$_2$, $-NHCO-C_1$-C_4alkyl, $-N(C_1$-C_4alkyl)$CO-C_1$-C_4alkyl; -NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl; $-CO_2C_1$-C_4alkyl, $-CONH(C_1$-C_4alkyl), $-CON(C_1$-C_4alkyl)$_2$, $-CONH(C_3$-C_6cycloalkyl), $-CON(C_1$-C_4alkyl)(C_3-C_6cycloalkyl), $-C(=NOC_1$-C_4alkyl)H, $-C(=NOC_1$-C_4alkyl)-C_1-C_4alkyl; phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy and C_1-C_4haloalkoxy;

the other one to two optional substituent(s) are each independently selected from group B consisting of halogen, hydroxy, $-NH_2$, -CN, $-SF_5$, $-COOH$, $-CONH_2$, $-NO_2$, C_1-C_6alkyl, optionally substituted C_3-C_6cycloalkyl; C_3-C_6cycloalkyl-C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl; phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, wherein in each case the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl; $-NH(C_1$-C_4alkyl), $-N(C_1$-C_4alkyl)$_2$, $-NHCO$-C_1-C_4alkyl, $-N(C_1$-C_4alkyl)CO-C_1-C_4alkyl; -NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl; $-CO_2C_1$-C_4alkyl, $-CONH(C_1$-C_4alkyl), $-CON(C_1$-C_4alkyl)$_2$, $-CONH(C_3$-C_6cycloalkyl), $-CON(C_1$-C_4alkyl)(C_3-C_6cycloalkyl), $-C(=NOC_1$-C_4alkyl)H, $-C(=NOC_1$-C_4alkyl)-C_1-C_4alkyl; phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

or

R^2 is naphthyl optionally substituted by one to three substituents independently selected from the group consisting of halogen, hydroxy, -CN, $-COOH$, $-CONH_2$, $-NO_2$, $-SF_5$, $-NH_2$, C_1-C_6alkyl, optionally substituted C_3-C_6cycloalkyl; C_3-C_6cycloalkyl-C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl; phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, wherein in each case the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl; $-NH(C_1$-C_4alkyl), $-N(C_1$-C_4alkyl)$_2$, $-NHCO$-C_1-C_4alkyl, $-N(C_1$-C_4alkyl)CO-C_1-C_4alkyl; -NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl; $-CO_2C_1$-C_4alkyl, $-CONH(C_1$-C_4alkyl), $-CON(C_1$-C_4alkyl)$_2$, $-C(=NOC_1$-C_4alkyl)H, $-C(=NOC_1$-C_4alkyl)-C_1-C_4alkyl; phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

or

R^2 is a heterocyclic ring which is selected from the group consisting of 4- to 10-membered saturated and partially unsaturated heterocyclyl, 5-membered heteroaryl, 9-membered heteroaryl and 10-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of halogen, =O (oxo), hydroxy, -CN, -COOH, $-CONH_2$, $-NO_2$, $-SF_5$, $-NH_2$, C_1-C_6alkyl, optionally substituted C_3-C_6cycloalkyl; C_3-C_6cycloalkyl-C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl; phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, wherein in each case the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl; $-NH(C_1$-C_4alkyl), $-N(C_1$-C_4alkyl)$_2$, $-NHCO$-C_1-C_4alkyl, $-N(C_1$-C_4alkyl)CO-C_1-C_4alkyl; -NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl; $-CO_2C_1$-C_4alkyl, $-CONH(C_1$-C_4alkyl), $-CON(C_1$-C_4alkyl)$_2$, $-C(=NOC_1$-C_4alkyl)H, $-C(=NOC_1$-C_4alkyl)-C_1-C_4alkyl; phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

or

R^2 is C_1-C_6alkyl substituted with one substituent selected from the group consisting of C_1-C_3alkoxy-, C_1-C_3haloalkoxy-, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl; phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy; C_3-C_6cycloalkyl optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, -COOH, $-CONH_2$, C_1-C_6alkyl, C_1-C_6haloalkyl, C_3-C_6cycloalkyl, C_1-C_6alkoxy, $-CO_2C_1$-C_4alkyl, $-CONH(C_1$-C_4alkyl), and $-CON(C_1$-C_4alkyl)$_2$; C_1-C_6haloalkyl;

R^{3a}, R^{3b} are independently selected from the group consisting of hydrogen; halogen: -CN; C_1-C_6alkyl optionally substituted by one to three substituents independently selected from the group consisting of hydroxy, -CN, -COOH, $-CONH_2$, $-NO_2$, $-NH_2$, C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl, $-NH(C_1$-C_4alkyl), $-N(C_1$-C_4alkyl)$_2$, $-NHCO$-C_1-C_4alkyl, $-N(C_1$-

C_4alkyl)CO-C_1-C_4alkyl, -CO_2C_1-C_4alkyl, -CONH(C_1-C_4alkyl), and -CON(C_1-C_4alkyl)$_2$; C_3-C_6cycloalkyl optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, -COOH, -$CONH_2$, C_1-C_6alkyl, C_1-C_6haloalkyl, C_3-C_6cycloalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, -CO_2C_1-C_4alkyl, -CONH(C_1-C_4alkyl), and -CON(C_1-C_4alkyl)$_2$; C_1-C_6haloalkyl optionally substituted with one to two substituents selected from the group consisting of hydroxy, -CN, C_3-C_6cycloalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, -CO_2C_1-C_4alkyl, -CONH(C_1-C_4alkyl), and -CON(C_1-C_4alkyl)$_2$; C_2-C_6alkenyl; C_2-C_6haloalkenyl; C_2-C_6alkynyl; C_2-C_6haloalkynyl; benzyl wherein the phenyl substituent is optionally substituted with one to five substituents, each independently selected from the group consisting of halogen, hydroxy, -CN, -COOH, -$CONH_2$, -NO_2, -NH_2, -SF_5, C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_4haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, and C_1-C_3haloalkylsulfonyl; heterocyclyl-C_1-C_6alkyl wherein the heterocyclyl substituent is selected from the group consisting of 4- to 10-membered saturated and partially unsaturated heterocyclyl, 5-membered heteroaryl and 6-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of halogen, =O (oxo), hydroxy, -CN, -COOH, -$CONH_2$, -NO_2, -NH_2, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy; phenyl optionally substituted with one to five substituents, each independently selected from the group consisting of halogen, hydroxy, -CN, -COOH, -$CONH_2$, -NO_2, -NH_2, -SF_5, C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_4haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, and C_1-C_3haloalkylsulfonyl; and heterocyclyl wherein the heterocyclyl substituent is selected from the group consisting of 4- to 10-membered saturated and partially unsaturated heterocyclyl, 5-membered heteroaryl and 6-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of halogen, =O (oxo), hydroxy, -CN, -COOH, -$CONH_2$, -NO_2, -NH_2, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

or

R^{3a}, R^{3b} form together with the carbon to which they are connected a C_3-C_6-carbocyclic or 3- to 6-membered heterocyclic ring system, optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy and C_1-C_3haloalkoxy;

R^4 is pyridine, pyrimidine, pyrazine, pyridazine or 5-membered heteroaryl, wherein the pyridine, pyrimidine, pyrazine, pyridazine or 5-membered heteroaryl is optionally substituted with one to three substituents selected from the group consisting of halogen,

hydroxy, -CN, -COOH, -$CONH_2$, -$CSNH_2$, -NO_2, -NH_2, C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl, -$NH(C_1$-C_4alkyl), -$N(C_1$-C_4alkyl)$_2$, -NHCO-C_1-C_4alkyl, -NHCO-C_3-C_6cycloalkyl; -NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl; -$N(C_1$-C_4alkyl)CO-C_1-C_4alkyl, -$N(C_1$-C_4alkyl)CO-C_3-C_6cycloalkyl; -$N(C_1$-C_4alkyl)CO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_6alkyl and C_1-C_3haloalkyl; -$N(SO_2C_1$-C_3alkyl)$_2$, -$NH(SO_2C_1$-C_3alkyl), -$N(C_1$-C_4alkyl)(SO_2C_1-C_3alkyl), -CO_2C_1-C_4alkyl, -$CONH(C_1$-C_4alkyl), -$CON(C_1$-C_4alkyl)$_2$, -C(=NOC_1-C_4alkyl)H, and -C(=NOC_1-C_4alkyl)-C_1-C_4alkyl;

R^5 is hydrogen, halogen, -CN, C_1-C_3alkyl, C_1-C_3haloalkyl, C_3-C_4cycloalkyl, C_1-C_3alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkoxyC(O)-, (C_1-C_3alkoxy)$_2$CH-, -CO_2C_1-C_4alkyl, -$CONH(C_1$-C_4alkyl), -$CON(C_1$-C_4alkyl)$_2$, -NHCO-C_1-C_4alkyl, -$N(C_1$-C_4alkyl)CO-C_1-C_4alkyl, -C(=NOC_1-C_4alkyl)H, or -C(=NOC_1-C_4alkyl)-C_1-C_4alkyl.

Also preferred (Configuration 2-2) are the compounds of the formula (I) in which

X is O or S;

Q^1 and Q^2 are independently CR^5 or N, provided at least one of Q^1 and Q^2 is N;

Y is a direct bond or CH_2;

R^1 is hydrogen; C_1-C_6alkyl optionally substituted with one substituent selected from -CN, -$CONH_2$, -COOH, -NO_2 and -$Si(CH_3)_3$; C_1-C_6haloalkyl; C_2-C_6alkenyl; C_2-C_6haloalkenyl; C_2-C_6alkynyl; C_2-C_6haloalkynyl; C_3-C_4cycloalkyl-C_1-C_2alkyl- wherein the C_3-C_4cycloalkyl is optionally substituted with one or two halogen atoms; oxetan-3-yl-CH_2-; or benzyl optionally substituted with halogen or C_1-C_3haloalkyl;

R^2 is phenyl, pyridine, pyrimidine, pyrazine or pyridazine, wherein the phenyl, pyridine, pyrimidine, pyrazine or pyridazine is substituted with one to five substituents, provided at least one substituent is on either carbon adjacent to the carbon bonded to the C=X group, each independently selected from the group consisting of

halogen, hydroxy, -NH_2, -CN, -SF_5, -COOH, -$CONH_2$, -NO_2, C_1-C_6alkyl,

optionally substituted C_3-C_6cycloalkyl;

C_3-C_6cycloalkyl-C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, wherein in each case the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl;

-NH(C_1-C_4alkyl), -N(C_1-C_4alkyl)$_2$, -NHCO-C_1-C_4alkyl, -N(C_1-C_4alkyl)CO-C_1-C_4alkyl;

-NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl;

-$CO_2$$C_1$-$C_4$alkyl, -CONH($C_1$-$C_4$alkyl), -CON($C_1$-$C_4$alkyl)$_2$, -CONH($C_3$-$C_6$cycloalkyl), -CON($C_1$-$C_4$alkyl)($C_3$-$C_6$cycloalkyl), -C(=NO$C_1$-$C_4$alkyl)H, -C(=NO$C_1$-$C_4$alkyl)-$C_1$-$C_4$alkyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

or

R^2 is phenyl, pyridine, pyrimidine, pyrazine or pyridazine, wherein the phenyl, pyridine, pyrimidine, pyrazine or pyridazine is substituted with a total of one to three substituents, provided the substituent(s) are not on either carbon adjacent to the carbon bonded to the C=X group and at least one and up to three substituent(s) are independently selected from group A consisting of

C_4-C_6-alkyl, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, wherein in each case the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl;

optionally substituted C_3-C_6cycloalkyl;

-NH(C_1-C_4alkyl), -N(C_1-C_4alkyl)$_2$, -NHCO-C_1-C_4alkyl, -N(C_1-C_4alkyl)CO-C_1-C_4alkyl, -NHCO-C_3-C_6cycloalkyl, -NHSO$_2$-phenyl;

-NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_6alkyl and C_1-C_3haloalkyl;

-CO$_2$$C_1$-$C_4$alkyl, -CONH($C_1$-$C_4$alkyl), -CON($C_1$-$C_4$alkyl)$_2$, -CONH($C_3$-$C_6$cycloalkyl), -CON($C_1$-$C_4$alkyl)($C_3$-$C_6$cycloalkyl), -C(=NO$C_1$-$C_4$alkyl)H, -C(=NO$C_1$-$C_4$alkyl)-$C_1$-$C_4$alkyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy and C_1-C_4haloalkoxy;

and the other one to two optional substituent(s) are each independently selected from group B consisting of

halogen, hydroxy, -NH$_2$, -CN, -SF$_5$, -COOH, -CONH$_2$, -NO$_2$, C_1-C_6alkyl,

optionally substituted C_3-C_6cycloalkyl;

C_3-C_6cycloalkyl-C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, wherein in each case the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl;

-NH(C_1-C_4alkyl), -N(C_1-C_4alkyl)$_2$, -NHCO-C_1-C_4alkyl, -N(C_1-C_4alkyl)CO-C_1-C_4alkyl; -NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl;

-CO$_2$$C_1$-$C_4$alkyl, -CONH($C_1$-$C_4$alkyl), -CON($C_1$-$C_4$alkyl)$_2$, -CONH($C_3$-$C_6$cycloalkyl), -CON($C_1$-$C_4$alkyl)($C_3$-$C_6$cycloalkyl), -C(=NO$C_1$-$C_4$alkyl)H, -C(=NO$C_1$-$C_4$alkyl)-$C_1$-$C_4$alkyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently

selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

or

R^2 is naphthyl optionally substituted by one to three substituents independently selected from the group consisting of

halogen, hydroxy, -CN, -COOH, $-CONH_2$, $-NO_2$, $-SF_5$, $-NH_2$, C_1-C_6alkyl,

optionally substituted C_3-C_6cycloalkyl;

C_3-C_6cycloalkyl-C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, wherein in each case the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl;

$-NH(C_1$-C_4alkyl), $-N(C_1$-C_4alkyl$)_2$, $-NHCO$-C_1-C_4alkyl, $-N(C_1$-C_4alkyl$)CO$-C_1-C_4alkyl;

-NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl;

$-CO_2C_1$-C_4alkyl, $-CONH(C_1$-C_4alkyl), $-CON(C_1$-C_4alkyl$)_2$, $-C(=NOC_1$-C_4alkyl$)H$, $-C(=NOC_1$-C_4alkyl$)$-C_1-C_4alkyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

or

R^2 is a heterocyclic ring which is selected from the group consisting of 4- to 10-membered saturated and partially unsaturated heterocyclyl, 5-membered heteroaryl, 9-membered heteroaryl and 10-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of

halogen, =O (oxo), hydroxy, -CN, -COOH, -$CONH_2$, -NO_2, -SF_5, -NH_2, C_1-C_6alkyl,

optionally substituted C_3-C_6cycloalkyl;

C_3-C_6cycloalkyl-C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, wherein in each case the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl;

-$NH(C_1$-C_4alkyl), -$N(C_1$-C_4alkyl)$_2$, -NHCO-C_1-C_4alkyl, -$N(C_1$-C_4alkyl)CO-C_1-C_4alkyl; -NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl;

-CO_2C_1-C_4alkyl, -$CONH(C_1$-C_4alkyl), -$CON(C_1$-C_4alkyl)$_2$, -$C(=NOC_1$-C_4alkyl)H, -$C(=NOC_1$-C_4alkyl)-C_1-C_4alkyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

or

R^2 is C_1-C_6alkyl substituted with one substituent selected from the group consisting of

C_1-C_3alkoxy-, C_1-C_3haloalkoxy-, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

C_3-C_6cycloalkyl optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, -COOH, -$CONH_2$, C_1-C_6alkyl, C_1-C_6haloalkyl, C_3-C_6cycloalkyl, C_1-C_6alkoxy, -CO_2C_1-C_4alkyl, -$CONH(C_1$-C_4alkyl), and -$CON(C_1$-C_4alkyl)$_2$;

and C_1-C_6haloalkyl;

R^{3a}, R^{3b} are independently selected from the group consisting of hydrogen; halogen; -CN; C_1-C_6alkyl optionally substituted by one to three substituents independently selected from the group consisting of hydroxy, -CN, -COOH, $-CONH_2$, $-NO_2$, $-NH_2$, C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl, $-NH(C_1$-C_4alkyl), $-N(C_1$-C_4alkyl)$_2$, $-NHCO$-C_1-C_4alkyl, $-N(C_1$-C_4alkyl)CO-C_1-C_4alkyl, $-CO_2C_1$-C_4alkyl, $-CONH(C_1$-C_4alkyl), and $-CON(C_1$-C_4alkyl)$_2$; C_3-C_6cycloalkyl optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, -COOH, $-CONH_2$, C_1-C_6alkyl, C_1-C_6haloalkyl, C_3-C_6cycloalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, $-CO_2C_1$-C_4alkyl, $-CONH(C_1$-C_4alkyl), and $-CON(C_1$-C_4alkyl)$_2$; C_1-C_6haloalkyl optionally substituted with one to two substituents selected from the group consisting of hydroxy, -CN, C_3-C_6cycloalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, $-CO_2C_1$-C_4alkyl, $-CONH(C_1$-C_4alkyl), and $-CON(C_1$-C_4alkyl)$_2$; C_2-C_6alkenyl; C_2-C_6haloalkenyl; C_2-C_6alkynyl; C_2-C_6haloalkynyl; benzyl wherein the phenyl substituent is optionally substituted with one to five substituents, each independently selected from the group consisting of halogen, hydroxy, -CN, -COOH, $-CONH_2$, $-NO_2$, $-NH_2$, $-SF_5$, C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_4haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, and C_1-C_3haloalkylsulfonyl; heterocyclyl-C_1-C_6alkyl wherein the heterocyclyl substituent is selected from the group consisting of 4- to 10-membered saturated and partially unsaturated heterocyclyl, 5-membered heteroaryl and 6-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of halogen, =O (oxo), hydroxy, -CN, -COOH, $-CONH_2$, $-NO_2$, $-NH_2$, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy; phenyl optionally substituted with one to five substituents, each independently selected from the group consisting of halogen, hydroxy, -CN, -COOH, $-CONH_2$, $-NO_2$, $-NH_2$, $-SF_5$, C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_4haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, and C_1-C_3haloalkylsulfonyl; and heterocyclyl wherein the heterocyclyl substituent is selected from the group consisting of 4- to 10-membered saturated and partially unsaturated heterocyclyl, 5-membered heteroaryl and 6-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of halogen, =O (oxo), hydroxy, -CN, -COOH, $-CONH_2$, $-NO_2$, $-NH_2$, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

or

R^{3a}, R^{3b} form together with the carbon to which they are connected a C_3-C_6-carbocyclic or 3- to 6-membered heterocyclic ring system, optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy and C_1-C_3haloalkoxy;

R^4 is pyridine, pyrimidine, pyrazine, pyridazine or 5-membered heteroaryl, wherein the pyridine, pyrimidine, pyrazine, pyridazine or 5-membered heteroaryl is optionally substituted with one to three substituents selected from the group consisting of halogen, hydroxy, -CN, -COOH, -CO_2-C_1-C_6alkyl, -$CONH_2$, -$CSNH_2$, -NO_2, -NH_2, C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl, -NH(C_1-C_4alkyl), -N(C_1-C_4alkyl)$_2$, -NHCO-C_1-C_4alkyl, wherein the alkyl is optionally substituted with -CN, C_1-C_6alkyl and C_1-C_4alkoxy; -NHCO-C_1-C_4haloalkyl, -NHCO-C_3-C_6cycloalkyl, wherein the cycloalkyl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_6alkyl or C_1-C_4alkoxy; -NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_6alkyl and C_1-C_3haloalkyl; -N(C_1-C_4alkyl)CO-C_1-C_3alkyl, -N(C_1-C_4alkyl)CO-C_3-C_6cycloalkyl; -N(C_1-C_4alkyl)CO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl; -N(-$SO_2$$C_1$-$C_3$alkyl)$_2$, -NH(-$SO_2$$C_1$-$C_3$alkyl), -N($C_1$-$C_4$alkyl)(-$SO_2$$C_1$-$C_3$alkyl), -N(-$SO_2$$C_1$-$C_3$haloalkyl)$_2$, -NH(-$SO_2$$C_1$-$C_3$haloalkyl), -CONH($C_1$-$C_4$alkyl), -CON($C_1$-$C_4$alkyl)$_2$, -CONH-$SO_2$-$C_1$-$C_3$alkyl, -CON($C_1$-$C_4$alkyl)($C_3$-$C_6$cycloalkyl), -CONH($C_1$-$C_4$haloalkyl), -CONH($C_3$-$C_6$cycloalkyl), -CONH($C_3$-$C_6$cyanocycloalkyl), -C(=NO$C_1$-$C_4$alkyl)H and -C(=NO$C_1$-$C_4$alkyl)-$C_1$-$C_4$alkyl; and -CONH-phenyl, wherein the phenyl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

R^5 is hydrogen, halogen, -CN, C_1-C_3alkyl, C_1-C_3haloalkyl, C_3-C_4cycloalkyl, C_1-C_3alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkoxyC(O)-, (C_1-C_3alkoxy)$_2$CH-, -$CO_2$$C_1$-$C_4$alkyl, -CONH($C_1$-$C_4$alkyl), -CON($C_1$-$C_4$alkyl)$_2$, -NHCO-$C_1$-$C_4$alkyl, -N($C_1$-$C_4$alkyl)CO-$C_1$-$C_4$alkyl, -C(=NO$C_1$-$C_3$alkyl)H, or -C(=NO$C_1$-$C_4$alkyl)-$C_1$-$C_4$alkyl.

Further preferred (Configuration 3-1) are the compounds of the formula (I) in which

X is O or S;

Q^1 and Q^2 are independently CR^5 or N, provided at least one of Q^1 and Q^2 is N;

Y is a direct bond or CH_2;

R^1 is hydrogen; C_1-C_3alkyl optionally substituted with one substituent selected from -CN, -$CONH_2$, -COOH, -NO_2 and -$Si(CH_3)_3$; C_1-C_3haloalkyl; C_2-C_4alkenyl; C_2-C_4haloalkenyl; C_2-C_4alkynyl; C_2-C_4haloalkynyl; C_3-C_4cycloalkyl-C_1-C_2alkyl- wherein the C_3-C_4cycloalkyl is optionally substituted with one or two halogen atoms; oxetan-3-yl-CH_2-; or benzyl optionally substituted with halogen or C_1-C_3haloalkyl;

R^2 is phenyl, pyridine, pyrimidine, pyrazine or pyridazine, wherein the phenyl, pyridine, pyrimidine, pyrazine or pyridazine is substituted with one to five substituents, provided at least one substituent is on either carbon adjacent to the carbon bonded to the C=X group, each independently selected from the group consisting of halogen, -CN, -NO_2, C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_3-C_4cycloalkylsulfanyl, C_3-C_4cycloalkylsulfinyl, C_3-C_4cycloalkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl; phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl and C_1-C_3haloalkyl:

or

R^2 is phenyl, pyridine, pyrimidine, pyrazine or pyridazine, wherein the phenyl, pyridine, pyrimidine, pyrazine or pyridazine is substituted with a total of one to three substituents, provided the substituent(s) are not on either carbon adjacent to the carbon bonded to the C=X group and at least one and up to two substituent(s) are independently selected from group A consisting of C_3-C_4cycloalkyl, C_1-C_4alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_3-C_4cycloalkylsulfanyl, C_3-C_4cycloalkylsulfinyl, C_3-C_4cycloalkylsulfonyl, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl; phenylsulfanyl wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl or C_1-C_3haloalkyl; phenylsulfinyl wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl or C_1-C_3haloalkyl: phenylsulfonyl wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl or C_1-C_3haloalkyl; -NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl; -$CONH(C_3$-C_4cycloalkyl), -$CON(C_1$-C_3alkyl)(C_3-C_4cycloalkyl), -$C(=NOC_1$-C_3alkyl)-C_1-C_3alkyl; phenyl and 5- to 6-

membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl, C_1-C_3haloalkyl and C_1-C_3haloalkoxy;

the other one to two optional substituent(s) are each independently selected from group B consisting of halogen, -CN, -NO_2, C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl; phenyl and 5- to 6-membered heteroaryl, wherein the phenyl and 5- to 6-membered heteroaryl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl and C_1-C_3haloalkyl;

or

R^2 is thiophene, furane, pyrazole, thiazole, isothiazole, oxazole or isoxazole each of which is optionally substituted by one to three substituents independently selected from the group consisting of halogen, hydroxy, -CN, -NO_2, C_1-C_6alkyl, C_3-C_4cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_3-C_4cycloalkylsulfanyl, C_3-C_4cycloalkylsulfinyl, C_3-C_4cycloalkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl; phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl and C_1-C_3haloalkyl

or

R^2 is C_1-C_6alkyl substituted with one substituent selected from the group consisting of C_1-C_3alkoxy-, C_1-C_3haloalkoxy-, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl; phenyl, wherein the phenyl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

R^{3a}, R^{3b} are independently selected from the group consisting of hydrogen; C_1-C_6alkyl optionally substituted by one to three substituents independently selected from the group consisting of C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, and C_1-C_3haloalkylsulfonyl; C_3-C_6cycloalkyl; C_1-C_6haloalkyl; C_2-C_6alkenyl; C_2-C_6haloalkenyl; C_2-C_6alkynyl; C_2-C_6haloalkynyl; benzyl wherein the phenyl substituent is optionally substituted with one to three substituents independently selected

from the group consisting of halogen, -CN, $-NO_2$, C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, and C_1-C_4haloalkoxy; or heterocyclyl-C_1-C_6alkyl wherein the heterocyclyl substituent is selected from the group consisting of 4 - to 10-membered heterocyclyl, 5-membered heteroaryl and 6-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of halogen, -CN, $-NO_2$, C_1-C_6alkyl, C_1-C_3haloalkyl, and C_1-C_4alkoxy; or phenyl optionally substituted with one substituent selected from the group consisting of halogen, -CN, $-NO_2$, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

or

R^{3a}, R^{3b} form together with the carbon to which they are connected a cyclopropane, cyclobutane, oxetane or tetrahydropyrane ring optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

R^4 is pyridine, pyrimidine or thiazole, wherein (A) the pyridine or pyrimidine is optionally substituted with one to three substituents selected from the group consisting of halogen, -CN, $-NO_2$, C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl and C_1-C_3haloalkylsulfonyl and (B) the thiazole is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, $-NO_2$, C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl and C_1-C_3haloalkylsulfonyl;

R^5 is hydrogen, halogen, -CN, C_1-C_3alkyl, C_1-C_3haloalkyl, C_3-C_4cycloalkyl, or C_1-C_3alkoxy.

Also further preferred (Configuration 3-2) are the compounds of the formula (I) in which

X is O or S;

Q^1 and Q^2 are independently CR^5 or N, provided at least one of Q^1 and Q^2 is N;

Y is a direct bond or CH_2;

R^1 is hydrogen; C_1-C_3alkyl optionally substituted with one substituent selected from -CN, $-CONH_2$, -COOH, $-NO_2$ and $-Si(CH_3)_3$; C_1-C_3haloalkyl; C_2-C_4alkenyl; C_2-C_4haloalkenyl; C_2-C_4alkynyl; C_2-C_4haloalkynyl; C_3-C_4cycloalkyl-C_1-C_2alkyl- wherein the C_3-C_4cycloalkyl

is optionally substituted with one or two halogen atoms; oxetan-3-yl-CH_2-; or benzyl optionally substituted with halogen or C_1-C_3haloalkyl;

R^2 is phenyl, pyridine, pyrimidine, pyrazine or pyridazine, wherein the phenyl, pyridine, pyrimidine, pyrazine or pyridazine is substituted with one to five substituents, provided at least one substituent is on either carbon adjacent to the carbon bonded to the C=X group, each independently selected from the group consisting of

halogen, -CN, -NO_2, C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_3-C_4cycloalkylsulfanyl, C_3-C_4cycloalkylsulfinyl, C_3-C_4cycloalkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl and C_1-C_3haloalkyl;

or

R^2 is phenyl, pyridine, pyrimidine, pyrazine or pyridazine, wherein the phenyl, pyridine, pyrimidine, pyrazine or pyridazine is substituted with a total of one to three substituents, provided the substituent(s) are not on either carbon adjacent to the carbon bonded to the C=X group and at least one and up to two substituent(s) are independently selected from group A consisting of

C_4-alkyl, C_3-C_4cycloalkyl, wherein the C_3-C_4cycloalkyl is optionally substituted with -CN or halogen, C_1-C_4alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_3-C_4cycloalkylsulfanyl, C_3-C_4cycloalkylsulfinyl, C_3-C_4cycloalkylsulfonyl, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

and phenylsulfanyl wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl and C_1-C_3haloalkyl;

phenylsulfinyl wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl and C_1-C_3haloalkyl;

phenylsulfonyl wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl and C_1-C_3haloalkyl;

-NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl;

-NHCO-C_1-C_3alkyl, -NHCO-C_3-C_4cycloalkyl, -NHSO$_2$-phenyl;

-CONH(C_3-C_4cycloalkyl), -CON(C_1-C_3alkyl)(C_3-C_4cycloalkyl), -C(=NOC_1-C_3alkyl)-C_1-C_3alkyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl, C_1-C_3haloalkyl and C_1-C_3haloalkoxy;

and the other one to two optional substituent(s) are each independently selected from group B consisting of

halogen, -CN, -NO$_2$, C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl and 5- to 6-membered heteroaryl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl and C_1-C_3haloalkyl;

or

R^2 is thiophene, furane, pyrazole, thiazole, isothiazole, oxazole or isoxazole each of which is optionally substituted by one to three substituents independently selected from the group consisting of

halogen, hydroxy, -CN, -NO$_2$, C_1-C_6alkyl, C_3-C_4cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_3-C_4cycloalkylsulfanyl, C_3-C_4cycloalkylsulfinyl, C_3-C_4cycloalkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl and C_1-C_3haloalkyl

or

R^2 is C_1-C_6alkyl substituted with one substituent selected from the group consisting of

C_1-C_3alkoxy-, C_1-C_3haloalkoxy-, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

and phenyl, wherein the phenyl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

or

R^2 is naphthyl optionally substituted by one to three substituents independently selected from the group consisting of

halogen, hydroxy, -CN, -NO_2, C_1-C_6alkyl, C_3-C_4cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_3-C_4cycloalkylsulfanyl, C_3-C_4cycloalkylsulfinyl, C_3-C_4cycloalkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl and C_1-C_3haloalkyl

or

R^2 is a 9-membered or 10-membered heteroaryl, which is optionally substituted by one to three substituents independently selected from the group consisting of

halogen, hydroxy, -CN, -NO_2, C_1-C_6alkyl, C_3-C_4cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_3-C_4cycloalkylsulfanyl, C_3-C_4cycloalkylsulfinyl, C_3-C_4cycloalkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl and C_1-C_3haloalkyl;

R^{3a}, R^{3b} are independently selected from the group consisting of hydrogen; C_1-C_6alkyl optionally substituted by one to three substituents independently selected from the group consisting of C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, and C_1-C_3haloalkylsulfonyl; C_3-C_6cycloalkyl; C_1-C_6haloalkyl; C_2-C_6alkenyl; C_2-C_6haloalkenyl; C_2-C_6alkynyl; C_2-C_6haloalkynyl; benzyl wherein the phenyl

substituent is optionally substituted with one to three substituents independently selected from the group consisting of halogen, -CN, -NO_2, C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, and C_1-C_4haloalkoxy; or heterocyclyl-C_1-C_6alkyl wherein the heterocyclyl substituent is selected from the group consisting of 4 - to 10-membered heterocyclyl, 5-membered heteroaryl and 6-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of halogen, -CN, -NO_2, C_1-C_6alkyl, C_1-C_3haloalkyl, and C_1-C_4alkoxy; or phenyl optionally substituted with one substituent selected from the group consisting of halogen, -CN, -NO_2, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

or

R^{3a}, R^{3b} form together with the carbon to which they are connected a cyclopropane, cyclobutane, oxetane or tetrahydropyrane ring optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

R^4 is pyridine, pyrimidine, pyrazine, pyridazine or thiazole, wherein (A) the pyridine, pyrimidine, pyrazine or pyridazine is optionally substituted with one to three substituents selected from the group consisting of halogen, -CN, -NH_2, -NO_2, -COOH, -$CONH_2$, -$CSNH_2$, -CO_2-C_1-C_3alkyl, C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl, -NHCO-C_1-C_3alkyl, -NHCO-C_1-C_3haloalkyl, -NHCO-C_1-C_3cyanoalkyl, -NHCO-C_3-C_4cycloalkyl, wherein the cycloalkyl is optionally substituted with one to two substituents selected from the group consisting of fluorine, chlorine, -CN, C_1-C_6alkyl or C_1-C_4alkoxy; -NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl, C_1-C_3haloalkyl, C_1-C_3alkoxy and C_1-C_3haloalkoxy; -$NHSO_2$-C_1-C_3alkyl, -$NHSO_2$-C_1-C_3haloalkyl, -CONH(C_1-C_3alkyl), -CON(C_1-C_3alkyl)$_2$, -CONH-SO_2-C_1-C_3alkyl, -CON(C_1-C_3alkyl)(C_3-C_6cycloalkyl), -CONH(C_1-C_3haloalkyl), -CONH(C_3-C_6cycloalkyl), -CONH(1-cyano-C_3-C_6cycloalkyl), -CONH-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl, C_1-C_3haloalkyl, C_1-C_3alkoxy and C_1-C_3haloalkoxy;

and (B) the thiazole is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, -NO_2, C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl and C_1-C_3haloalkylsulfonyl;

R^5 is hydrogen, halogen, -CN, C_1-C_3alkyl, C_1-C_3haloalkyl, C_3-C_4cycloalkyl, or C_1-C_3alkoxy.

Particularly preferred (Configuration 4-1) are the compounds of the formula (I) in which

X is O or S;

Q^1 and Q^2 are independently CR^5 or N, provided at least one of Q^1 and Q^2 is N;

Y is a direct bond or CH_2;

R^1 is hydrogen; C_1-C_3alkyl optionally substituted with -CN, -$Si(CH_3)_3$ or one to three substituents selected from the group consisting of fluorine, chlorine or bromine; C_2-C_4alkenyl; C_2-C_4alkynyl; C_3-C_4cycloalkyl-C_1-C_2alkyl- wherein the C_3-C_4cycloalkyl is optionally substituted with one to two substituents selected from the group consisting of fluorine, chlorine and bromine;

R^2 is phenyl or pyridine wherein the phenyl or pyridine is substituted with one to three substituents, provided at least one substituent is on either carbon adjacent to the carbon bonded to the C=X group, each independently selected from the group consisting of fluorine, chlorine, bromine, -CN, -NO_2, methyl, cyclopropyl, difluoromethyl, trifluoromethyl, methoxy, trifluoromethoxy, difluoromethoxy, methylthio, methylsulfinyl, methylsulfonyl, ethylthio, ethylsulfinyl, ethylsulfonyl, isopropylthio, isopropylsulfinyl, isopropylsulfonyl, cyclopropylthio, cyclopropylsulfinyl, cyclopropylsulfonyl, difluoromethylthio, difluoromethylsulfinyl, difluoromethylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl, trifluoromethylsulfonyl, and phenyl, wherein the phenyl is optionally substituted with one two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, difluoromethyl and trifluoromethyl;

or

R^2 is phenyl or pyridine, wherein the phenyl or pyridine is substituted with a total of one to three substituents, provided the substituent(s) are not on either carbon adjacent to the carbon bonded to the C=X group and one substituent is independently selected from group A consisting of cyclopropyl, methylthio, methylsulfinyl, methylsulfonyl, ethylthio, ethylsulfinyl, ethylsulfonyl, isopropylthio, isopropylsulfinyl, isopropylsulfonyl, tert-butylthio, tert-butylsulfinyl, tert-butylsulfonyl, cyclopropylthio, cyclopropylsulfinyl, cyclopropylsulfonyl, difluoromethylsulfinyl, difluoromethylsulfonyl, trifluoromethylsulfinyl, trifluoromethylsulfonyl; phenylsulfonyl wherein the phenyl is

optionally substituted with one two substituents selected from the group consisting of fluorine, chlorine bromine, -CN, difluoromethyl and trifluoromethyl; -NHCO-phenyl wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of fluorine, chlorine, CN, methyl and trifluoromethyl; (cyclopropylamino)carbonyl, 1-(methoxyimino)ethyl; phenyl and 5-membered heteroaryl wherein the phenyl or 5-membered heteroaryl is optionally substituted with one two substituents selected from the group consisting of fluorine, chlorine bromine, -CN, difluoromethyl, trifluoromethyl and trifluoromethoxy;

the other one to two optional substituent(s) are each independently selected from group B consisting of fluorine, chlorine, bromine, -CN, $-NO_2$, methyl, cyclopropyl, difluoromethyl, trifluoromethyl, methoxy, trifluoromethoxy, difluoromethoxy, methylthio, methylsulfinyl, methylsulfonyl, difluoromethylthio, difluoromethylsulfinyl, difluoromethylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl, trifluoromethylsulfonyl and phenyl, wherein the phenyl is optionally substituted with one two substituents selected from the group consisting of fluorine, chlorine bromine, -CN, difluoromethyl and trifluoromethyl;

or

R^2 is thiophene, furane, pyrazole, thiazole, oxazole or isoxazole each of which is optionally substituted by one to three substituents independently selected from the group consisting of of fluorine, chlorine, bromine, -CN, $-NO_2$, methyl, cyclopropyl, difluoromethyl, trifluoromethyl, methoxy, trifluoromethoxy, difluoromethoxy, methylthio, methylsulfinyl, methylsulfonyl, difluoromethylthio, difluoromethylsulfinyl, difluoromethylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl, trifluoromethylsulfonyl and phenyl, wherein the phenyl is optionally substituted with one two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, difluoromethyl and trifluoromethyl

or

R^2 is C_1-C_3alkyl substituted with one substituent selected from the group consisting of methoxy, trifluoromethoxy, difluoromethoxy, methylthio, methylsulfinyl, methylsulfonyl, difluoromethylthio, difluoromethylsulfinyl, difluoromethylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl, trifluoromethylsulfonyl and phenyl, wherein the phenyl is optionally substituted with one two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, difluoromethyl and trifluoromethyl;

R^{3a}, R^{3b} are independently selected from the group consisting of hydrogen; C_1-C_3alkyl optionally substituted by one to three substituents independently selected from the group consisting of

methyl, ethyl, iso-propyl, n-propyl, cyclopropyl, cyclobutyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, difluoromethoxy, trifluoromethoxy, methylthio, methylsulfinyl, methylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl, and trifluoromethylsulfonyl; cyclopropyl, difluoromethyl, trifluoromethyl, difluoromethyl, trifluoromethyl, 2,2-difluoroethyl, 2,2,2-trifluoroethyl, ethinyl, 2-propen-1-yl and 2-propin-1-yl; benzyl wherein the phenyl substituent is optionally substituted with one to three substituents independently selected from the group consisting of fluorine, chlorine, bromine, -CN, NO_2, methyl, trifluoromethyl and methoxy; heterocyclyl-methyl wherein the heterocyclyl substituent is selected from the group consisting of 4 - to 10-membered heterocyclyl, 5-membered heteroaryl and 6-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of fluorine, chlorine, bromine, -CN, $-NO_2$, methyl, trifluoromethyl and methoxy; and phenyl optionally substituted with one substituent selected from the group consisting of fluorine, chlorine, bromine, -CN, $-NO_2$, methyl, trifluoromethyl and methoxy;

or

R^{3a}, R^{3b} form together with the carbon to which they are connected a cyclopropane, cyclobutane, oxetane or tetrahydropyrane ring;

R^4 is pyridine, pyrimidine or thiazole, wherein (A) the pyridine or pyrimidine is optionally substituted with one to three substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, $-NO_2$, methyl, ethyl, difluoromethyl, trifluoromethyl, pentafluoroethyl, cyclopropyl, methoxy, difluoromethoxy, trifluoromethoxy, methylthio, methylsulfinyl, methylsulfonyl, difluoromethylthio, difluoromethylsulfinyl, difluoromethylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl and trifluoromethylsulfonyl and (B) the thiazole is optionally substituted with one to two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, $-NO_2$, methyl, ethyl, difluoromethyl, trifluoromethyl, pentafluoroethyl, cyclopropyl, methoxy, difluoromethoxy, trifluoromethoxy, methylthio, methylsulfinyl, methylsulfonyl, difluoromethylthio, difluoromethylsulfinyl, difluoromethylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl and trifluoromethylsulfonyl;

R^5 is hydrogen, fluorine, chlorine, bromine, -CN, methyl, ethyl, iso-propyl, difluoromethyl, trifluoromethyl, cyclopropyl, methoxy, or ethoxy.

Particular preference is also given (Configuration 4-2) to the compounds of the formula (I) in which

X is O or S;

Q^1 and Q^2 are independently CR^5 or N, provided at least one of Q^1 and Q^2 is N;

Y is a direct bond or CH_2;

R^1 is hydrogen; C_1-C_3alkyl optionally substituted with -CN, $-Si(CH_3)_3$ or one to three substituents selected from the group consisting of fluorine, chlorine or bromine; C_2-C_4alkenyl; C_2-C_4alkynyl; C_3-C_4cycloalkyl-C_1-C_2alkyl- wherein the C_3-C_4cycloalkyl is optionally substituted with one to two substituents selected from the group consisting of fluorine, chlorine and bromine;

R^2 is phenyl or pyridine wherein the phenyl or pyridine is substituted with one to three substituents, provided at least one substituent is on either carbon adjacent to the carbon bonded to the C=X group, each independently selected from the group consisting of

fluorine, chlorine, bromine, -CN, $-NO_2$, methyl, cyclopropyl, difluoromethyl, trifluoromethyl, methoxy, trifluoromethoxy, difluoromethoxy, methylthio, methylsulfinyl, methylsulfonyl, ethylthio, ethylsulfinyl, ethylsulfonyl, isopropylthio, isopropylsulfinyl, isopropylsulfonyl, cyclopropylthio, cyclopropylsulfinyl, cyclopropylsulfonyl, difluoromethylthio, difluoromethylsulfinyl, difluoromethylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl, trifluoromethylsulfonyl,

and phenyl, wherein the phenyl is optionally substituted with one two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, difluoromethyl and trifluoromethyl;

or

R^2 is phenyl or pyridine, wherein the phenyl or pyridine is substituted with a total of one to three substituents, provided the substituent(s) are not on either carbon adjacent to the carbon bonded to the C=X group and one substituent is independently selected from group A consisting of

tert-butyl, cyclopropyl, 1-cyanocyclopropyl, methylthio, methylsulfinyl, methylsulfonyl, ethylthio, ethylsulfinyl, ethylsulfonyl, isopropylthio, isopropylsulfinyl, isopropylsulfonyl, tert-butylthio, tert-butylsulfinyl, tert-butylsulfonyl, cyclopropylthio,

cyclopropylsulfinyl, cyclopropylsulfonyl, difluoromethylsulfinyl, difluoromethylsulfonyl, trifluoromethylsulfinyl, trifluoromethylsulfonyl, trifluoroethylsulfinyl, trifluoroethylsulfonyl;

phenylsulfonyl wherein the phenyl is optionally substituted with one two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, difluoromethyl and trifluoromethyl;

-NHCO-phenyl wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of fluorine, chlorine, CN, methyl and trifluoromethyl;

(cyclopropylamino)carbonyl, 1-(methoxyimino)ethyl, acetamido, (cyclopropylcarbonyl)amino, (phenylsulfonyl)amino;

and phenyl and 5-membered heteroaryl wherein the phenyl or 5-membered heteroaryl is optionally substituted with one two substituents selected from the group consisting of fluorine, chlorine bromine, -CN, difluoromethyl, trifluoromethyl and trifluoromethoxy;

and the other one to two optional substituent(s) are each independently selected from group B consisting of

fluorine, chlorine, bromine, -CN, $-NO_2$, methyl, cyclopropyl, difluoromethyl, trifluoromethyl, methoxy, trifluoromethoxy, difluoromethoxy, methylthio, methylsulfinyl, methylsulfonyl, difluoromethylthio, difluoromethylsulfinyl, difluoromethylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl, trifluoromethylsulfonyl

and phenyl, wherein the phenyl is optionally substituted with one two substituents selected from the group consisting of fluorine, chlorine bromine, -CN, difluoromethyl and trifluoromethyl;

or

R^2 is thiophene, furane, pyrazole, thiazole, oxazole or isoxazole each of which is optionally substituted by one to three substituents independently selected from the group consisting of of

fluorine, chlorine, bromine, -CN, $-NO_2$, methyl, cyclopropyl, difluoromethyl, trifluoromethyl, methoxy, trifluoromethoxy, difluoromethoxy, methylthio, methylsulfinyl, methylsulfonyl, difluoromethylthio, difluoromethylsulfinyl,

difluoromethylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl, trifluoromethylsulfonyl

and phenyl, wherein the phenyl is optionally substituted with one two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, difluoromethyl and trifluoromethyl

or

R^2 is C_1-C_3alkyl substituted with one substituent selected from the group consisting of

methoxy, trifluoromethoxy, difluoromethoxy, methylthio, methylsulfinyl, methylsulfonyl, difluoromethylthio, difluoromethylsulfinyl, difluoromethylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl, trifluoromethylsulfonyl

and phenyl, wherein the phenyl is optionally substituted with one two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, difluoromethyl and trifluoromethyl

or

R^2 is naphthyl; or pyrazolo[1.5-a]pyridin-2-yl, optionally substituted with trifluoromethyl or chlorine;

R^{3a}, R^{3b} are independently selected from the group consisting of hydrogen; C_1-C_3alkyl optionally substituted by one to three substituents independently selected from the group consisting of methyl, ethyl, iso-propyl, n-propyl, cyclopropyl, cyclobutyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, difluoromethoxy, trifluoromethoxy, methylthio, methylsulfinyl, methylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl, and trifluoromethylsulfonyl; cyclopropyl, difluoromethyl, trifluoromethyl, difluoromethyl, trifluoromethyl, 2,2-difluoroethyl, 2,2,2-trifluoroethyl, ethinyl, 2-propen-1-yl and 2-propin-1-yl; benzyl wherein the phenyl substituent is optionally substituted with one to three substituents independently selected from the group consisting of fluorine, chlorine, bromine, -CN, NO_2, methyl, trifluoromethyl and methoxy; heterocyclyl-methyl wherein the heterocyclyl substituent is selected from the group consisting of 4 - to 10-membered heterocyclyl, 5-membered heteroaryl and 6-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of fluorine, chlorine, bromine, -CN, -NO_2, methyl, trifluoromethyl and methoxy; and phenyl optionally substituted with one substituent selected from the group consisting of fluorine, chlorine, bromine, -CN, -NO_2, methyl, trifluoromethyl and methoxy;

or

R^{3a}, R^{3b} form together with the carbon to which they are connected a cyclopropane, cyclobutane, oxetane or tetrahydropyrane ring;

R^4 is pyridine, pyrimidine, pyrazine or thiazole, wherein (A) the pyridine, pyrimidine or pyrazine is optionally substituted with one to three substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, $-NH_2$, $-NO_2$, -COOH, $-CONH_2$, $-CSNH_2$, $-CO_2Me$, methyl, ethyl, difluoromethyl, trifluoromethyl, pentafluoroethyl, cyclopropyl, methoxy, difluoromethoxy, trifluoromethoxy, methylthio, methylsulfinyl, methylsulfonyl, difluoromethylthio, difluoromethylsulfinyl, difluoromethylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl, trifluoromethylsulfonyl, -NHCO-methyl, -NHCO-trifluoromethyl, $-NHCO-CH_2CN$, -NHCO-cyclopropyl, -NHCO-1-cyanocyclopropyl, $-NHSO_2$-methyl, $-NHSO_2$-trifluoromethyl, -NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, methyl, difluoromethyl, trifluoromethyl, methoxy, difluoromethoxy and trifluoromethoxy; -CONH-methyl, $-CONH-SO_2$-methyl, -CON-(N-methyl)-N-cyclopropyl, -CONH-difluoroethyl, -CONH-trifluoroethyl, -CONH-cyclopropyl, -CONH-1-cyanocyclopropyl, -CONH-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, methyl, difluoromethyl, trifluoromethyl, methoxy, difluoromethoxy and trifluoromethoxy;

and (B) the thiazole is optionally substituted with one to two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, $-NO_2$, methyl, ethyl, difluoromethyl, trifluoromethyl, pentafluoroethyl, cyclopropyl, methoxy, difluoromethoxy, trifluoromethoxy, methylthio, methylsulfinyl, methylsulfonyl, difluoromethylthio, difluoromethylsulfinyl, difluoromethylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl and trifluoromethylsulfonyl;

R^5 is hydrogen, fluorine, chlorine, bromine, -CN, methyl, ethyl, iso-propyl, difluoromethyl, trifluoromethyl, cyclopropyl, methoxy, or ethoxy.

Very particularly preferred (Configuration 5-1) are the compounds of the formula (I) in which

X is O;

Q^1 is N

Q^2 is CR^5

Y is a direct bond;

R^1 is hydrogen, cyclopropyl-CH_2-, 3,3,3-trifluoropropyl, ethyl or 2,2-difluoroethyl;

R^2 3-chloro-2-fluoro-5-(trifluoromethyl)phenyl, 3-chloro-5-(methylsulfonyl)phenyl, 5-(methylsulfonyl)pyridin-3-yl, 3-(methylsulfonyl)phenyl, 3-(trifluoromethylsulfonyl)phenyl, 5-[(trifluoromethyl)sulfonyl]pyridin-3-yl, 3-chloro-5-[(cyclopropylamino)carbonyl]phenyl, 3-cyclopropyl-5-(trifluoromethyl)phenyl, 2,3,5-trichlorophenyl, 3-phenyl-5-(trifluoromethyl)phenyl, [3-chloro-5-(trifluoromethyl)phenyl]methyl, 3-(4-fluorophenyl)-5-(trifluoromethyl)phenyl, 2-chlorophenyl, 2,5-dichlorophenyl, 2,3,4-trichlorophenyl, 2,3-dichlorophenyl, 2,4-dichlorophenyl, 2,6-difluorophenyl, 3-chloro-5-(trifluoromethylsulfonyl)phenyl, 5-chloro-3-thienyl, 3,4,5-trichloro-2-thienyl, 2,5-dichloro-3-thienyl, 4,5-dichloro-2-thienyl, 1-methyl-5-(trifluoromethyl)-1H-pyrazol-3-yl, 4-chloro-1-methyl-3-(trifluoromethyl)-1H-pyrazol-5-yl, 5-methyl-1,2-oxazol-3-yl, 5-cyclopropyl-1,2-oxazol-3-yl, 3-chloro-1,2-oxazol-5-yl, 2-chloro-1,3-thiazol-5-yl, 1-methyl-1H-pyrazol-4-yl, 5-chloro-1-methyl-1H-pyrazol-4-yl, 3-chloro-5-cyclopropylsulfonylphenyl, 3-chloro-5-(4-fluorophenyl)sulfonylphenyl, 3-chloro-5-ethylsulfonylphenyl, 3-cyclopropyl-5-fluorophenyl, 3-chloro-5-(isopropylthio)phenyl, 3-chloro-5-(1H-pyrazol-1-yl)phenyl, 3-chloro-5-(1H-1,2,4-triazol-1-yl)phenyl, 3-chloro-5-cyclopropylphenyl, 3-chloro-5-isopropylsulfonylphenyl, 1-(4-fluorophenyl)-3-(trifluoromethyl)-1H-pyrazol-5-yl, 3-cyclopropyl-5-(trifluoromethoxy)phenyl, 4-(trifluoromethylsulfonyl)phenyl, 3-chloro-5-[1-(methoxyimino)ethyl]phenyl, 3-(tert-butylthio)-5-chlorophenyl, 1-(4-fluorophenyl)-5-(trifluoromethyl)-1H-pyrazol-3-yl, 5-[4-(trifluoromethoxy)phenyl]pyridin-3-yl, 3-chloro-5-methylsulfanylphenyl, 3-chloro-5-methylsulfinylphenyl, or 3-benzamido-5-chlorophenyl;

R^{3a} is hydrogen, methyl or methoxymethyl;

R^{3b} is methyl or methoxymethyl if R^{3a} is hydrogen;

R^{3b} is hydrogen if R^{3a} is methyl or methoxymethyl;

R^4 is 2-pyridinyl, 2-pyrimidin-2-yl, 2-pyrimidin-4-yl, 5-chloropyridin-2-yl, 4-chloropyridin-2-yl, 5-cyanopyridin-2-yl, 4-cyano-2-pyridinyl, 5-(trifluoromethyl)-pyridin-2-yl, 5-(difluoromethoxy)pyridin-2-yl, 5-(trifluoromethylthio)pyridin-2-yl, 3,5-difluoro-2-pyridinyl, 5-chloro-3-fluoro-2-pyridinyl, 5-fluoropyrimidin-2-yl, 5-chloropyrimidin-2-yl, 2-pyrazin-2-yl or 1,3-thiazol-2-yl;

R^5 is hydrogen or methyl.

Very particular preference is also given (Configuration 5-2) to the compounds of the formula (I) in which

X is O or S;

Q^1 is N

Q^2 is CR^5

Y is a direct bond or CH_2;

R^1 is hydrogen, methyl, ethyl, 2-(trimethylsilyl)ethyl, 2,2-difluoroethyl, 2,2,2-trifluoroethyl, 3,3,3-trifluoropropyl, or cyclopropyl-CH_2- ;

R^2 3-chloro-2-fluoro-5-(trifluoromethyl)phenyl, 3-chloro-5-(methylsulfonyl)phenyl, 3-methylsulfonyl-5-(trifluoromethyl)phenyl, 5-(methylsulfonyl)pyridin-3-yl, 3-(methylsulfonyl)phenyl, 3-(trifluoromethylsulfonyl)phenyl, 5-[(trifluoromethyl)sulfonyl]pyridin-3-yl, 3-chloro-5-[(cyclopropylamino)carbonyl]phenyl, 3-cyclopropyl-5-(trifluoromethyl)phenyl, 2,3,5-trichlorophenyl, 3-phenyl-5-(trifluoromethyl)phenyl, [3-chloro-5-(trifluoromethyl)phenyl]methyl, 3-(4-fluorophenyl)-5-(trifluoromethyl)phenyl, 2-chlorophenyl, 2,5-dichlorophenyl, 2,3,4-trichlorophenyl, 2,3-dichlorophenyl, 2,4-dichlorophenyl, 2,6-difluorophenyl, 3-fluoro-5-(trifluoromethylsulfonyl)phenyl, 3-chloro-5-(trifluoromethylsulfonyl)phenyl, 5-chloro-3-thienyl, 3,4,5-trichloro-2-thienyl, 2,5-dichloro-3-thienyl, 4,5-dichloro-2-thienyl, 1-methyl-5-(trifluoromethyl)-1H-pyrazol-3-yl, 4-chloro-1-methyl-3-(trifluoromethyl)-1H-pyrazol-5-yl,5-methyl-1,2-oxazol-3-yl, 5-cyclopropyl-1,2-oxazol-3-yl, 3-chloro-1,2-oxazol-5-yl, 2-chloro-1,3-thiazol-5-yl, 1-methyl-1H-pyrazol-4-yl, 5-chloro-1-methyl-1H-pyrazol-4-yl, 3-chloro-5-cyclopropylsulfonylphenyl, 3-chloro-5-(4-fluorophenyl)sulfonylphenyl, 3-chloro-5-ethylsulfonylphenyl, 3-cyclopropyl-5-fluorophenyl, 3-chloro-5-(isopropylthio)phenyl, 3-chloro-5-(1H-pyrazol-1-yl)phenyl, 3-chloro-5-(1H-1,2,4-triazol-1-yl)phenyl, 3-tert-butyl-5-chlorophenyl, 3-tert-butyl-5-bromophenyl, 3-fluoro-5-cyclopropylphenyl, 3-chloro-5-cyclopropylphenyl, 3-chloro-5-isopropylsulfonylphenyl, 1-(4-fluorophenyl)-3-(trifluoromethyl)-1H-pyrazol-5-yl, 3-cyclopropyl-5-(trifluoromethoxy)phenyl, 4-(trifluoromethylsulfonyl)phenyl, 3-chloro-5-[1-(methoxyimino)ethyl]phenyl, 3-(tert-butylthio)-5-chlorophenyl, 1-(4-fluorophenyl)-1H-pyrazol-4-yl, 1-(4-fluorophenyl)-5-(trifluoromethyl)-1H-pyrazol-3-yl, 5-[4-(trifluoromethoxy)phenyl]pyridin-3-yl, 3-chloro-5-methylsulfanylphenyl, 3-chloro-5-methylsulfinylphenyl, 3-benzamido-5-chlorophenyl, 3-(tert-butylsulfonyl)-5-chlorophenyl, 5-[4-(trifluoromethyl)phenyl]-pyridin-3-yl, 5-[4-

(trifluoromethoxy)phenyl]-pyridin-3-yl, 5-(4-chlorophenyl)pyridin-3-yl, 5-(4-fluorophenyl)pyridin-3-yl, 3-chloro-5-[(phenylsulfonyl)amino]phenyl, 3-acetamido-5-chlorophenyl, 3-chloro-5-[(cyclopropylcarbonyl)amino]phenyl, 3-chloro-5-[(2,2,2-trifluoroethyl)sulfinyl]phenyl, 3-chloro-5-[(2,2,2-trifluoroethyl)sulfonyl]phenyl, 3-chloro-5-[3-(trifluoromethyl)-1H-pyrazol-1-yl]phenyl, 3,5-bis(methylsulfonyl)phenyl, pyrazolo[1,5-a]pyridin-2-yl, 7-(trifluoromethyl)pyrazolo[1,5-a]pyridin-2-yl, 6-chloropyrazolo[1,5-a]pyridin-2-yl, naphth-2-yl, 3-[4'-(trifluoromethoxy)phenyl]-phenyl, 3-(4'-fluorophenyl)-5-(trifluoromethyl)phenyl or 3-chloro-5-(1-cyanocyclopropyl)phenyl;

R^{3a} is hydrogen, methyl or methoxymethyl;

R^{3b} is methyl or methoxymethyl if R^{3a} is hydrogen;

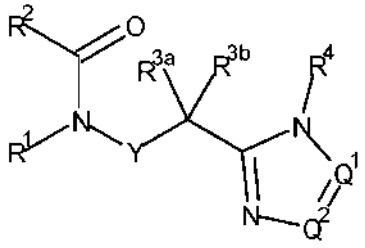
R^{3b} is hydrogen if R^{3a} is methyl or methoxymethyl;

R^{3a} and R^{3b} form together with the carbon to which they are connected a cyclopropane ring;

R^4 is pyridin-2-yl, pyrimidin-2-yl, pyrimidin-4-yl, 5-fluoropyrimidin-2-yl, 5-chloropyrimidin-2-yl, 5-cyanopyrimidin-2-yl, 5-(trifluoromethyl)pyrimidin-2-yl, 5-methylpyrimidin-2-yl, 5-fluoropyridin-2-yl, 5-chloropyridin-2-yl, 2-chloropyridin-4-yl, 5-cyanopyridin-2-yl, 4-cyano-pyridin-2-yl, 6-cyano-pyridin-2-yl, 5-methoxy-pyridin-2-yl, 5-(trifluoromethyl)-pyridin-2-yl, 5-(difluoromethoxy)pyridin-2-yl, 5-(trifluoromethylthio)pyridin-2-yl, 5-nitropyridin-2-yl, 5-aminopyridin-2-yl, 3,5-difluoropyridin-2-yl, 5-chloro-3-fluoropyridin-2-yl, pyridin-2-yl-5-carboxylic acid, methyl pyridin-2-yl-5-carboxylate, N-methyl-pyridin-2-yl-5-carboxamide, N-cyclopropyl-pyridin-2-yl-5-carboxamide, N-cyclopropyl-N-methyl-pyridin-2-yl-5-carboxamide, N-(1-cyanocyclopropyl)-pyridin-2-yl-5-carboxamide, N-(2,2-difluoroethyl)-pyridin-2-yl-5-carboxamide, N-(2,2,2-trifluoroethyl)-pyridin-2-yl-5-carboxamide, N-methylsulfonyl-pyridin-2-yl-5-carboxamide, N-(4-fluorophenyl)-pyridin-2-yl-5-carboxamide, 5-acetamidopyridin-2-yl, 5-(trifluoroacetamido)-pyridin-2-yl, 5-(2-cyanoacetylamino)-pyridin-2-yl, 5-[(cyclopropylcarbonyl)amino]pyridin-2-yl, 5-[(1-cyanocyclopropylcarbonyl)amino]-pyridin-2-yl, 5-(methanesulfonamido)-pyridin-2-yl, 5-(trifluoromethylsulfonamido)-pyridin-2-yl, 5-[(4-fluorobenzoyl)amino]pyridine-2-yl pyrazin-2-yl, 2-cyano-pyrazin-5-yl, or 1,3-thiazol-2-yl;

R^5 is hydrogen, methyl or trifluoromethyl.

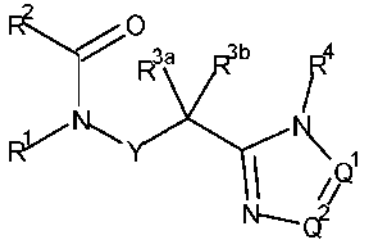
In a further preferred embodiment, the invention relates to compounds of the formula (I')



(I'),

in which the structural elements Y, Q^1, Q^2, R^1, R^2, R^{3a}, R^{3b}, R^4 and R^5 have the meanings given in Configuration (1-1) or in Configuration (2-1) or in Configuration (3-1) or in Configuration (4-1) or in Configuration (5-1).

In another further preferred embodiment, the invention relates to compounds of the formula (I')



(I'),

in which the structural elements Y, Q^1, Q^2, R^1, R^2, R^{3a}, R^{3b}, R^4 and R^5 have the meanings given in Configuration (1-2) or in Configuration (2-2) or in Configuration (3-2) or in Configuration (4-2) or in Configuration (5-2).

In further preferred embodiments of the compounds of the formula (I'), Q^1 represents N or CR^5 and Q^2 represents N and all further structural elements Y, R^1, R^2, R^{3a}, R^{3b}, R^4 and R^5 have the meanings described above in Configuration (1-1) or in Configuration (2-1) or in Configuration (3-1) or in Configuration (4-1) or in Configuration (5-1).

In another further preferred embodiments of the compounds of the formula (I'), Q^1 represents N or CR^5 and Q^2 represents N and all further structural elements Y, R^1, R^2, R^{3a}, R^{3b}, R^4 and R^5 have the meanings described above in Configuration (1-2) or in Configuration (2-2) or in Configuration (3-2) or in Configuration (4-2) or in Configuration (5-2).

In other further preferred embodiments of the compounds of the formula (I'), Q^1 represents N and Q^2 represents CR^5 and all further structural elements Y, R^1, R^2, R^{3a}, R^{3b}, R^4 and R^5 have the meanings described above in Configuration (1-1) or in Configuration (2-1) or in Configuration (3-1) or in Configuration (4-1) or in Configuration (5-1).

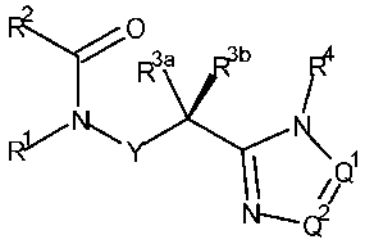
In another further preferred embodiments of the compounds of the formula (I'), Q^1 represents N and Q^2 represents CR^5 and all further structural elements Y, R^1, R^2, R^{3a}, R^{3b}, R^4 and R^5 have the meanings described above in Configuration (1-2) or in Configuration (2-2) or in Configuration (3-2) or in Configuration (4-2) or in Configuration (5-2).

Among these, particular preference is given to the configurations shown below:

Compounds of the formula	with Q^1 as per	with Q^2 as per	all other structural elements as per
I'	N	CR^5	Configuration (1-1)
I'	N	CR^5	Configuration (2-1)
I'	N	CR^5	Configuration (3-1)
I'	N	CR^5	Configuration (4-1)
I'	N	CR^5	Configuration (5-1)
I'	CR^5	N	Configuration (1-1)
I'	CR^5	N	Configuration (2-1)
I'	CR^5	N	Configuration (3-1)
I'	CR^5	N	Configuration (4-1)
I'	CR^5	N	Configuration (5-1)
I'	N	N	Configuration (1-1)
I'	N	N	Configuration (2-1)
I'	N	N	Configuration (3-1)
I'	N	N	Configuration (4-1)
I'	N	N	Configuration (5-1)
I'	N	CR^5	Configuration (1-2)
I'	N	CR^5	Configuration (2-2)

I'	N	CR^5	Configuration (3-2)
I'	N	CR^5	Configuration (4-2)
I'	N	CR^5	Configuration (5-2)
I'	CR^5	N	Configuration (1-2)
I'	CR^5	N	Configuration (2-2)
I'	CR^5	N	Configuration (3-2)
I'	CR^5	N	Configuration (4-2)
I'	CR^5	N	Configuration (5-2)
I'	N	N	Configuration (1-2)
I'	N	N	Configuration (2-2)
I'	N	N	Configuration (3-2)
I'	N	N	Configuration (4-2)
I'	N	N	Configuration (5-2)

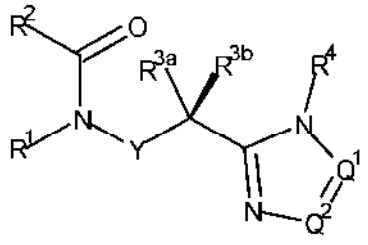
In a further preferred embodiment, the invention relates to compounds of the formula (I'') in which R^{3b} is C_1-C_3alkyl, especially preferred Me, and R^{3a} is H



(I''),

in which the structural elements Y, Q^1, Q^2, R^1, R^2, R^4 and R^5 have the meanings given in Configuration (1-1) or in Configuration (2-1) or in Configuration (3-1) or in Configuration (4-1) or in Configuration (5-1).

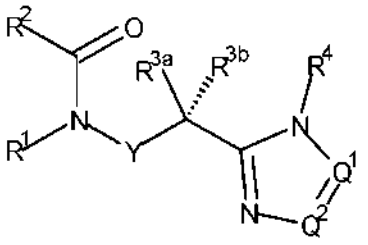
In another further preferred embodiment, the invention relates to compounds of the formula (I'') in which R^{3b} is C_1-C_3alkyl, especially preferred Me, and R^{3a} is H



(I''),

in which the structural elements Y, Q^1, Q^2, R^1, R^2, R^4 and R^5 have the meanings given in Configuration (1-2) or in Configuration (2-2) or in Configuration (3-2) or in Configuration (4-2) or in Configuration (5-2).

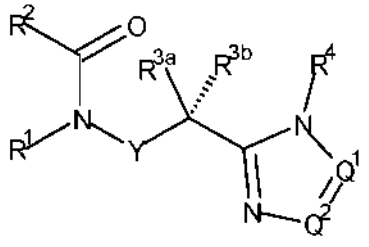
In a further preferred embodiment, the invention relates to compounds of the formula (I''') in which R^{3b} is C_1-C_3alkyl, especially preferred Me, and R^{3a} is H



(I'''),

in which the structural elements Y, Q^1, Q^2, R^1, R^2, R^4 and R^5 have the meanings given in Configuration (1-1) or in Configuration (2-1) or in Configuration (3-1) or in Configuration (4-1) or in Configuration (5-1).

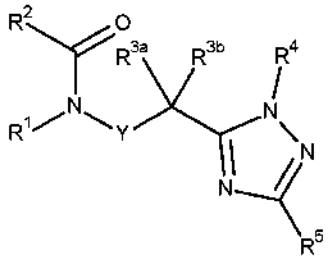
In another further preferred embodiment, the invention relates to compounds of the formula (I''') in which R^{3b} is C_1-C_3alkyl, especially preferred Me, and R^{3a} is H



(I'''),

in which the structural elements Y, Q^1, Q^2, R^1, R^2, R^4 and R^5 have the meanings given in Configuration (1-2) or in Configuration (2-2) or in Configuration (3-2) or in Configuration (4-2) or in Configuration (5-2).

In a further preferred embodiment, the invention relates to compounds of the formula (I'p1)



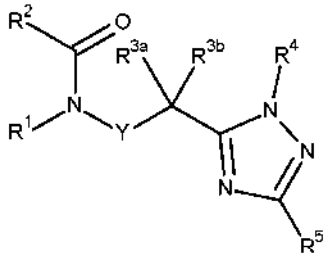
(I'p1),

in which Y is a direct bond and the structural elements R^1, R^2, R^{3a}, R^{3b}, R^4 and R^5 have the meanings given the following table:

entry	R^1 meaning given in Configuration	R^2 meaning given in Configuration	R^{3a}, R^{3b} meaning given in Configuration	R^4 meaning given in Configuration	R^5 meaning given in Configuration
1	4-1	4-1	5-1	4-1	4-1
2	4-1	4-1	5-1	4-1	5-1
3	4-1	4-1	5-1	5-1	4-1
4	4-1	5-1	5-1	4-1	4-1
5	4-1	5-1	5-1	5-1	4-1
6	4-1	5-1	5-1	4-1	5-1

7	4-1	4-1	5-1	5-1	5-1
8	4-1	5-1	5-1	5-1	5-1
9	5-1	4-1	5-1	4-1	4-1
10	5-1	4-1	5-1	4-1	5-1
11	5-1	4-1	5-1	5-1	4-1
12	5-1	5-1	5-1	4-1	4-1
13	5-1	5-1	5-1	5-1	4-1
14	5-1	5-1	5-1	4-1	5-1
15	5-1	4-1	5-1	5-1	5-1
16	5-1	5-1	5-1	5-1	5-1
17	4-1	3-1	5-1	4-1	4-1
18	4-1	3-1	5-1	4-1	5-1
19	4-1	3-1	5-1	5-1	4-1
20	4-1	3-1	5-1	5-1	5-1
21	5-1	3-1	5-1	4-1	4-1
22	5-1	3-1	5-1	4-1	5-1
23	5-1	3-1	5-1	5-1	4-1
24	5-1	3-1	5-1	5-1	5-1

In another further preferred embodiment, the invention relates to compounds of the formula (I'p1)



(Tp1),

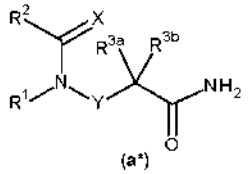
in which Y is a direct bond and the structural elements R^1, R^2, R^{3a}, R^{3b}, R^4 and R^5 have the meanings given the following table:

entry	R^1 meaning given in Configuration	R^2 meaning given in Configuration	R^{3a}, R^{3b} meaning given in Configuration	R^4 meaning given in Configuration	R^5 meaning given in Configuration
1	4-2	4-2	5-2	4-2	4-2
2	4-2	4-2	5-2	4-2	5-2
3	4-2	4-2	5-2	5-2	4-2
4	4-2	5-2	5-2	4-2	4-2
5	4-2	5-2	5-2	5-2	4-2
6	4-2	5-2	5-2	4-2	5-2
7	4-2	4-2	5-2	5-2	5-2
8	4-2	5-2	5-2	5-2	5-2
9	5-2	4-2	5-2	4-2	4-2
10	5-2	4-2	5-2	4-2	5-2
11	5-2	4-2	5-2	5-2	4-2
12	5-2	5-2	5-2	4-2	4-2
13	5-2	5-2	5-2	5-2	4-2

14	5-2	5-2	5-2	4-2	5-2
15	5-2	4-2	5-2	5-2	5-2
16	5-2	5-2	5-2	5-2	5-2
17	4-2	3-2	5-2	4-2	4-2
18	4-2	3-2	5-2	4-2	5-2
19	4-2	3-2	5-2	5-2	4-2
20	4-2	3-2	5-2	5-2	5-2
21	5-2	3-2	5-2	4-2	4-2
22	5-2	3-2	5-2	4-2	5-2
23	5-2	3-2	5-2	5-2	4-2
24	5-2	3-2	5-2	5-2	5-2

In accordance with a further aspect, the present invention covers intermediate compounds which are useful for the preparation of the compounds of general formula (I), *supra*.

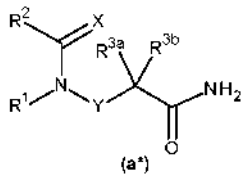
Particularly, the invention covers the intermediate compounds of general formula (a*):



(a*)

in which the structural elements Y, R^1, R^2, R^{3a} and R^{3b} have the meanings given in Configuration (1-1) or in Configuration (2-1) or in Configuration (3-1) or in Configuration (4-1) or in Configuration (5-1).

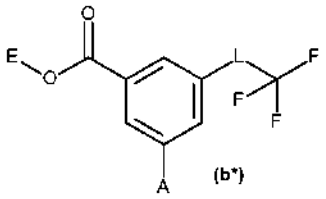
Particularly, the invention also covers the intermediate compounds of general formula (a*):



(a*)

in which the structural elements Y, R^1, R^2, R^{3a} and R^{3b} have the meanings given in Configuration (1-2) or in Configuration (2-2) or in Configuration (3-2) or in Configuration (4-2) or in Configuration (5-2).

Particularly, the invention covers the intermediate compounds of general formula (**b***):



(b*)

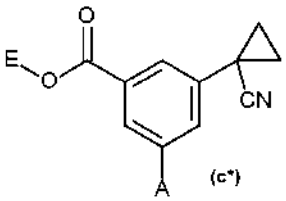
in which:

E is hydrogen or C_1-C_6alkyl;

A is -CN, chlorine or fluorine;

L is S, SO or SO_2.

Particularly, the invention covers the intermediate compounds of general formula (**c***):



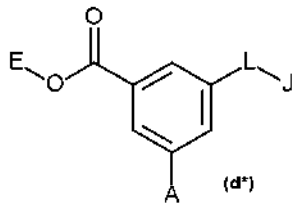
(c*)

in which:

E is hydrogen or C_1-C_6alkyl;

A is bromine, chlorine, fluorine, -CN or trifluoromethyl, preferably chlorine.

Particularly, the invention covers the intermediate compounds of general formula (**d***):



(d*)

in which:

E is hydrogen or C_1-C_6alkyl;

A is bromine, chlorine or fluorine, preferably chlorine;

L is S, SO or SO_2, preferably S or SO_2, more preferably SO_2;

J is ethyl, iso-propyl, tert-butyl, cyclopropyl, 2,2,2-trifluoroethyl or 4-fluorophenyl;

and wherein the compound of formula (**d***) is not 3-(ethylsulfanyl)-5-fluorobenzoic acid or 3-(tert-butylsulfanyl)-5-fluorobenzoic acid.

The invention also covers the compounds 3-cyclopropyl-5-(trifluoromethoxy)benzoic acid and methyl 3-cyclopropyl-5-(trifluoromethoxy)benzoate.

The compounds of the formula (I) may possibly also, depending on the nature of the substituents, be in the form of stereoisomers, i.e. in the form of geometric and/or optical isomers or isomer mixtures of varying composition. This invention provides both the pure stereoisomers and any desired mixtures of these isomers, even though it is generally only compounds of the formula (I) that are discussed here.

However, preference is given in accordance with the invention to using the optically active, stereoisomeric forms of the compounds of the formula (I) and salts thereof.

The invention therefore relates both to the pure enantiomers and diastereomers and to mixtures thereof for controlling animal pests, including arthropods and particularly insects.

If appropriate, the compounds of the formula (I) may be present in various polymorphic forms or as a mixture of various polymorphic forms. Both the pure polymorphs and the polymorph mixtures are provided by the invention and can be used in accordance with the invention.

Definitions

The person skilled in the art is aware that, if not stated explicitly, the expressions "a" or "an" as used in the present application may, depending on the situation, mean "one (1)", "one (1) or more" or "at least one (1)".

For all the structures described herein, such as ring systems and groups, adjacent atoms must not be -O-O- or -O-S-.

Structures having a variable number of possible carbon atoms (C atoms) may be referred to in the present application as $C_{\text{lower limit of carbon atoms}}$-$C_{\text{upper limit of carbon atoms}}$ structures (C_{LL}-C_{UL} structures), in order thus to be stipulated more specifically. Example: an alkyl group may consist of 3 to 10 carbon atoms and in that case corresponds to C_3-C_{10}alkyl. Ring structures composed of carbon atoms and heteroatoms may be referred to as "LL- to UL-membered" structures. One example of a 6-membered ring structure is toluene (a 6-membered ring structure substituted by a methyl group).

If a collective term for a substituent, for example C_{LL}-C_{UL}alkyl, is at the end of a composite substituent, for example C_{LL}-C_{UL}cycloalkyl-C_{LL}-C_{UL}alkyl, the constituent at the start of the composite substituent, for example the C_{LL}-C_{UL}cycloalkyl, may be mono- or polysubstituted identically or differently and independently by the latter substituent, for example C_{LL}-C_{UL}alkyl. All the collective terms used in this application for chemical groups, cyclic systems and cyclic groups can be stipulated more specifically through the addition "C_{LL}-C_{UL}" or "LL- to UL-membered".

In the definitions of the symbols given in the above formulae, collective terms which are generally representative of the following substituents were used:

Halogen relates to elements of the 7th main group, preferably fluorine, chlorine, bromine and iodine, more preferably fluorine, chlorine and bromine, and even more preferably fluorine and chlorine.

Examples of heteroatom are N, O, S, P, B, Si. Preferably, the term "heteroatom" relates to N, S and O.

According to the invention, "alkyl" – on its own or as part of a chemical group – represents straight-chain or branched hydrocarbons preferably having 1 to 6 carbon atoms, for example methyl, ethyl, n-propyl, isopropyl, n-butyl, isobutyl, s-butyl, t-butyl, pentyl, 1-methylbutyl, 2-methylbutyl, 3-methylbutyl, 1,2-dimethylpropyl, 1,1-dimethylpropyl, 2,2-dimethylpropyl, 1-ethylpropyl, hexyl, 1-methylpentyl, 2-methylpentyl, 3-methylpentyl, 4-methylpentyl, 1,2-dimethylpropyl, 1,3-dimethylbutyl, 1,4-dimethylbutyl, 2,3-dimethylbutyl, 1,1-dimethylbutyl, 2,2-dimethylbutyl, 3,3-dimethylbutyl, 1,1,2-trimethylpropyl, 1,2,2-trimethylpropyl, 1-ethylbutyl and 2-ethylbutyl. Preference is also given to alkyls having 1 to 4 carbon atoms such as, inter alia, methyl, ethyl, ethyl, n-propyl, isopropyl, n-butyl, isobutyl, s-butyl or t-butyl. The inventive alkyls may be substituted by one or more identical or different radicals.

According to the invention, "alkenyl" – on its own or as part of a chemical group – represents straight-chain or branched hydrocarbons preferably having 2 to 6 carbon atoms and at least one double bond, for example vinyl, 2-propenyl, 2-butenyl, 3-butenyl, 1-methyl-2-propenyl, 2-methyl-2-propenyl, 2-pentenyl, 3-pentenyl, 4-pentenyl, 1-methyl-2-butenyl, 2-methyl-2-butenyl, 3-methyl-2-butenyl, 1-methyl-3-butenyl, 2-methyl-3-butenyl, 3-methyl-3-butenyl, 1,1-dimethyl-2-propenyl, 1,2-dimethyl-2-propenyl, 1-ethyl-2-propenyl, 2-hexenyl, 3-hexenyl, 4-hexenyl, 5-hexenyl, 1-methyl-2-pentenyl, 2-methyl-2-pentenyl, 3-methyl-2-pentenyl, 4-methyl-2-pentenyl, 3-methyl-3-pentenyl, 4-methyl-3-pentenyl, 1-methyl-4-pentenyl, 2-methyl-4-pentenyl, 3-methyl-4-pentenyl, 4-methyl-4-pentenyl, 1,1-dimethyl-2-butenyl, 1,1-dimethyl-3-butenyl, 1,2-dimethyl-2-butenyl, 1,2-dimethyl-3-butenyl, 1,3-dimethyl-2-butenyl, 2,2-dimethyl-3-butenyl, 2,3-dimethyl-2-butenyl, 2,3-dimethyl-3-butenyl, 1-ethyl-2-butenyl, 1-ethyl-3-butenyl, 2-ethyl-2-butenyl, 2-ethyl-3-butenyl, 1,1,2-trimethyl-2-propenyl, 1-ethyl-1-methyl-2-propenyl and 1-ethyl-2-methyl-2-propenyl. Preference is also given to alkenyls having 2 to 4 carbon atoms such as, inter alia, 2-propenyl, 2-butenyl or 1-methyl-2-propenyl. The inventive alkenyls may be substituted by one or more identical or different radicals.

According to the invention, "alkynyl" – on its own or as part of a chemical group – represents straight-chain or branched hydrocarbons preferably having 2 to 6 carbon atoms and at least one triple bond, for example 2-propynyl, 2-butynyl, 3-butynyl, 1-methyl-2-propynyl, 2-pentynyl, 3-pentynyl, 4-pentynyl, 1-methyl-3-butynyl, 2-methyl-3-butynyl, 1-methyl-2-butynyl, 1,1-dimethyl-2-propynyl, 1-ethyl-2-propynyl, 2-hexynyl, 3-hexynyl, 4-hexynyl, 5-hexynyl, 1-methyl-2-pentynyl, 1-methyl-3-pentynyl, 1-methyl-4-pentynyl, 2-methyl-3-pentynyl, 2-methyl-4-pentynyl, 3-methyl-4-pentynyl, 4-methyl-2-pentynyl, 1,1-dimethyl-3-butynyl, 1,2-dimethyl-3-butynyl, 2,2-dimethyl-3-butynyl, 1-ethyl-3-butynyl, 2-ethyl-3-butynyl, 1-ethyl-1-methyl-2-propynyl and 2,5-hexadiynyl. Preference is also given to alkynyls having 2 to 4 carbon atoms such as, inter alia, ethynyl, 2-propynyl or 2-butynyl-2-propenyl. The inventive alkynyls may be substituted by one or more identical or different radicals.

According to the invention, "cycloalkyl" – on its own or as part of a chemical group – represents mono-, bi- or tricyclic hydrocarbons preferably having 3 to 10 carbons, for example cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cycloheptyl, cyclooctyl, bicyclo[2.2.1]heptyl, bicyclo[2.2.2]octyl or adamantyl. Preference is also given to cycloalkyls having 3, 4, 5, 6 or 7 carbon atoms such as, inter alia, cyclopropyl or cyclobutyl. The inventive cycloalkyls may be substituted by one or more identical or different radicals.

According to the invention, "alkylcycloalkyl" represents mono-, bi- or tricyclic alkylcycloalkyl preferably having 4 to 10 or 4 to 7 carbon atoms, for example methylcyclopropyl, ethylcyclopropyl, isopropylcyclobutyl, 3-methylcyclopentyl and 4-methylcyclohexyl. Preference is also given to alkylcycloalkyls having 4, 5 or 7 carbon atoms such as, inter alia, ethylcyclopropyl or 4-

methylcyclohexyl. The inventive alkylcycloalkyls may be substituted by one or more identical or different radicals.

According to the invention, "cycloalkylalkyl" represents mono-, bi- or tricyclic cycloalkylalkyl preferably having 4 to 10 or 4 to 7 carbon atoms, for example cyclopropylmethyl, cyclobutylmethyl, cyclopentylmethyl, cyclohexylmethyl and cyclopentylethyl. Preference is also given to cycloalkylalkyls having 4, 5 or 7 carbon atoms such as, inter alia, cyclopropylmethyl or cyclobutylmethyl. The inventive cycloalkylalkyls may be substituted by one or more identical or different radicals.

According to the invention, "hydroxyalkyl" represents a straight-chain or branched alcohol preferably having 1 to 6 carbon atoms, for example methanol, ethanol, n-propanol, isopropanol, n-butanol, isobutanol, s-butanol and t-butanol. Preference is also given to hydroxyalkyl groups having 1 to 4 carbon atoms. The inventive hydroxyalkyl groups may be substituted by one or more identical or different radicals.

According to the invention, "alkoxy" represents a straight-chain or branched O-alkyl preferably having 1 to 6 carbon atoms, for example methoxy, ethoxy, n-propoxy, isopropoxy, n-butoxy, isobutoxy, s-butoxy and t-butoxy. Preference is also given to alkoxy groups having 1 to 4 carbon atoms. The inventive alkoxy groups may be substituted by one or more identical or different radicals.

According to the invention, "alkylthio", or "alkylsulfanyl" represents straight-chain or branched S-alkyl preferably having 1 to 6 carbon atoms, for example methylthio, ethylthio, n-propylthio, isopropylthio, n-butylthio, isobutylthio, s-butylthio and t-butylthio. Preference is also given to alkylthio groups having 1 to 4 carbon atoms. The inventive alkylthio groups may be substituted by one or more identical or different radicals.

According to the invention, "alkylsulfinyl" represents straight-chain or branched alkylsulfinyl preferably having 1 to 6 carbon atoms, for example methylsulfinyl, ethylsulfinyl, n-propylsulfinyl, isopropylsulfinyl, n-butylsulfinyl, isobutylsulfinyl, s-butylsulfinyl and t-butylsulfinyl. Preference is also given to alkylsulfinyl groups having 1 to 4 carbon atoms. The inventive alkylsulfinyl groups may be substituted by one or more identical or different radicals and embrace both enantiomers.

According to the invention, "alkylsulfonyl" represents straight-chain or branched alkylsulfonyl preferably having 1 to 6 carbon atoms, for example methylsulfonyl, ethylsulfonyl, n-propylsulfonyl, isopropylsulfonyl, n-butylsulfonyl, isobutylsulfonyl, s-butylsulfonyl and t-butylsulfonyl. Preference is also given to alkylsulfonyl groups having 1 to 4 carbon atoms. The inventive alkylsulfonyl groups may be substituted by one or more identical or different radicals.

According to the invention, "cycloalkylthio" or "cycloalkylsulfanyl" represents -S-cycloalkyl preferably having 3 to 6 carbon atoms, for example cyclopropylthio, cyclobutylthio, cyclopentylthio,

cyclohexylthio. Preference is also given to cycloalkylthio groups having 3 to 5 carbon atoms. The inventive cycloalkylthio groups may be substituted by one or more identical or different radicals.

According to the invention, "cycloalkylsulfinyl" represents -S(O)-cycloalkyl preferably having 3 to 6 carbon atoms, for example cyclopropylsulfinyl, cyclobutylsulfinyl, cyclopentylsulfinyl, cyclohexylsulfinyl. Preference is also given to cycloalkylsulfinyl groups having 3 to 5 carbon atoms. The inventive cycloalkylsulfinyl groups may be substituted by one or more identical or different radicals and embrace both enantiomers.

According to the invention, "cycloalkylsulfonyl" represents -SO_2-cycloalkyl preferably having 3 to 6 carbon atoms, for example cyclopropylsulfonyl, cyclobutylsulfonyl, cyclopentylsulfonyl, cyclohexylsulfonyl. Preference is also given to cycloalkylsulfonyl groups having 3 to 5 carbon atoms. The inventive cycloalkylsulfonyl groups may be substituted by one or more identical or different radicals.

According to the invention, "phenylthio", or "phenylsulfanyl" represents -S-phenyl, for example phenylthio. The inventive phenylthio groups may be substituted by one or more identical or different radicals.

According to the invention, "phenylsulfinyl" represents -S(O)-phenyl, for example phenylsulfinyl. The inventive phenylsulfinyl groups may be substituted by one or more identical or different radicals and embrace both enantiomers.

According to the invention, "phenylsulfonyl" represents -SO_2-phenyl for example phenylsulfonyl. The inventive phenylsulfonyl groups may be substituted by one or more identical or different radicals.

According to the invention, "alkylcarbonyl" represents straight-chain or branched alkyl-C(=O) preferably having 2 to 7 carbon atoms such as methylcarbonyl, ethylcarbonyl, n-propylcarbonyl, isopropylcarbonyl, s-butylcarbonyl and t-butylcarbonyl. Preference is also given to alkylcarbonyls having 1 to 4 carbon atoms. The inventive alkylcarbonyls may be substituted by one or more identical or different radicals.

According to the invention, "alkoxycarbonyl" - alone or as a constituent of a chemical group - represents straight-chain or branched alkoxycarbonyl, preferably having 1 to 6 carbon atoms or having 1 to 4 carbon atoms in the alkoxy moiety, for example methoxycarbonyl, ethoxycarbonyl, n-propoxycarbonyl, isopropoxycarbonyl, s-butoxycarbonyl and t-butoxycarbonyl. The inventive alkoxycarbonyl groups may be substituted by one or more identical or different radicals.

According to the invention, "alkylaminocarbonyl" represents straight-chain or branched alkylaminocarbonyl having preferably 1 to 6 carbon atoms or 1 to 4 carbon atoms in the alkyl moiety,

for example methylaminocarbonyl, ethylaminocarbonyl, n-propylaminocarbonyl, isopropylaminocarbonyl, s-butylaminocarbonyl and t-butylaminocarbonyl. The inventive alkylaminocarbonyl groups may be substituted by one or more identical or different radicals.

According to the invention, "*N,N*-dialkylaminocarbonyl" represents straight-chain or branched *N,N*-dialkylaminocarbonyl having preferably 1 to 6 carbon atoms or 1 to 4 carbon atoms in the alkyl moiety, for example *N,N*-dimethylaminocarbonyl, *N,N*-diethylaminocarbonyl, *N,N*-di(n-propylamino)carbonyl, *N,N*-di(isopropylamino)carbonyl and *N,N*-di-(s-butylamino)carbonyl. The inventive *N,N*-dialkylaminocarbonyl groups may be substituted by one or more identical or different radicals.

According to the invention, "aryl" represents a mono-, bi- or polycyclic aromatic system having preferably 6 to 14, especially 6 to 10, ring carbon atoms, for example phenyl, naphthyl, anthryl, phenanthrenyl, preferably phenyl. In addition, aryl also represents polycyclic systems such as tetrahydronaphthyl, indenyl, indanyl, fluorenyl, biphenyl, where the bonding site is on the aromatic system. The inventive aryl groups may be substituted by one or more identical or different radicals.

Examples of substituted aryls are the arylalkyls, which may likewise be substituted by one or more identical or different radicals in the C_1-C_4alkyl and/or C_6-C_{14}aryl moiety. Examples of such arylalkyls include benzyl and phenyl-1-ethyl.

According to the invention, "heterocycle", "heterocyclic ring" or "heterocyclic ring system" represents a carbocyclic ring system having at least one ring in which at least one carbon atom is replaced by a heteroatom, preferably by a heteroatom from the group consisting of N, O, S, P, B, Si, Se, and which is saturated, unsaturated or heteroaromatic and may be unsubstituted or substituted, where the bonding site is on a ring atom. Unless defined differently, the heterocyclic ring contains preferably 3 to 9 ring atoms, especially 3 to 6 ring atoms, and one or more, preferably 1 to 4, especially 1, 2 or 3, heteroatoms in the heterocyclic ring, preferably from the group consisting of N, O, and S, although no two oxygen atoms should be directly adjacent. The heterocyclic rings usually contain not more than 4 nitrogen atoms and/or not more than 2 oxygen atoms and/or not more than 2 sulphur atoms. When the heterocyclyl radical or the heterocyclic ring is optionally substituted, it may be fused to other carbocyclic or heterocyclic rings. In the case of optionally substituted heterocyclyl, the invention also embraces polycyclic systems, for example 8-azabicyclo[3.2.1]octanyl or 1-azabicyclo[2.2.1]heptyl. In the case of optionally substituted heterocyclyl, the invention also embraces spirocyclic systems, for example 1-oxa-5-azaspiro[2.3]hexyl.

Inventive heterocyclyl groups are, for example, piperidinyl, piperazinyl, morpholinyl, thiomorpholinyl, dihydropyranyl, tetrahydropyranyl, dioxanyl, pyrrolinyl, pyrrolidinyl, imidazolinyl, imidazolidinyl, thiazolidinyl, oxazolidinyl, dioxolanyl, dioxolyl, pyrazolidinyl, tetrahydrofuranyl, dihydrofuranyl,

oxetanyl, oxiranyl, azetidinyl, aziridinyl, oxazetidinyl, oxaziridinyl, oxazepanyl, oxazinanyl, azepanyl, oxopyrrolidinyl, dioxopyrrolidinyl, oxomorpholinyl, oxopiperazinyl and oxepanyl.

Of particular significance are heteroaryls, i.e. heteroaromatic systems. According to the invention, the term heteroaryl represents heteroaromatic compounds, i.e. completely unsaturated aromatic heterocyclic compounds which fall under the above definition of heterocycles. Preference is given to 5- to 7-membered rings having 1 to 3, preferably 1 or 2, identical or different heteroatoms from the group above. Inventive heteroaryls are, for example, furyl, thienyl, pyrazolyl, imidazolyl, 1,2,3- and 1,2,4-triazolyl, isoxazolyl, thiazolyl, isothiazolyl, 1,2,3-, 1,3,4-, 1,2,4- and 1,2,5-oxadiazolyl, azepinyl, pyrrolyl, pyridyl, pyridazinyl, pyrimidinyl, pyrazinyl, 1,3,5-, 1,2,4- and 1,2,3-triazinyl, 1,2,4-, 1,3,2-, 1,3,6- and 1,2,6-oxazinyl, oxepinyl, thiepinyl, 1,2,4-triazolonyl and 1,2,4-diazepinyl. The inventive heteroaryl groups may also be substituted by one or more identical or different radicals.

The term "in each case optionally substituted" means that a group/substituent , such as a alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, cycloalkyl, aryl, phenyl, benzyl, heterocyclyl and heteroaryl radical, is substituted, meaning, for example, a substituted radical derived from the unsubstituted base structure, where the substituents, for example, one (1) substituent or a plurality of substituents, preferably 1, 2, 3, 4, 5, 6 or 7, are selected from a group consisting of amino, hydroxyl, halogen, nitro, cyano, isocyano, mercapto, isothiocyanato, C_1-C_4carboxyl, carbonamide, SF_5, aminosulphonyl, C_1-C_4alkyl, C_1-C_4haloalkyl, C_3-C_4cycloalkyl, C_2-C_4alkenyl, C_5-C_6cycloalkenyl, C_2-C_4alkynyl, *N*-mono-C_1-C_4alkylamino, *N,N*-di-C_1-C_4alkylamino, *N*-C_1-C_4alkanoylamino, C_1-C_4alkoxy, C_1-C_4haloalkoxy, C_2-C_4alkenyloxy, C_2-C_4alkynyloxy, C_3-C_4cycloalkoxy, C_5-C_6cycloalkenyloxy, C_1-C_4alkoxycarbonyl, C_2-C_4alkenyloxycarbonyl, C_2-C_4alkynyloxycarbonyl, C_6-,C_{10}-,C_{14}-aryloxycarbonyl, C_1-C_4alkanoyl, C_2-C_4alkenylcarbonyl, C_2-C_4alkynylcarbonyl, C_6-,C_{10}-,C_{14}-arylcarbonyl, C_1-C_4alkylthio, C_1-C_4haloalkylthio, C_3-C_4cycloalkylthio, C_2-C_4alkenylthio, C_5-C_6cycloalkenylthio, C_2-C_4alkynylthio, C_1-C_4alkylsulfinyl, including both enantiomers of the C_1-C_4alkylsulfinyl group, C_1-C_4haloalkylsulfinyl, including both enantiomers of the C_1-C_4haloalkylsulfinyl group, C_1-C_4alkylsulfonyl, C_1-C_4haloalkylsulfonyl, *N*-mono-C_1-C_4alkylaminosulfonyl, *N,N*-di-C_1-C_4alkylaminosulfonyl, C_1-C_4alkylphosphinyl, C_1-C_4alkylphosphonyl, including both enantiomers of C_1-C_4alkylphosphinyl and C_1-C_4alkylphosphonyl, *N*-C_1-C_4alkylaminocarbonyl, *N,N*-di-C_1-C_4alkylaminocarbonyl, N-C_1-C_4alkanoylaminocarbonyl, N-C_1-C_4alkanoyl-N-C_1-C_4alkylaminocarbonyl, C_6-,C_{10}-,C_{14}-aryl, C_6-,C_{10}-,C_{14}-aryloxy, benzyl, benzyloxy, benzylthio, C_6-,C_{10}-,C_{14}-arylthio, C_6-,C_{10}-,C_{14}-arylamino, benzylamino, heterocyclyl and trialkylsilyl, substituents bonded via a double bond, such as C_1-C_4alkylidene (e.g. methylidene or ethylidene), an oxo group, an imino group and a substituted imino group. When two or more radicals form one or more rings, these may be carbocyclic, heterocyclic, saturated, partly saturated, unsaturated, for example including aromatic rings and with further substitution. The substituents mentioned by way of example ("first substituent level") may, if they contain hydrocarbonaceous components, optionally have further substitution therein ("second substituent level"), for example by one

or more of the substituents each independently selected from halogen, hydroxyl, amino, nitro, cyano, isocyano, azido, acylamino, an oxo group and an imino group. The term "(optionally) substituted" group preferably embraces just one or two substituent levels.

The inventive halogen-substituted chemical groups or halogenated groups (for example alkyl or alkoxy) are mono- or polysubstituted by halogen up to the maximum possible number of substituents. Such groups are also referred to as halo groups (for example haloalkyl). In the case of polysubstitution by halogen, the halogen atoms may be the same or different, and may all be bonded to one carbon atom or may be bonded to a plurality of carbon atoms. Halogen is especially fluorine, chlorine, bromine or iodine, preferably fluorine, chlorine or bromine and more preferably fluorine. More particularly, halogen-substituted groups are monohalocycloalkyl such as 1-fluorocyclopropyl, 2-fluorocyclopropyl or 1-fluorocyclobutyl, monohaloalkyl such as 2-chloroethyl, 2-fluoroethyl, 1-chloroethyl, 1-fluoroethyl, chloromethyl, or fluoromethyl; perhaloalkyl such as trichloromethyl or trifluoromethyl or CF_2CF_3, polyhaloalkyl such as difluoromethyl, 2-fluoro-2-chloroethyl, dichloromethyl, 1,1,2,2-tetrafluoroethyl or 2,2,2-trifluoroethyl. Further examples of haloalkyls are trichloromethyl, chlorodifluoromethyl, dichlorofluoromethyl, chloromethyl, bromomethyl, 1-fluoroethyl, 2-fluoroethyl, 2,2-difluoroethyl, 2,2,2-trifluoroethyl, 2,2,2-trichloroethyl, 2-chloro-2,2-difluoroethyl, pentafluoroethyl, 3,3,3-trifluoropropyl and pentafluoro-t-butyl. Preference is given to haloalkyls having 1 to 4 carbon atoms and 1 to 9, preferably 1 to 5, identical or different halogen atoms selected from fluorine, chlorine and bromine. Particular preference is given to haloalkyls having 1 or 2 carbon atoms and 1 to 5 identical or different halogen atoms selected from fluorine and chlorine, such as, inter alia, difluoromethyl, trifluoromethyl or 2,2-difluoroethyl. Further examples of halogen-substituted compounds are haloalkoxy such as OCF_3, $OCHF_2$, OCH_2F, OCF_2CF_3, OCH_2CF_3, OCH_2CHF_2 und OCH_2CH_2Cl, haloalkylsulfanyls such as difluoromethylthio, trifluoromethylthio, trichloromethylthio, chlorodifluoromethylthio, 1-fluoroethylthio, 2-fluoroethylthio, 2,2-difluoroethylthio, 1,1,2,2-tetrafluoroethylthio, 2,2,2-trifluoroethylthio or 2-chloro-1,1,2-trifluoroethylthio, haloalkylsulfinyls such as difluoromethylsulfinyl, trifluoromethylsulfinyl, trichloromethylsulfinyl, chlorodifluoromethylsulfinyl, 1-fluoroethylsulfinyl, 2-fluoroethylsulfinyl, 2,2-difluoroethylsulfinyl, 1,1,2,2-tetrafluoroethylsulfinyl, 2,2,2-trifluoroethylsulfinyl and 2-chloro-1,1,2-trifluoroethylsulfinyl, haloalkylsulfinyls such as difluoromethylsulfinyl, trifluoromethylsulfinyl, trichloromethylsulfinyl, chlorodifluoromethylsulfinyl, 1-fluoroethylsulfinyl, 2-fluoroethylsulfinyl, 2,2-difluoroethylsulfinyl, 1,1,2,2-tetrafluoroethylsulfinyl, 2,2,2-trifluoroethylsulfinyl and 2-chloro-1,1,2-trifluoroethylsulfinyl, haloalkylsulfonyl groups such as difluoromethylsulfonyl, trifluoromethylsulfonyl, trichloromethylsulfonyl, chlorodifluoromethylsulfonyl, 1-fluoroethylsulfonyl, 2-fluoroethylsulfonyl, 2,2-difluoroethylsulfonyl, 1,1,2,2-tetrafluoroethylsulfonyl, 2,2,2-trifluoroethylsulfonyl and 2-chloro-1,1,2-trifluoroethylsulfonyl.

In the case of radicals having carbon atoms, preference is given to those having 1 to 4 carbon atoms, especially 1 or 2 carbon atoms. Preference is generally given to substituents from the group of halogen,

e.g. fluorine and chlorine, (C_1-C_4)alkyl, preferably methyl or ethyl, (C_1-C_4)haloalkyl, preferably trifluoromethyl, (C_1-C_4)alkoxy, preferably methoxy or ethoxy, (C_1-C_4)haloalkoxy, nitro and cyano. Particular preference is given here to the substituents methyl, methoxy, fluorine and chlorine.

Substituted amino such as mono- or disubstituted amino means a radical from the group of the substituted amino radicals which are *N*-substituted, for example, by one or two identical or different radicals from the group of alkyl, hydroxy, amino, alkoxy, acyl and aryl; preferably *N*-mono- and *N,N*-dialkylamino, (for example methylamino, ethylamino, *N,N*-dimethylamino, *N,N*-diethylamino, *N,N*-di-n-propylamino, *N,N*-diisopropylamino or *N,N*-dibutylamino), *N*-mono- or *N,N*-dialkoxyalkylamino groups (for example *N*-methoxymethylamino, *N*-methoxyethylamino, *N,N*-di(methoxymethyl)amino or *N,N*-di(methoxyethyl)amino), *N*-mono- and *N,N*-diarylamino, such as optionally substituted anilines, acylamino, *N,N*-diacylamino, *N*-alkyl-*N*-arylamino, *N*-alkyl-*N*-acylamino and also saturated *N*-heterocycles; preference is given here to alkyl radicals having 1 to 4 carbon atoms; here, aryl is preferably phenyl or substituted phenyl; for acyl, the definition given further below applies, preferably (C_1-C_4)-alkanoyl. The same applies to substituted hydroxylamino or hydrazino.

Substituted amino also includes quaternary ammonium compounds (salts) having four organic substituents on the nitrogen atom.

Optionally substituted phenyl is preferably phenyl which is unsubstituted or mono- or polysubstituted, preferably up to trisubstituted, by identical or different radicals from the group of halogen, (C_1-C_4)alkyl, (C_1-C_4)alkoxy, (C_1-C_4)alkoxy-(C_1-C_4)alkoxy, (C_1-C_4)alkoxy-(C_1-C_4)alkyl, (C_1-C_4)haloalkyl, (C_1-C_4)haloalkoxy, (C_1-C_4)alkylthio, (C_1-C_4)haloalkylthio, (C_1-C_4)alkylsulfinyl (C_1-C_4) haloalkylsulfinyl, (C_1-C_4)alkylsulfonyl (C_1-C_4)haloalkylsulfonyl, cyano, isocyano and nitro, for example o-, m- and p-tolyl, dimethylphenyls, 2-, 3- and 4-chlorophenyl, 2-, 3- and 4-fluorophenyl, 2-, 3- and 4-trifluoromethyl- and 4-trichloromethylphenyl, 2,4-, 3,5-, 2,5- and 2,3-dichlorophenyl, o-, m- and p-methoxyphenyl, 4-heptafluorophenyl.

Optionally substituted cycloalkyl is preferably cycloalkyl which is unsubstituted or mono- or polysubstituted, preferably up to trisubstituted, by identical or different radicals from the group of halogen, cyano, (C_1-C_4)alkyl, (C_1-C_4)alkoxy, (C_1-C_4)alkoxy-(C_1-C_4)alkoxy, (C_1-C_4)alkoxy-(C_1-C_4)alkyl, (C_1-C_4)haloalkyl and (C_1-C_4)haloalkoxy, especially by one or two (C_1-C_4)alkyl radicals.

Inventive compounds may occur in preferred embodiments. Individual embodiments described herein may be combined with one another. Not included are combinations which contravene the laws of nature and which the person skilled in the art would therefore rule out on the basis of his/her expert knowledge. Ring structures having three or more adjacent oxygen atoms, for example, are excluded.

Isomers

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

Methods and uses

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

The invention furthermore relates to the use of the compounds of the formula (I) as pesticides, in particular crop protection agents.

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

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

Within the context of the present patent application, the term "hygiene" is understood to mean any and all measures, procedures and practices which aim to prevent disease, in particular infectious disease, and which serve to protect the health of humans and animals and/or to protect the environment, and/or which maintain cleanliness. In accordance with the invention, this especially includes measures for cleaning, disinfection and sterilisation of, for example, textiles or hard surfaces, especially surfaces of glass, wood, concrete, porcelain, ceramics, plastic or also of metal(s), and for ensuring that these are kept free of hygiene pests and/or their excretions. Preferably excluded from the scope of the invention in this regard are surgical or therapeutic treatment procedures applicable to the human body or to the bodies of animals and diagnostic procedures which are carried out on the human body or on the bodies of animals.

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

kitchens, bakeries, airports, bathrooms, swimming pools, department stores, hotels, hospitals, stables, animal husbandries, etc.

The term "hygiene pest" is therefore understood to mean one or more animal pests whose presence in the hygiene sector is problematic, in particular for health reasons. It is therefore a primary objective to avoid or minimize the presence of hygiene pests, and/or exposure to them, in the hygiene sector. This can be achieved in particular through the application of a pesticide that can be used both to prevent infestation and to tackle an infestation which is already present. Preparations which avoid or reduce exposure to pests can also be used. Hygiene pests include, for example, the organisms mentioned below.

The term "hygiene protection" thus covers all actions to maintain and/or improve these hygiene measures, procedures and practices.

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

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

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

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

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

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

from the order of the Coleoptera, for example Acalymma vittatum, Acanthoscelides obtectus, Adoretus spp., Aethina tumida, Agelastica alni, Agrilus spp., for example Agrilus planipennis, Agrilus coxalis, Agrilus bilineatus, Agrilus anxius, Agriotes spp., for example Agriotes linneatus, Agriotes mancus, Alphitobius diaperinus, Amphimallon solstitialis, Anobium punctatum, Anoplophora spp., for example Anoplophora glabripennis, Anthonomus spp., for example Anthonomus grandis, Anthrenus spp., Apion spp., Apogonia spp., Atomaria spp., for example Atomaria linearis, Attagenus spp., Baris caerulescens, Bruchidius obtectus, Bruchus spp., for example Bruchus pisorum, Bruchus rufimanus, Cassida spp., Cerotoma trifurcata, Ceutorrhynchus spp., for example Ceutorrhynchus assimilis, Ceutorrhynchus quadridens, Ceutorrhynchus rapae, Chaetocnema spp., for example Chaetocnema confinis, Chaetocnema denticulata, Chaetocnema ectypa, Cleonus mendicus, Conoderus spp., Cosmopolites spp., for example Cosmopolites sordidus, Costelytra zealandica, Ctenicera spp., Curculio spp., for example Curculio caryae, Curculio caryatrypes,Curculio obtusus, Curculio sayi, Cryptolestes ferrugineus, Cryptolestes pusillus, Cryptorhynchus lapathi, Cryptorhynchus mangiferae, Cylindrocopturus spp., Cylindrocopturus adspersus, Cylindrocopturus furnissi, Dendroctonus spp., for example Dendroctonus ponderosae, Dermestes spp., Diabrotica spp., for example Diabrotica balteata, Diabrotica barberi, Diabrotica undecimpunctata howardi, Diabrotica undecimpunctata undecimpunctata, Diabrotica virgifera virgifera, Diabrotica virgifera zeae, Dichocrocis spp., Dicladispa armigera, Diloboderus spp., Epicaerus spp., Epilachna spp., for example Epilachna borealis, Epilachna varivestis, Epitrix spp., for example Epitrix cucumeris, Epitrix fuscula, Epitrix hirtipennis, Epitrix subcrinita, Epitrix tuberis, Faustinus spp., Gibbium psylloides, Gnathocerus cornutus, Hellula undalis, Heteronychus arator, Heteronyx spp., Hylamorpha elegans, Hylotrupes bajulus, Hypera postica, Hypomeces squamosus, Hypothenemus spp., for example Hypothenemus hampei, Hypothenemus obscurus, Hypothenemus pubescens, Lachnosterna consanguinea, Lasioderma serricorne, Latheticus oryzae, Lathridius spp., Lema spp., Leptinotarsa decemlineata, Leucoptera spp., for example Leucoptera coffeella, Limonius ectypus, Lissorhoptrus oryzophilus, Listronotus (= Hyperodes) spp., Lixus spp., Luperodes spp., Luperomorpha xanthodera, Lyctus spp., Megacyllene spp., for example Megacyllene robiniae, Megascelis spp., Melanotus spp., for example Melanotus longulus oregonensis, Meligethes aeneus, Melolontha spp., for example Melolontha melolontha, Migdolus spp., Monochamus spp., Naupactus xanthographus, Necrobia spp., Neogalerucella spp., Niptus hololeucus, Oryctes rhinoceros, Oryzaephilus surinamensis, Oryzaphagus

oryzae, Otiorhynchus spp., for example Otiorhynchus cribricollis, Otiorhynchus ligustici, Otiorhynchus ovatus, Otiorhynchus rugosostriarus, Otiorhynchus sulcatus, Oulema spp., for example Oulema melanopus, Oulema oryzae, Oxycetonia jucunda, Phaedon cochleariae, Phyllophaga spp., Phyllophaga helleri, Phyllotreta spp., for example Phyllotreta armoraciae, Phyllotreta pusilla, Phyllotreta ramosa, Phyllotreta striolata, Popillia japonica, Premnotrypes spp., Prostephanus truncatus, Psylliodes spp., for example Psylliodes affinis, Psylliodes chrysocephala, Psylliodes punctulata, Ptinus spp., Rhizobius ventralis, Rhizopertha dominica, Rhynchophorus spp., Rhynchophorus ferrugineus, Rhynchophorus palmarum, Scolytus spp., for example Scolytus multistriatus, Sinoxylon perforans, Sitophilus spp., for example Sitophilus granarius, Sitophilus linearis, Sitophilus oryzae, Sitophilus zeamais, Sphenophorus spp., Stegobium paniceum, Sternechus spp., for example Sternechus paludatus, Symphyletes spp., Tanymecus spp., for example Tanymecus dilaticollis, Tanymecus indicus, Tanymecus palliatus, Tenebrio molitor, Tenebrioides mauretanicus, Tribolium spp., for example Tribolium audax, Tribolium castaneum, Tribolium confusum, Trogoderma spp., Tychius spp., Xylotrechus spp., Zabrus spp., for example Zabrus tenebrioides;

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

from the order of the Diptera, for example Aedes spp., for example Aedes aegypti, Aedes albopictus, Aedes stimulans, Aedes vexans, Agromyza spp., for example Agromyza frontella, Agromyza parvicornis, Anastrepha spp., Anopheles spp., for example Anopheles quadrimaculatus, Anopheles gambiae, Asphondylia spp., Bactrocera spp., for example Bactrocera cucurbitae, Bactrocera dorsalis, Bactrocera oleae, Bibio hortulanus, Calliphora erythrocephala, Calliphora vicina, Ceratitis capitata, Chironomus spp., Chrysomya spp., Chrysops spp., Chrysozona pluvialis, Cochliomya spp., Contarinia spp., for example Contarinia johnsoni, Contarinia nasturtii, Contarinia pyrivora, Contarinia schulzi, Contarinia sorghicola, Contarinia tritici,Cordylobia anthropophaga, Cricotopus sylvestris, Culex spp., for example Culex pipiens, Culex quinquefasciatus, Culicoides spp., Culiseta spp., Cuterebra spp., Dacus oleae, Dasineura spp., for example Dasineura brassicae, Delia spp., for example Delia antiqua, Delia coarctata, Delia florilega, Delia platura, Delia radicum, Dermatobia hominis, Drosophila spp., for example Drosphila melanogaster, Drosophila suzukii, Echinocnemus spp., Eulcia heraclei, Fannia spp., Gasterophilus spp., Glossina spp., Haematopota spp., Hydrellia spp., Hydrellia griseola, Hylemya spp., Hippobosca spp., Hypoderma spp., Liriomyza spp., for example Liriomyza brassicae, Liriomyza huidobrensis, Liriomyza sativae, Lucilia spp., for example Lucilia cuprina, Lutzomyia spp., Mansonia spp., Musca spp., for example Musca domestica, Musca domestica vicina, Oestrus spp., Oscinella frit, Paratanytarsus spp., Paralauterborniella subcincta, Pegomya or Pegomyia spp., for example Pegomya betae, Pegomya hyoscyami, Pegomya rubivora, Phlebotomus spp., Phorbia spp., Phormia spp., Piophila casei, Platyparea poeciloptera, Prodiplosis spp., Psila rosae, Rhagoletis spp., for example Rhagoletis cingulata, Rhagoletis completa, Rhagoletis fausta, Rhagoletis indifferens, Rhagoletis mendax,

Rhagoletis pomonella, Sarcophaga spp., Simulium spp., for example Simulium meridionale, Stomoxys spp., Tabanus spp., Tetanops spp., Tipula spp., for example Tipula paludosa, Tipula simplex, Toxotrypana curvicauda;

from the order of the Hemiptera, for example Acizzia acaciaebaileyanae, Acizzia dodonaeae, Acizzia uncatoides, Acrida turrita, Acyrthosipon spp., for example Acyrthosiphon pisum, Acrogonia spp., Aeneolamia spp., Agonoscena spp., Aleurocanthus spp., Aleyrodes proletella, Aleurolobus barodensis, Aleurothrixus floccosus, Allocaridara malayensis, Amrasca spp., for example Amrasca bigutulla, Amrasca devastans, Anuraphis cardui, Aonidiella spp., for example Aonidiella aurantii, Aonidiella citrina, Aonidiella inornata, Aphanostigma piri, Aphis spp., for example Aphis citricola, Aphis craccivora, Aphis fabae, Aphis forbesi, Aphis glycines, Aphis gossypii, Aphis hederae, Aphis illinoisensis, Aphis middletoni, Aphis nasturtii, Aphis nerii, Aphis pomi, Aphis spiraecola, Aphis viburniphila, Arboridia apicalis, Arytainilla spp., Aspidiella spp., Aspidiotus spp., for example Aspidiotus nerii, Atanus spp., Aulacorthum solani, Bemisia tabaci, Blastopsylla occidentalis, Boreioglycaspis melaleucae, Brachycaudus helichrysi, Brachycolus spp., Brevicoryne brassicae, Cacopsylla spp., for example Cacopsylla pyricola, Calligypona marginata, Capulinia spp., Carneocephala fulgida, Ceratovacuna lanigera, Cercopidae, Ceroplastes spp., Chaetosiphon fragaefolii, Chionaspis tegalensis, Chlorita onukii, Chondracris rosea, Chromaphis juglandicola, Chrysomphalus aonidum, Chrysomphalus ficus, Cicadulina mbila, Coccomytilus halli, Coccus spp., for example Coccus hesperidum, Coccus longulus, Coccus pseudomagnoliarum, Coccus viridis, Cryptomyzus ribis, Cryptoneossa spp., Ctenarytaina spp., Dalbulus spp., Dialeurodes chittendeni, Dialeurodes citri, Diaphorina citri, Diaspis spp., Diuraphis spp., Doralis spp., Drosicha spp., Dysaphis spp., for example Dysaphis apiifolia, Dysaphis plantaginea, Dysaphis tulipae, Dysmicoccus spp., Empoasca spp., for example Empoasca abrupta, Empoasca fabae, Empoasca maligna, Empoasca solana, Empoasca stevensi, Eriosoma spp., for example Eriosoma americanum, Eriosoma lanigerum, Eriosoma pyricola, Erythroneura spp., Eucalyptolyma spp., Euphyllura spp., Euscelis bilobatus, Ferrisia spp., Fiorinia spp., Furcaspis oceanica, Geococcus coffeae, Glycaspis spp., Heteropsylla cubana, Heteropsylla spinulosa, Homalodisca coagulata, Hyalopterus arundinis, Hyalopterus pruni, Icerya spp., for example Icerya purchasi, Idiocerus spp., Idioscopus spp., Laodelphax striatellus, Lecanium spp., for example Lecanium corni (=Parthenolecanium corni), Lepidosaphes spp., for example Lepidosaphes ulmi, Lipaphis erysimi, Lopholeucaspis japonica, Lycorma delicatula, Macrosiphum spp., for example Macrosiphum euphorbiae, Macrosiphum lilii, Macrosiphum rosae, Macrosteles facifrons, Mahanarva spp., Melanaphis sacchari, Metcalfiella spp., Metcalfa pruinosa, Metopolophium dirhodum, Monellia costalis, Monelliopsis pecanis, Myzus spp., for example Myzus ascalonicus, Myzus cerasi, Myzus ligustri, Myzus ornatus, Myzus persicae,. Myzus nicotianae, Nasonovia ribisnigri, Neomaskellia spp., Nephotettix spp., for example Nephotettix cincticeps,, Nephotettix nigropictus, Nettigoniella spectra, Nilaparvata lugens, Oncometopia spp., Orthezia praelonga, Oxya chinensis, Pachypsylla spp., Parabemisia myricae, Paratrioza spp., for example Paratrioza cockerelli, Parlatoria spp., Pemphigus spp.,

for example Pemphigus bursarius, Pemphigus populivenae, Peregrinus maidis, Perkinsiella spp., Phenacoccus spp., for example Phenacoccus madeirensis, Phlocomyzus passerinii, Phorodon humuli, Phylloxera spp., for example Phylloxera devastatrix, Phylloxera notabilis, Pinnaspis aspidistrae, Planococcus spp., for example Planococcus citri, Prosopidopsylla flava, Protopulvinaria pyriformis, Pseudaulacaspis pentagona, Pseudococcus spp., for example Pseudococcus calceolariae, Pseudococcus comstocki, Pseudococcus longispinus, Pseudococcus maritimus, Pseudococcus viburni, Psyllopsis spp., Psylla spp., for example Psylla buxi, Psylla mali, Psylla pyri, Pteromalus spp., Pulvinaria spp., Pyrilla spp., Quadraspidiotus spp., for example Quadraspidiotus juglansregiae, Quadraspidiotus ostreaeformis, Quadraspidiotus perniciosus, Quesada gigas, Rastrococcus spp., Rhopalosiphum spp., for example Rhopalosiphum maidis, Rhopalosiphum oxyacanthae, Rhopalosiphum padi, Rhopalosiphum rufiabdominale, Saissetia spp., for example Saissetia coffeae, Saissetia miranda, Saissetia neglecta, Saissetia oleae, Scaphoideus titanus, Schizaphis graminum, Selenaspidus articulatus, Sipha flava, Sitobion avenae, Sogata spp., Sogatella furcifera, Sogatodes spp., Stictocephala festina, Siphoninus phillyreae, Tenalaphara malayensis,Tetragonocephela spp., Tinocallis caryaefoliae, Tomaspis spp., Toxoptera spp., for example Toxoptera aurantii, Toxoptera citricidus, Trialeurodes vaporariorum, Trioza spp., for example Trioza diospyri, Typhlocyba spp., Unaspis spp., Viteus vitifolii, Zygina spp.;

from the suborder of the Heteroptera, for example Aelia spp., Anasa tristis, Antestiopsis spp., Boisea spp., Blissus spp., Calocoris spp., Campylomma livida, Cavelerius spp., Cimex spp., for example Cimex adjunctus, Cimex hemipterus, Cimex lectularius, Cimex pilosellus, Collaria spp., Creontiades dilutus, Dasynus piperis, Dichelops furcatus, Diconocoris hewetti, Dysdercus spp., Euschistus spp., for example Euschistus heros, Euschistus servus, Euschistus tristigmus, Euschistus variolarius, Eurydema spp., Eurygaster spp., Halyomorpha halys, Heliopeltis spp., Horcias nobilellus, Leptocorisa spp., Leptocorisa varicornis, Leptoglossus occidentalis, Leptoglossus phyllopus, Lygocoris spp., for example Lygocoris pabulinus, Lygus spp., for example Lygus elisus, Lygus hesperus, Lygus lineolaris, Macropes excavatus, Megacopta cribraria, Miridae, Monalonion atratum, Nezara spp., for example Nezara viridula, Nysius spp., Oebalus spp., Pentomidae, Piesma quadrata, Piezodorus spp., for example Piezodorus guildinii, Psallus spp., Pseudacysta persea, Rhodnius spp., Sahlbergella singularis, Scaptocoris castanea, Scotinophora spp., Stephanitis nashi, Tibraca spp., Triatoma spp.;

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

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

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

from the order of the Lepidoptera, for example Achroia grisella, Acronicta major, Adoxophyes spp., for example Adoxophyes orana, Aedia leucomelas, Agrotis spp., for example Agrotis segetum, Agrotis ipsilon, Alabama spp., for example Alabama argillacea, Amyelois transitella, Anarsia spp., Anticarsia spp., for example Anticarsia gemmatalis, Argyroploce spp., Autographa spp., Barathra brassicae, Blastodacna atra, Borbo cinnara, Bucculatrix thurberiella, Bupalus piniarius, Busseola spp., Cacoecia spp., Caloptilia theivora, Capua reticulana, Carpocapsa pomonella, Carposina niponensis, Cheimatobia brumata, Chilo spp., for example Chilo plejadellus, Chilo suppressalis, Choreutis pariana, Choristoneura spp., Chrysodeixis chalcites, Clysia ambiguella, Cnaphalocerus spp., Cnaphalocrocis medinalis, Cnephasia spp., Conopomorpha spp., Conotrachelus spp., Copitarsia spp., Cydia spp., for example Cydia nigricana, Cydia pomonella, Dalaca noctuides, Diaphania spp., Diparopsis spp., Diatraea saccharalis, Dioryctria spp., for example Dioryctria zimmermani, Earias spp., Ecdytolopha aurantium, Elasmopalpus lignosellus, Eldana saccharina, Ephestia spp., for example Ephestia elutella, Ephestia kuehniella, Epinotia spp., Epiphyas postvittana, Erannis spp., Erschoviella musculana, Etiella spp., Eudocima spp., Eulia spp., Eupoecilia ambiguella, Euproctis spp., for example Euproctis chrysorrhoea, Euxoa spp., Feltia spp., Galleria mellonella, Gracillaria spp., Grapholitha spp., for example Grapholita molesta, Grapholita prunivora, Hedylepta spp., Helicoverpa spp., for example Helicoverpa armigera, Helicoverpa zea, Heliothis spp., for example Heliothis virescens, Hofmannophila pseudospretella, Homocosoma spp., Homona spp., Hyponomeuta padella, Kakivoria flavofasciata, Lampides spp., Laphygma spp., Laspeyresia molesta, Leucinodes orbonalis, Leucoptera spp., for example Leucoptera coffeella, Lithocolletis spp., for example Lithocolletis blancardella, Lithophane antennata, Lobesia spp., for example Lobesia botrana, Loxagrotis albicosta, Lymantria spp., for example Lymantria dispar, Lyonetia spp., for example Lyonetia clerkella, Malacosoma neustria, Maruca testulalis, Mamestra brassicae, Melanitis leda, Mocis spp., Monopis obviella, Mythimna separata, Nemapogon cloacellus, Nymphula spp., Oiketicus spp., Omphisa spp., Operophtera spp., Oria spp., Orthaga spp., Ostrinia spp., for example Ostrinia nubilalis, Panolis flammea, Parnara spp., Pectinophora spp., for example Pectinophora gossypiella, Perileucoptera spp., Phthorimaea spp., for example Phthorimaea operculella, Phyllocnistis citrella, Phyllonorycter spp., for example Phyllonorycter blancardella, Phyllonorycter crataegella, Pieris spp., for example Pieris rapae, Platynota stultana, Plodia interpunctella, Plusia spp., Plutella xylostella (=Plutella maculipennis), Podesia spp., for example Podesia syringae, Prays spp., Prodenia spp., Protoparce spp., Pseudaletia spp., for example Pseudaletia unipuncta, Pseudoplusia includens, Pyrausta nubilalis, Rachiplusia nu, Schoenobius spp., for example Schoenobius bipunctifer, Scirpophaga spp., for example Scirpophaga innotata, Scotia segetum, Sesamia spp., for example Sesamia inferens, Sparganothis spp., Spodoptera spp., for example Spodoptera eradiana, Spodoptera

exigua, Spodoptera frugiperda, Spodoptera praefica, Stathmopoda spp., Stenoma spp., Stomopteryx subsecivella, Synanthedon spp., Tecia solanivora, Thaumetopoea spp., Thermesia gemmatalis, Tinea cloacella, Tinea pellionella, Tineola bisselliella, Tortrix spp., Trichophaga tapetzella, Trichoplusia spp., for example Trichoplusia ni, Tryporyza incertulas, Tuta absoluta, Virachola spp.;

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

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

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

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

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

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

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

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

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

plant pests from the phylum of the Nematoda, i.e. phytoparasitic nematodes, in particular Aglenchus spp., for example Aglenchus agricola, Anguina spp., for example Anguina tritici, Aphelenchoides spp., for example Aphelenchoides arachidis, Aphelenchoides fragariae, Belonolaimus spp., for example Belonolaimus gracilis, Belonolaimus longicaudatus, Belonolaimus nortoni, Bursaphelenchus spp., for

example Bursaphelenchus cocophilus, Bursaphelenchus eremus, Bursaphelenchus xylophilus, Cacopaurus spp., for example Cacopaurus pestis, Criconemella spp., for example Criconemella curvata, Criconemella onoensis, Criconemella ornata, Criconemella rusium, Criconemella xenoplax (= Mesocriconema xenoplax), Criconemoides spp., for example Criconemoides ferniae, Criconemoides onoense, Criconemoides ornatum, Ditylenchus spp., for example Ditylenchus dipsaci, Dolichodorus spp., Globodera spp., for example Globodera pallida, Globodera rostochiensis, Helicotylenchus spp., for example Helicotylenchus dihystera, Hemicriconemoides spp., Hemicycliophora spp., Heterodera spp., for example Heterodera avenae, Heterodera glycines, Heterodera schachtii, Hirschmaniella spp., Hoplolaimus spp., Longidorus spp., for example Longidorus africanus, Meloidogyne spp., for example Meloidogyne chitwoodi, Meloidogyne fallax, Meloidogyne hapla, Meloidogyne incognita, Meloinema spp., Nacobbus spp., Neotylenchus spp., ., Paralongidorus spp., Paraphelenchus spp., Paratrichodorus spp., for example Paratrichodorus minor, Paratylenchus spp., Pratylenchus spp., for example Pratylenchus penetrans, Pseudohalenchus spp., Psilenchus spp., Punctodera spp., Quinisulcius spp., Radopholus spp., for example Radopholus citrophilus, Radopholus similis, Rotylenchulus spp., Rotylenchus spp., Scutellonema spp., Subanguina spp., Trichodorus spp., for example Trichodorus obtusus, Trichodorus primitivus, Tylenchorhynchus spp., for example Tylenchorhynchus annulatus, Tylenchulus spp., for example Tylenchulus semipenetrans, Xiphinema spp., for example Xiphinema index.

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

Formulations

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

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

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

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

ethers and esters, ketones such as acetone, methyl ethyl ketone, methyl isobutyl ketone or cyclohexanone, strongly polar solvents such as dimethylformamide or dimethyl sulphoxide, carbonates such as propylene carbonate, butylene carbonate, diethyl carbonate or dibutyl carbonate, or nitriles such as acetonitrile or propanenitrile.

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 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, carbonates such as propylene carbonate, butylene carbonate, diethyl carbonate or dibutyl carbonate, nitriles such as acetonitrile or propanenitrile, and also water.

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 sulphosuccinic esters, taurine derivatives (preferably alkyl taurates), isethionate derivatives, 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 alkoxylates such as coconut fatty ethoxylate (10) or isotridecyl ethoxylate (12), fatty acid esters, for example rapeseed oil methyl ester or soya oil methyl ester, fatty amine alkoxylates, for example tallowamine ethoxylate (15), or ammonium and/or phosphonium salts, for example ammonium sulphate or diammonium hydrogenphosphate.

The formulations preferably comprise between 0.00000001 and 98% by weight of the compound of the formula (I) 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 pesticides) 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.

Mixtures

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

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

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

If one of the compounds mentioned below can occur in different tautomeric forms, these forms are also included even if not explicitly mentioned in each case. Further, all named mixing partners can, if their functional groups enable this, optionally form salts with suitable bases or acids.

Insecticides/acaricides/nematicides

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

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

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

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

(4) Nicotinic acetylcholine receptor (nAChR) competitive modulators, preferably neonicotinoids selected from acetamiprid, clothianidin, dinotefuran, imidacloprid, nitenpyram, thiacloprid and thiamethoxam or nicotine or sulfoxaflor or flupyradifurone.

(5) Nicotinic acetylcholine receptor (nAChR) allosteric modulators, preferably spinosyns selected from spinetoram and spinosad.

(6) Glutamate-gated chloride channel (GluCl) allosteric modulators, preferably avermectins/milbemycins selected from abamectin, emamectin benzoate, lepimectin and milbemectin.

(7) Juvenile hormone mimics, preferably juvenile hormone analogues selected from hydroprene, kinoprene and methoprene, or fenoxycarb or pyriproxyfen.

(8) Miscellaneous non-specific (multi-site) inhibitors, preferably alkyl halides selected from methyl bromide and other alkyl halides, or chloropicrine or sulphuryl fluoride or borax or tartar emetic or methyl isocyanate generators selected from diazomet and metam.

(9) Chordotonal organ TRPV channel modulators selected from pymetrozine and pyrifluquinazone.

(10) Mite growth inhibitors selected from clofentezine, hexythiazox, diflovidazin and etoxazole.

(11) Microbial disruptors of the insect gut membrane selected from Bacillus thuringiensis subspecies israelensis, Bacillus sphaericus, Bacillus thuringiensis subspecies aizawai, Bacillus thuringiensis subspecies kurstaki, Bacillus thuringiensis subspecies tenebrionis, and B.t. plant proteins selected from Cry1Ab, Cry1Ac, Cry1Fa, Cry1A.105, Cry2Ab, Vip3A, mCry3A, Cry3Ab, Cry3Bb and Cry34Ab1/35Ab1.

(12) Inhibitors of mitochondrial ATP synthase, preferably ATP disruptors selected from diafenthiuron, or organotin compounds selected from azocyclotin, cyhexatin and fenbutatin oxide, or propargite or tetradifon.

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

(14) Nicotinic acetylcholine receptor channel blockers selected from bensultap, cartap hydrochloride, thiocylam and thiosultap-sodium.

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

(16) Inhibitors of chitin biosynthesis, type 1 selected from buprofezin.

(17) Moulting disruptor (in particular for Diptera, i.e. dipterans) selected from cyromazine.

(18) Ecdysone receptor agonists selected from chromafenozide, halofenozide, methoxyfenozide and tebufenozide.

(19) Octopamine receptor agonists selected from amitraz.

(20) Mitochondrial complex III electron transport inhibitors selected from hydramethylnone, acequinocyl and fluacrypyrim.

(21) Mitochondrial complex I electron transport inhibitors, preferably METI acaricides selected from fenazaquin, fenpyroximate, pyrimidifen, pyridaben, tebufenpyrad and tolfenpyrad, or rotenone (Derris).

(22) Voltage-dependent sodium channel blockers selected from indoxacarb and metaflumizone.

(23) Inhibitors of acetyl CoA carboxylase, preferably tetronic and tetramic acid derivatives selected from spirodiclofen, spiromesifen and spirotetramat.

(24) Mitochondrial complex IV electron transport inhibitors, preferably phosphines selected from aluminium phosphide, calcium phosphide, phosphine and zinc phosphide, or cyanides selected from calcium cyanide, potassium cyanide and sodium cyanide.

(25) Mitochondrial complex II electron transport inhibitors, preferably beta-ketonitrile derivatives selected from cyenopyrafen and cyflumetofen, and carboxanilides selected from pyflubumide.

(28) Ryanodine receptor modulators, preferably diamides selected from chlorantraniliprole, cyantraniliprole and flubendiamide.

(29) Chordotonal organ Modulators (with undefined target site) selected from flonicamid.

(30) further active compounds selected from Acynonapyr, Afidopyropen, Afoxolaner, Azadirachtin, Benclothiaz, Benzoximate, Benzpyrimoxan, Bifenazate, Broflanilide, Bromopropylate, Chinomethionat, Chloroprallethrin, Cryolite, Cyclaniliprole, Cycloxaprid, Cyhalodiamide, Dicloromezotiaz, Dicofol, epsilon-Metofluthrin, epsilon-Momfluthrin, Flometoquin, Fluazaindolizine, Fluensulfone, Flufenerim, Flufenoxystrobin, Flufiprole, Fluhexafon, Fluopyram, Flupyrimin, Fluralaner, Fluxametamide, Fufenozide, Guadipyr, Heptafluthrin, Imidaclothiz, Iprodione, kappa-Bifenthrin, kappa-Tefluthrin, Lotilaner, Meperfluthrin, Oxazosulfyl, Paichongding, Pyridalyl, Pyrifluquinazon, Pyriminostrobin, Spirobudiclofen, Spiropidion, Tetramethylfluthrin, Tetraniliprole, Tetrachlorantraniliprole, Tigolaner, Tioxazafen, Thiofluoximate, Triflumezopyrim and iodomethane; furthermore preparations based on Bacillus firmus (I-1582, BioNeem, Votivo), and also the following compounds: 1-{2-fluoro-4-methyl-5-[(2,2,2-trifluoroethyl)sulphinyl]phenyl}-3-(trifluoromethyl)-1H-1,2,4-triazole-5-amine (known from WO2006/043635) (CAS 885026-50-6), {1'-[(2E)-3-(4-chlorophenyl)prop-2-en-1-yl]-5-fluorospiro[indol-3,4'-piperidin]-1(2H)-yl}(2-chloropyridin-4-yl)methanone (known from WO2003/106457) (CAS 637360-23-7), 2-chloro-N-[2-{1-[(2E)-3-(4-chlorophenyl)prop-2-en-1-yl]piperidin-4-yl}-4-(trifluoromethyl)phenyl]isonicotinamide (known from WO2006/003494) (CAS 872999-66-1), 3-(4-chloro-2,6-dimethylphenyl)-4-hydroxy-8-methoxy-1,8-diazaspiro[4.5]dec-3-en-2-one (known from WO 2010052161) (CAS 1225292-17-0), 3-(4-chloro-2,6-dimethylphenyl)-8-methoxy-2-oxo-1,8-diazaspiro[4.5]dec-3-en-4-yl ethyl carbonate (known from EP2647626) (CAS 1440516-42-6), 4-(but-2-yn-1-yloxy)-6-(3,5-dimethylpiperidin-1-yl)-5-fluoropyrimidine (known from WO2004/099160) (CAS 792914-58-0), PF1364 (known from JP2010/018586) (CAS 1204776-60-2), (3E)-3-[1-[(6-chloro-3-pyridyl)methyl]-2-pyridylidene]-1,1,1-trifluoro-propan-2-one (known from WO2013/144213) (CAS 1461743-15-6), , N-[3-(benzylcarbamoyl)-4-chlorophenyl]-1-methyl-3-

(pentafluoroethyl)-4-(trifluoromethyl)-1H-pyrazole-5-carboxamide (known from WO2010/051926) (CAS 1226889-14-0), 5-bromo-4-chloro-N-[4-chloro-2-methyl-6-(methylcarbamoyl)phenyl]-2-(3-chloro-2-pyridyl)pyrazole-3-carboxamide (known from CN103232431) (CAS 1449220-44-3), 4-[5-(3,5-dichlorophenyl)-4,5-dihydro-5-(trifluoromethyl)-3-isoxazolyl]-2-methyl-N-(cis-1-oxido-3-thictanyl)-benzamide, 4-[5-(3,5-dichlorophenyl)-4,5-dihydro-5-(trifluoromethyl)-3-isoxazolyl]-2-methyl-N-(trans-1-oxido-3-thietanyl)-benzamide and 4-[(5S)-5-(3,5-dichlorophenyl)-4,5-dihydro-5-(trifluoromethyl)-3-isoxazolyl]-2-methyl-N-(cis-1-oxido-3-thictanyl)benzamide (known from WO 2013/050317 A1) (CAS 1332628-83-7), N-[3-chloro-1-(3-pyridinyl)-1H-pyrazol-4-yl]-N-ethyl-3-[(3,3,3-trifluoropropyl)sulfinyl]-propanamide, (+)-N-[3-chloro-1-(3-pyridinyl)-1H-pyrazol-4-yl]-N-ethyl-3-[(3,3,3-trifluoropropyl)sulfinyl]-propanamide and (-)-N-[3-chloro-1-(3-pyridinyl)-1H-pyrazol-4-yl]-N-ethyl-3-[(3,3,3-trifluoropropyl)sulfinyl]-propanamide (known from WO 2013/162715 A2, WO 2013/162716 A2, US 2014/0213448 A1) (CAS 1477923-37-7), 5-[[(2E)-3-chloro-2-propen-1-yl]amino]-1-[2,6-dichloro-4-(trifluoromethyl)phenyl]-4-[(trifluoromethyl)sulfinyl]-1H-pyrazole-3-carbonitrile (known from CN 101337937 A) (CAS 1105672-77-2), 3-bromo-N-[4-chloro-2-methyl-6-[(methylamino)thioxomethyl]phenyl]-1-(3-chloro-2-pyridinyl)-1H-pyrazole-5-carboxamide, (Liudaibenjiaxuanan, known from CN 103109816 A) (CAS 1232543-85-9); N-[4-chloro-2-[[(1,1-dimethylethyl)amino]carbonyl]-6-methylphenyl]-1-(3-chloro-2-pyridinyl)-3-(fluoromethoxy)-1H-Pyrazole-5-carboxamide (known from WO 2012/034403 A1) (CAS 1268277-22-0), N-[2-(5-amino-1,3,4-thiadiazol-2-yl)-4-chloro-6-methylphenyl]-3-bromo-1-(3-chloro-2-pyridinyl)-1H-pyrazole-5-carboxamide (known from WO 2011/085575 A1) (CAS 1233882-22-8), 4-[3-[2,6-dichloro-4-[(3,3-dichloro-2-propen-1-yl)oxy]phenoxy]propoxy]-2-methoxy-6-(trifluoromethyl)-pyrimidine (known from CN 101337940 A) (CAS 1108184-52-6); (2E)- and 2(Z)-2-[2-(4-cyanophenyl)-1-[3-(trifluoromethyl)phenyl]ethylidene]-N-[4-(difluoromethoxy)phenyl]-hydrazinecarboxamide (known from CN 101715774 A) (CAS 1232543-85-9); 3-(2,2-dichloroethenyl)-2,2-dimethyl-4-(1H-benzimidazol-2-yl)phenyl-cyclopropanecarboxylic acid ester (known from CN 103524422 A) (CAS 1542271-46-4); (4aS)-7-chloro-2,5-dihydro-2-[[(methoxycarbonyl)[4-[(trifluoromethyl)thio]phenyl]amino]carbonyl]-indeno[1,2-e][1,3,4]oxadiazine-4a(3H)-carboxylic acid methyl ester (known from CN 102391261 A) (CAS 1370358-69-2); 6-deoxy-3-O-ethyl-2,4-di-O-methyl-, 1-[N-[4-[1-[4-(1,1,2,2,2-pentafluoroethoxy)phenyl]-1H-1,2,4-triazol-3-yl]phenyl]carbamate]-α-L-mannopyranose (known from US 2014/0275503 A1) (CAS 1181213-14-8); 8-(2-cyclopropylmethoxy-4-trifluoromethyl-phenoxy)-3-(6-trifluoromethyl-pyridazin-3-yl)-3-aza-bicyclo[3.2.1]octane (CAS 1253850-56-4), (8-anti)-8-(2-cyclopropylmethoxy-4-trifluoromethyl-phenoxy)-3-(6-trifluoromethyl-pyridazin-3-yl)-3-aza-bicyclo[3.2.1]octane (CAS 933798-27-7), (8-syn)-8-(2-cyclopropylmethoxy-4-trifluoromethyl-phenoxy)-3-(6-trifluoromethyl-pyridazin-3-yl)-3-aza-bicyclo[3.2.1]octane (known from WO 2007040280 A1, WO 2007040282 A1) (CAS 934001-66-8), N-[3-chloro-1-(3-pyridinyl)-1H-pyrazol-4-yl]-N-ethyl-3-[(3,3,3-trifluoropropyl)thio]-propanamide (known from WO 2015/058021 A1, WO 2015/058028 A1) (CAS 1477919-27-9) and N-[4-

(aminothioxomethyl)-2-methyl-6-[(methylamino)carbonyl]phenyl]-3-bromo-1-(3-chloro-2-pyridinyl)-1H-pyrazole-5-carboxamide (known from CN 103265527 A) (CAS 1452877-50-7), 5-(1,3-dioxan-2-yl)-4-[[4-(trifluoromethyl)phenyl]methoxy]-pyrimidine (known from WO 2013/115391 A1) (CAS 1449021-97-9), 3-(4-chloro-2,6-dimethylphenyl)-8-methoxy-1-methyl-1,8-diazaspiro[4.5]decane-2,4-dione (known from WO 2014/187846 A1) (CAS 1638765-58-8), 3-(4-chloro-2,6-dimethylphenyl)-8-methoxy-1-methyl-2-oxo-1,8-diazaspiro[4.5]dec-3-en-4-yl-carbonic acid ethyl ester (known from WO 2010/066780 A1, WO 2011151146 A1) (CAS 1229023-00-0), 4-[(5S)-5-(3,5-Dichloro-4-fluorophenyl)-4,5-dihydro-5-(trifluoromethyl)-3-isoxazolyl]-N-[(4R)-2-ethyl-3-oxo-4-isoxazolidinyl]-2-methyl-benzamide (bekannt aus WO 2011/067272, WO2013/050302) (CAS 1309959-62-3).

Fungicides

The active ingredients specified herein by their Common Name are known and described, for example, in The Pesticide Manual (16th Ed.British Crop Protection Council) or can be searched in the internet (e.g. www.alanwood.net/pesticides).

All named fungicidal mixing partners of the classes (1) to (15) can, if their functional groups enable this, optionally form salts with suitable bases or acids. All named mixing partners of the classes (1) to (15) can include tautomeric forms, where applicable.

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

triazole, (1.038) 1-({(2S,4S)-2-[2-chloro-4-(4-chlorophenoxy)phenyl]-4-methyl-1,3-dioxolan-2-yl}methyl)-1H-1,2,4-triazole, (1.039) 1-{[3-(2-chlorophenyl)-2-(2,4-difluorophenyl)oxiran-2-yl]methyl}-1H-1,2,4-triazol-5-yl thiocyanate, (1.040) 1-{[rel(2R,3R)-3-(2-chlorophenyl)-2-(2,4-difluorophenyl)oxiran-2-yl]methyl}-1H-1,2,4-triazol-5-yl thiocyanate, (1.041) 1-{[rel(2R,3S)-3-(2-chlorophenyl)-2-(2,4-difluorophenyl)oxiran-2-yl]methyl}-1H-1,2,4-triazol-5-yl thiocyanate, (1.042) 2-[(2R,4R,5R)-1-(2,4-dichlorophenyl)-5-hydroxy-2,6,6-trimethylheptan-4-yl]-2,4-dihydro-3H-1,2,4-triazole-3-thione, (1.043) 2-[(2R,4R,5S)-1-(2,4-dichlorophenyl)-5-hydroxy-2,6,6-trimethylheptan-4-yl]-2,4-dihydro-3H-1,2,4-triazole-3-thione, (1.044) 2-[(2R,4S,5R)-1-(2,4-dichlorophenyl)-5-hydroxy-2,6,6-trimethylheptan-4-yl]-2,4-dihydro-3H-1,2,4-triazole-3-thione, (1.045) 2-[(2R,4S,5S)-1-(2,4-dichlorophenyl)-5-hydroxy-2,6,6-trimethylheptan-4-yl]-2,4-dihydro-3H-1,2,4-triazole-3-thione, (1.046) 2-[(2S,4R,5R)-1-(2,4-dichlorophenyl)-5-hydroxy-2,6,6-trimethylheptan-4-yl]-2,4-dihydro-3H-1,2,4-triazole-3-thione, (1.047) 2-[(2S,4R,5S)-1-(2,4-dichlorophenyl)-5-hydroxy-2,6,6-trimethylheptan-4-yl]-2,4-dihydro-3H-1,2,4-triazole-3-thione, (1.048) 2-[(2S,4S,5R)-1-(2,4-dichlorophenyl)-5-hydroxy-2,6,6-trimethylheptan-4-yl]-2,4-dihydro-3H-1,2,4-triazole-3-thione, (1.049) 2-[(2S,4S,5S)-1-(2,4-dichlorophenyl)-5-hydroxy-2,6,6-trimethylheptan-4-yl]-2,4-dihydro-3H-1,2,4-triazole-3-thione, (1.050) 2-[1-(2,4-dichlorophenyl)-5-hydroxy-2,6,6-trimethylheptan-4-yl]-2,4-dihydro-3H-1,2,4-triazole-3-thione, (1.051) 2-[2-chloro-4-(2,4-dichlorophenoxy)phenyl]-1-(1H-1,2,4-triazol-1-yl)propan-2-ol, (1.052) 2-[2-chloro-4-(4-chlorophenoxy)phenyl]-1-(1H-1,2,4-triazol-1-yl)butan-2-ol, (1.053) 2-[4-(4-chlorophenoxy)-2-(trifluoromethyl)phenyl]-1-(1H-1,2,4-triazol-1-yl)butan-2-ol, (1.054) 2-[4-(4-chlorophenoxy)-2-(trifluoromethyl)phenyl]-1-(1H-1,2,4-triazol-1-yl)pentan-2-ol, (1.055) 2-[4-(4-chlorophenoxy)-2-(trifluoromethyl)phenyl]-1-(1H-1,2,4-triazol-1-yl)propan-2-ol, (1.056) 2-{[3-(2-chlorophenyl)-2-(2,4-difluorophenyl)oxiran-2-yl]methyl}-2,4-dihydro-3H-1,2,4-triazole-3-thione, (1.057) 2-{[rel(2R,3R)-3-(2-chlorophenyl)-2-(2,4-difluorophenyl)oxiran-2-yl]methyl}-2,4-dihydro-3H-1,2,4-triazole-3-thione, (1.058) 2-{[rel(2R,3S)-3-(2-chlorophenyl)-2-(2,4-difluorophenyl)oxiran-2-yl]methyl}-2,4-dihydro-3H-1,2,4-triazole-3-thione, (1.059) 5-(4-chlorobenzyl)-2-(chloromethyl)-2-methyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol, (1.060) 5-(allylsulfanyl)-1-{[3-(2-chlorophenyl)-2-(2,4-difluorophenyl)oxiran-2-yl]methyl}-1H-1,2,4-triazole, (1.061) 5-(allylsulfanyl)-1-{[rel(2R,3R)-3-(2-chlorophenyl)-2-(2,4-difluorophenyl)oxiran-2-yl]methyl}-1H-1,2,4-triazole, (1.062) 5-(allylsulfanyl)-1-{[rel(2R,3S)-3-(2-chlorophenyl)-2-(2,4-difluorophenyl)oxiran-2-yl]methyl}-1H-1,2,4-triazole, (1.063) N'-(2,5-dimethyl-4-{[3-(1,1,2,2-tetrafluoroethoxy)phenyl]sulfanyl}phenyl)-N-ethyl-N-methylimidoformamide, (1.064) N'-(2,5-dimethyl-4-{[3-(2,2,2-trifluoroethoxy)phenyl]sulfanyl}phenyl)-N-ethyl-N-methylimidoformamide, (1.065) N'-(2,5-dimethyl-4-{[3-(2,2,3,3-tetrafluoropropoxy)phenyl]sulfanyl}phenyl)-N-ethyl-N-methylimidoformamide, (1.066) N'-(2,5-dimethyl-4-{[3-(pentafluoroethoxy)phenyl]sulfanyl}phenyl)-N-ethyl-N-methylimidoformamide, (1.067) N'-(2,5-dimethyl-4-{3-[(1,1,2,2-tetrafluoroethyl)sulfanyl]phenoxy}phenyl)-N-ethyl-N-methylimidoformamide, (1.068) N'-(2,5-dimethyl-4-{3-[(2,2,2-trifluoroethyl)sulfanyl]phenoxy}phenyl)-N-ethyl-N-methylimidoformamide, (1.069) N'-(2,5-dimethyl-4-{3-[(2,2,3,3-

tetrafluoropropyl)sulfanyl]phenoxy}phenyl)-N-ethyl-N-methylimidoformamide, (1.070) N'-(2,5-dimethyl-4-{3-[(pentafluoroethyl)sulfanyl]phenoxy}phenyl)-N-ethyl-N-methylimidoformamide, (1.071) N'-(2,5-dimethyl-4-phenoxyphenyl)-N-ethyl-N-methylimidoformamide, (1.072) N'-(4-{[3-(difluoromethoxy)phenyl]sulfanyl}-2,5-dimethylphenyl)-N-ethyl-N-methylimidoformamide, (1.073) N'-(4-{3-[(difluoromethyl)sulfanyl]phenoxy}-2,5-dimethylphenyl)-N-ethyl-N-methylimidoformamide, (1.074) N'-[5-bromo-6-(2,3-dihydro-1H-inden-2-yloxy)-2-methylpyridin-3-yl]-N-ethyl-N-methylimidoformamide, (1.075) N'-{4-[(4,5-dichloro-1,3-thiazol-2-yl)oxy]-2,5-dimethylphenyl}-N-ethyl-N-methylimidoformamide, (1.076) N'-{5-bromo-6-[(1R)-1-(3,5-difluorophenyl)ethoxy]-2-methylpyridin-3-yl}-N-ethyl-N-methylimidoformamide, (1.077) N'-{5-bromo-6-[(1S)-1-(3,5-difluorophenyl)ethoxy]-2-methylpyridin-3-yl}-N-ethyl-N-methylimidoformamide, (1.078) N'-{5-bromo-6-[(cis-4-isopropylcyclohexyl)oxy]-2-methylpyridin-3-yl}-N-ethyl-N-methylimidoformamide, (1.079) N'-{5-bromo-6-[(trans-4-isopropylcyclohexyl)oxy]-2-methylpyridin-3-yl}-N-ethyl-N-methylimidoformamide, (1.080) N'-{5-bromo-6-[1-(3,5-difluorophenyl)ethoxy]-2-methylpyridin-3-yl}-N-ethyl-N-methylimidoformamide, (1.081) Mefentrifluconazole, (1.082) Ipfentrifluconazole.

2) Inhibitors of the respiratory chain at complex I or II, for example (2.001) benzovindiflupyr, (2.002) bixafen, (2.003) boscalid, (2.004) carboxin, (2.005) fluopyram, (2.006) flutolanil, (2.007) fluxapyroxad, (2.008) furametpyr, (2.009) Isofetamid, (2.010) isopyrazam (anti-epimeric enantiomer 1R,4S,9S), (2.011) isopyrazam (anti-epimeric enantiomer 1S,4R,9R), (2.012) isopyrazam (anti-epimeric racemate 1RS,4SR,9SR), (2.013) isopyrazam (mixture of syn-epimeric racemate 1RS,4SR,9RS and anti-epimeric racemate 1RS,4SR,9SR), (2.014) isopyrazam (syn-epimeric enantiomer 1R,4S,9R), (2.015) isopyrazam (syn-epimeric enantiomer 1S,4R,9S), (2.016) isopyrazam (syn-epimeric racemate 1RS,4SR,9RS), (2.017) penflufen, (2.018) penthiopyrad, (2.019) pydiflumetofen, (2.020) Pyraziflumid, (2.021) sedaxane, (2.022) 1,3-dimethyl-N-(1,1,3-trimethyl-2,3-dihydro-1H-inden-4-yl)-1H-pyrazole-4-carboxamide, (2.023) 1,3-dimethyl-N-[(3R)-1,1,3-trimethyl-2,3-dihydro-1H-inden-4-yl]-1H-pyrazole-4-carboxamide, (2.024) 1,3-dimethyl-N-[(3S)-1,1,3-trimethyl-2,3-dihydro-1H-inden-4-yl]-1H-pyrazole-4-carboxamide, (2.025) 1-methyl-3-(trifluoromethyl)-N-[2'-(trifluoromethyl)biphenyl-2-yl]-1H-pyrazole-4-carboxamide, (2.026) 2-fluoro-6-(trifluoromethyl)-N-(1,1,3-trimethyl-2,3-dihydro-1H-inden-4-yl)benzamide, (2.027) 3-(difluoromethyl)-1-methyl-N-(1,1,3-trimethyl-2,3-dihydro-1H-inden-4-yl)-1H-pyrazole-4-carboxamide, (2.028) 3-(difluoromethyl)-1-methyl-N-[(3R)-1,1,3-trimethyl-2,3-dihydro-1H-inden-4-yl]-1H-pyrazole-4-carboxamide, (2.029) 3-(difluoromethyl)-1-methyl-N-[(3S)-1,1,3-trimethyl-2,3-dihydro-1H-inden-4-yl]-1H-pyrazole-4-carboxamide, (2.030) 3-(difluoromethyl)-N-(7-fluoro-1,1,3-trimethyl-2,3-dihydro-1H-inden-4-yl)-1-methyl-1H-pyrazole-4-carboxamide, (2.031) 3-(difluoromethyl)-N-[(3R)-7-fluoro-1,1,3-trimethyl-2,3-dihydro-1H-inden-4-yl]-1-methyl-1H-pyrazole-4-carboxamide, (2.032) 3-(difluoromethyl)-N-[(3S)-7-fluoro-1,1,3-trimethyl-2,3-dihydro-1H-inden-4-yl]-1-methyl-1H-pyrazole-4-carboxamide, (2.033) 5,8-difluoro-N-[2-(2-fluoro-4-{[4-(trifluoromethyl)pyridin-2-yl]oxy}phenyl)ethyl]quinazolin-4-amine, (2.034) N-(2-cyclopentyl-5-fluorobenzyl)-N-cyclopropyl-3-(difluoromethyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide,

(2.035) N-(2-tert-butyl-5-methylbenzyl)-N-cyclopropyl-3-(difluoromethyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide, (2.036) N-(2-tert-butylbenzyl)-N-cyclopropyl-3-(difluoromethyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide, (2.037) N-(5-chloro-2-ethylbenzyl)-N-cyclopropyl-3-(difluoromethyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide, (2.038) N-(5-chloro-2-isopropylbenzyl)-N-cyclopropyl-3-(difluoromethyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide, (2.039) N-[(1R,4S)-9-(dichloromethylene)-1,2,3,4-tetrahydro-1,4-methanonaphthalen-5-yl]-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide, (2.040) N-[(1S,4R)-9-(dichloromethylene)-1,2,3,4-tetrahydro-1,4-methanonaphthalen-5-yl]-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide, (2.041) N-[1-(2,4-dichlorophenyl)-1-methoxypropan-2-yl]-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide, (2.042) N-[2-chloro-6-(trifluoromethyl)benzyl]-N-cyclopropyl-3-(difluoromethyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide, (2.043) N-[3-chloro-2-fluoro-6-(trifluoromethyl)benzyl]-N-cyclopropyl-3-(difluoromethyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide, (2.044) N-[5-chloro-2-(trifluoromethyl)benzyl]-N-cyclopropyl-3-(difluoromethyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide, (2.045) N-cyclopropyl-3-(difluoromethyl)-5-fluoro-1-methyl-N-[5-methyl-2-(trifluoromethyl)benzyl]-1H-pyrazole-4-carboxamide, (2.046) N-cyclopropyl-3-(difluoromethyl)-5-fluoro-N-(2-fluoro-6-isopropylbenzyl)-1-methyl-1H-pyrazole-4-carboxamide, (2.047) N-cyclopropyl-3-(difluoromethyl)-5-fluoro-N-(2-isopropyl-5-methylbenzyl)-1-methyl-1H-pyrazole-4-carboxamide, (2.048) N-cyclopropyl-3-(difluoromethyl)-5-fluoro-N-(2-isopropylbenzyl)-1-methyl-1H-pyrazole-4-carbothioamide, (2.049) N-cyclopropyl-3-(difluoromethyl)-5-fluoro-N-(2-isopropylbenzyl)-1-methyl-1H-pyrazole-4-carboxamide, (2.050) N-cyclopropyl-3-(difluoromethyl)-5-fluoro-N-(5-fluoro-2-isopropylbenzyl)-1-methyl-1H-pyrazole-4-carboxamide, (2.051) N-cyclopropyl-3-(difluoromethyl)-N-(2-ethyl-4,5-dimethylbenzyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide, (2.052) N-cyclopropyl-3-(difluoromethyl)-N-(2-ethyl-5-fluorobenzyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide, (2.053) N-cyclopropyl-3-(difluoromethyl)-N-(2-ethyl-5-methylbenzyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide, (2.054) N-cyclopropyl-N-(2-cyclopropyl-5-fluorobenzyl)-3-(difluoromethyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide, (2.055) N-cyclopropyl-N-(2-cyclopropyl-5-methylbenzyl)-3-(difluoromethyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide, (2.056) N-cyclopropyl-N-(2-cyclopropylbenzyl)-3-(difluoromethyl)-5-fluoro-1-methyl-1H-pyrazole-4-carboxamide.

3) Inhibitors of the respiratory chain at complex III, for example (3.001) ametoctradin, (3.002) amisulbrom, (3.003) azoxystrobin, (3.004) coumethoxystrobin, (3.005) coumoxystrobin, (3.006) cyazofamid, (3.007) dimoxystrobin, (3.008) enoxastrobin, (3.009) famoxadone, (3.010) fenamidone, (3.011) flufenoxystrobin, (3.012) fluoxastrobin, (3.013) kresoxim-methyl, (3.014) metominostrobin, (3.015) orysastrobin, (3.016) picoxystrobin, (3.017) pyraclostrobin, (3.018) pyrametostrobin, (3.019) pyraoxystrobin, (3.020) trifloxystrobin, (3.021) (2E)-2-{2-[({[(1E)-1-(3-{[(E)-1-fluoro-2-phenylvinyl]oxy}phenyl)ethylidene]amino}oxy)methyl]phenyl}-2-(methoxyimino)-N-methylacetamide, (3.022) (2E,3Z)-5-{[1-(4-chlorophenyl)-1H-pyrazol-3-yl]oxy}-2-(methoxyimino)-N,3-dimethylpent-3-

enamide, (3.023) (2R)-2-{2-[(2,5-dimethylphenoxy)methyl]phenyl}-2-methoxy-N-methylacetamide, (3.024) (2S)-2-{2-[(2,5-dimethylphenoxy)methyl]phenyl}-2-methoxy-N-methylacetamide, (3.025) (3S,6S,7R,8R)-8-benzyl-3-[({3-[(isobutyryloxy)methoxy]-4-methoxypyridin-2-yl}carbonyl)amino]-6-methyl-4,9-dioxo-1,5-dioxonan-7-yl 2-methylpropanoate, (3.026) 2-{2-[(2,5-dimethylphenoxy)methyl]phenyl}-2-methoxy-N-methylacetamide, (3.027) N-(3-ethyl-3,5,5-trimethylcyclohexyl)-3-formamido-2-hydroxybenzamide, (3.028) (2E,3Z)-5-{[1-(4-chloro-2-fluorophenyl)-1H-pyrazol-3-yl]oxy}-2-(methoxyimino)-N,3-dimethylpent-3-enamide, (3.029) methyl {5-[3-(2,4-dimethylphenyl)-1H-pyrazol-1-yl]-2-methylbenzyl}carbamate.

4) Inhibitors of the mitosis and cell division, for example (4.001) carbendazim, (4.002) diethofencarb, (4.003) ethaboxam, (4.004) fluopicolide, (4.005) pencycuron, (4.006) thiabendazole, (4.007) thiophanate-methyl, (4.008) zoxamide, (4.009) 3-chloro-4-(2,6-difluorophenyl)-6-methyl-5-phenylpyridazine, (4.010) 3-chloro-5-(4-chlorophenyl)-4-(2,6-difluorophenyl)-6-methylpyridazine, (4.011) 3-chloro-5-(6-chloropyridin-3-yl)-6-methyl-4-(2,4,6-trifluorophenyl)pyridazine, (4.012) 4-(2-bromo-4-fluorophenyl)-N-(2,6-difluorophenyl)-1,3-dimethyl-1H-pyrazol-5-amine, (4.013) 4-(2-bromo-4-fluorophenyl)-N-(2-bromo-6-fluorophenyl)-1,3-dimethyl-1H-pyrazol-5-amine, (4.014) 4-(2-bromo-4-fluorophenyl)-N-(2-bromophenyl)-1,3-dimethyl-1H-pyrazol-5-amine, (4.015) 4-(2-bromo-4-fluorophenyl)-N-(2-chloro-6-fluorophenyl)-1,3-dimethyl-1H-pyrazol-5-amine, (4.016) 4-(2-bromo-4-fluorophenyl)-N-(2-chlorophenyl)-1,3-dimethyl-1H-pyrazol-5-amine, (4.017) 4-(2-bromo-4-fluorophenyl)-N-(2-fluorophenyl)-1,3-dimethyl-1H-pyrazol-5-amine, (4.018) 4-(2-chloro-4-fluorophenyl)-N-(2,6-difluorophenyl)-1,3-dimethyl-1H-pyrazol-5-amine, (4.019) 4-(2-chloro-4-fluorophenyl)-N-(2-chloro-6-fluorophenyl)-1,3-dimethyl-1H-pyrazol-5-amine, (4.020) 4-(2-chloro-4-fluorophenyl)-N-(2-chlorophenyl)-1,3-dimethyl-1H-pyrazol-5-amine, (4.021) 4-(2-chloro-4-fluorophenyl)-N-(2-fluorophenyl)-1,3-dimethyl-1H-pyrazol-5-amine, (4.022) 4-(4-chlorophenyl)-5-(2,6-difluorophenyl)-3,6-dimethylpyridazine, (4.023) N-(2-bromo-6-fluorophenyl)-4-(2-chloro-4-fluorophenyl)-1,3-dimethyl-1H-pyrazol-5-amine, (4.024) N-(2-bromophenyl)-4-(2-chloro-4-fluorophenyl)-1,3-dimethyl-1H-pyrazol-5-amine, (4.025) N-(4-chloro-2,6-difluorophenyl)-4-(2-chloro-4-fluorophenyl)-1,3-dimethyl-1H-pyrazol-5-amine.

5) Compounds capable to have a multisite action, for example (5.001) bordeaux mixture, (5.002) captafol, (5.003) captan, (5.004) chlorothalonil, (5.005) copper hydroxide, (5.006) copper naphthenate, (5.007) copper oxide, (5.008) copper oxychloride, (5.009) copper(2+) sulfate, (5.010) dithianon, (5.011) dodine, (5.012) folpet, (5.013) mancozeb, (5.014) maneb, (5.015) metiram, (5.016) metiram zinc, (5.017) oxine-copper, (5.018) propineb, (5.019) sulfur and sulfur preparations including calcium polysulfide, (5.020) thiram, (5.021) zineb, (5.022) ziram, (5.023) 6-ethyl-5,7-dioxo-6,7-dihydro-5H-pyrrolo[3',4':5,6][1,4]dithiino[2,3-c][1,2]thiazole-3-carbonitrile.

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

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

8) Inhibitors of the ATP production, for example (8.001) silthiofam.

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

10) Inhibitors of the lipid and membrane synthesis, for example (10.001) propamocarb, (10.002) propamocarb hydrochloride, (10.003) tolclofos-methyl.

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

12) Inhibitors of the nucleic acid synthesis, for example (12.001) benalaxyl, (12.002) benalaxyl-M (kiralaxyl), (12.003) metalaxyl, (12.004) metalaxyl-M (mefenoxam).

13) Inhibitors of the signal transduction, for example (13.001) fludioxonil, (13.002) iprodione, (13.003) procymidone, (13.004) proquinazid, (13.005) quinoxyfen, (13.006) vinclozolin.

14) Compounds capable to act as an uncoupler, for example (14.001) fluazinam, (14.002) meptyldinocap.

15) Further compounds, for example (15.001) Abscisic acid, (15.002) benthiazole, (15.003) bethoxazin, (15.004) capsimycin, (15.005) carvone, (15.006) chinomethionat, (15.007) cufraneb, (15.008) cyflufenamid, (15.009) cymoxanil, (15.010) cyprosulfamide, (15.011) flutianil, (15.012) fosetyl-aluminium, (15.013) fosetyl-calcium, (15.014) fosetyl-sodium, (15.015) methyl isothiocyanate, (15.016) metrafenone, (15.017) mildiomycin, (15.018) natamycin, (15.019) nickel dimethyldithiocarbamate, (15.020) nitrothal-isopropyl, (15.021) oxamocarb, (15.022) Oxathiapiprolin, (15.023) oxyfenthiin, (15.024) pentachlorophenol and salts, (15.025) phosphorous acid and its salts, (15.026) propamocarb-fosetylate, (15.027) pyriofenone (chlazafenone), (15.028) tebufloquin, (15.029) tecloftalam, (15.030) tolnifanide, (15.031) 1-(4-{4-[(5R)-5-(2,6-difluorophenyl)-4,5-dihydro-1,2-oxazol-3-yl]-1,3-thiazol-2-yl}piperidin-1-yl)-2-[5-methyl-3-(trifluoromethyl)-1H-pyrazol-1-yl]ethanone, (15.032) 1-(4-{4-[(5S)-5-(2,6-difluorophenyl)-4,5-dihydro-1,2-oxazol-3-yl]-1,3-thiazol-2-yl}piperidin-1-yl)-2-[5-methyl-3-

(trifluoromethyl)-1H-pyrazol-1-yl]ethanone, (15.033) 2-(6-benzylpyridin-2-yl)quinazoline, (15.034) 2,6-dimethyl-1H,5H-[1,4]dithiino[2,3-c:5,6-c']dipyrrole-1,3,5,7(2H,6H)-tetrone, (15.035) 2-[3,5-bis(difluoromethyl)-1H-pyrazol-1-yl]-1-[4-(4-{5-[2-(prop-2-yn-1-yloxy)phenyl]-4,5-dihydro-1,2-oxazol-3-yl}-1,3-thiazol-2-yl)piperidin-1-yl]ethanone, (15.036) 2-[3,5-bis(difluoromethyl)-1H-pyrazol-1-yl]-1-[4-(4-{5-[2-chloro-6-(prop-2-yn-1-yloxy)phenyl]-4,5-dihydro-1,2-oxazol-3-yl}-1,3-thiazol-2-yl)piperidin-1-yl]ethanone, (15.037) 2-[3,5-bis(difluoromethyl)-1H-pyrazol-1-yl]-1-[4-(4-{5-[2-fluoro-6-(prop-2-yn-1-yloxy)phenyl]-4,5-dihydro-1,2-oxazol-3-yl}-1,3-thiazol-2-yl)piperidin-1-yl]ethanone, (15.038) 2-[6-(3-fluoro-4-methoxyphenyl)-5-methylpyridin-2-yl]quinazoline, (15.039) 2-{(5R)-3-[2-(1-{[3,5-bis(difluoromethyl)-1H-pyrazol-1-yl]acetyl}piperidin-4-yl)-1,3-thiazol-4-yl]-4,5-dihydro-1,2-oxazol-5-yl}-3-chlorophenyl methanesulfonate, (15.040) 2-{(5S)-3-[2-(1-{[3,5-bis(difluoromethyl)-1H-pyrazol-1-yl]acetyl}piperidin-4-yl)-1,3-thiazol-4-yl]-4,5-dihydro-1,2-oxazol-5-yl}-3-chlorophenyl methanesulfonate, (15.041) 2-{2-[(7,8-difluoro-2-methylquinolin-3-yl)oxy]-6-fluorophenyl}propan-2-ol, (15.042) 2-{2-fluoro-6-[(8-fluoro-2-methylquinolin-3-yl)oxy]phenyl}propan-2-ol, (15.043) 2-{3-[2-(1-{[3,5-bis(difluoromethyl)-1H-pyrazol-1-yl]acetyl}piperidin-4-yl)-1,3-thiazol-4-yl]-4,5-dihydro-1,2-oxazol-5-yl}-3-chlorophenyl methanesulfonate, (15.044) 2-{3-[2-(1-{[3,5-bis(difluoromethyl)-1H-pyrazol-1-yl]acetyl}piperidin-4-yl)-1,3-thiazol-4-yl]-4,5-dihydro-1,2-oxazol-5-yl}phenyl methanesulfonate, (15.045) 2-phenylphenol and salts, (15.046) 3-(4,4,5-trifluoro-3,3-dimethyl-3,4-dihydroisoquinolin-1-yl)quinoline, (15.047) 3-(4,4-difluoro-3,3-dimethyl-3,4-dihydroisoquinolin-1-yl)quinoline, (15.048) 4-amino-5-fluoropyrimidin-2-ol (tautomeric form: 4-amino-5-fluoropyrimidin-2(1H)-one), (15.049) 4-oxo-4-[(2-phenylethyl)amino]butanoic acid, (15.050) 5-amino-1,3,4-thiadiazole-2-thiol, (15.051) 5-chloro-N'-phenyl-N'-(prop-2-yn-1-yl)thiophene-2-sulfonohydrazide, (15.052) 5-fluoro-2-[(4-fluorobenzyl)oxy]pyrimidin-4-amine, (15.053) 5-fluoro-2-[(4-methylbenzyl)oxy]pyrimidin-4-amine, (15.054) 9-fluoro-2,2-dimethyl-5-(quinolin-3-yl)-2,3-dihydro-1,4-benzoxazepine, (15.055) but-3-yn-1-yl {6-[({[(Z)-(1-methyl-1H-tetrazol-5-yl)(phenyl)methylene]amino}oxy)methyl]pyridin-2-yl}carbamate, (15.056) ethyl (2Z)-3-amino-2-cyano-3-phenylacrylate, (15.057) phenazine-1-carboxylic acid, (15.058) propyl 3,4,5-trihydroxybenzoate, (15.059) quinolin-8-ol, (15.060) quinolin-8-ol sulfate (2:1), (15.061) tert-butyl {6-[({[(1-methyl-1H-tetrazol-5-yl)(phenyl)methylene]amino}oxy)methyl]pyridin-2-yl}carbamate, (15.062) 5-fluoro-4-imino-3-methyl-1-[(4-methylphenyl)sulfonyl]-3,4-dihydropyrimidin-2(1H)-one.

Biological pesticides as mixing components

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

Biological pesticides comprise in particular bacteria, fungi, yeasts, plant extracts and products formed by microorganisms, including proteins and secondary metabolites.

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

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

Bacillus amyloliquefaciens, strain FZB42 (DSM 231179), or Bacillus cereus, in particular B. cereus strain CNCM I-1562 or Bacillus firmus, strain I-1582 (Accession number CNCM I-1582) or Bacillus pumilus, in particular strain GB34 (Accession No. ATCC 700814) and strain QST2808 (Accession No. NRRL B-30087), or Bacillus subtilis, in particular strain GB03 (Accession No. ATCC SD-1397), or Bacillus subtilis strain QST713 (Accession No. NRRL B-21661) or Bacillus subtilis strain OST 30002 (Accession No. NRRL B-50421) Bacillus thuringiensis, in particular B. thuringiensis subspecies israelensis (serotype H-14), strain AM65-52 (Accession No. ATCC 1276), or B. thuringiensis subsp. aizawai, in particular strain ABTS-1857 (SD-1372), or B. thuringiensis subsp. kurstaki strain HD-1, or B. thuringiensis subsp. tenebrionis strain NB 176 (SD-5428), Pasteuria penetrans, Pasteuria spp. (Rotylenchulus reniformis nematode)-PR3 (Accession Number ATCC SD-5834), Streptomyces microflavus strain AQ6121 (= QRD 31.013, NRRL B-50550), Streptomyces galbus strain AQ 6047 (Accession Number NRRL 30232).

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

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

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

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

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

Agrobacterium spp., Azorhizobium caulinodans, Azospirillum spp., Azotobacter spp., Bradyrhizobium spp., Burkholderia spp., in particular Burkholderia cepacia (formerly known as Pseudomonas cepacia),

Gigaspora spp., or Gigaspora monosporum, Glomus spp., Laccaria spp., Lactobacillus buchneri, Paraglomus spp., Pisolithus tinctorus, Pseudomonas spp., Rhizobium spp., in particular Rhizobium trifolii, Rhizopogon spp., Scleroderma spp., Suillus spp., Streptomyces spp.

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

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

Safener as mixing components

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

Plants and plant parts

All plants and plant parts can be treated in accordance with the invention. 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, pepper, cucumber, melon, carrot, watermelon, onion, lettuce, spinach, leek, beans, *Brassica oleracea* (e.g. cabbage) and other vegetable species, cotton, 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. Plants should be understood to mean all developmental stages, such as seeds, seedlings, young (immature) plants up to mature plants. Plant parts should be understood to mean all parts and organs of the plants above and below ground, such as shoot, leaf, flower and root, examples given being leaves, needles, stalks, stems, flowers, fruit bodies, fruits and seeds, and also tubers, roots

and rhizomes. Parts of plants also include harvested plants or harvested plant parts 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) 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.

Transgenic plant, seed treatment and integration events

The transgenic plants or plant cultivars (those obtained by genetic engineering) which are to be treated with preference in accordance with the invention include all plants which, through the genetic modification, received genetic material which imparts particular advantageous useful properties ("traits") to these plants. Examples of such properties are better plant growth, increased tolerance to high or low temperatures, increased tolerance to drought or to levels of water or soil salinity, enhanced flowering performance, easier harvesting, accelerated ripening, higher yields, higher quality and/or a higher nutritional value of the harvested products, better storage life and/or processability of the harvested products. Further and particularly emphasized examples of such properties are increased resistance of the plants against animal and microbial pests, such as against insects, arachnids, nematodes, mites, slugs and snails owing, for example, to toxins formed in the plants, in particular those formed in the plants by the genetic material from Bacillus thuringiensis (for example by the genes CryIA(a), CryIA(b), CryIA(c), CryIIA, CryIIIA, CryIIIB2, Cry9c Cry2Ab, Cry3Bb and CryIF and also combinations thereof), furthermore increased resistance of the plants against phytopathogenic fungi, bacteria and/or viruses owing, for example, to systemic acquired resistance (SAR), systemin, phytoalexins, elicitors and also resistance genes and correspondingly expressed proteins and toxins, and also increased tolerance of the plants to certain herbicidally active compounds, for example imidazolinones, sulphonylureas, glyphosate or phosphinothricin (for example the "PAT" gene). The

genes which impart the desired traits in question may also be present in combinations with one another in the transgenic plants. Examples of transgenic plants which may be mentioned are the important crop plants, such as cereals (wheat, rice, triticale, barley, rye, oats), maize, soya beans, potatoes, sugar beet, sugar cane, tomatoes, peas and other types of vegetable, cotton, tobacco, oilseed rape and also fruit plants (with the fruits apples, pears, citrus fruits and grapes), with particular emphasis being given to maize, soya beans, wheat, rice, potatoes, cotton, sugar cane, tobacco and oilseed rape. Traits which are particularly emphasized are the increased resistance of the plants to insects, arachnids, nematodes and slugs and snails.

Crop protection – types of treatment

The 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 pest 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, or by drip application (often also referred to as "chemigation"), i.e. the liquid application of the compounds of the formula (I) according to the invention from surface or sub-surface driplines over a certain period of time together with varying amounts of water at defined locations in the vicinity 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.

Treatment of seed

The control of animal pests by treating the seed of plants has been known for a long time and is the subject of continuous improvements. However, the treatment of seed entails a series of problems which cannot always be solved in a satisfactory manner. Thus, it is desirable to develop methods for protecting the seed and the germinating plant which dispense with, or at least reduce considerably, the additional application of pesticides during storage, after sowing or after emergence of the plants. It is furthermore desirable to optimize the amount of active compound employed in such a way as to provide optimum protection for the seed and the germinating plant from attack by animal pests, but without damaging the plant itself by the active compound employed. In particular, methods for the treatment of seed should also take into consideration the intrinsic insecticidal or nematicidal properties of pest-resistant or -tolerant transgenic plants in order to achieve optimum protection of the seed and also the germinating plant with a minimum of pesticides being employed.

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

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

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

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

One of the advantages encountered with a systemically acting compound of the formula (I) is the fact that, by treating the seed, not only the seed itself but also the plants resulting therefrom are, after

emergence, protected against animal pests. In this manner, the immediate treatment of the crop at the time of sowing or shortly thereafter can be dispensed with.

It has to be considered a further advantage that by treatment of the seed with a compound of the formula (I), germination and emergence of the treated seed may be enhanced.

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

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

The compounds of the formula (I) are suitable for protection of seed of any plant variety which is used in agriculture, in the greenhouse, in forests or in horticulture. In particular, this takes the form of seed of cereals (for example wheat, barley, rye, millet and oats), corn, cotton, soya beans, rice, potatoes, sunflowers, coffee, tobacco, canola, oilseed rape, beets (for example sugarbeets and fodder beets), peanuts, vegetables (for example tomatoes, cucumbers, bean, cruciferous vegetables, onions and lettuce), fruit plants, lawns and ornamental plants. The treatment of the seed of cereals (such as wheat, barley, rye and oats), maize, soya beans, cotton, canola, oilseed rape, vegetables and rice is of particular importance.

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

In the context of the present invention, the compound of the formula (I) is applied to the seed. Preferably, the seed is treated in a state in which it is stable enough to avoid damage during treatment. In general, the seed may be treated at any point in time between harvest and sowing. The seed usually used has been separated from the plant and freed from cobs, shells, stalks, coats, hairs or the flesh of the fruits. For example, it is possible to use seed which has been harvested, cleaned and dried down to a moisture content which allows storage. Alternatively, it is also possible to use seed which, after drying, has been treated with, for example, water and then dried again, for example priming. In the case of rice

seed, it is also possible to use seed which has been soaked, for example in water to a certain stage of the rice embryo ('pigeon breast stage'), stimulating the germination and a more uniform emergence.

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

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

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

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

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

Useful wetting agents which may be present in the seed dressing formulations usable in accordance with the invention are all substances which promote wetting and which are conventionally used for the formulation of agrochemically active compounds. Preference is given to using alkylnaphthalenesulphonates, such as diisopropyl- or diisobutylnaphthalenesulphonates.

Useful dispersants and/or emulsifiers which may be present in the seed dressing formulations usable in accordance with the invention are all nonionic, anionic and cationic dispersants conventionally used for the formulation of active agrochemical ingredients. Preference is given to using nonionic or anionic dispersants or mixtures of nonionic or anionic dispersants. Suitable nonionic dispersants include in particular ethylene oxide/propylene oxide block polymers, alkylphenol polyglycol ethers and tristryrylphenol polyglycol ethers, and the phosphated or sulphated derivatives thereof. Suitable anionic dispersants are in particular lignosulphonates, polyacrylic acid salts and arylsulphonate/formaldehyde condensates.

Antifoams which may be present in the seed dressing formulations usable in accordance with the invention are all foam-inhibiting substances conventionally used for the formulation of active agrochemical ingredients. Preference is given to using silicone antifoams and magnesium stearate.

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

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

Adhesives which may be present in the seed dressing formulations usable in accordance with the invention are all customary binders usable in seed dressing products. Polyvinylpyrrolidone, polyvinyl acetate, polyvinyl alcohol and tylose may be mentioned as being preferred.

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

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

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

The application rate of the seed dressing formulations usable in accordance with the invention can be varied within a relatively wide range. It is guided by the particular content of the compounds of the formula (I) in the formulations and by the seed. The application rates of the compound of the formula (I)

are generally between 0.001 and 50 g per kilogram of seed, preferably between 0.01 and 15 g per kilogram of seed.

Animal health

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

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

Agricultural livestock include, for example, mammals, such as, sheep, goats, horses, donkeys, camels, buffaloes, rabbits, reindeers, fallow deers, and in particular cattle and pigs; or poultry, such as turkeys, ducks, geese, and in particular chickens; or fish or crustaceans, e.g. in aquaculture; or, as the case may be, insects such as bees.

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

According to a particular embodiment, the compounds of the formula (I) are administered to mammals.

According to another particular embodiment, the compounds of the formula (I) are administered to birds, namely cage birds or in particular poultry.

By using the compounds of the formula (I) to control animal parasites, it is intended to reduce or prevent illness, cases of deaths and performance reductions (in the case of meat, milk, wool, hides, eggs, honey and the like), so that more economical and simpler animal keeping is made possible and better animal well-being is achievable.

The term "control" or "controlling", as used herein with regard to the animal health field, means that the compounds of the formula (I) are effective in reducing the incidence of the respective parasite in an animal infected with such parasites to innocuous levels. More specifically, "controlling", as used herein, means that the compounds of the formula (I) are effective in killing the respective parasite, inhibiting its growth, or inhibiting its proliferation.

Exemplary arthropods include, without any limitation

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

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

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

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

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

Further, among the arthropods, the following acari may be mentioned by way of example, without any limitation:

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

Exemplary parasitic protozoa include, without any limitation:

Mastigophora (Flagellata) such as:

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

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

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

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

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

Microspora such as Encephalitozoon spp., Enterocytozoon spp., Globidium spp., Nosema spp., and furthermore, e.g. Myxozoa spp.

Helminths pathogenic for humans or animals include, for example, acanthocephala, nematodes, pentastoma and platyhelmintha (e.g. monogenea, cestodes and trematodes).

Exemplary helminths include, without any limitation:

Monogenea: e.g.: Dactylogyrus spp., Gyrodactylus spp., Microbothrium spp., Polystoma spp., Troglocephalus spp.

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

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

Trematodes: from the class of the Digenea, for example: Austrobilharzia spp., Brachylaima spp., Calicophoron spp., Catatropis spp., Clonorchis spp. Collyriclum spp., Cotylophoron spp., Cyclocoelum spp., Dicrocoelium spp., Diplostomum spp., Echinochasmus spp., Echinoparyphium spp., Echinostoma spp., Eurytrema spp., Fasciola spp., Fasciolides spp., Fasciolopsis spp., Fischoederius spp.,

Gastrothylacus spp., Gigantobilharzia spp., Gigantocotyle spp., Heterophyes spp., Hypoderaeum spp., Leucochloridium spp., Metagonimus spp., Metorchis spp., Nanophyetus spp., Notocotylus spp., Opisthorchis spp., Ornithobilharzia spp., Paragonimus spp., Paramphistomum spp., Plagiorchis spp., Posthodiplostomum spp., Prosthogonimus spp., Schistosoma spp., Trichobilharzia spp., Troglotrema spp., Typhlocoelum spp.

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

from the order of the Tylenchida, for example: Micronema spp., Parastrongyloides spp., Strongyloides spp.

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

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

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

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

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

In the veterinary field and in animal keeping, the administration of the compounds of the formula (I) is carried out by methods generally known in the art, such as enterally, parenterally, dermally or nasally, in the form of suitable preparations. Administration can be carried out prophylactically, methaphylactically or therapeutically.

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

Another aspect refers to the compounds of the formula (I) for use as an antiendoparasitical agent.

Another particular aspect refers to the compounds of the formula (I) for use as a anthelmintic agent, more particular for use as a nematicidal agent, a platyhelminthicidal agent, an acanthocephalicidal agent, or a pentastomicidal agent.

Another particular aspect refers to the compounds of the formula (I) for use as an antiprotozoal agent.

Another aspect refers to the compounds of the formula (I) for use as an antiectoparasitical agent, in particular an arthropodicidal agent, more particular an insecticidal agent or acaricidal agent.

Further aspects of the invention are veterinary formulations, comprising an effective amount of at least one compound of the formula (I) and at least one of the following: pharmaceutically acceptable excipient (e.g. solid or liquid diluents), pharmaceutically acceptable auxiliary (e.g. surfactants), in particular a pharmaceutically acceptable excipient and/or pharmaceutically acceptable auxiliary which is normally used in veterinary formulations.

A related aspect of the invention is a method for preparing a veterinary formulation as described herein, comprising the step of mixing at least one compound of the formula (I) with pharmaceutically acceptable excipients and/or auxiliaries , in particular with pharmaceutically acceptable excipients and/or auxiliaries which are normally used in veterinary formulations.

Another particular aspect of the invention are veterinary formulations, selected from the group of ectoparasiticidal and endoparasiticidal formulations, more particular selected from the group of anthelmintic, antiprotozoal, and arthropodicidal formulations, even more particular selected from the group of nematicidal, platyhelminthicidal, acanthocephalicidal, pentastomicidal, insecticidal, and acaricidal formulations, in accordance with the mentioned aspects, as well as their methods for preparation.

Another aspect refers to a method for treatment of a parasitic infection, in particular an infection by a parasite selected from the group of ectoparasites and endoparasites mentioned herein, by applying an effective amount of a compound of the formula (I) to an animal, in particular a non-human animal, in need thereof.

Another aspect refers to a method for treatment of a parasitic infection, in particular an infection by a parasite selected from the group of ectoparasites and endoparasites mentioned herein, by applying a veterinary formulation as defined herein to an animal, in particular a non-human animal, in need thereof.

Another aspect refers to the use of the compounds of the formula (I) in the treatment of a parasitic infection, in particular an infection by a parasite selected from the group of ectoparasites and endoparasites mentioned herein, in an animal, in particular a non-human animal.

In the present context of the animal health or veterinary field, the term "treatment" includes prophylactic, metaphylactic or therapeutical treatment.

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

In the field of animal health "mixture" not only means that two (or more) different active ingredients are formulated in a joint formulation and are accordingly applied together but also refers to products which comprise separate formulations for each active compound. Accordingly, if more than two active compounds are to be applied, all active compounds may be formulated in a joint formulation or all active compounds may be formulated in separate formulations; also feasible are mixed forms where some of the active compounds are formulated jointly and some of the active compounds are formulated separately. Separate formulations allow the separate or successive application of the active compounds in question.

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

Exemplary active ingredients from the group of ectoparasiticides, as mixing partners, include, without limitation insecticides and acaricides listed in detail above. Further active ingredients which may be used are listed below following the aforementioned classification which is based on the current IRAC Mode of Action Classification Scheme: (1) Acetylcholinesterase (AChE) inhibitors; (2) GABA-gated chloride channel blockers; (3) Sodium channel modulators; (4) Nicotinic acetylcholine receptor (nAChR) competitive modulators; (5) Nicotinic acetylcholine receptor (nAChR) allosteric modulators; (6) Glutamate-gated chloride channel (GluCl) allosteric modulators; (7) Juvenile hormone mimics; (8) Miscellaneous non-specific (multi-site) inhibitors; (9) Modulators of Chordotonal Organs; (10) Mite

growth inhibitors; (12) Inhibitors of mitochondrial ATP synthase, such as, ATP disruptors; (13) Uncouplers of oxidative phosphorylation via disruption of the proton gradient; (14) Nicotinic acetylcholine receptor channel blockers; (15) Inhibitors of chitin biosynthesis, type 0; (16) Inhibitors of chitin biosynthesis, type 1; (17) Moulting disruptor (in particular for Diptera, i.e. dipterans); (18) Ecdysone receptor agonists; (19) Octopamine receptor agonists; (21) Mitochondrial complex I electron transport inhibitors; (25) Mitochondrial complex II electron transport inhibitors; (20) Mitochondrial complex III electron transport inhibitors; (22) Voltage-dependent sodium channel blockers; (23) Inhibitors of acetyl CoA carboxylase; (28) Ryanodine receptor modulators;

Active compounds with unknown or non-specific mode of action, e.g., fentrifanil, fenoxacrim, cycloprene, chlorobenzilate, chlordimeform, flubenzimine, dicyclanil, amidoflumet, quinomethionate, triarathene, clothiazoben, tetrasul, potassium oleate, petroleum, metoxadiazone, gossyplure, flutenzin, bromopropylate, cryolite;

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

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

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

neonicotinoids, e.g. nithiazine

dicloromezotiaz, triflumezopyrim

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

triprene, epofenonane, diofenolan;

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

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

benzoylureas, e.g. fluazuron, penflurou,

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

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

Exemplary active ingredients from the group of endoparasiticides, as mixing partners, include, without limitation, anthelmintically active compounds and antiprotozoal active compounds.

Anthelmintically active compounds, including, without limitation, the following nematicidally, trematicidally and/or cestocidally active compounds:

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

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

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

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

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

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

from the class of aminoacetonitriles, for example: monepantel;

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

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

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

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

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

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

from the class of tetracyclines, for example: tetracyclin, chlorotetracycline, doxycyclin, oxytetracyclin, rolitetracyclin;

from diverse other classes, for example: bunamidine, niridazole, resorantel, omphalotin, oltipraz, nitroscanate, nitroxynile, oxamniquine, mirasan, miracil, lucanthone, hycanthone, hetolin, emetine, diethylcarbamazine, dichlorophen, diamfenetide, clonazepam, bephenium, amoscanate, clorsulon.

Antiprotozoal active compounds, including, without limitation, the following active compounds:

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

from the class of polylether ionophore, for example: monensin, salinomycin, maduramicin, narasin;

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

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

from the class of quinines, for example: chloroquine;

from the class of pyrimidines, for example: pyrimethamine;

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

from the class of thiamines, for example: amprolium;

from the class of lincosamides, for example: clindamycin;

from the class of carbanilides, for example: imidocarb;

from the class of nitrofuranes, for example: nifurtimox;

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

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

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

All named mixing partners can, if their functional groups enable this, optionally form salts with suitable bases or acids.

Vector control

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

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

1) Mosquitoes

- Anopheles: malaria, filariasis;

- Culex: Japanese encephalitis, other viral diseases, filariasis, transmission of other worms;

- Aedes: yellow fever, dengue fever, other viral diseases, filariasis;

- Simuliidae: transmission of worms, in particular Onchocerca volvulus;

- Psychodidae: transmission of leishmaniasis

2) Lice: skin infections, epidemic typhus;

3) Fleas: plague, endemic typhus, cestodes;

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

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

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

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

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

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

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

Protection of industrial materials

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

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

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

In a further embodiment, the compounds of the formula (I) are present as a ready-to-use pesticide, i.e. they can be applied to the material in question without further modifications. Suitable further insecticides or fungicides are in particular those mentioned above.

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

Control of animal pests in the hygiene sector

The compounds of the formula (I) are suitable for controlling animal pests in the hygiene sector. In particular, the invention can be applied in the domestic sector, in the hygiene sector and in the protection of stored products, especially for controlling insects, arachnids, ticks and mites encountered in enclosed spaces such as dwellings, factory halls, offices, vehicle cabins, animal husbandries. For controlling animal pests, the compounds of the formula (I) are used alone or in combination with other active

compounds and/or auxiliaries. They are preferably used in domestic insecticide products. The compounds of the formula (I) are effective against sensitive and resistant species, and against all developmental stages.

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

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

Abbreviations and Symbols

AcOH:	acetic acid
aq.:	aqueous
br.:	broad
d:	doublet
DCC:	N,N'-dicyclohexylcarbodiimide
DIPEA:	N,N-diisopropylethylamine
DMF:	N,N-dimethylformamide
DMSO:	dimethylsulfoxide
ee:	enantiomeric excess
eq.:	equivalent
ES:	electrospray ionization
Et_3N	triethylamine
EtOAc:	ethyl acetate

hr(s)	hour(s)
HATU:	1-[bis(dimethylamino)methylene]-1H-1,2,3-triazolo[4,5-b]pyridinium-3-oxid hexafluorophosphate
HOBt:	1-hydroxybenzotriazole hydrate
HPLC:	high performance liquid chromatography
*i*PrOH:	isopropanol
J:	coupling constant
LCMS:	liquid chromatography-mass spectrometry
m/z:	mass-to-charge ratio
M:	molarity
m:	multiplet
MeCN	acetonitrile
MeOH:	methanol
NaH_2PO_4	monosodium phosphate
NaOH	sodium hydroxide
Na_2SO_4	sodium sulfate
NH_4Cl	ammonium chloride
NMR:	nuclear magnetic resonance
q:	quartet
r. t.:	room temperature
R_t:	retention time
s:	singlet
sat.:	saturated

T: temperature

t: triplet

T3P®: propylphosphonic anhydride

THF: tetrahydrofuran

TMSOK potassium trimethylsilanolate

wt.: weight

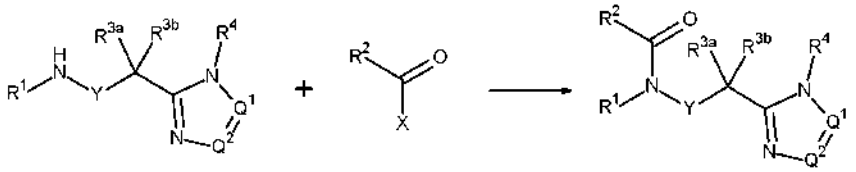
δ: chemical shift

λ: wavelength

Description of the processes and intermediates

Compounds of formula I' may be prepared as illustrated in the following scheme 1 where R^1, R^2, R^{3a}, R^{3b}, R^4, Q^1, Q^2 and Y are as previously defined and X stands for OH or Cl.

Scheme 1



X = OH: An azole compound of formula (a) is reacted with a carboxylic acid of formula (b) (X = OH) to form compounds of formula I'. For example, a mixture of an azole of formula (a), a carboxylic acid of formula (b) (X = OH), a suitable coupling reagent, such as T3P®, HATU, DCC or HOBt, a suitable base such as triethylamine or DIPEA, in a suitable solvent, such as ethyl acetate or DMF are mixed at temperatures ranging from around 0 to 100 °C to provide compounds of formula I' which may then be isolated and, if necessary and desired, purified using techniques well known in the art, such as chromatography.

X = Cl: An azole compound of formula (a) is reacted with a carboxylic acid chloride of formula (b) (X = Cl) to form compounds of formula I'. For example, a mixture of an azole of formula (a), a carboxylic acid chloride of formula (b) (X = Cl), a suitable base such as triethylamine or DIPEA, in a suitable solvent, such as dichloromethane or THF are mixed at temperatures ranging from around 0 to 100 °C to

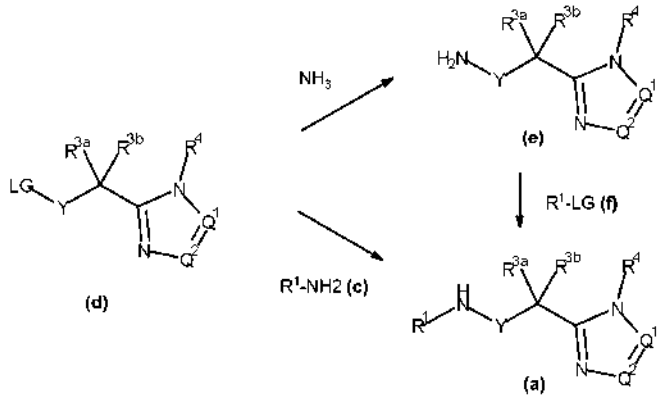
provide compounds of formula I' which may then be isolated and, if necessary and desired, purified using techniques well known in the art, such as chromatography.

Carboxylic acids of formula (b) (X = OH) and carboxylic acid chlorides of formula (b) (X = Cl) are commercially available or may be synthesized by methods known to a person skilled in the state of the art.

For example, the carboxylic acids employed for the synthesis of examples I-048 and I-049 can be synthesized in analogy to WO 2016198507, WO 2015084936, WO 2015148354, WO 2015148373 using a similar catalytic system as described in the referenced, consisting of copper(I)iodide and (E,E)-N,N'-cyclohexane-1,2-diylbis[1-(pyridin-2-yl)methanimine], for the latter see US 20030236413.

The requisite azole compounds of formula (a) may be prepared as illustrated in the following scheme 2, where R^1, R^{3a}, R^{3b}, R^4, Q^1, Q^2 and Y are as previously described and LG is a suitable leaving group (see also WO 2017192385).

Scheme 2



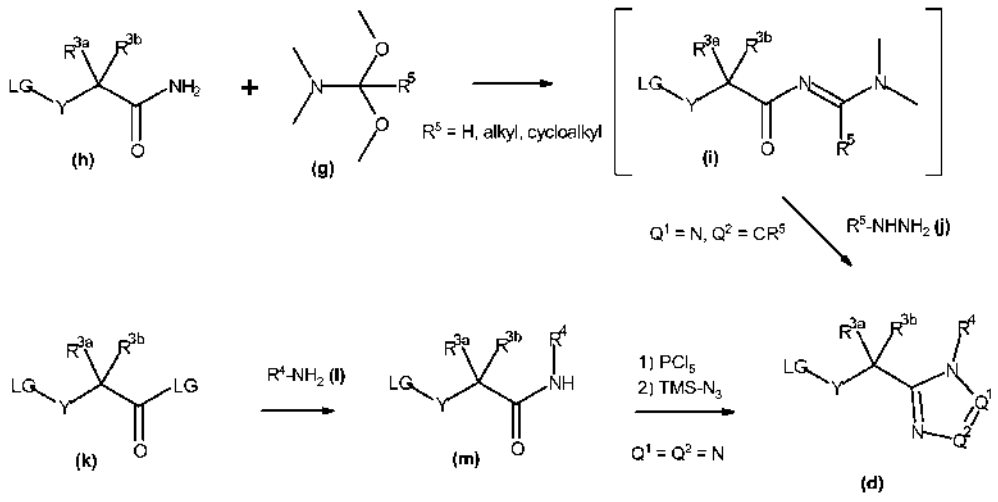
An amine of formula (c) is reacted with a substituted azole of formula (d) to form compounds of formula (a). For example, a mixture of an azole of formula (d), an amine of formula (c), a suitable base, such as K_2CO_3, NaH or DIPEA in a suitable solvent, such as acetonitrile or DMF are mixed at temperatures ranging from around 20 to 120 °C to provide compounds of formula (a) which may then be isolated and, if necessary and desired, purified using techniques well known in the art, such as chromatography.

Alternatively, a substituted azole of formula (d) is reacted with ammonia to form compounds of formula (e). For example, a solution of ammonia in a suitable solvent, such as methanol, and a substituted azole of formula (d) are mixed in a sealed tube at temperatures ranging from around 0 to 25 °C to provide

compounds of formula (e) which may then be isolated and, if necessary and desired, purified using techniques well known in the art, such as trituration. A substituted azole of formula (c), a compound of formula (f), a suitable base, such as K_2CO_3 or DIPEA in a suitable solvent, such as acetonitrile or DMF are mixed at temperatures ranging from around 20 to 120 °C to provide compounds of formula (a) which may then be isolated and, if necessary and desired, purified using techniques well known in the art such as chromatography.

Amines of formula (c) and compounds of formula (f) are commercially available or may be synthesized by methods known to a person skilled in the state of the art. The requisite azole compounds of formula (d) may be prepared as illustrated in the following scheme 3, where R^{3a}, R^{3b}, R^4, R^5, Q^1, Q^2 and Y are as previously described, LG is a suitable leaving group (see also WO 2017192385).

Scheme 3



An amide of formula (h) is reacted with an *N*,*N*-dimethylamide dimethyl acetal (g) to form compounds of formula (i) which are subsequently reacted with hydrazines (j) under acidic conditions to form compounds of formula (d). For example, a compound of formula (h) and an *N*,*N*-dimethylamide dimethyl acetal of formula (g) are reacted in a suitable solvent, such as CH_2Cl_2 at reflux to provide compounds of formula (i). Upon removal of the solvent, compounds of formula (i) are reacted with a substituted hydrazine (j) in a suitable solvent such as 1,4-dioxane, acetic acid or a mixture of such solvents at temperatures ranging from around 20 to 100 °C to provide compounds of formula (d) which

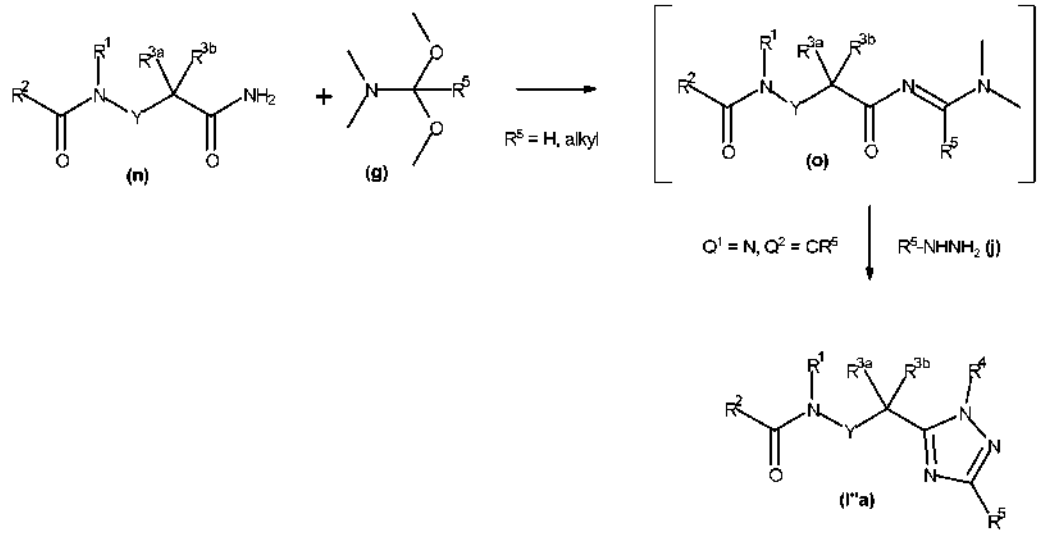
may then be isolated and, if necessary and desired, purified using techniques well known in the art, such as chromatography.

Alternatively, a carboxylic acid derivative of formula (k) is reacted with an amine of formula (l) and a suitable base, such as triethylamine or DIPEA, in a suitable solvent, such as toluene, at temperatures ranging from around 0 to 120 °C. The resulting compounds (m) may then be isolated and, if necessary and desired, purified using techniques well known in the art, such as chromatography. The resulting amides of formula (m) and phosphorus pentachloride are reacted in a suitable solvent, such as CH_2Cl_2, at r.t. and then trimethylsilyl azide is added to the mixture at 0 °C and the mixture is stirred at r.t. to provide compounds of formula (d) which may then be isolated and, if necessary and desired, purified using techniques well known in the art, such as chromatography.

N,N-dimethylamide acetals of formula (g), amides of formula (h), carboxylic acid derivatives of formula (k) and hydrazines of formula (j) are commercially available or may be synthesized by methods known to a person skilled in the state of the art.

Compounds of formula I"a may be prepared as illustrated in the following scheme 4 where R^1, R^2, R^{3a}, R^{3b}, R^4, R^5 and Y are as previously defined.

Scheme 4

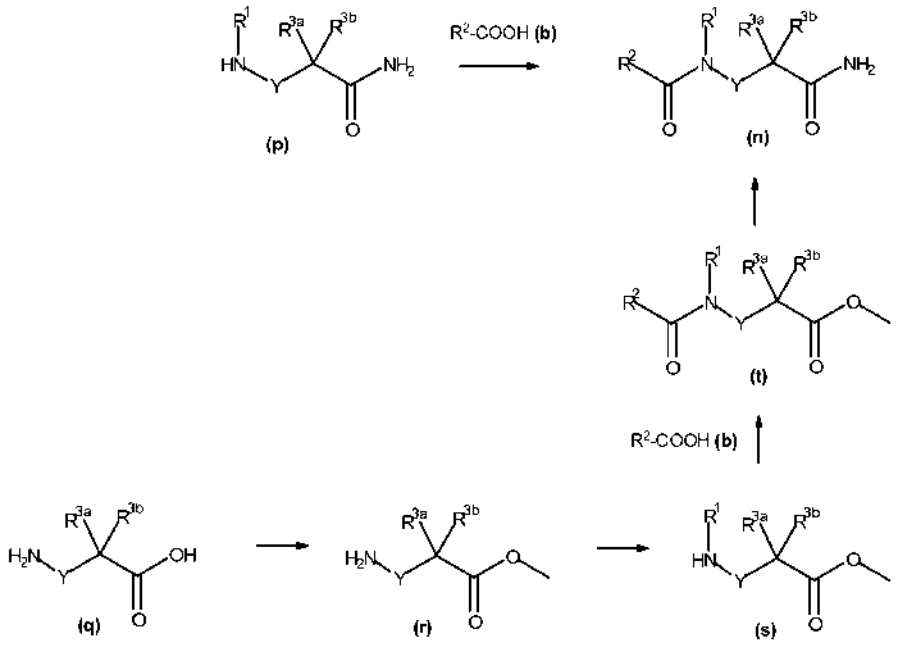


An amide of formula (n) is reacted with an *N,N*-dimethylamide dimethyl acetal of formula (g) to form compounds of formula (o) which are subsequently reacted with substituted hydrazines of formula (j) under acidic conditions to form compounds of formula I"a . For example, a compound of formula (n) and an *N,N*-dimethylamide dimethyl acetal of formula (g) are reacted in a suitable solvent, such as

CH_2Cl_2 at reflux to provide compounds of formula (o). Upon removal of the solvent, compounds of formula (o) are reacted with a substituted hydrazine of formula (i) in a suitable solvent such as 1,4-dioxane, acetic acid or a mixture of such solvents at temperatures ranging from around 20 to 100 °C. The resulting compounds of formula I"a may then be isolated and, if necessary and desired, purified using techniques well known in the art, such as chromatography.

The requisite amides of formula (n) may be prepared as illustrated in the following scheme 5, where R^1, R^2, R^3, and Y are as previously described (see also WO 2017192385).

Scheme 5



An amino amide of formula (p) is reacted with a carboxylic acid of formula (b) to form compounds of formula (n). For example, a mixture of an amino amide of formula (p), a carboxylic acid (b), a suitable coupling reagent, such as T3P®, HATU, DCC or HOBt, a suitable base such as triethylamine or DIPEA, in a suitable solvent such as ethyl acetate or DMF are mixed at temperatures ranging from around 0 to 100 °C to provide compounds of formula (n) which may then be isolated and, if necessary and desired, purified using techniques well known in the art, such as chromatography.

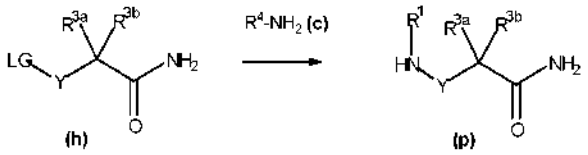
Alternatively, an amino acid of formula (q) is reacted with thionyl chloride in a suitable solvent, such as MeOH, at r.t. to provide amino esters of formula (r). The resulting amino esters (r) are reacted with an

aldehyde or a ketone, a suitable reducing agent such as sodium triacetoxyborohydride, a dehydrating agent such as Na_2SO_4, in a suitable solvent such as acetic acid, at r.t. to provide compounds of formula (s). The resulting amino esters of formula (s) are then reacted with a carboxylic acid of formula (b), a suitable coupling reagent, such as T3P®, a suitable base such as DIPEA, in a suitable solvent, such as ethyl acetate at about 90 °C to provide amido esters of formula (t) which may then be isolated and, if necessary and desired, purified using techniques well known in the art, such as chromatography. The resulting amido esters of formula (t) are reacted with magnesium nitride in a suitable solvent, such as MeOH at about 80 °C in a sealed tube to provide compounds of formula (n) which may then be isolated and, if necessary and desired, purified using techniques well known in the art, such as chromatography or extraction.

Compounds of formula (b) and (q) are commercially available. The requisite amino amide compounds of formula (p) are commercially available or may be prepared as illustrated in the following scheme 6, where R^1, R^{3a}, R^{3b}, and Y are as previously described and LG is a suitable leaving group (see also WO 2017192385).

Compounds of formula (c) and (h) are commercially available.

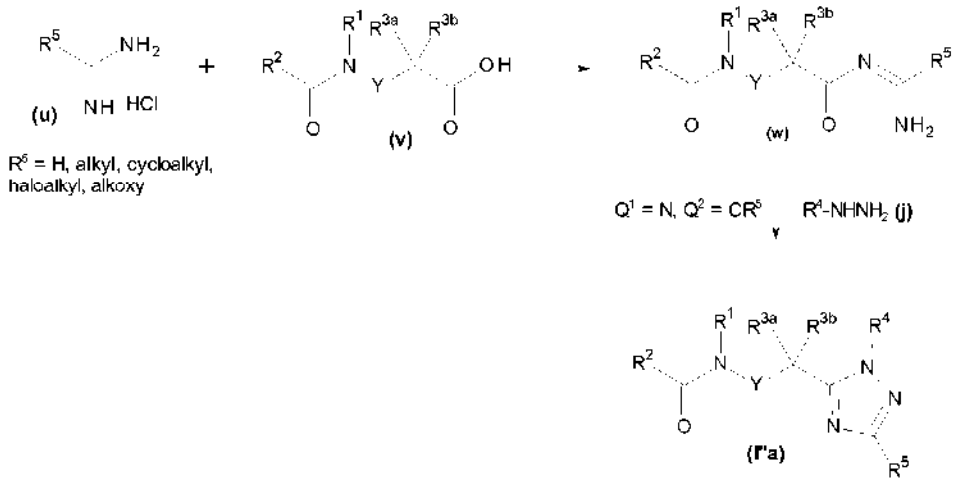
Scheme 6



An amine of formula (c) is reacted with an amide of formula (h) to form compounds of formula (p). For example, a mixture of an amine of formula (c), an amide of formula (h), a suitable base, such as K_2CO_3 or DIPEA in a suitable solvent, such as acetonitrile or DMF are mixed at 25-80 °C to provide compounds of formula (p) which may then be isolated and, if necessary and desired, purified using techniques well known in the art, such as chromatography.

In an alternative approach compounds of formula I"a may be prepared as illustrated in the following scheme 7 where R^1, R^2, R^{3a}, R^{3b}, R^4, R^5 and Y are as previously defined.

Scheme 7

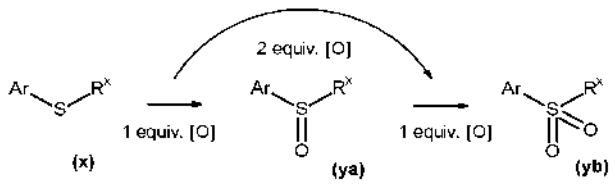


An amidine hydrochloride of formula (u) is reacted with an acid of formula (v). For example, an amidine hydrochloride of formula (u), a carboxylic acid (v), a suitable coupling reagent, such as HATU, DCC or HOBt, a suitable base such as triethylamine or DIPEA, in a suitable solvent such as acetonitrile or DMF are mixed at temperatures ranging from around 0 to 100 °C, to form compounds of formula (w) which are subsequently reacted with substituted hydrazines of formula (j) under acidic conditions to form compounds of formula I"a which may then be isolated and, if necessary and desired, purified using techniques well known in the art, such as chromatography.

Amidine hydrochlorides of formula (u), carboxylic acid derivatives of formula (v) and hydrazines of formula (j) are commercially available or may be synthesized by methods known to the skilled artisan.

Sulfoxides (sulfines) of the general formula (ya) and sulfones of the formula (yb) may be prepared as illustrated in the following scheme 8 wherein Ar is phenyl or hetaryl and R^x is C_1-C_6alkyl, C_1-C_6haloalkyl, optionally substituted phenyl or optionally substituted C_3-C_6cycloalkyl

Scheme 8

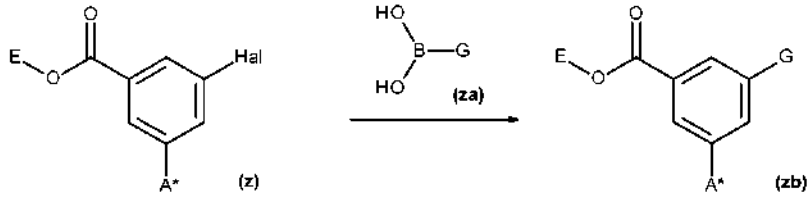


A sulfanyl group containing compound of formula (x) is reacted with an oxidizing reagent such as 3-chloroperoxybenzoic acid or ruthenium(III) chloride in combination with sodium periodate to form

compounds of formula (ya) or (yb), depending on the mol equivalent of the oxidizing reagent. Sulfinyl compounds of the formula (ya) are understood to form optical isomers or isomer mixtures of varying composition. A sulfinyl group containing compound of formula (ya) is reacted with an oxidizing reagent such as 3-chloroperoxybenzoic acid or ruthenium(III) chloride in combination with sodium periodate to form sulfone containing compounds of formula (yb).

Compounds of formula (zb) may be prepared as illustrated in the following scheme 9 wherein E is H or C_1-C_6alkyl, Hal is bromine or iodine, G is an optionally substituted phenyl or cyclopropyl, and A* is chlorine, fluorine, trifluoromethyl or trifluoromethoxy.

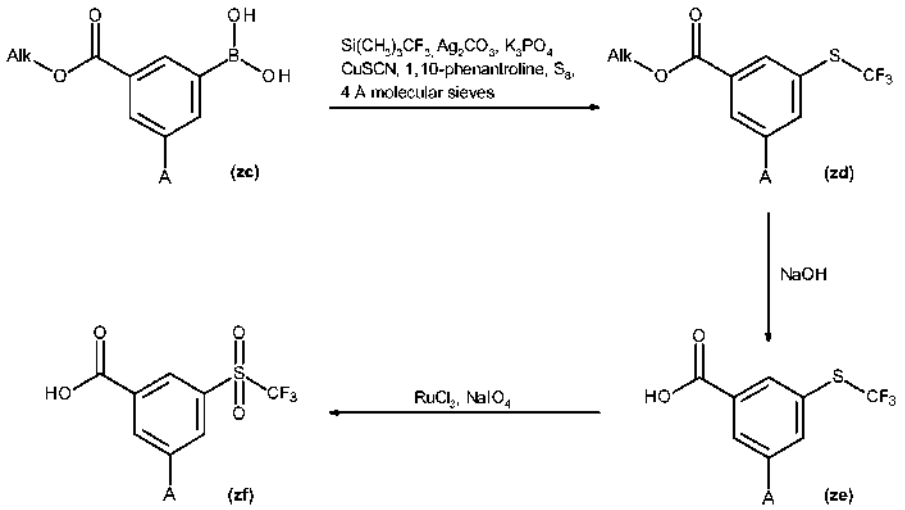
Scheme 9



A halogen containing compound of formula (z) is reacted with a boronic acid of formula (za) to form compounds of formula (zb). For example, a mixture of a halogen containing compound of formula (z), a boronic acid (za), a suitable catalyst, such as [1,1'-bis(diphenylphosphino)ferrocene]-dichloropalladium(II) or palladium(II) acetate in combination with tricyclohexylphosphine, a suitable base such as cesium carbonate, tripotassium phosphate or sodium hydrogencarbonate, in a suitable solvent or solvent mixture such as / containing 1,4-dioxane, ethanol, toluene or water are reacted at temperatures ranging from around 0 to 100 °C to provide compounds of formula (zb) which may then be isolated and, if necessary and desired, purified using techniques well known in the art, such as chromatography. Compounds of formula (zb) in which E is C_1-C_6alkyl can be transformed to compounds of formula (zb) in which E is H by treatment with a an alkali hydroxide in a suitable solvent or solvent mixture such as / containing tetrahydrofuran, ethanol or water at temperatures ranging from around 0 to 100 °C.

Compounds of formula (zf) may be prepared as illustrated in the following scheme 10 wherein Alk is C_1-C_6alkyl and A is chlorine, fluorine or cyano.

Scheme 10



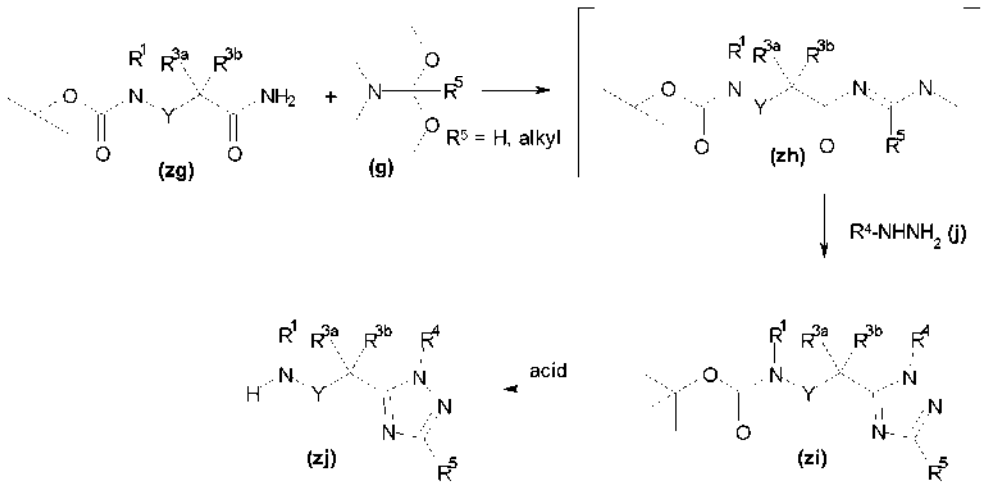
Boronic acids of formula (zc) may be prepared from the known boronic acid pinacol esters (WO 2011/023677, WO 2009/107391, WO 2010/069504) by hydrolysis using $NaIO_4$ (Journal of Organic Chemistry, 79(1), 328-338, 2014).

A boronic acid of formula (zc) is reacted to trifluoromethylsulfanyl compounds of formula (zd) which are subsequently reacted with alkali hydroxides to form acids of formula (ze). The trifluoromethylsulfanyl group in compounds of formula (zc) is then oxidized to give trifluoromethylsulfonyl functionalized compounds of formula (zf).

For example, a mixture of a boronic acid of formula (zc), trimethyl(trifluoromethyl)silane, silver carbonate, tripotassium phosphate, copper thiocyanate, 1,10-phenanthroline, sulfur and 4 Å molecular sieves, in a suitable solvent such as dimethylformamide are reacted at temperatures ranging from around 0 to 60 °C to provide compounds of formula (zd) which may then be isolated and, if necessary and desired, purified using techniques well known in the art, such as chromatography (Angew. Chem. Int. Ed. 2012, 51, 2492 –2495). Esters of formula (zd) and alkali hydroxides in a suitable solvent mixture containing for example water and tetrahydrofurane are reacted at temperatures ranging from around 0 to 100 °C to provide acids of formula (ze) which may then be isolated and, if necessary and desired, purified using techniques well known in the art, such as chromatography. Trifluoromethylsulfanyl compounds of formula (ze), ruthenium(III) chloride and sodium periodate, in a suitable solvent mixture containing for example dichloromethane, acetonitrile and water are reacted at temperatures ranging from 0 to 60 °C to trifluoromethylsulfonyl compounds of formula (zf) which may then be isolated and, if necessary and desired, purified using techniques well known in the art, such as chromatography.

Compounds of formula (zj) may be prepared as illustrated in the following scheme 11 where R^1, R^{3a}, R^{3b}, R^4, R^5 and Y are as previously defined.

Scheme 11



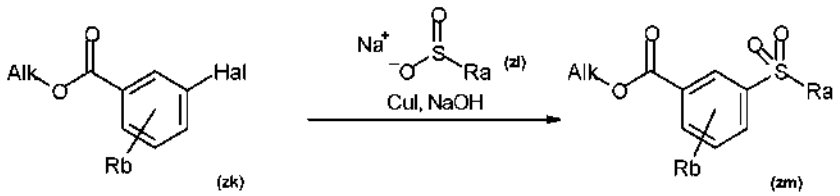
An amide of formula (zg) is reacted with an *N*,*N*-dimethylamide dimethyl acetal of formula (g) to form compounds of formula (zh) which are subsequently reacted with substituted hydrazines of formula (j) under acidic conditions to form compounds of formula (zi). For example, a compound of formula (zg) and a *N*,*N*-dimethylamide dimethyl acetal of formula (g) are reacted in a suitable solvent, such as CH_2Cl_2 at reflux to provide compounds of formula (zh). After removal of the solvent, compounds of formula (zh) are reacted with a substituted hydrazine of formula (j) in a suitable solvent such as 1,4-dioxane, acetic acid or a mixture of such solvents at temperatures ranging from around 20 to 80 °C. The resulting compounds of formula (zi) may then be isolated and, if necessary and desired, purified using techniques well known in the art, such as chromatography.

A carbamate of formula (zi) is treated with an acid to form amines of formula (zj). For example, a carbamate of formula (zi) and a suitable acid, such as hydrogen chloride or trifluoracetic acid, are reacted in a suitable solvent, such as dioxane or in the case of trifluoroacetic acid without an additional solvent at temperatures ranging from around 0 to 80 °C. The resulting amines of formula (zj) may then be isolated as their acid salts of after base treatment as free amines and, if necessary and desired, purified using techniques well known in the art, such as chromatography.

The requisite amides of formula (zg) and hydrazines of formula (j) are commercially available or may be synthesized by methods described in this application or methods known to the skilled artisan.

Compounds of formula (zm) may be prepared as illustrated in the following scheme 12 wherein Alk is C_1-C_6alkyl, Hal is iodine or bromine, Ra is C_1-C_6alkyl, cylopropyl or optionally substituted phenyl; and Rb is halogen, C_1-C_6alkyl or C_3-C_6cycloalkyl. The phenyl ring may be substituted by up to two Rb substitutents.

Scheme 12

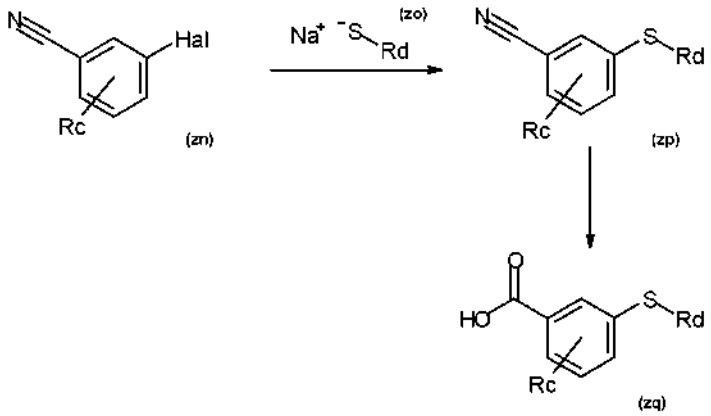


An aryl halide of formula (zk) is reacted with a sulfinate salt of formula (zl) under copper catalysis to form sulfones of formula (zm). For example, a mixture of a compound of formula (zk), a sodium sulfinate salt of formula (zl), copper(I) iodide, proline and sodium hydroxide are reacted in a suitable solvent, such as dimethyl sulfoxide at temperatures ranging from 40 to 140 °C. The resulting compounds of formula (zm) may then be isolated and, if necessary and desired, purified using techniques well known in the art, such as chromatography. Esters of formula (zm) can be hydrolyzed to the carboxylic acids by treatment with a an alkali hydroxide in a suitable solvent or solvent mixture such as / containing tetrahydrofuran, ethanol or water at temperatures ranging from around 0 to 100 °C.

The requisite aryl halides (zk) and sulfonate salts of formula (zl) are commercially available or may be synthesized by methods known to the skilled artisan.

Compounds of formula (zq) may be prepared as illustrated in the following scheme 13, Hal is fluorine or chlorine, Rd is optionally substituted C_1-C_6alkyl or optionally substituted C_3-C_6cycloalkyl; and Rc is halogen or in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl or C_1-C_4alkoxy. The phenyl ring may be substituted by up to two Rc substitutents.

Scheme 13

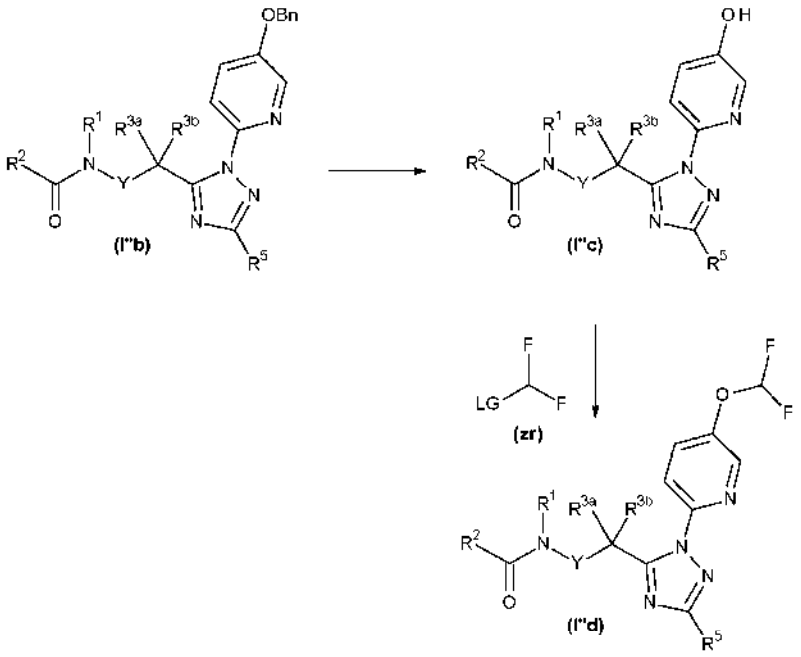


An aryl halide of formula (zn) is reacted with a thiolate salt of formula (zo) to form thioethers of formula (zp) which are then hydrolised to form carboxylic acids of formula (zq). For example, a mixture of a halide of formula (zn) and a sodium thiolate of formula (zo), is reacted in a suitable solvent, such as N,N-dimethylformamide at temperatures ranging from – 20 to 50 °C. The resulting nitriles of formula (zp) are then hydrolized either under basic conditions, using for example aqueous sodium hydroxide in a suitable solvent, such as ethanol at temperatures ranging from 40 to 100 °C or under acidic conditions in a suitable strong acid, such as sulfuric acid or hydrochloric acid either neat or diluted with a suitable dilutant such as water at temperatures ranging from 40 to 100 °C. The obtained carboxylic acids (zq) are then if necessary and desired, purified using techniques well known in the art, such as chromatography.

The requisite aryl halides (zn) and thiolate salts of formula (zo) are commercially available or may be synthesized by methods known to the skilled artisan.

Compounds of formula I"b may be prepared as illustrated in the following scheme 14 where R^1, R^2, R^{3a}, R^{3b}, R^5 and Y are as previously defined. Bn is benzyl and LG is chloride or trifluoromethylsulfonyl.

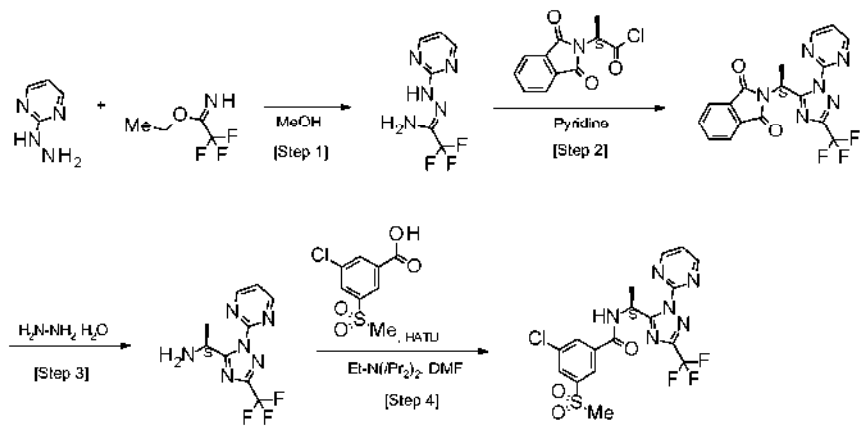
Scheme 14



A benzyl protected compound of formula (I"b) is deprotected to form an alcohol of formula (I"c) which is then alkylated with an alkylating agent of formula (zr) to form ethers of formula (I"d). For example, a benzyl protected compound of formula (I"b), is deprotected in the presence of a suitable catalyst, such as palladium on charcoal under a hydrogen atmosphere, in a suitable solvent, such as methanol at temperatures ranging from – 20 to 50 °C. The resulting alcohols of formula (I"b) are then alkylated with a suitable alkylating agent such as chloro(difluoro)methane (WO2016155884) or difluoromethyl trifluoromethanesulfonate (WO2016046166) in the presence of a suitable base, such as potassium carbonate or potassium hydroxide in a suitable solvent, such as acetonitrile or N,N-dimethylformamide at temperatures ranging from - 30 to 50 °C. The obtained ethers of formula (I"d) are then if necessary and desired, purified using techniques well known in the art, such as chromatography.

The requisite benzyl protected compound of formula (I"b) may be prepared as described in Scheme 4 using hydrazines that may be synthesized by methods known to the skilled artisan (e.g. as described in *J. Am. Chem. Soc.* 2017, 139, 42, 14833-14836).

Scheme 15

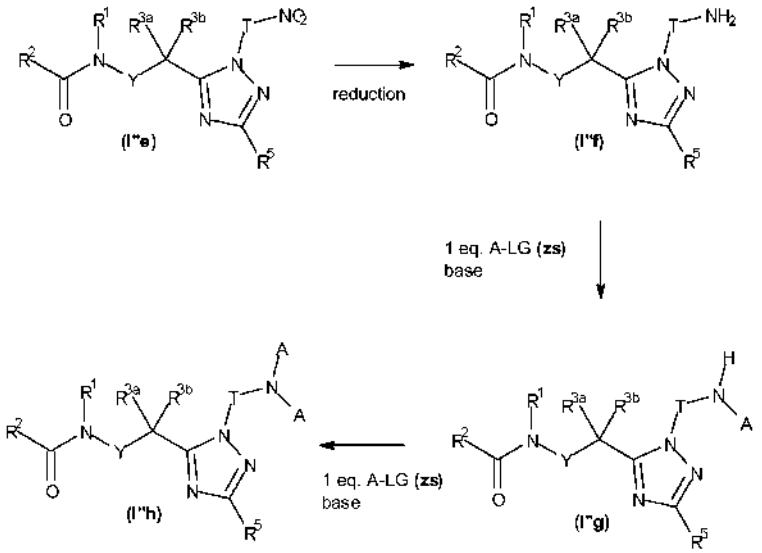


I-091

Scheme 15 illustrates the preparation of 3-haloalkyl triazoles as shown e.g. in example I-091. In a first step, a hydrazine amide is formed as described in EP 1099695. In a second step, (α*S*)-1,3-dihydro-α-methyl-1,3-dioxo-2*H*-isoindole-2-acetyl chloride, prepared from (α*S*)-1,3-dihydro-α-methyl-1,3-dioxo-2*H*-isoindole-2-acetic acid (Pht-Ala-OH purchased from ABCR) and oxalyl chloride according to *Tetrahedron: Asymmetry*, 21(8), 936-942, 2010, reacts with a hydrazone amide in the presence of a base, like pyridine, as described in EP 1099695. In a third step, the phthalimide protection group is removed by reaction with hydrazine hydrate in a suitable solvent, like ethanol, as described in WO 2018086605. In a final step, the obtained amine is reacted with a carboxylic acid to form the example compound, e.g. I-091. For example, a mixture of an amine, a carboxylic acid, a suitable coupling reagent, such as T3P®, [*O*-(7-azabenzotriazol-1-yl)-*N,N,N',N'*-tetramethyluronium-hexafluorophosphate] (HATU), dicyclohexylcarbodiimid (DCC), 1-ethyl-3-(3-dimethylaminopropyl)carbodiimide (EDC) or hydroxybenzotriazole (HOBt), a suitable base such as triethylamine or *N,N*-diisopropylethylamine, in a suitable solvent such as ethyl acetate or *N,N*-dimethylformamide are mixed at temperatures ranging from around 0 to 100 °C to provide the example compound which may then be isolated and, if necessary and desired, purified using techniques well known in the art, such as chromatography.

Compounds of formula I"g and I"h may be prepared as illustrated in the following scheme 16, where R^1, R^2, R^{3a}, R^{3b}, R^5 and Y are as previously defined, T is R^4 as previously described and at least substituted with one $-NO_2$-group, LG is a suitable leaving group and A represents optionally substituted C_1-C_6alkyl, CO-C_1-C_6alkyl, CO-C_3-C_6cycloalkyl, CO-phenyl, or SO_2C_1-C_6alkyl.

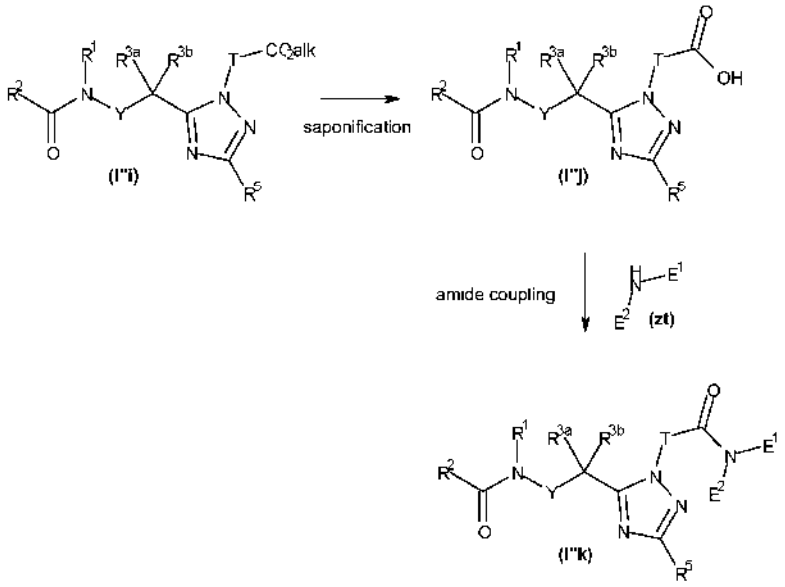
Scheme 16



A nitro compound of formula (I"e) is converted into the respective amino compound of formula (I"f) under reducing conditions, likewise with hydrogen and palladium on charcoal in a suitable solvent like THF or ethanol (European Journal of Medicinal Chemistry, 158, 322-333; 2018), with tin(II) chloride and HCl in a suitable solvent like ethanol (WO 2018085247), with iron powder and HCl in a suitable solvent like ethanol (WO 2017216293) or with iron powder in a mixture of acetic acid and ethanol The resulting amino compound (I"f) reacts, in the presence of a suitbale base such as DIPEA or potassium carbonate, with acylation, benzoylation, sulfonlyation or alkylation reagents A-LG of formula (zs). If one equivalent of A-LG is used compounds of formula (I"g) are obtained. Two equivalents of A-LG yield compounds of formula (I"h). The obtained compounds of formula (I"h) and (I"g) are then if necessary and desired, purified using techniques well known in the art, such as chromatography.

Compounds of formula I"k may be prepared as illustrated in the following scheme 17, where R^1, R^2, R^{3a}, R^{3b}, R^5 and Y are as previously defined, wherein T is R^4 as previously described and at least substituted with one $-CO_2$alkyl-group, -COOH or $CON(E^1)E^2$ group respectively. E^1 and E^2 are independently selected from the group of H and in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl, phenyl or SO_2C_1-C_6alkyl.

Scheme 17



An ester compound of formula (I"i) is saponified to obtain the respective carboxylic acid compound of formula (I"j) followed by an amide coupling step with amines of fromula (zt) to obtain amides of formula (I"k) by methods known to a person skilled in the state of the art.

For example, a mixture of an amine of formula (zt), a carboxylic acid (I"j), a suitable coupling reagent, such as T3P®, HATU, DCC or HOBt, a suitable base such as triethylamine or DIPEA, in a suitable solvent such as ethyl acetate or DMF are mixed at temperatures ranging from around 0 to 100 °C to provide compounds of formula (I"k) which may then be isolated and, if necessary and desired, purified using techniques well known in the art, such as chromatography.

The preparation and use examples which follow illustrate the invention without limiting it.

Preparation examples

Synthesis of 3-chloro-N-(cyclopropylmethyl)-5-(methylsulfonyl)-N-{1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}benzamide (example I-003)

A solution of 120 mg (491 µmol) N-(cyclopropylmethyl)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethanamine and 127 mg (541 µmol) 3-chloro-5-(methylsulfonyl)benzoic acid in 5 mL ethyl acetate was treated with 0.30 mL (1,7 mmol) *N,N*-Diisopropylethylamine and stirred for 10 min at room temperature. 0.60 mL (0.84 mmol) of T3P® solution (50 wt. % in EtOAc) were added and the reaction mixture was stirred at room temperature over night. Water was added, the layers separated and the aqueous layer was extracted several times with ethyl acetate. The combined organic layers were sequentially washed with water, aq. sat. $NaHCO_3$ and aq. sat. NH_4Cl. The solution was dried with Na_2SO_4, filtered and concentrated under reduced pressure. The residue was purified by HPLC (H_2O / acetonitrile) to provide 125 mg of 3-chloro-N-(cyclopropylmethyl)-5-(methylsulfonyl)-N-{1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}benzamide.

^{1}H-NMR(600.1 MHz, CD_3CN, 260 K): NMR peaklist:δ= 8.8859 (4.9); 8.8778 (5.0); 8.6382 (1.6); 8.6302 (1.6); 8.0865 (4.4); 8.0335 (1.4); 8.0142 (0.1); 7.9580 (2.7); 7.9433 (0.1); 7.9060 (0.1); 7.8124 (1.0); 7.7920 (0.1); 7.6327 (1.0); 7.5286 (1.4); 7.5206 (2.6); 7.5125 (1.4); 7.4498 (3.6); 7.4167 (0.5); 7.4088 (0.9); 7.4007 (0.5); 7.3889 (2.9); 6.3593 (0.4); 6.3477 (1.4); 6.3361 (1.5); 6.3246 (0.5); 6.0860 (0.2); 6.0749 (0.5); 6.0634 (0.5); 6.0517 (0.2); 3.8379 (0.3); 3.6910 (0.3); 3.6808 (0.3); 3.6675 (0.4); 3.6571 (0.4); 3.5278 (0.4); 3.5160 (0.4); 3.5040 (0.3); 3.4922 (0.3); 3.1910 (0.1); 3.1259 (0.4); 3.1151 (0.3); 3.0769 (16.0); 3.0244 (0.2); 2.9592 (0.1); 2.9111 (0.6); 2.9037 (0.4); 2.8995 (0.6); 2.8849 (1.3); 2.8733 (1.4); 2.8440 (1.3); 2.8345 (1.3); 2.8178 (0.6); 2.8083 (0.6); 2.3015 (0.1); 2.2910 (81.9); 2.2744 (0.2); 2.2645 (0.1); 2.2585 (0.1); 2.0800 (0.2); 2.0759 (0.4); 2.0718 (0.6); 2.0677 (0.4); 2.0636 (0.2); 1.9851 (1.2); 1.9770 (1.0); 1.9726 (1.7); 1.9692 (37.9); 1.9651 (74.7); 1.9609 (110.4); 1.9568 (76.7); 1.9527 (39.4); 1.9440 (0.9); 1.9348 (0.4); 1.9307 (0.3); 1.9268 (0.2); 1.9226 (0.2); 1.9182 (0.2); 1.9138 (0.2); 1.9096 (0.1); 1.8950 (0.1); 1.8916 (0.1); 1.8873 (0.1); 1.8831 (0.1); 1.8789 (0.1); 1.8748 (0.1); 1.8707 (0.1); 1.8622 (0.1); 1.8541 (0.3); 1.8500 (0.5); 1.8458 (0.7); 1.8417 (0.5); 1.8376 (0.3); 1.8232 (6.0); 1.8116 (6.1); 1.7615 (2.1); 1.7501 (2.1); 1.7134 (0.1); 1.7019 (0.1); 1.5085 (0.1); 1.3213 (0.2); 1.3132 (0.2); 1.3096 (0.2); 1.3006 (0.2); 1.2879 (0.2); 1.2766 (0.2); 1.2716 (0.2); 1.0585 (0.2); 1.0481 (0.3); 1.0378 (0.2); 0.8970 (0.2); 0.8858 (0.5); 0.8738 (0.2); 0.5974 (0.1); 0.5877 (0.2); 0.5837 (0.2); 0.5752 (0.5); 0.5643 (0.7); 0.5544 (0.6); 0.5418 (0.3); 0.5325 (0.1); 0.5107 (0.1); 0.4954 (0.4); 0.4817 (0.6); 0.4741 (0.6); 0.4681 (0.6); 0.4602 (0.4); 0.4523 (0.3); 0.4374 (0.1); 0.3496 (0.1); 0.3420 (0.2); 0.3336 (0.3); 0.3259 (0.4); 0.3209 (0.3); 0.3083 (0.3); 0.2991 (0.4); 0.2929 (0.7); 0.2851 (0.9); 0.2777 (0.8); 0.2702 (0.8); 0.2622 (1.1); 0.2528 (1.0); 0.2459 (0.9); 0.2398 (1.0); 0.2322 (0.7); 0.2254 (0.4); 0.2170 (0.2); 0.0967 (0.4); 0.0109 (0.2); 0.0054 (2.2); -0.0001 (84.9); -0.0057 (3.1); -0.0124 (1.5); -

0.0265 (0.1); -0.0319 (0.1); -0.0376 (0.1); -0.0430 (0.1); -0.0580 (0.1); -0.0820 (0.1); -0.1002 (0.4); -0.1791 (0.3); -0.1875 (0.7); -0.1954 (1.0).

ESI mass [m/z]: 461.1 $[M+H]^+$

Synthesis of N-(cyclopropylmethyl)-N-{1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}-3-[(trifluoromethyl)sulfonyl]benzamide (example I-005)

A mixture of 50 mg (111 µmol) N-(cyclopropylmethyl)-N-{1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}-3-[(trifluoromethyl)sulfanyl]benzamide, 2 mL dichloromethane, 2 mL acetonitrile and 4 mL water was treated with 72 mg (0.33 mmol) sodium periodate followed by 0.02 mg (0.1 µmol) ruthenium(III) chloride. The reaction mixture was stirred at room temperature for 1.5 h. Water and dichloromethane were added, the layers separated and the aqueous layer was extracted several times with dichloromethane. The combined organic layers were dried with Na_2SO_4, filtered and concentrated under reduced pressure to provide 20 mg of N-(cyclopropylmethyl)-N-{1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}-3-[(trifluoromethyl)sulfonyl]benzamide.

^{1}H-NMR(600.1 MHz, CD_3CN, 260 K): NMR peaklist: δ= 9.0235 (0.2); 9.0154 (0.1); 8.9241 (0.4); 8.9161 (0.4); 8.9092 (0.3); 8.9011 (0.4); 8.8879 (0.9); 8.8764 (12.2); 8.8684 (12.2); 8.7211 (0.1); 8.7130 (0.1); 8.5912 (0.3); 8.5831 (0.5); 8.5723 (2.6); 8.5645 (2.6); 8.4517 (0.1); 8.3799 (0.1); 8.2586 (0.1); 8.2337 (0.1); 8.2199 (0.1); 8.1799 (0.2); 8.1638 (0.2); 8.1513 (0.1); 8.1383 (0.1); 8.1122 (3.6); 8.0990 (4.0); 8.0877 (11.2); 8.0726 (0.8); 8.0596 (0.6); 8.0393 (2.6); 8.0250 (1.0); 8.0122 (1.0); 7.9954 (0.1); 7.9814 (0.1); 7.9643 (0.1); 7.9586 (0.1); 7.9462 (0.2); 7.9321 (0.2); 7.9115 (1.8); 7.8855 (0.1); 7.8806 (0.1); 7.8713 (0.1); 7.8636 (0.1); 7.8547 (0.1); 7.7884 (2.8); 7.7754 (5.8); 7.7623 (3.3); 7.7223 (0.6); 7.7106 (1.6); 7.7034 (1.4); 7.6904 (1.3); 7.6755 (4.9); 7.6624 (3.7); 7.6295 (6.8); 7.6139 (0.1); 7.5380 (0.2); 7.5276 (0.3); 7.5165 (3.4); 7.5084 (6.4); 7.5004 (3.2); 7.4879 (0.2); 7.4743 (0.2); 7.4507 (0.5); 7.4369 (0.4); 7.3810 (0.9); 7.3734 (1.4); 7.3656 (0.7); 6.5009 (0.1); 6.4358 (0.1); 6.4239 (0.2); 6.4066 (1.2); 6.3951 (3.8); 6.3835 (3.8); 6.3719 (1.2); 6.2934 (0.1); 6.2818 (0.1); 6.1368 (0.1); 6.1334 (0.1); 6.0337 (0.3); 6.0227 (0.9); 6.0113 (0.9); 6.0002 (0.3); 5.9466 (0.1); 5.9354 (0.1); 5.6189 (0.1); 5.6035 (0.1); 5.4721 (9.8); 5.3607 (0.3); 5.3524 (0.5); 5.3443 (0.3); 5.3369 (0.1); 5.3189 (0.1); 3.7124 (0.1); 3.6988 (0.1); 3.6872 (0.6); 3.6767 (0.6); 3.6635 (0.7); 3.6531 (0.7); 3.5619 (0.1); 3.5496 (0.1); 3.5375 (0.1); 3.4961 (0.7); 3.4845 (0.7); 3.4722 (0.6); 3.4607 (0.6); 3.4443 (0.1); 3.4363 (0.1); 3.4337 (0.1); 3.4258 (0.1); 3.2372 (0.1); 3.2270 (0.1); 3.2162 (0.1); 3.1097 (0.1); 3.0986 (0.1); 3.0329 (0.5); 3.0220 (0.8); 3.0115 (0.5); 3.0015 (0.1); 2.9900 (0.2); 2.9792 (0.1); 2.9472 (0.1); 2.9183 (0.3); 2.9104 (0.3); 2.8935 (0.1); 2.8817 (0.1); 2.8719 (0.3); 2.8671 (0.3); 2.8612 (0.3); 2.8454 (9.0); 2.8349 (9.8); 2.8193 (0.4); 2.8088 (0.1); 2.8035 (0.1); 2.7934 (0.1); 2.7793 (0.1); 2.7300 (0.5); 2.6637 (0.6); 2.5973 (0.1); 2.3290 (0.1); 2.3232 (0.1); 2.3147 (0.2); 2.2914 (121.5); 2.2685 (0.2); 2.2560 (0.3); 2.2479 (0.1); 2.2427

(0.1); 2.1918 (0.1); 2.1103 (0.5); 2.0978 (1.0); 2.0851 (0.6); 2.0801 (0.4); 2.0760 (0.7); 2.0719 (1.0); 2.0678 (0.7); 2.0637 (0.4); 2.0497 (0.1); 2.0456 (0.1); 2.0324 (0.2); 2.0210 (0.6); 2.0114 (0.6); 2.0001 (0.4); 1.9925 (0.2); 1.9852 (1.6); 1.9771 (2.6); 1.9692 (61.6); 1.9651 (119.3); 1.9610 (175.6); 1.9569 (122.8); 1.9529 (63.2); 1.9354 (0.3); 1.9262 (0.2); 1.9229 (0.2); 1.9180 (0.2); 1.8958 (0.1); 1.8917 (0.1); 1.8870 (0.1); 1.8830 (0.1); 1.8780 (0.1); 1.8736 (0.1); 1.8687 (0.1); 1.8540 (0.5); 1.8501 (0.8); 1.8459 (1.2); 1.8418 (1.1); 1.8292 (15.8); 1.8176 (16.0); 1.7871 (0.2); 1.7838 (0.2); 1.7491 (3.9); 1.7377 (3.8); 1.7109 (0.2); 1.7000 (0.1); 1.6931 (0.1); 1.6813 (0.1); 1.6756 (0.1); 1.6602 (0.1); 1.6408 (0.1); 1.6271 (0.1); 1.6043 (0.1); 1.5882 (0.1); 1.5350 (0.2); 1.5249 (0.6); 1.5134 (0.6); 1.5001 (0.3); 1.4780 (0.1); 1.4701 (0.1); 1.4580 (0.1); 1.4486 (0.1); 1.4441 (0.1); 1.4279 (0.1); 1.4208 (0.1); 1.4108 (0.4); 1.4029 (0.2); 1.3906 (0.2); 1.3771 (0.1); 1.3630 (0.2); 1.3517 (0.2); 1.3408 (0.9); 1.3086 (0.8); 1.2826 (2.9); 1.2601 (9.1); 1.2169 (0.2); 1.2069 (0.2); 1.1912 (0.4); 1.1758 (0.2); 1.1598 (0.2); 1.1519 (0.1); 1.1420 (0.1); 1.1358 (0.1); 1.1246 (0.4); 1.1098 (0.1); 1.0974 (0.1); 1.0942 (0.1); 1.0852 (0.5); 1.0737 (1.6); 1.0617 (0.4); 1.0506 (0.6); 1.0463 (1.8); 1.0403 (1.6); 1.0294 (1.5); 1.0204 (0.9); 0.9820 (0.1); 0.9688 (0.2); 0.9578 (0.2); 0.9493 (0.2); 0.9452 (0.2); 0.9372 (0.2); 0.9327 (0.2); 0.9246 (0.3); 0.9168 (0.2); 0.9124 (0.2); 0.8927 (1.1); 0.8816 (2.2); 0.8697 (1.2); 0.8528 (0.5); 0.8404 (0.3); 0.8151 (0.1); 0.8045 (0.2); 0.7922 (0.1); 0.7816 (0.1); 0.7654 (0.1); 0.5550 (0.2); 0.5415 (0.7); 0.5320 (1.6); 0.5225 (2.2); 0.5121 (1.7); 0.4997 (0.9); 0.4890 (0.5); 0.4801 (0.6); 0.4641 (1.1); 0.4570 (1.5); 0.4434 (1.2); 0.4346 (0.7); 0.4222 (0.2); 0.3916 (0.1); 0.3844 (0.1); 0.3712 (0.1); 0.3638 (0.1); 0.3564 (0.1); 0.3392 (0.3); 0.3317 (0.5); 0.3236 (0.7); 0.3157 (0.8); 0.2837 (0.1); 0.2734 (0.2); 0.2602 (0.6); 0.2515 (1.0); 0.2451 (1.9); 0.2369 (2.6); 0.2299 (2.7); 0.2228 (2.4); 0.2150 (2.9); 0.2066 (2.4); 0.1995 (2.3); 0.1932 (2.5); 0.1842 (2.0); 0.1721 (1.0); 0.0970 (0.1); 0.0786 (0.2); 0.0243 (0.1); 0.0183 (0.1); 0.0054 (0.6); -0.0001 (19.3); -0.1005 (0.1); --0.2529 (0.8); -0.2613 (1.9); -0.2693 (2.7); -0.2772 (2.8); -0.2847 (2.1); -0.2926 (0.8); -0.4435 (0.9); -0.4514 (2.2); -0.4590 (2.8); -0.4670 (2.6); -0.4751 (1.8); -0.4833 (0.7).

ESI mass [m/z]: 481.1 $[M+H]^-$

3-Chloro-5-(cyclopropylcarbamoyl)benzoic acid

A solution of 0.80 g (3.98 mmol) 5-chloroisophthalic acid, 1.82 g (4.78 mmol) 1-[bis(dimethylamino)methylene]-1*H*-1,2,3-triazolo[4,5-*b*]pyridinium 3-oxid hexafluorophosphate (HATU) and 0.83 mL (4.8 mL) *N,N*-diisopropylethylamine in dichloromethane was stirred for 10 min a room temperature and then treated with 0.28 mL (4.0 mmol) cyclopropylamine. The mixture was stirred over night at room temperature. The solvent was evaporated under reduced pressure and the residue purified by HPLC (H_2O / acetonitrile) to provide 286 mg of 3-chloro-5-(cyclopropylcarbamoyl)benzoic acid.

^{1}H-NMR(400.2 MHz, d_6-DMSO): NMR peaklist; δ= 13.5637 (0.4); 8.7486 (4.5); 8.7384 (4.5); 8.6590 (0.4); 8.6491 (0.4); 8.3479 (8.7); 8.3442 (16.0); 8.3404 (9.1); 8.2041 (0.6); 8.2002 (0.3); 8.1020 (8.3); 8.0971 (12.8); 8.0928 (9.1); 8.0221 (9.5); 8.0184 (11.4); 8.0172 (11.0); 8.0133 (8.3); 7.9664 (1.2);

7.9626 (1.2); 3.3349 (4.9); 2.9095 (0.7); 2.8993 (2.1); 2.8895 (2.8); 2.8811 (4.6); 2.8709 (4.7); 2.8629 (2.8); 2.8528 (2.3); 2.8426 (0.9); 2.6789 (0.4); 2.6744 (0.6); 2.6698 (0.4); 2.5278 (1.6); 2.5230 (2.6); 2.5144 (35.4); 2.5099 (72.7); 2.5053 (95.3); 2.5007 (67.5); 2.4962 (31.8); 2.3368 (0.4); 2.3321 (0.6); 2.3276 (0.4); 2.0772 (5.6); 0.7363 (2.8); 0.7234 (6.7); 0.7181 (10.9); 0.7065 (9.2); 0.6996 (8.1); 0.6889 (4.3); 0.6683 (0.8); 0.6587 (0.7); 0.6501 (1.1); 0.6197 (4.2); 0.6093 (11.3); 0.6012 (9.3); 0.5993 (9.0); 0.5943 (6.9); 0.5915 (6.9); 0.5809 (3.0); 0.1459 (0.4); 0.0133 (0.3); 0.0079 (3.6); -0.0002 (107.9); -0.0086 (3.6); -0.1497 (0.4).

ESI mass [m/z]: 240.2 $[M+H]^-$

4'-Fluoro-5-(trifluoromethyl)[biphenyl]-3-carboxylic acid

A mixture of 400 mg (1.48 mmol) 3-bromo-5-(trifluoromethyl)benzoic acid, 250 mg (1.78 mmol) (4-fluorophenyl)boronic acid, 109 mg (140 µmol) [1,1'-bis(diphenylphosphino)ferrocene]-dichloropalladium(II), 969 mg (2.97 mmol) cesium carbonate, 3.1 mL 1,4-dioxane and 0.75 mL ethanol was heated for 2 h at 80 °C. The reaction mixture was then filtered over celite washing with ethanol. The filtrate was concentrated under reduced pressure, treated with 1 M aqeous HCl and extracted several times with ethyl acetate. The combined organic layers were washed with brine, dried with Na_2SO_4 and concentrated under reduced pressure. The residue was recrystallized from dichloromethane yielding 316 mg 4'-fluoro-5-(trifluoromethyl)[biphenyl]-3-carboxylic acid.

^{1}H-NMR(400.2 MHz, d_6-DMSO): NMR peaklist: δ= 13.6540 (1.8); 8.4111 (10.5); 8.2400 (9.6); 8.1578 (10.0); 7.8932 (7.8); 7.8882 (3.7); 7.8798 (8.7); 7.8713 (9.3); 7.8630 (3.8); 7.8579 (8.3); 7.8503 (1.0); 7.3862 (1.0); 7.3785 (8.5); 7.3564 (16.0); 7.3393 (2.8); 7.3343 (7.7); 7.3269 (0.9); 4.0389 (0.5); 4.0211 (0.5); 3.3310 (18.2); 2.6778 (0.8); 2.6734 (1.0); 2.6693 (0.8); 2.5090 (131.2); 2.5046 (168.3); 2.5002 (125.9); 2.3357 (0.8); 2.3313 (1.0); 2.3271 (0.8); 1.9902 (2.0); 1.1940 (0.5); 1.1762 (1.1); 1.1584 (0.5); 0.1460 (0.5); 0.0077 (4.5); -0.0002 (100.7); -0.0083 (4.6); -0.1496 (0.5).

ESI mass [m/z]: 283.1 $[M-H]^-$

Methyl 3-cyclopropyl-5-(trifluoromethyl)benzoate

A mixture of 1.00 g (3.53 mmol) methyl 3-bromo-5-(trifluoromethyl)benzoate, 334 mg (3.88 mmol) cyclopropylboronic acid, 891 mg (10.6 mmol) $NaHCO_3$ in 8 mL 1,4-dioxane and 4 mL H_2O was degassed by purging with argon. 129 mg (176 µmol) [1,1'-bis(diphenylphosphino)ferrocene]-dichloropalladium(II) were added. The mixture was degassed once more by purging with argon before it was heated for 10 h at 100 °C. The mixture was concentrated under reduced pressure. Water and dichloromethane were added, the layers separated and the aqueous layer was extracted several times with dichloromethane. The combined organic layers were dried with Na_2SO_4, filtered and concentrated

under reduced pressure. The residue was purified by HPLC (H_2O / acetonitrile) to provide 23 mg of methyl 3-cyclopropyl-5-(trifluoromethyl)benzoate.

^{1}H-NMR(400.2 MHz, d_6-DMSO): NMR peaklist: δ= 7.9431 (2.1); 7.8956 (2.3); 7.7295 (2.1); 3.8896 (16.0); 3.8753 (0.6); 3.3255 (10.1); 2.5264 (0.4); 2.5129 (8.4); 2.5088 (16.6); 2.5043 (21.5); 2.4998 (15.6); 2.4956 (7.8); 2.2086 (0.6); 2.2002 (0.6); 2.1965 (0.4); 2.1877 (1.2); 2.1752 (0.7); 2.1667 (0.6); 1.0928 (0.7); 1.0813 (1.9); 1.0759 (2.0); 1.0650 (1.0); 1.0603 (2.0); 1.0549 (1.9); 1.0442 (0.8); 0.8501 (0.8); 0.8387 (2.3); 0.8340 (2.1); 0.8267 (2.0); 0.8216 (2.4); 0.8098 (0.7); 0.0078 (0.5); -0.0002 (13.4); -0.0082 (0.6).

ESI mass [m/z]: 245.1 $[M]^+$

Synthesis of 3-chloro-5-[(trifluoromethyl)sulfanyl]benzoic acid

Step 1: [3-chloro-5-(methoxycarbonyl)phenyl]boronic acid

To a suspension of 12 g (40 mmol) methyl 3-chloro-5-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)benzoate in 30 mL acetone and 30 mL H_2O were added 17.3 g (80.9 mmol) sodium periodate and 6.24 g (80.9 mmol) ammonium acetate. The mixture was stirred at 25 °C for 2 h and then filtered through celite. The filtrate was evaporated. The residue was diluted with 200 mL ethyl acetate and washed with 100 mL H_2O. The organic phase was washed with brine, dried over anhydrous Na_2SO_4, filtered and concentrated in vacuum. The crude product was triturated with 10 mL petroleum ether at 15 °C for 20 min. The mixture was filtered and the residue dried under reduced pressure to obtain 7 g [3-Chloro-5-(methoxycarbonyl)phenyl]boronic acid as a white solid.

^{1}H-NMR (400 MHz, $CDCl_3$): δ = 8.72 (s, 1H), 8.35 (s, 1H), 8.27 (s, 1H), 4.02 (s, 3H). Referenced to the signal of trace $CHCl_3$ at 7.25 ppm. Measured using a Varian 400MR NMR machine.

Step 2: methyl 3-chloro-5-[(trifluoromethyl)sulfanyl]benzoate

13 g (61 mmol) [3-Chloro-5-(methoxycarbonyl)phenyl]boronic acid, 43.1 g (303 mmol) trimethyl(trifluoromethyl)silane, 33.4 g (121 mmol) Ag_2CO_3, 38.6 g (182 mmol) K_3PO_4, 762 mg (6.06 mmol) CuSCN, 2.2 g (12 mmol) 1,10-Phenanthroline, 46.7 g (1.46 mol) sulfur and 13 g 4 Å molecular sieves in 500 mL DMF were stirred at 25 °C for 16 h under N_2. The mixture was filtered through celite. The filtrate was diluted with 1.5 L methyl *tert*-butyl ether and washed with 2 x 500 mL H_2O. The organic phase was washed with brine, dried over anhydrous Na_2SO_4, filtered and concentrated in vacuum. The crude product was purified by MPLC on silica gel (petroleum ether : ethyl acetate = 1 : 0 ~ 20 : 1) to obtain 5.5 g methyl 3-chloro-5-[(trifluoromethyl)sulfanyl]benzoate as a light yellow oil.

^{1}H-NMR (400 MHz, $CDCl_3$): δ =8.20 (s, 1H), 8.10 – 8.15 (m, 1H), 7.83 (s, 1H), 3.96 (s, 3H). Referenced to the signal of trace $CHCl_3$ at 7.25 ppm. Measured using a Varian 400MR NMR machine.

Step 3: 3-chloro-5-[(trifluoromethyl)sulfanyl]benzoic acid

5.5 g (20 mmol) Methyl 3-chloro-5-[(trifluoromethyl)sulfanyl]benzoate were dissolved in a mixture of 12 mL tetrahydrofuran and 12 mL H_2O. 1.63 g (40.6 mmol) NaOH were added to the mixture which was then stirred at 25 °C for 2 h. The mixture was adjusted to pH 5 by addition of 40 mL 1 M HCl and extracted with 150 mL ethyl acetate. The organic phase was washed with brine, dried over anhydrous Na_2SO_4, filtered and concentrated in vacuum. The crude product was triturated with 50 mL petroleum ether at 25 °C for 15 min. The mixture was filtered and the residue dried under reduced pressure to obtain 3.0 g 3-chloro-5-(trifluoromethylsulfanyl)benzoic acid as a yellow solid.

^{1}H-NMR (400 MHz, $CDCl_3$): δ =11.28 (br s, 1H), 8.29 (s, 1H), 8.20 – 8.25 (m, 1H), 7.91 (s, 1H). Referenced to the signal of trace $CHCl_3$ at 7.25 ppm. Measured using a Varian 400MR NMR machine.

ESI mass [m/z]: 254.8 $[M-H]^-$

The determination by LC-MS was carried out using the mobile phases acetonitrile and 10 mM aqeous ammonium bicarbonate solution; linear gradient from 15% acetonitrile to 90% acetonitrile, flow rate 0.80 ml/min; instruments: Agilent 1200 & Agilent 6120. The column used for chromatography was a 2.1*50mm Xbridge Shield RPC18 column (5µm particles). Detection methods are diode array (DAD) and evaporative light scattering (ELSD) detection as well as negative electrospray ionization.

Synthesis of 3-chloro-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}-5-[(trifluoromethyl)sulfonyl]benzamide (example I-033)

Step 1: 3-chloro-5-[(trifluoromethyl)sulfonyl]benzoic acid

1 g (3.89 mmol) 3-chloro-5-[(trifluoromethyl)sulfanyl]benzoic acid was dissolved in a mixture of 20 mL dichloromethane, 20 mL acetonitrile and 20 mL of water. 2.5 g (11.6 mmol) sodium periodate and 0.81 mg (3.9 µmol) ruthenium(III) chloride were added to the mixture which was then stirred at room temperature for 90 min. The mixture was diluted by the addition of water and extracted with dichloromethane. The organic phase was dried over anhydrous Na_2SO_4, filtered and concentrated *in vacuo* to obtain 1.2 g of the title compound as a colorless solid. The crude product was used as such in the next step.

^{1}H-NMR (400 MHz, d_6-DMSO): δ = 14.27 – 14.20 (br s, 1H), 8.51 (s, 1H), 8.49 (s, 1H), 8.38 (s, 1H).

ESI mass [m/z]: 287.0 $[M-H]^-$

Step 2: N-[(2S)-1-amino-1-oxopropan-2-yl]-3-chloro-5-[(trifluoromethyl)sulfonyl]benzamide

1.2 g (crude from step 1, 4.15 mmol) were dissolved in 20 mL dichloromethane, two drops of DMF and 0.43 mL (4.98 mmol) oxalyl chloride were added. The mixture was stirred for 5 h at room temperature. Dichloromethane and excess oxalyl chloride were removed under reduced pressure and the remaining residue was diluted with 50 mL dichloromethane and 1.03 g (8.3 mmol) (2S)-2-aminopropanamide hydrochloride were added. 2.31 mL (16 mmol) triethylamine were added dropwise within 5 minutes. The mixture was stirred at room temperature for 1 h, monitored by thin layer chromatography. The mixture was concentrated *in vacuo*, diluted with water and extracted with dichloromethane. The organic phase was dried over anhydrous Na_2SO_4, filtered and concentrated *in vacuo*. The remaining residue was purified by chromatography (gradient cyclohexane / ethyl acetate) to obtain 1.1 g of the title compound as a colorless solid.

^{1}H NMR (400 MHz, d6-DMSO): δ = 9.13 - 9.11 (d, 1H, NH), 8.61 (s, 1H), 8.54 (s, 1H), 8.41 (s, 1H), 7.50 (br s, 1H from NH_2), 7.05 (br s, 1H from NH_2), 4.46 - 4.39 (m, 1H), 1.36 - 1.35 (d, 3H).

ESI mass [m/z]: 358.9 $[M+H]^+$

Step 3: 3-chloro-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}-5-[(trifluoromethyl) sulfonyl]benzamide (example I-033)

1.1 g (81.6 % purity, 2.53 mmol) of N-[(2S)-1-aminoamino-1-oxopropan-2-yl]-3-chloro-5-[(trifluoromethyl)sulfonyl]benzamide were dissolved in 20 mL dichloromethane. 447 mg (3.75 mmol) *N,N*-dimethylformamide dimethyl acetal were added, and the reaction mixture was refluxed for 90 minutes. The solvents were removed under reduced pressure, and the remaining residue was dissolved in a mixture of 20 mL dioxane and 3 mL acetic acid. 336 mg (3.05 mmol) 2-hydrazinopyrimidine were added. The reaction mixture was stirred over night at 50 °C, concentrated *in vacuo* and diluted with water and ethyl acetate. The separated organic phase was washed with aqueous sodium bicarbonate, dried over anhydrous Na_2SO_4, filtered and concentrated *in vacuo*. The remaining residue was purified by pHPLC to obtain 0.3 g 3-chloro-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}-5-[(trifluoromethyl)sulfonyl]benzamide as a colorless solid.

^{1}H-NMR (400 MHz, d6-DMSO): see NMR peak list in table 1.

ESI mass [m/z]: 460.9 $[M+H]^+$

Synthesis of 3-chloro-5-(methylsulfonyl)-N-{1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}benzamide (example I-020)

4.00 g (11.8 mmol) 2-[5-(1-bromoethyl)-1H-1,2,4-triazol-1-yl]pyrimidine were treated with 40 mL of an ammonia solution in methanol (7 M, 0.3 mol). The mixture was stirred overnight at room temperature. Then an additional 20 mL of ammonia solution in methanol (7 M, 0.14 mol) were added and stirring was continued until complete conversion of the starting material was observed by HPLC analysis. The reaction mixture was concentrated under reduced pressure and the residue used without further purification.

To 136 mg (580 µmol) 3-chloro-5-(methylsulfonyl)benzoic acid were added 5 mL acetonitrile, 365 mg (960 µmol) 1-[bis(dimethylamino)methylene]-1*H*-1,2,3-triazolo[4,5-*b*]pyridinium 3-oxid hexafluorophosphate (HATU) and 0.19 mL (1.4 mmol) *N,N*-diisopropylethylamine. The mixture was stirred for 1 h at room temperature. Then 200 mg of the residue containing 1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethanamine from the previous step were added. The reaction mixture was stirred over night at room temperature before it was purified by HPLC (H_2O / acetonitrile) to provide 64 mg of 3-chloro-5-(methylsulfonyl)-N-{1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}benzamide.

^{1}H-NMR (400 MHz, d_6-DMSO): see NMR peak list in table 1.

ESI mass [m/z]: 407.1 $[M+H]^+$

Synthesis of (1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethanamine hydrochloride

Step 1: tert-butyl {(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}carbamate

To a solution of 4.78 g (25.3 mmol) N^2-(tert-butoxycarbonyl)-L-alaninamide in 100 mL CH_2Cl_2 was added 4.97 mL (37.5 mmol) N,N-dimethylformamide dimethylacetal. The solution was heated at reflux for 2 h after which the solvent was removed in vacuuo. The residue was dissolved in a mixture of 45 mL 1,4-dioxane and 45 mL glacial acetic acid. 3.41 g (31 mmol) 2-hydrazinopyrimidine were added and the mixture stirred at 50 °C for 45 min. The solvents were removed under reduced pressure, a saturated aqueous solution of $NaHCO_3$ was added and the mixture repeatedly extracted with ethyl acetate. The combined organic layers were dried with Na_2SO_4 and the solvent was removed under reduced pressure. The residue was purified by reversed phase chromatography (H_2O / acetonitrile) to provide 4.51 g of tert-butyl {(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}carbamate.

$[\alpha]_D^{20} = +82$ (c = 0.95; ethanol)

^{1}H NMR (DMSO-d_6, 400 MHz): NMR peaklist: δ= 9.0011 (3.9); 8.9890 (3.9); 8.1196 (2.5); 7.6599 (2.2); 7.6477 (4.2); 7.6356 (2.1); 7.4658 (0.7); 7.4465 (0.7); 5.5270 (0.5); 5.5091 (0.7); 5.4910 (0.5); 3.3264 (15.3); 2.5262 (0.3); 2.5214 (0.6); 2.5127 (8.5); 2.5083 (17.6); 2.5037 (23.5); 2.4992 (17.0); 2.4948 (8.1); 2.0759 (10.4); 1.4486 (3.8); 1.4312 (3.5); 1.2827 (16.0); 1.0275 (0.9); -0.0002 (7.8).

ESI mass [m/z]: 235.2 $[M-C_4H_8+H]^+$

Step 2: (1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethanamine hydrochloride

To a solution of 2.0 g (6.9 mmol) tert-butyl {(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}carbamate in 40 mL 1,4-dioxane were added 17 mL of a 4 M solution of HCl in 1,4-dioxane. The mixture was stirred for 4 h at 50 °C and overnight at room temperature. The solvent was removed under reduced pressure to provide 1.74 g of a residue containing (1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethanamine hydrochloride. This was used without further purification.

^{1}H NMR (DMSO-d_6, 400 MHz): NMR peaklist: δ= 9.0360 (15.7); 9.0238 (16.0); 8.7967 (0.4); 8.7061 (3.5); 8.3670 (13.0); 7.6975 (4.2); 7.6853 (8.0); 7.6731 (4.1); 5.3554 (0.4); 5.3411 (1.2); 5.3263 (1.5); 5.3108 (1.2); 5.2960 (0.5); 4.1434 (0.4); 4.1253 (0.8); 4.1107 (2.1); 4.0899 (0.4); 4.0210 (1.2); 3.8777 (0.9); 3.8698 (0.8); 3.8623 (0.9); 3.8418 (0.8); 3.8335 (0.7); 3.8212 (0.6); 3.7300 (0.3); 3.7252 (0.3); 3.7144 (0.5); 3.7104 (0.4); 3.7006 (0.6); 3.6806 (0.6); 3.6709 (0.4); 3.6668 (0.5); 3.5683 (5.6); 3.5139 (0.3); 3.5048 (1.1); 3.4994 (1.5); 3.4958 (1.6); 3.4903 (1.5); 3.4837 (0.4); 3.4742 (0.6); 3.4660 (0.9); 3.4486 (2.4); 3.4311 (2.4); 3.4136 (0.8); 3.3886 (3.4); 2.6770 (0.5); 2.6725 (0.6); 2.6681 (0.5); 2.5259 (1.8); 2.5212 (2.8); 2.5125 (38.7); 2.5081 (79.6); 2.5036 (104.8); 2.4990 (74.8); 2.4946 (35.9); 2.3350 (0.4); 2.3303 (0.6); 2.3260 (0.5); 1.6495 (14.5); 1.6327 (14.3); 1.5476 (0.6); 1.5305 (0.6); 1.2164 (0.8); 1.1985 (1.7); 1.1808 (0.8); 1.1400 (0.4); 1.0728 (2.4); 1.0554 (4.7); 1.0379 (2.3); -0.0001 (4.9).

ESI mass [m/z]: 191.2 $[M+H]^+$

Synthesis of 3-chloro-N-ethyl-5-(methylsulfonyl)-N-{1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}benzamide (example I-040)

Step 1: N-ethyl-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethanamine

500 mg (1.86 mmol) of 2-[5-(1-bromoethyl)-1H-1,2,4-triazol-1-yl]pyrimidine (known from WO 2017192385) were dissolved in 30 mL acetonitrile. Then 775 mg (5.60 mmol) potassium carbonate and 1.87 mL of a 2*M* solution of ethylamine in THF were added. The reaction mixture was heated to reflux for two hours. After cooling, the reaction mixture was filtered *via* Celite®, the filter cake was washed with acetonitrile and the filtrate was evaporated under reduced pressure to obtain 450 mg of the title compound which was used as such in the next step.

^{1}H NMR (DMSO-d_6, 400 MHz): 9.00 – 8.99 (d, 2H), 8.14 (s, 1H), 7.66 – 7.64 (t, 1H), 4.67 – 4.57 (broad m, 1H), 2.34 – 2.31 (broad m, 2H), 2.04 (broad s, 1H, NH), 1.40 – 1.38 (d, 3H), 0.86 – 0.82 (t, 3H).

ESI mass [m/z]: 219.3 $[M+H]^+$

Step 2: 3-chloro-N-ethyl-5-(methylsulfonyl)-N-{1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl} benzamide (example I-040)

449 mg (1.77 mmol) of N-ethyl-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethanamine were dissolved in 20 mL acetonitrile followed by 0.462 mL (2.65 mmol) DIPEA. To this reaction mixture, 448 mg (1.77 mmol) of 3-chloro-5-(methylsulfonyl)benzoyl chloride dissolved in 21 mL acetonitrile were added drop wise. The reaction mixture was stirred at room temperature over night, followed by evaporation of the solvent under reduced pressure. The title compound was obtained after purification by reversed phase chromatography (H_2O / acetonitrile). Yield: 470 mg (yield: 61 %).

^{1}H NMR (DMSO-d_6, 400 MHz, 260K): see NMR peak list in table 1.

ESI mass [m/z]: 435.1 $[M+H]^+$

Synthesis of 3-chloro-5-(ethylsulfonyl)-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl} benzamide (example I-044)

Step 1: 3-chloro-5-(ethylsulfonyl)benzoic acid

A mixture of 0.47 g (4.1 mmol) proline and 0.16 g (4.0 mmol) sodium hydroxide in 24 mL dimethylsulfoxide was degassed for 30 min by purging with argon. 1.5 g (5.1 mmol) methyl 3-chloro-5-iodobenzoate, 4.7 g (40 mmol) sodium ethanesulfinate and 0.77 g (4.0 mmol) copper(I) iodide were added and the mixture further purged with argon for 5 min. The mixture was stirred at 120 °C for 3 h, cooled to room temperature and then treated with 4 mL of a 2 M aqeous sodium hydroxide solution. It was further stirred over night at room temperature, cooled to 10 °C and acidified to pH 1 using concentrated hydrochloric acid. Water was added to the mixture and it was extracted with ethyl acetate. The layers were separated and the aqueous layer repeatedly extracted with ethyl acetate. The combined organic layers were washed twice with water and once with brine and then dried with Na_2SO_4. The solvent was removed under reduced pressure and the residue purified by reversed phase chromatography (H_2O / acetonitrile) to provide 1.00 g of 3-chloro-5-(ethylsulfonyl)benzoic acid.

^{1}H NMR (DMSO-d_6, 400 MHz): NMR peaklist: δ= 8.2775 (3.5); 8.2737 (6.8); 8.2698 (4.4); 8.2363 (3.4); 8.2325 (4.0); 8.2313 (5.4); 8.2277 (4.1); 8.2090 (4.8); 8.2046 (5.5); 8.1997 (3.0); 3.4891 (1.9);

3.4707 (6.7); 3.4523 (6.8); 3.4340 (2.1); 3.3298 (6.3); 2.5259 (0.6); 2.5212 (1.0); 2.5125 (17.2); 2.5080 (36.2); 2.5034 (48.0); 2.4988 (33.7); 2.4942 (15.6); 1.1402 (6.9); 1.1219 (16.0); 1.1034 (6.8); -0.0002 (5.1).

ESI mass [m/z]: 247.1 $[M-H]^-$

Step 2: 3-chloro-5-(ethylsulfonyl)-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}benzamide (example I-044)

To 369 mg (1.48 mmol) of 3-chloro-5-(ethylsulfonyl)benzoic acid were added 10 mL acetonitrile, 936 mg (2.47 mmol) N,N,N',N'-tetramethyl-O-(1H-benzotriazol-1-yl)uronium hexafluorophosphate (HBTU) and 0.48 mL (3.7 mmol) *N,N*-diisopropylethylamine. The mixture was stirred for 1 h a room temperature. Then 280 mg (1.23 mmol) of (1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethanamine hydrochloride were added. The reaction mixture was stirred overnight at room temperature before it was purified by reversed phase chromatography (H_2O / acetonitrile) to provide 270 mg of 3-chloro-5-(ethylsulfonyl)-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}benzamide.

^{1}H-NMR (400 MHz, d_6-DMSO): see NMR peak list in table 1.

ESI mass [m/z]: 421.1 $[M+H]^+$

Synthesis of N-(cyclopropylmethyl)-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}-3-[(trifluoro-methyl)sulfonyl]benzamide (example I-047)

A solution of 100 mg (0.44 mmol) (1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethanamine hydrochloride in 2.2 mL tetrahydrofuran was treated with 31 µL (0.41 mmol) cyclopropanecarbaldehyde. After 5 min 140 mg (0.66 mmol) sodium triacetoxyborohydride were added and the mixture stirred over night at room temperature. To the mixture were added 2 mL of a saturated aqueous solution of $NaHCO_3$ and 2 mL ethyl acetate and stirring was continued for 30 min. Another 10 mL aqueous saturated $NaHCO_3$ solution were added and the mixture repeatedly extracted with ethyl acetate. The combined organic layers were dried with Na_2SO_4 and the solvent was removed under reduced pressure to provide 82 mg of a residue containing (1S)-N-(cyclopropylmethyl)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethanamine.

To the residue obtained in the previous step were added 69 mg (0.26 mmol) 3-[(trifluoromethyl)sulfonyl]benzoic acid, 2.4 mL ethyl acetate, 0.15 mL (0.85 mmol) *N*-ethyldiisopropylamine and 0.29 mL (0.41 mmol) of a T3P® solution (50 wt. % in EtOAc). The mixture was stirred over night at room temperature. The solvent was removed unter reduced pressure and residue

was purified by chromatography on silica (gradient cyclohexane / ethyl acetate) and by reversed phase chromatography (H_2O / acetonitrile) to provide 12 mg N-(cyclopropylmethyl)-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}-3-[(trifluoromethyl)sulfonyl]benzamide.

^{1}H-NMR (400 MHz, d_6-DMSO): see NMR peak list in table 1.

ESI mass [m/z]: 481.2 $[M+H]^+$

Synthesis of 3-chloro-5-(isopropylsulfonyl)-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}benzamide (example I-051)

Step 1: 3-chloro-5-(isopropylsulfanyl)benzonitrile

A solution of 1.00 g (6.42 mmol) 3-chloro-5-fluorobenzonitrile and 820 mg (8.35 mmol) sodium propane-2-thiolate in 20 mL *N,N*-dimethylformamide was stirred over night at room temperature. To the mixture was added 0.74 mL glacial acetic acid and the volatiles were removed under reduced pressure. Water and ethyl acetate were added to the residue. The layers were separated and the aqueous layer repeatedly extracted with ethyl acetate. The combined organic layers were washed with brine and then dried with Na_2SO_4. The solvent was removed under reduced pressure and the residue purified by reversed phase chromatography (H_2O / acetonitrile) to provide 589 mg of 3-chloro-5-(isopropylsulfanyl)benzonitrile.

^{1}H-NMR (400 MHz, d_6-DMSO): NMR peaklist: δ= 7.8514 (1.3); 7.8469 (2.2); 7.8433 (1.7); 7.8148 (1.5); 7.8109 (2.7); 7.8075 (1.6); 7.7554 (1.7); 7.7508 (2.7); 7.7464 (1.4); 3.8055 (0.4); 3.7890 (1.0); 3.7724 (1.4); 3.7558 (1.0); 3.7393 (0.4); 3.3253 (10.3); 2.5215 (0.5); 2.5126 (6.3); 2.5082 (12.9); 2.5037 (17.1); 2.4991 (12.2); 2.4946 (5.8); 1.2767 (16.0); 1.2601 (15.5).

Step 2: 3-chloro-5-(isopropylsulfanyl)benzoic acid

To a solution of 585 mg (2.76 mmol) 3-chloro-5-(isopropylsulfanyl)benzonitrile in 20 mL ethanol were added 2.1 mL of a 50% aqueous solution of sodium hydroxide. The mixture was heated at reflux for 45 min. The volatiles were then removed under reduced pressure. Water was added, the pH adjusted to pH 1 by the addion of 1 M hydrochloric acid and the mixture repeatedly extracted with ethyl acetate. The combined organic layers were washed with brine and then dried with Na_2SO_4. The solvent was removed under reduced pressure to provide 610 mg of 3-chloro-5-(isopropylsulfanyl)benzoic acid.

^{1}H-NMR (400 MHz, d_6-DMSO): NMR peaklist: δ= 7.7701 (1.6); 7.7662 (3.0); 7.7624 (2.1); 7.7195 (1.7); 7.7146 (2.5); 7.7110 (2.0); 7.6738 (1.9); 7.6691 (3.0); 7.6645 (1.5); 3.7020 (0.4); 3.6854 (1.1);

3.6688 (1.5); 3.6522 (1.1); 3.6356 (0.4); 2.5160 (3.1); 2.5115 (6.7); 2.5069 (9.1); 2.5023 (6.5); 2.4977 (3.1); 1.2786 (16.0); 1.2620 (15.4); -0.0002 (4.8).

ESI mass [m/z]: 231.1 $[M+H]^+$

Step 3: 3-chloro-5-(isopropylsulfanyl)-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}-benzamide (example I-046)

To 321 mg (1.39 mmol) of 3-chloro-5-(isopropylsulfanyl)benzoic acid were added 15 mL acetonitrile, 922 mg (2.43 mmol) N,N,N',N'-tetramethyl-O-(1H-benzotriazol-1-yl)uronium hexafluorophosphate (HBTU) and 0.47 mL (3.6 mmol) *N,N*-diisopropylethylamine. The mixture was stirred for 1 h a room temperature. Then 315 mg (1.39 mmol) of (1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethanamine hydrochloride were added. The reaction mixture was stirred over night at room temperature before it was purified by reversed phase chromatography (H_2O / acetonitrile) to provide 302 mg of 3-chloro-5-(isopropylsulfanyl)-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}benzamide.

^{1}H-NMR (400 MHz, d_6-DMSO): see NMR peak list in table 1.

ESI mass [m/z]: 403.2 $[M+H]^+$

Step 4: 3-chloro-5-(isopropylsulfonyl)-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}-benzamide (example I-051)

To a solution of 150 mg (0.37 mmol) 3-chloro-5-(isopropylsulfanyl)-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}benzamide in 2 ml CH_2Cl_2 at 0 °C were added 193 mg (70% purity, 0.78 mmol) 3-chloroperoxybenzoic acid. The reaction mixture was stirred for 2 h at 0 °C after which a saturated aqueous $NaHCO_3$ solution was added. The layers were separated and the aqueous layer repeatedly extracted with CH_2Cl_2. The combined organic layers were washed with brine and then dried with Na_2SO_4. The solvent was removed under reduced pressure and the residue purified by chromatography on silica (cyclohexane / ethyl acetate) to provide 121 mg of 3-chloro-5-(isopropylsulfonyl)-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}benzamide.

^{1}H-NMR (400 MHz, d_6-DMSO): see NMR peak list in table 1.

ESI mass [m/z]: 435.2 $[M+H]^+$

3-chloro-5-cyclopropylbenzoic acid

A mixture of 1.00 g (3.37 mmol) methyl 3-chloro-5-iodobenzoate, 375 mg (4.36 mmol) cyclopropylboronic acid, 2.5 g (11.7 mmol) K_3PO_4, 95 mg (0.33 mmol) tricyclohexylphosphine in 20

mL toluene and 1 mL H_2O was degassed by purging with argon. 38 mg (0.16 mmol) palladium(II) acetate were added. The mixture was heated for 3 h at 100 °C and over night at room temperature. Another 290 mg (3.37 mmol) cyclopropylboronic acid and 38 mg (0.16 mmol) palladium(II) acetate were added and the mixture heated over night at reflux. Water and ethyl acetate were added, the layers separated and the aqueous layer was extracted several times with ethyl acetate. The combined organic layers were dried with Na_2SO_4, filtered and concentrated under reduced pressure. The residue was purified by chromatography on silica (cyclohexane / ethyl acetate) and reversed phase chromatography (H_2O / acetonitrile) to provide 381 mg of methyl 3-chloro-5-cyclopropylbenzoate

A solution of 378 mg (1.79 mmol) methyl 3-chloro-5-cyclopropylbenzoate in 6 mL methanol was treated with 5 mL of a 1 M aqueous solution of sodium hydroxide. The mixture was stirred over night at room temperature. The volatiles were then removed under reduced pressure. Water was added, the pH adjusted to pH 1 by the addion of 1 M hydrochloric acid and the mixture repeatedly extracted with ethyl acetate. The combined organic layers were dried with Na_2SO_4 and the solvent removed under reduced pressure to provide 338 mg of 3-chloro-5-cyclopropylbenzoic acid.

^{1}H-NMR (400 MHz, d_6-DMSO): NMR peak list: δ= 13.2677 (3.0); 7.6530 (8.9); 7.6483 (13.0); 7.6443 (10.4); 7.5890 (9.2); 7.5853 (16.0); 7.5815 (8.8); 7.3987 (9.2); 7.3941 (15.6); 7.3894 (8.5); 3.3324 (4.4); 2.6744 (0.4); 2.5279 (0.9); 2.5232 (1.4); 2.5145 (21.3); 2.5100 (43.8); 2.5055 (58.0); 2.5009 (41.7); 2.4964 (19.9); 2.3323 (0.4); 2.0807 (1.5); 2.0681 (3.2); 2.0597 (3.4); 2.0557 (2.2); 2.0472 (6.6); 2.0387 (2.2); 2.0346 (3.6); 2.0262 (3.5); 2.0136 (1.7); 1.0376 (4.0); 1.0263 (10.8); 1.0209 (10.9); 1.0170 (5.5); 1.0102 (5.6); 1.0053 (11.2); 0.9998 (10.4); 0.9893 (4.7); 0.9726 (0.4); 0.9519 (0.4); 0.8186 (0.4); 0.8055 (0.4); 0.7809 (5.0); 0.7699 (12.3); 0.7648 (12.0); 0.7575 (11.0); 0.7525 (13.4); 0.7409 (4.0); -0.0002 (11.0); -0.0084 (0.3).

ESI mass [m/z]: 197.2 $[M+H]^+$

<u>Synthesis of 1-(4-fluorophenyl)-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}-3-(trifluoromethyl)-1H-pyrazole-5-carboxamide (example I-052)</u>

<u>Step 1</u>: 1-(4-fluorophenyl)-3-(2-furyl)-5-(trifluoromethyl)-1H-pyrazole and 1-(4-fluorophenyl)-5-(2-furyl)-3-(trifluoromethyl)-1H-pyrazole

To a solution of 1.00 g (4.85 mmol) 4,4,4-trifluoro-1-(2-furyl)butane-1,3-dione in 15 mL ethanol were added 2.1 mL (12 mmol) *N,N*-diisopropylethylamine and 1.18 g (7.3 mmol) (4-fluorophenyl)hydrazine hydrochloride. The mixture was stirred over night at room temperature before all volatiles were removed under reduced pressure. To the residue were added water and ethyl acetate. The layers were separated and the aqueous layer was repeatedly extracted with ethyl acetate. The combined organic layers were

washed with brine and dried with Na_2SO_4. The solvent was removed under reduced pressure. The residue was dissolved in 15 mL tetrahydrofuran. 7 mL 3 M hydrochloric acid were added and the mixture heated at 100 °C for 3 h. The solvent was then removed under reduced pressure. To the residue were added water and ethyl acetate. The layers were separated and the aqueous layer was repeatedly extracted with ethyl acetate. The combined organic layers were washed with brine and dried with Na_2SO_4. The solvent was removed under reduced pressure and the residue adsorbed onto reversed phase silica gel. Purification by reversed phase chromatography (H_2O / acetonitrile) provided 812 mg of an inseparable mixture of 1-(4-fluorophenyl)-3-(2-furyl)-5-(trifluoromethyl)-1H-pyrazole and 1-(4-fluorophenyl)-5-(2-furyl)-3-(trifluoromethyl)-1H-pyrazol.

^{1}H NMR (DMSO-d_6, 400 MHz): NMR peak list: δ= 7.8066 (3.4); 7.8049 (3.4); 7.8024 (3.4); 7.7757 (10.1); 7.7715 (10.0); 7.6722 (2.0); 7.6600 (2.3); 7.6500 (2.7); 7.6380 (2.5); 7.6176 (0.9); 7.6092 (6.9); 7.6044 (3.2); 7.5970 (7.6); 7.5921 (5.3); 7.5870 (9.1); 7.5797 (3.9); 7.5749 (8.5); 7.5665 (1.0); 7.4735 (5.9); 7.4670 (3.4); 7.4452 (6.1); 7.4371 (9.2); 7.4314 (3.4); 7.4230 (4.4); 7.4154 (14.7); 7.3985 (2.8); 7.3935 (6.7); 7.3853 (0.8); 7.2688 (16.0); 6.9756 (3.1); 6.9672 (3.3); 6.6456 (2.3); 6.6410 (2.4); 6.6374 (2.3); 6.6331 (2.0); 6.5590 (6.2); 6.5545 (6.6); 6.5505 (6.8); 6.5462 (6.2); 6.2806 (9.5); 6.2719 (8.9); 3.3267 (119.8); 2.6714 (1.0); 2.5065 (133.8); 2.5025 (166.0); 2.4984 (121.6); 2.3291 (1.0); -0.0004 (25.2).

ESI mass [m/z]: 297.1 $[M+H]^-$

<u>Step 2</u>: 1-(4-fluorophenyl)-3-(trifluoromethyl)-1H-pyrazole-5-carboxylic acid and 1-(4-fluorophenyl)-5-(trifluoromethyl)-1H-pyrazole-3-carboxylic acid

777 mg (2.62 mmol) of the mixture of 1-(4-fluorophenyl)-3-(2-furyl)-5-(trifluoromethyl)-1H-pyrazole and 1-(4-fluorophenyl)-5-(2-furyl)-3-(trifluoromethyl)-1H-pyrazol obtained in the previous step was dissolved in a mixture of 8 mL acetonitrile, 8 ml CH_2Cl_2 and 12 mL water. To this mixture were added 54 mg (0.26 mmol) Ruthenium(III) chloride followed by 2.81 g (13.1 mmol) sodium periodate. The reaction mixture was stirred for 5 h at room temperature. 20 mL of 1 M hydrochloric acid were added and the mixture filtered over celite, washing with ethyl acetate and water. The layers were separated and the aqueous layer repeatedly extracted with ethyl acetate. The combined organic layers were washed with brine and dried with Na_2SO_4. The solvent was removed under reduced pressure and the residue adsorbed onto reversed phase silica gel. Purification by reversed phase chromatography (H_2O / acetonitrile) provided 101 mg 1-(4-fluorophenyl)-5-(trifluoromethyl)-1H-pyrazole-3-carboxylic acid in 73 % purity, 155 mg 1-(4-fluorophenyl)-3-(trifluoromethyl)-1H-pyrazole-5-carboxylic acid in 89 % purity and another fraction of 139 mg 1-(4-fluorophenyl)-3-(trifluoromethyl)-1H-pyrazole-5-carboxylic acid in 98 % purity.

1-(4-fluorophenyl)-5-(trifluoromethyl)-1H-pyrazole-3-carboxylic:

^{1}H NMR (DMSO-d_6, 400 MHz): NMR peak list δ= 13.4416 (1.2); 8.3160 (0.6); 7.7337 (0.4); 7.6983 (0.7); 7.6895 (6.2); 7.6775 (6.6); 7.6724 (4.4); 7.6672 (7.8); 7.6552 (7.4); 7.6462 (0.9); 7.6362 (2.4); 7.6307 (0.9); 7.6240 (2.5); 7.6190 (1.4); 7.6137 (2.9); 7.6071 (1.0); 7.6015 (2.7); 7.5366 (16.0); 7.5245 (0.5); 7.5120 (0.4); 7.4912 (4.6); 7.4827 (10.2); 7.4770 (3.0); 7.4701 (1.6); 7.4655 (3.6); 7.4610 (15.6); 7.4559 (3.4); 7.4515 (1.2); 7.4445 (2.6); 7.4389 (7.9); 7.4302 (0.6); 7.3893 (0.3); 7.3806 (2.9); 7.3751 (1.0); 7.3678 (0.5); 7.3588 (4.7); 7.3538 (1.1); 7.3422 (0.8); 7.3367 (2.3); 5.7562 (2.2); 3.3275 (47.8); 2.6807 (0.5); 2.6762 (1.0); 2.6717 (1.5); 2.6672 (1.1); 2.6625 (0.5); 2.5252 (4.4); 2.5204 (6.8); 2.5117 (86.0); 2.5073 (173.8); 2.5028 (227.5); 2.4982 (163.1); 2.4937 (78.4); 2.3386 (0.5); 2.3342 (1.0); 2.3296 (1.4); 2.3251 (1.0); 2.3204 (0.5); 0.0080 (0.8); -0.0002 (26.3); -0.0085 (0.9).

ESI mass [m/z]: 275.1 $[M+H]^-$

1-(4-fluorophenyl)-3-(trifluoromethyl)-1H-pyrazole-5-carboxylic acid:

^{1}H NMR (DMSO-d_6, 400 MHz): NMR peak list δ= 8.3156 (0.4); 7.6460 (0.8); 7.6373 (8.1); 7.6318 (2.9); 7.6251 (8.6); 7.6200 (4.9); 7.6147 (9.7); 7.6081 (3.4); 7.6026 (9.2); 7.5939 (1.0); 7.5005 (16.0); 7.3903 (1.1); 7.3816 (9.5); 7.3760 (2.9); 7.3687 (1.6); 7.3645 (3.3); 7.3597 (15.9); 7.3547 (3.3); 7.3432 (2.6); 7.3377 (7.8); 7.3289 (0.7); 5.7558 (8.6); 3.3341 (12.6); 2.6760 (0.7); 2.6714 (1.0); 2.6669 (0.7); 2.5249 (2.8); 2.5201 (4.4); 2.5114 (60.4); 2.5070 (122.2); 2.5025 (160.1); 2.4979 (115.0); 2.4935 (55.6); 2.3338 (0.7); 2.3293 (1.0); 2.3248 (0.7); 2.3202 (0.4); 0.0080 (0.5); -0.0002 (17.5); -0.0085 (0.6).

ESI mass [m/z]: 275.1 $[M+H]^-$

<u>Step 3:</u> 1-(4-fluorophenyl)-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}-3-(trifluoromethyl)-1H-pyrazole-5-carboxamide (example I-052)

A mixture of 130 mg (0.47 mmol) 1-(4-fluorophenyl)-3-(trifluoromethyl)-1H-pyrazole-5-carboxylic acid, 328 mg (0.86 mmol) 1-[bis(dimethylamino)methylene]-1H-1,2,3-triazolo[4,5-b]pyridinium 3-oxid hexafluorophosphate (HATU), 0.17 mL (1.3 mmol) *N*-ethyldiisopropylamine and 2 mL acetonitrile was stirred for 45 min at room temperature. 98 mg (0.43 mmol) (1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethanamine hydrochloride were added and the mixture stirred over night at room temperature. The mixture was then diluted with acetonitrile and adsorbed onto reversed phase silica gel. Purification by reversed phase chromatography (H_2O / acetonitrile) provided 146 mg 1-(4-fluorophenyl)-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}-3-(trifluoromethyl)-1H-pyrazole-5-carboxamide.

^{1}H-NMR (400 MHz, d_6-DMSO): see NMR peak list in table 1

ESI mass [m/z]: 447.2 $[M+H]^-$

Synthesis of 3-chloro-5-(N-methoxyethanimidoyl)-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}benzamide (example I-057)

Step 1: 3-acetyl-N-[(2S)-1-amino-1-oxopropan-2-yl]-5-chlorobenzamide

2.494 g (20 mmol) L-alaninamide hydrochloride, 0.994 g (5 mmol) of 3-acetyl-5-chlorobenzoic acid (commercially available) and 2.62 mL (15 mmol) DIPEA were dissolved in 18.6 mL DMF. 4.4 mL (7.5 mmol) of a T3P® solution (50 wt. % in EtOAc) were added drop wise and the mixture was stirred over night at room temperature. The solvents were removed under reduced pressure, the remaining residue was taken up with 15 mL water and 3 mL aqueous saturated $NaHCO_3$ solution and extracted with 15 mL EtOAc. The aqueous layer was extracted three times more with EtOAc, the combined organic layers were washed with brine, dried over Na_2SO_4, filtered, and evaporated under reduced pressure to obtain 360 mg (yield: 26.7 %) of an off-white solid which was used as such in the next step.

^{1}H-NMR (400 MHz, d_6-DMSO): 8.86 – 8.85 (d, 1H, NH), 8.38 (s, 1H), 8.21 (s, 1H), 8.10 (s, 1H), 7.45 (broad s, 1H, NH_2), 7.02 (broad s, 1H, NH_2), 4.45 – 4.40 (quint., 1H), 2.66 (s, 3H), 1.36 – 1.34 (d, 3H).

ESI mass [m/z]: 269.2 $[M+H]^+$

Step 2: N-[(2S)-1-amino-1-oxopropan-2-yl]-3-chloro-5-(N-methoxyethanimidoyl)benzamide

360 mg (1.34 mmol) of 3-acetyl-N-[(2S)-1-amino-1-oxopropan-2-yl]-5-chlorobenzamide, 134 mg (1.60 mmol) methoxyamine hydrochloride and 0.224 mL (1.6 mmol) Et_3N were dissolved in 15 mL acetonitrile and refluxed for 48 h. The solvents were removed under reduced pressure, the remaining residue was taken up with dichloromethane and washed with water. The aqueous phase was extracted three times with dichloromethane, the combined organic layers were dried over Na_2SO_4, filtered, and evaporated under reduced pressure to obtain 304 mg (yield: 70.8 %) of an off-white solid which was used as such in the next step.

^{1}H-NMR (400 MHz, d_6-DMSO): 8.73 – 8.71 (d, 1H, NH), 8.08 (s, 1H), 7.99 (s, 1H), 7.84 (s, 1H), 7.42 (broad s, 1H, NH_2), 7.00 (broad s, 1H, NH_2), 4.44 – 4.39 (quint., 1H), 3.32 (s, 3H), 2.21 (s, 3H), 1.34 – 1.32 (d, 3H).

ESI mass [m/z]: 298.1 $[M+H]^+$

Step 3: 3-chloro-5-(N-methoxyethanimidoyl)-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}benzamide (example I-057)

304 mg (1.02 mmol) of N-[(2S)-1-amino-1-oxopropan-2-yl]-3-chloro-5-(N-methoxyethanimidoyl)benzamide and 182 mg (1.53 mmol) N,N-dimethylformamide dimethyl acetal were dissolved in 20 mL dichloromethane and refluxed for 2 h. The solvents were removed under

reduced pressure, the remaining residue was taken up with a mixture of 10 mL dioxane and 1 mL HOAc. 137 mg (1.24 mmol) of 2-hydrazinopyrimidine were added and the reaction mixture was stirred at 50 °C over night. After evaporation of the solvents under reduced pressure, the residue was dissolved in dichloromethane, washed with an aqueous saturated $NaHCO_3$ solution, and the separated organic phase was reduced *in vacuo* again. Purification by reversed phase chromatography (H_2O / acetonitrile) provided 148 mg (yield: 35.2 %) of the title compound as an off-white solid.

^{1}H-NMR (400 MHz, d_6-DMSO): see NMR peaklist in table 1.

ESI mass [m/z]: 400.2 $[M+H]^+$

Synthesis of 3-chloro-N-{(1R)-1-[1-(5-cyanopyridin-2-yl)-1H-1,2,4-triazol-5-yl]-2-methoxyethyl}-5-(methylsulfonyl)benzamide (example I-058)

Step 1: N-[3-chloro-5-(methylsulfonyl)benzoyl]-O-methyl-L-serine

1 g (8.39 mmol) of O-methyl-L-serine and 3.22 mL (18.4 mmol) DIPEA were dissolved in 50 mL dichloromethane. To this reaction mixture, 2.23 g (8.81 mmol) of 3-chloro-5-(methylsulfonyl)benzoyl chloride dissolved in 20 mL dichloromethane were added drop wise. The reaction mixture was stirred at room temperature over night, followed by work-up with water. The aqueous phase was extracted three times with dichloromethane, the combined organic layers were dried over Na_2SO_4, filtered and evaporated under reduced pressure. 622 mg of the title compound were obtained after purification *via* pHPLC and were used as such in the next step.

ESI mass [m/z]: 334.0 $[M+H]^+$

Step 2: N-[(2S)-1-amino-3-methoxy-1-oxopropan-2-yl]-3-chloro-5-(methylsulfonyl)benzamide

622 mg (1.85 mmol) of N-[3-chloro-5-(methylsulfonyl)benzoyl]-O-methyl-L-serine were dissolved in 18.6 mL THF. 0.24 mL (1.85 mmol) isobutylchloroformate and subsequently 0.204 mL (1.85 mmol) N-methyl morpholine were added drop wise at -15 °C and the mixture was stirred at -15 °C for 15 min. 0.42 mL (2.68 mmol) ammonia (25% wt% in water) were added drop wise at -15 °C. The temperature was kept for 45 min, followed by quenching with brine at room temperature. The reaction mixture was extracted with EtOAc three times, the combined organic layers were dried over Na_2SO_4, filtered and evaporated under reduced pressure. 473 mg of the title compound were obtained and used as such in the next step.

ESI mass [m/z]: 335.1 $[M+H]^+$

Step 3: 3-chloro-N-{(1R)-1-[1-(5-cyanopyridin-2-yl)-1H-1,2,4-triazol-5-yl]-2-methoxyethyl}-5-(methylsulfonyl)benzamide (example I-058)

248 mg (0.74 mmol) of N-[(2S)-1-amino-3-methoxy-1-oxopropan-2-yl]-3-chloro-5-(methylsulfonyl)benzamide and 132 mg (1.11 mmol) N,N-dimethylformamide dimethyl acetal were dissolved in 20 mL dichloromethane and refluxed for 2 h. The solvents were removed under reduced pressure, the remaining residue was taken up with a mixture of 10 mL dioxane and 1 mL HOAc. 121 mg (0.90 mmol) of 6-hydrazinonicotinonitrile were added and the reaction mixture was stirred at 50 °C over night. After evaporation of the solvents under reduced pressure, the residue was dissolved in dichloromethane, washed with an aqueous saturated $NaHCO_3$ solution, and the separated organic phase was reduced *in vacuo* again. Purification by reversed phase chromatography (H_2O / acetonitrile) provided 77 mg (yield: 19.6 %) of the title compound.

^{1}H-NMR (400 MHz, d_6-DMSO): see NMR peaklist in table 1.

ESI mass [m/z]: 461.2 $[M+H]^+$

Synthesis of 3-chloro-5-[(phenylsulfonyl)amino]-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}benzamide (example I-086)

Step 1: methyl 3-chloro-5-[(phenylsulfonyl)amino]benzoate

To a solution of 0.52 g (2.83 mmol) methyl 3-amino-5-chlorobenzoate in chloroform (5 mL) at 0 °C were added 1.0 g (5.65 mmol) benzenesulfonyl chloride and 0.45 g (5.66 mmol) pyridine and then the reaction mixture was stirred at room temperature. Once the conversion was complete the mixture was poured into a mixture of ice water and a saturated aqueous NH_4Cl solution and extracted with ethyl acetate. The combined organic phases were washed with brine, dried and the solvent was removed under reduced pressure. The remaining residue was chromatographed with a cyclohexane/ethyl acetate gradient on silica gel to afford 0.66 g (purity: 99.5%; yield: 71.6 %) of the title compound.

ESI mass [m/z]: 326.0 $[M+H]^+$

Rt = 1.24 min (instrument: LC-MS6)

Step 2: 3-chloro-5-[(phenylsulfonyl)amino]benzoic acid

A solution of 0.66 g (2.03 mmol) methyl 3-chloro-5-[(phenylsulfonyl)amino]benzoate in a mixture of 2 ml ethanol/THF (1:1) was treated with 8.48 g (8.14 mmol) of a 1 M aqueous solution of sodium hydroxide. The reaction mixture was stirred 2 hrs at room temperature. The mixture was poured into a

mixture of ice water, ethyl acetate and aqueous HCl 10% solution. The layers were separated and the aqueous layer was repeatedly extracted with ethyl acetate, washed with water and brine and finally dried. The solvent was removed under reduced pressure to provide 0.62 g (purity: 97.0%; yield: 94.0 %) of the title compound.

ESI mass [m/z]: 312.0 $[M+H]^+$

Rt = 1.00 min (instrument: LC-MS7)

Step 3: 3-chloro-5-[(phenylsulfonyl)amino]-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}benzamide (example I-086)

A solution of 0.21 g (0.66 mmol) 3-chloro-5-[(phenylsulfonyl)amino]benzoic acid in 5 dichloromethane was treated with 0.30 g (0.79 mmol) 1-[bis(dimethylamino)methylene]-1H-1,2,3-triazolo[4,5-b]pyridinium 3-oxid hexafluorophosphate (HATU) and 0.16 ml (0.92 mmol) *N,N*-diisopropylethylamine and then the mixture was stirred 30 minutes at room temperature. After that a solution of 0.15 g (0.66 mmol) (1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethanamine hydrochloride (1:1) and 0.23 ml (1.32 mmol) *N,N*-diisopropylethylamine in 2.5 ml dichloromethane previously stirred for 30 minutes was added to the reaction and the mixture was stirred over night at room temperature. The mixture was treated with a saturated aqueous NaH_2PO_4 solution and extracted with dichloromethane. The combined organic layers were dried and finally the volatiles was reduced under pressure. The residue was purified by reversed phase chromatography (H_2O/acetonitrile) to provide 36 mg (purity: 95.5%; yield: 11.0 %) of the title compound.

^{1}H-NMR (400 MHz, d_6-DMSO): see NMR peaklist in table 1.

ESI mass [m/z]: 484.1 $[M+H]^+$

Rt = 0.97 min (instrument: LC-MS6)

Synthesis of 3-chloro-*N*-{(1*S*)-1-[1-(2-pyrimidinyl)-3-(trifluoromethyl)-1*H*-1,2,4-triazol-5-yl]ethyl}-5-(methylsulfonyl)benzamide (example I-091)

Step 1: 2-[2-pyrimidinyl]hydrazide-2,2,2-trifluoro-ethanimidic acid

To 1.65 g (15 mmol) 2-hydrazinyl-pyrimidine in methanol (15 mL) 3.87 g (21 mmol) 2,2,2-trifluoro-ethanimidic acid ethyl ester (purity: 76.5%) was added, and the reaction mixture was stirred at room temperature over night. The solvent was evaporated and the residue was then stirred with n-hexane (30

mL) and ethyl acetate (3 mL). The brownish precipitate was separated and dried to obtain 2.6 g (purity: 94.6 %; yield: 7.8 %) 2-[2-pyrimidinyl]hydrazide-2,2,2-trifluoro-ethanimidic acid.

ESI mass [m/z]: 206.0 $[M+H]^+$

R_t = 0.233 min (instrument: LC-MS 7)

Step 2: 2-[(1*S*)-1-[3-(trifluoromethyl)-1-(2-pyrimidinyl)-1*H*-1,2,4-triazol-5-yl)ethyl]-1*H*-isoindole-1,3(2*H*)-dione

To 2.55 g (11.78 mmol) 2-[2-pyrimidinyl]hydrazide-2,2,2-trifluoro-ethanimidic acid in pyridine (40 mL), 2.80g (11.78 mmol) (α*S*)-1,3-dihydro-α-methyl-1,3-dioxo-2*H*-isoindole-2-acetyl chloride (see preparation from (α*S*)-1,3-dihydro-α-methyl-1,3-dioxo-2*H*-isoindole-2-acetic acid (Pht-Ala-OH purchased from ABCR) and oxalyl chloride: *Tetrahedron: Asymmetry*, 21(8), 936-942, 2010) was added, and the reaction mixture was stirred at room temperature over night. Then water (200 mL) was added and the mixture was extracted with dichloromethane (200 mL). The organic phase was separated, dried and the solvent was evaporated. The remaining solid residue was chromatographed with a cyclohexane/acetone gradient on silica gel to afford 1.65 g (purity: 93.4%; yield: 33.6 %) of the title compound as a colorless solid.

ESI mass [m/z]: 389.1 $[M+H]^+$

R_t = 1.20 min (instrument: LC-MS 7)

Step 3: (α*S*)-methyl-1-(2-pyrimidinyl)-1*H*-1,2,4-triazole-5-methane amine

To 1.6 g (4.12 mmol) 2-[(1*S*)-1-[3-(trifluoromethyl)-1-(1-(2-pyrimidinyl)-1*H*-1,2,4-triazol-5-yl)ethyl]-1*H*-isoindole-1,3(2*H*)-dione in ethanol (40 mL), 937.6 mg (10.30 mmol) hydrazine hydrate was added, and the reaction mixture was heated under reflux. After 30 minutes a colorless precipitate was formed. The reaction mixture was stirred and heated under reflux one additional hour, aceton (20 mL) was added and the heating was continued for further 30 minutes. The rection mixture was concentrated and the solid residue was treated with ethanol. Then, the solvent was evaporated to afford 660 mg (purity: 70 %; yield: 43.4%) (α*S*)-methyl-1-(2-pyrimidinyl)-1*H*-1,2,4-triazole-5-methane amine, which was used for the *N*-benzoylation reaction (step 4) without purification.

ESI mass [m/z]: 259.0 $[M+H]^+$

R_t = 0.14 min (broad) (instrument: LC-MS 7)

Step 4: 3-chloro-N-{(1S)-1-[1-(2-pyrimidinyl)-3-(trifluoromethyl)-1*H*-1,2,4-triazol-5-yl]ethyl}-5-(methylsulfonyl)benzamide

To 221.3 mg (0.60 mmol) (αS)-methyl-1-(2-pyrimidinyl)-1*H*-1,2,4-triazole-5-methane amine, 145.1 mg (0.60 mmol) 3-chloro-5-(methylsulfonyl)-benzoic acid, 100.8 mg (0.78 mmol) *N,N*-diisopropylethylamine (Hünig's Base) in *N,N*-dimethylformamide (DMF) (5 mL), 273.7 mg (0.72 mmol) [*O*-(7-azabenzotriazol-1-yl)-*N,N,N',N'*-tetramethyluronium-hexafluorophosphate] (HATU) was added, and the reaction mixture was stirred at room temperature over night. The rection mixture was concentrated and the solid residue was treated with dichloromethane and then extracted with a saturated $NaHCO_3$ solution and water. The organic phase was separated, dried and the solvent was evaporated. The remaining solid residue was chromatographed with a cyclohexane/acetone gradient on silica gel to afford 100 mg (purity: 98.4%; yield: 34.5 %) of the title compound.

^{1}H-NMR (400 MHz, d_6-DMSO): see NMR peaklist in table 1.

ESI mass [m/z]: 475.0 $[M+H]^+$

R_t = 1.09 min (instrument: LC-MS 7)

Synthesis of 3-chloro-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}-5-[(2,2,2-trifluoroethyl)sulfinyl]benzamide (example I-092), and

Synthesis of 3-chloro-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}-5-[(2,2,2-trifluoroethyl)sulfonyl]benzamide (example I-093)

Step 1: 3-chloro-5-[(2,2,2-trifluoroethyl)sulfanyl]benzonitrile

To a suspension of 310 mg (7.1 mmol) sodium hydride (55% suspension in mineral oil) in 15 mL anhydrous *N,N*-dimethylformamide were added carefully 0.74 mL (8.35 mmol) 2,2,2-trifluoroethanethiol. After 30 min stirring at room temperature 1.00 g (6.42 mmol) 3-chloro-5-fluorobenzonitrile was added. The mixture was stirred for 5 hrs at room temperature and then quenched by the addition of 1 mL H_2O and 1.1 mL glacial acetic acid. The volatiles were removed under reduced pressure. Water and ethyl acetate were added to the residue. The layers were separated and the aqueous layer repeatedly extracted with ethyl acetate. The combined organic layers were washed with brine and then dried with Na_2SO_4. The solvent was removed under reduced pressure and the residue purified by reversed phase chromatography (H_2O/acetonitrile) to provide 1.40 g of 3-chloro-5-[(2,2,2-trifluoroethyl)sulfanyl]benzonitrile.

^{1}H-NMR (400 MHz, d_6-DMSO): 8.03 – 8.02 (m, 1H), 7.98 – 7.97 (m, 1H), 7.93 – 7.92 (m, 1H), 4.30 – 4.22 (q, 2H).

ESI mass [m/z]: 252.1 $[M+H]^+$

Step 2: 3-chloro-5-[(2,2,2-trifluoroethyl)sulfanyl]benzoic acid

A mixture of 800 mg (3.17 mmol) 3-chloro-5-[(2,2,2-trifluoroethyl)sulfanyl]benzonitrile, 3.5 mL water and 3.6 mL concentrated sulfuric acid was heated 2 days at 100 °C. Water and ethyl acetate were added. The layers were separated and the aqueous layer repeatedly extracted with ethyl acetate. The combined organic layers were washed with brine and then dried with Na_2SO_4. The solvent was removed under reduced pressure and the residue purified by reversed phase chromatography (H_2O/acetonitrile) to provide 728 mg of 3-chloro-5-[(2,2,2-trifluoroethyl)sulfanyl]benzoic acid.

^{1}H-NMR (400 MHz, d_6-DMSO): 13.55 (s, 1H, COOH), 7.91 – 7.89 (m, 2H), 7.77 – 7.76 (m, 1H), 4.23 – 4.16 (q, 2H).

ESI mass [m/z]: 269.0 $[M-H]^-$

Step 3: 3-chloro-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}-5-[(2,2,2-trifluoroethyl)sulfanyl]benzamide

A mixture of 430 mg (1.58 mmol) 3-chloro-5-[(2,2,2-trifluoroethyl)sulfanyl]benzoic acid, 1.05 g (2.77 mmol) 1-[bis(dimethylamino)methylene]-1H-1,2,3-triazolo[4,5-b]pyridinium 3-oxid hexafluorophosphate (HATU), 0.53 mL (4.1 mmol) *N*-ethyldiisopropylamine and 5 mL acetonitrile was stirred for 60 min at room temperature. 400 mg (90% purity, 1.58 mmol) (1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethanamine hydrochloride were added and the mixture stirred over night at room temperature. The mixture was then diluted with acetonitrile and adsorbed onto reversed phase silica gel. Purification by reversed phase chromatography (H_2O/acetonitrile) provided 440 mg 3-chloro-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}-5-[(2,2,2-trifluoroethyl)sulfanyl]benzamide.

^{1}H-NMR(400.2 MHz, d_6-DMSO): NMR peak list: δ= 9.1997 (1.6); 9.1816 (1.6); 8.9905 (10.8); 8.9783 (11.1); 8.1596 (8.2); 7.7896 (1.9); 7.7852 (4.2); 7.7807 (2.7); 7.7631 (2.8); 7.7593 (4.4); 7.7553 (2.2); 7.6735 (2.8); 7.6692 (3.9); 7.6652 (2.4); 7.6358 (3.0); 7.6236 (5.6); 7.6114 (2.8); 5.9856 (1.2); 5.9680 (2.0); 5.9503 (1.2); 5.7569 (0.9); 4.2048 (1.1); 4.1791 (3.4); 4.1534 (3.6); 4.1276 (1.2); 3.3240 (13.7); 2.6717 (0.4); 2.5254 (1.0); 2.5206 (1.5); 2.5120 (23.4); 2.5074 (48.5); 2.5029 (63.6); 2.4982 (44.4); 2.4936 (20.3); 2.3297 (0.4); 1.6339 (7.8); 1.6165 (7.7); 1.3975 (16.0); -0.0002 (8.5)

ESI mass [m/z]: 443.1 $[M+H]^+$

Step 4: 3-chloro-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}-5-[(2,2,2-trifluoroethyl)sulfinyl]benzamide (example I-092) and 3-chloro-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}-5-[(2,2,2-trifluoroethyl)sulfonyl]benzamide (example I-093)

To a solution of 140 mg (0.31 mmol) 3-chloro-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}-5-[(2,2,2-trifluoroethyl)sulfanyl]benzamide in 2 ml CH_2Cl_2 at 0 °C were added 74 mg (70% purity, 0.31 mmol) 3-chloroperoxybenzoic acid. The reaction mixture was stirred for 2.5 hrs at 0 °C after which a saturated aqueous $NaHCO_3$ solution was added. The layers were separated and the aqueous layer repeatedly extracted with CH_2Cl_2. The solvent was removed under reduced pressure and the residue purified by reversed phase chromatography (H_2O/acetonitrile) to provide 98 mg of 3-chloro-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}-5-[(2,2,2-trifluoroethyl)sulfinyl]benzamide (example I-092) and 38 mg of 3-chloro-N-{(1S)-1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}-5-[(2,2,2-trifluoroethyl)sulfonyl]benzamide (example I-093).

Example I-092 ^{1}H-NMR (400 MHz, d_6-DMSO): see NMR peaklist in table 1.

ESI mass [m/z]: 459.1 $[M+H]^+$

Example I-093 ^{1}H-NMR (400 MHz, d_6-DMSO): see NMR peaklist in table 1.

ESI mass [m/z]: 475.1 $[M+H]^+$

Synthesis of 3-chloro-5-(1-cyanocyclopropyl)-N-{(1S)-1-[1-(5-cyanopyridin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}benzamide (example I-119)

Step 1: methyl 3-chloro-5-(1-cyanocyclopropyl)benzoate

To a solution of methyl 3-chloro-5-(cyanomethyl)benzoate (12 g, 57.24 mmol) in 1,2-dibromoethane (150 mL) was added NaOH (4.58 g, 114.49 mmol) and benzyl(trimethyl)ammonium chloride (10.32 g, 68.69 mmol) in one portion at 25°C. The mixture was stirred at 65°C for 12 hrs and afterwards diluted with a saturated aqueous solution of NH_4Cl (50 mL) and extracted with EtOAc (50 mL). The aqueous phase was extracted two times with EtOAc (30 mL). The combined organic layers were dried over Na_2SO_4 and filtered. The solvent was removed under reduce pressure. The residue was purified by column chromatography (silica gel, petrol ether/EtOAc = 100/1 to 20/1) to give methyl 3-chloro-5-(1-cyanocyclopropyl)benzoate (8.8 g, 65% yield) as yellow oil.

Step 2: 3-chloro-5-(1-cyanocyclopropyl)benzoic acid

To a solution of methyl 3-chloro-5-(1-cyanocyclopropyl)benzoate (8.8 g, 37.34 mmol) in THF (100 mL) was added TMSOK (6.71 g, 52.28 mmol) in one portion at 25°C. The mixture was stirred at 25°C for 12 hrs. The reaction suspension was adjusted to pH = 5 to 6 with 1 M hydrochloric acid. The color of the suspension turned to orange. The mixture was diluted with H_2O (15 mL). The water was extracted

three times with EtOAc (50 mL). The combined organic layers were dried over Na_2SO_4, filtered and concentrated under reduce pressure to give 3-chloro-5-(1-cyanocyclopropyl)benzoic acid (5.05 g, 61% yield) as light yellow solid.

^{1}H-NMR (400 MHz, MeOD): δ, 7.85 – 7.93 (m, 2H), 7.55 (t, *J*=1.9 Hz, 1 H), 1.78 - 1.82 (m, 2 H), 1.55 - 1.59 (m, 2 H). Measured using a Varian 400MR NMR machine.

Step 3: 3-chloro-5-(1-cyanocyclopropyl)-N-{(1S)-1-[1-(5-cyanopyridin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}benzamide (example I-119)

A mixture of 116.7mg (0.52 mmol) 3-chloro-5-(1-cyanocyclopropyl)benzoic acid, 363.1 mg (0.95 mmol) 1-[bis(dimethylamino)methylene]-1H-1,2,3-triazolo[4,5-b]pyridinium 3-oxid hexafluoro-phosphate (HATU), 0.22 mL (1.67 mmol) *N*-ethyldiisopropylamine and 2 mL DMF was stirred for 45 min at room temperature. 150 mg (0.47 mmol) 6-{5-[(1S)-1-aminoethyl]-1H-1,2,4-triazol-1-yl}nicotinonitrile hydrochloride were added and the mixture stirred over night at room temperature. The mixture was then diluted with acetonitrile and adsorbed onto reversed phase silica gel. Purification by reversed phase chromatography (H_2O/acetonitrile) provided 164 mg of the title compound as colorless solid.

^{1}H-NMR (400 MHz, d_6-DMSO): see NMR peak list in table 1

ESI mass [m/z]: 418.3 $[M+H]^+$

Synthesis of N-{(1S)-1-[1-(5-cyanopyridin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}-3-cyclopropyl-5-fluorobenzenecarbothioamide (example I-120)

A solution of 70 mg (0.18 mmol) N-{(1S)-1-[1-(5-cyanopyridin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}-3-cyclopropyl-5-fluorobenzamide in 2.4 ml toluene was treated with 70 mg (0.18 mmol) Lawesson's reagent and then was stirred at 110 °C for 3 hrs. The reaction mixture was cooled to room temperature and a saturated aqueous $NaHCO_3$ solution was added. The toluene layer was separated and the aqueous phase was extracted repeatedly with ethyl acetate. The combined organic phases were washed with a saturated aqueous $NaHCO_3$ solution and then dried. The solvent was removed under reduced pressure and the residue purified by reversed phase chromatography (H_2O/acetonitrile) to provide 47 mg (purity: 100%; yield: 64.4%) of the title compound.

^{1}H-NMR (400 MHz, d_6-DMSO): see NMR peaklist in table 1.

ESI mass [m/z]: 393.1 $[M+H]^+$

Rt = 1.36 min (instrument: LC-MS6)

Synthesis of 6-(5-{(1S)-1-[3-chloro-5-(methylsulfonyl)benzamido]ethyl}-1H-1,2,4-triazol-1-yl)-N-cyclopropylnicotinamide (example I-129)

Step 1: methyl 6-(5-{(1S)-1-[3-chloro-5-(methylsulfonyl)benzamido]ethyl}-1H-1,2,4-triazol-1-yl)nicotinate (example I-122)

1.58 g (5.18 mmol) N-[(2S)-1-amino-1-oxopropan-2-yl]-3-chloro-5-(methylsulfonyl)benzamide (intermediate a*-002) was dissolved in 50 mL dichloromethane. 1.03 mL (7.77 mmol) N,N-dimethylformamide dimethylacetal was added and the mixture was stirred at 40 °C for 2.5 hrs. Solvents were removed, the remaining residue was dissolved in 50 mL acetic acid, 1.13 g (6.74 mmol) methyl 6-hydrazinonicotinate were added and the mixture was stirred at 80 °C for 3 hrs. The volatiles were removed under reduced pressure and the remaining residue was purified by silica gel chromatography (cyclohexane / EtOAc gradient) to obtain 1.88 g (78 %) of example I-122 as colorless solid.

^{1}H-NMR (400 MHz, d_6-DMSO): see NMR peaklist in table 1.

ESI mass [m/z]: 464.2 $[M+H]^+$

Rt = 0.96 min (instrument: LC-MS3)

Step 2: 6-(5-{(1S)-1-[3-chloro-5-(methylsulfonyl)benzamido]ethyl}-1H-1,2,4-triazol-1-yl)nicotinic acid (example I-126)

1.78 g (3.83 mmol) methyl 6-(5-{(1S)-1-[3-chloro-5-(methylsulfonyl)benzamido]ethyl}-1H-1,2,4-triazol-1-yl)nicotinate were suspended in 40 mL methanol. 10.7 mL (10.7 mmol) of 1M NaOH were added and the mixture was stirred at room temperature over night. Methanol was removed under reduced pressure and the remaining residue was acidified with 1N HCl to pH 1. The mixture was taken up with EtOAc and the unsoluble solid material was filtered and washed with water and EtOAc and dried under air ventilation to obtain 1.21 g (70%) of example I-126 as a colorless solid.

^{1}H-NMR (400 MHz, d_6-DMSO): see NMR peaklist in table 1.

ESI mass [m/z]: 450.2 $[M+H]^+$

Rt = 0.74 min (instrument: LC-MS3)

Step 3: 6-(5-{(1S)-1-[3-chloro-5-(methylsulfonyl)benzamido]ethyl}-1H-1,2,4-triazol-1-yl)-N-cyclopropylnicotinamide (example I-129)

A mixture of 110 mg (0.24 mmol) 6-(5-{(1S)-1-[3-chloro-5-(methylsulfonyl)benzamido]ethyl}-1H-1,2,4-triazol-1-yl)nicotinic acid, 185.4 mg (0.48 mmol) 1-[bis(dimethylamino)methylene]-1H-1,2,3-triazolo[4,5-b]pyridinium 3-oxid hexafluorophosphate (HATU), 0.11 mL (0.85 mmol) *N*-ethyldiisopropylamine and 2 mL DMF was stirred for 60 min at room temperature. 0.015 mL (0.22 mmol) cyclopropylamine were added and the mixture was stirred over night at room temperature. The mixture was then diluted with acetonitrile and adsorbed onto reversed phase silica gel. Purification by reversed phase chromatography (H_2O/acetonitrile) provided 48 mg (39%) of the title compound as colorless solid.

^{1}H-NMR (400 MHz, d_6-DMSO): see NMR peaklist in table 1.

ESI mass [m/z]: 489.3 $[M+H]^+$

Rt = 0.81 min (instrument: LC-MS3)

Synthesis of 3-chloro-N-[(1S)-1-(1-{5-[(cyclopropylcarbonyl)amino]pyridin-2-yl}-1H-1,2,4-triazol-5-yl)ethyl]-5-(methylsulfonyl)benzamide (example I-139)

Step 1: N-{(1S)-1-[1-(5-aminopyridin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}-3-chloro-5-(methylsulfonyl) benzamide (example I-135)

To a solution of 3.0 g (6.7 mmol) 3-chloro-5-(methylsulfonyl)-N-{(1S)-1-[1-(5-nitropyridin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}benzamide in a mixture of 155 mL ethanol and 15 mL acetic acid were added 1.49 g (26.6 mmol) iron powder. The mixture was heated at 80 °C for 1.5 h. All volatiles were removed under reduced pressure. Water, ethyl acetate and a saturated aqueous solution of $NaHCO_3$ were added to the residue. The layers were separated and the aqueous layer was extracted several times with ethyl acetate. The combined organic layers were washed with brine, dried with Na_2SO_4, filtered and concentrated under reduced pressure to give 2.70 g of N-{(1S)-1-[1-(5-aminopyridin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}-3-chloro-5-(methylsulfonyl)benzamide.

^{1}H-NMR (400 MHz, d_6-DMSO): see NMR peaklist in table 1.

ESI mass [m/z]: 421.1 $[M+H]^+$

Step 2: 3-chloro-N-[(1S)-1-(1-{5-[(cyclopropylcarbonyl)amino]pyridin-2-yl}-1H-1,2,4-triazol-5-yl)ethyl]-5-(methylsulfonyl)benzamide (example I-139)

A solution of 150 mg (0.35 mmol) N-{(1S)-1-[1-(5-aminopyridin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}-3-chloro-5-(methylsulfonyl)benzamide in 0.6 mL tetrahydrofuran was treated at 0 °C with 37 mg (0.35

mmol) cyclopropanecarbonyl chloride and 0.06 mL (0.4 mmol) triethylamine. The reaction mixture was stirred over night at room temperature. Water was added, the layers separated and the aqueous layer was extracted several times with ethyl acetate. The combined organic layers were washed with brine, dried with Na_2SO_4, filtered and concentrated under reduced pressure. The residue was purified by reversed phase chromatography (H_2O / acetonitrile) to provide 97 mg of 3-chloro-N-[(1S)-1-(1-{5-[(cyclopropylcarbonyl)amino]pyridin-2-yl}-1H-1,2,4-triazol-5-yl)ethyl]-5-(methylsulfonyl)benzamide.

^{1}H-NMR (400 MHz, d_6-DMSO): see NMR peaklist in table 1.

ESI mass [m/z]: 489.1 $[M+H]^+$

Analytical data of the compounds

The determination of $[M+H]^+$ or $[M-H]^-$ by LC-MS under acidic chromatographic conditions was done with 1 ml formic acid per liter acetonitrile and 0.9 ml formic acid per liter Millipore water as eluents. The column Zorbax Eclipse Plus C18 50 mm * 2.1 mm was used. The temperature of the column oven was 55 °C.

Instruments:

LC-MS3: Waters UPLC with SQD2 mass spectrometer and SampleManager autosampler. Linear gradient 0.0 to 1.70 minutes from 10 % acetonitrile to 95 % acetonitrile, from 1.70 to 2.40 minutes constant 95 % acetonitrile, flow 0.85 ml/min.

LC-MS6 and LC-MS7: Agilent 1290 LC, Agilent MSD, HTS PAL autosampler. Linear gradient 0.0 to 1.80 minutes from 10 % acetonitrile to 95 % acetonitrile, from 1.80 to 2.50 minutes constant 95 % acetonitrile, flow 1.0 ml/min.

The determination of $[M+H]^+$ by LC-MS under neutral chromatographic conditions was done with acetonitrile and Millipore water containing 79 mg/l ammonia carbonate as eluents.

Instruments:

LC-MS4: Waters IClass Acquity with QDA mass spectrometer and FTN autosampler (column Waters Acquity 1.7 µm 50 mm * 2.1 mm, oven temperature 45°C). Linear gradient 0.0 to 2.10 minutes from 10 % acetonitrile to 95 % acetonitrile, from 2.10 to 3.00 minutes constant 95 % acetonitrile, flow 0.7 ml/min.

LC-MS5: Agilent 1100 LC system with MSD mass spectrometer and HTS PAL autosampler (column: Zorbax XDB C18 1.8 µm 50 mm * 4.6 mm, oven temperature 55°C). Linear gradient 0.0 to 4.25 minutes from 10 % acetonitrile to 95 % acetonitrile, from 4.25 to 5.80 minutes constant 95 % acetonitrile, flow 2.0 ml/min.

The logP values reported in the tables and preparation examples above were determined in accordance with EEC directive 79/831 Annex V.A8 by HPLC (High Performance Liquid Chromatography) using a reversed-phase column (C18). Temperature 43°C. The calibration is effected with unbranched alkan-2-ones (having 3 to 16 carbon atoms), for which the logP values are known.

Optical rotations were measured using a Perkin Elmer model 341 polarimeter at a wavelength of 589 nm, a pathlength of 10 cm and a temperature of 20 °C. They are reported as specific rotations including the concentration "c" of the measured compound (in g / 100 mL) and the solvent used.

The determination of the ^{1}H NMR data was effected with a Bruker Avance III 400 Mhz equipped with a 1.7 mm TCI cryo probe, a Bruker Avance III 600 Mhz equipped with a 5 mm multi-nuclear cryo probe or a Bruker Avance NEO 600 Mhz equipped with a 5 mm TCI cryo probe with tetramethylsilane as reference (0.0) and the solvents CD_3CN, $CDCl_3$ or D_6-DMSO.

The NMR data of selected examples are listed either in conventional form (δ values, multiplet splitting, number of hydrogen atoms) or as NMR peak lists.

NMR peak list method

The ^{1}H NMR data of selected examples are stated in the form of ^{1}H NMR peak lists. For each signal peak, first the δ value in ppm and then the signal intensity in round brackets are listed. The pairs of δ value–signal intensity numbers for different signal peaks are listed with separation from one another by semicolons.

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

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

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

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

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

In addition, like conventional ^{1}H NMR printouts, they may show solvent signals, signals of stereoisomers of the target compounds which are likewise provided by the invention, and/or peaks of impurities.

In the reporting of compound signals within the delta range of solvents and/or water, our lists of ^{1}H NMR peaks show the standard solvent peaks, for example peaks of DMSO in DMSO-D_6 and the peak of water, which usually have a high intensity on average.

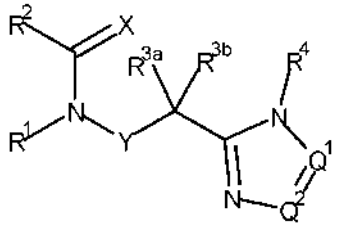
The peaks of stereoisomers of the target compounds and/or peaks of impurities usually have a lower intensity on average than the peaks of the target compounds (for example with a purity of > 90%).

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

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

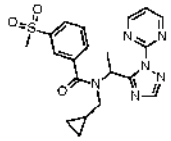
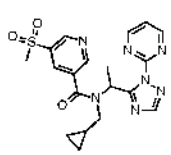
Further details of ^{1}H NMR peak lists can be found in the Research Disclosure Database Number 564025.

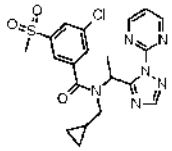
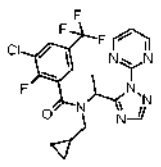
The compounds according to the invention described in table 1 below are likewise preferred compounds of the formula (I) according to the invention which are obtained according to or analogously to the preparation examples described above.

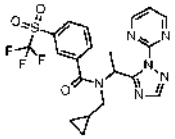


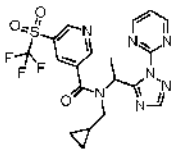
(I)

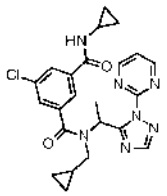
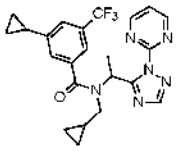
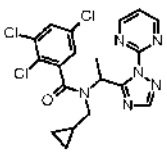
Table 1

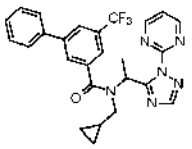
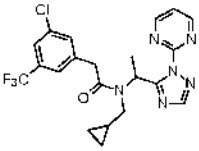
Example	Structure	NMR Peaklist[1)]	ESI mass [m/z][2)]
I-001		^{1}H-NMR(600.1 MHz, CD_3CN, 260 K): δ= 8.8882 (3.5); 8.8802 (3.5); 8.8570 (0.1); 8.8489 (0.1); 8.5820 (1.1); 8.5741 (1.1); 8.0826 (3.3); 8.0321 (1.0); 7.9388 (1.1); 7.9257 (1.2); 7.8312 (0.4); 7.8185 (0.4); 7.7208 (0.7); 7.6292 (0.8); 7.6163 (1.7); 7.6033 (0.9); 7.5246 (1.0); 7.5165 (1.8); 7.5085 (1.0); 7.5012 (0.3); 7.4882 (0.5); 7.4754 (0.4); 7.4559 (0.5); 7.4411 (2.2); 7.4040 (1.3); 7.3913 (1.1); 7.3756 (0.3); 7.3677 (0.6); 7.3598 (0.3); 6.3835 (0.3); 6.3720 (1.1); 6.3605 (1.1); 6.3489 (0.4); 6.0869 (0.1); 6.0758 (0.4); 6.0644 (0.4); 6.0533 (0.1); 3.6669 (0.2); 3.6565 (0.2); 3.6433 (0.3); 3.6329 (0.3); 3.4706 (0.3); 3.4590 (0.3); 3.4471 (0.2); 3.4354 (0.2); 3.2626 (0.1); 3.1677 (0.1); 3.1291 (0.2); 3.1033 (0.1); 3.0978 (0.1); 3.0542 (16.0); 2.9368 (0.1); 2.8728 (0.3); 2.8611 (0.3); 2.8467 (1.1); 2.8349 (1.2); 2.8262 (1.1); 2.8168 (1.1); 2.8001 (0.4); 2.7906 (0.3); 2.3022 (11.0); 2.0805 (0.1); 2.0764 (0.1); 2.0723 (0.2); 2.0682 (0.1); 2.0641 (0.1); 1.9856 (0.2); 1.9775 (0.4); 1.9696 (9.8); 1.9655 (18.9); 1.9614 (27.6); 1.9573 (19.0); 1.9532 (9.6); 1.9445 (0.2); 1.9383 (0.1); 1.8544 (0.1); 1.8504 (0.2); 1.8463 (0.2); 1.8420 (0.3); 1.8326 (4.4); 1.8210 (4.5); 1.7774 (1.4); 1.7660 (1.4); 1.6565 (0.1); 1.6450 (0.1); 1.2597 (0.1); 1.0283 (0.2); 1.0180 (0.2); 1.0077 (0.2); 0.5828 (0.1); 0.5608 (0.4); 0.5512 (0.6); 0.5399 (0.5); 0.5184 (0.1); 0.4893 (0.1); 0.4749 (0.2); 0.4673 (0.3); 0.4612 (0.3); 0.4515 (0.4); 0.4434 (0.3); 0.4366 (0.3); 0.4293 (0.2); 0.4143 (0.1); 0.3269 (0.2); 0.3191 (0.3); 0.3113 (0.3); 0.3056 (0.2); 0.2729 (0.2); 0.2641 (0.3); 0.2578 (0.5); 0.2499 (0.7); 0.2430 (0.7); 0.2353 (0.5); 0.2287 (0.6); 0.2228 (0.7); 0.2158 (0.8); 0.2095 (0.9); 0.2017 (0.7); 0.1956 (0.4); 0.1866 (0.2); 0.0053 (0.1); -0.0001 (2.9); -0.0057 (0.1); -0.2168 (0.2); -0.2250 (0.5); -0.2330 (0.7); -0.2411 (0.8); -0.2483 (0.6); -0.2562 (0.2); -0.4070 (0.2); -0.4148 (0.6); -0.4221 (0.8); -0.4301 (0.7); -0.4382 (0.5); -0.4464 (0.2)	427.3
I-002		^{1}H-NMR(600.1 MHz, CD_3CN, 260 K): δ= 9.2407 (0.1); 9.0845 (2.5); 9.0810 (2.8); 9.0158 (0.8); 9.0130 (0.8); 8.8803 (5.1); 8.8722 (5.3); 8.7299 (0.9); 8.6226 (1.4); 8.6146 (1.5); 8.6065 (2.8); 8.6036 (3.0); 8.5852 (0.1); 8.5816 (0.1); 8.5781 (0.1); 8.1290 (0.8); 8.0950 (4.6); 8.0722 (0.1); 8.0472 (1.2); 7.9025 (1.5); 7.8992 (2.8); 7.8960 (1.8); 7.5181 (1.4); 7.5100 (2.7); 7.5020 (1.4); 7.4873 (0.1); 7.4134 (0.4); 7.4054 (0.7); 7.3974 (0.4); 6.4131 (0.4); 6.4015 (1.5); 6.3899 (1.6); 6.3783 (0.5); 6.0705 (0.2); 6.0591 (0.5); 6.0477 (0.5); 6.0363 (0.2); 3.6304 (0.3); 3.6196 (0.3); 3.6066 (0.4); 3.5959 (0.4); 3.4970 (0.4); 3.4855 (0.4); 3.4734 (0.3); 3.4619 (0.3); 3.2484 (0.1); 3.2396 (0.1); 3.2376 (0.1); 3.2012 (0.1); 3.1732 (0.4); 3.1681 (0.2); 3.1483 (0.1); 3.1337 (16.0); 3.0158 (0.1); 2.9411 (0.4); 2.9298 (0.4); 2.9148 (1.7); 2.9019 (2.4); 2.8912 (1.7); 2.8744 (0.4); 2.8648 (0.4); 2.3187 (0.1); 2.3153 (0.1); 2.2928 (45.2); 2.2601 (0.1); 2.1614 (0.1); 2.0924 (0.2);	428.2

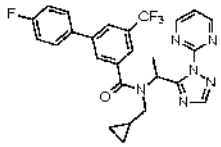
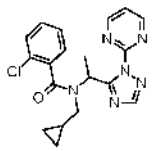
		2.0887 (0.1); 2.0801 (0.2); 2.0760 (0.3); 2.0719 (0.5); 2.0678 (0.3); 2.0637 (0.2); 2.0425 (0.1); 2.0113 (0.1); 2.0071 (0.1); 2.0030 (0.1); 1.9988 (0.1); 1.9946 (0.1); 1.9852 (1.2); 1.9771 (1.1); 1.9728 (1.8); 1.9693 (28.7); 1.9652 (56.0); 1.9610 (82.0); 1.9569 (56.9); 1.9528 (28.8); 1.9441 (0.3); 1.9366 (0.1); 1.9339 (0.1); 1.8542 (0.2); 1.8501 (0.4); 1.8459 (0.5); 1.8418 (0.4); 1.8306 (6.3); 1.8189 (6.3); 1.7936 (0.1); 1.7745 (1.9); 1.7630 (1.8); 1.3630 (0.1); 1.3515 (0.1); 1.2400 (0.1); 1.1574 (0.1); 1.1464 (0.1); 0.9749 (0.2); 0.9643 (0.3); 0.9545 (0.2); 0.6026 (0.1); 0.5932 (0.2); 0.5891 (0.2); 0.5806 (0.6); 0.5708 (0.7); 0.5601 (0.6); 0.5517 (0.3); 0.5473 (0.3); 0.5383 (0.1); 0.5211 (0.1); 0.5076 (0.1); 0.4668 (0.1); 0.4526 (0.2); 0.4444 (0.3); 0.4385 (0.4); 0.4292 (0.5); 0.4214 (0.4); 0.4142 (0.3); 0.4066 (0.2); 0.3919 (0.1); 0.3252 (0.1); 0.3172 (0.3); 0.3089 (0.4); 0.3029 (0.6); 0.2944 (0.6); 0.2880 (0.8); 0.2801 (1.0); 0.2722 (0.8); 0.2654 (0.6); 0.2578 (0.4); 0.2495 (0.4); 0.2407 (0.7); 0.2335 (0.7); 0.2271 (0.9); 0.2196 (0.6); 0.2134 (0.4); 0.2044 (0.2); 0.1758 (0.1); 0.1614 (0.3); 0.1557 (0.4); 0.1477 (0.3); 0.1401 (0.2); 0.1319 (0.1); 0.0968 (0.3); 0.0814 (0.1); 0.0419 (0.1); 0.0282 (0.1); 0.0227 (0.1); 0.0054 (2.0); -0.0001 (60.1); -0.0057 (1.8); -0.1001 (0.2); -0.1984 (0.3)	
I-003		^{1}H-NMR(600.1 MHz, CD_3CN, 260 K): δ= 8.8859 (4.9); 8.8778 (5.0); 8.6382 (1.6); 8.6302 (1.6); 8.0865 (4.4); 8.0335 (1.4); 8.0142 (0.1); 7.9580 (2.7); 7.9433 (0.1); 7.9060 (0.1); 7.8124 (1.0); 7.7920 (0.1); 7.6327 (1.0); 7.5286 (1.4); 7.5206 (2.6); 7.5125 (1.4); 7.4498 (3.6); 7.4167 (0.5); 7.4088 (0.9); 7.4007 (0.5); 7.3889 (2.9); 6.3593 (0.4); 6.3477 (1.4); 6.3361 (1.5); 6.3246 (0.5); 6.0860 (0.2); 6.0749 (0.5); 6.0634 (0.5); 6.0517 (0.2); 3.8379 (0.3); 3.6910 (0.3); 3.6808 (0.3); 3.6675 (0.4); 3.6571 (0.4); 3.5278 (0.4); 3.5160 (0.4); 3.5040 (0.3); 3.4922 (0.3); 3.1910 (0.1); 3.1259 (0.4); 3.1151 (0.3); 3.0769 (16.0); 3.0244 (0.2); 2.9592 (0.1); 2.9111 (0.6); 2.9037 (0.4); 2.8995 (0.6); 2.8849 (1.3); 2.8733 (1.4); 2.8440 (1.3); 2.8345 (1.3); 2.8178 (0.6); 2.8083 (0.6); 2.3015 (0.1); 2.2910 (81.9); 2.2744 (0.2); 2.2645 (0.1); 2.2585 (0.1); 2.0800 (0.2); 2.0759 (0.4); 2.0718 (0.6); 2.0677 (0.4); 2.0636 (0.2); 1.9851 (1.2); 1.9770 (1.0); 1.9726 (1.7); 1.9692 (37.9); 1.9651 (74.7); 1.9609 (110.4); 1.9568 (76.7); 1.9527 (39.4); 1.9440 (0.9); 1.9348 (0.4); 1.9307 (0.3); 1.9268 (0.2); 1.9226 (0.2); 1.9182 (0.2); 1.9138 (0.2); 1.9096 (0.1); 1.8950 (0.1); 1.8916 (0.1); 1.8873 (0.1); 1.8831 (0.1); 1.8789 (0.1); 1.8748 (0.1); 1.8707 (0.1); 1.8622 (0.1); 1.8541 (0.3); 1.8500 (0.5); 1.8458 (0.7); 1.8417 (0.5); 1.8376 (0.3); 1.8232 (6.0); 1.8116 (6.1); 1.7615 (2.1); 1.7501 (2.1); 1.7134 (0.1); 1.7019 (0.1); 1.5085 (0.1); 1.3213 (0.2); 1.3132 (0.2); 1.3096 (0.2); 1.3006 (0.2); 1.2879 (0.2); 1.2766 (0.2); 1.2716 (0.2); 1.0585 (0.2); 1.0481 (0.3); 1.0378 (0.2); 0.8970 (0.2); 0.8858 (0.5); 0.8738 (0.2); 0.5974 (0.1); 0.5877 (0.2); 0.5837 (0.2); 0.5752 (0.5); 0.5643 (0.7); 0.5544 (0.6); 0.5418 (0.3); 0.5325 (0.1); 0.5107 (0.1); 0.4954 (0.4); 0.4817 (0.6); 0.4741 (0.6); 0.4681 (0.6); 0.4602 (0.4); 0.4523 (0.3); 0.4374 (0.1); 0.3496 (0.1); 0.3420 (0.2); 0.3336 (0.3); 0.3259 (0.4); 0.3209 (0.3); 0.3083 (0.3); 0.2991 (0.4); 0.2929 (0.7); 0.2851 (0.9); 0.2777 (0.8); 0.2702 (0.8); 0.2622 (1.1); 0.2528 (1.0); 0.2459 (0.9); 0.2398 (1.0); 0.2322 (0.7); 0.2254 (0.4); 0.2170 (0.2); 0.0967 (0.4); 0.0109 (0.2); 0.0054 (2.2); -0.0001 (84.9); -0.0057 (3.1); -0.0124 (1.5); -0.0265 (0.1); -0.0319 (0.1); -0.0376 (0.1); -0.0430 (0.1); -0.0580 (0.1); -0.0820 (0.1); -0.1002 (0.4); -0.1791 (0.3); -0.1875 (0.7); -0.1954 (1.0)	461.1
I-004		^{1}H-NMR(400.2 MHz, d_6-DMSO): δ= 9.0075 (1.3); 8.9908 (14.0); 8.9787 (14.1); 8.7288 (6.2); 8.7167 (6.3); 8.3166 (0.8); 8.2715 (15.2); 8.2343 (5.1); 8.1865 (3.0); 8.1744 (2.9); 8.0920 (0.9); 8.0096 (1.7); 7.9930 (2.6); 7.9123 (0.4); 7.6873 (4.6); 7.6751 (8.9); 7.6630 (4.9); 7.6507 (0.5); 7.6103 (0.4); 7.5666 (1.2); 7.4133 (0.6); 7.3914 (0.7); 7.3647 (0.6); 7.3083 (0.4); 7.2708 (0.5); 7.2647 (0.4); 7.2496 (0.4); 7.2433 (0.4); 7.2023 (0.4); 6.6627 (0.3); 6.5048 (1.0); 5.9824 (0.4); 5.9656 (1.3); 5.9484 (1.3); 5.9309 (0.4); 5.3358	469.1

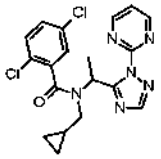
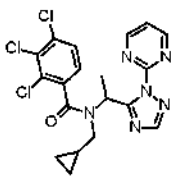
		(0.4); 5.3241 (0.8); 5.3120 (0.5); 3.7163 (0.4); 3.6970 (0.5); 3.6593 (1.4); 3.6421 (1.4); 3.6237 (0.6); 3.6065 (0.6); 3.3252 (162.0); 2.9782 (1.4); 2.9624 (2.5); 2.9465 (2.2); 2.9304 (1.0); 2.9111 (1.3); 2.8004 (2.2); 2.7853 (2.3); 2.7609 (1.5); 2.7460 (1.4); 2.6761 (2.0); 2.6715 (3.0); 2.6670 (2.0); 2.6625 (1.0); 2.5878 (0.4); 2.5249 (9.5); 2.5114 (167.2); 2.5071 (328.6); 2.5026 (427.6); 2.4980 (311.9); 2.4937 (152.6); 2.3384 (0.9); 2.3339 (1.9); 2.3294 (2.6); 2.3250 (1.9); 2.1209 (0.4); 2.1052 (0.4); 2.0274 (0.9); 2.0089 (1.7); 1.9900 (1.6); 1.9738 (0.7); 1.9576 (0.4); 1.7773 (16.0); 1.7598 (16.0); 1.7099 (5.9); 1.6927 (5.8); 1.6255 (0.3); 1.6084 (0.4); 1.5705 (0.4); 1.4736 (0.6); 1.4553 (0.7); 1.4419 (0.5); 1.3880 (0.7); 1.3820 (1.1); 1.3647 (1.0); 1.3526 (0.7); 1.3451 (0.4); 1.3359 (1.6); 1.2984 (9.1); 1.2896 (2.4); 1.2809 (1.9); 1.2589 (13.4); 1.2494 (5.6); 1.2353 (13.8); 1.1883 (0.4); 1.1376 (0.3); 1.0984 (0.6); 1.0894 (0.6); 1.0723 (0.5); 1.0614 (0.6); 1.0455 (0.4); 1.0331 (0.4); 1.0185 (0.4); 0.9247 (0.5); 0.9053 (0.5); 0.8998 (0.4); 0.8878 (0.6); 0.8707 (1.5); 0.8541 (3.3); 0.8366 (1.4); 0.6939 (0.4); 0.6769 (0.8); 0.4756 (1.6); 0.4600 (1.7); 0.4413 (1.8); 0.4275 (2.7); 0.4175 (2.7); 0.4132 (2.9); 0.4081 (2.2); 0.3972 (2.1); 0.3930 (2.0); 0.3830 (0.8); 0.3271 (1.4); 0.2464 (0.8); 0.2340 (0.8); 0.2240 (1.8); 0.2122 (2.8); 0.2038 (4.1); 0.1937 (3.4); 0.1843 (3.7); 0.1677 (1.8); 0.1574 (2.0); 0.1542 (2.0); 0.1456 (1.5); 0.1419 (1.8); 0.1314 (0.4); 0.0079 (0.4); -0.0002 (12.0); -0.0086 (0.4); -0.2736 (0.7); -0.2855 (1.5); -0.2983 (1.8); -0.3087 (2.2); -0.4265 (1.6)	
I-005		^{1}H-NMR(600.1 MHz, CD_3CN, 260 K): δ= 9.0235 (0.2); 9.0154 (0.1); 8.9241 (0.4); 8.9161 (0.4); 8.9092 (0.3); 8.9011 (0.4); 8.8879 (0.9); 8.8764 (12.2); 8.8684 (12.2); 8.7211 (0.1); 8.7130 (0.1); 8.5912 (0.3); 8.5831 (0.5); 8.5723 (2.6); 8.5645 (2.6); 8.4517 (0.1); 8.3799 (0.1); 8.2586 (0.1); 8.2337 (0.1); 8.2199 (0.1); 8.1799 (0.2); 8.1638 (0.2); 8.1513 (0.1); 8.1383 (0.1); 8.1122 (3.6); 8.0990 (4.0); 8.0877 (11.2); 8.0726 (0.8); 8.0596 (0.6); 8.0393 (2.6); 8.0250 (1.0); 8.0122 (1.0); 7.9954 (0.1); 7.9814 (0.1); 7.9643 (0.1); 7.9586 (0.1); 7.9462 (0.2); 7.9321 (0.2); 7.9115 (1.8); 7.8855 (0.1); 7.8806 (0.1); 7.8713 (0.1); 7.8636 (0.1); 7.8547 (0.1); 7.7884 (2.8); 7.7754 (5.8); 7.7623 (3.3); 7.7223 (0.6); 7.7106 (1.6); 7.7034 (1.4); 7.6904 (1.3); 7.6755 (4.9); 7.6624 (3.7); 7.6295 (6.8); 7.6139 (0.1); 7.5380 (0.2); 7.5276 (0.3); 7.5165 (3.4); 7.5084 (6.4); 7.5004 (3.2); 7.4879 (0.2); 7.4743 (0.2); 7.4507 (0.5); 7.4369 (0.4); 7.3810 (0.9); 7.3734 (1.4); 7.3656 (0.7); 6.5009 (0.1); 6.4358 (0.1); 6.4239 (0.2); 6.4066 (1.2); 6.3951 (3.8); 6.3835 (3.8); 6.3719 (1.2); 6.2934 (0.1); 6.2818 (0.1); 6.1368 (0.1); 6.1334 (0.1); 6.0337 (0.3); 6.0227 (0.9); 6.0113 (0.9); 6.0002 (0.3); 5.9466 (0.1); 5.9354 (0.1); 5.6189 (0.1); 5.6035 (0.1); 5.4721 (9.8); 5.3607 (0.3); 5.3524 (0.5); 5.3443 (0.3); 5.3369 (0.1); 5.3189 (0.1); 3.7124 (0.1); 3.6988 (0.1); 3.6872 (0.6); 3.6767 (0.6); 3.6635 (0.7); 3.6531 (0.7); 3.5619 (0.1); 3.5496 (0.1); 3.5375 (0.1); 3.4961 (0.7); 3.4845 (0.7); 3.4722 (0.6); 3.4607 (0.6); 3.4443 (0.1); 3.4363 (0.1); 3.4337 (0.1); 3.4258 (0.1); 3.2372 (0.1); 3.2270 (0.1); 3.2162 (0.1); 3.1097 (0.1); 3.0986 (0.1); 3.0329 (0.5); 3.0220 (0.8); 3.0115 (0.5); 3.0015 (0.1); 2.9900 (0.2); 2.9792 (0.1); 2.9472 (0.1); 2.9183 (0.3); 2.9104 (0.3); 2.8935 (0.1); 2.8817 (0.1); 2.8719 (0.3); 2.8671 (0.3); 2.8612 (0.3); 2.8454 (9.0); 2.8349 (9.8); 2.8193 (0.4); 2.8088 (0.1); 2.8035 (0.1); 2.7934 (0.1); 2.7793 (0.1); 2.7300 (0.5); 2.6637 (0.6); 2.5973 (0.1); 2.3290 (0.1); 2.3232 (0.1); 2.3147 (0.2); 2.2914 (121.5); 2.2685 (0.2); 2.2560 (0.3); 2.2479 (0.1); 2.2427 (0.1); 2.1918 (0.1); 2.1103 (0.5); 2.0978 (1.0); 2.0851 (0.6); 2.0801 (0.4); 2.0760 (0.7); 2.0719 (1.0); 2.0678 (0.7); 2.0637 (0.4); 2.0497 (0.1); 2.0456 (0.1); 2.0324 (0.2); 2.0210 (0.6); 2.0114 (0.6); 2.0001 (0.4); 1.9925 (0.2); 1.9852 (1.6); 1.9771 (2.6); 1.9692 (61.6); 1.9651 (119.3); 1.9610 (175.6); 1.9569 (122.8); 1.9529 (63.2); 1.9354 (0.3); 1.9262 (0.2); 1.9229 (0.2); 1.9180 (0.2); 1.8958 (0.1); 1.8917 (0.1); 1.8870 (0.1); 1.8830 (0.1); 1.8780 (0.1); 1.8736 (0.1); 1.8687 (0.1); 1.8540 (0.5); 1.8501 (0.8); 1.8459 (1.2); 1.8418	481.1

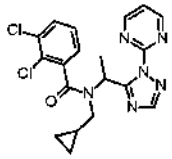
		(1.1); 1.8292 (15.8); 1.8176 (16.0); 1.7871 (0.2); 1.7838 (0.2); 1.7491 (3.9); 1.7377 (3.8); 1.7109 (0.2); 1.7000 (0.1); 1.6931 (0.1); 1.6813 (0.1); 1.6756 (0.1); 1.6602 (0.1); 1.6408 (0.1); 1.6271 (0.1); 1.6043 (0.1); 1.5882 (0.1); 1.5350 (0.2); 1.5249 (0.6); 1.5134 (0.6); 1.5001 (0.3); 1.4780 (0.1); 1.4701 (0.1); 1.4580 (0.1); 1.4486 (0.1); 1.4441 (0.1); 1.4279 (0.1); 1.4208 (0.1); 1.4108 (0.4); 1.4029 (0.2); 1.3906 (0.2); 1.3771 (0.1); 1.3630 (0.2); 1.3517 (0.2); 1.3408 (0.9); 1.3086 (0.8); 1.2826 (2.9); 1.2601 (9.1); 1.2169 (0.2); 1.2069 (0.2); 1.1912 (0.4); 1.1758 (0.2); 1.1598 (0.2); 1.1519 (0.1); 1.1420 (0.1); 1.1358 (0.1); 1.1246 (0.4); 1.1098 (0.1); 1.0974 (0.1); 1.0942 (0.1); 1.0852 (0.5); 1.0737 (1.6); 1.0617 (0.4); 1.0506 (0.6); 1.0463 (1.8); 1.0403 (1.6); 1.0294 (1.5); 1.0204 (0.9); 0.9820 (0.1); 0.9688 (0.2); 0.9578 (0.2); 0.9493 (0.2); 0.9452 (0.2); 0.9372 (0.2); 0.9327 (0.2); 0.9246 (0.3); 0.9168 (0.2); 0.9124 (0.2); 0.8927 (1.1); 0.8816 (2.2); 0.8697 (1.2); 0.8528 (0.5); 0.8404 (0.3); 0.8151 (0.1); 0.8045 (0.2); 0.7922 (0.1); 0.7816 (0.1); 0.7654 (0.1); 0.5550 (0.2); 0.5415 (0.7); 0.5320 (1.6); 0.5225 (2.2); 0.5121 (1.7); 0.4997 (0.9); 0.4890 (0.5); 0.4801 (0.6); 0.4641 (1.1); 0.4570 (1.5); 0.4434 (1.2); 0.4346 (0.7); 0.4222 (0.2); 0.3916 (0.1); 0.3844 (0.1); 0.3712 (0.1); 0.3638 (0.1); 0.3564 (0.1); 0.3392 (0.3); 0.3317 (0.5); 0.3236 (0.7); 0.3157 (0.8); 0.2837 (0.1); 0.2734 (0.2); 0.2602 (0.6); 0.2515 (1.0); 0.2451 (1.9); 0.2369 (2.6); 0.2299 (2.7); 0.2228 (2.4); 0.2150 (2.9); 0.2066 (2.4); 0.1995 (2.3); 0.1932 (2.5); 0.1842 (2.0); 0.1721 (1.0); 0.0970 (0.1); 0.0786 (0.2); 0.0243 (0.1); 0.0183 (0.1); 0.0054 (0.6); -0.0001 (19.3); -0.1005 (0.1); --0.2529 (0.8); -0.2613 (1.9); -0.2693 (2.7); -0.2772 (2.8); -0.2847 (2.1); -0.2926 (0.8); -0.4435 (0.9); -0.4514 (2.2); -0.4590 (2.8); -0.4670 (2.6); -0.4751 (1.8); -0.4833 (0.7);	
I-006		^{1}H-NMR(600.1 MHz, CD_3CN, 260 K): δ= 9.2302 (6.6); 9.2274 (6.7); 9.1826 (1.7); 8.9662 (1.9); 8.9087 (0.5); 8.9007 (0.5); 8.8787 (2.9); 8.8703 (3.8); 8.8654 (12.4); 8.8574 (12.6); 8.8275 (7.5); 8.8254 (7.6); 8.6277 (2.7); 8.6197 (2.8); 8.3294 (1.7); 8.1796 (0.4); 8.1376 (6.8); 8.1175 (1.5); 8.1002 (11.3); 8.0520 (2.4); 8.0396 (2.5); 7.5115 (1.0); 7.5064 (3.7); 7.4987 (6.7); 7.4907 (3.4); 7.4278 (0.8); 7.4200 (1.4); 7.4122 (0.8); 6.5577 (1.0); 6.5466 (1.0); 6.5358 (0.3); 6.4315 (1.2); 6.4199 (4.0); 6.4083 (4.0); 6.3967 (1.3); 6.0178 (0.3); 6.0063 (0.9); 5.9951 (1.0); 5.9841 (0.3); 5.4718 (1.0); 4.0126 (0.4); 3.6765 (0.4); 3.6651 (0.6); 3.6536 (0.5); 3.6472 (0.5); 3.6366 (0.6); 3.6231 (0.8); 3.6129 (0.7); 3.5180 (0.7); 3.5065 (0.8); 3.4942 (0.6); 3.4825 (0.5); 2.9753 (0.3); 2.9512 (1.3); 2.9391 (0.3); 2.9252 (9.0); 2.9150 (12.1); 2.8985 (0.4); 2.6633 (1.4); 2.2933 (196.3); 2.2680 (0.4); 2.2609 (0.4); 2.0791 (0.5); 2.0756 (0.8); 2.0715 (1.2); 2.0675 (0.8); 2.0633 (0.5); 1.9848 (1.4); 1.9761 (3.4); 1.9687 (76.1); 1.9647 (147.0); 1.9607 (213.5); 1.9566 (152.8); 1.9526 (80.3); 1.9335 (9.5); 1.9155 (0.4); 1.8537 (0.6); 1.8496 (1.0); 1.8455 (1.4); 1.8415 (1.2); 1.8287 (15.9); 1.8171 (16.0); 1.7445 (3.8); 1.7331 (3.7); 1.6784 (4.3); 1.6674 (4.4); 1.5403 (0.5); 1.5286 (0.5); 1.3405 (0.7); 1.3081 (0.3); 1.3040 (0.3); 1.2922 (0.4); 1.2823 (1.2); 1.2733 (1.6); 1.2612 (2.9); 1.2321 (7.1); 1.2273 (7.1); 1.2208 (7.2); 1.2159 (6.9); 0.9618 (0.7); 0.8808 (0.5); 0.8689 (0.3); 0.5943 (0.7); 0.5820 (1.6); 0.5724 (2.2); 0.5622 (1.7); 0.5504 (0.8); 0.4540 (0.6); 0.4395 (1.0); 0.4301 (1.0); 0.4160 (0.8); 0.4085 (0.6); 0.3218 (0.6); 0.3138 (0.8); 0.3044 (1.4); 0.2961 (1.5); 0.2893 (2.1); 0.2814 (2.7); 0.2745 (2.3); 0.2675 (1.7); 0.2589 (1.1); 0.2426 (1.1); 0.2338 (1.8); 0.2268 (2.0); 0.2203 (2.5); 0.2126 (1.8); 0.2064 (1.1); 0.1975 (0.7); 0.1615 (0.6); 0.1561 (0.8); 0.1481 (0.7); 0.1403 (0.5); -0.0004 (2.1)	482.1

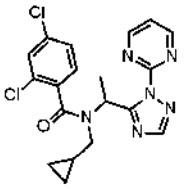
I-007		^{1}H-NMR(600.1 MHz, CD_3CN, 260 K): δ= 8.8814 (10.7); 8.8737 (11.2); 8.5786 (6.4); 8.5711 (6.7); 8.0847 (10.6); 8.0271 (6.1); 7.7796 (8.5); 7.6351 (4.9); 7.5179 (3.1); 7.5103 (5.7); 7.5026 (3.2); 7.3731 (1.9); 7.3656 (3.5); 7.3531 (5.1); 7.2899 (9.2); 7.2422 (4.0); 7.2105 (4.6); 7.1805 (8.8); 7.1514 (2.8); 6.3776 (1.3); 6.3662 (3.9); 6.3546 (4.0); 6.3433 (1.4); 6.1082 (0.8); 6.0972 (2.3); 6.0859 (2.4); 6.0751 (0.9); 5.4727 (6.8); 3.6771 (1.3); 3.6669 (1.4); 3.6537 (1.9); 3.6434 (1.9); 3.5426 (1.8); 3.5309 (1.9); 3.5191 (1.4); 3.5074 (1.3); 2.9230 (2.1); 2.9113 (2.2); 2.8969 (3.4); 2.8853 (3.4); 2.8126 (5.5); 2.8036 (6.9); 2.7937 (4.7); 2.7876 (5.7); 2.7780 (3.7); 2.6208 (0.5); 2.3084 (105.2); 2.0981 (0.5); 2.0853 (0.3); 2.0730 (0.6); 2.0198 (0.4); 2.0089 (0.3); 1.9851 (0.7); 1.9621 (89.4); 1.9606 (87.8); 1.8468 (0.7); 1.8164 (15.8); 1.8049 (16.0); 1.7567 (9.2); 1.7453 (9.0); 1.3067 (0.4); 1.2590 (3.0); 1.0581 (1.3); 1.0485 (1.6); 1.0386 (1.3); 0.8916 (0.5); 0.8808 (0.8); 0.8691 (0.5); 0.7670 (5.3); 0.7549 (7.2); 0.7443 (9.6); 0.7336 (8.5); 0.7093 (0.3); 0.6131 (5.2); 0.5723 (11.3); 0.4723 (2.7); 0.4583 (2.0); 0.3441 (1.4); 0.3354 (1.8); 0.3286 (2.1); 0.2943 (1.0); 0.2710 (4.7); 0.2645 (4.7); 0.2578 (3.8); 0.2493 (2.6); 0.2351 (2.6); 0.2283 (2.8); 0.2219 (3.0); 0.2142 (2.3); 0.1992 (0.9); 0.1771 (0.3); 0.1647 (0.3); 0.1539 (0.4); 0.1472 (0.4); 0.1378 (0.4); 0.1246 (0.5); 0.0968 (6.6); 0.0848 (1.0); 0.0656 (0.9); 0.0573 (1.0); 0.0475 (1.2); 0.0364 (2.0); -0.0001 (1003.2); -0.1002 (5.6); -0.1764 (0.7); -0.1839 (2.0); -0.1918 (2.8); -0.1995 (3.0); -0.2071 (2.2); -0.3887 (2.4); -0.3963 (3.0); -0.4040 (2.8); -0.4118 (1.9); -0.4195 (0.7)	466.2
I-008		^{1}H-NMR(600.1 MHz, CD_3CN, 260 K): δ= 8.8858 (10.2); 8.8777 (11.8); 8.8690 (2.3); 8.6013 (0.7); 8.5932 (0.8); 8.5453 (4.6); 8.5375 (4.7); 8.0849 (2.0); 8.0751 (9.2); 8.0299 (0.9); 8.0196 (4.1); 7.9337 (1.2); 7.7617 (0.5); 7.5310 (2.9); 7.5230 (5.9); 7.5150 (4.1); 7.4686 (1.3); 7.4588 (0.6); 7.4142 (6.4); 7.3991 (0.4); 7.3913 (0.5); 7.3840 (0.3); 7.3599 (1.5); 7.3520 (2.5); 7.3444 (1.4); 7.2916 (1.2); 7.1941 (3.4); 7.1820 (2.8); 6.9747 (6.4); 6.9224 (2.6); 6.8511 (6.5); 6.3725 (1.2); 6.3614 (3.5); 6.3499 (3.5); 6.3386 (1.2); 6.1483 (0.6); 6.1372 (1.7); 6.1255 (1.8); 6.1138 (0.8); 6.1027 (0.3); 3.7401 (0.9); 3.7298 (1.0); 3.7163 (1.3); 3.7060 (1.3); 3.5349 (1.3); 3.5225 (1.4); 3.5113 (1.0); 3.4993 (1.0); 2.9251 (0.3); 2.9136 (0.3); 2.8988 (0.5); 2.8873 (0.5); 2.8620 (1.7); 2.8501 (1.7); 2.8358 (2.9); 2.8242 (3.3); 2.7989 (0.4); 2.7887 (0.4); 2.7636 (2.7); 2.7541 (2.8); 2.7372 (1.7); 2.7281 (1.6); 2.3199 (0.6); 2.2912 (562.0); 2.2665 (0.7); 2.2584 (0.8); 2.0977 (0.4); 2.0798 (1.3); 2.0756 (2.4); 2.0716 (3.5); 2.0675 (2.4); 2.0634 (1.3); 2.0071 (0.6); 1.9849 (4.8); 1.9688 (219.6); 1.9648 (416.4); 1.9607 (595.7); 1.9567 (418.5); 1.9526 (216.5); 1.9322 (1.7); 1.9170 (0.5); 1.9085 (0.4); 1.8984 (0.5); 1.8943 (0.5); 1.8907 (0.5); 1.8866 (0.4); 1.8536 (1.5); 1.8497 (2.8); 1.8456 (3.8); 1.8415 (3.2); 1.8375 (2.3); 1.8222 (14.5); 1.8108 (16.0); 1.8008 (3.5); 1.7553 (6.8); 1.7439 (6.7); 1.5047 (0.3); 1.3084 (0.5); 1.3021 (0.6); 1.2609 (4.0); 1.2424 (0.6); 1.0878 (1.2); 1.0772 (1.1); 1.0587 (0.7); 1.0379 (7.1); 1.0268 (7.4); 0.9901 (0.4); 0.8938 (0.5); 0.8819 (0.9); 0.8699 (0.5); 0.6964 (6.3); 0.6887 (6.3); 0.6710 (1.1); 0.6525 (1.6); 0.6283 (1.4); 0.6100 (0.6); 0.5469 (0.5); 0.5253 (2.0); 0.5141 (2.8); 0.5047 (2.9); 0.4933 (2.5); 0.4827 (1.8); 0.4760 (1.4); 0.3537 (0.8); 0.3448 (1.2); 0.3377 (1.5); 0.3010 (1.6); 0.2933 (1.4); 0.2865 (1.2); 0.2780 (1.4); 0.2699 (1.4); 0.2629 (2.0); 0.2549 (2.5); 0.2481 (2.3); 0.2406 (2.0); 0.2337 (2.4); 0.2267 (2.2); 0.2189 (2.3); 0.2127 (2.3); 0.2050 (1.6); 0.1900 (0.5); -0.0001 (5.8)	457.2
I-009		^{1}H-NMR(600.1 MHz, CD_3CN, 260 K): δ= 8.9038 (12.6); 8.8958 (12.6); 8.8752 (0.3); 8.6657 (7.4); 8.6577 (7.5); 8.6387 (7.2); 8.6307 (7.3); 8.0884 (10.0); 8.0811 (6.6); 8.0303 (6.6); 8.0201 (6.4); 7.6627 (5.4); 7.6589 (5.6); 7.6387 (3.4); 7.6348 (3.6); 7.5373 (2.0); 7.5306 (4.9); 7.5232 (6.6); 7.5154 (3.1); 7.4320 (2.1); 7.4236 (6.9); 7.4159 (2.2); 7.4115 (2.3); 7.4033 (3.8); 7.3953 (1.9); 7.3819 (3.9); 7.3781 (3.5); 7.2936 (3.6); 7.2897 (3.8); 7.2152 (3.4); 7.2115 (3.5);	453.0

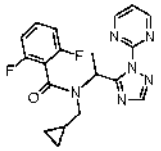
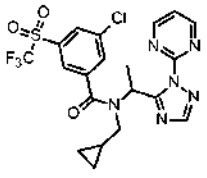
		7.0104 (0.3); 6.9806 (5.6); 6.9768 (5.8); 6.7777 (0.6); 6.7661 (2.0); 6.7544 (2.0); 6.7428 (0.6); 6.6507 (3.6); 6.6469 (3.8); 6.3954 (0.9); 6.3840 (2.9); 6.3725 (3.0); 6.3611 (1.0); 6.1431 (0.7); 6.1316 (2.2); 6.1201 (2.2); 6.1086 (0.7); 5.9389 (0.7); 5.9273 (2.2); 5.9158 (2.2); 5.9042 (0.7); 3.8724 (1.2); 3.8618 (1.2); 3.8488 (2.2); 3.8381 (2.1); 3.8285 (2.0); 3.8182 (1.9); 3.7746 (3.0); 3.7625 (2.9); 3.7512 (1.8); 3.7391 (1.7); 2.9914 (1.9); 2.9795 (1.9); 2.9652 (2.7); 2.9533 (2.7); 2.8568 (0.9); 2.8493 (2.7); 2.8403 (2.6); 2.8307 (2.1); 2.8207 (2.7); 2.8143 (2.0); 2.7960 (2.0); 2.7854 (2.0); 2.7698 (0.8); 2.7592 (0.8); 2.2937 (173.9); 2.0796 (0.3); 2.0756 (0.7); 2.0715 (1.0); 2.0675 (0.7); 2.0634 (0.4); 1.9848 (18.1); 1.9763 (3.6); 1.9687 (58.9); 1.9647 (113.2); 1.9606 (164.9); 1.9566 (118.0); 1.9526 (61.8); 1.8538 (0.4); 1.8496 (0.7); 1.8456 (1.0); 1.8415 (0.8); 1.8371 (0.6); 1.8265 (8.8); 1.8148 (8.8); 1.7955 (13.8); 1.7835 (16.0); 1.7692 (8.9); 1.7547 (0.4); 1.7426 (0.4); 1.7284 (8.7); 1.7169 (8.6); 1.2674 (0.5); 1.2590 (1.0); 1.2473 (1.1); 1.2360 (0.8); 1.2275 (0.4); 1.1902 (0.6); 1.1793 (0.7); 1.1696 (0.4); 1.1607 (0.8); 1.1493 (1.0); 1.1386 (0.8); 1.1301 (0.4); 0.5975 (0.3); 0.5921 (0.8); 0.5832 (1.2); 0.5780 (2.1); 0.5703 (1.9); 0.5640 (2.4); 0.5567 (1.8); 0.5496 (1.9); 0.5426 (1.6); 0.5358 (1.8); 0.5247 (1.5); 0.5192 (1.7); 0.5114 (2.0); 0.5044 (2.6); 0.4954 (2.6); 0.4865 (2.1); 0.4791 (1.4); 0.4706 (0.6); 0.4222 (0.6); 0.4146 (1.5); 0.4076 (2.0); 0.4001 (2.1); 0.3929 (2.3); 0.3862 (1.7); 0.3786 (0.8); 0.3716 (1.0); 0.3642 (1.9); 0.3574 (2.5); 0.3491 (2.3); 0.3436 (2.0); 0.3353 (1.6); 0.3234 (0.6); 0.3036 (0.4); 0.2948 (0.6); 0.2883 (1.0); 0.2806 (1.3); 0.2735 (1.2); 0.2667 (0.9); 0.2563 (0.9); 0.2477 (1.1); 0.2400 (1.2); 0.2335 (1.3); 0.2258 (1.0); 0.2195 (0.5); 0.2109 (0.4); 0.2028 (0.4); 0.1876 (1.4); 0.1797 (5.3); 0.1734 (2.2); 0.1663 (5.1); 0.1589 (1.3); 0.1438 (0.3); -0.0008 (1.9); -0.1766 (0.4); -0.1845 (1.0); -0.1927 (1.4)	
I-010		^{1}H-NMR(600.1 MHz, CD_3CN, 260 K): δ= 8.8877 (10.7); 8.8798 (10.9); 8.4298 (4.4); 8.4222 (4.4); 8.0879 (9.7); 8.0212 (3.8); 7.9780 (7.1); 7.8159 (3.1); 7.6340 (7.5); 7.6213 (9.5); 7.5863 (3.2); 7.5733 (5.1); 7.5414 (0.4); 7.5245 (7.1); 7.5118 (16.0); 7.4999 (14.4); 7.4687 (4.8); 7.4553 (11.0); 7.4251 (2.7); 7.2610 (7.0); 7.2243 (1.3); 7.2170 (2.3); 7.2094 (1.3); 6.4237 (1.2); 6.4123 (3.5); 6.4009 (3.6); 6.3894 (1.2); 6.2534 (0.6); 6.2425 (1.6); 6.2312 (1.6); 6.2195 (0.6); 3.7846 (0.9); 3.7746 (1.0); 3.7610 (1.2); 3.7508 (1.2); 3.5819 (1.1); 3.5707 (1.2); 3.5587 (1.0); 3.5471 (0.9); 2.9461 (1.8); 2.9347 (1.9); 2.9202 (3.0); 2.9085 (3.0); 2.8484 (2.9); 2.8391 (3.0); 2.8223 (1.8); 2.8131 (1.8); 2.2920 (255.9); 2.2596 (0.5); 2.0758 (1.1); 2.0718 (1.6); 2.0677 (1.2); 1.9850 (2.7); 1.9689 (101.5); 1.9650 (197.7); 1.9609 (288.0); 1.9569 (211.8); 1.9530 (113.5); 1.9185 (0.3); 1.8533 (14.8); 1.8418 (15.6); 1.8102 (0.4); 1.7813 (6.0); 1.7699 (5.8); 1.2604 (0.4); 1.1201 (1.0); 1.1106 (0.8); 0.5842 (1.6); 0.5748 (2.1); 0.5645 (1.8); 0.5416 (0.5); 0.5094 (1.9); 0.4952 (1.3); 0.3755 (0.8); 0.3594 (1.4); 0.3235 (1.4); 0.2803 (0.7); 0.2653 (1.8); 0.2571 (2.6); 0.2506 (2.5); 0.2414 (2.6); 0.2343 (2.6); 0.2257 (2.4); 0.2195 (2.5); 0.2115 (1.7); 0.1965 (0.6); -0.0001 (3.0)	493.2
I-011		^{1}H-NMR(400.2 MHz, d_6-DMSO): δ= 9.0428 (5.9); 9.0308 (6.0); 8.8655 (9.1); 8.8534 (9.2); 8.2697 (5.6); 8.1855 (8.4); 7.8423 (3.5); 7.8178 (4.9); 7.7835 (3.5); 7.6910 (1.7); 7.6790 (3.1); 7.6669 (1.8); 7.6437 (3.9); 7.6300 (5.3); 7.5836 (2.6); 7.5715 (4.8); 7.5595 (2.4); 7.5099 (5.0); 6.2877 (0.8); 6.2709 (2.9); 6.2535 (3.3); 6.2424 (2.2); 6.2255 (1.8); 6.2088 (0.6); 5.7578 (8.2); 4.2199 (1.7); 4.1796 (2.4); 4.0156 (2.4); 3.9754 (1.6); 3.7437 (11.4); 3.3265 (31.2); 3.1882 (0.3); 3.1614 (4.8); 3.1466 (4.6); 3.1205 (0.3); 3.0457 (0.9); 3.0298 (1.0); 3.0106 (1.4); 2.9944 (1.4); 2.9184 (1.4); 2.9017 (1.5); 2.8830 (0.9); 2.8660 (0.9); 2.6764 (0.7); 2.6721 (1.0); 2.6678 (0.7); 2.5076 (124.5); 2.5033 (158.7); 2.4989 (120.3); 2.3343 (0.8); 2.3300 (1.0); 2.3256 (0.8); 1.6206 (16.0); 1.6031 (15.0); 1.2347 (1.3); 0.7482 (1.1); 0.7352 (1.5); 0.7221 (1.2); 0.7026 (0.6); 0.4515 (0.4); 0.4374 (0.7); 0.4289 (1.4);	465.1

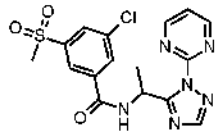
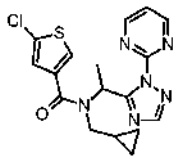
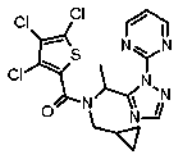
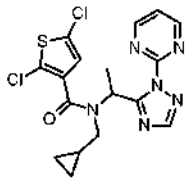
		0.4166 (1.9); 0.4068 (2.0); 0.3953 (1.9); 0.3836 (2.3); 0.3713 (2.1); 0.3607 (2.3); 0.3504 (2.1); 0.3393 (1.5); 0.3166 (0.5); 0.2063 (0.6); 0.1944 (1.3); 0.1826 (1.8); 0.1706 (2.0); 0.1600 (1.4); 0.1470 (0.8); 0.0971 (3.1); 0.0769 (2.8); 0.0077 (2.3); -0.0001 (46.9); -0.0081 (3.0); -0.0380 (1.8); -0.0503 (2.4); -0.0612 (2.1); -0.0733 (1.9); -0.0852 (1.2); -0.0975 (0.5); -0.4153 (1.1); -0.4279 (1.3); -0.4402 (1.0)	
I-012		^{1}H-NMR(600.1 MHz, CD$_3$CN, 260 K): δ= 8.8832 (10.1); 8.8751 (10.2); 8.4293 (3.7); 8.4214 (3.7); 8.0876 (9.2); 8.0203 (3.3); 7.9481 (5.4); 7.7828 (2.4); 7.6550 (3.8); 7.6460 (4.5); 7.6407 (4.8); 7.6317 (4.2); 7.6088 (1.6); 7.5953 (2.0); 7.5863 (1.6); 7.5219 (1.9); 7.5040 (2.9); 7.4960 (5.4); 7.4879 (2.8); 7.4250 (2.0); 7.4037 (5.5); 7.2771 (5.6); 7.2624 (16.0); 7.2479 (5.6); 7.2260 (1.1); 7.2180 (1.9); 7.2100 (1.0); 6.4163 (0.9); 6.4047 (3.0); 6.3932 (3.0); 6.3815 (1.0); 6.2197 (1.2); 6.2085 (1.2); 3.7857 (0.7); 3.7756 (0.8); 3.7624 (0.9); 3.7520 (0.9); 3.5883 (0.9); 3.5767 (1.0); 3.5648 (0.8); 3.5529 (0.7); 3.0550 (0.7); 2.9426 (2.1); 2.9303 (1.5); 2.9157 (2.5); 2.9041 (2.5); 2.8458 (2.4); 2.8363 (2.5); 2.8196 (1.5); 2.8102 (1.4); 2.2921 (303.8); 2.0802 (0.6); 2.0761 (1.1); 2.0720 (1.7); 2.0679 (1.1); 2.0637 (0.6); 1.9929 (0.6); 1.9853 (39.7); 1.9771 (3.3); 1.9693 (102.4); 1.9652 (200.4); 1.9611 (294.3); 1.9570 (202.3); 1.9528 (102.3); 1.8793 (0.3); 1.8516 (12.5); 1.8460 (4.3); 1.8401 (12.6); 1.7779 (4.8); 1.7664 (4.7); 1.1240 (0.8); 0.5728 (1.5); 0.5120 (1.3); 0.3616 (1.0); 0.3288 (1.0); 0.2814 (0.5); 0.2664 (1.4); 0.2586 (1.9); 0.2516 (1.8); 0.2426 (1.7); 0.2347 (1.8); 0.2260 (1.7); 0.2196 (1.8); 0.2119 (1.3); 0.1969 (0.4); 0.0967 (1.4); 0.0054 (9.4); -0.0001 (312.2); -0.0057 (9.8); -0.1002 (1.4); -0.2063 (0.6); -0.2145 (1.4); -0.2225 (2.0); -0.2306 (2.2); -0.2376 (1.6); -0.2455 (0.7); -0.3760 (1.6); -0.3831 (2.1); -0.3911 (2.0); -0.3991 (1.3)	511.1
I-013		^{1}H-NMR(600.1 MHz, CD$_3$CN, 260 K): δ= 8.9065 (11.2); 8.8986 (16.0); 8.8914 (6.3); 8.5721 (5.5); 8.5640 (5.6); 8.5376 (5.2); 8.5295 (5.3); 8.0804 (9.9); 8.0705 (5.4); 8.0136 (7.2); 7.5347 (3.0); 7.5266 (5.9); 7.5187 (4.1); 7.5117 (3.2); 7.5036 (1.6); 7.4280 (3.2); 7.4146 (5.5); 7.3866 (2.3); 7.3743 (3.8); 7.3668 (2.2); 7.3589 (4.0); 7.3508 (2.2); 7.3362 (7.1); 7.3254 (7.9); 7.3178 (2.1); 7.3102 (5.4); 7.2976 (4.2); 7.2852 (1.9); 7.1556 (0.7); 7.1508 (0.8); 7.1406 (1.2); 7.1266 (2.5); 7.1138 (1.7); 7.0328 (1.0); 7.0204 (1.8); 7.0068 (1.0); 6.9343 (3.8); 6.9217 (3.5); 6.8892 (2.2); 6.8755 (1.9); 6.7603 (0.6); 6.7494 (2.1); 6.7389 (3.4); 6.7265 (1.6); 6.5226 (1.9); 6.5120 (1.7); 6.4923 (1.0); 6.4809 (3.0); 6.4694 (3.0); 6.4579 (1.0); 6.0875 (0.5); 6.0760 (1.6); 6.0645 (1.6); 6.0530 (0.5); 5.9301 (0.5); 5.9185 (1.6); 5.9069 (1.7); 5.8954 (0.6); 5.4713 (9.0); 3.9297 (1.0); 3.9194 (1.0); 3.9058 (1.2); 3.8956 (1.2); 3.8425 (0.8); 3.8324 (0.8); 3.8190 (1.3); 3.8088 (1.3); 3.7479 (1.4); 3.7358 (1.4); 3.7244 (0.8); 3.7123 (0.9); 3.7019 (1.3); 3.6898 (1.3); 3.6780 (1.0); 3.6660 (1.0); 2.9155 (1.6); 2.9033 (1.7); 2.8895 (3.2); 2.8773 (3.2); 2.8384 (2.8); 2.8292 (2.9); 2.8121 (1.7); 2.8032 (1.6); 2.7827 (1.9); 2.7717 (1.9); 2.7562 (1.8); 2.7457 (1.9); 2.7303 (0.6); 2.7197 (0.7); 2.2968 (182.4); 2.0966 (0.8); 2.0709 (1.0); 1.9843 (4.8); 1.9682 (60.9); 1.9642 (117.6); 1.9601 (167.8); 1.9560 (118.8); 1.9519 (60.9); 1.8447 (8.7); 1.8330 (7.8); 1.7871 (14.1); 1.7755 (14.2); 1.7669 (7.0); 1.7552 (6.8); 1.6991 (6.5); 1.6875 (6.4); 1.5127 (0.4); 1.5012 (0.6); 1.2560 (0.7); 1.2441 (0.8); 1.1175 (0.7); 0.5783 (0.7); 0.5642 (1.6); 0.5561 (2.0); 0.5480 (2.1); 0.5412 (1.8); 0.5339 (1.7); 0.5265 (1.3); 0.5196 (1.2); 0.5123 (1.0); 0.4972 (0.9); 0.4885 (1.0); 0.4821 (1.5); 0.4747 (1.8); 0.4672 (1.8); 0.4593 (1.2); 0.4058 (1.1); 0.3863 (1.5); 0.3782 (1.4); 0.3716 (0.9); 0.3191 (0.9); 0.3125 (1.1); 0.3039 (1.0); 0.2954 (1.1); 0.2870 (1.6); 0.2747 (2.4); 0.2661 (2.4); 0.2446 (0.7); 0.2252 (0.5); 0.2028 (1.1); 0.1951 (0.8); 0.1437 (0.5); 0.1284 (1.5); 0.1207 (2.0); 0.1130 (1.6); 0.0932 (1.1); 0.0844 (1.6); 0.0773 (1.8); 0.0709 (2.0); 0.0632 (1.4); 0.0480 (0.5); -0.1926 (0.8); -0.2006 (1.2); -0.2086 (1.2); -0.2166 (0.9); -0.3634 (0.6); -0.3716 (1.5); -0.3792 (2.1); -0.3874 (2.3); -0.3954 (1.7); -	383.2

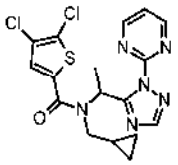
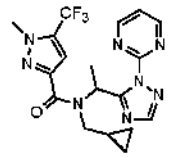
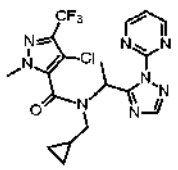
		0.4039 (0.7); -0.4177 (1.0); -0.4255 (1.2); -0.4336 (1.2); -0.4417 (0.8); -0.5275 (0.7); -0.5356 (1.7); -0.5437 (2.2); -0.5517 (2.0); -0.5594 (1.4)	
I-014		^{1}H-NMR(600.1 MHz, CD_3CN, 260 K): δ= 9.1747 (0.3); 9.0532 (0.4); 8.9085 (12.1); 8.8997 (14.4); 8.8902 (5.4); 8.6453 (0.9); 8.6251 (7.9); 8.6170 (6.9); 8.6048 (5.2); 8.5968 (4.5); 8.3583 (0.4); 8.0886 (9.7); 8.0758 (5.6); 8.0304 (6.3); 8.0121 (4.4); 7.9452 (0.8); 7.6020 (0.4); 7.5665 (0.6); 7.5359 (4.0); 7.5278 (6.4); 7.5201 (4.0); 7.5152 (3.5); 7.5073 (1.7); 7.4706 (0.9); 7.4589 (1.2); 7.4297 (6.4); 7.4156 (8.8); 7.4077 (6.3); 7.3929 (2.2); 7.3812 (1.2); 7.3669 (2.9); 7.3523 (4.4); 7.3475 (3.6); 7.3381 (8.6); 7.3238 (1.2); 7.2201 (3.8); 7.1252 (1.6); 7.1108 (1.6); 7.0628 (2.4); 7.0483 (1.9); 6.9813 (6.3); 6.8770 (2.8); 6.8627 (2.4); 6.7724 (0.7); 6.7609 (2.1); 6.7493 (1.9); 6.7373 (0.4); 6.6719 (3.9); 6.4326 (1.2); 6.4213 (3.2); 6.4098 (2.9); 6.3981 (0.6); 6.1015 (0.7); 6.0899 (1.9); 6.0785 (1.8); 6.0668 (0.4); 6.0001 (0.8); 5.9884 (2.4); 5.9771 (2.2); 5.9654 (0.5); 5.4730 (3.7); 5.2414 (0.4); 5.2298 (0.3); 3.8847 (1.4); 3.8743 (1.4); 3.8610 (2.1); 3.8503 (2.9); 3.8398 (1.0); 3.8262 (1.6); 3.8160 (1.5); 3.7560 (3.6); 3.7439 (3.6); 3.7323 (2.3); 3.7203 (2.2); 3.1342 (0.4); 3.0493 (0.4); 3.0310 (1.2); 2.9835 (2.0); 2.9715 (2.0); 2.9574 (2.9); 2.9455 (2.8); 2.8317 (2.8); 2.8226 (2.9); 2.8045 (5.5); 2.8000 (5.3); 2.7957 (4.6); 2.7790 (0.3); 2.7684 (0.4); 2.7272 (0.5); 2.2962 (181.6); 2.0772 (0.9); 2.0706 (1.2); 1.9855 (2.1); 1.9621 (240.1); 1.9614 (238.2); 1.9269 (1.4); 1.8949 (0.5); 1.8447 (1.6); 1.8303 (9.1); 1.8186 (9.2); 1.7889 (15.4); 1.7842 (12.2); 1.7776 (16.0); 1.7730 (11.5); 1.7236 (7.4); 1.7121 (7.6); 1.6500 (0.5); 1.6378 (0.5); 1.5082 (0.4); 1.4959 (0.4); 1.3843 (1.5); 1.3731 (1.4); 1.2614 (1.5); 1.2529 (1.1); 1.2416 (1.2); 1.2305 (0.9); 1.2203 (0.3); 1.1922 (1.1); 1.1812 (1.1); 1.1517 (0.6); 1.1412 (0.8); 1.1309 (0.6); 0.7992 (0.4); 0.5722 (0.5); 0.5650 (1.2); 0.5577 (1.6); 0.5507 (1.7); 0.5429 (1.9); 0.5351 (1.9); 0.5287 (1.8); 0.5199 (1.9); 0.5129 (1.4); 0.5049 (1.1); 0.4970 (1.1); 0.4883 (0.9); 0.4857 (0.9); 0.4789 (1.1); 0.4706 (1.3); 0.4629 (0.8); 0.4088 (1.0); 0.4014 (1.6); 0.3937 (1.7); 0.3871 (1.5); 0.3803 (0.8); 0.3534 (1.8); 0.3476 (1.9); 0.3410 (2.1); 0.3319 (1.3); 0.1677 (3.1); 0.1546 (2.4); 0.0969 (3.9); -0.0001 (1442.4); -0.0846 (6.1); -0.1002 (12.9); -0.1673 (3.1); -0.1759 (3.7); -0.1839 (4.1); -0.1920 (4.1); -0.1998 (3.7); -0.2076 (2.9); -0.2181 (2.4); -0.2262 (2.6); -0.2346 (2.6); -0.2423 (2.5); -0.2493 (2.3); -0.3160 (1.6); -0.3250 (1.6); -0.3355 (2.8); -0.3441 (3.5); -0.3517 (3.5); -0.3590 (3.5); -0.3658 (2.3); -0.4207 (1.5); -0.4297 (2.8); -0.4374 (4.5); -0.4449 (4.7); -0.4529 (4.6); -0.4612 (3.3); -0.5414 (1.1); -0.5530 (1.0); -0.6287 (0.9); -0.6476 (0.9); -0.6545 (0.8); -0.6638 (0.8); -0.6729 (0.8); -0.6894 (0.8); -0.6993 (0.8); -0.7397 (0.8); -0.7964 (0.7); -0.8304 (0.7); -0.8391 (0.6); -0.8801 (0.6); -0.8904 (0.6); -0.8992 (0.6); -0.9293 (0.6); -0.9403 (0.6); -0.9439 (0.6); -0.9494 (0.6); -0.9705 (0.6); -0.9857 (0.6); -1.0010 (0.5); -1.0205 (0.5); -1.0447 (0.5); -1.0512 (0.5); -1.0744 (0.5); -1.0958 (0.5); -1.1334 (0.5); -1.2053 (0.4); -1.2109 (0.4); -1.2264 (0.4); -1.2555 (0.4); -1.2604 (0.4); -1.2733 (0.4); -1.2883 (0.4); -1.3039 (0.4); -1.3260 (0.4); -1.3466 (0.4); -1.3590 (0.4); -1.3772 (0.4); -1.4025 (0.4); -1.4265 (0.3); -1.4391 (0.3); -1.4498 (0.3); -1.4562 (0.3); -1.4632 (0.3); -1.4780 (0.3)	417.2
I-015		^{1}H-NMR(600.1 MHz, CD_3CN, 260 K): δ= 8.9069 (4.4); 8.8986 (12.1); 8.8906 (8.2); 8.6411 (5.2); 8.6330 (5.2); 8.6101 (5.5); 8.6021 (5.6); 8.0852 (7.3); 8.0204 (7.9); 7.9431 (0.9); 7.5353 (3.3); 7.5293 (3.9); 7.5213 (7.9); 7.5060 (3.4); 7.4999 (4.3); 7.4860 (4.1); 7.4385 (1.4); 7.4305 (2.7); 7.4225 (1.4); 7.4157 (1.6); 7.4077 (3.0); 7.3997 (1.5); 7.3159 (3.2); 7.3021 (2.7); 7.1302 (2.2); 7.1162 (2.1); 6.9476 (2.6); 6.9339 (2.8); 6.9261 (4.1); 6.9122 (3.9); 6.7829 (0.5); 6.7715 (1.4); 6.7598 (1.4); 6.7484 (0.5); 6.4923 (2.7); 6.4786 (2.6); 6.4418 (0.8); 6.4305 (2.4); 6.4190 (2.4); 6.4075 (0.8);	453.0

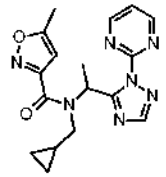
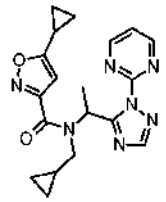
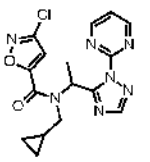
		6.1560 (0.6); 6.1447 (1.9); 6.1331 (2.0); 6.1218 (0.6); 5.9185 (0.5); 5.9072 (1.7); 5.8956 (1.7); 5.8840 (0.6); 5.4723 (4.8); 5.2388 (0.4); 5.2272 (0.4); 3.8922 (1.0); 3.8816 (1.0); 3.8681 (1.4); 3.8580 (1.6); 3.8522 (1.0); 3.8386 (1.7); 3.8283 (1.7); 3.7821 (1.7); 3.7700 (1.8); 3.7534 (1.5); 3.7416 (1.5); 3.7293 (1.0); 3.7174 (1.0); 3.1854 (0.3); 3.0327 (1.0); 2.9483 (1.3); 2.9363 (1.3); 2.9222 (2.3); 2.9102 (2.3); 2.8525 (2.2); 2.8434 (2.2); 2.8268 (1.8); 2.8171 (1.9); 2.8017 (1.4); 2.7898 (2.2); 2.7560 (1.3); 2.7454 (1.4); 2.7295 (0.7); 2.7194 (0.8); 2.6929 (0.7); 2.2961 (162.5); 2.2802 (0.9); 2.2693 (0.6); 2.0976 (1.0); 2.0854 (0.8); 2.0751 (1.0); 2.0649 (0.8); 2.0206 (0.3); 2.0108 (0.4); 1.9851 (1.0); 1.9618 (141.4); 1.9603 (138.5); 1.8447 (1.0); 1.8350 (6.1); 1.8232 (6.0); 1.7856 (16.0); 1.7741 (15.8); 1.7263 (7.4); 1.7147 (7.4); 1.3832 (1.6); 1.3719 (1.6); 1.2604 (2.9); 1.2453 (1.0); 1.2352 (0.5); 1.1913 (1.9); 1.1804 (2.2); 1.1696 (0.8); 1.1594 (0.4); 0.8925 (0.4); 0.8818 (0.8); 0.8701 (0.4); 0.5972 (0.6); 0.5892 (1.0); 0.5823 (1.6); 0.5750 (1.9); 0.5679 (2.1); 0.5603 (2.0); 0.5530 (2.5); 0.5387 (1.7); 0.5358 (1.7); 0.5326 (1.8); 0.5141 (1.7); 0.5085 (1.4); 0.4998 (1.6); 0.4926 (1.6); 0.4846 (1.2); 0.4771 (0.4); 0.4179 (1.6); 0.4093 (1.9); 0.3974 (3.3); 0.3711 (0.6); 0.3596 (0.5); 0.3509 (0.4); 0.3438 (0.4); 0.2896 (1.1); 0.2802 (1.7); 0.2679 (1.9); 0.2586 (1.4); 0.2481 (1.0); 0.2428 (1.0); 0.2342 (1.1); 0.2264 (1.2); 0.2183 (1.0); 0.2114 (0.8); 0.2036 (0.6); 0.1594 (0.4); 0.1507 (0.6); 0.1441 (1.1); 0.1357 (1.6); 0.1294 (1.5); 0.1209 (1.8); 0.1134 (1.9); 0.1049 (1.6); 0.0970 (9.4); 0.0784 (0.9); 0.0461 (0.7); 0.0375 (0.8); -0.0001 (1384.6); -0.0277 (1.2); -0.0345 (1.1); -0.0422 (1.0); -0.0507 (1.1); -0.0571 (0.9); -0.0655 (1.0); -0.0844 (0.9); -0.1000 (8.2); -0.1669 (0.4); -0.1747 (0.8); -0.1826 (1.0); -0.1904 (1.1); -0.1983 (0.8); -0.2065 (0.4); -0.2281 (0.4); -0.2361 (0.6); -0.2440 (0.5); -0.2515 (0.4); -0.3189 (0.5); -0.3267 (1.2); -0.3340 (1.8); -0.3419 (1.9); -0.3502 (1.5); -0.3584 (0.6); -0.3746 (0.3); -0.3829 (0.8); -0.3909 (1.1); -0.3987 (1.0); -0.4069 (0.7); -0.4630 (0.6); -0.4709 (1.4); -0.4791 (1.8); -0.4868 (1.6); -0.4942 (1.1); -0.5016 (0.4)	
I-016		^{1}H-NMR(600.1 MHz, CD_3CN, 260 K): δ= 8.9118 (7.5); 8.9047 (16.0); 8.8968 (13.6); 8.6157 (7.1); 8.6076 (7.2); 8.5720 (8.4); 8.5639 (8.5); 8.0839 (11.5); 8.0785 (6.2); 8.0249 (6.5); 8.0126 (5.6); 7.5629 (3.4); 7.5606 (3.5); 7.5495 (3.9); 7.5471 (3.8); 7.5441 (2.0); 7.5417 (2.0); 7.5387 (2.2); 7.5341 (3.9); 7.5306 (6.2); 7.5279 (3.1); 7.5261 (7.4); 7.5226 (2.2); 7.5180 (3.6); 7.3879 (2.3); 7.3838 (2.1); 7.3798 (4.6); 7.3757 (3.9); 7.3717 (2.4); 7.3676 (2.0); 7.3534 (0.6); 7.3505 (0.6); 7.3441 (0.4); 7.3401 (0.5); 7.3371 (1.0); 7.3323 (2.6); 7.3265 (5.8); 7.3215 (7.2); 7.3191 (8.6); 7.3127 (2.4); 7.3084 (0.9); 7.3048 (5.0); 7.2916 (5.9); 7.2785 (3.4); 7.1801 (1.9); 7.1777 (1.9); 7.1667 (2.0); 7.1643 (2.0); 7.1039 (1.9); 7.1015 (1.9); 7.0911 (1.7); 7.0888 (1.7); 6.9167 (3.5); 6.9143 (3.6); 6.9040 (3.4); 6.9016 (3.3); 6.7718 (0.5); 6.7601 (1.7); 6.7564 (2.0); 6.7484 (1.7); 6.7435 (3.3); 6.7368 (0.5); 6.7304 (1.9); 6.4872 (2.0); 6.4848 (2.0); 6.4746 (1.9); 6.4722 (1.8); 6.4596 (0.8); 6.4481 (2.5); 6.4366 (2.5); 6.4251 (0.8); 6.1523 (0.6); 6.1407 (2.0); 6.1292 (2.0); 6.1176 (0.6); 5.9033 (0.5); 5.8917 (1.7); 5.8801 (1.7); 5.8684 (0.5); 5.4725 (1.4); 3.9193 (1.0); 3.9088 (1.0); 3.8954 (1.3); 3.8849 (1.3); 3.8490 (1.0); 3.8388 (1.0); 3.8255 (1.7); 3.8152 (1.7); 3.7699 (1.9); 3.7577 (1.9); 3.7463 (1.1); 3.7341 (1.1); 3.7276 (1.4); 3.7156 (1.4); 3.7037 (1.1); 3.6918 (1.1); 2.9273 (1.6); 2.9151 (1.6); 2.9012 (3.0); 2.8890 (3.0); 2.8501 (2.5); 2.8409 (2.5); 2.8309 (0.9); 2.8239 (1.4); 2.8201 (1.0); 2.8148 (1.3); 2.8048 (1.5); 2.7940 (1.5); 2.7482 (1.5); 2.7376 (1.5); 2.7221 (0.8); 2.7115 (0.8); 2.2927 (45.4); 2.0763 (0.5); 2.0722 (0.8); 2.0681 (0.5); 1.9855 (0.4); 1.9774 (1.5); 1.9696 (45.7); 1.9654 (89.0); 1.9613 (130.4); 1.9572 (89.2); 1.9531 (44.9); 1.9487 (1.2); 1.9444 (0.4); 1.8503 (0.6); 1.8462 (1.0); 1.8413 (8.2); 1.8295 (7.9); 1.7935 (13.9); 1.7820 (13.8); 1.7672 (7.1); 1.7556 (7.1); 1.7079 (8.5); 1.6963 (8.5); 1.2671 (0.5); 1.2641 (0.4); 1.2620 (0.4);	417.1

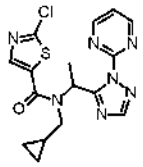
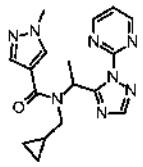
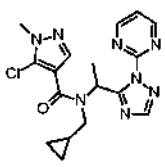
		1.2561 (0.7); 1.2474 (0.4); 1.2448 (0.5); 1.1941 (0.6); 1.1831 (0.6); 1.1444 (0.6); 1.1404 (0.4); 1.1340 (0.7); 1.1323 (0.7); 1.1264 (0.4); 1.1221 (0.6); 0.5931 (0.5); 0.5870 (0.6); 0.5839 (0.7); 0.5792 (1.5); 0.5735 (1.2); 0.5709 (1.1); 0.5651 (1.6); 0.5594 (0.8); 0.5575 (0.8); 0.5509 (0.8); 0.5470 (0.6); 0.5445 (0.7); 0.5385 (1.0); 0.5362 (0.9); 0.5317 (1.2); 0.5233 (1.5); 0.5191 (1.0); 0.5158 (0.9); 0.5093 (1.7); 0.5021 (1.3); 0.5008 (1.3); 0.4944 (1.7); 0.4870 (1.8); 0.4802 (1.6); 0.4719 (0.6); 0.4651 (0.4); 0.4228 (0.5); 0.4145 (0.9); 0.4087 (0.9); 0.4057 (1.0); 0.4021 (1.1); 0.3954 (1.4); 0.3870 (1.5); 0.3808 (1.0); 0.3725 (0.5); 0.3431 (0.5); 0.3345 (1.0); 0.3283 (1.2); 0.3196 (1.0); 0.3128 (0.6); 0.3041 (0.3); 0.2986 (0.4); 0.2925 (0.6); 0.2903 (0.5); 0.2853 (1.3); 0.2821 (0.9); 0.2769 (1.8); 0.2721 (1.4); 0.2695 (1.5); 0.2637 (1.6); 0.2606 (1.2); 0.2561 (1.0); 0.2509 (0.6); 0.2471 (0.7); 0.2359 (0.5); 0.2285 (0.6); 0.2268 (0.6); 0.2222 (0.6); 0.2196 (0.6); 0.2134 (0.9); 0.2058 (0.6); 0.2000 (0.3); 0.1982 (0.3); 0.1533 (0.4); 0.1458 (0.5); 0.1441 (0.6); 0.1380 (1.2); 0.1307 (1.5); 0.1240 (1.2); 0.1223 (1.2); 0.1173 (0.9); 0.1154 (0.9); 0.1075 (1.5); 0.1001 (1.2); 0.0981 (1.3); 0.0936 (1.2); 0.0913 (1.4); 0.0849 (1.6); 0.0775 (1.2); 0.0715 (0.6); 0.0696 (0.5); 0.0622 (0.5); 0.0054 (4.2); -0.0001 (138.3); -0.0057 (4.0); -0.1002 (0.6); -0.2120 (0.7); -0.2200 (1.0); -0.2283 (1.1); -0.2358 (0.8); -0.2442 (0.4); -0.3370 (0.6); -0.3453 (1.2); -0.3524 (1.9); -0.3608 (1.9); -0.3689 (1.4); -0.3772 (0.7); -0.3850 (0.4); -0.3933 (0.8); -0.4009 (1.0); -0.4093 (1.0); -0.4173 (0.6); -0.4948 (0.6); -0.5029 (1.3); -0.5111 (1.8); -0.5192 (1.6); -0.5264 (1.1); -0.5347 (0.4)	
I-017		^{1}H-NMR(600.1 MHz, CD_3CN, 260 K): δ= 8.8963 (14.2); 8.8937 (9.4); 8.8882 (14.6); 8.8856 (9.4); 8.6457 (10.4); 8.6376 (10.7); 8.6170 (8.9); 8.6090 (9.1); 8.0833 (11.8); 8.0744 (6.4); 8.0179 (8.4); 8.0133 (7.2); 7.5340 (6.4); 7.5308 (6.9); 7.5277 (4.3); 7.5195 (7.4); 7.5114 (4.2); 7.5093 (4.6); 7.5011 (2.0); 7.4512 (2.6); 7.4473 (3.6); 7.4433 (7.5); 7.4351 (2.5); 7.4314 (3.0); 7.4233 (5.6); 7.4152 (2.9); 7.4106 (5.1); 7.4073 (5.2); 7.3976 (0.4); 7.3765 (1.9); 7.3733 (1.8); 7.3628 (2.2); 7.3595 (2.1); 7.3426 (3.6); 7.3393 (3.7); 7.3317 (11.6); 7.3256 (4.1); 7.1689 (3.5); 7.1551 (3.1); 6.9598 (6.6); 6.9459 (9.2); 6.7822 (0.6); 6.7706 (1.9); 6.7651 (2.9); 6.7618 (3.2); 6.7592 (2.2); 6.7515 (3.1); 6.7482 (3.6); 6.5381 (5.3); 6.5244 (4.7); 6.4641 (0.9); 6.4526 (3.1); 6.4411 (3.1); 6.4296 (1.0); 6.0843 (0.7); 6.0728 (2.2); 6.0612 (2.3); 6.0496 (0.7); 5.9413 (0.8); 5.9297 (2.6); 5.9180 (2.6); 5.9064 (0.8); 5.4724 (6.3); 3.8983 (1.5); 3.8879 (1.6); 3.8745 (2.1); 3.8641 (2.1); 3.8524 (1.1); 3.8422 (1.2); 3.8289 (1.9); 3.8185 (1.9); 3.7612 (2.0); 3.7491 (2.0); 3.7376 (1.3); 3.7330 (2.2); 3.7255 (1.4); 3.7210 (2.3); 3.7092 (1.7); 3.6971 (1.7); 2.9332 (1.9); 2.9210 (1.9); 2.9071 (3.2); 2.8949 (3.2); 2.8378 (2.8); 2.8286 (2.9); 2.8163 (0.9); 2.8118 (1.8); 2.8027 (1.8); 2.7904 (2.0); 2.7794 (2.0); 2.7604 (1.9); 2.7499 (1.9); 2.7344 (0.7); 2.7239 (0.7); 2.2918 (51.8); 2.0803 (0.4); 2.0762 (0.7); 2.0721 (1.1); 2.0680 (0.7); 2.0639 (0.4); 1.9855 (3.4); 1.9813 (0.3); 1.9773 (1.8); 1.9695 (64.1); 1.9654 (125.8); 1.9613 (185.1); 1.9571 (127.6); 1.9530 (64.8); 1.9443 (1.1); 1.9404 (0.5); 1.9356 (0.3); 1.8544 (0.4); 1.8503 (0.7); 1.8462 (1.1); 1.8421 (0.9); 1.8379 (0.5); 1.8292 (8.5); 1.8175 (8.5); 1.7841 (11.4); 1.7778 (16.0); 1.7725 (12.3); 1.7663 (15.6); 1.7201 (9.3); 1.7085 (9.3); 1.3193 (0.3); 1.3083 (0.4); 1.3022 (0.4); 1.2913 (0.4); 1.2648 (0.5); 1.2565 (0.9); 1.2447 (1.0); 1.2339 (0.8); 1.2252 (0.4); 1.2206 (0.3); 1.1894 (0.8); 1.1851 (0.4); 1.1782 (1.2); 1.1649 (0.9); 1.1585 (0.6); 1.1543 (0.7); 0.5887 (0.4); 0.5831 (1.0); 0.5766 (1.1); 0.5739 (1.1); 0.5690 (1.8); 0.5646 (1.7); 0.5598 (2.0); 0.5556 (1.7); 0.5511 (2.4); 0.5437 (2.5); 0.5367 (2.6); 0.5306 (1.6); 0.5278 (1.6); 0.5229 (2.5); 0.5175 (1.5); 0.5126 (1.4); 0.5095 (1.5); 0.5034 (1.5); 0.4964 (1.3); 0.4909 (1.1); 0.4882 (1.5); 0.4822 (1.9); 0.4735 (1.7); 0.4667 (1.3); 0.4580 (0.6); 0.4182 (0.7); 0.4097 (1.6); 0.4035 (1.6); 0.4017 (1.6); 0.3976 (1.4); 0.3938 (2.0); 0.3897 (2.0); 0.3848 (2.2); 0.3808 (1.8); 0.3779 (1.7); 0.3726 (1.4); 0.3694 (1.0); 0.3645 (0.8); 0.3566 (0.5);	417.1

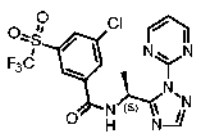
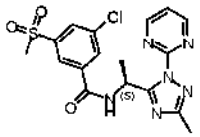
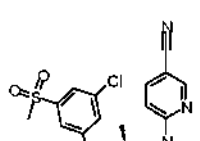
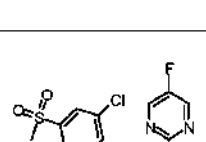
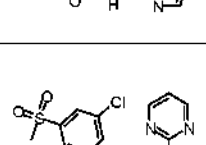
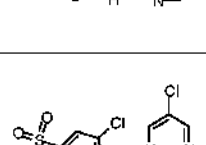
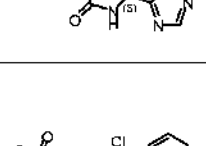
		0.3082 (0.4); 0.3004 (0.8); 0.2945 (1.5); 0.2914 (1.3); 0.2861 (2.2); 0.2828 (1.8); 0.2780 (2.1); 0.2730 (1.9); 0.2698 (1.6); 0.2649 (1.2); 0.2556 (0.6); 0.2342 (0.7); 0.2250 (0.8); 0.2174 (0.8); 0.2112 (1.1); 0.2034 (0.8); 0.1975 (0.4); 0.1614 (0.5); 0.1526 (0.7); 0.1465 (1.4); 0.1387 (1.9); 0.1315 (1.9); 0.1235 (2.4); 0.1170 (2.4); 0.1084 (1.8); 0.1019 (1.9); 0.0947 (1.5); 0.0867 (0.6); 0.0793 (0.5); 0.0054 (5.8); -0.0001 (189.6); -0.0057 (5.9); -0.1002 (0.8); -0.1724 (0.4); -0.1806 (0.8); -0.1886 (1.2); -0.1968 (1.3); -0.2047 (0.9); -0.2130 (0.4); -0.3337 (0.6); -0.3417 (1.5); -0.3484 (2.2); -0.3567 (2.4); -0.3648 (1.7); -0.3731 (0.8); -0.4086 (0.4); -0.4170 (1.0); -0.4250 (1.2); -0.4330 (1.2); -0.4412 (0.8); -0.4495 (0.4); -0.4889 (0.7); -0.4970 (1.7); -0.5052 (2.2); -0.5132 (2.0); -0.5200 (1.3); -0.5280 (0.5)	
I-018		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 8.9632 (13.2); 8.9511 (13.5); 8.7285 (6.0); 8.7163 (6.1); 8.2657 (12.3); 8.2409 (5.0); 7.6591 (3.7); 7.6470 (7.2); 7.6348 (3.6); 7.5636 (1.6); 7.5514 (3.1); 7.5392 (1.6); 7.5326 (0.7); 7.5155 (1.4); 7.5114 (1.5); 7.4945 (2.7); 7.4775 (1.6); 7.4734 (1.6); 7.4566 (0.7); 7.3410 (0.6); 7.3369 (0.7); 7.3201 (1.2); 7.3030 (0.7); 7.2990 (0.7); 7.2823 (0.4); 7.1775 (2.7); 7.1558 (4.9); 7.1343 (2.4); 7.1184 (2.1); 7.0968 (3.8); 7.0753 (1.8); 6.7138 (0.9); 6.6923 (1.6); 6.6708 (0.8); 6.6206 (0.9); 6.6033 (3.4); 6.5859 (3.4); 6.5686 (0.9); 6.0424 (0.4); 6.0253 (1.2); 6.0080 (1.2); 5.9912 (0.3); 5.7579 (16.0); 3.7734 (0.5); 3.7573 (0.5); 3.7377 (1.3); 3.7217 (1.3); 3.7039 (1.4); 3.6864 (1.4); 3.6679 (0.5); 3.6505 (0.5); 3.3289 (85.5); 2.9222 (1.4); 2.9055 (1.5); 2.8830 (2.3); 2.8663 (2.3); 2.7669 (2.2); 2.7521 (2.2); 2.7277 (1.4); 2.7128 (1.4); 2.6766 (0.7); 2.6722 (0.9); 2.6677 (0.7); 2.5254 (3.2); 2.5118 (57.1); 2.5077 (111.3); 2.5032 (144.5); 2.4988 (106.4); 2.4946 (53.5); 2.3343 (0.6); 2.3300 (0.9); 2.3256 (0.6); 2.0759 (6.4); 1.7456 (13.4); 1.7282 (13.3); 1.7017 (5.3); 1.6844 (5.2); 1.0644 (0.4); 1.0469 (0.6); 1.0305 (0.4); 0.4921 (0.5); 0.4840 (0.6); 0.4795 (0.6); 0.4723 (1.0); 0.4664 (0.8); 0.4592 (1.0); 0.4523 (0.7); 0.4477 (0.9); 0.4366 (0.8); 0.4275 (0.6); 0.3518 (0.7); 0.3399 (1.3); 0.3277 (1.9); 0.3159 (1.8); 0.3093 (1.7); 0.2975 (0.9); 0.2799 (0.6); 0.2732 (0.6); 0.2683 (0.8); 0.2613 (0.9); 0.2493 (0.6); 0.2375 (0.4); 0.2248 (0.3); 0.2114 (0.5); 0.1882 (1.4); 0.1749 (4.2); 0.1544 (4.6); 0.1413 (1.1); 0.1182 (0.4); 0.0079 (3.8); -0.0001 (93.5); -0.0082 (3.6); -0.1494 (0.5); -0.2935 (0.6); -0.3048 (1.3); -0.3135 (1.4); -0.3254 (2.0); -0.3373 (1.4); -0.3406 (1.4); -0.4767 (1.5); -0.4798 (1.5); -0.4918 (1.9); -0.5032 (1.3); -0.5123 (1.2); -0.5243 (0.5)	385.2
I-019		^{1}H-NMR(600.1 MHz, CD$_3$CN, 260 K): δ= 8.9092 (0.4); 8.9011 (0.5); 8.8719 (13.4); 8.8638 (13.1); 8.6337 (3.0); 8.6257 (2.9); 8.2626 (0.3); 8.1801 (0.4); 8.1463 (6.7); 8.0919 (11.9); 8.0774 (0.4); 8.0401 (4.4); 8.0268 (0.4); 7.8451 (1.9); 7.7364 (1.9); 7.6992 (7.2); 7.5945 (7.2); 7.5198 (3.7); 7.5117 (6.9); 7.5037 (3.5); 7.4297 (0.9); 7.4218 (1.6); 7.4140 (0.8); 6.3800 (1.3); 6.3685 (3.9); 6.3568 (3.9); 6.3453 (1.2); 6.0315 (0.4); 6.0195 (1.0); 6.0082 (1.0); 5.9967 (0.3); 5.4721 (10.5); 3.6955 (0.6); 3.6852 (0.6); 3.6719 (0.8); 3.6613 (0.8); 3.5385 (0.8); 3.5270 (0.8); 3.5148 (0.6); 3.5033 (0.6); 3.2206 (0.3); 2.9096 (1.0); 2.8983 (1.1); 2.8834 (4.3); 2.8713 (6.3); 2.8597 (4.2); 2.8430 (1.0); 2.8334 (0.9); 2.6637 (1.4); 2.3187 (0.5); 2.2901 (183.1); 2.0925 (0.4); 2.0800 (0.8); 2.0760 (1.4); 2.0719 (2.0); 2.0677 (1.4); 2.0637 (0.8); 2.0422 (0.4); 2.0379 (0.4); 2.0324 (0.4); 2.0233 (0.5); 2.0188 (0.5); 2.0151 (0.5); 2.0112 (0.6); 1.9994 (0.9); 1.9768 (7.1); 1.9692 (124.0); 1.9651 (233.3); 1.9610 (332.5); 1.9569 (225.5); 1.9528 (111.7); 1.9441 (0.9); 1.8540 (0.7); 1.8500 (1.4); 1.8459 (2.0); 1.8418 (1.5); 1.8376 (0.9); 1.8217 (16.0); 1.8100 (15.9); 1.7943 (0.6); 1.7823 (0.5); 1.7497 (0.4); 1.7303 (4.0); 1.7188 (3.8); 1.4157 (0.4); 1.3409 (0.6); 1.3050 (0.6); 1.2828 (1.1); 1.2749 (0.7); 1.2609 (2.5); 1.2441 (0.3); 1.2066 (0.4); 1.0616 (0.4); 1.0509 (0.7); 1.0410 (0.8); 1.0294 (0.6); 0.8814 (0.5); 0.5765 (0.6); 0.5642 (1.5); 0.5544 (2.0); 0.5435 (1.6); 0.5349 (0.8); 0.5199	515.0

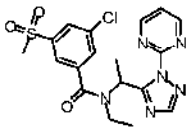
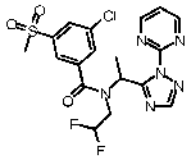
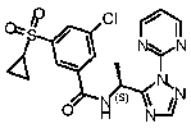
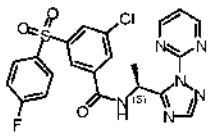
		(0.4); 0.5168 (0.4); 0.5061 (0.4); 0.5034 (0.4); 0.4922 (0.6); 0.4785 (1.2); 0.4714 (1.2); 0.4651 (1.2); 0.4587 (0.8); 0.4512 (0.5); 0.3405 (0.6); 0.3314 (0.7); 0.3234 (0.8); 0.3023 (0.8); 0.2933 (1.1); 0.2870 (2.0); 0.2795 (2.6); 0.2725 (2.4); 0.2651 (2.1); 0.2567 (1.9); 0.2513 (2.0); 0.2435 (2.4); 0.2358 (2.4); 0.2293 (2.5); 0.2218 (1.7); 0.2154 (1.0); 0.2063 (0.6); 0.0968 (0.7); 0.0052 (6.4); -0.0001 (147.2); -0.0057 (4.2); -0.1002 (0.7); -0.1976 (0.8); -0.2057 (1.8); -0.2138 (2.6); -0.2219 (2.7); -0.2294 (2.0); -0.2377 (0.8); -0.3728 (0.9); -0.3808 (2.1); -0.3886 (2.8); -0.3966 (2.5); -0.4045 (1.7); -0.4131 (0.6)	
I-020		^{1}H-NMR(400.2 MHz, d_6-DMSO): δ= 9.4561 (2.7); 9.4382 (2.8); 8.9983 (15.6); 8.9861 (16.0); 8.3243 (0.3); 8.3166 (0.4); 8.2594 (0.3); 8.2375 (4.0); 8.2337 (7.8); 8.2299 (4.6); 8.1748 (12.9); 8.1443 (2.5); 8.1395 (7.5); 8.1349 (10.0); 8.1305 (7.1); 8.1258 (2.3); 7.6439 (4.2); 7.6318 (8.0); 7.6196 (4.1); 6.0444 (0.5); 6.0272 (2.1); 6.0097 (3.3); 5.9921 (2.1); 5.9746 (0.4); 3.3690 (0.4); 3.3572 (2.2); 3.3299 (113.6); 3.3137 (35.5); 2.6758 (1.1); 2.6714 (1.5); 2.6668 (1.1); 2.6623 (0.5); 2.5248 (4.3); 2.5200 (6.8); 2.5113 (91.1); 2.5069 (184.0); 2.5024 (241.4); 2.4978 (173.5); 2.4933 (83.2); 2.3381 (0.6); 2.3337 (1.1); 2.3292 (1.5); 2.3247 (1.1); 2.0750 (0.4); 1.6537 (12.8); 1.6363 (12.8); 0.1459 (0.9); 0.0080 (7.2); -0.0002 (210.9); -0.0085 (7.4); -0.1496 (0.9)	407.1
I-021		^{1}H-NMR(400.6 MHz, CD3CN, 260 K): δ= 8.8212 (7.5); 8.6613 (6.0); 8.6448 (4.2); 8.3409 (0.4); 8.3294 (0.4); 8.0535 (16.0); 7.4612 (8.2); 7.3588 (4.0); 7.3236 (0.5); 7.0365 (5.3); 6.9590 (4.0); 6.8254 (5.3); 6.6102 (0.3); 6.5985 (0.6); 6.3509 (4.5); 6.3336 (14.8); 6.3162 (14.8); 6.2989 (4.6); 3.3108 (2.1); 3.2991 (2.1); 3.2530 (2.1); 3.2383 (2.2); 3.1303 (1.0); 3.1137 (0.4); 3.0939 (0.3); 3.0780 (0.3); 3.0473 (0.8); 2.9905 (1.1); 2.9400 (5.8); 2.5163 (2.0); 2.3306 (432.9); 2.1330 (0.6); 2.1268 (0.8); 2.1207 (0.6); 2.0019 (0.3); 1.9956 (0.4); 1.9896 (0.4); 1.9837 (0.8); 1.9775 (2.2); 1.9720 (50.3); 1.9659 (100.7); 1.9597 (147.8); 1.9535 (100.1); 1.9474 (50.2); 1.9407 (1.7); 1.9343 (0.8); 1.9282 (0.3); 1.8065 (10.2); 1.7947 (8.1); 1.7883 (8.2); 1.7726 (12.5); 1.7570 (10.4); 1.6513 (1.2); 1.6335 (1.2); 1.1851 (0.6); 1.1686 (0.6); 0.7519 (1.8); 0.5810 (2.2); 0.3130 (7.2); 0.2088 (1.6); 0.1826 (2.1); -0.1001 (3.8)	389.1
I-022		^{1}H-NMR(400.6 MHz, CD3CN, 260 K): δ= 8.8323 (3.2); 8.7611 (1.8); 8.0706 (2.8); 7.4919 (8.4); 7.4798 (15.9); 7.4677 (8.0); 6.3900 (1.8); 3.7285 (0.7); 3.6435 (0.7); 2.9584 (1.6); 2.3767 (1.1); 2.3653 (0.7); 2.3534 (4.8); 2.3265 (638.4); 2.3047 (1.5); 2.2933 (1.2); 2.2832 (0.5); 2.1332 (0.4); 2.1270 (0.5); 2.1208 (0.4); 1.9930 (0.5); 1.9868 (0.8); 1.9843 (0.9); 1.9778 (1.7); 1.9722 (32.7); 1.9660 (65.4); 1.9598 (95.4); 1.9537 (65.6); 1.9475 (32.6); 1.9369 (0.4); 1.8249 (15.9); 1.8080 (16.0); 1.7887 (2.0); 1.7825 (1.1); 1.7763 (0.7); 1.1389 (0.6); 0.7432 (1.0); 0.4967 (1.4); 0.3501 (3.6); -0.0206 (1.1)	459.0
I-023		^{1}H-NMR(400.6 MHz, CD3CN, 260 K): δ= 8.8577 (13.7); 8.8456 (13.9); 8.7878 (8.1); 8.7757 (8.2); 8.0817 (11.5); 8.0145 (6.4); 7.4930 (5.7); 7.4809 (11.1); 7.4688 (5.6); 6.7228 (14.2); 6.5710 (2.9); 6.5260 (0.9); 6.5086 (3.0); 6.4912 (3.0); 6.4737 (0.9); 6.2020 (0.6); 6.1847 (2.0); 6.1673 (2.0); 6.1500 (0.6); 3.8049 (1.0); 3.7891 (1.1); 3.7690 (1.6); 3.7532 (1.6); 3.6471 (1.7); 3.6292 (1.8); 3.6112 (1.2); 3.5933 (1.2); 3.2619 (0.4); 2.9703 (1.3); 2.9525 (1.3); 2.9313 (3.3); 2.9136 (3.3); 2.8856 (3.0); 2.8707 (3.1); 2.8467 (1.2); 2.8317 (1.2); 2.5161 (0.5); 2.3296 (131.9); 2.2984 (0.8); 1.9722 (12.7); 1.9660 (25.3); 1.9599 (37.3); 1.9537 (25.1); 1.9475 (12.7); 1.7837 (15.9); 1.7778 (9.9); 1.7662 (16.0); 1.7604 (9.6); 1.1346 (0.6); 1.1172 (0.8); 1.1010 (0.6); 0.5590 (0.4); 0.5462 (1.2); 0.5397 (1.0); 0.5226 (2.6); 0.5023 (3.0); 0.4848 (1.9); 0.4618 (0.4); 0.3713 (0.5); 0.3593 (2.8); 0.3545 (2.6); 0.3470 (2.6); 0.3424 (2.6); 0.3304 (0.4); 0.3223 (0.5); 0.3093 (0.5); 0.2995 (1.3); 0.2898 (1.8); 0.2865 (1.8); 0.2801 (3.4); 0.2702 (2.2); 0.2656 (1.7); 0.2604 (3.6); 0.2516 (1.6); 0.2415 (1.1); 0.2315 (0.4); 0.2188 (0.4); -0.1090 (0.6); -0.1212 (1.3); -0.1311 (1.3); -	423.1

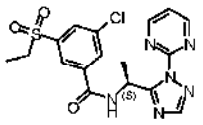
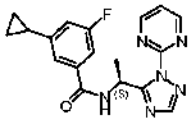
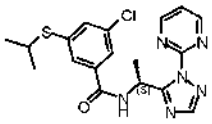
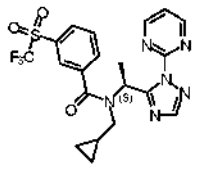
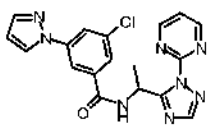
		0.1441 (1.5); -0.1490 (1.3); -0.1541 (1.1); -0.1630 (0.7)	
I-024		^{1}H-NMR(400.2 MHz, d_6-DMSO): δ= 8.7911 (4.3); 8.7811 (4.3); 8.3108 (0.5); 8.2558 (16.0); 7.6034 (5.8); 7.5912 (11.1); 7.5791 (5.6); 7.4212 (2.2); 6.3944 (1.6); 6.3781 (1.6); 3.3361 (143.3); 3.2048 (0.7); 3.1884 (0.8); 3.1674 (2.9); 3.1502 (3.8); 3.1299 (2.3); 3.1078 (0.7); 3.0927 (0.6); 2.6784 (0.3); 2.6738 (0.5); 2.6693 (0.3); 2.5441 (0.9); 2.5272 (1.2); 2.5138 (28.0); 2.5094 (57.2); 2.5049 (75.5); 2.5003 (54.5); 2.4959 (26.5); 2.3362 (0.3); 2.3317 (0.4); 2.3272 (0.3); 2.0744 (15.4); 1.7808 (9.3); 1.7636 (9.2); 0.6367 (1.2); 0.6226 (1.7); 0.6093 (1.3); 0.5915 (0.6); 0.3038 (1.4); 0.2653 (1.0); 0.2524 (1.4); 0.2419 (1.6); 0.2321 (1.7); 0.2207 (1.3); 0.1986 (0.5); 0.1103 (0.9); 0.0977 (1.8); 0.0866 (2.7); 0.0739 (2.9); 0.0638 (2.0); 0.0509 (0.8); -0.0002 (1.3); -0.1997 (0.7); -0.2119 (1.8); -0.2226 (2.4); -0.2347 (2.3); -0.2464 (1.5); -0.2589 (0.6)	423.1
I-025		^{1}H-NMR(400.6 MHz, CD_3CN, 260 K): δ= 8.7649 (3.5); 8.7528 (3.6); 8.5659 (9.9); 8.5538 (10.1); 8.0266 (8.9); 8.0214 (3.7); 7.4084 (1.0); 7.3963 (1.8); 7.3842 (1.0); 7.3737 (2.7); 7.3616 (5.1); 7.3495 (2.5); 7.0865 (5.7); 7.0851 (5.7); 6.8358 (2.2); 6.8346 (2.1); 6.7657 (0.7); 6.7487 (2.5); 6.7317 (2.5); 6.7147 (0.7); 6.3042 (0.9); 6.2868 (0.9); 3.9189 (15.6); 3.9174 (16.0); 3.8648 (6.2); 3.8634 (6.2); 3.2377 (1.5); 3.2354 (1.5); 3.2199 (2.0); 3.0822 (5.5); 3.0657 (5.3); 2.3392 (0.4); 2.2999 (115.2); 2.2712 (1.3); 1.9478 (0.4); 1.9421 (12.7); 1.9359 (25.2); 1.9298 (37.0); 1.9236 (25.4); 1.9175 (12.6); 1.9109 (0.4); 1.8616 (11.5); 1.8446 (11.5); 1.7584 (0.4); 1.7500 (4.3); 1.7325 (4.3); 0.6425 (0.4); 0.5598 (0.6); 0.5559 (0.6); 0.5519 (0.6); 0.5476 (0.5); 0.5432 (0.6); 0.5395 (1.1); 0.5358 (0.7); 0.5316 (0.6); 0.5270 (0.7); 0.5231 (0.7); 0.5193 (0.7); 0.5069 (0.4); 0.2445 (0.4); 0.2363 (0.5); 0.2307 (1.1); 0.2251 (0.6); 0.2166 (1.0); 0.2104 (1.4); 0.1950 (1.2); 0.1865 (1.2); 0.1815 (1.1); 0.1747 (1.9); 0.1712 (1.4); 0.1647 (1.4); 0.1606 (1.9); 0.1540 (1.4); 0.1512 (2.1); 0.1441 (0.9); 0.1406 (1.2); 0.1309 (1.0); 0.1182 (0.4); 0.1092 (0.5); 0.0897 (0.7); 0.0810 (0.6); 0.0769 (1.1); 0.0684 (1.0); 0.0642 (1.0); 0.0577 (0.8); 0.0528 (1.0); 0.0459 (0.8); 0.0413 (0.6); 0.0350 (0.4); -0.0549 (0.4); -0.0630 (0.4); -0.0745 (0.5); -0.0781 (0.5); -0.0866 (0.4); -0.0906 (0.4)	421.15
I-026		^{1}H-NMR(400.6 MHz, CD_3CN, 260 K): δ= 8.8789 (4.8); 8.8668 (5.0); 8.7786 (6.5); 8.7665 (6.7); 8.6796 (3.1); 8.6674 (3.2); 8.0872 (6.5); 8.0769 (5.1); 7.9984 (1.5); 7.5007 (1.3); 7.4886 (2.5); 7.4765 (1.3); 7.4298 (2.0); 7.4177 (3.8); 7.4056 (2.2); 6.7405 (0.6); 6.7230 (1.9); 6.7054 (2.0); 6.6878 (0.6); 6.4072 (0.4); 6.3900 (1.4); 6.3727 (1.5); 6.3556 (0.5); 6.1994 (0.9); 6.1821 (0.9); 4.0705 (0.4); 3.8950 (0.6); 3.8506 (16.0); 3.7210 (12.1); 3.6921 (0.3); 3.3565 (0.9); 3.3427 (0.9); 3.3177 (1.1); 3.3037 (1.2); 3.2594 (1.0); 2.9622 (1.1); 2.9450 (2.0); 2.9347 (1.2); 2.9233 (1.0); 2.9060 (2.3); 2.8952 (1.6); 2.7463 (1.5); 2.7257 (1.6); 2.7071 (1.1); 2.6864 (1.1); 2.3434 (0.4); 2.3346 (0.5); 2.3305 (0.6); 2.2937 (256.4); 2.2652 (2.3); 2.0960 (0.4); 1.9467 (0.8); 1.9412 (22.8); 1.9350 (45.5); 1.9288 (67.6); 1.9227 (46.0); 1.9165 (23.3); 1.9008 (0.5); 1.8252 (8.1); 1.8075 (8.5); 1.7804 (1.1); 1.7698 (1.1); 1.7570 (6.8); 1.7396 (6.3); 1.7107 (0.4); 0.7623 (0.4); 0.7538 (0.8); 0.7418 (0.9); 0.7336 (0.9); 0.7217 (0.9); 0.7134 (0.5); 0.7014 (0.3); 0.5184 (0.7); 0.3695 (1.1); 0.3588 (1.1); 0.3467 (1.5); 0.3352 (1.7); 0.3250 (1.7); 0.3123 (1.5); 0.3027 (1.4); 0.2938 (1.2); 0.2811 (1.1); 0.2718 (1.2); 0.2608 (1.0); 0.2417 (2.4); 0.2246 (1.8); -0.0209 (0.4); -0.0334 (0.9); -0.0455 (1.3); -0.0578 (1.3); -0.0684 (0.9); -0.0808 (0.4)	455.2

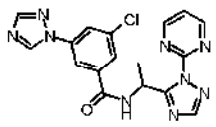
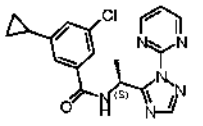
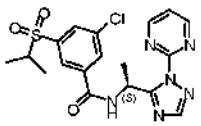
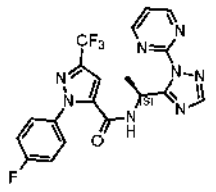
I-027		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 8.9325 (7.6); 8.9203 (7.8); 8.7866 (13.5); 8.7745 (13.7); 8.3088 (1.0); 8.2551 (12.0); 8.2403 (6.9); 8.1311 (0.6); 7.6289 (2.1); 7.6168 (4.1); 7.6050 (5.6); 7.5931 (7.0); 7.5809 (3.5); 6.4803 (7.9); 6.3727 (0.6); 6.3557 (2.6); 6.3428 (4.2); 6.3259 (3.9); 6.3089 (1.1); 6.2854 (4.8); 3.3465 (530.8); 3.2310 (0.9); 3.2146 (0.9); 3.1955 (3.7); 3.1794 (7.1); 3.1631 (3.8); 3.1446 (0.9); 3.1277 (1.7); 3.1100 (1.0); 3.0887 (1.8); 3.0710 (1.8); 3.0286 (1.7); 3.0131 (1.8); 2.9897 (0.9); 2.9745 (0.8); 2.6783 (0.7); 2.6738 (0.9); 2.6694 (0.7); 2.5440 (5.8); 2.5269 (2.7); 2.5134 (61.3); 2.5092 (120.4); 2.5048 (155.7); 2.5003 (112.3); 2.4960 (54.9); 2.4722 (27.0); 2.4117 (16.0); 2.3359 (0.7); 2.3315 (1.0); 2.3272 (0.7); 2.0731 (1.9); 1.8051 (13.8); 1.7880 (13.7); 1.7404 (8.3); 1.7230 (8.2); 0.6159 (0.8); 0.6021 (1.3); 0.5832 (1.7); 0.5655 (2.0); 0.5531 (1.2); 0.5491 (1.2); 0.5332 (0.6); 0.2847 (0.4); 0.2758 (0.8); 0.2614 (1.4); 0.2540 (2.1); 0.2395 (2.5); 0.2313 (3.2); 0.2248 (2.9); 0.2182 (3.8); 0.2102 (3.4); 0.1979 (3.9); 0.1878 (2.1); 0.1773 (1.7); 0.1648 (0.6); 0.1562 (0.8); 0.1451 (1.1); 0.1326 (1.7); 0.1243 (1.5); 0.1196 (1.5); 0.1095 (1.6); 0.0922 (0.7); -0.0002 (2.1); -0.0363 (0.4); -0.0483 (0.9); -0.0612 (1.1); -0.0725 (1.2); -0.0809 (0.9); -0.0918 (0.4); -0.2220 (0.8); -0.2283 (1.1); -0.2332 (1.6); -0.2407 (1.9); -0.2517 (2.3); -0.2635 (2.4); -0.2825 (1.2); -0.2953 (0.9); -0.3073 (0.4)	354.2
I-028		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 8.9310 (8.7); 8.9188 (8.9); 8.7810 (15.7); 8.7689 (16.0); 8.3081 (1.1); 8.2492 (13.2); 8.2376 (7.7); 7.6280 (2.4); 7.6161 (8.6); 7.6041 (10.2); 7.5920 (4.1); 6.4594 (13.0); 6.3627 (0.6); 6.3458 (2.2); 6.3280 (3.0); 6.3098 (4.1); 6.2925 (3.7); 6.2755 (1.0); 6.2571 (7.9); 3.3491 (607.4); 3.2346 (0.6); 3.2179 (0.6); 3.1989 (4.4); 3.1918 (4.7); 3.1824 (4.7); 3.1752 (4.6); 3.1563 (0.6); 3.1396 (0.6); 3.1244 (0.9); 3.1067 (0.9); 3.0856 (1.8); 3.0680 (1.8); 3.0280 (1.7); 3.0127 (1.8); 2.9892 (0.9); 2.9740 (0.8); 2.6787 (0.7); 2.6741 (1.0); 2.6695 (0.7); 2.5443 (1.1); 2.5274 (2.6); 2.5140 (62.4); 2.5096 (126.6); 2.5051 (166.6); 2.5006 (120.0); 2.4961 (57.9); 2.3408 (0.3); 2.3365 (0.7); 2.3318 (1.0); 2.3275 (0.7); 2.2127 (0.7); 2.2000 (1.6); 2.1915 (1.7); 2.1790 (3.3); 2.1664 (2.0); 2.1579 (2.0); 2.1419 (2.0); 2.1293 (1.1); 2.1206 (1.0); 2.1082 (0.5); 2.0730 (4.1); 1.7942 (14.2); 1.7771 (14.2); 1.7300 (8.6); 1.7126 (8.6); 1.1497 (1.0); 1.1454 (1.2); 1.1388 (4.5); 1.1318 (5.1); 1.1259 (2.5); 1.1177 (4.8); 1.1107 (5.0); 1.1054 (1.8); 1.1006 (2.4); 1.0894 (3.1); 1.0828 (3.5); 1.0728 (1.8); 1.0684 (3.0); 1.0618 (3.1); 1.0522 (1.2); 0.9866 (0.4); 0.9691 (2.3); 0.9624 (3.2); 0.9569 (4.8); 0.9520 (5.6); 0.9457 (4.5); 0.9399 (3.5); 0.9333 (1.8); 0.9233 (0.5); 0.9153 (1.6); 0.9054 (3.5); 0.8991 (3.3); 0.8933 (3.4); 0.8869 (3.4); 0.8757 (0.9); 0.6240 (0.4); 0.6109 (1.0); 0.5943 (1.9); 0.5867 (1.7); 0.5744 (2.3); 0.5666 (1.4); 0.5618 (1.5); 0.5423 (0.6); 0.2823 (0.4); 0.2731 (0.9); 0.2604 (1.6); 0.2520 (2.3); 0.2388 (3.4); 0.2304 (3.4); 0.2183 (4.5); 0.2087 (3.4); 0.1987 (4.2); 0.1883 (2.2); 0.1783 (1.9); 0.1658 (0.6); 0.1573 (0.8); 0.1485 (1.2); 0.1359 (1.7); 0.1281 (1.5); 0.1230 (1.6); 0.1134 (1.6); 0.1103 (1.6); 0.1012 (1.0); 0.0961 (0.7); -0.0002 (1.8); -0.0424 (0.4); -0.0549 (0.9); -0.0679 (1.1); -0.0787 (1.2); -0.0870 (1.0); -0.0983 (0.4); -0.2068 (0.8); -0.2128 (1.1); -0.2180 (1.6); -0.2252 (1.9); -0.2357 (1.8); -0.2382 (1.8); -0.2481 (1.6); -0.2599 (1.2); -0.2702 (1.1); -0.2789 (1.3); -0.2910 (1.2); -0.3030 (0.8); -0.3154 (0.4)	380.2
I-029		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 8.9234 (2.9); 8.9131 (3.0); 8.7614 (7.0); 8.7496 (7.0); 8.3087 (1.2); 8.2835 (7.1); 8.2657 (2.8); 7.6230 (7.9); 7.6109 (15.0); 7.5987 (7.5); 7.4080 (6.3); 7.2095 (2.4); 6.3329 (1.0); 6.3168 (1.1); 6.1585 (0.9); 6.1420 (2.4); 6.1251 (2.4); 6.1087 (0.8); 3.3479 (632.4); 3.1986 (0.4); 3.1549 (4.2); 3.1469 (4.3); 3.1402 (4.1); 3.1094 (1.0); 3.1013 (1.0); 3.0858 (1.6); 3.0694 (2.3); 2.6790 (0.7); 2.6744 (1.0); 2.6698 (0.7); 2.6654 (0.4); 2.5446 (1.1); 2.5278 (2.7); 2.5143 (62.1); 2.5100 (125.8); 2.5054 (165.0); 2.5009 (118.5); 2.4964 (57.2); 2.3367 (0.7);	374.1

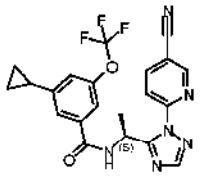
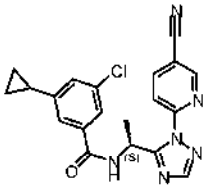
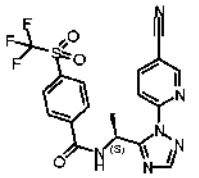
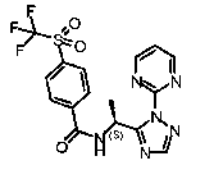
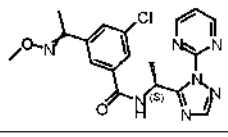
		2.3322 (1.0); 2.3276 (0.7); 2.0735 (16.0); 1.8397 (8.8); 1.8229 (9.1); 1.7346 (4.0); 1.7185 (3.8); 0.5874 (0.9); 0.5050 (1.6); 0.3200 (0.9); 0.2814 (0.7); 0.2559 (1.0); 0.2501 (1.1); 0.2375 (1.0); 0.2249 (1.2); 0.1873 (3.1); 0.1683 (3.1); 0.1482 (1.7); 0.1294 (1.8); 0.1223 (1.8); 0.0995 (1.7); 0.0079 (0.4); -0.0002 (4.4); -0.0086 (0.8); -0.0229 (0.9); -0.0331 (1.0); -0.2842 (3.5); -0.2966 (3.5); -0.3087 (2.4); -0.3199 (1.1)	
I-030		^{1}H-NMR(400.6 MHz, CD3CN, 260 K): δ= 9.1725 (2.8); 8.8398 (4.8); 8.8277 (5.3); 8.7807 (8.1); 8.6271 (8.7); 8.4540 (0.4); 8.3589 (2.0); 8.3472 (2.0); 8.0861 (14.6); 7.9280 (5.6); 7.6362 (5.3); 7.4566 (2.4); 7.4445 (4.9); 7.4191 (14.2); 6.6217 (1.0); 6.6098 (1.8); 6.5980 (1.0); 6.4479 (3.9); 6.3412 (3.5); 6.2706 (0.8); 3.5090 (0.6); 3.4929 (0.6); 3.4725 (0.7); 3.4571 (0.8); 3.3896 (0.6); 3.3723 (0.9); 3.3537 (0.6); 3.2588 (4.0); 3.1144 (16.0); 3.0977 (16.0); 3.0772 (9.4); 3.0602 (8.6); 2.9239 (0.3); 2.5205 (0.9); 2.3850 (5.1); 2.3596 (7.9); 2.3274 (746.7); 2.1950 (0.7); 2.1393 (0.9); 2.1331 (1.6); 2.1269 (2.1); 2.1208 (1.6); 2.1146 (0.9); 2.0963 (0.6); 2.0398 (1.2); 2.0037 (1.1); 1.9963 (1.2); 1.9899 (1.2); 1.9838 (2.0); 1.9775 (5.5); 1.9721 (112.5); 1.9660 (226.3); 1.9598 (332.9); 1.9537 (229.0); 1.9475 (119.1); 1.9347 (5.7); 1.9322 (5.5); 1.9261 (3.8); 1.9198 (3.0); 1.8726 (14.1); 1.8008 (4.9); 1.7946 (5.8); 1.7884 (7.0); 1.7823 (6.9); 1.7760 (7.0); 1.7442 (13.3); 1.7147 (9.0); 1.6967 (5.9); 1.5770 (0.5); 1.3764 (0.4); 1.2568 (1.3); 1.0766 (0.7); 0.8793 (0.5); 0.6099 (4.0); 0.5180 (4.2); 0.4010 (4.2); 0.3184 (2.1); 0.3051 (2.4); 0.2508 (5.0); 0.2397 (5.2); 0.2033 (6.4); 0.1810 (6.9); 0.0628 (9.9); -0.0034 (1.1); -0.0162 (0.9); -0.0257 (0.7)	390.1
I-031		^{1}H-NMR(400.6 MHz, CD3CN, 260 K): δ= 9.0236 (0.3); 8.8364 (1.2); 8.5734 (0.6); 8.5583 (0.9); 8.5386 (1.1); 8.2277 (0.8); 8.0696 (0.7); 7.8659 (0.8); 7.7241 (0.9); 7.6840 (0.9); 7.6794 (0.9); 7.6719 (1.0); 7.4921 (1.4); 7.3984 (0.6); 6.4533 (0.5); 6.1818 (0.6); 6.1577 (0.5); 6.0495 (0.4); 3.9046 (2.7); 3.8709 (1.5); 3.8555 (1.1); 3.8170 (3.0); 3.6881 (0.4); 3.6779 (0.4); 3.6716 (1.0); 3.6614 (1.0); 3.6550 (1.3); 3.6449 (1.3); 3.6385 (1.0); 3.6283 (1.0); 3.6220 (0.4); 3.6118 (0.4); 3.3360 (0.5); 3.2629 (1.9); 3.1699 (0.7); 3.1590 (0.7); 3.1513 (2.0); 3.1404 (2.0); 3.1328 (2.0); 3.1219 (2.0); 3.1143 (0.8); 3.1035 (0.8); 3.0888 (0.4); 3.0348 (1.1); 3.0051 (1.8); 2.9712 (0.7); 2.9664 (0.6); 2.9528 (0.5); 2.9377 (0.4); 2.8922 (0.3); 2.8628 (0.8); 2.8558 (1.0); 2.7848 (0.7); 2.6143 (1.4); 2.4889 (9.3); 2.1326 (0.4); 2.1264 (0.5); 2.1203 (0.4); 1.9966 (0.3); 1.9904 (0.4); 1.9879 (0.3); 1.9841 (0.4); 1.9772 (0.8); 1.9716 (19.4); 1.9655 (39.2); 1.9593 (57.6); 1.9531 (39.3); 1.9469 (19.9); 1.9398 (1.0); 1.9381 (1.3); 1.9335 (0.4); 1.9321 (0.4); 1.8433 (2.8); 1.8123 (2.6); 1.8005 (2.3); 1.7942 (2.0); 1.7880 (1.7); 1.7819 (1.2); 1.7751 (1.0); 1.7574 (0.6); 1.3182 (3.1); 1.3078 (11.2); 1.2989 (16.0); 1.2911 (11.6); 1.2819 (13.9); 0.7042 (0.5); 0.5441 (0.4); 0.5325 (0.4); 0.5131 (0.5); 0.4388 (0.8); 0.1566 (0.8); 0.0556 (1.5); -0.0780 (0.6)	353.2
I-032		^{1}H-NMR(400.6 MHz, CD3CN, 260 K): δ= 8.8248 (3.0); 8.7843 (0.9); 8.7809 (0.8); 8.7730 (0.7); 8.7697 (0.6); 8.6311 (2.4); 8.0438 (2.4); 7.5656 (0.4); 7.5544 (0.6); 7.5334 (2.5); 7.4638 (3.5); 7.2242 (3.4); 6.3893 (2.5); 3.8061 (1.4); 3.7795 (8.5); 3.7411 (16.0); 3.2821 (1.6); 3.2627 (1.8); 3.2515 (2.9); 3.0341 (2.3); 2.9486 (1.8); 2.9236 (2.0); 2.8814 (1.1); 2.8629 (0.7); 2.7955 (0.4); 2.6419 (0.7); 2.6174 (0.6); 2.3583 (13.1); 2.1393 (0.7); 2.1331 (0.8); 2.1270 (0.9); 2.1208 (0.8); 2.1147 (0.6); 2.0963 (0.5); 2.0161 (0.4); 2.0100 (0.4); 2.0042 (0.4); 1.9977 (0.4); 1.9909 (0.4); 1.9838 (0.7); 1.9776 (1.5); 1.9721 (26.6); 1.9660 (53.3); 1.9598 (77.5); 1.9537 (52.8); 1.9475 (26.6); 1.9409 (1.1); 1.9322 (0.7); 1.9259 (0.4); 1.8009 (8.7); 1.7887 (7.3); 0.7314 (1.0); 0.6335 (1.5); 0.3540 (0.8); 0.3324 (2.6); 0.3199 (4.1); 0.3117 (5.0); 0.2993 (5.1); 0.2916 (4.9); 0.1660 (1.1); -0.0906 (2.7)	387.1

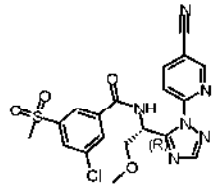
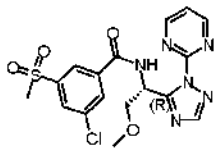
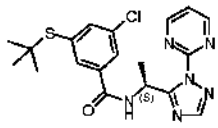
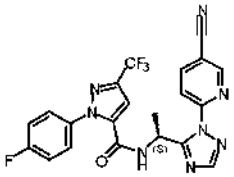
I-033		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.6384 (0.9); 9.6206 (0.9); 8.9936 (5.2); 8.9814 (5.3); 8.4694 (1.2); 8.4651 (2.2); 8.4609 (1.5); 8.3997 (3.0); 8.1847 (4.1); 7.6380 (1.4); 7.6259 (2.6); 7.6137 (1.3); 6.0409 (0.7); 6.0234 (1.1); 6.0059 (0.7); 5.7568 (1.8); 3.3283 (32.3); 2.5264 (0.5); 2.5130 (10.7); 2.5086 (22.1); 2.5041 (29.3); 2.4995 (21.1); 2.4951 (10.2); 2.0875 (16.0); 1.6661 (4.3); 1.6487 (4.3); 0.0079 (0.7); -0.0002 (20.7); -0.0085 (0.7)	460.9
I-034		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4401 (1.5); 9.4219 (1.5); 8.9620 (7.4); 8.9499 (7.5); 8.2666 (2.0); 8.2629 (3.6); 8.2592 (2.2); 8.1681 (1.9); 8.1636 (3.2); 8.1596 (2.2); 8.1356 (2.4); 8.1314 (3.3); 8.1268 (1.7); 7.5985 (2.0); 7.5863 (3.8); 7.5742 (1.9); 6.0359 (1.1); 6.0182 (1.6); 6.0005 (1.1); 3.3291 (25.0); 3.3183 (16.1); 2.5264 (0.7); 2.5130 (11.3); 2.5087 (21.8); 2.5042 (28.0); 2.4997 (20.4); 2.4954 (10.3); 2.3373 (16.0); 2.0767 (0.5); 1.6332 (6.0); 1.6158 (5.9); 0.0079 (0.6); -0.0002 (15.0); -0.0084 (0.7)	421.2
I-035		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.5064 (4.0); 9.4890 (4.1); 9.0776 (7.0); 9.0757 (6.5); 9.0722 (7.4); 9.0704 (5.7); 8.5901 (4.9); 8.5846 (4.7); 8.5686 (5.3); 8.5631 (5.2); 8.2941 (5.7); 8.2905 (9.8); 8.2868 (5.8); 8.2550 (15.4); 8.2020 (5.4); 8.1979 (8.3); 8.1937 (5.5); 8.1524 (6.2); 8.1483 (8.5); 8.1437 (4.5); 8.0931 (7.5); 8.0716 (7.0); 8.0700 (5.8); 6.1431 (0.6); 6.1258 (2.7); 6.1085 (4.3); 6.0911 (2.8); 6.0739 (0.6); 3.3271 (96.5); 2.6775 (0.4); 2.6730 (0.6); 2.6685 (0.4); 2.5084 (69.8); 2.5039 (87.0); 2.4995 (62.5); 2.3351 (0.4); 2.3307 (0.6); 1.6533 (16.0); 1.6359 (15.9); 0.0078 (2.1); -0.0002 (44.8); -0.0083 (2.1)	431.2
I-036		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4626 (2.0); 9.4448 (2.1); 9.1061 (16.0); 8.2460 (2.9); 8.2424 (5.1); 8.2388 (3.1); 8.1820 (8.6); 8.1644 (2.6); 8.1600 (4.6); 8.1561 (3.3); 8.1421 (3.6); 8.1380 (4.6); 8.1334 (2.2); 5.9493 (1.4); 5.9318 (2.2); 5.9144 (1.4); 5.8969 (0.3); 3.3462 (0.5); 3.3263 (51.3); 3.3155 (23.1); 2.6719 (0.4); 2.5117 (25.0); 2.5076 (47.1); 2.5031 (59.4); 2.4986 (43.0); 2.4944 (21.4); 2.3298 (0.4); 2.0754 (0.6); 1.6504 (8.6); 1.6330 (8.5); 0.0077 (1.3); -0.0002 (28.7); -0.0083 (1.3)	425.1
I-037		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4626 (2.0); 9.4448 (2.1); 9.1061 (16.0); 8.2460 (2.9); 8.2424 (5.1); 8.2388 (3.1); 8.1820 (8.6); 8.1644 (2.6); 8.1600 (4.6); 8.1561 (3.3); 8.1421 (3.6); 8.1380 (4.6); 8.1334 (2.2); 5.9493 (1.4); 5.9318 (2.2); 5.9144 (1.4); 5.8969 (0.3); 3.3462 (0.5); 3.3263 (51.3); 3.3155 (23.1); 2.6719 (0.4); 2.5117 (25.0); 2.5076 (47.1); 2.5031 (59.4); 2.4986 (43.0); 2.4944 (21.4); 2.3298 (0.4); 2.0754 (0.6); 1.6504 (8.6); 1.6330 (8.5); 0.0077 (1.3); -0.0002 (28.7); -0.0083 (1.3)	407.1
I-038		^{1}H-NMR(600.4 MHz, d$_6$-DMSO): δ= 9.4514 (1.5); 9.4395 (1.5); 9.1214 (16.0); 8.2545 (2.1); 8.2519 (3.9); 8.2494 (2.2); 8.1970 (6.4); 8.1650 (2.0); 8.1620 (3.3); 8.1592 (2.3); 8.1382 (2.3); 8.1353 (3.4); 8.1322 (1.7); 5.9919 (1.1); 5.9803 (1.8); 5.9687 (1.1); 3.3328 (0.3); 3.3131 (18.2); 3.3070 (41.3); 2.5226 (0.5); 2.5194 (0.6); 2.5164 (0.7); 2.5075 (14.7); 2.5045 (32.0); 2.5015 (44.7); 2.4985 (32.2); 2.4955 (14.9); 2.0722 (0.4); 1.6469 (6.6); 1.6352 (6.6); -0.0002 (2.8)	441.1
I-039		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 8.9992 (0.6); 8.6941 (3.8); 8.6832 (3.7); 8.3156 (0.4); 8.2841 (8.4); 8.0634 (0.4); 7.9132 (2.6); 7.7788 (0.4); 7.7102 (8.4); 7.6827 (0.4); 7.5875 (2.7); 7.5395 (2.0); 6.0446 (1.3); 6.0287 (1.3); 5.7557 (16.0); 4.0560 (1.0); 4.0382 (3.1); 4.0204 (3.2); 4.0026 (1.4); 3.9655 (0.9); 3.9426 (0.9); 3.9286 (0.9); 3.9172 (0.8); 3.9033 (0.9); 3.8902 (0.9); 3.8820 (0.9); 3.4659 (0.4); 3.3245 (138.4); 3.2938 (30.4); 2.7340 (0.6); 2.7057 (0.7); 2.6807 (1.0); 2.6762 (1.3); 2.6716 (1.7); 2.6669 (1.4); 2.6625 (1.0); 2.6374 (0.8); 2.6273 (0.8); 2.6025 (0.7); 2.5251 (2.8); 2.5203 (4.0); 2.5117 (56.9); 2.5072 (118.7); 2.5026 (158.0); 2.4980 (112.1); 2.4935 (52.7); 2.3381 (0.4); 2.3339 (0.8); 2.3295 (1.1); 2.3248 (0.8); 2.3203 (0.5); 2.0865 (1.1); 2.0748	503.0

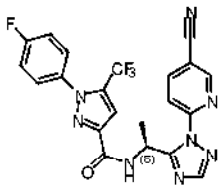
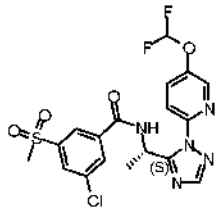
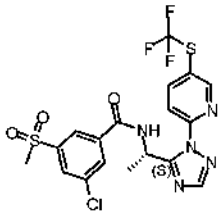
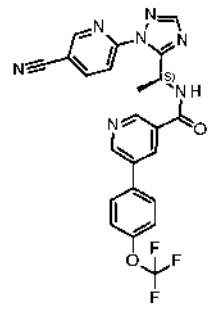
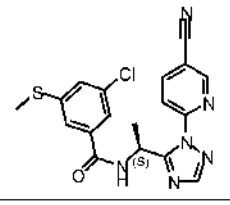
		(0.5); 1.9891 (13.7); 1.7129 (9.9); 1.6958 (9.9); 1.3977 (4.3); 1.2350 (0.6); 1.1931 (3.8); 1.1753 (7.6); 1.1576 (3.7); 0.1460 (0.7); 0.0080 (5.4); -0.0002 (173.2); -0.0085 (5.5); -0.1496 (0.7)	
I-040		^{1}H-NMR(600.1 MHz, CD3CN, 260 K): δ= 8.8901 (5.0); 8.8821 (5.1); 8.5993 (3.5); 8.5913 (3.5); 8.0994 (4.6); 8.0579 (3.1); 7.9740 (1.4); 7.9713 (2.6); 7.9685 (1.5); 7.8145 (1.0); 7.8118 (1.8); 7.8091 (1.1); 7.6273 (1.5); 7.5294 (2.5); 7.5263 (2.8); 7.5177 (2.7); 7.5097 (1.4); 7.4986 (2.8); 7.4243 (1.4); 7.4009 (1.0); 7.3929 (1.8); 7.3848 (0.9); 6.4504 (0.4); 6.4387 (1.4); 6.4271 (1.4); 6.4154 (0.4); 6.0804 (1.0); 6.0689 (1.0); 3.8047 (0.5); 3.7932 (0.9); 3.7815 (0.9); 3.7733 (0.8); 3.7616 (0.9); 3.7501 (0.5); 3.2254 (0.6); 3.2133 (0.8); 3.1994 (0.9); 3.1873 (0.8); 3.0881 (13.8); 3.0725 (9.4); 3.0231 (0.8); 3.0110 (0.9); 2.9972 (0.7); 2.9850 (0.6); 2.3046 (16.0); 1.9866 (1.4); 1.9785 (0.8); 1.9742 (1.0); 1.9706 (7.3); 1.9665 (13.1); 1.9624 (19.3); 1.9583 (13.4); 1.9542 (6.8); 1.7377 (4.6); 1.7334 (6.4); 1.7262 (4.8); 1.7217 (6.3); 1.1524 (2.1); 1.1407 (4.4); 1.1289 (2.0); 0.6555 (2.9); 0.6436 (6.2); 0.6317 (2.8)	435.1
I-041		^{1}H-NMR(600.1 MHz, CD3CN, 260 K): δ= 8.8918 (0.7); 8.8839 (0.7); 8.5935 (6.0); 8.5854 (6.1); 8.1000 (0.6); 8.0572 (5.4); 7.9902 (0.4); 7.8337 (1.8); 7.8311 (3.1); 7.8285 (2.0); 7.6435 (2.7); 7.6123 (0.5); 7.5754 (0.4); 7.5193 (0.4); 7.4893 (2.5); 7.3911 (1.6); 7.3830 (3.1); 7.3750 (1.6); 6.3337 (0.4); 6.3299 (0.3); 6.2368 (1.1); 6.2247 (1.6); 6.2131 (1.6); 6.2016 (0.5); 6.1448 (0.4); 6.1409 (0.3); 5.4730 (14.2); 4.2271 (0.4); 4.2228 (0.4); 4.2177 (0.4); 4.2134 (0.4); 4.2026 (0.7); 4.1931 (0.7); 4.1818 (0.4); 4.1782 (0.4); 4.1727 (0.7); 4.1646 (0.4); 4.1593 (0.4); 4.1393 (0.5); 4.1342 (0.5); 4.1257 (0.4); 4.1205 (0.4); 3.1132 (0.3); 3.0842 (2.1); 3.0718 (16.0); 2.3019 (6.0); 1.9863 (1.3); 1.9782 (0.8); 1.9740 (1.0); 1.9703 (7.2); 1.9662 (13.0); 1.9621 (19.1); 1.9580 (13.2); 1.9539 (6.8); 1.7637 (0.8); 1.7519 (0.9); 1.7179 (5.5); 1.7063 (5.5)	471.2
I-042		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4706 (2.6); 9.4527 (2.6); 8.9964 (15.4); 8.9843 (15.7); 8.3158 (4.3); 8.2036 (3.8); 8.1998 (7.6); 8.1961 (4.8); 8.1761 (12.8); 8.1566 (3.9); 8.1520 (6.7); 8.1481 (4.3); 8.1073 (4.3); 8.1029 (6.4); 8.0986 (3.4); 7.6417 (4.1); 7.6295 (7.9); 7.6174 (3.9); 6.0432 (0.4); 6.0264 (2.0); 6.0088 (3.1); 5.9913 (2.0); 5.9737 (0.4); 5.7562 (16.0); 3.3247 (140.3); 3.3009 (2.3); 3.0337 (0.6); 3.0217 (1.4); 3.0140 (1.5); 3.0092 (0.9); 3.0023 (2.8); 2.9902 (1.5); 2.9826 (1.4); 2.9704 (0.7); 2.6756 (1.2); 2.6710 (1.6); 2.6665 (1.2); 2.6621 (0.6); 2.5245 (4.9); 2.5195 (7.7); 2.5110 (97.6); 2.5066 (198.7); 2.5021 (261.0); 2.4975 (186.2); 2.4931 (89.1); 2.3379 (0.5); 2.3335 (1.1); 2.3289 (1.6); 2.3244 (1.2); 2.3200 (0.5); 1.6559 (13.1); 1.6385 (13.0); 1.6113 (0.5); 1.2124 (0.3); 1.1880 (1.7); 1.1800 (3.8); 1.1768 (3.8); 1.1716 (3.4); 1.1685 (3.9); 1.1601 (2.4); 1.1400 (0.5); 1.1287 (0.7); 1.1157 (0.8); 1.1088 (1.2); 1.0967 (3.5); 1.0892 (3.1); 1.0767 (3.4); 1.0718 (2.4); 1.0560 (0.6); 0.0078 (0.4); -0.0003 (11.3); -0.0086 (0.4)	433.1
I-043		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4616 (2.9); 9.4438 (2.9); 8.9854 (15.7); 8.9732 (16.0); 8.3163 (0.6); 8.2581 (3.8); 8.2543 (7.6); 8.2505 (4.8); 8.2164 (3.8); 8.2119 (6.7); 8.2077 (3.7); 8.1676 (13.0); 8.1582 (0.4); 8.1526 (0.6); 8.1450 (4.7); 8.1400 (2.1); 8.1323 (5.2); 8.1275 (3.1); 8.1226 (5.4); 8.1173 (5.5); 8.1131 (8.2); 8.1095 (8.1); 7.9671 (0.4); 7.9448 (0.4); 7.6250 (4.2); 7.6129 (8.0); 7.6007 (4.0); 7.5303 (0.6); 7.5225 (4.8); 7.5173 (1.6); 7.5004 (9.0); 7.4838 (1.9); 7.4784 (4.6); 7.4705 (0.4); 7.1652 (0.4); 7.1430 (0.4); 6.0192 (0.4); 6.0018 (2.2); 5.9843 (3.4); 5.9669 (2.2); 5.9495 (0.5); 5.7566 (2.0); 4.0558 (0.9); 4.0380 (2.9); 4.0202 (2.9); 4.0024 (1.0); 3.8390 (1.5); 3.3256 (188.6); 2.6761 (1.3); 2.6716 (1.8); 2.6670 (1.3); 2.6626 (0.6); 2.5250 (4.4); 2.5202 (7.0); 2.5115 (104.1); 2.5071 (215.8); 2.5026 (286.4); 2.4981	487.2

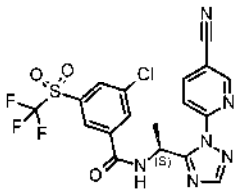
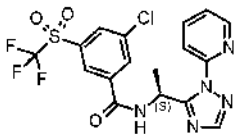
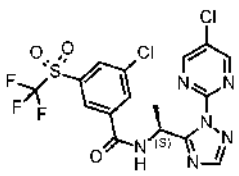
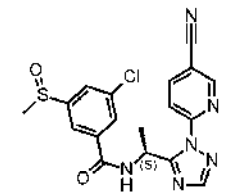
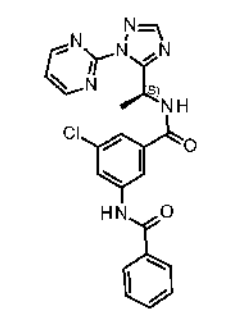
		(203.2); 2.4936 (95.5); 2.3384 (0.6); 2.3338 (1.2); 2.3295 (1.7); 2.3249 (1.2); 1.9892 (12.5); 1.6448 (13.1); 1.6274 (13.1); 1.1929 (3.5); 1.1751 (6.9); 1.1573 (3.3); 0.1457 (0.7); 0.0078 (5.4); -0.0003 (166.6); -0.0086 (5.3); -0.1496 (0.7)	
I-044		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4633 (2.1); 9.4453 (2.2); 8.9942 (14.3); 8.9820 (14.6); 8.3159 (0.4); 8.1928 (3.0); 8.1890 (6.6); 8.1851 (4.4); 8.1763 (11.1); 8.1679 (3.8); 8.1631 (5.3); 8.1592 (3.2); 8.0829 (3.6); 8.0785 (5.4); 8.0741 (3.1); 7.6385 (3.8); 7.6263 (7.3); 7.6142 (3.7); 6.0432 (0.4); 6.0260 (1.6); 6.0084 (2.6); 5.9909 (1.7); 5.9732 (0.4); 5.7563 (12.8); 3.4394 (1.8); 3.4211 (6.4); 3.4027 (6.4); 3.3843 (1.9); 3.3252 (156.6); 2.6803 (0.4); 2.6758 (0.9); 2.6712 (1.2); 2.6667 (0.9); 2.6622 (0.4); 2.5248 (3.6); 2.5201 (5.1); 2.5114 (70.2); 2.5069 (146.5); 2.5023 (194.1); 2.4977 (136.5); 2.4931 (63.6); 2.3382 (0.4); 2.3337 (0.8); 2.3291 (1.2); 2.3245 (0.9); 2.3199 (0.4); 1.6552 (10.3); 1.6378 (10.2); 1.1240 (6.9); 1.1056 (16.0); 1.0872 (6.6); 0.1459 (0.4); 0.0079 (3.0); -0.0002 (100.0); -0.0086 (3.0); -0.1497 (0.4)	421.1
I-045		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.0424 (2.9); 9.0243 (3.0); 8.9883 (15.7); 8.9762 (16.0); 8.1614 (0.7); 8.1508 (12.8); 7.7165 (0.4); 7.6967 (0.4); 7.6357 (4.2); 7.6291 (0.7); 7.6235 (8.0); 7.6114 (4.0); 7.2808 (6.1); 7.2771 (10.4); 7.2617 (2.2); 7.2558 (2.4); 7.0973 (1.8); 7.0926 (2.6); 7.0880 (1.7); 7.0719 (1.9); 7.0678 (2.4); 5.9898 (0.6); 5.9723 (2.5); 5.9546 (3.7); 5.9369 (2.4); 5.9195 (0.5); 3.3265 (74.6); 2.6765 (0.5); 2.6719 (0.7); 2.6673 (0.5); 2.5252 (1.7); 2.5205 (2.5); 2.5117 (40.3); 2.5074 (84.0); 2.5029 (112.1); 2.4984 (80.3); 2.4940 (38.5); 2.3342 (0.5); 2.3296 (0.7); 2.3252 (0.5); 1.9970 (0.6); 1.9847 (1.2); 1.9762 (1.4); 1.9639 (2.5); 1.9515 (1.5); 1.9429 (1.4); 1.9307 (0.7); 1.6302 (14.4); 1.6214 (2.1); 1.6128 (14.3); 1.0126 (1.7); 1.0019 (4.5); 0.9962 (4.8); 0.9861 (2.5); 0.9810 (4.7); 0.9753 (4.6); 0.9653 (2.0); 0.7552 (2.0); 0.7449 (5.0); 0.7396 (5.0); 0.7326 (4.8); 0.7274 (5.2); 0.7164 (1.6); 0.0080 (1.8); -0.0002 (57.6); -0.0084 (1.9)	353.2
I-046		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.1918 (1.2); 9.1740 (1.2); 8.9885 (6.0); 8.9763 (6.2); 8.1578 (5.1); 7.6355 (2.7); 7.6321 (3.3); 7.6276 (4.1); 7.6230 (5.7); 7.6112 (1.6); 7.5602 (1.7); 7.5559 (2.7); 7.5516 (1.5); 5.9771 (0.9); 5.9595 (1.4); 5.9419 (0.9); 3.6743 (0.4); 3.6578 (1.0); 3.6411 (1.4); 3.6245 (1.0); 3.6079 (0.4); 3.3281 (34.7); 2.5258 (0.7); 2.5210 (1.0); 2.5121 (15.7); 2.5078 (33.0); 2.5033 (44.3); 2.4987 (32.1); 2.4943 (15.6); 1.6294 (5.4); 1.6120 (5.3); 1.2679 (0.6); 1.2530 (16.0); 1.2365 (15.6); 0.0079 (0.3); -0.0002 (11.0); -0.0085 (0.4)	403.2
I-047		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.0296 (0.4); 8.9668 (1.9); 8.7217 (0.4); 8.7106 (0.4); 8.3157 (0.8); 8.2511 (16.0); 8.1933 (2.2); 8.1773 (2.5); 7.8799 (1.6); 7.8648 (2.9); 7.8453 (2.2); 7.7984 (4.0); 7.7811 (2.5); 7.6369 (2.5); 6.3575 (0.8); 5.7559 (4.5); 5.3244 (0.3); 3.3253 (246.8); 2.8570 (1.4); 2.7329 (0.3); 2.6762 (1.7); 2.6716 (2.2); 2.6670 (1.7); 2.6625 (0.9); 2.5251 (7.4); 2.5203 (10.7); 2.5117 (121.2); 2.5072 (243.2); 2.5027 (317.5); 2.4981 (224.0); 2.4936 (104.5); 2.3386 (0.5); 2.3340 (1.2); 2.3295 (1.8); 2.3249 (1.2); 2.3204 (0.5); 2.0095 (0.6); 1.9905 (0.6); 1.7682 (8.0); 1.7531 (8.1); 1.4278 (0.4); 1.4097 (0.4); 1.2354 (4.4); 0.8709 (0.4); 0.8542 (1.2); 0.8365 (0.5); 0.4997 (0.8); 0.2089 (1.8); 0.1458 (1.0); 0.0080 (1.5); -0.0002 (42.1); -0.0085 (1.3); -0.3017 (0.8); -0.4709 (0.8)	481.2
I-048		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.3002 (2.6); 9.2823 (2.6); 9.0007 (15.7); 8.9885 (16.0); 8.6185 (5.5); 8.6121 (5.4); 8.1889 (3.5); 8.1844 (5.4); 8.1803 (4.1); 8.1713 (12.4); 8.1602 (0.4); 8.0986 (3.8); 8.0937 (6.7); 8.0888 (3.5); 7.8124 (6.0); 7.8083 (5.9); 7.7181 (4.0); 7.7139 (6.0); 7.7099 (3.8); 7.6421 (4.3); 7.6299 (8.1); 7.6177 (4.1); 6.6022 (4.1); 6.5977 (4.7); 6.5961 (4.8); 6.5915 (4.0); 6.0400 (0.4); 6.0229 (2.0); 6.0053 (3.1); 5.9877 (2.0); 5.9703 (0.4); 5.7576 (4.7); 3.3289 (35.3); 2.6773 (0.3); 2.6729 (0.4); 2.5264	395.2

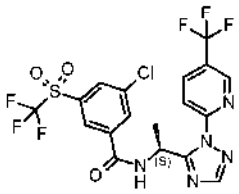
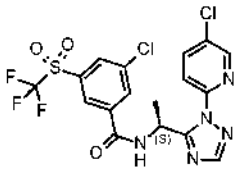
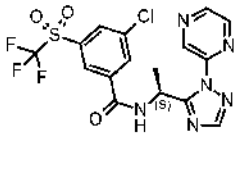
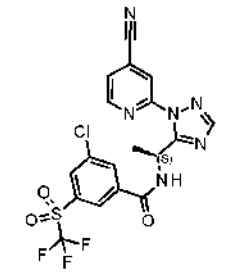
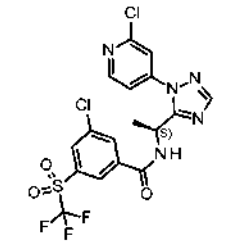
		(1.3); 2.5216 (2.1); 2.5130 (26.5); 2.5085 (53.7); 2.5040 (70.2); 2.4994 (50.0); 2.4948 (23.6); 2.3308 (0.4); 2.3261 (0.3); 1.6577 (12.0); 1.6403 (11.9); -0.0002 (9.2)	
I-049		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.3933 (10.8); 9.3435 (2.2); 9.3256 (2.2); 9.0014 (12.8); 8.9893 (13.0); 8.2982 (10.8); 8.2102 (2.8); 8.2056 (4.8); 8.2018 (3.7); 8.1769 (3.8); 8.1719 (16.0); 8.1675 (3.3); 7.8513 (3.3); 7.8472 (5.2); 7.8432 (3.3); 7.6440 (3.5); 7.6318 (6.6); 7.6197 (3.3); 6.0431 (0.4); 6.0257 (1.7); 6.0082 (2.6); 5.9907 (1.7); 5.9734 (0.4); 5.7569 (3.9); 3.3279 (8.0); 3.0003 (0.3); 2.9866 (0.4); 2.9824 (0.4); 2.9743 (0.3); 2.9684 (0.4); 2.9538 (0.6); 2.6770 (0.4); 2.6726 (0.5); 2.6681 (0.4); 2.5429 (2.0); 2.5260 (1.4); 2.5212 (2.2); 2.5125 (29.0); 2.5081 (58.9); 2.5036 (77.3); 2.4990 (55.5); 2.4945 (26.8); 2.3350 (0.4); 2.3304 (0.5); 2.3259 (0.4); 2.1804 (2.4); 1.6580 (10.2); 1.6407 (10.2); 1.4977 (0.3); 1.2338 (0.4); 0.9887 (0.6); 0.9708 (1.3); 0.9529 (0.6); -0.0002 (9.7); -0.0085 (0.3)	396.1
I-050		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.0852 (2.4); 9.0672 (2.4); 8.9890 (15.8); 8.9769 (16.0); 8.1530 (12.3); 7.6371 (4.3); 7.6250 (8.1); 7.6128 (4.1); 7.5261 (3.6); 7.5216 (5.7); 7.5174 (3.9); 7.3488 (3.1); 7.3450 (6.1); 7.3413 (3.6); 7.3113 (3.7); 7.3068 (5.7); 7.3025 (3.0); 5.9878 (0.4); 5.9706 (2.0); 5.9530 (3.1); 5.9353 (2.0); 5.9179 (0.4); 3.3263 (15.6); 2.5260 (0.7); 2.5213 (1.1); 2.5126 (18.8); 2.5082 (39.1); 2.5036 (52.0); 2.4990 (36.6); 2.4944 (17.0); 2.0764 (1.2); 1.9993 (0.6); 1.9865 (1.2); 1.9782 (1.3); 1.9743 (0.9); 1.9657 (2.5); 1.9571 (0.8); 1.9531 (1.4); 1.9448 (1.3); 1.9321 (0.7); 1.6277 (12.3); 1.6103 (12.2); 1.0088 (1.6); 0.9981 (3.9); 0.9925 (4.1); 0.9880 (2.1); 0.9822 (2.2); 0.9771 (4.0); 0.9714 (3.9); 0.9614 (1.8); 0.7568 (1.9); 0.7464 (4.3); 0.7410 (4.1); 0.7340 (4.1); 0.7288 (4.3); 0.7177 (1.4); -0.0002 (4.1)	369.2
I-051		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4752 (2.5); 9.4573 (2.6); 8.9916 (15.7); 8.9795 (16.0); 8.1928 (3.5); 8.1886 (6.0); 8.1842 (4.8); 8.1779 (12.7); 8.1664 (4.4); 8.1626 (7.4); 8.1588 (3.5); 8.0437 (4.0); 8.0394 (6.2); 8.0350 (3.4); 7.6351 (4.2); 7.6229 (8.2); 7.6108 (4.1); 6.0442 (0.4); 6.0269 (2.0); 6.0094 (3.1); 5.9918 (2.0); 5.9745 (0.4); 4.0562 (0.8); 4.0384 (2.6); 4.0206 (2.6); 4.0028 (0.9); 3.6102 (0.8); 3.5933 (2.1); 3.5762 (3.0); 3.5592 (2.2); 3.5422 (0.8); 3.3253 (60.0); 2.6766 (0.4); 2.6720 (0.6); 2.6676 (0.4); 2.5256 (1.4); 2.5208 (2.3); 2.5122 (35.3); 2.5077 (72.2); 2.5031 (94.8); 2.4985 (66.3); 2.4940 (30.3); 2.3345 (0.4); 2.3299 (0.6); 2.3255 (0.4); 1.9895 (11.5); 1.9098 (0.3); 1.6575 (12.1); 1.6401 (12.0); 1.3519 (1.0); 1.2991 (0.8); 1.2591 (1.2); 1.2342 (1.8); 1.2162 (0.4); 1.1933 (3.6); 1.1778 (15.9); 1.1757 (12.5); 1.1682 (15.8); 1.1608 (15.7); 1.1580 (7.7); 1.1512 (14.8); 0.8892 (0.3); 0.8537 (1.0); 0.8370 (0.9); -0.0002 (8.0)	435.2
I-052		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.5221 (2.5); 9.5041 (2.6); 8.9684 (15.6); 8.9563 (16.0); 8.3160 (0.3); 8.2354 (12.5); 7.6427 (4.2); 7.6305 (8.0); 7.6184 (4.1); 7.4938 (0.4); 7.4851 (4.1); 7.4796 (1.5); 7.4730 (4.4); 7.4679 (2.6); 7.4625 (5.5); 7.4561 (1.8); 7.4505 (5.2); 7.4418 (0.6); 7.3616 (9.2); 7.3375 (0.6); 7.3289 (5.4); 7.3233 (1.5); 7.3161 (0.8); 7.3116 (1.7); 7.3072 (8.4); 7.3020 (1.7); 7.2906 (1.4); 7.2850 (4.0); 7.2763 (0.4); 5.9072 (0.4); 5.8898 (2.1); 5.8721 (3.2); 5.8545 (2.1); 5.8371 (0.4); 5.7564 (1.8); 3.3260 (117.6); 2.6898 (0.5); 2.6758 (0.7); 2.6713 (0.9); 2.6668 (0.7); 2.5249 (2.2); 2.5201 (3.2); 2.5114 (54.5); 2.5069 (112.9); 2.5024 (149.3); 2.4978 (105.4); 2.4933 (49.1); 2.3337 (0.7); 2.3292 (0.9); 2.3247 (0.7); 1.5704 (12.7); 1.5531 (12.7); -0.0002 (10.7)	447.2

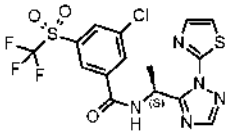
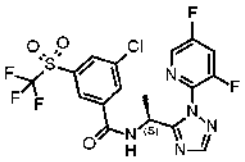
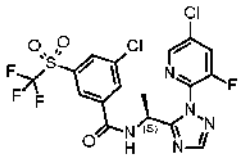
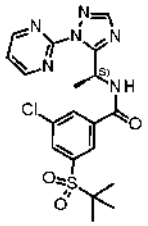
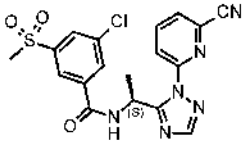
I-053		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.1950 (3.1); 9.1776 (3.1); 9.0571 (5.3); 9.0553 (6.0); 9.0516 (5.9); 9.0498 (5.8); 8.5818 (5.1); 8.5762 (4.8); 8.5603 (5.4); 8.5547 (5.4); 8.2380 (16.0); 8.0771 (6.2); 8.0753 (6.3); 8.0556 (5.9); 8.0538 (5.9); 7.4910 (7.2); 7.4874 (4.9); 7.4755 (4.1); 7.4728 (4.6); 7.4703 (4.1); 7.2728 (4.5); 6.0904 (0.5); 6.0731 (2.4); 6.0557 (3.7); 6.0383 (2.4); 6.0210 (0.5); 4.3321 (0.4); 3.3282 (48.4); 2.6777 (0.4); 2.6732 (0.6); 2.6686 (0.4); 2.5267 (1.6); 2.5221 (2.3); 2.5133 (32.6); 2.5088 (67.7); 2.5042 (88.9); 2.4996 (62.6); 2.4950 (29.3); 2.3357 (0.4); 2.3311 (0.6); 2.3265 (0.4); 2.0685 (0.7); 2.0559 (1.5); 2.0476 (1.5); 2.0436 (1.0); 2.0351 (3.0); 2.0264 (1.0); 2.0226 (1.6); 2.0141 (1.6); 2.0016 (0.8); 1.6415 (14.3); 1.6240 (14.2); 1.4770 (0.5); 1.2727 (0.4); 1.2332 (0.6); 1.0496 (1.9); 1.0385 (5.0); 1.0329 (5.3); 1.0289 (2.6); 1.0224 (2.6); 1.0175 (5.1); 1.0119 (5.1); 1.0016 (2.1); 0.7952 (2.2); 0.7846 (5.6); 0.7793 (5.6); 0.7722 (5.2); 0.7670 (6.1); 0.7555 (1.8); 0.1458 (0.4); 0.0080 (3.3); -0.0002 (112.0); -0.0086 (3.5); -0.1495 (0.4)	443.2
I-054		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.1340 (3.0); 9.1166 (3.1); 9.0625 (5.7); 9.0606 (6.1); 9.0570 (6.2); 9.0551 (5.7); 8.5837 (5.4); 8.5781 (5.2); 8.5622 (5.8); 8.5567 (5.7); 8.3162 (0.4); 8.2315 (16.0); 8.0752 (6.5); 8.0733 (6.5); 8.0537 (6.2); 8.0518 (6.1); 7.5795 (4.7); 7.5750 (7.1); 7.5707 (5.1); 7.4043 (4.2); 7.4005 (7.7); 7.3968 (4.3); 7.3255 (4.5); 7.3211 (7.2); 7.3167 (3.9); 6.0759 (0.5); 6.0587 (2.4); 6.0413 (3.8); 6.0239 (2.4); 6.0067 (0.5); 5.7564 (0.8); 3.3246 (101.5); 2.6806 (0.4); 2.6760 (0.9); 2.6715 (1.3); 2.6669 (0.9); 2.6624 (0.4); 2.5250 (3.6); 2.5204 (5.2); 2.5116 (70.6); 2.5071 (145.8); 2.5025 (191.5); 2.4979 (133.6); 2.4933 (61.3); 2.3385 (0.4); 2.3339 (0.8); 2.3293 (1.2); 2.3247 (0.8); 2.3201 (0.4); 2.0750 (0.4); 2.0129 (0.7); 2.0002 (1.5); 1.9919 (1.6); 1.9879 (1.0); 1.9794 (3.1); 1.9709 (1.0); 1.9668 (1.7); 1.9584 (1.6); 1.9458 (0.8); 1.6256 (14.8); 1.6081 (14.7); 1.0166 (2.0); 1.0055 (5.2); 0.9999 (5.6); 0.9957 (2.6); 0.9895 (2.8); 0.9845 (5.6); 0.9789 (5.3); 0.9686 (2.3); 0.7685 (2.4); 0.7579 (5.8); 0.7526 (5.7); 0.7455 (5.4); 0.7403 (6.2); 0.7289 (1.9); 0.1459 (0.9); 0.0162 (0.3); 0.0141 (0.3); 0.0080 (7.5); -0.0002 (245.4); -0.0086 (7.3); -0.0127 (0.7); -0.1496 (0.9)	393.1
I-055		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.5479 (3.2); 9.5304 (3.2); 9.0719 (5.5); 9.0702 (6.0); 9.0665 (6.0); 9.0647 (5.8); 8.5905 (5.0); 8.5850 (4.8); 8.5691 (5.3); 8.5635 (5.3); 8.2634 (6.2); 8.2532 (16.0); 8.2422 (10.5); 8.1831 (13.4); 8.1780 (3.7); 8.1660 (2.9); 8.1612 (8.0); 8.1568 (1.2); 8.1004 (6.3); 8.0986 (6.4); 8.0789 (5.9); 8.0771 (6.0); 6.1451 (0.5); 6.1278 (2.4); 6.1105 (3.8); 6.0930 (2.4); 6.0758 (0.5); 4.0395 (0.4); 4.0217 (0.4); 3.3282 (25.1); 2.6785 (0.4); 2.6739 (0.5); 2.6691 (0.4); 2.5274 (1.5); 2.5227 (2.1); 2.5140 (28.3); 2.5095 (58.0); 2.5049 (75.4); 2.5003 (53.2); 2.4958 (24.8); 2.3363 (0.3); 2.3319 (0.5); 2.3272 (0.3); 1.9906 (1.9); 1.6433 (14.6); 1.6260 (14.5); 1.1942 (0.5); 1.1763 (1.1); 1.1586 (0.5); 0.1459 (0.4); 0.0080 (3.4); -0.0002 (101.3); -0.0086 (3.1); -0.0120 (0.5); -0.1495 (0.4)	451.1
I-056		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.5024 (2.4); 9.4844 (2.5); 9.0033 (15.6); 8.9911 (16.0); 8.2466 (5.2); 8.2255 (7.5); 8.1723 (12.0); 8.1425 (0.7); 8.1322 (9.8); 8.1272 (2.8); 8.1151 (2.5); 8.1104 (6.8); 8.1057 (1.0); 7.6464 (4.3); 7.6342 (8.2); 7.6221 (4.2); 6.0547 (0.4); 6.0375 (1.9); 6.0199 (3.0); 6.0023 (1.9); 5.9850 (0.4); 3.3343 (24.7); 2.5284 (0.9); 2.5237 (1.3); 2.5150 (17.3); 2.5106 (34.6); 2.5060 (44.5); 2.5014 (31.1); 2.4968 (14.4); 2.0778 (0.4); 1.6481 (11.7); 1.6308 (11.6); 0.0079 (1.8); -0.0002 (56.6); -0.0086 (1.9)	427.2
I-057		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.2537 (0.9); 9.2357 (1.0); 8.9948 (6.9); 8.9827 (7.0); 8.1608 (4.8); 7.9251 (1.4); 7.9212 (2.8); 7.9174 (1.6); 7.8254 (0.8); 7.8205 (2.6); 7.8156 (3.2); 7.8113 (2.6); 7.8063 (0.8); 7.6399 (1.8); 7.6277 (3.5); 7.6156 (1.8); 5.9924 (0.7); 5.9749 (1.1); 5.9573 (0.7); 3.9466 (16.0); 3.3251 (7.8); 2.5255 (0.6);	400.2

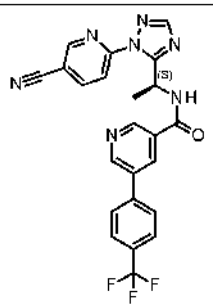
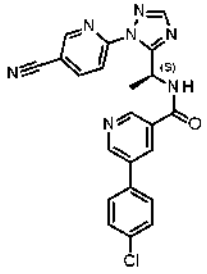
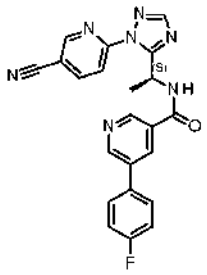
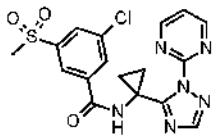
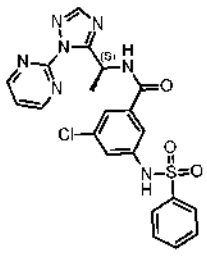
		2.5208 (1.0); 2.5121 (13.6); 2.5076 (28.1); 2.5030 (36.8); 2.4984 (25.9); 2.4938 (12.0); 2.1850 (14.8); 2.0756 (0.4); 1.6444 (4.5); 1.6269 (4.5); 0.0079 (1.5); -0.0002 (45.7); -0.0086 (1.4)	
I-058		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.5471 (2.7); 9.5288 (2.7); 9.1163 (4.8); 9.1111 (4.6); 8.6022 (3.0); 8.5968 (3.0); 8.5807 (3.3); 8.5753 (3.3); 8.3186 (6.5); 8.3152 (4.3); 8.2987 (10.3); 8.2263 (3.6); 8.2221 (5.7); 8.2183 (3.8); 8.1604 (3.8); 8.1561 (5.7); 8.1520 (3.3); 8.0997 (4.7); 8.0782 (4.3); 7.9532 (0.4); 6.4566 (0.9); 6.4427 (1.5); 6.4378 (1.9); 6.4243 (2.1); 6.4052 (0.9); 3.9319 (1.1); 3.9062 (3.0); 3.8856 (5.0); 3.8710 (3.2); 3.8591 (1.3); 3.8454 (0.9); 3.3407 (36.3); 3.3279 (86.9); 3.2787 (0.7); 2.8918 (2.9); 2.7323 (2.6); 2.6768 (0.5); 2.6723 (0.6); 2.5077 (74.5); 2.5034 (93.8); 2.4990 (69.1); 2.3344 (0.4); 2.3302 (0.6); 2.3258 (0.4); 2.0755 (16.0); 0.1460 (0.4); 0.0075 (4.0); -0.0002 (75.9); -0.0082 (4.0); -0.1496 (0.4)	461.2
I-059		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4985 (2.9); 9.4796 (3.0); 9.0227 (15.7); 9.0105 (16.0); 8.9372 (1.8); 8.9250 (1.8); 8.4465 (1.7); 8.2789 (4.2); 8.2752 (7.6); 8.2715 (4.5); 8.2192 (12.7); 8.1836 (3.9); 8.1791 (6.5); 8.1751 (4.5); 8.1473 (4.9); 8.1430 (6.7); 8.1385 (3.5); 8.1162 (0.5); 8.1119 (0.8); 8.1073 (0.5); 8.0183 (0.5); 8.0143 (0.8); 8.0097 (0.5); 7.9932 (0.6); 7.9894 (0.9); 7.9856 (0.4); 7.7046 (0.5); 7.6925 (1.0); 7.6803 (0.6); 7.6714 (4.3); 7.6592 (8.1); 7.6471 (4.2); 6.3425 (1.0); 6.3238 (2.3); 6.3086 (2.6); 6.2899 (1.0); 3.9325 (0.8); 3.9070 (4.1); 3.8984 (3.9); 3.8879 (4.6); 3.8836 (4.7); 3.8731 (1.0); 3.8579 (0.5); 3.4933 (0.3); 3.3264 (81.9); 3.3197 (75.8); 3.3031 (4.9); 3.2817 (0.3); 3.2632 (0.4); 2.6762 (0.7); 2.6717 (0.9); 2.6673 (0.6); 2.5251 (3.3); 2.5116 (56.2); 2.5073 (109.3); 2.5028 (139.6); 2.4982 (99.0); 2.4938 (47.2); 2.3340 (0.6); 2.3295 (0.9); 2.3251 (0.6); 0.1459 (0.4); 0.0080 (3.7); -0.0002 (88.8); -0.0084 (3.2); -0.1495 (0.4)	437.1
I-060		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.2497 (0.4); 9.2318 (0.5); 8.9815 (2.8); 8.9693 (2.8); 8.1610 (2.3); 7.8900 (0.6); 7.8855 (1.0); 7.8811 (0.7); 7.8091 (0.7); 7.8053 (1.3); 7.8016 (0.7); 7.6677 (0.7); 7.6632 (1.1); 7.6589 (0.7); 7.6262 (0.8); 7.6141 (1.4); 7.6019 (0.7); 5.9906 (0.3); 5.9730 (0.5); 5.9554 (0.3); 5.7560 (2.5); 3.3263 (18.7); 2.5209 (0.4); 2.5122 (6.4); 2.5077 (13.5); 2.5031 (18.1); 2.4985 (13.0); 2.4940 (6.2); 1.6363 (2.1); 1.6189 (2.1); 1.2425 (16.0); -0.0002 (0.7)	417.1
I-061		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.5687 (3.1); 9.5510 (3.2); 9.0057 (5.5); 9.0039 (6.1); 9.0002 (6.0); 8.9984 (5.8); 8.5692 (5.2); 8.5636 (5.0); 8.5477 (5.5); 8.5421 (5.5); 8.3271 (16.0); 8.3158 (0.6); 8.2359 (0.4); 8.0723 (6.3); 8.0705 (6.4); 8.0508 (5.8); 8.0489 (6.0); 7.5235 (0.5); 7.5148 (5.2); 7.5092 (1.9); 7.5027 (5.6); 7.4975 (3.2); 7.4922 (6.6); 7.4857 (2.3); 7.4801 (6.2); 7.4713 (0.8); 7.4632 (0.3); 7.4116 (11.1); 7.3346 (0.7); 7.3260 (6.4); 7.3202 (1.8); 7.3133 (1.0); 7.3088 (2.2); 7.3041 (10.0); 7.2990 (2.1); 7.2876 (1.8); 7.2820 (5.1); 7.2732 (0.4); 5.9977 (0.5); 5.9804 (2.4); 5.9629 (3.9); 5.9454 (2.5); 5.9282 (0.5); 5.7561 (0.8); 3.3250 (175.5); 2.6804 (0.6); 2.6758 (1.2); 2.6712 (1.7); 2.6666 (1.2); 2.6622 (0.6); 2.5247 (4.8); 2.5201 (7.0); 2.5114 (94.9); 2.5069 (195.2); 2.5023 (256.3); 2.4976 (179.6); 2.4931 (83.0); 2.3382 (0.5); 2.3337 (1.1); 2.3291 (1.6); 2.3245 (1.1); 2.3199 (0.5); 1.6057 (0.4); 1.5883 (0.6); 1.5708 (14.8); 1.5534 (14.7); 1.2340 (0.4); 0.1459 (0.8); 0.0080 (6.4); -0.0002 (205.6); -0.0086 (6.1); -0.1496 (0.8)	471.2

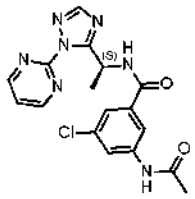
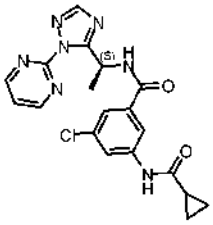
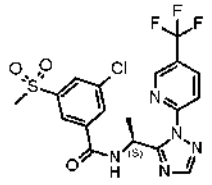
I-062		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.0807 (5.5); 9.0789 (6.1); 9.0752 (6.0); 9.0734 (5.8); 9.0363 (3.2); 9.0180 (3.3); 8.5873 (5.0); 8.5817 (4.8); 8.5658 (5.4); 8.5603 (5.4); 8.3270 (0.4); 8.3159 (0.5); 8.2359 (16.0); 8.0796 (6.2); 8.0779 (6.3); 8.0581 (5.8); 8.0563 (5.9); 7.7068 (0.4); 7.6980 (3.9); 7.6859 (4.2); 7.6808 (2.7); 7.6756 (4.8); 7.6637 (4.6); 7.6549 (0.4); 7.4931 (0.8); 7.4846 (6.4); 7.4789 (2.2); 7.4682 (12.4); 7.4629 (10.3); 7.4578 (2.2); 7.4535 (0.8); 7.4464 (1.7); 7.4408 (5.2); 7.4322 (0.4); 6.1207 (0.5); 6.1034 (2.5); 6.0857 (3.8); 6.0680 (2.5); 6.0506 (0.5); 5.7562 (0.4); 3.3258 (193.5); 2.6805 (0.5); 2.6759 (1.1); 2.6714 (1.5); 2.6668 (1.1); 2.6622 (0.5); 2.5249 (4.7); 2.5202 (6.9); 2.5115 (89.7); 2.5070 (183.5); 2.5024 (240.6); 2.4978 (168.5); 2.4932 (77.9); 2.3382 (0.5); 2.3339 (1.0); 2.3292 (1.5); 2.3246 (1.1); 2.3202 (0.5); 1.6059 (14.6); 1.5886 (14.6); 1.5710 (0.5); 1.5535 (0.4); 0.1459 (0.7); 0.0161 (0.3); 0.0139 (0.4); 0.0080 (6.1); -0.0002 (187.3); -0.0086 (5.4); -0.1496 (0.7)	471.2
I-063		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4550 (2.4); 9.4373 (2.4); 9.4122 (0.4); 8.4873 (4.0); 8.4806 (4.1); 8.2737 (3.5); 8.2700 (6.6); 8.2662 (3.9); 8.1678 (3.6); 8.1627 (16.0); 8.1398 (4.2); 8.1355 (5.7); 8.1310 (2.8); 7.9784 (1.3); 7.9716 (1.2); 7.9562 (3.7); 7.9494 (3.8); 7.9332 (6.3); 7.9322 (6.3); 7.9111 (2.1); 7.5715 (2.8); 7.3890 (5.8); 7.2065 (2.9); 6.0004 (0.4); 5.9833 (1.8); 5.9659 (2.7); 5.9484 (1.8); 5.9309 (0.4); 5.7563 (0.4); 3.3255 (40.8); 3.3154 (29.1); 2.6765 (0.4); 2.6719 (0.6); 2.6673 (0.4); 2.5254 (2.0); 2.5206 (3.0); 2.5120 (36.6); 2.5075 (73.5); 2.5030 (95.4); 2.4984 (67.9); 2.4940 (32.4); 2.3343 (0.4); 2.3299 (0.6); 2.3252 (0.4); 1.6449 (10.3); 1.6275 (10.3); 1.2342 (0.5); 0.0080 (2.1); -0.0002 (65.2); -0.0085 (2.5)	472.1
I-064		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4745 (2.2); 9.4569 (2.3); 8.8398 (4.0); 8.8342 (3.9); 8.4567 (2.1); 8.4509 (2.0); 8.4354 (2.4); 8.4295 (2.3); 8.2778 (3.4); 8.2739 (6.5); 8.2701 (3.8); 8.2353 (11.0); 8.1683 (3.0); 8.1636 (5.3); 8.1597 (3.9); 8.1417 (4.0); 8.1373 (5.5); 8.1329 (2.6); 8.0559 (4.4); 8.0545 (4.5); 8.0346 (4.0); 8.0331 (4.1); 6.1354 (0.3); 6.1179 (1.6); 6.1006 (2.6); 6.0831 (1.6); 6.0661 (0.4); 3.3258 (66.7); 3.3123 (27.6); 2.6766 (0.5); 2.6719 (0.6); 2.6673 (0.4); 2.5255 (1.8); 2.5207 (2.8); 2.5121 (36.6); 2.5076 (74.7); 2.5030 (97.3); 2.4984 (68.6); 2.4938 (32.0); 2.3345 (0.4); 2.3299 (0.6); 2.3253 (0.4); 2.0755 (16.0); 1.6622 (9.8); 1.6448 (9.8); 0.0080 (2.4); -0.0002 (73.0); -0.0086 (2.3)	506.1
I-065		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.3830 (3.2); 9.3652 (3.3); 9.0877 (5.7); 9.0859 (6.2); 9.0823 (6.2); 9.0804 (5.9); 9.0466 (7.8); 9.0410 (7.8); 8.9352 (7.8); 8.9301 (7.9); 8.5896 (5.3); 8.5840 (5.0); 8.5681 (5.6); 8.5625 (5.6); 8.4437 (4.4); 8.4383 (7.8); 8.4329 (4.1); 8.3164 (0.7); 8.2574 (16.0); 8.0989 (6.4); 8.0971 (6.4); 8.0774 (6.0); 8.0756 (6.1); 7.9493 (1.1); 7.9419 (10.6); 7.9366 (3.6); 7.9251 (3.5); 7.9198 (12.2); 7.9124 (1.2); 7.5512 (6.5); 7.5313 (5.8); 6.1735 (0.5); 6.1562 (2.3); 6.1387 (3.7); 6.1212 (2.4); 6.1036 (0.5); 3.3251 (155.8); 3.0357 (0.4); 2.9717 (0.5); 2.6807 (0.6); 2.6761 (1.3); 2.6716 (1.8); 2.6669 (1.3); 2.6625 (0.6); 2.5251 (5.2); 2.5204 (7.4); 2.5117 (99.5); 2.5072 (205.8); 2.5026 (271.4); 2.4980 (190.4); 2.4934 (88.1); 2.3385 (0.5); 2.3340 (1.2); 2.3294 (1.6); 2.3248 (1.2); 2.3203 (0.5); 1.6717 (14.2); 1.6543 (14.2); 1.3360 (2.0); 1.2985 (1.3); 1.2589 (2.0); 1.2497 (3.1); 1.2346 (1.6); 0.8533 (0.4); 0.1459 (0.6); 0.0080 (4.5); -0.0001 (158.1); -0.0085 (4.9); -0.1496 (0.6)	480.2
I-066		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.2250 (3.1); 9.2076 (3.2); 9.0659 (5.6); 9.0640 (6.1); 9.0604 (6.2); 9.0584 (5.8); 8.5861 (5.3); 8.5806 (5.1); 8.5647 (5.7); 8.5591 (5.7); 8.3163 (0.4); 8.2359 (16.0); 8.0810 (6.4); 8.0791 (6.3); 8.0595 (6.0); 8.0576 (6.0); 7.5872 (2.8); 7.5835 (9.2); 7.5800 (11.4); 7.5760 (9.2); 7.5724 (3.2); 7.4614 (5.0); 7.4568 (8.7); 7.4523 (4.4); 6.0848 (0.5); 6.0675 (2.4); 6.0502 (3.7); 6.0328 (2.4); 6.0155 (0.5); 3.3242 (36.4); 2.6763 (0.7); 2.6717 (0.9); 2.6671 (0.7); 2.5708 (0.4); 2.5470 (0.8); 2.5298	399.1

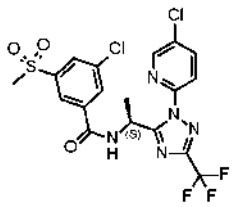
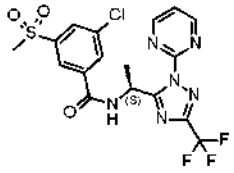
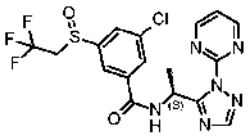
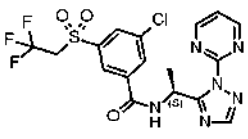
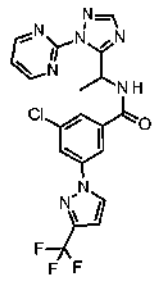
		(50.8); 2.5206 (4.3); 2.5118 (52.4); 2.5073 (109.4); 2.5027 (144.4); 2.4981 (101.4); 2.4935 (47.1); 2.3341 (0.6); 2.3295 (0.9); 2.3249 (0.6); 2.0994 (0.3); 1.6256 (14.4); 1.6082 (14.3); 0.1460 (0.3); 0.0080 (2.6); -0.0002 (91.8); -0.0085 (2.8); -0.1495 (0.3)	
I-067		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.6774 (3.2); 9.6602 (3.2); 9.0630 (5.3); 9.0614 (6.2); 9.0576 (5.8); 9.0558 (5.9); 8.5870 (4.9); 8.5814 (4.7); 8.5655 (5.3); 8.5599 (5.3); 8.5151 (4.5); 8.5106 (7.5); 8.5065 (5.5); 8.4460 (6.7); 8.4139 (3.8); 8.4099 (5.9); 8.3161 (0.6); 8.2647 (16.0); 8.0911 (6.0); 8.0894 (6.4); 8.0697 (5.7); 8.0679 (6.0); 6.1496 (0.5); 6.1326 (2.4); 6.1153 (3.8); 6.0980 (2.4); 6.0808 (0.5); 5.7566 (4.7); 3.3258 (147.6); 2.6810 (0.5); 2.6764 (1.0); 2.6719 (1.4); 2.6673 (1.0); 2.6629 (0.5); 2.5254 (4.0); 2.5207 (5.7); 2.5120 (81.0); 2.5075 (169.6); 2.5029 (225.0); 2.4983 (159.0); 2.4938 (74.2); 2.3389 (0.4); 2.3343 (1.0); 2.3297 (1.4); 2.3252 (1.0); 2.3208 (0.5); 1.9894 (0.4); 1.9807 (0.9); 1.9533 (1.0); 1.6627 (14.6); 1.6453 (14.6); 1.3975 (9.3); 0.1459 (0.5); 0.0080 (3.6); -0.0002 (124.3); -0.0086 (3.8); -0.1497 (0.5)	485.0
I-068		^{1}H-NMR(600.4 MHz, d$_6$-DMSO): δ= 9.6043 (3.3); 9.5928 (3.4); 8.5576 (3.3); 8.5558 (3.5); 8.5495 (3.5); 8.5477 (3.4); 8.4740 (4.6); 8.4712 (7.6); 8.4684 (5.3); 8.4142 (7.2); 8.3881 (6.4); 8.1583 (14.1); 8.0897 (2.1); 8.0866 (2.1); 8.0762 (3.5); 8.0739 (3.5); 8.0636 (2.5); 8.0605 (2.5); 7.8587 (5.6); 7.8451 (5.1); 7.4931 (2.7); 7.4917 (2.8); 7.4836 (3.0); 7.4807 (2.9); 7.4793 (2.8); 7.4726 (2.7); 7.4712 (2.6); 6.0821 (0.5); 6.0703 (2.5); 6.0587 (3.9); 6.0470 (2.6); 6.0353 (0.6); 3.3063 (244.6); 3.2784 (0.8); 2.6156 (1.0); 2.6126 (1.7); 2.6096 (1.0); 2.5217 (1.9); 2.5186 (3.0); 2.5155 (3.1); 2.5065 (146.4); 2.5036 (306.6); 2.5006 (424.4); 2.4976 (327.3); 2.4947 (171.4); 2.3876 (2.4); 2.3846 (3.1); 2.3817 (2.4); 2.3405 (0.4); 2.3235 (0.4); 2.3186 (0.4); 2.0722 (1.4); 1.6560 (15.6); 1.6444 (16.0); 0.0052 (0.4); -0.0001 (14.2); -0.0056 (0.7)	460.2
I-069		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.6468 (1.2); 9.6292 (1.2); 9.1202 (16.0); 8.4897 (1.7); 8.4853 (2.8); 8.4811 (2.1); 8.4255 (2.5); 8.4090 (1.5); 8.4048 (2.2); 8.2121 (5.9); 6.0091 (0.9); 5.9917 (1.4); 5.9742 (0.9); 3.3232 (33.6); 2.6717 (0.4); 2.5252 (1.1); 2.5205 (1.6); 2.5118 (23.1); 2.5073 (47.9); 2.5027 (63.7); 2.4981 (45.3); 2.4935 (21.2); 2.3295 (0.4); 1.6589 (5.5); 1.6415 (5.5); 0.0080 (0.7); -0.0002 (24.6); -0.0085 (0.7)	495.1
I-070		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.3881 (1.1); 9.3731 (1.1); 9.0698 (2.9); 9.0644 (2.8); 8.5862 (2.4); 8.5807 (2.3); 8.5647 (2.6); 8.5592 (2.5); 8.2479 (7.6); 8.0853 (3.1); 8.0837 (3.2); 8.0637 (4.0); 8.0623 (3.8); 8.0599 (2.8); 8.0560 (1.4); 8.0453 (1.2); 8.0416 (2.4); 8.0379 (1.4); 7.9911 (1.6); 7.9862 (2.8); 7.9806 (1.5); 7.9059 (2.6); 7.9014 (3.8); 7.8972 (2.3); 6.1042 (1.0); 6.0869 (1.5); 6.0696 (1.0); 5.7563 (3.0); 3.3264 (66.8); 2.8170 (16.0); 2.6762 (0.4); 2.6717 (0.6); 2.6670 (0.4); 2.5252 (1.7); 2.5205 (2.5); 2.5118 (36.1); 2.5073 (74.1); 2.5027 (96.9); 2.4981 (67.6); 2.4936 (31.2); 2.3341 (0.4); 2.3296 (0.6); 2.3249 (0.4); 1.6436 (7.3); 1.6262 (7.3); 0.0080 (1.7); -0.0002 (53.8); -0.0086 (1.6)	415.1
I-071		^{1}H-NMR(400.2 MHz, CD3CN): δ= 9.1810 (0.4); 8.9657 (1.2); 8.9079 (11.3); 8.8958 (11.5); 8.8800 (0.6); 8.8679 (0.5); 8.0425 (3.0); 8.0377 (6.2); 8.0328 (3.5); 7.9954 (9.7); 7.9799 (3.8); 7.9760 (5.3); 7.9714 (3.1); 7.9463 (0.8); 7.9409 (4.6); 7.9382 (5.5); 7.9256 (1.7); 7.9206 (7.0); 7.9169 (5.2); 7.7594 (0.3); 7.6904 (1.1); 7.6769 (1.1); 7.6421 (0.5); 7.6385 (0.4); 7.6264 (1.2); 7.6233 (0.8); 7.6139 (0.9); 7.6081 (3.5); 7.6027 (1.2); 7.5929 (1.7); 7.5896 (2.9); 7.5865 (1.8); 7.5710 (0.4); 7.5669 (0.3); 7.5490 (4.8); 7.5333 (3.7); 7.5297 (6.9); 7.5160 (1.2); 7.5120 (2.7); 7.4920 (3.6); 7.4799 (7.1); 7.4742 (4.1); 7.4697 (6.4); 7.4679 (5.8); 7.3441 (0.4); 7.3328 (0.6); 6.1430 (0.6); 6.1256 (2.0); 6.1077 (2.9); 6.0899 (2.0); 6.0722 (0.5); 3.4281 (0.7); 3.4106 (0.7); 2.4682 (0.4); 2.4635 (0.6); 2.4589 (0.4); 2.1552 (115.4); 2.1529 (114.8); 2.1194 (0.6); 2.1133 (0.9); 2.1071 (1.3); 2.1009 (0.9);	448.0

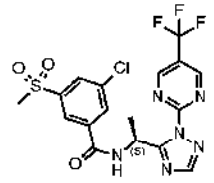
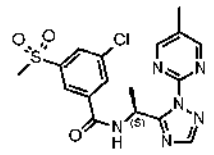
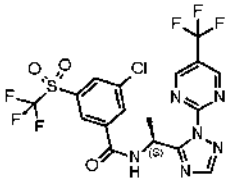
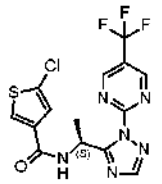
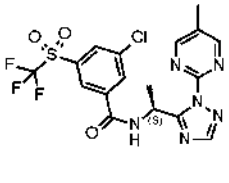
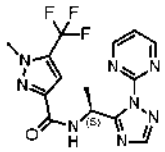
		2.0947 (0.5); 1.9834 (0.4); 1.9717 (1.3); 1.9641 (3.3); 1.9579 (5.2); 1.9522 (72.0); 1.9460 (138.0); 1.9399 (195.7); 1.9337 (133.8); 1.9275 (68.4); 1.9145 (1.0); 1.7806 (0.4); 1.7745 (0.8); 1.7684 (1.1); 1.7622 (0.8); 1.7559 (0.4); 1.6625 (16.0); 1.6541 (1.5); 1.6452 (16.0); 1.3400 (0.5); 1.2850 (0.9); 1.2716 (1.6); 1.2612 (0.9); 1.2428 (0.4); 1.2036 (0.5); 1.1401 (0.9); 1.1225 (1.6); 1.1050 (0.8); 0.8817 (0.4); 0.1458 (2.3); 0.0374 (0.4); 0.0288 (0.6); 0.0215 (0.5); 0.0162 (0.9); 0.0080 (18.7); -0.0002 (537.6); -0.0086 (19.5); -0.1496 (2.4)	
I-072		^{1}H-NMR(600.4 MHz, d$_6$-DMSO): δ= 9.6186 (3.6); 9.6070 (3.8); 8.9561 (4.8); 8.9549 (4.8); 8.9536 (4.8); 8.4838 (2.9); 8.4799 (3.0); 8.4751 (5.0); 8.4722 (8.6); 8.4695 (8.4); 8.4657 (3.5); 8.4109 (7.3); 8.3960 (4.5); 8.3933 (6.6); 8.2562 (15.4); 8.0904 (5.1); 8.0760 (4.8); 6.1312 (0.6); 6.1197 (2.7); 6.1081 (4.2); 6.0965 (2.7); 6.0849 (0.6); 5.7532 (1.9); 4.0366 (0.4); 4.0249 (0.4); 3.3082 (102.8); 2.6172 (0.4); 2.6142 (0.7); 2.6111 (0.4); 2.5232 (0.9); 2.5201 (1.2); 2.5170 (0.8); 2.5081 (53.2); 2.5052 (115.5); 2.5021 (162.1); 2.4991 (124.1); 2.4962 (63.7); 2.3891 (0.8); 2.3861 (1.2); 2.3831 (0.9); 1.9888 (1.6); 1.6750 (15.6); 1.6634 (16.0); 1.1877 (0.4); 1.1758 (0.9); 1.1639 (0.5); -0.0001 (5.3)	528.2
I-073		^{1}H-NMR(600.4 MHz, d$_6$-DMSO): δ= 9.6057 (1.8); 9.5940 (1.9); 8.6221 (3.3); 8.6178 (3.5); 8.4785 (2.4); 8.4758 (4.1); 8.4728 (2.8); 8.4192 (3.7); 8.3984 (2.1); 8.3956 (3.3); 8.2032 (2.5); 8.1989 (2.5); 8.1889 (10.6); 8.1843 (2.8); 7.8875 (3.8); 7.8730 (3.4); 6.0136 (1.4); 6.0020 (2.2); 5.9904 (1.4); 3.3077 (55.4); 2.6139 (0.4); 2.5229 (0.4); 2.5198 (0.5); 2.5168 (0.3); 2.5079 (27.2); 2.5049 (60.3); 2.5019 (85.5); 2.4988 (64.6); 2.4958 (32.0); 2.3889 (0.4); 2.3858 (0.6); 2.3828 (0.5); 2.0733 (16.0); 1.6494 (8.2); 1.6377 (8.4); -0.0001 (2.8)	494.1
I-074		^{1}H-NMR(600.4 MHz, d$_6$-DMSO): δ= 9.6353 (1.1); 9.6239 (1.1); 9.1673 (2.6); 9.1650 (2.7); 8.7548 (2.6); 8.7505 (2.8); 8.6578 (1.9); 8.6554 (2.0); 8.6536 (1.9); 8.6512 (1.8); 8.4782 (1.6); 8.4752 (2.6); 8.4725 (1.9); 8.4252 (2.3); 8.3968 (1.3); 8.3939 (2.0); 8.3913 (1.1); 8.2707 (5.0); 5.9947 (0.9); 5.9831 (1.3); 5.9716 (0.9); 3.3084 (34.8); 2.5231 (0.7); 2.5200 (1.1); 2.5169 (1.2); 2.5081 (15.1); 2.5051 (32.7); 2.5020 (46.5); 2.4989 (35.3); 2.4959 (17.8); 2.3860 (0.3); 2.0735 (16.0); 1.6657 (5.4); 1.6541 (5.5); -0.0001 (2.1)	461.1
I-075		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.6456 (3.2); 9.6282 (3.3); 8.8049 (5.6); 8.8031 (5.7); 8.7923 (5.8); 8.7904 (5.9); 8.4853 (4.4); 8.4810 (7.7); 8.4768 (5.3); 8.4147 (7.0); 8.4085 (5.9); 8.4033 (6.1); 8.3226 (5.7); 8.3196 (8.0); 8.3173 (6.1); 8.2498 (16.0); 7.9649 (5.6); 7.9615 (5.5); 7.9523 (5.4); 7.9489 (5.3); 6.0824 (0.5); 6.0652 (2.3); 6.0478 (3.7); 6.0304 (2.4); 6.0132 (0.5); 3.3235 (90.3); 2.6810 (0.3); 2.6764 (0.7); 2.6718 (1.0); 2.6673 (0.7); 2.6628 (0.3); 2.5253 (2.6); 2.5206 (4.0); 2.5119 (57.7); 2.5074 (118.8); 2.5029 (156.9); 2.4983 (111.0); 2.4937 (52.0); 2.3343 (0.7); 2.3297 (1.0); 2.3251 (0.7); 1.9893 (1.2); 1.6591 (14.3); 1.6417 (14.2); 1.3976 (15.5); 1.1934 (0.3); 1.1755 (0.7); 1.1577 (0.3); 0.0080 (1.7); -0.0002 (56.1); -0.0085 (1.6)	485.2
I-076		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.5510 (1.8); 9.5327 (1.8); 8.5224 (3.8); 8.5090 (3.9); 8.3969 (3.2); 8.3931 (2.2); 8.3606 (2.7); 8.3567 (4.4); 8.3520 (2.7); 8.3330 (2.5); 8.3297 (3.7); 8.3155 (0.4); 8.2688 (8.8); 7.8128 (4.0); 7.8089 (4.2); 7.7049 (2.9); 7.7003 (2.6); 7.6914 (2.8); 7.6868 (2.6); 5.6247 (1.2); 5.6073 (1.9); 5.5898 (1.2); 4.0559 (1.2); 4.0381 (3.6); 4.0203 (3.6); 4.0025 (1.2); 3.3222 (60.4); 2.6757 (0.6); 2.6711 (0.9); 2.6665 (0.7); 2.5247 (2.3); 2.5200 (3.5); 2.5113 (51.8); 2.5068 (107.1); 2.5022 (141.6); 2.4976 (100.1); 2.4931 (46.6); 2.3336 (0.6); 2.3291 (0.9); 2.3244 (0.6); 1.9889 (16.0); 1.6421 (7.8); 1.6251 (7.8); 1.3978 (1.6); 1.2360 (0.4); 1.1931 (4.4); 1.1804 (0.3); 1.1753 (8.7); 1.1575 (4.2); 0.0080 (1.6); -0.0002 (55.1); -0.0086 (1.6)	494.1

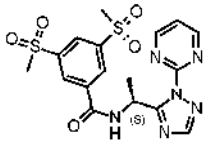
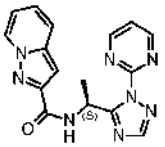
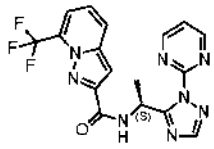
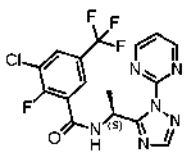
I-077		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.7257 (3.3); 9.7091 (3.4); 8.5515 (4.7); 8.5472 (7.8); 8.5430 (5.9); 8.5010 (7.1); 8.4274 (3.7); 8.4233 (6.2); 8.3161 (0.5); 8.2178 (16.0); 7.7943 (8.5); 7.7856 (14.3); 7.7612 (14.7); 7.7525 (8.7); 6.1087 (0.5); 6.0915 (2.5); 6.0743 (3.9); 6.0571 (2.6); 6.0397 (0.5); 3.3232 (68.2); 2.6807 (0.4); 2.6762 (0.9); 2.6717 (1.3); 2.6671 (0.9); 2.6626 (0.4); 2.5252 (3.0); 2.5205 (4.4); 2.5117 (71.3); 2.5073 (149.2); 2.5027 (198.4); 2.4981 (141.2); 2.4936 (66.6); 2.3387 (0.4); 2.3341 (0.9); 2.3295 (1.2); 2.3249 (0.9); 2.3205 (0.4); 2.0752 (2.4); 1.6520 (15.9); 1.6345 (15.8); 1.2591 (0.3); 1.2341 (0.5); 0.0081 (0.5); -0.0001 (16.4); -0.0084 (0.5)	466.1
I-078		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.5493 (3.2); 9.5313 (3.2); 8.6193 (0.4); 8.5642 (0.5); 8.5162 (8.3); 8.5099 (9.0); 8.4091 (5.9); 8.4053 (4.0); 8.3761 (5.3); 8.3721 (7.8); 8.3675 (4.7); 8.3281 (7.5); 8.3241 (5.2); 8.3157 (1.3); 8.3089 (2.4); 8.3060 (2.3); 8.3027 (2.3); 8.2998 (1.9); 8.2850 (1.9); 8.2787 (1.6); 8.2371 (16.0); 5.4058 (0.5); 5.3883 (2.4); 5.3707 (3.8); 5.3529 (2.4); 5.3355 (0.5); 3.3234 (271.5); 2.6800 (0.8); 2.6756 (1.8); 2.6711 (2.5); 2.6664 (1.8); 2.6619 (0.8); 2.5246 (6.2); 2.5199 (9.0); 2.5112 (141.5); 2.5067 (293.3); 2.5021 (388.8); 2.4975 (273.9); 2.4929 (126.9); 2.3380 (0.8); 2.3335 (1.7); 2.3289 (2.4); 2.3243 (1.7); 2.3199 (0.8); 2.0745 (7.4); 1.6426 (14.8); 1.6251 (14.8); 1.4350 (0.5); 1.4171 (0.5); 0.0081 (0.7); -0.0001 (26.3); -0.0085 (0.7)	496.1
I-079		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.5519 (3.1); 9.5339 (3.2); 8.5087 (8.7); 8.5035 (10.0); 8.4467 (4.3); 8.4415 (3.6); 8.4233 (4.3); 8.4180 (4.1); 8.4096 (5.8); 8.3657 (4.7); 8.3616 (7.6); 8.3570 (5.1); 8.3390 (4.5); 8.3354 (6.7); 8.3156 (1.4); 8.2516 (16.0); 5.4506 (0.5); 5.4335 (2.4); 5.4158 (3.7); 5.3981 (2.4); 5.3805 (0.5); 4.0377 (0.6); 4.0200 (0.6); 3.3232 (263.4); 2.6800 (0.9); 2.6755 (1.9); 2.6709 (2.6); 2.6663 (1.9); 2.6617 (0.9); 2.5244 (6.6); 2.5197 (9.6); 2.5110 (145.7); 2.5065 (303.8); 2.5019 (404.0); 2.4973 (286.2); 2.4927 (133.8); 2.3378 (0.8); 2.3334 (1.8); 2.3287 (2.5); 2.3241 (1.8); 2.3195 (0.8); 2.0744 (2.7); 1.9888 (2.5); 1.6493 (14.5); 1.6318 (14.6); 1.2340 (0.6); 1.1928 (0.7); 1.1750 (1.4); 1.1572 (0.7); 0.0080 (0.7); -0.0002 (26.8); -0.0086 (0.8)	512.1
I-080		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.5049 (0.6); 9.4870 (0.6); 8.9869 (3.8); 8.9747 (3.9); 8.2534 (0.9); 8.2492 (1.3); 8.2448 (0.9); 8.1757 (2.9); 8.1292 (0.9); 8.1254 (1.7); 8.1215 (0.9); 7.9579 (0.9); 7.9535 (1.4); 7.9490 (0.8); 7.6312 (1.0); 7.6190 (2.0); 7.6069 (1.0); 6.0260 (0.4); 6.0085 (0.7); 5.9909 (0.5); 5.7560 (1.3); 3.3309 (33.8); 2.5255 (0.5); 2.5207 (0.8); 2.5120 (13.2); 2.5075 (27.2); 2.5030 (35.6); 2.4984 (25.0); 2.4938 (11.6); 1.6564 (2.7); 1.6390 (2.7); 1.2480 (16.0); -0.0002 (9.7)	449.1
I-081		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4744 (3.3); 9.4571 (3.4); 8.3420 (3.9); 8.3229 (5.5); 8.3211 (6.0); 8.3155 (0.9); 8.3021 (6.5); 8.2739 (4.8); 8.2701 (9.4); 8.2663 (5.4); 8.2449 (16.0); 8.2040 (6.3); 8.2020 (7.1); 8.1830 (9.6); 8.1809 (7.7); 8.1784 (8.4); 8.1743 (5.5); 8.1445 (6.8); 8.1415 (8.6); 8.1366 (8.2); 8.1321 (4.4); 8.1257 (5.4); 8.1237 (5.0); 5.9855 (0.5); 5.9684 (2.5); 5.9511 (4.0); 5.9338 (2.5); 5.9165 (0.5); 5.7560 (6.0); 3.3248 (99.6); 3.3118 (42.2); 2.6762 (0.7); 2.6716 (1.0); 2.6671 (0.7); 2.5251 (2.5); 2.5204 (3.7); 2.5117 (55.2); 2.5072 (114.3); 2.5027 (151.0); 2.4981 (106.4); 2.4935 (49.2); 2.3340 (0.7); 2.3295 (0.9); 2.3249 (0.7); 1.6788 (15.3); 1.6615 (15.2); 0.0080 (0.3); -0.0001 (11.0)	431.1

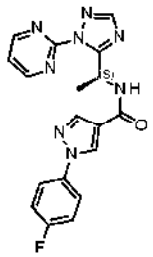
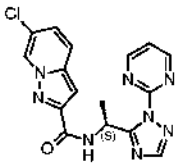
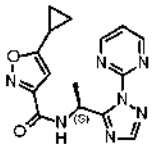
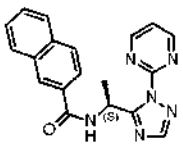
I-082		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4147 (3.8); 9.3971 (3.8); 9.1006 (8.5); 9.0951 (8.7); 9.0886 (6.5); 9.0870 (7.0); 9.0832 (6.6); 9.0816 (6.3); 8.9736 (8.5); 8.9686 (8.5); 8.5900 (5.0); 8.5844 (4.8); 8.5685 (5.3); 8.5629 (5.2); 8.4941 (4.7); 8.4888 (8.1); 8.4835 (4.4); 8.3161 (0.7); 8.2604 (16.0); 8.0997 (6.7); 8.0982 (6.8); 8.0782 (6.2); 8.0767 (6.3); 8.0477 (6.8); 8.0274 (9.2); 7.9143 (9.5); 7.8936 (7.0); 6.1784 (0.6); 6.1611 (2.6); 6.1436 (4.2); 6.1262 (2.7); 6.1094 (0.5); 3.3238 (125.2); 2.6757 (1.4); 2.6713 (1.9); 2.6668 (1.4); 2.5246 (6.6); 2.5112 (117.5); 2.5069 (230.6); 2.5024 (298.0); 2.4979 (215.5); 2.4935 (105.1); 2.3337 (1.4); 2.3292 (1.8); 2.3248 (1.4); 2.0750 (0.5); 1.6779 (15.8); 1.6605 (15.8); 0.0079 (0.6); -0.0002 (16.5); -0.0084 (0.6)	464.2
I-083		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.3856 (4.4); 9.3682 (4.4); 9.0832 (7.7); 9.0349 (8.1); 9.0307 (8.0); 8.9183 (8.4); 8.5872 (4.2); 8.5825 (4.2); 8.5656 (4.6); 8.5613 (4.4); 8.4226 (7.9); 8.3157 (0.7); 8.2561 (12.0); 8.0957 (6.4); 8.0744 (5.9); 7.8510 (10.0); 7.8300 (11.6); 7.6167 (11.8); 7.5958 (9.9); 7.5310 (0.6); 7.5138 (0.4); 6.1529 (2.9); 6.1353 (4.2); 6.1178 (2.8); 6.1013 (0.8); 3.4202 (0.4); 3.3234 (199.9); 3.2527 (0.5); 2.7465 (0.4); 2.6714 (3.5); 2.5022 (490.5); 2.3293 (3.2); 2.0743 (0.6); 1.6720 (16.0); 1.6547 (15.9); 1.2319 (0.3); -0.0002 (14.0)	430.2
I-084		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.3751 (3.8); 9.3576 (3.8); 9.0843 (6.8); 9.0805 (6.5); 9.0789 (6.4); 9.0136 (8.2); 9.0080 (8.3); 8.9025 (8.4); 8.8975 (8.4); 8.5878 (4.8); 8.5823 (4.7); 8.5663 (5.2); 8.5608 (5.1); 8.4056 (4.7); 8.4003 (8.1); 8.3950 (4.5); 8.3157 (0.8); 8.2558 (15.5); 8.0970 (6.5); 8.0956 (6.8); 8.0756 (6.0); 8.0741 (6.3); 7.8704 (5.6); 7.8652 (2.7); 7.8570 (6.3); 7.8484 (6.8); 7.8402 (2.8); 7.8349 (6.1); 7.4032 (6.2); 7.3981 (2.2); 7.3810 (11.6); 7.3640 (2.0); 7.3588 (5.6); 6.1690 (0.7); 6.1519 (2.7); 6.1346 (4.2); 6.1171 (2.7); 6.0995 (0.6); 3.3241 (224.5); 2.6754 (1.8); 2.6710 (2.4); 2.6667 (1.8); 2.5409 (2.0); 2.5242 (9.1); 2.5108 (146.3); 2.5066 (282.9); 2.5021 (365.7); 2.4976 (267.2); 2.4934 (133.2); 2.3334 (1.7); 2.3289 (2.3); 2.3245 (1.7); 1.6710 (16.0); 1.6536 (16.0); 0.0077 (0.8); -0.0002 (19.0); -0.0084 (0.8)	414.3
I-085		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.0269 (5.9); 8.9974 (1.0); 8.8686 (15.6); 8.8565 (16.0); 8.3156 (0.8); 8.0949 (4.0); 8.0905 (6.7); 8.0861 (4.1); 8.0329 (14.8); 7.8502 (4.4); 7.8464 (7.8); 7.8426 (4.4); 7.6894 (4.5); 7.6851 (6.5); 7.6808 (4.2); 7.5489 (4.1); 7.5367 (7.8); 7.5245 (3.9); 7.3747 (0.4); 5.7560 (0.6); 3.4093 (0.8); 3.3918 (2.2); 3.3744 (2.3); 3.3568 (1.1); 3.3535 (0.8); 3.3227 (171.9); 3.2950 (35.1); 2.6752 (1.7); 2.6707 (2.4); 2.6662 (1.8); 2.5241 (6.9); 2.5193 (10.7); 2.5107 (140.1); 2.5063 (282.2); 2.5018 (368.0); 2.4972 (262.8); 2.4927 (125.2); 2.3377 (0.8); 2.3331 (1.6); 2.3286 (2.3); 2.3240 (1.6); 1.7037 (2.4); 1.6909 (6.0); 1.6834 (6.5); 1.6717 (2.7); 1.4140 (1.1); 1.4053 (3.9); 1.3937 (10.1); 1.3860 (13.8); 1.3739 (4.8); 1.3365 (0.4); 1.1086 (2.2); 1.0911 (4.7); 1.0777 (1.7); 1.0736 (3.0); 1.0582 (0.6); 0.0081 (1.9); -0.0001 (59.2); -0.0084 (2.0)	419.2
I-086		^{1}H-NMR(400.2 MHz, CD3CN): δ= 8.8793 (0.3); 8.8686 (12.1); 8.8564 (12.2); 8.2603 (1.3); 7.9799 (9.6); 7.7932 (0.6); 7.7881 (4.5); 7.7854 (5.4); 7.7823 (2.6); 7.7724 (1.7); 7.7674 (7.1); 7.7639 (5.4); 7.6384 (0.7); 7.6353 (1.4); 7.6322 (0.9); 7.6218 (1.0); 7.6167 (3.6); 7.6120 (1.3); 7.6012 (1.8); 7.5981 (3.1); 7.5949 (1.9); 7.5818 (1.0); 7.5646 (1.0); 7.5390 (1.0); 7.5343 (4.8); 7.5304 (2.2); 7.5175 (3.7); 7.5144 (6.6); 7.5003 (1.2); 7.4960 (2.6); 7.4942 (2.0); 7.4636 (3.7); 7.4515 (7.0); 7.4393 (3.5); 7.4192 (3.2); 7.4150 (5.5); 7.4110 (3.8); 7.3421 (3.7); 7.3372 (5.2); 7.3333 (4.1); 7.2748 (4.1); 7.2698 (6.7); 7.2649 (3.4); 6.0844 (0.5); 6.0670 (2.0); 6.0492 (2.9); 6.0313 (2.0); 6.0138 (0.5); 5.4471 (1.5); 4.0857 (1.0); 4.0679 (3.0); 4.0500 (3.0); 4.0322 (1.0); 2.6381	484.1

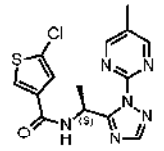
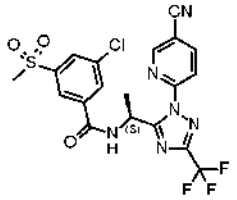
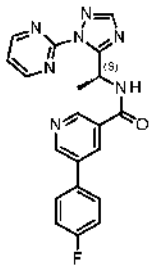
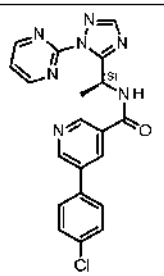
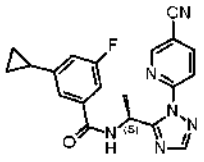
		(1.0); 2.1526 (22.8); 2.1078 (0.4); 1.9721 (13.5); 1.9648 (1.0); 1.9585 (1.6); 1.9528 (20.1); 1.9467 (38.3); 1.9405 (54.8); 1.9343 (37.3); 1.9281 (19.0); 1.8480 (0.6); 1.7689 (0.3); 1.6232 (16.0); 1.6059 (15.9); 1.3720 (0.5); 1.2845 (0.5); 1.2760 (1.4); 1.2697 (1.5); 1.2214 (3.8); 1.2036 (7.6); 1.1857 (3.7); 0.8808 (0.4); 0.1457 (0.8); 0.0079 (6.8); -0.0002 (180.8); -0.0087 (5.7); -0.1497 (0.7)	
I-087		^{1}H-NMR(400.2 MHz, CD3CN): δ= 14.8224 (0.4); 11.6690 (0.5); 8.8990 (10.6); 8.8869 (10.6); 8.5569 (1.2); 8.5416 (0.8); 8.5136 (0.4); 7.9858 (8.6); 7.9087 (0.6); 7.8630 (2.6); 7.8585 (4.3); 7.8534 (2.7); 7.8100 (0.6); 7.7226 (4.4); 7.6443 (1.2); 7.6195 (1.3); 7.5874 (0.8); 7.5090 (0.7); 7.4862 (3.6); 7.4740 (6.1); 7.4617 (3.0); 7.3898 (4.8); 6.1182 (0.5); 6.1008 (2.1); 6.0830 (3.0); 6.0650 (2.1); 6.0485 (0.8); 4.4684 (0.4); 4.4302 (0.5); 3.6567 (0.4); 3.6409 (0.5); 3.1285 (0.6); 3.1111 (0.6); 2.8890 (1.6); 2.7715 (1.4); 2.7280 (16.0); 2.4695 (1.9); 2.4648 (2.9); 2.4600 (2.0); 2.3217 (0.5); 2.3103 (0.6); 2.2804 (0.5); 2.2496 (0.9); 2.2295 (1.0); 2.1600 (581.7); 2.1199 (3.4); 2.1136 (4.1); 2.1074 (4.6); 2.1013 (3.1); 2.0950 (2.1); 2.0771 (5.2); 2.0649 (35.3); 2.0064 (0.7); 1.9926 (0.8); 1.9643 (18.8); 1.9525 (231.1); 1.9464 (426.8); 1.9402 (590.8); 1.9340 (400.7); 1.9279 (204.2); 1.9064 (1.4); 1.8844 (0.7); 1.7972 (0.9); 1.7810 (1.3); 1.7749 (2.4); 1.7686 (3.4); 1.7626 (2.3); 1.7562 (1.2); 1.6454 (14.9); 1.6281 (15.0); 1.6151 (0.6); 1.5984 (0.7); 1.5102 (0.5); 1.4969 (0.5); 1.4908 (0.6); 1.4085 (1.7); 1.4012 (0.6); 1.3906 (1.7); 1.3508 (1.3); 1.3319 (3.9); 1.3137 (3.9); 1.2708 (5.9); 1.1996 (1.0); 1.1662 (0.5); 1.1585 (0.6); 1.1482 (0.5); 1.1321 (0.6); 1.1266 (0.5); 1.1101 (0.6); 1.0841 (0.5); 1.0272 (0.5); 0.9282 (0.6); 0.8815 (1.5); 0.8567 (1.2); 0.8405 (1.1); 0.8120 (0.5); 0.1546 (0.8); 0.1457 (7.9); 0.0530 (0.5); 0.0302 (2.4); 0.0080 (107.4); -0.0002 (1799.6); -0.0086 (72.7); -0.0388 (1.7); -0.0702 (0.7); -0.1025 (0.6); -0.1076 (0.8); -0.1498 (8.2); -2.3548 (0.5); -3.0454 (0.4)	386.2
I-088		^{1}H-NMR(400.2 MHz, CD3CN): δ= 8.8936 (10.7); 8.8814 (10.8); 8.7707 (1.9); 7.9883 (9.0); 7.8620 (3.2); 7.8575 (5.5); 7.8532 (3.4); 7.7568 (4.0); 7.7530 (5.6); 7.7490 (3.5); 7.6709 (1.3); 7.6541 (1.4); 7.4810 (3.1); 7.4689 (5.9); 7.4568 (3.0); 7.3811 (3.8); 7.3771 (5.8); 7.3732 (3.7); 6.1231 (0.6); 6.1057 (2.1); 6.0877 (3.1); 6.0699 (2.1); 6.0523 (0.6); 5.4479 (3.4); 4.0859 (1.3); 4.0681 (4.0); 4.0503 (4.0); 4.0324 (1.4); 2.1673 (21.4); 2.1222 (0.3); 2.1152 (0.3); 2.1085 (0.3); 1.9726 (17.1); 1.9536 (11.3); 1.9475 (20.9); 1.9414 (28.7); 1.9352 (20.4); 1.9291 (11.2); 1.6774 (0.8); 1.6659 (1.6); 1.6576 (2.0); 1.6415 (16.0); 1.6243 (15.8); 1.2695 (1.2); 1.2216 (4.5); 1.2038 (8.7); 1.1860 (4.4); 0.9238 (1.3); 0.9184 (1.5); 0.9123 (4.0); 0.9052 (6.3); 0.9011 (4.4); 0.8975 (4.2); 0.8939 (5.2); 0.8861 (2.7); 0.8633 (1.2); 0.8495 (2.7); 0.8419 (5.1); 0.8345 (3.4); 0.8298 (3.3); 0.8223 (5.5); 0.8150 (3.1); 0.8103 (1.7); 0.8037 (1.3); 0.1459 (0.4); -0.0002 (83.7); -0.0079 (7.0); -0.1496 (0.5)	412.2
I-089		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4896 (3.1); 9.4721 (3.2); 8.9998 (4.1); 8.9981 (4.0); 8.9962 (4.1); 8.9939 (4.2); 8.5081 (2.5); 8.5021 (2.4); 8.4865 (2.8); 8.4804 (2.7); 8.2800 (4.7); 8.2761 (9.3); 8.2723 (5.4); 8.2467 (16.0); 8.1721 (4.1); 8.1673 (7.7); 8.1634 (5.6); 8.1461 (5.9); 8.1416 (7.8); 8.1372 (4.0); 8.1075 (4.7); 8.0860 (4.3); 6.1477 (0.5); 6.1305 (2.3); 6.1131 (3.6); 6.0956 (2.3); 6.0782 (0.5); 4.0565 (0.5); 4.0387 (1.6); 4.0209 (1.7); 4.0031 (0.6); 3.3462 (0.4); 3.3264 (57.0); 3.3162 (40.1); 2.6772 (0.5); 2.6726 (0.7); 2.6681 (0.5); 2.5261 (1.9); 2.5215 (2.7); 2.5127 (38.2); 2.5082 (79.2); 2.5037 (104.2); 2.4990 (72.8); 2.4944 (33.7); 2.3350 (0.4); 2.3305 (0.6); 2.3259 (0.4); 1.9898 (7.4); 1.6661 (13.9); 1.6487 (13.8); 1.3972 (0.7); 1.2352 (0.4); 1.1936 (2.0); 1.1758 (4.1); 1.1580 (2.0); 0.0080 (1.6); -0.0002 (52.5); -0.0086 (1.5)	474.2

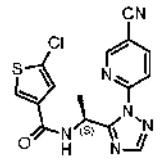
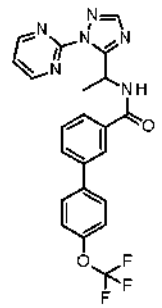
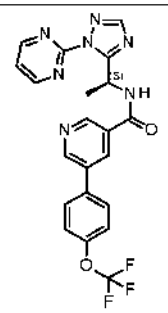
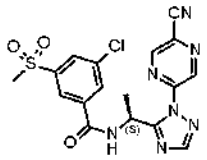
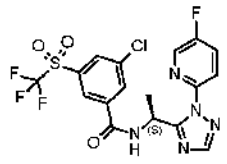
I-090		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.5110 (3.8); 9.4938 (3.8); 8.6856 (7.4); 8.6794 (7.4); 8.3161 (0.6); 8.2686 (5.1); 8.2621 (4.9); 8.2468 (6.0); 8.2398 (8.5); 8.2350 (10.4); 8.2312 (6.1); 8.1564 (4.8); 8.1518 (9.1); 8.1476 (5.8); 8.1250 (6.4); 8.1209 (8.5); 8.1165 (4.6); 7.9432 (8.0); 7.9214 (7.0); 5.9748 (0.6); 5.9575 (2.9); 5.9402 (4.6); 5.9229 (2.9); 5.9054 (0.6); 3.3263 (90.8); 3.3177 (45.7); 2.6814 (0.3); 2.6772 (0.7); 2.6726 (0.9); 2.6679 (0.7); 2.6635 (0.3); 2.5260 (3.0); 2.5212 (4.6); 2.5126 (55.6); 2.5081 (112.0); 2.5036 (145.2); 2.4990 (102.5); 2.4945 (48.3); 2.3348 (0.6); 2.3303 (0.9); 2.3258 (0.6); 2.0758 (5.0); 1.6816 (16.0); 1.6641 (15.9); 0.0080 (2.3); -0.0002 (67.4); -0.0085 (2.1)	508.2
I-091		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.5384 (2.5); 9.5211 (2.5); 9.0504 (15.7); 9.0382 (16.0); 8.2236 (3.7); 8.2198 (6.9); 8.2160 (4.1); 8.1494 (3.1); 8.1447 (6.5); 8.1405 (4.6); 8.1315 (5.0); 8.1276 (5.6); 8.1229 (2.7); 7.9534 (0.5); 7.7417 (4.2); 7.7296 (7.9); 7.7174 (4.0); 6.0691 (0.4); 6.0519 (2.0); 6.0346 (3.1); 6.0172 (2.0); 6.0000 (0.4); 3.3250 (61.7); 3.3136 (31.1); 2.8918 (4.0); 2.7329 (3.2); 2.7317 (3.2); 2.6765 (0.6); 2.6719 (0.8); 2.6674 (0.6); 2.5255 (2.8); 2.5207 (4.7); 2.5121 (52.3); 2.5076 (103.6); 2.5030 (132.7); 2.4984 (92.5); 2.4939 (42.8); 2.3344 (0.6); 2.3298 (0.8); 2.3252 (0.6); 2.0868 (0.5); 1.7044 (10.7); 1.6870 (10.6); 1.3976 (3.1); 1.1198 (0.3); 0.0080 (2.6); -0.0002 (69.9); -0.0085 (2.1)	475.2
I-092		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.3542 (2.8); 9.3362 (2.8); 8.9979 (15.7); 8.9858 (16.0); 8.3159 (0.5); 8.1720 (7.2); 8.1703 (8.5); 8.1254 (1.8); 8.1217 (3.4); 8.1180 (2.0); 8.1003 (2.3); 8.0967 (4.4); 8.0929 (2.6); 8.0138 (3.2); 8.0095 (6.2); 8.0056 (4.3); 7.9904 (5.2); 7.9863 (6.7); 7.9818 (3.4); 7.6429 (3.8); 7.6307 (7.3); 7.6185 (3.7); 6.0446 (0.4); 6.0271 (1.5); 6.0095 (2.3); 5.9919 (1.5); 5.9761 (0.3); 5.7560 (10.1); 4.3046 (0.6); 4.2935 (0.7); 4.2836 (0.5); 4.2777 (0.8); 4.2682 (1.5); 4.2568 (1.2); 4.2415 (1.8); 4.2300 (1.2); 4.2219 (1.3); 4.2158 (1.7); 4.2033 (0.6); 4.1955 (1.3); 4.1898 (1.6); 4.1799 (0.7); 4.1691 (0.5); 4.1632 (0.6); 4.1595 (0.6); 4.1537 (0.7); 3.3235 (114.1); 2.6799 (0.5); 2.6755 (1.1); 2.6710 (1.5); 2.6665 (1.1); 2.6620 (0.5); 2.5245 (4.7); 2.5198 (7.2); 2.5111 (89.7); 2.5066 (182.0); 2.5021 (236.9); 2.4975 (168.0); 2.4930 (79.6); 2.3380 (0.5); 2.3334 (1.0); 2.3289 (1.4); 2.3243 (1.0); 2.3200 (0.5); 1.7537 (0.4); 1.6526 (12.3); 1.6352 (12.3); 0.1459 (0.8); 0.0079 (6.9); -0.0001 (202.2); -0.0085 (6.7); -0.0177 (0.3); -0.1496 (0.8)	459.1
I-093		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4914 (2.6); 9.4736 (2.7); 8.9966 (15.7); 8.9844 (16.0); 8.2729 (3.3); 8.2691 (6.9); 8.2653 (4.7); 8.2523 (4.2); 8.2477 (6.2); 8.2438 (3.6); 8.1783 (12.4); 8.1650 (4.0); 8.1605 (6.4); 8.1561 (3.4); 7.6394 (4.3); 7.6273 (8.1); 7.6151 (4.1); 6.0510 (0.4); 6.0335 (2.0); 6.0160 (3.1); 5.9985 (2.0); 5.9809 (0.4); 5.7566 (6.8); 5.1388 (1.6); 5.1143 (4.9); 5.0896 (5.2); 5.0649 (1.8); 3.3244 (36.1); 2.6763 (0.6); 2.6717 (0.8); 2.6671 (0.6); 2.5251 (2.9); 2.5204 (4.7); 2.5117 (49.4); 2.5073 (99.4); 2.5027 (129.4); 2.4981 (92.0); 2.4936 (43.5); 2.3563 (1.0); 2.3341 (0.6); 2.3295 (0.8); 2.3250 (0.6); 1.7547 (0.8); 1.6591 (12.0); 1.6417 (11.9); 1.2400 (0.4); 0.1457 (0.4); 0.0078 (3.4); -0.0003 (91.7); -0.0086 (3.0); -0.1497 (0.3)	475.1
I-094		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.3506 (2.5); 9.3326 (2.5); 8.9994 (15.6); 8.9872 (16.0); 8.8459 (3.0); 8.8437 (3.4); 8.8395 (3.4); 8.8373 (3.1); 8.3158 (0.8); 8.1928 (2.8); 8.1878 (5.2); 8.1841 (4.4); 8.1715 (15.7); 8.1662 (6.6); 8.1613 (2.9); 7.8499 (3.9); 7.8458 (5.9); 7.8418 (3.8); 7.6402 (4.2); 7.6280 (8.1); 7.6159 (4.1); 7.4098 (0.6); 7.4017 (0.4); 7.3961 (0.4); 7.3870 (0.6); 7.1097 (4.4); 7.1033 (4.4); 6.9934 (2.1); 6.0421 (0.4); 6.0248 (1.8); 6.0072 (2.9); 5.9897 (1.9); 5.9722 (0.4); 5.7559 (2.9); 3.3218 (77.2); 2.6800 (0.6); 2.6755 (1.4); 2.6709 (1.9); 2.6663 (1.4); 2.6619 (0.6); 2.5412 (0.7); 2.5244 (4.8); 2.5197 (7.1); 2.5110 (106.0); 2.5065 (219.5); 2.5020 (291.6); 2.4974 (207.3); 2.4928 (97.4); 2.4521 (0.6); 2.4355 (0.4); 2.3378 (0.6); 2.3334 (1.3); 2.3288 (1.8);	461.2#

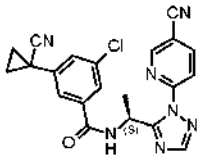
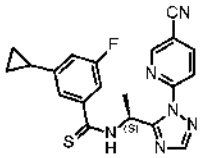
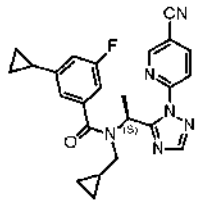
		2.3242 (1.3); 2.3197 (0.6); 1.6603 (11.2); 1.6429 (11.2); 1.2568 (3.8); 1.2395 (3.8); 1.1613 (2.4); 1.1443 (2.3); 1.1069 (8.0); 1.0785 (8.1); 0.9143 (2.4); 0.8976 (2.3); 0.1458 (0.4); 0.0079 (2.7); -0.0002 (89.6); -0.0086 (2.7); -0.1495 (0.3)	
I-095		^{1}H-NMR(600.1 MHz, CD3CN): δ= 9.2056 (5.4); 8.1732 (3.2); 8.0710 (2.9); 8.0509 (4.0); 8.0484 (3.8); 7.8814 (0.7); 7.8702 (0.7); 6.2048 (0.8); 6.1932 (1.2); 6.1815 (0.8); 3.2758 (1.6); 3.1333 (0.8); 3.1168 (1.0); 3.1009 (16.0); 2.1346 (2.2); 2.1281 (2.4); 2.0727 (0.8); 2.0543 (0.3); 2.0503 (0.5); 2.0463 (0.3); 1.9638 (1.8); 1.9556 (1.7); 1.9477 (17.5); 1.9436 (31.9); 1.9395 (46.0); 1.9354 (32.3); 1.9313 (16.8); 1.6943 (6.4); 1.6828 (6.4); 1.2703 (0.5); 1.2328 (0.4); 1.2219 (0.4); 1.1391 (0.4); 0.0052 (1.9); -0.0001 (41.5); -0.0053 (2.2)	474.9
I-096		^{1}H-NMR(600.1 MHz, d$_6$-DMSO): δ= 9.43 (d, 1H), 8.81 (d, 2H), 8.21 (m,. 1H), 8.14 (m, 1H), 8.13 (m, 2H), 5.94 (m, 1H), 3.31 (s, 3H), 2.32 (s, 3H), 1.63 (d, 3H)	421.0
I-097		^{1}H-NMR(600.1 MHz, d$_6$-DMSO): δ= 9.65 (d, 1H), 9.41 (m, 2H), 8.49 (m, 1H), 8.42 (s, 1H), 8.41 (s, 1H), 8.27 (s, 1H), 6.09 (m, 1H), 1.67 (d, 3H)	528.9
I-098		^{1}H-NMR(600.1 MHz, d$_6$-DMSO): δ= 9.4562 (4.1); 8.9168 (0.9); 8.9049 (0.9); 8.2334 (3.2); 8.0092 (2.0); 8.0064 (2.1); 7.4498 (2.1); 7.4470 (2.2); 6.0021 (0.6); 5.9904 (1.0); 5.9787 (0.6); 3.3324 (16.0); 2.5230 (0.5); 2.5200 (0.7); 2.5169 (0.7); 2.5050 (23.5); 2.5020 (32.1); 2.4991 (24.6); 2.0744 (2.8); 1.6188 (3.8); 1.6071 (3.8)	402.9
I-099		^{1}H-NMR(600.1 MHz, CD3CN): δ= 8.7011 (6.6); 8.2650 (1.5); 8.2625 (4.2); 8.2594 (6.0); 8.1932 (1.7); 8.1905 (2.7); 8.0383 (0.8); 8.0264 (0.8); 7.9730 (6.1); 6.1091 (0.3); 6.0974 (1.3); 6.0856 (2.0); 6.0737 (1.4); 6.0620 (0.4); 4.6786 (0.3); 4.0664 (0.4); 4.0545 (0.4); 2.3485 (16.0); 2.2392 (0.5); 2.2385 (0.5); 2.2059 (2.2); 2.1777 (0.8); 1.9735 (2.1); 1.9674 (13.1); 1.9593 (0.4); 1.9551 (0.4); 1.9513 (2.9); 1.9472 (5.4); 1.9431 (7.7); 1.9390 (5.3); 1.9349 (2.6); 1.6725 (9.8); 1.6610 (9.8); 1.3730 (0.6); 1.2764 (0.9); 1.2685 (0.5); 1.2164 (0.6); 1.2046 (1.1); 1.1927 (0.5)	475.0
I-100		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.0012 (12.6); 8.9974 (2.1); 8.9890 (12.9); 8.9853 (2.0); 8.7704 (1.8); 8.7516 (1.9); 8.3136 (0.8); 8.1575 (9.9); 8.1134 (0.9); 7.6525 (0.4); 7.6467 (3.5); 7.6404 (0.8); 7.6346 (6.6); 7.6284 (0.5); 7.6224 (3.4); 7.3785 (0.6); 7.2129 (6.2); 6.0251 (0.4); 6.0074 (1.6); 5.9894 (2.3); 5.9714 (1.6); 5.9540 (0.4); 4.4016 (0.4); 4.0650 (0.4); 4.0519 (1.6); 4.0140 (16.0); 4.0128 (16.0); 3.8869 (0.7); 3.8790 (0.7); 3.7244 (0.4); 3.7128 (0.4); 3.7021 (0.4); 3.3267 (146.0); 2.6811 (0.4); 2.6764 (0.8); 2.6718 (1.1); 2.6674 (0.8); 2.6627 (0.4); 2.5422 (3.8); 2.5254 (3.4); 2.5207 (5.1); 2.5120 (67.0); 2.5075 (137.1); 2.5029 (181.2); 2.4983 (132.9); 2.4938 (65.2); 2.3388 (0.4); 2.3343 (0.8); 2.3297 (1.1); 2.3252 (0.8); 2.0740 (0.5); 1.5915 (10.4); 1.5743 (10.4); 1.4824 (1.0); 1.4651 (1.0); 0.0080 (0.4); -0.0002 (14.6); -0.0085 (0.5)	367.1

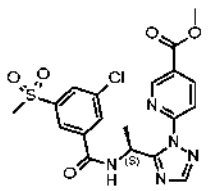
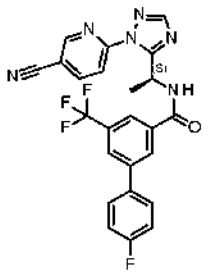
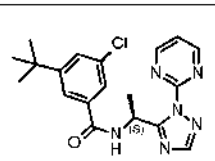
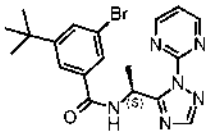
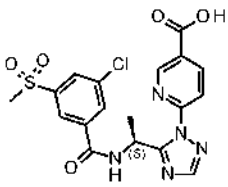
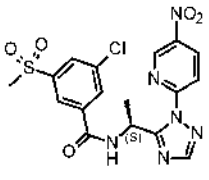
I-101		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 17.0545 (0.3); 9.6374 (2.5); 9.6192 (2.6); 9.0034 (13.0); 8.9913 (13.5); 8.9777 (0.4); 8.7807 (0.3); 8.6946 (0.6); 8.6707 (0.7); 8.6592 (0.8); 8.6290 (1.2); 8.5946 (12.8); 8.5905 (13.4); 8.5135 (4.0); 8.5095 (6.5); 8.5054 (3.1); 8.4092 (0.5); 8.4052 (0.8); 8.3125 (12.6); 8.3029 (0.8); 8.2986 (0.7); 8.2835 (1.0); 8.2790 (0.9); 8.1863 (11.2); 7.9766 (0.4); 7.9572 (0.6); 7.8685 (0.4); 7.8577 (0.4); 7.6451 (3.7); 7.6330 (6.9); 7.6209 (3.4); 7.1990 (0.4); 7.0711 (0.3); 6.9445 (0.4); 6.7796 (0.5); 6.0950 (0.4); 6.0788 (1.9); 6.0609 (2.7); 6.0433 (1.8); 3.8041 (0.4); 3.7490 (0.4); 3.7027 (0.4); 3.6812 (0.4); 3.6508 (0.4); 3.6138 (0.4); 3.5784 (0.4); 3.5317 (0.6); 3.5121 (0.5); 3.4710 (0.6); 3.4299 (1.2); 3.4204 (1.9); 3.4063 (1.4); 3.3875 (6.3); 3.3603 (56.3); 3.3407 (17.0); 3.3241 (1850.4); 3.2543 (0.4); 3.2405 (0.4); 3.1852 (0.4); 3.0433 (0.5); 3.0239 (0.9); 2.9943 (0.4); 2.9592 (0.4); 2.9002 (0.3); 2.8362 (0.4); 2.7669 (0.5); 2.7470 (0.5); 2.7349 (0.5); 2.7119 (1.0); 2.6757 (11.9); 2.6712 (16.0); 2.6667 (11.4); 2.6620 (5.4); 2.5415 (155.6); 2.5247 (51.1); 2.5199 (78.5); 2.5111 (1031.6); 2.5068 (1994.3); 2.5023 (2533.7); 2.4977 (1815.4); 2.4933 (865.9); 2.3977 (0.6); 2.3678 (0.7); 2.3336 (11.6);	451.0
I-102		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.0196 (15.8); 9.0074 (16.0); 8.7843 (0.7); 8.7722 (1.4); 8.7672 (2.3); 8.7565 (0.7); 8.7482 (2.2); 8.7085 (3.0); 8.7061 (3.1); 8.6909 (3.1); 8.6884 (3.1); 8.3130 (2.1); 8.1805 (11.2); 7.7649 (1.8); 7.7620 (3.1); 7.7593 (1.9); 7.7424 (2.0); 7.7397 (3.4); 7.7368 (2.0); 7.6515 (4.2); 7.6393 (8.0); 7.6271 (4.1); 7.5605 (0.3); 7.3028 (1.8); 7.3003 (2.0); 7.2859 (2.1); 7.2834 (2.2); 7.2806 (1.9); 7.2780 (1.8); 7.2636 (2.0); 7.2611 (2.0); 7.0491 (2.0); 7.0456 (2.1); 7.0318 (3.2); 7.0284 (3.2); 7.0146 (1.8); 7.0111 (1.7); 6.9429 (7.4); 6.9409 (7.6); 6.0950 (0.4); 6.0777 (1.8); 6.0596 (2.4); 6.0415 (1.8); 6.0239 (0.4); 3.3246 (263.2); 2.6808 (0.8); 2.6762 (1.7); 2.6716 (2.4); 2.6671 (1.7); 2.6625 (0.8); 2.5659 (0.3); 2.5420 (13.4); 2.5252 (7.4); 2.5205 (11.0); 2.5118 (139.5); 2.5073 (283.8); 2.5027 (373.3); 2.4981 (270.1); 2.4935 (130.4); 2.3387 (0.7); 2.3341 (1.6); 2.3295 (2.3); 2.3250 (1.6); 2.3205 (0.8); 2.0738 (4.0); 1.6236 (11.8); 1.6064 (11.8); 0.0081 (0.6); -0.0001 (21.4); -0.0085 (0.6)	335.1
I-103		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.0147 (15.7); 9.0026 (16.0); 8.9901 (2.1); 8.9780 (2.1); 8.8219 (2.9); 8.8024 (2.9); 8.3130 (3.9); 8.2739 (0.4); 8.2542 (0.4); 8.2030 (13.2); 8.1592 (0.5); 8.1224 (3.6); 8.1041 (3.9); 8.1008 (4.0); 7.7423 (0.5); 7.7254 (0.6); 7.6937 (1.2); 7.6785 (4.3); 7.6610 (3.9); 7.6568 (5.4); 7.6445 (8.2); 7.6324 (4.3); 7.6175 (0.6); 7.4873 (0.4); 7.4650 (0.5); 7.4440 (3.0); 7.4261 (3.6); 7.4037 (2.4); 7.3807 (1.9); 7.2858 (1.5); 7.2348 (14.3); 6.1097 (0.5); 6.0920 (2.2); 6.0736 (3.0); 6.0557 (2.2); 6.0383 (0.5); 5.8445 (0.4); 4.4988 (0.6); 4.4875 (0.8); 4.4760 (0.6); 3.9088 (1.2); 3.8999 (1.3); 3.7717 (0.6); 3.7603 (0.7); 3.7479 (0.5); 3.4846 (0.5); 3.3251 (471.9); 2.7112 (0.4); 2.6803 (1.9); 2.6760 (4.0); 2.6715 (5.6); 2.6670 (4.1); 2.6626 (2.0); 2.6033 (0.4); 2.5420 (92.4); 2.5250 (16.9); 2.5203 (26.7); 2.5115 (341.6); 2.5072 (684.5); 2.5026 (896.2); 2.4980 (661.8); 2.4936 (328.8); 2.3686 (0.4); 2.3385 (1.8); 2.3340 (3.9); 2.3294 (5.5); 2.3249 (4.1); 2.3204 (2.0); 2.0737 (11.3); 1.6436 (14.0); 1.6263 (14.0); 1.4776 (2.0); 1.4603 (1.9); 0.0079 (1.2); -0.0002 (39.5); -0.0085 (1.2)	403.1
I-104		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.3494 (2.5); 9.3308 (2.5); 9.0119 (15.8); 8.9998 (16.0); 8.9926 (1.1); 8.9804 (0.8); 8.3126 (5.0); 8.2242 (2.1); 8.2191 (2.4); 8.2039 (14.4); 8.0967 (0.3); 8.0660 (0.7); 7.6884 (2.2); 7.6838 (2.3); 7.6748 (2.3); 7.6701 (2.2); 7.6639 (4.5); 7.6517 (8.1); 7.6395 (4.2); 6.0477 (0.5); 6.0304 (2.0); 6.0127 (3.1); 5.9950 (2.1); 5.9781 (0.5); 3.9072 (0.6); 3.8981 (0.5); 3.7577 (0.3); 3.5061 (0.3); 3.4314 (0.4); 3.3908 (0.6); 3.3244 (853.0); 3.2769 (0.4); 2.6758 (4.7); 2.6713 (6.6); 2.6668 (4.9); 2.6623 (2.4); 2.5417 (36.6); 2.5248 (20.7); 2.5200 (32.3); 2.5113 (397.7); 2.5069 (800.2); 2.5024 (1050.5); 2.4978 (774.7);	415.0

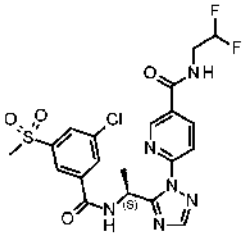
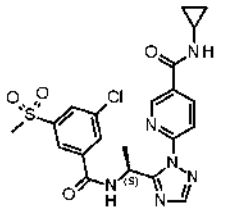
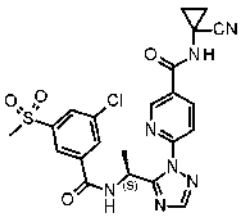
		2.4933 (385.9); 2.4290 (0.4); 2.3383 (2.1); 2.3338 (4.6); 2.3292 (6.4); 2.3246 (4.7); 2.3201 (2.3); 2.0733 (4.3); 1.6153 (13.1); 1.5980 (13.1); 1.4683 (0.8); 1.4514 (0.8); 1.2347 (0.4); 0.0081 (1.5); -0.0001 (47.6); -0.0083 (1.8)	
I-105		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 8.9981 (3.1); 8.8512 (13.7); 8.8507 (13.8); 8.7343 (3.6); 8.7158 (3.7); 8.3124 (2.4); 8.1585 (4.1); 8.0898 (14.6); 7.8700 (0.6); 7.8612 (6.1); 7.8556 (2.2); 7.8494 (6.6); 7.8439 (3.7); 7.8383 (7.0); 7.8322 (2.3); 7.8265 (6.6); 7.8175 (0.6); 7.6419 (2.0); 7.3916 (0.6); 7.3826 (6.8); 7.3770 (2.0); 7.3704 (1.0); 7.3606 (10.0); 7.3507 (0.8); 7.3442 (1.9); 7.3385 (6.2); 7.3296 (0.5); 6.0234 (0.5); 6.0058 (2.4); 5.9880 (3.6); 5.9701 (2.4); 5.9526 (0.5); 3.3305 (308.5); 2.6811 (0.8); 2.6766 (1.8); 2.6719 (2.5); 2.6673 (1.8); 2.6628 (0.8); 2.5423 (26.8); 2.5255 (7.8); 2.5208 (11.7); 2.5121 (146.8); 2.5076 (298.0); 2.5030 (391.0); 2.4983 (281.8); 2.4938 (135.3); 2.3389 (0.8); 2.3344 (1.7); 2.3298 (2.4); 2.3252 (1.7); 2.3207 (0.8); 2.0736 (4.6); 1.6312 (16.0); 1.6138 (16.0); 0.0081 (0.7); -0.0001 (23.1); -0.0084 (0.7)	379.1
I-106		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.0465 (0.8); 9.0445 (0.8); 9.0196 (16.0); 9.0074 (14.6); 8.8039 (2.0); 8.7847 (2.1); 8.3118 (2.7); 8.1836 (10.6); 7.8314 (3.6); 7.8299 (3.6); 7.8062 (4.5); 7.7828 (0.8); 7.6520 (3.8); 7.6398 (7.2); 7.6277 (3.6); 7.3708 (3.5); 7.3663 (3.3); 7.3571 (0.8); 7.3526 (0.9); 7.3471 (3.1); 7.3427 (3.0); 7.3336 (0.6); 7.3290 (0.6); 7.0355 (7.2); 7.0336 (7.1); 6.9113 (1.4); 6.9094 (1.4); 6.0925 (0.4); 6.0753 (1.7); 6.0573 (2.3); 6.0392 (1.7); 6.0216 (0.4); 3.3256 (431.0); 3.3022 (0.8); 3.1997 (5.2); 3.0261 (4.7); 2.6809 (1.0); 2.6765 (2.3); 2.6719 (3.2); 2.6673 (2.2); 2.6627 (1.0); 2.5422 (44.6); 2.5254 (10.0); 2.5207 (14.7); 2.5120 (185.8); 2.5075 (375.1); 2.5029 (491.4); 2.4982 (352.5); 2.4937 (167.6); 2.3389 (1.0); 2.3343 (2.2); 2.3297 (3.1); 2.3251 (2.2); 2.3205 (1.0); 2.0733 (2.0); 1.6192 (11.2); 1.6020 (11.2); 0.0080 (0.7); -0.0002 (24.9); -0.0085 (0.7)	369.0
I-107		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.1559 (1.8); 9.1377 (1.8); 8.9985 (1.6); 8.9861 (16.0); 8.9739 (14.7); 8.3118 (1.5); 8.1514 (10.6); 8.1184 (1.0); 7.6526 (0.4); 7.6403 (4.6); 7.6281 (7.8); 7.6160 (3.8); 6.6128 (1.1); 6.4133 (11.3); 6.3842 (0.4); 5.9913 (0.4); 5.9739 (1.8); 5.9562 (2.8); 5.9384 (1.8); 5.9209 (0.4); 4.4477 (0.3); 4.4404 (0.3); 4.4365 (0.4); 4.4320 (0.3); 4.4249 (0.3); 4.2188 (0.7); 3.8808 (0.8); 3.8713 (0.8); 3.7242 (0.4); 3.7129 (0.5); 3.7018 (0.5); 3.3259 (228.4); 3.0462 (1.7); 2.9849 (1.5); 2.6810 (0.5); 2.6765 (1.0); 2.6719 (1.5); 2.6674 (1.1); 2.6628 (0.5); 2.5422 (32.8); 2.5255 (4.5); 2.5208 (6.8); 2.5121 (90.4); 2.5076 (184.3); 2.5029 (242.9); 2.4983 (175.3); 2.4938 (84.2); 2.3390 (0.5); 2.3344 (1.1); 2.3298 (1.6); 2.3252 (1.1); 2.3207 (0.5); 2.1911 (0.7); 2.1784 (1.3); 2.1697 (1.3); 2.1663 (0.9); 2.1573 (2.4); 2.1485 (0.8); 2.1449 (1.4); 2.1362 (1.2); 2.1238 (0.6); 2.0733 (1.3); 1.5922 (11.3); 1.5749 (11.3); 1.4867 (1.2); 1.4695 (1.1); 1.1181 (0.4); 1.1120 (0.5); 1.1025 (1.5); 1.0973 (0.7); 1.0913 (4.0); 1.0849 (4.4); 1.0818 (2.2); 1.0747 (2.0); 1.0703 (3.9); 1.0637 (3.9); 1.0538 (1.6); 0.9627 (0.4); 0.9530 (0.6); 0.9474 (0.5); 0.9405 (0.5); 0.9349 (0.6); 0.9107 (1.8); 0.9009 (4.3); 0.8945 (4.1); 0.8885 (4.1); 0.8822 (4.4); 0.8711 (1.2); -0.0001 (10.3)	326.1
I-108		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.1565 (1.6); 9.1382 (1.6); 9.0017 (3.3); 8.9896 (3.3); 8.3448 (2.9); 8.3124 (2.4); 8.1581 (4.8); 7.9856 (1.4); 7.9637 (2.6); 7.9471 (2.9); 7.9256 (2.9); 7.8269 (2.2); 7.8226 (2.2); 7.8054 (1.6); 7.8011 (1.6); 7.6324 (1.2); 7.6266 (1.0); 7.6205 (2.4); 7.6093 (2.7); 7.6056 (2.1); 7.5975 (1.9); 7.5917 (3.5); 7.5857 (1.8); 7.5780 (1.5); 7.5740 (1.6); 7.5610 (0.6); 7.5571 (0.4); 6.0555 (1.2); 6.0378 (1.9); 6.0201 (1.2); 3.3386 (472.4); 2.6805 (1.0); 2.6761 (2.1); 2.6715 (3.0); 2.6669 (2.2); 2.6625 (1.0); 2.5419 (27.9); 2.5250 (9.4); 2.5203 (13.9); 2.5116 (174.0); 2.5071 (354.3); 2.5025 (467.2); 2.4979 (339.2); 2.4933	345.1

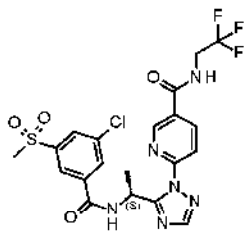
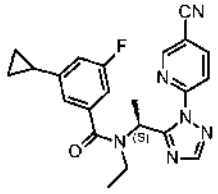
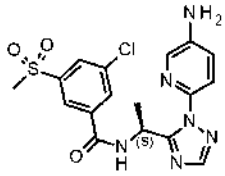
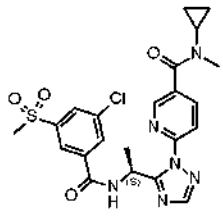
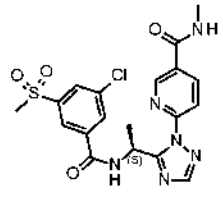
		(163.9); 2.3385 (0.9); 2.3339 (2.0); 2.3293 (2.9); 2.3248 (2.1); 2.3202 (0.9); 2.0733 (16.0); 1.6788 (7.6); 1.6614 (7.6); -0.0001 (10.6)	
I-109		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 8.8557 (1.7); 8.8375 (1.7); 8.8156 (10.6); 8.8140 (10.4); 8.3157 (0.4); 8.1147 (7.9); 7.9845 (5.2); 7.9801 (5.3); 7.4313 (5.4); 7.4270 (5.3); 5.9010 (0.3); 5.8835 (1.4); 5.8658 (2.1); 5.8481 (1.4); 3.3229 (52.7); 2.6755 (0.8); 2.6709 (1.1); 2.6664 (0.8); 2.6618 (0.4); 2.5244 (3.3); 2.5197 (5.0); 2.5110 (61.6); 2.5065 (125.2); 2.5020 (165.4); 2.4974 (119.9); 2.4929 (57.9); 2.3433 (16.0); 2.3288 (1.2); 2.3243 (0.8); 1.5892 (8.5); 1.5717 (8.5); 1.2583 (0.3); -0.0002 (5.8)	349.1
I-110		^{1}H-NMR(600.4 MHz, d$_6$-DMSO): δ= 9.5461 (2.0); 9.5348 (2.1); 9.1065 (3.0); 9.1038 (3.0); 8.6355 (2.0); 8.6318 (2.0); 8.6212 (2.2); 8.6176 (2.1); 8.2477 (4.3); 8.2454 (2.6); 8.1548 (8.6); 8.1525 (8.1); 8.1272 (3.1); 8.1131 (2.9); 6.0723 (1.4); 6.0609 (2.1); 6.0494 (1.4); 3.4620 (0.4); 3.3911 (1067.5); 3.3301 (1.6); 3.3144 (20.3); 3.2964 (0.4); 2.6221 (0.4); 2.6193 (0.6); 2.6163 (0.4); 2.5280 (1.1); 2.5250 (1.4); 2.5220 (1.4); 2.5101 (67.0); 2.5072 (90.9); 2.5043 (68.6); 2.3941 (0.4); 2.3911 (0.6); 2.3881 (0.4); 2.0880 (1.6); 1.6929 (7.4); 1.6813 (7.4); 1.3977 (16.0); 1.2454 (0.6); 1.2343 (0.7); 1.2299 (0.7); 1.2186 (0.6); -0.0001 (4.4)	499.0
I-111		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.3280 (1.9); 9.3098 (2.0); 9.0047 (11.5); 8.9981 (5.1); 8.9926 (16.0); 8.8504 (4.8); 8.8453 (4.9); 8.3510 (2.5); 8.3456 (4.6); 8.3402 (2.5); 8.1785 (9.0); 7.8658 (0.3); 7.8579 (3.2); 7.8527 (1.4); 7.8445 (3.5); 7.8358 (3.8); 7.8278 (1.4); 7.8224 (3.4); 7.8146 (0.4); 7.6444 (3.1); 7.6323 (5.8); 7.6201 (2.9); 7.4081 (0.4); 7.4002 (3.5); 7.3950 (1.1); 7.3833 (1.3); 7.3780 (6.6); 7.3728 (1.3); 7.3611 (1.0); 7.3559 (3.2); 6.0784 (0.3); 6.0610 (1.5); 6.0433 (2.4); 6.0256 (1.5); 6.0081 (0.3); 3.3317 (32.6); 2.5271 (0.9); 2.5223 (1.4); 2.5136 (17.3); 2.5092 (35.1); 2.5046 (46.3); 2.5000 (33.6); 2.4955 (16.2); 1.6773 (9.2); 1.6599 (9.2); -0.0002 (0.4)	390.2
I-112		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.3415 (3.0); 9.3234 (3.1); 9.0206 (7.1); 9.0151 (7.2); 9.0055 (15.9); 8.9934 (16.0); 8.8690 (7.1); 8.8640 (7.1); 8.3752 (3.9); 8.3699 (6.8); 8.3645 (3.7); 8.1809 (13.0); 8.1705 (0.6); 7.8455 (1.2); 7.8390 (8.8); 7.8342 (3.1); 7.8223 (3.5); 7.8175 (10.9); 7.8110 (1.4); 7.6449 (4.3); 7.6327 (8.2); 7.6205 (5.5); 7.6135 (11.0); 7.6087 (3.4); 7.5968 (3.1); 7.5921 (9.0); 7.5855 (1.1); 6.0810 (0.5); 6.0637 (2.2); 6.0460 (3.4); 6.0284 (2.2); 6.0110 (0.5); 3.3376 (62.7); 2.5283 (1.1); 2.5148 (19.9); 2.5105 (38.4); 2.5060 (49.2); 2.5015 (35.7); 2.4971 (17.5); 2.0786 (1.1); 1.6799 (13.3); 1.6625 (13.2); -0.0002 (0.4)	406.2
I-113		^{1}H-NMR(600.1 MHz, CD3CN, 260K): δ= 8.8757 (6.0); 8.8730 (6.1); 8.3392 (4.0); 8.3355 (4.1); 8.3248 (4.4); 8.3211 (4.6); 8.0923 (6.1); 8.0780 (5.4); 8.0694 (0.3); 8.0450 (13.2); 8.0326 (1.0); 7.8205 (2.3); 7.8083 (2.3); 7.2612 (8.1); 7.2582 (11.1); 7.2477 (2.4); 7.2438 (2.7); 7.2415 (1.9); 6.9945 (2.0); 6.9913 (3.0); 6.9881 (2.0); 6.9776 (2.1); 6.9748 (2.6); 6.9714 (1.9); 6.1992 (0.6); 6.1875 (2.5); 6.1757 (3.9); 6.1639 (2.6); 6.1522 (0.6); 5.4729 (3.2); 2.3061 (18.1); 1.9867 (3.2); 1.9786 (2.0); 1.9744 (2.4); 1.9707 (17.0); 1.9666 (30.8); 1.9625 (44.9); 1.9584 (31.9); 1.9542 (17.5); 1.9462 (3.0); 1.9381 (1.7); 1.9323 (1.5); 1.9240 (0.7); 1.6684 (0.4); 1.6511 (16.0); 1.6395 (16.0); 1.0435 (1.1); 1.0393 (1.4); 1.0355 (5.3); 1.0320 (5.6); 1.0216 (5.3); 1.0181 (5.4); 1.0146 (1.5); 1.0103 (1.1); 0.7667 (0.4); 0.7557 (2.2); 0.7510 (3.5); 0.7480 (5.4); 0.7445 (4.7); 0.7399 (5.2); 0.7366 (3.5); 0.7320 (1.7); 0.7194 (0.3); -0.0001 (0.8)	377.1

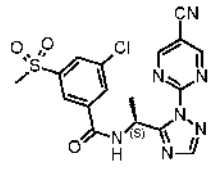
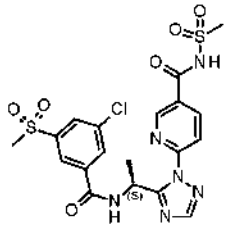
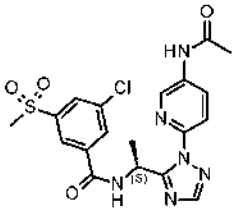
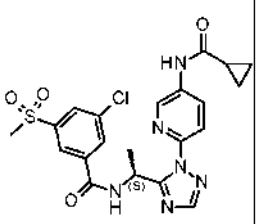
I-114		^{1}H-NMR(600.1 MHz, CD3CN, 260 K): δ= 8.8502 (3.8); 8.8491 (4.1); 8.8466 (4.2); 8.8454 (4.0); 8.2970 (3.4); 8.2933 (3.4); 8.2827 (3.8); 8.2790 (3.8); 8.0575 (4.6); 8.0564 (4.7); 8.0432 (4.0); 8.0420 (4.2); 8.0308 (0.3); 8.0137 (9.9); 8.0017 (0.3); 7.7519 (6.5); 7.7491 (6.8); 7.5521 (1.1); 7.5404 (1.2); 7.2794 (0.3); 7.2747 (6.6); 7.2718 (6.7); 6.1640 (0.5); 6.1523 (2.2); 6.1404 (3.2); 6.1285 (2.2); 6.1168 (0.6); 5.4470 (7.6); 2.1654 (0.7); 1.9666 (0.6); 1.9586 (0.3); 1.9544 (0.4); 1.9506 (3.2); 1.9465 (6.0); 1.9424 (8.8); 1.9383 (6.1); 1.9341 (3.2); 1.6302 (0.7); 1.6282 (0.7); 1.6215 (15.8); 1.6100 (16.0)	359.0
I-115		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.1428 (2.6); 9.1245 (2.7); 8.9973 (15.7); 8.9852 (16.0); 8.9342 (0.4); 8.9221 (0.4); 8.1574 (12.7); 8.0285 (3.2); 8.0245 (5.5); 8.0206 (3.3); 7.8737 (0.3); 7.8513 (1.0); 7.8439 (8.8); 7.8387 (2.9); 7.8274 (5.1); 7.8219 (10.5); 7.8132 (2.8); 7.8092 (3.0); 7.7600 (2.7); 7.7436 (2.4); 7.7402 (3.2); 7.6363 (4.2); 7.6241 (8.1); 7.6120 (4.2); 7.6060 (0.4); 7.5841 (0.3); 7.5484 (3.2); 7.5290 (5.6); 7.5091 (3.9); 7.5033 (5.8); 7.4831 (5.1); 6.0543 (0.4); 6.0370 (2.0); 6.0193 (3.2); 6.0015 (2.0); 5.9840 (0.4); 3.3252 (52.0); 2.8912 (0.4); 2.7322 (0.3); 2.6760 (0.7); 2.6715 (0.9); 2.6669 (0.7); 2.5250 (2.4); 2.5202 (3.5); 2.5115 (53.8); 2.5071 (110.6); 2.5025 (146.3); 2.4979 (104.4); 2.4934 (49.0); 2.3340 (0.6); 2.3294 (0.9); 2.3248 (0.7); 1.6628 (12.6); 1.6454 (12.7); 1.6244 (0.4); 1.3975 (12.6); 0.1459 (1.5); 0.0253 (0.4); 0.0079 (11.7); -0.0002 (327.4); -0.0086 (11.3); -0.0205 (0.4); -0.1496 (1.5)	455.3
I-116		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.3383 (2.8); 9.3201 (2.9); 9.0324 (6.2); 9.0269 (6.4); 9.0084 (15.7); 8.9963 (16.0); 8.8858 (6.4); 8.8807 (6.6); 8.3935 (3.6); 8.3881 (6.6); 8.3827 (3.6); 8.2166 (5.6); 8.1807 (13.0); 7.9382 (1.0); 7.9308 (8.9); 7.9257 (3.0); 7.9138 (3.5); 7.9089 (11.2); 7.9016 (1.2); 7.8945 (1.0); 7.8896 (2.7); 7.6480 (4.2); 7.6359 (8.0); 7.6237 (4.1); 7.5482 (5.8); 7.5280 (5.3); 7.3215 (1.5); 7.3022 (1.4); 6.0856 (0.4); 6.0684 (2.1); 6.0508 (3.3); 6.0331 (2.2); 6.0156 (0.5); 3.3354 (34.8); 2.5288 (0.8); 2.5238 (1.2); 2.5152 (17.5); 2.5108 (35.9); 2.5063 (47.5); 2.5017 (34.5); 2.4972 (16.7); 2.0785 (0.8); 1.6799 (12.8); 1.6625 (12.8); 0.1460 (0.5); 0.0079 (4.4); -0.0002 (112.0); -0.0086 (4.4); -0.1496 (0.5)	456.2
I-117		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.5333 (3.9); 9.5160 (4.0); 9.3760 (9.4); 9.3729 (9.8); 9.2583 (9.9); 9.2551 (9.4); 8.3692 (16.0); 8.3118 (9.1); 8.3083 (5.6); 8.2244 (5.0); 8.2203 (8.2); 8.2164 (5.3); 8.1614 (5.4); 8.1572 (8.4); 8.1529 (4.5); 6.0957 (0.6); 6.0785 (2.7); 6.0612 (4.2); 6.0438 (2.7); 6.0269 (0.6); 3.3264 (163.6); 2.6757 (0.6); 2.6714 (0.9); 2.6670 (0.6); 2.5245 (2.6); 2.5068 (103.8); 2.5025 (135.6); 2.4981 (99.8); 2.3337 (0.6); 2.3293 (0.8); 2.3249 (0.6); 2.0747 (1.4); 1.6431 (15.8); 1.6258 (15.7); 0.1458 (1.3); 0.0077 (10.9); -0.0002 (257.8); -0.0084 (11.2); -0.1497 (1.3)	432.2
I-118		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.6157 (1.4); 9.5982 (1.4); 8.5829 (2.9); 8.5755 (2.9); 8.4795 (2.0); 8.4753 (3.4); 8.4710 (2.3); 8.4100 (3.2); 8.4052 (2.7); 8.3989 (2.6); 8.3161 (0.4); 8.1667 (6.7); 8.0525 (0.8); 8.0450 (0.8); 8.0302 (1.3); 8.0228 (1.3); 8.0098 (1.1); 8.0023 (1.0); 7.9210 (1.7); 7.9112 (1.8); 7.8985 (1.2); 7.8887 (1.2); 5.9630 (1.0); 5.9456 (1.6); 5.9281 (1.0); 3.5685 (16.0); 3.3258 (109.9); 2.6807 (0.3); 2.6762 (0.6); 2.6714 (0.9); 2.6670 (0.6); 2.5249 (2.6); 2.5115 (53.3); 2.5071 (106.8); 2.5025 (139.6); 2.4979 (99.4); 2.4934 (46.6); 2.3339 (0.6); 2.3293 (0.8); 2.3249 (0.6); 1.9089 (5.2); 1.6511 (6.4); 1.6337 (6.4); 1.2982 (0.5); 1.2588 (0.8); 1.2345 (1.5); 0.1458 (1.4); 0.0079 (14.0); -0.0002 (318.4); -0.0086 (11.0); -0.1497 (1.4)	478.1

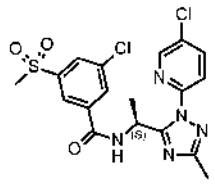
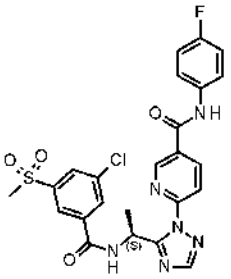
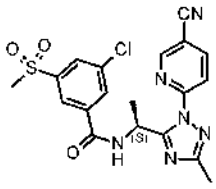
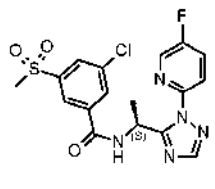
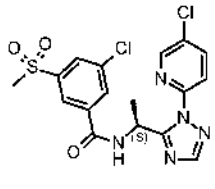
I-119		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.2840 (2.3); 9.2666 (2.4); 9.0658 (4.3); 9.0615 (4.1); 9.0604 (4.2); 8.5864 (3.2); 8.5809 (3.2); 8.5650 (3.5); 8.5594 (3.5); 8.2418 (11.1); 8.0817 (4.5); 8.0614 (4.0); 8.0601 (4.2); 7.8059 (3.2); 7.8017 (5.4); 7.7976 (3.6); 7.7014 (3.4); 7.6974 (5.8); 7.6936 (3.4); 7.5266 (3.5); 7.5220 (6.2); 7.5174 (3.2); 6.1008 (0.4); 6.0835 (1.8); 6.0662 (2.8); 6.0487 (1.8); 6.0312 (0.4); 5.7561 (7.8); 3.3257 (96.8); 2.6759 (0.6); 2.6715 (0.8); 2.6670 (0.6); 2.5249 (2.1); 2.5201 (3.2); 2.5115 (44.9); 2.5071 (92.1); 2.5025 (121.9); 2.4980 (87.4); 2.4935 (41.4); 2.3339 (0.5); 2.3294 (0.7); 2.3249 (0.5); 1.8164 (1.9); 1.8038 (5.5); 1.7963 (5.9); 1.7848 (2.5); 1.7454 (0.3); 1.6727 (0.4); 1.6392 (10.7); 1.6347 (4.9); 1.6218 (16.0); 1.6147 (6.4); 1.6013 (2.1); 0.1458 (1.1); 0.0078 (9.0); -0.0002 (245.2); -0.0086 (8.7); -0.1497 (1.1)	418.3
I-120		^{1}H-NMR(600.1 MHz, CD3CN, 260K): δ= 9.2780 (1.8); 9.2670 (1.9); 8.8779 (5.9); 8.8750 (5.8); 8.3608 (4.0); 8.3571 (3.9); 8.3464 (4.4); 8.3427 (4.4); 8.0983 (6.1); 8.0839 (5.5); 8.0642 (12.8); 7.2442 (2.0); 7.2413 (2.8); 7.2379 (2.1); 7.2281 (2.0); 7.2254 (2.8); 7.2217 (2.0); 7.1775 (7.7); 6.9465 (2.1); 6.9438 (2.7); 6.9406 (1.9); 6.9298 (2.2); 6.9271 (2.7); 6.9238 (1.9); 6.5544 (0.6); 6.5429 (2.6); 6.5314 (4.0); 6.5199 (2.6); 6.5084 (0.6); 2.3029 (7.9); 1.9862 (16.2); 1.9781 (2.3); 1.9740 (3.1); 1.9702 (17.5); 1.9662 (31.8); 1.9620 (46.0); 1.9579 (31.7); 1.9538 (17.9); 1.9451 (1.8); 1.9391 (1.5); 1.9309 (0.7); 1.7892 (16.0); 1.7776 (16.0); 1.2726 (0.4); 1.2573 (0.6); 1.0455 (1.8); 1.0380 (5.3); 1.0345 (5.4); 1.0270 (2.7); 1.0241 (5.4); 1.0206 (5.2); 1.0134 (2.0); 0.7566 (2.0); 0.7491 (6.4); 0.7459 (5.6); 0.7411 (5.5); 0.7378 (6.5); 0.7301 (1.8); 0.0053 (0.7); -0.0001 (20.8); -0.0056 (0.7)	393.1
I-121		^{1}H-NMR(600.1 MHz, CD3CN, 260K): δ= 8.8014 (2.7); 8.3775 (1.4); 8.3743 (1.4); 8.3632 (1.6); 8.3601 (1.5); 8.3373 (2.0); 8.2805 (1.2); 8.2661 (1.2); 8.1155 (4.4); 8.0807 (2.4); 8.0631 (3.5); 8.0328 (1.6); 7.8978 (1.6); 7.8835 (1.5); 6.8608 (1.4); 6.8437 (1.4); 6.6308 (1.4); 6.6152 (2.2); 6.5966 (1.0); 6.5400 (0.8); 6.5265 (0.8); 6.4935 (1.8); 6.4223 (3.2); 6.3770 (0.5); 6.3654 (1.5); 6.3539 (1.5); 6.3426 (0.5); 6.2014 (0.4); 6.1900 (1.1); 6.1785 (1.1); 6.1670 (0.4); 4.0680 (2.3); 4.0561 (7.0); 4.0442 (7.0); 4.0323 (2.3); 3.7163 (0.6); 3.7061 (0.7); 3.6927 (0.9); 3.6823 (0.9); 3.5524 (0.8); 3.5406 (0.9); 3.5286 (0.7); 3.5170 (0.7); 2.8859 (0.4); 2.8736 (0.3); 2.8597 (1.8); 2.8483 (3.3); 2.8394 (1.8); 2.8229 (0.4); 2.2975 (49.5); 2.0805 (0.5); 2.0764 (0.9); 2.0723 (1.3); 2.0682 (0.9); 2.0641 (0.5); 1.9846 (39.0); 1.9776 (11.2); 1.9733 (14.4); 1.9696 (89.0); 1.9655 (158.1); 1.9614 (230.0); 1.9573 (158.4); 1.9532 (80.2); 1.9445 (1.2); 1.8867 (0.3); 1.8779 (0.7); 1.8718 (0.9); 1.8643 (1.2); 1.8546 (1.2); 1.8505 (1.6); 1.8464 (1.6); 1.8423 (1.3); 1.8382 (0.6); 1.8021 (6.1); 1.7905 (6.3); 1.7543 (4.6); 1.7427 (4.7); 1.7327 (1.1); 1.7169 (0.7); 1.2734 (0.4); 1.2611 (0.7); 1.2178 (8.0); 1.2059 (16.0); 1.1940 (8.0); 1.1113 (0.6); 1.1000 (0.9); 1.0869 (0.7); 1.0762 (0.6); 1.0221 (0.6); 1.0095 (5.4); 0.9957 (5.1); 0.9878 (1.1); 0.6355 (2.8); 0.6089 (0.5); 0.6013 (0.6); 0.5962 (0.6); 0.5876 (1.0); 0.5792 (1.0); 0.5699 (0.5); 0.5521 (1.4); 0.5448 (1.7); 0.5360 (1.2); 0.5136 (0.7); 0.5055 (0.8); 0.4994 (0.8); 0.4908 (0.9); 0.4854 (0.9); 0.4770 (0.8); 0.4695 (0.8); 0.4632 (0.6); 0.3493 (0.5); 0.3419 (0.7); 0.3336 (0.9); 0.3279 (0.8); 0.3005 (0.8); 0.2947 (0.9); 0.2869 (0.7); 0.2794 (0.4); 0.2694 (0.4); 0.2599 (0.5); 0.2532 (0.8); 0.2455 (1.0); 0.2386 (0.9); 0.2320 (0.7); 0.2231 (0.5); 0.2166 (0.5); 0.2081 (0.8); 0.2007 (0.8); 0.1948 (1.0); 0.1875 (0.7); 0.0967 (0.4); 0.0053 (3.2); -0.0001 (100.6); -0.0057 (3.3); -0.1002 (0.5); -0.1642 (0.3); -0.1724 (0.8); -0.1803 (1.1); -0.1881 (1.1); -0.1959 (0.8); -0.2041 (0.4); -0.3881 (0.4); -0.3960 (0.8); -0.4037 (1.1); -0.4116 (1.0); -0.4194 (0.7)	431.1

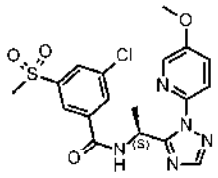
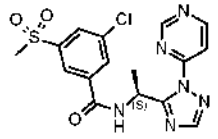
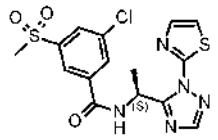
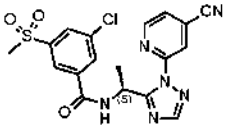
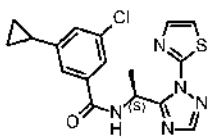
I-122		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4670 (1.3); 9.4495 (1.4); 9.0410 (2.3); 9.0395 (2.4); 9.0354 (2.5); 9.0339 (2.3); 8.5518 (1.8); 8.5461 (1.8); 8.5304 (2.0); 8.5247 (2.0); 8.3162 (0.4); 8.2613 (1.8); 8.2576 (3.4); 8.2538 (2.1); 8.2308 (6.1); 8.1650 (1.6); 8.1604 (3.0); 8.1564 (2.1); 8.1395 (2.3); 8.1352 (3.1); 8.1306 (1.5); 8.0364 (2.5); 8.0351 (2.4); 8.0151 (2.3); 8.0136 (2.3); 6.1327 (1.0); 6.1153 (1.5); 6.0978 (1.0); 3.9177 (16.0); 3.3236 (42.0); 3.3135 (16.1); 2.6757 (0.5); 2.6711 (0.7); 2.6665 (0.5); 2.5247 (1.9); 2.5199 (2.8); 2.5111 (39.1); 2.5067 (79.5); 2.5022 (104.8); 2.4976 (75.6); 2.4931 (36.4); 2.3336 (0.5); 2.3290 (0.6); 2.3245 (0.5); 1.6621 (5.6); 1.6448 (5.6); 0.1459 (0.8); 0.0080 (6.2); -0.0002 (178.7); -0.0085 (6.9); -0.0201 (0.3); -0.1497 (0.8)	464.2
I-123		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4556 (1.7); 9.4381 (1.7); 9.0776 (2.9); 9.0759 (3.1); 9.0722 (3.1); 9.0704 (2.8); 8.5806 (2.5); 8.5750 (2.3); 8.5591 (2.6); 8.5535 (2.6); 8.3394 (3.1); 8.3138 (1.7); 8.2525 (7.8); 8.1304 (3.0); 8.0909 (4.4); 8.0892 (5.0); 8.0856 (3.2); 8.0696 (3.1); 8.0678 (3.0); 7.8876 (2.6); 7.8822 (1.1); 7.8742 (2.9); 7.8654 (3.0); 7.8573 (1.2); 7.8520 (2.7); 7.3872 (2.9); 7.3822 (0.9); 7.3651 (5.4); 7.3483 (0.9); 7.3430 (2.6); 6.1499 (1.2); 6.1325 (1.8); 6.1152 (1.2); 3.8242 (0.3); 3.3296 (659.1); 2.6806 (0.8); 2.6763 (1.6); 2.6717 (2.3); 2.6670 (1.6); 2.6628 (0.8); 2.5621 (0.4); 2.5251 (7.2); 2.5203 (11.3); 2.5117 (134.9); 2.5072 (270.4); 2.5027 (353.9); 2.4981 (254.5); 2.4936 (120.9); 2.3386 (0.7); 2.3341 (1.6); 2.3295 (2.2); 2.3250 (1.6); 2.3205 (0.7); 1.9886 (0.4); 1.6800 (7.0); 1.6625 (7.0); 1.3981 (16.0); 1.2359 (2.4); 1.1757 (0.4); 0.8542 (0.5); 0.1459 (2.7); 0.0079 (25.7); -0.0002 (649.7); -0.0086 (24.6); -0.0328 (0.5); -0.1496 (2.8)	481.2
I-124		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.1432 (0.4); 9.1252 (0.4); 8.9885 (2.2); 8.9763 (2.2); 8.1569 (1.8); 7.6757 (0.6); 7.6719 (1.0); 7.6680 (0.7); 7.6337 (0.6); 7.6215 (1.2); 7.6168 (0.7); 7.6122 (1.0); 7.6092 (1.1); 7.5473 (0.6); 7.5428 (1.0); 7.5383 (0.5); 5.9629 (0.5); 3.3229 (8.5); 2.5245 (0.6); 2.5111 (11.0); 2.5067 (21.5); 2.5022 (27.8); 2.4977 (20.4); 2.4934 (10.0); 1.6417 (1.9); 1.6243 (1.9); 1.2708 (16.0); 0.0079 (1.6); -0.0002 (37.0); -0.0085 (1.5)	385.2
I-125		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.1484 (0.4); 9.1304 (0.4); 8.9900 (2.5); 8.9778 (2.6); 8.1583 (2.0); 7.7544 (0.6); 7.7503 (1.0); 7.7462 (0.7); 7.7141 (0.6); 7.7100 (1.1); 7.7061 (0.6); 7.6711 (0.7); 7.6667 (1.1); 7.6623 (0.5); 7.6355 (0.7); 7.6233 (1.3); 7.6112 (0.7); 5.9620 (0.5); 3.3275 (1.7); 2.5127 (3.8); 2.5082 (7.7); 2.5036 (10.1); 2.4990 (7.3); 2.4945 (3.5); 2.0760 (3.5); 1.6414 (1.9); 1.6240 (1.9); 1.2668 (16.0); 0.0079 (0.8); -0.0002 (19.4); -0.0086 (0.7)	431.2
I-126		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 13.6217 (1.4); 9.4748 (3.7); 9.4572 (3.8); 9.0148 (6.6); 9.0105 (6.6); 8.5268 (4.5); 8.5212 (4.3); 8.5055 (4.8); 8.4999 (4.8); 8.2759 (5.2); 8.2723 (9.1); 8.2686 (5.4); 8.2207 (16.0); 8.1685 (4.6); 8.1641 (8.0); 8.1602 (5.6); 8.1391 (5.9); 8.1349 (8.2); 8.1305 (4.1); 8.0145 (6.5); 7.9933 (6.0); 6.1559 (0.6); 6.1385 (2.5); 6.1211 (3.9); 6.1037 (2.5); 6.0862 (0.5); 3.3272 (9.9); 3.3161 (42.0); 2.6771 (0.6); 2.6725 (0.7); 2.6679 (0.6); 2.5258 (2.7); 2.5123 (47.5); 2.5080 (92.8); 2.5035 (119.9); 2.4990 (87.6); 2.4947 (43.4); 2.3348 (0.5); 2.3304 (0.7); 2.3258 (0.5); 1.6628 (14.5); 1.6455 (14.4); 0.1459 (0.5); 0.0078 (5.0); -0.0002 (118.3); -0.0085 (5.0); -0.1496 (0.6)	450.2
I-127		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 10.0999 (1.8); 9.7311 (0.5); 9.5257 (2.4); 9.5085 (2.4); 9.3731 (4.7); 9.3720 (4.9); 9.3663 (5.0); 9.3651 (4.7); 8.9482 (2.4); 8.9422 (2.4); 8.8570 (3.9); 8.8501 (3.7); 8.8344 (4.1); 8.8275 (4.0); 8.3159 (0.5); 8.2891 (4.0); 8.2843 (15.6); 8.2747 (1.3); 8.2678 (1.1); 8.2513 (1.1); 8.2444 (1.0); 8.2127 (3.6); 8.2081 (5.5); 8.2040 (3.8); 8.1616 (5.2); 8.1605 (5.2); 8.1514 (4.1); 8.1470 (6.0); 8.1424 (3.6); 8.1392 (5.2); 8.1379 (5.0); 6.6498 (0.6); 6.6265 (0.6); 6.1755 (0.4); 6.1586 (1.8); 6.1413 (2.8); 6.1239 (1.8); 6.1065 (0.4); 3.3450 (0.8); 3.3259 (118.8);	451.1

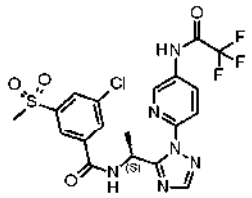
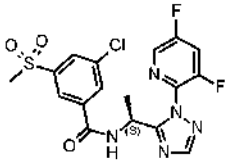
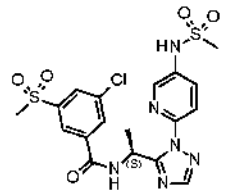
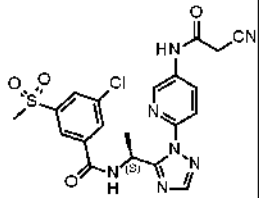
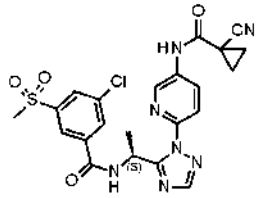
		3.3196 (32.7); 2.6805 (0.4); 2.6760 (0.7); 2.6714 (1.0); 2.6668 (0.8); 2.6622 (0.3); 2.5250 (2.8); 2.5202 (4.2); 2.5116 (60.9); 2.5071 (124.5); 2.5025 (163.9); 2.4979 (115.6); 2.4933 (53.5); 2.3384 (0.3); 2.3338 (0.7); 2.3293 (1.0); 2.3247 (0.7); 2.0750 (2.5); 1.9891 (0.9); 1.9423 (16.0); 1.8323 (0.5); 1.6721 (10.8); 1.6547 (10.7); 1.1752 (0.5); 0.1460 (0.5); 0.0081 (4.3); -0.0001 (130.8); -0.0085 (3.9); -0.1495 (0.5)	
I-128		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4780 (3.3); 9.4603 (3.4); 9.1970 (1.6); 9.1825 (3.3); 9.1678 (1.6); 9.0037 (5.9); 8.9993 (5.8); 8.9979 (5.7); 8.5027 (4.1); 8.4968 (3.9); 8.4813 (4.4); 8.4754 (4.5); 8.3163 (0.5); 8.2842 (4.8); 8.2804 (9.2); 8.2766 (5.5); 8.2137 (16.0); 8.1930 (0.5); 8.1828 (4.6); 8.1782 (7.7); 8.1742 (5.4); 8.1379 (5.6); 8.1335 (8.2); 8.1291 (4.4); 8.0135 (6.1); 7.9920 (5.7); 6.3021 (0.7); 6.2924 (1.4); 6.2826 (0.6); 6.1627 (1.5); 6.1529 (3.4); 6.1432 (1.6); 6.1323 (2.4); 6.1149 (3.7); 6.0974 (2.4); 6.0799 (0.5); 6.0232 (0.7); 6.0134 (1.6); 6.0037 (0.7); 3.7789 (1.0); 3.7689 (1.3); 3.7644 (1.2); 3.7544 (1.1); 3.7399 (2.2); 3.7299 (2.6); 3.7254 (2.5); 3.7154 (2.1); 3.7008 (1.2); 3.6906 (1.3); 3.6861 (1.3); 3.6762 (1.0); 3.3248 (43.5); 3.3145 (40.6); 2.6807 (0.4); 2.6761 (0.8); 2.6716 (1.1); 2.6671 (0.8); 2.6624 (0.4); 2.5251 (2.9); 2.5203 (4.6); 2.5117 (62.9); 2.5072 (128.2); 2.5026 (169.0); 2.4981 (121.4); 2.4935 (58.1); 2.3385 (0.4); 2.3340 (0.8); 2.3295 (1.1); 2.3249 (0.8); 2.3202 (0.4); 2.0752 (6.6); 1.6635 (13.5); 1.6461 (13.5); 1.2344 (1.4); 0.1459 (0.9); 0.0080 (8.0); -0.0001 (227.2); -0.0085 (8.0); -0.1496 (0.9)	513.2
I-129		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4741 (3.6); 9.4563 (3.7); 8.9431 (6.3); 8.9386 (6.3); 8.7435 (3.8); 8.7334 (3.7); 8.4389 (4.2); 8.4331 (3.9); 8.4176 (4.5); 8.4117 (4.4); 8.3162 (0.8); 8.2811 (5.2); 8.2774 (9.3); 8.2737 (5.5); 8.1994 (16.0); 8.1808 (4.9); 8.1763 (7.9); 8.1723 (5.4); 8.1382 (5.8); 8.1340 (8.4); 8.1295 (4.3); 7.9695 (6.5); 7.9482 (6.0); 6.1333 (0.6); 6.1164 (2.5); 6.0989 (3.9); 6.0814 (2.5); 6.0645 (0.6); 5.7564 (3.1); 3.3248 (173.5); 3.3166 (44.6); 2.9154 (0.6); 2.9056 (1.3); 2.8960 (1.8); 2.8875 (2.8); 2.8775 (2.7); 2.8691 (1.7); 2.8595 (1.2); 2.8494 (0.5); 2.7325 (0.4); 2.6897 (0.5); 2.6758 (1.6); 2.6712 (2.1); 2.6668 (1.6); 2.6623 (0.8); 2.5247 (7.0); 2.5197 (10.7); 2.5112 (128.1); 2.5068 (253.4); 2.5023 (328.3); 2.4978 (235.8); 2.4934 (113.1); 2.3336 (1.5); 2.3291 (2.0); 2.3245 (1.5); 1.6556 (14.8); 1.6383 (14.7); 0.7565 (1.5); 0.7435 (4.2); 0.7384 (6.2); 0.7264 (5.6); 0.7201 (4.8); 0.7090 (2.1); 0.6502 (0.4); 0.6210 (2.2); 0.6106 (6.5); 0.6034 (5.6); 0.5950 (4.6); 0.5825 (1.4); 0.1460 (1.9); 0.0080 (16.4); -0.0001 (432.7); -0.0085 (15.9); -0.1495 (1.9)	489.2
I-130		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.6151 (8.0); 9.4761 (3.7); 9.4584 (3.8); 8.9702 (6.4); 8.9656 (6.4); 8.4736 (4.2); 8.4678 (4.0); 8.4522 (4.6); 8.4464 (4.5); 8.3163 (0.6); 8.2749 (5.2); 8.2712 (9.4); 8.2675 (5.6); 8.2170 (16.0); 8.1773 (4.9); 8.1728 (8.0); 8.1688 (5.4); 8.1381 (5.8); 8.1339 (8.3); 8.1294 (4.3); 8.0147 (6.6); 7.9934 (6.0); 6.1420 (0.6); 6.1249 (2.5); 6.1075 (4.0); 6.0899 (2.5); 6.0726 (0.5); 5.7564 (3.0); 3.3270 (157.4); 3.3149 (42.2); 2.8911 (1.7); 2.7320 (1.4); 2.6897 (0.6); 2.6758 (1.3); 2.6714 (1.8); 2.6669 (1.3); 2.5247 (6.2); 2.5112 (107.6); 2.5069 (212.8); 2.5024 (276.4); 2.4978 (199.5); 2.4934 (96.3); 2.3337 (1.2); 2.3292 (1.7); 2.3246 (1.2); 1.6578 (14.5); 1.6404 (14.4); 1.6181 (3.2); 1.6039 (7.3); 1.5968 (7.9); 1.5840 (3.4); 1.5439 (0.3); 1.3853 (0.3); 1.3456 (3.6); 1.3323 (7.4); 1.3255 (7.8); 1.3110 (2.8); 1.2735 (0.4); 1.2593 (0.4); 1.2437 (0.4); 0.1459 (1.5); 0.0079 (13.3); -0.0002 (347.3); -0.0085 (13.7); -0.1496 (1.5)	514.2

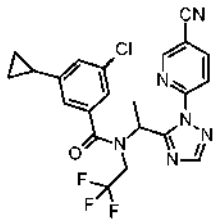
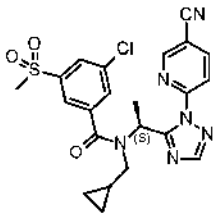
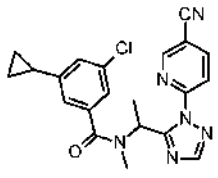
I-131		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4818 (3.1); 9.4641 (3.2); 9.4414 (1.6); 9.4259 (3.2); 9.4101 (1.5); 9.0236 (5.1); 9.0223 (5.3); 9.0179 (5.4); 9.0164 (5.0); 8.5233 (3.7); 8.5174 (3.5); 8.5019 (4.0); 8.4960 (4.0); 8.3163 (0.5); 8.2872 (4.5); 8.2834 (8.4); 8.2796 (4.9); 8.2186 (14.4); 8.1789 (4.3); 8.1743 (6.8); 8.1703 (4.8); 8.1371 (5.3); 8.1328 (7.3); 8.1283 (4.0); 8.0275 (5.5); 8.0262 (5.4); 8.0062 (5.1); 8.0047 (5.1); 6.1532 (0.4); 6.1360 (2.1); 6.1185 (3.3); 6.1010 (2.1); 6.0834 (0.5); 4.1965 (0.8); 4.1723 (2.7); 4.1564 (2.7); 4.1481 (2.9); 4.1322 (2.6); 4.1239 (1.1); 4.1079 (0.9); 3.3250 (36.1); 3.3137 (36.4); 2.6764 (0.6); 2.6719 (0.9); 2.6673 (0.7); 2.5253 (2.6); 2.5205 (4.1); 2.5119 (53.2); 2.5074 (107.0); 2.5029 (139.4); 2.4983 (99.4); 2.4938 (46.9); 2.3342 (0.6); 2.3297 (0.8); 2.3252 (0.6); 2.1376 (0.4); 2.0753 (16.0); 1.6662 (12.1); 1.6489 (12.1); 0.1459 (0.8); 0.0080 (6.9); -0.0002 (188.1); -0.0086 (6.5); -0.1496 (0.8)	531.2
I-132		^{1}H-NMR(400.2 MHz, CD3CN): δ= 8.2913 (0.7); 8.0657 (2.3); 7.9058 (0.3); 6.6244 (0.5); 6.5930 (0.6); 6.5843 (0.6); 6.5124 (0.9); 3.7774 (0.6); 3.7733 (0.6); 2.1414 (21.2); 2.1134 (0.3); 2.1073 (0.5); 1.9643 (7.2); 1.9579 (2.2); 1.9524 (24.3); 1.9462 (46.4); 1.9400 (65.3); 1.9338 (44.6); 1.9277 (22.7); 1.9150 (0.4); 1.7809 (0.4); 1.7746 (0.5); 1.7685 (0.6); 1.7624 (0.6); 1.7559 (0.5); 1.7212 (16.0); 1.7037 (15.9); 1.3856 (0.4); 1.3219 (0.4); 1.3155 (0.3); 1.2689 (0.8); 1.1735 (1.0); 0.9913 (3.5); 0.9704 (3.2); 0.6296 (1.0); 0.6249 (1.0); 0.5947 (0.9); 0.1458 (1.1); 0.0191 (0.4); 0.0160 (0.4); 0.0079 (9.8); -0.0002 (245.8); -0.0086 (9.7); -0.1496 (1.1)	405.3
I-133		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.3582 (2.2); 9.3400 (2.1); 8.2660 (3.1); 8.2625 (5.1); 8.2590 (3.3); 8.1475 (2.6); 8.1431 (4.8); 8.1393 (3.7); 8.1283 (3.8); 8.1242 (5.0); 8.1199 (2.5); 8.0225 (0.6); 8.0113 (8.3); 7.8022 (3.9); 7.7954 (3.8); 7.4132 (3.4); 7.3916 (4.0); 7.1311 (2.5); 7.1241 (2.4); 7.1095 (2.2); 7.1025 (2.1); 5.8060 (0.4); 5.7886 (1.5); 5.7708 (2.2); 5.7531 (1.4); 5.7355 (0.4); 5.6754 (7.2); 4.0560 (1.2); 4.0382 (3.8); 4.0205 (3.8); 4.0027 (1.3); 3.3285 (23.1); 3.3181 (23.0); 2.5075 (41.3); 2.5031 (53.6); 2.4988 (40.4); 2.3299 (0.4); 1.9895 (16.0); 1.9632 (0.3); 1.9435 (1.5); 1.9099 (0.7); 1.8331 (0.5); 1.8299 (0.5); 1.7863 (0.4); 1.6015 (0.7); 1.5833 (8.7); 1.5659 (8.3); 1.3363 (0.4); 1.2498 (0.3); 1.2352 (0.5); 1.1931 (4.4); 1.1753 (8.5); 1.1653 (0.7); 1.1575 (4.4); 1.1467 (0.5); 1.1306 (0.3); -0.0002 (3.6)	421.2
I-134		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4596 (3.4); 9.4419 (3.3); 8.6991 (3.4); 8.3162 (0.4); 8.2840 (6.6); 8.2187 (2.7); 8.1957 (16.0); 8.1343 (6.4); 7.9164 (4.9); 7.8955 (4.2); 6.1370 (1.9); 6.1196 (2.8); 6.1023 (1.8); 6.0869 (0.6); 5.7565 (4.0); 3.3233 (49.8); 3.3172 (33.0); 3.0083 (7.7); 2.8915 (0.4); 2.6712 (1.5); 2.5023 (198.0); 2.3296 (1.3); 1.6506 (11.6); 1.6335 (11.3); 0.5125 (2.4); 0.4115 (2.7); 0.1458 (0.7); -0.0002 (124.3); -0.1499 (0.7)	503.2
I-135		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4710 (2.5); 9.4533 (2.6); 8.9556 (4.7); 8.9501 (4.7); 8.7556 (1.9); 8.7442 (1.9); 8.4506 (2.8); 8.4448 (2.7); 8.4293 (3.0); 8.4235 (3.0); 8.2772 (6.2); 8.2739 (3.9); 8.2013 (10.3); 8.1928 (0.6); 8.1799 (3.2); 8.1759 (5.6); 8.1722 (3.8); 8.1364 (3.7); 8.1326 (5.6); 7.9791 (4.8); 7.9578 (4.5); 6.1371 (0.4); 6.1199 (1.8); 6.1025 (2.9); 6.0850 (1.9); 6.0671 (0.4); 3.3269 (92.6); 3.3154 (28.6); 3.0150 (0.3); 2.9126 (0.4); 2.8913 (0.6); 2.8314 (12.6); 2.8201 (12.6); 2.7316 (0.4); 2.6900 (1.1); 2.6761 (0.6); 2.6715 (0.9); 2.6672 (0.6); 2.5247 (2.6); 2.5070 (103.3); 2.5027 (134.6); 2.4982 (98.5); 2.3337 (0.6); 2.3295 (0.8); 2.3252 (0.6); 2.0750 (16.0); 1.6593 (10.7); 1.6419 (10.7); 0.1457 (0.7); 0.0077 (5.0); -0.0002 (143.5); -0.0085 (5.5); -0.1498 (0.7)	463.1

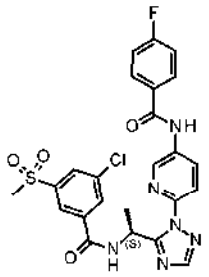
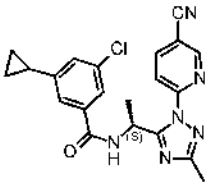
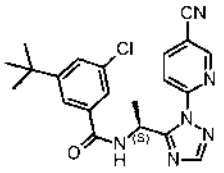
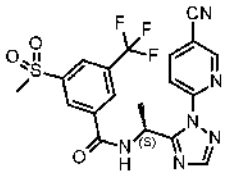
I-136		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.5184 (1.7); 9.5009 (1.9); 9.4910 (16.0); 8.9765 (0.4); 8.2928 (2.1); 8.2892 (4.0); 8.2856 (2.6); 8.2719 (7.1); 8.2172 (2.1); 8.2128 (3.6); 8.2090 (2.4); 8.1555 (2.3); 8.1511 (3.7); 8.1469 (2.1); 6.0988 (1.1); 6.0814 (1.8); 6.0642 (1.2); 3.3551 (0.4); 3.3457 (0.3); 3.3252 (52.5); 3.2744 (1.1); 2.6754 (0.4); 2.6709 (0.5); 2.6664 (0.4); 2.5239 (1.5); 2.5064 (63.3); 2.5019 (83.6); 2.4975 (62.2); 2.3330 (0.4); 2.3288 (0.5); 2.3244 (0.4); 2.0756 (0.9); 1.6527 (6.6); 1.6353 (6.6); -0.0002 (9.5); -0.0084 (0.3)	432.0
I-137		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4850 (3.4); 9.4675 (3.6); 9.0375 (5.3); 9.0361 (5.7); 9.0318 (5.7); 9.0302 (5.5); 9.0159 (1.0); 9.0142 (1.0); 9.0104 (1.0); 9.0086 (1.0); 9.0012 (0.8); 8.9971 (0.7); 8.9952 (0.7); 8.5512 (4.2); 8.5453 (3.8); 8.5297 (4.6); 8.5238 (4.6); 8.5057 (0.8); 8.5001 (0.8); 8.4879 (0.6); 8.4821 (0.5); 8.4666 (0.6); 8.4607 (0.6); 8.3160 (1.0); 8.2861 (5.2); 8.2823 (9.4); 8.2785 (5.6); 8.2742 (1.3); 8.2703 (1.6); 8.2664 (1.0); 8.2546 (0.4); 8.2271 (15.2); 8.2206 (2.8); 8.2016 (2.2); 8.1931 (4.6); 8.1885 (7.4); 8.1845 (5.7); 8.1798 (1.4); 8.1755 (0.8); 8.1673 (0.8); 8.1625 (1.2); 8.1586 (0.9); 8.1419 (5.5); 8.1376 (8.9); 8.1331 (6.1); 8.0207 (5.3); 8.0159 (1.4); 7.9991 (5.0); 7.9947 (1.3); 7.9780 (0.8); 7.9567 (0.8); 7.7105 (0.4); 6.1552 (0.5); 6.1377 (2.6); 6.1202 (4.1); 6.1128 (0.9); 6.1028 (2.6); 6.0853 (0.6); 3.4895 (0.4); 3.3645 (23.2); 3.3347 (14.4); 3.3178 (49.7); 3.2524 (1.6); 3.1416 (0.4); 3.0247 (1.1); 2.8907 (0.4); 2.6897 (0.6); 2.6803 (0.7); 2.6757 (1.5); 2.6711 (2.1); 2.6666 (1.5); 2.6620 (0.7); 2.5971 (0.5); 2.5247 (5.6); 2.5200 (8.8); 2.5113 (123.2); 2.5068 (252.7); 2.5022 (334.2); 2.4976 (239.4); 2.4931 (113.6); 2.3382 (0.8); 2.3336 (1.6); 2.3290 (2.2); 2.3245 (1.6); 2.3198 (0.8); 2.0747 (3.1); 2.0089 (0.4); 1.9897 (0.4); 1.6604 (16.0); 1.6430 (16.0); 1.2725 (1.1); 1.2582 (1.6); 1.2424 (2.5); 1.2348 (2.4); 0.8540 (0.6); 0.1459 (1.9); 0.0214 (0.5); 0.0207 (0.5); 0.0177 (0.8); 0.0147 (1.0); 0.0080 (17.9); -0.0002 (501.8); -0.0086 (17.2); -0.0245 (0.5); -0.0289 (0.4); -0.1496 (2.0)	527.2
I-138		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 10.3814 (2.4); 9.3995 (1.4); 9.3816 (1.4); 8.6943 (2.4); 8.6884 (2.4); 8.2520 (2.6); 8.2480 (5.4); 8.2443 (2.6); 8.2323 (1.6); 8.2258 (1.6); 8.1360 (1.0); 8.1310 (4.2); 8.1278 (6.2); 8.1242 (4.2); 8.1193 (1.2); 8.1144 (7.2); 7.7789 (2.8); 7.7569 (2.6); 5.9533 (1.0); 5.9358 (1.6); 5.9182 (1.0); 3.3256 (31.5); 3.3131 (17.5); 2.6891 (0.4); 2.6756 (0.4); 2.6710 (0.6); 2.6664 (0.4); 2.5246 (1.6); 2.5199 (2.3); 2.5112 (34.4); 2.5067 (71.4); 2.5021 (94.5); 2.4975 (67.6); 2.4929 (32.2); 2.3335 (0.4); 2.3289 (0.6); 2.3243 (0.4); 2.1049 (16.0); 2.0756 (10.9); 1.6310 (5.8); 1.6136 (5.8); 0.0080 (0.4); -0.0002 (14.0); -0.0085 (0.4)	463.1
I-139		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 10.6368 (4.7); 9.3984 (2.7); 9.3806 (2.8); 8.7140 (5.0); 8.7085 (4.9); 8.7075 (4.9); 8.2611 (3.4); 8.2540 (6.5); 8.2499 (8.3); 8.2460 (4.7); 8.2390 (3.7); 8.2324 (3.6); 8.1331 (2.0); 8.1281 (8.3); 8.1249 (11.6); 8.1215 (8.4); 8.1154 (15.2); 7.7757 (5.3); 7.7534 (4.9); 5.9699 (0.4); 5.9526 (1.9); 5.9351 (3.0); 5.9175 (1.9); 5.9000 (0.4); 3.3276 (57.6); 3.3119 (33.8); 2.6761 (0.5); 2.6716 (0.7); 2.6669 (0.6); 2.5251 (2.1); 2.5204 (3.0); 2.5117 (43.6); 2.5072 (90.5); 2.5026 (119.2); 2.4979 (84.3); 2.4934 (39.3); 2.3339 (0.5); 2.3294 (0.7); 2.3248 (0.5); 1.8366 (0.5); 1.8210 (1.6); 1.8059 (2.1); 1.7905 (1.7); 1.7748 (0.6); 1.6304 (10.8); 1.6130 (10.8); 0.8659 (9.1); 0.8515 (16.0); 0.0080 (0.4); -0.0002 (14.7); -0.0086 (0.4	489.1

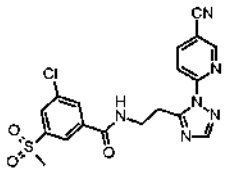
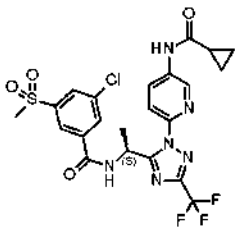
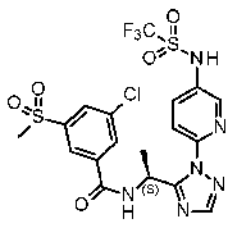
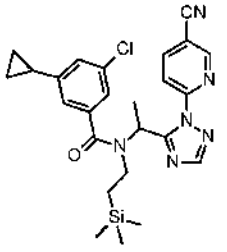
I-140		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4392 (1.2); 9.4212 (1.2); 8.6163 (2.2); 8.6152 (2.4); 8.6100 (2.4); 8.6087 (2.3); 8.2936 (1.8); 8.2897 (3.4); 8.2859 (2.0); 8.1855 (2.8); 8.1823 (3.0); 8.1787 (3.4); 8.1636 (2.1); 8.1571 (2.1); 8.1440 (2.1); 8.1397 (3.0); 8.1351 (1.6); 7.8516 (2.6); 7.8503 (2.6); 7.8297 (2.3); 7.8283 (2.3); 6.0154 (0.9); 5.9978 (1.4); 5.9802 (0.9); 5.7590 (3.7); 3.3256 (30.6); 3.3233 (18.6); 3.3096 (0.5); 2.6712 (0.4); 2.5248 (1.1); 2.5201 (1.5); 2.5114 (24.4); 2.5069 (51.2); 2.5023 (68.0); 2.4977 (48.8); 2.4931 (23.3); 2.3284 (16.0); 1.6176 (5.1); 1.6002 (5.1); -0.0002 (10.6); -0.0086 (0.3)	454.2
I-141		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 10.5968 (5.7); 9.5208 (3.0); 9.5032 (3.1); 9.1139 (4.8); 9.1126 (5.1); 9.1082 (5.1); 9.1067 (4.9); 8.5850 (3.6); 8.5791 (3.4); 8.5636 (3.8); 8.5577 (3.9); 8.3061 (4.6); 8.3023 (8.8); 8.2984 (5.1); 8.2811 (0.4); 8.2287 (16.0); 8.2117 (4.6); 8.2070 (7.0); 8.2030 (4.9); 8.1919 (0.7); 8.1802 (0.4); 8.1469 (5.4); 8.1425 (7.7); 8.1380 (4.5); 8.1292 (0.5); 8.0580 (5.4); 8.0566 (5.5); 8.0367 (5.2); 8.0352 (5.2); 7.8327 (0.4); 7.8240 (4.3); 7.8185 (1.7); 7.8114 (4.8); 7.8063 (2.7); 7.8011 (5.1); 7.7941 (1.8); 7.7885 (4.8); 7.7797 (0.4); 7.2664 (0.5); 7.2577 (5.5); 7.2520 (1.6); 7.2448 (0.8); 7.2403 (1.9); 7.2354 (8.8); 7.2305 (1.9); 7.2260 (0.7); 7.2187 (1.6); 7.2130 (5.2); 7.2041 (0.4); 6.1873 (0.5); 6.1697 (2.0); 6.1522 (3.2); 6.1347 (2.1); 6.1176 (0.4); 5.7590 (7.4); 3.3264 (140.3); 3.3194 (40.7); 2.6759 (1.7); 2.6711 (1.8); 2.6665 (1.2); 2.6620 (0.6); 2.5247 (4.9); 2.5200 (7.2); 2.5112 (99.8); 2.5067 (206.6); 2.5021 (272.6); 2.4975 (193.4); 2.4929 (90.3); 2.3381 (0.5); 2.3336 (1.2); 2.3290 (1.7); 2.3244 (1.2); 2.3200 (0.5); 1.6854 (11.8); 1.6679 (12.1); 1.6484 (0.8); 1.2469 (1.5); 1.2341 (3.2); 1.2186 (1.1); 1.2059 (0.6); 1.1937 (0.6); 1.1895 (0.6); 1.1772 (0.4); 0.8536 (0.6); 0.0081 (1.0); -0.0001 (33.6); -0.0085 (0.9)	543.1
I-142		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4897 (1.2); 9.4719 (1.2); 9.0452 (2.2); 9.0434 (2.4); 9.0397 (2.4); 9.0379 (2.2); 8.5487 (2.0); 8.5432 (1.9); 8.5272 (2.1); 8.5216 (2.1); 8.3165 (1.9); 8.3126 (3.6); 8.3088 (2.1); 8.2227 (1.9); 8.2181 (2.8); 8.2141 (1.9); 8.1537 (2.2); 8.1493 (3.1); 8.1448 (1.7); 8.0312 (2.5); 8.0293 (2.4); 8.0096 (2.4); 8.0078 (2.3); 6.1272 (1.0); 6.1097 (1.5); 6.0921 (1.0); 5.7591 (4.1); 3.9284 (0.8); 3.3680 (0.7); 3.3283 (20.2); 3.3265 (19.6); 2.5253 (0.8); 2.5206 (1.2); 2.5119 (17.8); 2.5074 (36.4); 2.5028 (47.7); 2.4981 (33.7); 2.4936 (15.6); 2.3476 (16.0); 2.3344 (0.4); 2.3296 (0.4); 1.6297 (5.2); 1.6123 (5.2); -0.0002 (7.8)	445.2
I-143		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4432 (2.2); 9.4254 (2.2); 8.6009 (4.6); 8.5935 (4.7); 8.3163 (1.0); 8.2603 (3.3); 8.2565 (6.5); 8.2527 (3.8); 8.1612 (3.4); 8.1574 (16.0); 8.1528 (4.6); 8.1399 (4.5); 8.1356 (5.7); 8.1310 (2.7); 8.0624 (1.4); 8.0549 (1.3); 8.0419 (1.8); 8.0401 (2.2); 8.0326 (2.1); 8.0197 (2.0); 8.0122 (1.8); 7.9255 (2.7); 7.9158 (2.8); 7.9029 (2.0); 7.8934 (2.0); 5.9694 (0.4); 5.9520 (1.7); 5.9346 (2.7); 5.9171 (1.7); 5.8993 (0.4); 3.3242 (134.4); 3.3168 (31.5); 2.6799 (0.7); 2.6755 (1.6); 2.6709 (2.2); 2.6663 (1.6); 2.6617 (0.8); 2.5244 (5.9); 2.5197 (8.5); 2.5110 (125.8); 2.5065 (263.0); 2.5019 (350.4); 2.4973 (250.5); 2.4928 (118.1); 2.3378 (0.6); 2.3333 (1.5); 2.3288 (2.1); 2.3242 (1.5); 2.3199 (0.7); 1.6385 (10.4); 1.6211 (10.3); 0.0081 (1.1); -0.0001 (38.8); -0.0084 (1.1)	424.1
I-144		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4557 (3.0); 9.4380 (3.1); 8.6464 (5.9); 8.6450 (6.6); 8.6400 (6.6); 8.6385 (6.5); 8.3157 (0.6); 8.2712 (4.8); 8.2674 (9.6); 8.2635 (5.6); 8.2212 (5.4); 8.2147 (5.1); 8.1993 (6.1); 8.1928 (6.1); 8.1814 (16.0); 8.1656 (4.4); 8.1608 (7.8); 8.1569 (6.1); 8.1431 (6.4); 8.1388 (8.0); 8.1342 (4.1); 7.8991 (7.0); 7.8976 (7.2); 7.8773 (6.2); 7.8758 (6.5); 6.0297 (0.5); 6.0126 (2.3); 5.9951 (3.7); 5.9776 (2.3); 5.9602 (0.5); 4.0381 (0.7); 4.0203 (0.8); 3.3268 (171.0); 3.3188 (43.5); 2.6807 (0.4); 2.6762 (0.8); 2.6716 (1.1); 2.6670 (0.8); 2.6627 (0.4); 2.5252 (2.8); 2.5205 (4.1); 2.5118 (63.4); 2.5073 (133.6); 2.5027	440.0

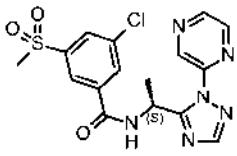
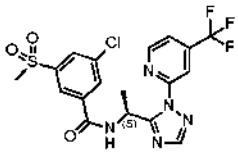
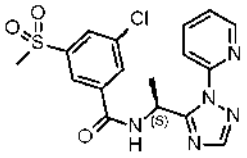
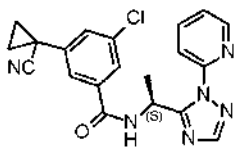
		(178.7); 2.4980 (127.4); 2.4935 (59.8); 2.3386 (0.4); 2.3341 (0.8); 2.3295 (1.1); 2.3249 (0.8); 2.3206 (0.4); 1.9893 (3.5); 1.6400 (14.0); 1.6226 (13.9); 1.2497 (0.3); 1.2355 (0.5); 1.1932 (1.0); 1.1753 (2.0); 1.1576 (1.0); -0.0001 (6.1)	
I-145		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4051 (1.0); 9.3872 (1.0); 8.2525 (3.4); 8.2485 (3.4); 8.2449 (3.5); 8.1356 (5.1); 8.1319 (4.8); 8.0992 (4.7); 7.7535 (1.5); 7.7312 (2.5); 7.6681 (1.7); 7.6606 (1.6); 7.6458 (1.0); 7.6383 (1.1); 5.8959 (0.7); 5.8784 (1.1); 5.8608 (0.7); 5.7571 (0.7); 3.9554 (1.2); 3.8859 (16.0); 3.7314 (0.4); 3.6726 (0.8); 3.3256 (7.2); 3.3177 (12.1); 2.5255 (0.5); 2.5208 (0.8); 2.5121 (11.5); 2.5076 (24.0); 2.5030 (31.9); 2.4984 (22.8); 2.4939 (10.8); 1.9099 (1.2); 1.6265 (4.3); 1.6091 (4.4); -0.0002 (1.1)	436.1
I-146		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.5372 (2.1); 9.5198 (2.1); 9.2270 (5.7); 9.2242 (5.6); 9.0386 (5.5); 9.0245 (5.7); 8.3213 (3.4); 8.3175 (6.5); 8.3136 (3.7); 8.2775 (10.7); 8.2306 (3.4); 8.2261 (5.1); 8.2220 (3.5); 8.1574 (3.7); 8.1530 (5.5); 8.1485 (3.0); 8.0063 (4.0); 8.0032 (4.0); 7.9923 (3.9); 7.9892 (3.8); 6.2734 (0.3); 6.2565 (1.6); 6.2391 (2.6); 6.2217 (1.6); 6.2044 (0.4); 5.7572 (16.0); 4.0385 (0.9); 4.0207 (1.0); 4.0029 (0.3); 3.3277 (42.9); 2.6726 (0.4); 2.5261 (1.1); 2.5213 (1.7); 2.5127 (22.8); 2.5082 (46.2); 2.5036 (60.4); 2.4990 (42.2); 2.4944 (19.2); 2.3304 (0.4); 2.0762 (6.8); 1.9899 (4.3); 1.9096 (1.4); 1.6696 (10.1); 1.6522 (10.0); 1.1934 (1.2); 1.1756 (2.4); 1.1578 (1.2); -0.0002 (2.3)	407.1
I-147		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.5544 (3.2); 9.5374 (3.3); 8.3386 (5.2); 8.3348 (10.0); 8.3310 (5.8); 8.3159 (1.3); 8.2438 (5.2); 8.2391 (8.1); 8.2351 (5.4); 8.2086 (16.0); 8.1652 (5.6); 8.1607 (8.4); 8.1563 (4.7); 7.8031 (9.3); 7.7943 (14.2); 7.7635 (14.3); 7.7548 (9.2); 6.0950 (0.5); 6.0777 (2.6); 6.0605 (4.0); 6.0432 (2.6); 6.0260 (0.5); 4.0376 (0.7); 4.0199 (0.7); 3.3316 (46.8); 3.3236 (138.1); 2.6800 (0.9); 2.6755 (1.9); 2.6709 (2.6); 2.6663 (1.9); 2.6617 (0.9); 2.5245 (6.8); 2.5197 (10.6); 2.5110 (151.8); 2.5065 (314.8); 2.5019 (417.8); 2.4973 (297.9); 2.4928 (139.9); 2.3379 (0.8); 2.3334 (1.8); 2.3287 (2.5); 2.3242 (1.8); 2.3196 (0.8); 2.0746 (0.8); 1.9889 (3.1); 1.6407 (15.9); 1.6232 (15.9); 1.2495 (0.6); 1.2362 (1.1); 1.1928 (1.0); 1.1750 (1.9); 1.1572 (0.9); 0.0080 (0.4); -0.0002 (14.6); -0.0086 (0.4)	412.1
I-148		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4745 (3.4); 9.4568 (3.4); 8.8182 (6.0); 8.8055 (6.1); 8.3245 (8.6); 8.3164 (0.6); 8.2623 (4.8); 8.2586 (9.1); 8.2549 (5.3); 8.2405 (16.0); 8.1655 (3.9); 8.1611 (8.0); 8.1571 (5.7); 8.1457 (6.0); 8.1415 (8.1); 8.1371 (3.5); 7.9744 (5.0); 7.9712 (4.9); 7.9618 (4.8); 7.9585 (4.7); 6.0708 (0.6); 6.0535 (2.6); 6.0361 (4.0); 6.0186 (2.6); 6.0016 (0.5); 4.0559 (0.4); 4.0380 (1.4); 4.0203 (1.4); 4.0024 (0.5); 3.3259 (86.4); 3.3197 (43.5); 2.6762 (0.8); 2.6716 (1.1); 2.6672 (0.8); 2.5250 (2.9); 2.5200 (4.4); 2.5115 (66.5); 2.5071 (135.0); 2.5026 (177.0); 2.4981 (125.8); 2.4937 (59.2); 2.3338 (0.8); 2.3294 (1.1); 2.3250 (0.8); 1.9893 (5.8); 1.9037 (0.4); 1.6483 (15.2); 1.6309 (15.1); 1.1930 (1.5); 1.1752 (3.1); 1.1574 (1.5); -0.0001 (4.5)	431.1
I-149		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.1942 (0.8); 9.1773 (0.8); 8.3158 (0.6); 8.1858 (4.1); 7.7968 (2.4); 7.7880 (3.8); 7.7589 (3.9); 7.7502 (2.5); 7.6429 (1.3); 7.6385 (2.0); 7.6342 (1.4); 7.4643 (1.2); 7.4606 (2.1); 7.4570 (1.2); 7.3428 (1.2); 7.3383 (2.0); 7.3340 (1.1); 6.0231 (0.7); 6.0058 (1.0); 5.9885 (0.7); 3.3255 (222.9); 2.6799 (0.5); 2.6755 (1.1); 2.6709 (1.6); 2.6663 (1.1); 2.6618 (0.5); 2.5244 (3.8); 2.5197 (5.6); 2.5110 (87.9); 2.5065 (183.4); 2.5019 (243.7); 2.4973 (173.3); 2.4928 (81.4); 2.3379 (0.5); 2.3334 (1.1); 2.3288 (1.5); 2.3241 (1.1); 2.3198 (0.5); 2.0157 (0.4); 2.0073 (0.4); 1.9948 (0.9); 1.9823 (0.5); 1.9741 (0.4); 1.6115 (4.2); 1.5940 (4.2); 1.3978 (16.0); 1.0229 (0.4); 1.0121 (1.4); 1.0064 (1.5); 1.0023 (0.7); 0.9960 (0.7); 0.9910 (1.5); 0.9854 (1.5); 0.9752 (0.6); 0.7848 (0.6); 0.7746 (1.5); 0.7722 (1.2); 0.7690 (1.4); 0.7620 (1.5); 0.7570 (1.5); 0.7458 (0.5); -0.0002	374.2

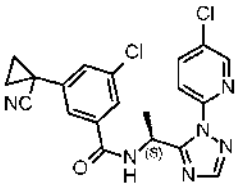
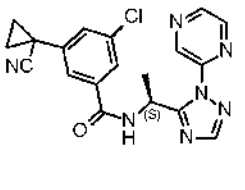
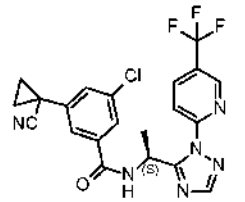
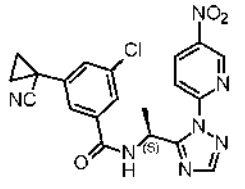
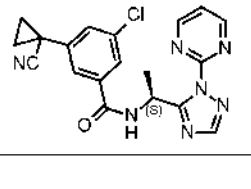
		(8.6)	
I-150		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 11.7091 (2.4); 9.4277 (3.5); 9.4101 (3.6); 8.8125 (6.3); 8.8064 (6.2); 8.3573 (4.0); 8.3508 (3.8); 8.3351 (4.5); 8.3286 (4.4); 8.3163 (0.5); 8.2525 (4.8); 8.2487 (9.0); 8.2450 (5.4); 8.1569 (16.0); 8.1414 (3.5); 8.1367 (8.5); 8.1328 (7.2); 8.1291 (7.6); 8.1249 (8.4); 8.1203 (3.2); 7.9125 (6.6); 7.8904 (6.0); 6.0246 (0.5); 6.0074 (2.4); 5.9900 (3.7); 5.9725 (2.4); 5.9552 (0.5); 3.3263 (91.2); 3.3091 (40.3); 2.6761 (0.9); 2.6716 (1.2); 2.6670 (0.9); 2.6626 (0.4); 2.5249 (3.8); 2.5115 (74.2); 2.5071 (147.7); 2.5026 (193.0); 2.4981 (138.4); 2.4937 (66.1); 2.3340 (0.9); 2.3295 (1.2); 2.3248 (0.8); 2.0752 (0.6); 1.9093 (0.4); 1.6489 (13.8); 1.6315 (13.7); 0.0081 (1.3); -0.0001 (32.7); -0.0084 (1.1)	517.2
I-151		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.3855 (3.0); 9.3674 (3.1); 8.5394 (8.2); 8.5332 (8.8); 8.3490 (1.8); 8.3429 (1.6); 8.3280 (2.2); 8.3251 (2.3); 8.3220 (2.2); 8.3190 (1.9); 8.3160 (1.3); 8.3042 (1.8); 8.2979 (1.6); 8.2270 (16.0); 8.1608 (3.8); 8.1570 (9.0); 8.1532 (6.2); 8.1443 (5.8); 8.1396 (8.4); 8.1355 (4.2); 8.0540 (5.3); 8.0495 (7.2); 8.0453 (4.5); 5.3864 (0.5); 5.3689 (2.2); 5.3512 (3.5); 5.3335 (2.3); 5.3156 (0.5); 3.3274 (280.4); 3.3102 (41.5); 2.6803 (0.6); 2.6758 (1.2); 2.6712 (1.6); 2.6666 (1.2); 2.6623 (0.6); 2.5247 (4.2); 2.5200 (6.5); 2.5113 (95.0); 2.5068 (197.3); 2.5022 (261.4); 2.4976 (185.2); 2.4931 (86.3); 2.3382 (0.5); 2.3337 (1.1); 2.3291 (1.6); 2.3245 (1.1); 2.3200 (0.5); 1.6316 (13.8); 1.6140 (13.8); 0.0080 (1.0); -0.0002 (32.8); -0.0085 (0.9)	442.2
I-152		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 10.2865 (0.7); 9.4279 (1.0); 9.4100 (1.0); 8.3482 (1.7); 8.3468 (1.8); 8.3419 (1.8); 8.3402 (1.7); 8.2709 (1.5); 8.2671 (2.8); 8.2632 (1.6); 8.1627 (1.3); 8.1580 (2.3); 8.1540 (1.7); 8.1369 (2.0); 8.1298 (5.6); 7.8843 (0.8); 7.8778 (0.6); 7.8623 (2.0); 7.8558 (2.0); 7.8372 (2.4); 7.8359 (2.5); 7.8154 (0.9); 7.8138 (0.9); 5.9681 (0.7); 5.9505 (1.1); 5.9329 (0.7); 3.3296 (16.5); 3.3174 (12.0); 3.0898 (13.0); 2.5260 (0.5); 2.5211 (0.8); 2.5125 (9.9); 2.5080 (20.0); 2.5035 (26.0); 2.4989 (18.3); 2.4943 (8.4); 2.0754 (16.0); 1.6385 (4.0); 1.6211 (3.9); 1.2345 (0.7); -0.0002 (6.0)	499.2
I-153		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 10.7622 (4.9); 9.4133 (2.5); 9.3955 (2.6); 8.6754 (4.2); 8.6691 (4.3); 8.2505 (5.7); 8.2407 (2.5); 8.2341 (2.2); 8.2185 (2.5); 8.2120 (2.5); 8.1366 (5.9); 8.1305 (15.8); 7.8362 (4.6); 7.8142 (4.2); 5.9936 (0.4); 5.9764 (1.6); 5.9589 (2.6); 5.9413 (1.7); 5.9237 (0.4); 3.9942 (16.0); 3.3306 (44.0); 3.3141 (25.4); 2.8312 (0.4); 2.6677 (0.7); 2.5075 (53.5); 2.5035 (68.7); 2.4994 (52.2); 2.3305 (0.4); 1.6385 (9.5); 1.6211 (9.4); -0.0002 (56.0); -0.0082 (2.3)	488.2
I-154		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 10.4380 (5.8); 9.4095 (2.6); 9.3915 (2.7); 8.7403 (5.2); 8.7346 (5.0); 8.3159 (0.8); 8.2552 (4.2); 8.2531 (4.8); 8.2491 (10.6); 8.2454 (4.7); 8.2333 (3.7); 8.2267 (3.7); 8.1740 (0.5); 8.1418 (3.1); 8.1370 (7.0); 8.1318 (16.0); 8.1269 (5.8); 8.1227 (6.8); 8.1180 (2.9); 7.9428 (0.3); 7.8204 (5.4); 7.7982 (4.9); 5.9981 (0.4); 5.9809 (1.9); 5.9633 (3.0); 5.9457 (1.9); 5.9281 (0.4); 3.3273 (257.5); 3.3109 (35.5); 2.6803 (0.8); 2.6758 (1.8); 2.6712 (2.4); 2.6667 (1.7); 2.6622 (0.8); 2.5247 (7.2); 2.5200 (10.4); 2.5113 (140.6); 2.5068 (288.5); 2.5022 (378.6); 2.4976 (267.2); 2.4931 (124.8); 2.3382 (0.8); 2.3336 (1.7); 2.3290 (2.4); 2.3244 (1.7); 2.3199 (0.8); 1.7673 (0.5); 1.7467 (3.0); 1.7376 (12.1); 1.7286 (12.1); 1.7195 (3.1); 1.6991 (0.5); 1.6343 (11.1); 1.6169 (11.0); 1.2697 (0.4); 1.2179 (0.3); 0.1459 (1.8); 0.0080 (14.1); -0.0002 (444.0); -0.0085 (13.8); -0.0208 (0.5); -0.1496 (1.8)	514.2

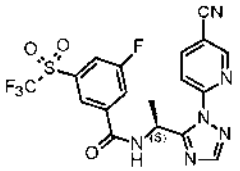
I-155		^{1}H-NMR(600.1 MHz, CD3CN, 260K): δ= 8.3856 (7.1); 8.3826 (7.4); 8.2804 (4.4); 8.2769 (4.2); 8.2661 (4.6); 8.2626 (4.4); 8.0716 (13.7); 7.8681 (6.9); 7.8538 (6.4); 6.8546 (8.4); 6.7962 (2.4); 6.6056 (2.3); 6.3773 (1.6); 6.3656 (4.8); 6.3539 (4.8); 6.3423 (1.5); 4.7334 (0.5); 4.7175 (1.6); 4.7071 (1.1); 4.7015 (1.9); 4.6914 (2.6); 4.6860 (1.0); 4.6754 (2.6); 4.6594 (0.9); 4.6129 (0.8); 4.5980 (2.6); 4.5830 (2.8); 4.5718 (2.0); 4.5569 (1.8); 4.5419 (0.6); 4.0681 (1.4); 4.0562 (4.1); 4.0443 (4.2); 4.0324 (1.4); 2.3012 (9.1); 2.1187 (0.4); 2.0770 (0.3); 2.0729 (0.5); 2.0688 (0.3); 2.0598 (0.4); 1.9848 (20.2); 1.9782 (5.2); 1.9740 (5.9); 1.9702 (33.8); 1.9661 (58.8); 1.9620 (86.1); 1.9579 (59.9); 1.9538 (30.8); 1.8551 (0.4); 1.8511 (0.5); 1.8469 (0.6); 1.8428 (0.5); 1.7483 (15.6); 1.7366 (16.0); 1.7238 (2.1); 1.7158 (2.5); 1.7084 (1.9); 1.7026 (1.5); 1.6943 (0.8); 1.2179 (4.8); 1.2060 (9.5); 1.1941 (4.8); 1.0343 (0.6); 1.0160 (6.3); 1.0127 (6.6); 1.0021 (6.2); 0.9988 (6.5); 0.9809 (0.8); 0.6104 (1.7); 0.6015 (2.2); 0.5949 (2.4); 0.5712 (0.3); 0.5416 (2.1); 0.5364 (2.0); 0.5271 (1.5)	475.1
I-156		^{1}H-NMR(600.1 MHz, CD3CN, 260K): δ= 8.7988 (2.1); 8.7962 (2.1); 8.3772 (1.3); 8.3736 (1.9); 8.3632 (1.3); 8.3600 (1.3); 8.2681 (0.5); 8.2539 (0.6); 8.1277 (3.8); 8.0899 (2.0); 8.0754 (3.3); 8.0358 (0.7); 7.9654 (2.3); 7.9339 (0.8); 7.9196 (0.8); 7.7854 (1.0); 7.6280 (1.0); 7.4745 (2.3); 7.3977 (0.9); 7.3482 (2.5); 6.3896 (0.4); 6.3782 (1.2); 6.3666 (1.2); 6.3552 (0.4); 6.1410 (0.6); 6.1297 (0.6); 4.0663 (2.5); 4.0544 (7.5); 4.0425 (7.5); 4.0306 (2.5); 3.6838 (0.4); 3.6732 (0.4); 3.5831 (0.4); 3.5718 (0.4); 3.0814 (11.2); 3.0510 (4.5); 2.8869 (1.6); 2.8805 (1.7); 2.8755 (1.9); 2.8714 (1.7); 2.2962 (34.3); 2.0964 (3.0); 2.0749 (0.5); 2.0709 (0.7); 2.0668 (0.5); 1.9831 (41.8); 1.9761 (7.4); 1.9680 (48.6); 1.9640 (84.1); 1.9599 (122.9); 1.9559 (86.2); 1.9518 (44.6); 1.8526 (0.3); 1.8490 (0.5); 1.8448 (0.7); 1.8408 (0.6); 1.8367 (0.3); 1.8223 (4.9); 1.8107 (5.0); 1.7571 (2.1); 1.7456 (2.1); 1.2162 (8.1); 1.2043 (16.0); 1.1924 (8.0); 1.0754 (0.3); 0.5577 (0.5); 0.5476 (0.6); 0.5368 (0.5); 0.4989 (0.4); 0.4923 (0.4); 0.4856 (0.5); 0.4790 (0.5); 0.4725 (0.4); 0.4653 (0.4); 0.3417 (0.4); 0.3340 (0.4); 0.3278 (0.3); 0.2872 (0.4); 0.2791 (0.6); 0.2723 (0.9); 0.2647 (1.1); 0.2572 (0.9); 0.2499 (0.6); 0.2414 (0.4); 0.2386 (0.4); 0.2302 (0.6); 0.2229 (0.6); 0.2163 (0.7); 0.2087 (0.5); -0.0016 (0.4); -0.1811 (0.6); -0.1892 (0.8); -0.1972 (0.9)	485.2
I-157		^{1}H-NMR(600.1 MHz, CD3CN, 260K): δ= 9.0327 (16.0); 8.4548 (5.9); 8.4540 (6.0); 8.4510 (6.2); 8.4501 (5.8); 7.8325 (4.7); 7.8297 (7.4); 7.8267 (4.9); 7.8011 (3.0); 7.7972 (3.0); 7.7860 (3.2); 7.7822 (3.1); 7.6933 (4.7); 7.6908 (8.6); 7.6883 (4.7); 7.4471 (4.7); 7.4441 (8.3); 7.4411 (4.6); 6.7266 (0.9); 2.9490 (0.6); 2.8797 (7.0); 2.2990 (65.2); 2.2665 (0.5); 2.0807 (0.3); 2.0766 (0.6); 2.0725 (0.8); 2.0684 (0.6); 1.9986 (0.9); 1.9903 (2.1); 1.9859 (31.8); 1.9778 (10.1); 1.9737 (10.2); 1.9699 (57.1); 1.9658 (98.9); 1.9617 (145.3); 1.9575 (99.3); 1.9534 (50.6); 1.9489 (1.3); 1.9447 (0.5); 1.8507 (0.6); 1.8466 (0.8); 1.8425 (0.6); 1.6434 (0.4); 1.6280 (9.5); 1.6163 (9.4); 1.0757 (1.3); 1.0732 (1.2); 1.0680 (5.3); 1.0648 (5.5); 1.0596 (2.4); 1.0571 (2.1); 1.0541 (5.4); 1.0508 (5.3); 1.0458 (1.4); 1.0434 (1.5); 0.7685 (0.5); 0.7646 (0.4); 0.7567 (2.8); 0.7516 (3.0); 0.7487 (6.1); 0.7450 (5.2); 0.7408 (6.1); 0.7375 (3.2); 0.7326 (2.3); 0.7207 (0.3)	407.2

I-158		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 10.6833 (7.3); 9.4272 (3.4); 9.4094 (3.5); 8.9091 (6.3); 8.9035 (6.1); 8.4466 (3.9); 8.4400 (3.7); 8.4244 (4.3); 8.4179 (4.2); 8.3162 (1.0); 8.2696 (4.8); 8.2659 (9.1); 8.2621 (5.4); 8.1553 (4.4); 8.1506 (7.7); 8.1467 (5.8); 8.1392 (16.0); 8.1237 (5.7); 8.1194 (7.9); 8.1149 (4.1); 8.0932 (5.0); 8.0879 (2.2); 8.0795 (5.6); 8.0710 (6.0); 8.0627 (2.2); 8.0573 (5.4); 8.0497 (0.6); 7.9524 (1.2); 7.8574 (6.3); 7.8352 (6.0); 7.4402 (5.5); 7.4350 (1.8); 7.4180 (10.6); 7.4010 (1.7); 7.3958 (5.3); 7.2766 (0.3); 7.2541 (0.6); 6.0225 (0.5); 6.0052 (2.3); 5.9877 (3.6); 5.9702 (2.3); 5.9526 (0.5); 3.3262 (194.2); 3.3081 (39.6); 3.2623 (0.5); 3.1453 (0.4); 2.8911 (8.4); 2.7321 (7.0); 2.7311 (7.2); 2.6759 (1.7); 2.6713 (2.3); 2.6667 (1.7); 2.6621 (0.8); 2.5248 (7.2); 2.5200 (10.8); 2.5113 (141.6); 2.5069 (287.7); 2.5023 (375.5); 2.4977 (268.6); 2.4933 (128.8); 2.3383 (0.8); 2.3337 (1.6); 2.3292 (2.3); 2.3246 (1.6); 2.3202 (0.8); 2.0749 (1.0); 1.6548 (13.2); 1.6374 (13.1); 0.1459 (0.8); 0.0079 (6.8); -0.0002 (207.1); -0.0085 (6.8); -0.1495 (0.8)	543.1
I-159		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.1139 (1.2); 9.0960 (1.2); 9.0284 (2.2); 9.0267 (2.3); 9.0230 (2.4); 9.0212 (2.1); 8.5414 (1.9); 8.5358 (1.8); 8.5199 (2.0); 8.5143 (2.0); 8.0164 (2.4); 8.0147 (2.3); 7.9949 (2.2); 7.9931 (2.1); 7.6057 (1.7); 7.6014 (2.7); 7.5970 (1.8); 7.4270 (1.6); 7.4234 (2.8); 7.4198 (1.6); 7.3291 (1.6); 7.3248 (2.7); 7.3204 (1.5); 6.0602 (1.0); 6.0428 (1.5); 6.0251 (1.0); 4.0380 (0.6); 4.0202 (0.5); 3.3262 (51.1); 2.6760 (0.4); 2.6715 (0.5); 2.6669 (0.4); 2.5251 (1.4); 2.5204 (2.0); 2.5116 (28.6); 2.5072 (59.3); 2.5026 (78.4); 2.4980 (55.5); 2.4935 (25.8); 2.3374 (16.0); 2.3250 (0.5); 2.0029 (0.6); 1.9944 (0.6); 1.9892 (2.8); 1.9820 (1.2); 1.9694 (0.6); 1.9612 (0.6); 1.6044 (5.5); 1.5870 (5.4); 1.2342 (0.4); 1.1931 (0.7); 1.1753 (1.4); 1.1575 (0.7); 1.0181 (0.6); 1.0072 (1.9); 1.0016 (2.0); 0.9975 (0.9); 0.9914 (0.9); 0.9862 (2.0); 0.9807 (2.0); 0.9706 (0.7); 0.7720 (0.9); 0.7616 (2.0); 0.7593 (1.7); 0.7561 (1.9); 0.7492 (2.0); 0.7444 (2.0); 0.7330 (0.7); -0.0002 (6.7)	407.3
I-160		^{1}H-NMR(600.4 MHz, d$_6$-DMSO): δ= 9.1666 (0.4); 9.1550 (0.4); 9.0552 (0.7); 9.0544 (0.7); 9.0517 (0.7); 9.0508 (0.7); 8.5739 (0.6); 8.5702 (0.5); 8.5596 (0.6); 8.5559 (0.6); 8.2349 (1.7); 8.0696 (0.7); 8.0688 (0.7); 8.0554 (0.7); 8.0545 (0.7); 7.7163 (0.6); 7.7137 (1.0); 7.7111 (0.6); 7.6725 (0.6); 7.6696 (0.9); 7.6669 (0.6); 7.5624 (0.6); 7.5594 (1.0); 7.5564 (0.5); 6.0511 (0.5); 4.0357 (0.4); 4.0238 (0.4); 3.3091 (35.4); 2.5218 (0.4); 2.5188 (0.4); 2.5157 (0.4); 2.5068 (10.8); 2.5038 (22.6); 2.5008 (31.0); 2.4978 (22.9); 2.4949 (10.9); 1.9880 (1.9); 1.6390 (1.9); 1.6274 (1.9); 1.3980 (0.3); 1.2794 (16.0); 1.1868 (0.5); 1.1749 (1.0); 1.1631 (0.5); -0.0001 (1.8)	409.2
I-161		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.6492 (3.3); 9.6318 (3.4); 9.0777 (5.9); 9.0758 (6.4); 9.0722 (6.4); 9.0702 (6.1); 8.6235 (6.5); 8.5881 (5.7); 8.5826 (5.4); 8.5667 (6.0); 8.5611 (6.0); 8.4814 (5.7); 8.3981 (5.6); 8.3967 (5.6); 8.3128 (1.7); 8.2604 (16.0); 8.0942 (6.8); 8.0923 (6.7); 8.0727 (6.2); 8.0708 (6.4); 6.1740 (0.5); 6.1569 (2.4); 6.1396 (3.8); 6.1222 (2.4); 6.1048 (0.5); 3.3751 (41.7); 3.3144 (246.9); 2.6795 (1.2); 2.6749 (2.6); 2.6703 (3.6); 2.6657 (2.6); 2.6612 (1.2); 2.5239 (10.4); 2.5192 (15.1); 2.5105 (192.1); 2.5059 (393.4); 2.5013 (530.3); 2.4967 (389.4); 2.4921 (187.4); 2.3375 (1.1); 2.3328 (2.4); 2.3282 (3.4); 2.3236 (2.4); 2.3190 (1.1); 2.0729 (1.2); 1.6743 (14.2); 1.6569 (14.2); 0.1460 (1.6); 0.0081 (13.7); -0.0002 (445.3); -0.0085 (13.4); -0.0194 (0.5); -0.1495 (1.6)	465.2

I-162		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.0102 (5.6); 9.0084 (6.2); 9.0047 (6.6); 9.0028 (6.6); 8.9869 (2.8); 8.9726 (1.4); 8.5050 (4.7); 8.4994 (4.5); 8.4835 (5.1); 8.4779 (5.0); 8.3158 (1.2); 8.2394 (4.5); 8.2356 (8.4); 8.2318 (5.2); 8.2250 (16.0); 8.1458 (4.3); 8.1412 (7.7); 8.1369 (5.0); 8.1092 (5.2); 8.1052 (6.8); 8.1006 (3.9); 8.0392 (5.8); 8.0375 (5.8); 8.0177 (5.3); 8.0159 (5.4); 3.7736 (1.4); 3.7569 (4.1); 3.7418 (4.6); 3.7260 (2.0); 3.5949 (3.9); 3.5785 (6.9); 3.5611 (2.6); 3.3274 (509.9); 2.6802 (0.9); 2.6758 (2.0); 2.6712 (2.8); 2.6667 (2.0); 2.6622 (0.9); 2.5247 (8.9); 2.5199 (13.4); 2.5113 (168.8); 2.5068 (343.5); 2.5023 (450.2); 2.4977 (321.6); 2.4932 (153.1); 2.3380 (0.9); 2.3336 (2.0); 2.3291 (2.8); 2.3246 (2.0); 0.1459 (1.3); 0.0080 (10.8); -0.0001 (323.8); -0.0085 (11.0); -0.1496 (1.3)	431.1
I-163		^{1}H-NMR(600.4 MHz, d$_6$-DMSO): δ= 10.6902 (5.8); 9.4349 (3.3); 9.4233 (3.5); 8.7287 (5.4); 8.7244 (5.5); 8.2874 (3.0); 8.2831 (2.9); 8.2727 (3.2); 8.2684 (3.3); 8.2155 (3.6); 8.2131 (7.2); 8.2108 (4.8); 8.1287 (3.3); 8.1256 (6.3); 8.1229 (4.1); 8.0836 (4.0); 8.0807 (6.3); 8.0782 (4.0); 7.8063 (5.5); 7.7917 (5.3); 5.9021 (0.5); 5.8907 (2.2); 5.8791 (3.5); 5.8675 (2.3); 5.8558 (0.5); 3.3103 (82.9); 3.3040 (33.9); 2.6168 (0.4); 2.6138 (0.6); 2.6108 (0.5); 2.5227 (1.0); 2.5198 (1.4); 2.5167 (1.4); 2.5047 (71.2); 2.5018 (100.3); 2.4988 (77.1); 2.3887 (0.4); 2.3857 (0.6); 2.3827 (0.4); 2.0861 (16.0); 1.8250 (0.6); 1.8139 (1.5); 1.8095 (0.9); 1.8045 (2.4); 1.8002 (1.0); 1.7953 (1.4); 1.7931 (1.4); 1.7839 (0.7); 1.6683 (11.9); 1.6567 (12.0); 0.8893 (0.4); 0.8787 (1.8); 0.8740 (6.7); 0.8680 (7.6); 0.8607 (15.1); -0.0001 (0.7)	557.1
I-164		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4131 (1.3); 9.3952 (1.3); 8.3156 (0.5); 8.2772 (2.0); 8.2735 (3.5); 8.2697 (2.1); 8.2454 (1.9); 8.2393 (1.8); 8.1606 (1.9); 8.1560 (3.0); 8.1520 (2.2); 8.1276 (2.4); 8.1232 (3.3); 8.1187 (1.8); 8.1117 (5.8); 7.8251 (0.8); 7.8185 (0.8); 7.8031 (1.5); 7.7966 (1.5); 7.7594 (2.1); 7.7376 (1.0); 5.9608 (0.9); 5.9433 (1.3); 5.9258 (0.8); 4.0556 (1.5); 4.0378 (4.0); 4.0200 (4.0); 4.0023 (1.6); 3.8546 (0.7); 3.8511 (0.8); 3.8018 (0.8); 3.7985 (0.8); 3.7725 (0.8); 3.6694 (0.7); 3.6657 (0.7); 3.6463 (0.7); 3.5931 (0.5); 3.5087 (0.4); 3.4824 (0.4); 3.3921 (1.0); 3.3701 (0.6); 3.3564 (0.4); 3.3425 (0.4); 3.3346 (0.5); 3.3290 (0.8); 3.3110 (15.6); 3.2771 (0.5); 3.2664 (0.3); 3.2594 (0.5); 3.2487 (0.3); 3.2436 (0.4); 3.2261 (0.4); 3.1165 (0.5); 3.1046 (0.5); 3.0983 (0.5); 3.0863 (0.5); 2.7774 (4.7); 2.7390 (8.6); 2.6897 (0.4); 2.6735 (9.1); 2.6351 (4.6); 2.6243 (0.6); 2.5249 (4.0); 2.5200 (6.3); 2.5114 (68.3); 2.5070 (136.0); 2.5025 (176.1); 2.4979 (125.0); 2.4934 (59.0); 2.3384 (0.4); 2.3339 (0.8); 2.3293 (1.0); 2.3248 (0.8); 2.3203 (0.4); 2.2914 (0.6); 1.9889 (16.0); 1.9799 (0.3); 1.9620 (1.4); 1.9089 (0.6); 1.6249 (5.2); 1.6076 (5.2); 1.2443 (0.5); 1.2352 (0.7); 1.1929 (5.1); 1.1751 (10.3); 1.1573 (5.1); 1.1096 (0.5); 1.0918 (0.9); 1.0740 (0.4); 1.0127 (0.6); 0.9950 (0.7); 0.1459 (0.5); 0.0079 (4.6); -0.0002 (129.1); -0.0085 (4.6); -0.1496 (0.6)	553.1
I-165		^{1}H-NMR(600.1 MHz, CD3CN, 260K): δ= 8.8223 (0.8); 8.8190 (0.8); 8.3722 (0.5); 8.3687 (0.5); 8.3579 (0.5); 8.3542 (0.5); 8.2881 (0.8); 8.2714 (0.5); 8.2678 (0.4); 8.1192 (1.7); 8.0806 (1.8); 8.0648 (0.8); 7.8997 (0.6); 7.8856 (0.6); 7.1249 (0.9); 6.9138 (0.9); 6.8939 (0.8); 6.7695 (0.4); 6.6870 (1.0); 6.5936 (0.4); 6.4763 (0.5); 6.4648 (0.5); 6.1780 (0.4); 6.1664 (0.4); 2.2903 (29.8); 2.0800 (0.4); 2.0761 (0.7); 2.0720 (0.8); 2.0677 (0.7); 2.0634 (0.7); 1.9854 (4.6); 1.9773 (3.7); 1.9730 (5.1); 1.9694 (49.8); 1.9653 (92.5); 1.9612 (136.4); 1.9571 (94.9); 1.9530 (49.1); 1.9446 (1.4); 1.9357 (0.6); 1.9320 (0.4); 1.9008 (0.4); 1.8944 (0.3); 1.8866 (0.5); 1.8542 (0.3); 1.8502 (0.6); 1.8461 (0.8); 1.8420 (0.6); 1.8379 (0.3); 1.7415 (1.8); 1.7351 (0.5); 1.7299 (1.8); 1.7066 (2.0); 1.6949 (2.0); 1.0131 (0.6); 1.0033 (0.9); 0.9997 (1.3); 0.9896 (0.8); 0.9861 (0.7); 0.6605 (0.8); 0.6576 (0.8); 0.6523 (0.8); 0.6493 (0.8); 0.5643 (0.5); 0.5574 (0.4); 0.0968 (1.1); 0.0690 (13.2); 0.0053 (7.1); -0.0001 (226.7); -0.0055 (8.8); -0.0197	493.2

		(0.6); -0.0233 (0.4); -0.0259 (0.6); -0.0290 (0.3); -0.1001 (1.2); -0.3567 (16.0)	
I-166		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4742 (2.9); 9.4568 (2.9); 9.1700 (6.8); 9.1671 (7.0); 8.7639 (6.3); 8.7575 (7.2); 8.6712 (4.6); 8.6677 (5.1); 8.6649 (4.7); 8.6613 (4.2); 8.3142 (0.8); 8.2630 (16.0); 8.2564 (4.9); 8.1629 (3.4); 8.1583 (6.7); 8.1544 (4.9); 8.1389 (4.8); 8.1346 (6.7); 8.1300 (3.3); 6.0031 (0.5); 5.9858 (2.2); 5.9685 (3.4); 5.9511 (2.2); 5.9337 (0.5); 3.3232 (241.0); 3.3152 (43.0); 2.6755 (1.3); 2.6709 (1.8); 2.6665 (1.3); 2.6615 (0.7); 2.5244 (5.4); 2.5196 (8.2); 2.5109 (100.6); 2.5065 (203.5); 2.5019 (273.3); 2.4974 (205.3); 2.4930 (102.7); 2.3379 (0.6); 2.3333 (1.2); 2.3288 (1.8); 2.3243 (1.3); 2.0738 (0.4); 1.6576 (13.0); 1.6402 (13.0); 0.1459 (0.8); 0.0080 (6.0); -0.0002 (184.4); -0.0085 (6.6); -0.1496 (0.8)	407.1
I-167		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 11.9576 (0.3); 9.7724 (0.4); 9.4649 (3.4); 9.4473 (3.5); 8.8634 (4.9); 8.8505 (5.0); 8.3211 (0.5); 8.3082 (0.5); 8.2730 (4.8); 8.2691 (9.5); 8.2653 (5.7); 8.2438 (16.0); 8.1547 (3.0); 8.1498 (8.7); 8.1458 (8.2); 8.1440 (9.3); 8.1397 (8.6); 8.1349 (3.4); 8.1271 (6.8); 8.1255 (6.4); 7.9030 (3.5); 7.9007 (3.5); 7.8901 (3.4); 7.8878 (3.3); 7.2261 (0.6); 6.9739 (0.3); 6.1130 (0.5); 6.0958 (2.5); 6.0783 (3.9); 6.0608 (2.5); 6.0435 (0.5); 4.0392 (0.8); 4.0214 (0.8); 3.3458 (0.9); 3.3236 (35.6); 3.3163 (41.6); 2.6775 (0.4); 2.6728 (0.6); 2.6681 (0.4); 2.5264 (1.8); 2.5217 (2.6); 2.5129 (31.4); 2.5084 (64.5); 2.5038 (87.6); 2.4992 (65.6); 2.4947 (32.2); 2.3352 (0.4); 2.3307 (0.5); 2.3262 (0.4); 2.0874 (1.3); 1.9898 (3.4); 1.9795 (4.3); 1.9421 (4.5); 1.9103 (11.7); 1.6624 (14.6); 1.6450 (14.7); 1.1940 (0.9); 1.1762 (1.8); 1.1584 (0.9); 0.0081 (2.3); -0.0002 (72.7); -0.0085 (2.3)	474.2
I-168		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.4437 (2.8); 9.4259 (2.8); 8.5768 (2.7); 8.5750 (2.7); 8.5724 (2.9); 8.5647 (2.8); 8.5629 (2.8); 8.5602 (2.7); 8.3146 (0.5); 8.2681 (4.3); 8.2644 (7.2); 8.2606 (3.9); 8.1603 (4.2); 8.1560 (7.3); 8.1514 (16.0); 8.1342 (4.9); 8.1301 (6.5); 8.1254 (2.8); 8.1060 (1.7); 8.1013 (1.6); 8.0869 (3.0); 8.0823 (2.8); 8.0668 (2.2); 8.0621 (2.0); 7.8687 (4.7); 7.8483 (3.9); 7.5103 (2.4); 7.5081 (2.1); 7.4981 (2.4); 7.4959 (2.4); 7.4917 (2.4); 7.4795 (2.2); 7.4773 (1.9); 6.0849 (0.5); 6.0677 (2.0); 6.0501 (3.2); 6.0326 (2.0); 6.0154 (0.4); 3.3226 (111.6); 2.6756 (1.1); 2.6711 (1.4); 2.6667 (1.0); 2.6624 (0.5); 2.5243 (6.0); 2.5110 (93.9); 2.5066 (173.2); 2.5021 (219.2); 2.4976 (157.4); 2.4933 (74.8); 2.3379 (0.5); 2.3334 (1.1); 2.3289 (1.4); 2.3245 (1.0); 2.3201 (0.4); 2.0740 (0.4); 1.9466 (0.6); 1.9001 (0.6); 1.6483 (12.3); 1.6309 (12.1); 0.1462 (0.6); 0.0079 (7.1); -0.0002 (141.2); -0.0085 (4.5); -0.0137 (0.4); -0.1492 (0.6)	406.2
I-169		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.2218 (2.5); 9.2039 (2.6); 8.5670 (2.6); 8.5643 (2.7); 8.5625 (2.5); 8.5566 (2.4); 8.5548 (2.8); 8.5522 (2.7); 8.5503 (2.4); 8.3162 (0.4); 8.1400 (12.2); 8.1041 (1.7); 8.0994 (1.7); 8.0837 (2.7); 8.0805 (2.6); 8.0791 (2.7); 8.0649 (2.2); 8.0602 (2.2); 7.8599 (4.8); 7.8394 (4.1); 7.7703 (3.7); 7.7661 (6.0); 7.7620 (4.2); 7.6602 (3.8); 7.6561 (6.4); 7.6523 (4.0); 7.5130 (4.0); 7.5082 (8.3); 7.5043 (5.3); 7.4951 (2.2); 7.4928 (2.4); 7.4887 (2.3); 7.4863 (2.2); 7.4764 (2.1); 7.4741 (2.1); 6.0421 (0.4); 6.0249 (2.0); 6.0073 (3.1); 5.9898 (2.0); 5.9722 (0.4); 4.0557 (1.2); 4.0379 (3.6); 4.0201 (3.6); 4.0023 (1.2); 3.3291 (235.5); 2.6759 (0.9); 2.6715 (1.2); 2.6670 (0.9); 2.5249 (3.9); 2.5202 (5.7); 2.5115 (74.0); 2.5071 (152.1); 2.5025 (200.7); 2.4980 (145.3); 2.4935 (70.4); 2.3385 (0.4); 2.3339 (0.9); 2.3294 (1.2); 2.3249 (0.9); 2.3202 (0.4); 1.9891 (16.0); 1.8114 (2.1); 1.7991 (6.1); 1.7916 (6.6); 1.7803 (2.8); 1.7407 (0.4); 1.6623 (0.5); 1.6356 (12.2); 1.6182 (12.9); 1.6114 (7.6); 1.6038 (6.5); 1.5908 (2.3); 1.3975 (2.9); 1.2493 (0.4); 1.2369 (0.5);	393.3

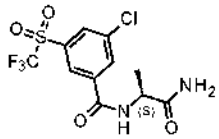
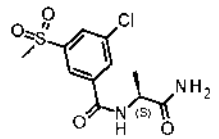
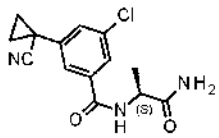
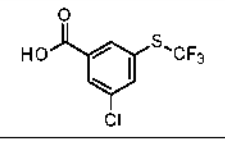
		1.1929 (4.3); 1.1751 (8.6); 1.1573 (4.2); 0.1458 (0.6); 0.0079 (4.6); -0.0002 (146.1); -0.0086 (5.1); -0.1497 (0.6)	
I-170		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.2142 (2.5); 9.1965 (2.6); 8.6280 (4.7); 8.6226 (4.7); 8.6216 (4.6); 8.2105 (3.6); 8.2040 (3.4); 8.1887 (4.0); 8.1822 (4.0); 8.1662 (11.5); 7.8852 (5.2); 7.8842 (5.2); 7.8633 (4.5); 7.8623 (4.6); 7.7690 (3.4); 7.7648 (5.5); 7.7606 (3.9); 7.6678 (3.5); 7.6638 (6.0); 7.6599 (3.6); 7.5193 (3.6); 7.5147 (6.4); 7.5101 (3.3); 5.9902 (0.4); 5.9729 (1.8); 5.9554 (2.8); 5.9379 (1.8); 5.9205 (0.4); 5.7527 (8.4); 3.3186 (5.7); 2.5264 (0.8); 2.5217 (1.2); 2.5130 (13.9); 2.5085 (28.3); 2.5039 (38.6); 2.4993 (28.9); 2.4948 (14.3); 1.9897 (0.4); 1.8142 (1.9); 1.8018 (5.6); 1.7943 (6.0); 1.7828 (2.6); 1.7434 (0.4); 1.6649 (0.4); 1.6313 (10.7); 1.6269 (4.8); 1.6139 (16.0); 1.6067 (6.6); 1.5934 (2.1); 0.0080 (1.1); -0.0002 (33.5); -0.0085 (1.1)	427.2
I-171		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.2443 (3.6); 9.2268 (3.6); 9.1602 (8.5); 9.1569 (8.7); 8.7587 (8.0); 8.7524 (9.0); 8.6618 (5.9); 8.6582 (6.4); 8.6555 (6.1); 8.6518 (5.3); 8.2521 (15.6); 7.7652 (4.9); 7.7609 (8.1); 7.7569 (5.6); 7.6541 (5.1); 7.6501 (8.7); 7.6463 (5.3); 7.5178 (5.2); 7.5132 (9.2); 7.5087 (4.8); 5.9645 (0.6); 5.9471 (2.6); 5.9298 (4.2); 5.9123 (2.7); 5.8948 (0.6); 5.7552 (0.3); 3.3236 (59.4); 2.6766 (0.4); 2.6721 (0.6); 2.6677 (0.4); 2.5257 (1.7); 2.5211 (2.5); 2.5122 (33.3); 2.5078 (68.1); 2.5032 (93.4); 2.4987 (71.3); 2.4942 (35.8); 2.3347 (0.4); 2.3301 (0.6); 2.3256 (0.4); 1.8109 (2.8); 1.7988 (7.7); 1.7912 (8.5); 1.7799 (3.6); 1.7399 (0.5); 1.6614 (0.8); 1.6461 (15.7); 1.6287 (16.0); 1.6226 (5.9); 1.6103 (8.6); 1.6027 (7.9); 1.5901 (3.2); 1.2501 (0.4); 1.2357 (0.6); 0.0081 (2.2); -0.0002 (71.2); -0.0085 (2.6)	394.3
I-172		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.2548 (3.4); 9.2372 (3.5); 8.9804 (4.3); 8.9785 (4.2); 8.9766 (4.3); 8.9744 (4.5); 8.4988 (2.6); 8.4928 (2.6); 8.4771 (2.9); 8.4711 (2.8); 8.2338 (16.0); 8.0946 (4.8); 8.0731 (4.4); 7.7734 (4.5); 7.7691 (7.2); 7.7651 (5.3); 7.6780 (4.6); 7.6738 (8.0); 7.6700 (5.0); 7.5165 (4.8); 7.5119 (8.8); 7.5073 (4.6); 6.1056 (0.5); 6.0883 (2.3); 6.0708 (3.6); 6.0534 (2.3); 6.0359 (0.5); 3.3246 (36.7); 2.6735 (0.4); 2.5271 (1.2); 2.5224 (1.8); 2.5137 (21.9); 2.5091 (45.2); 2.5045 (62.4); 2.4999 (47.2); 2.4954 (23.1); 2.3314 (0.4); 1.8120 (2.6); 1.8000 (7.0); 1.7924 (7.7); 1.7811 (3.3); 1.7411 (0.4); 1.6556 (13.6); 1.6382 (13.6); 1.6211 (4.0); 1.6090 (7.7); 1.6013 (7.0); 1.5887 (2.8); 0.0081 (1.7); -0.0002 (53.2); -0.0085 (1.6)	461.3
I-173		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.3612 (6.9); 9.3555 (6.9); 9.3544 (6.7); 9.3018 (3.5); 9.2845 (3.6); 8.8517 (5.3); 8.8448 (5.1); 8.8291 (5.6); 8.8222 (5.6); 8.3141 (0.4); 8.2703 (16.0); 8.1540 (7.2); 8.1531 (7.4); 8.1316 (6.8); 8.1305 (7.0); 7.8185 (4.8); 7.8144 (7.8); 7.8102 (5.5); 7.7144 (5.0); 7.7103 (8.5); 7.7064 (5.2); 7.5215 (5.1); 7.5168 (9.3); 7.5122 (4.9); 6.1390 (0.5); 6.1218 (2.6); 6.1045 (4.0); 6.0871 (2.6); 6.0696 (0.5); 4.0384 (0.7); 4.0206 (0.7); 3.3244 (166.1); 2.6763 (0.6); 2.6717 (0.9); 2.6671 (0.6); 2.5252 (2.6); 2.5205 (3.8); 2.5118 (47.6); 2.5073 (98.1); 2.5027 (133.4); 2.4981 (100.3); 2.4936 (49.7); 2.3341 (0.6); 2.3296 (0.8); 2.3250 (0.6); 1.9891 (3.3); 1.8127 (2.7); 1.8004 (7.8); 1.7928 (8.4); 1.7815 (3.6); 1.7419 (0.5); 1.6595 (15.2); 1.6421 (15.2); 1.6311 (4.5); 1.6187 (8.3); 1.6113 (7.9); 1.5982 (2.9); 1.1933 (0.9); 1.1755 (1.8); 1.1577 (0.9); 0.1459 (0.4); 0.0080 (3.1); -0.0002 (98.8); -0.0085 (3.2); -0.1497 (0.4)	438.2
I-174		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.2250 (2.5); 9.2070 (2.6); 8.9923 (15.6); 8.9801 (16.0); 8.1610 (12.0); 7.9154 (0.4); 7.8109 (0.5); 7.7434 (3.7); 7.7392 (5.9); 7.7351 (4.2); 7.6433 (4.0); 7.6392 (10.6); 7.6355 (4.3); 7.6269 (8.2); 7.6147 (4.2); 7.5546 (0.5); 7.5126 (4.0); 7.5080 (7.0); 7.5034 (3.7); 6.0090 (0.4); 5.9915 (2.0); 5.9739 (3.0); 5.9562 (2.0); 5.9387 (0.4); 3.3187 (8.9); 2.6762 (0.4); 2.6716	394.2

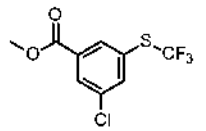
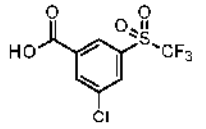
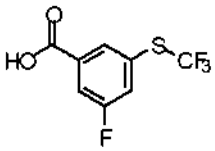
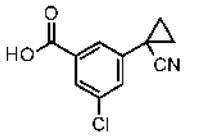
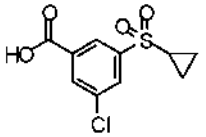
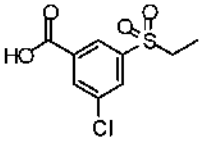
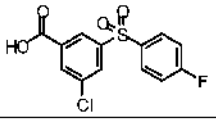
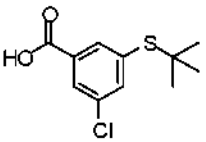
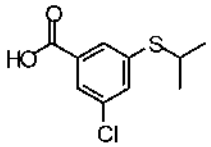
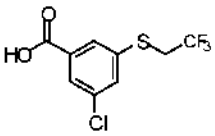
		(0.5); 2.6670 (0.4); 2.5419 (0.5); 2.5251 (1.6); 2.5203 (2.3); 2.5117 (30.8); 2.5072 (62.9); 2.5026 (83.6); 2.4980 (61.4); 2.4935 (30.1); 2.3341 (0.4); 2.3294 (0.5); 2.3249 (0.4); 1.8255 (0.5); 1.8179 (0.6); 1.8084 (2.3); 1.7971 (5.5); 1.7893 (6.3); 1.7782 (2.9); 1.7374 (0.3); 1.6589 (0.6); 1.6415 (12.2); 1.6241 (12.2); 1.6196 (5.4); 1.6109 (3.7); 1.6075 (6.3); 1.6018 (4.3); 1.5993 (5.1); 1.5879 (2.5); 1.4177 (0.9); 1.3996 (0.9); 0.0080 (1.6); -0.0002 (50.7); -0.0085 (1.8)	
I-175		^{1}H-NMR(400.2 MHz, d$_6$-DMSO): δ= 9.6625 (3.5); 9.6453 (3.6); 9.0583 (5.8); 9.0566 (6.4); 9.0528 (6.5); 9.0511 (6.2); 8.5839 (5.0); 8.5784 (4.9); 8.5625 (5.3); 8.5569 (5.4); 8.3896 (7.3); 8.3222 (6.5); 8.3037 (7.9); 8.3003 (7.6); 8.2622 (16.0); 8.0904 (6.5); 8.0888 (6.6); 8.0689 (5.9); 8.0673 (6.1); 6.1507 (0.6); 6.1334 (2.5); 6.1161 (4.0); 6.0988 (2.5); 6.0815 (0.5); 5.7545 (3.7); 3.3546 (0.7); 3.3267 (267.7); 2.6814 (0.4); 2.6769 (0.7); 2.6725 (1.0); 2.6678 (0.7); 2.6635 (0.4); 2.5258 (3.2); 2.5211 (4.7); 2.5124 (55.1); 2.5080 (111.5); 2.5034 (148.3); 2.4988 (110.5); 2.4944 (55.3); 2.3348 (0.6); 2.3302 (0.9); 2.3256 (0.7); 1.6664 (15.0); 1.6490 (15.0); 1.2343 (0.9); 0.1459 (0.3); 0.0080 (2.4); -0.0002 (75.5); -0.0084 (2.9); -0.1497 (0.3)	469.2

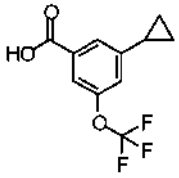
[1] '260 K' denotes that the measurement was conducted at 260 K.

[2] The stated mass corresponds to the peak from the isotope pattern of the $[M+H]^+$ ion with the highest intensity. [a] denotes that the $[M-H]^-$ ion was recorded.

Table 2 (Intermediates)

Example	Structure	NMR[1]	ESI mass [m/z][2]
a*-001		**^{1}H NMR** (400 MHz, d$_6$-DMSO): δ = 9.13 - 9.11 (d, 1H, NH), 8.61 (s, 1H), 8.54 (s, 1H), 8.41 (s, 1H), 7.50 (br s, 1H from NH_2), 7.05 (br s, 1H from NH_2), 4.46 - 4.39 (m, 1H), 1.36 - 1.35 (d, 3H).	358.9
a*-002		**^{1}H NMR** (400 MHz, d$_6$-DMSO): δ = 8.92 (d, 1H), 8.37 (t, 1H), 8.30 (t, 1H), 8.14 (t, 1H), 7.47 (br s, 1H), 7.04 (br s, 1H), 4.46 – 4.39 (m, 1H), 3.34 (s, 3H), 1.35 (d, 3H).	305.1
a*-003		**^{1}H NMR** (400 MHz, d$_6$-DMSO): δ = 8.72 (d, 1H), 7.90 (t, 1H), 7.79 (t, 1H), 7.53 (t, 1H), 7.42 (br s, 1H), 7.01 (br s, 1H), 4.42 – 4.38 (m, 1H), 1.83 – 1.80 (m, 2H), 1.66 – 1.63 (m, 2H), 1.34 (d, 3H).	292.2
b*-001		**^{1}H NMR** (400 MHz, CDCl$_3$): δ =11.28 (br s, 1H), 8.29 (s, 1H), 8.20 – 8.25 (m, 1H), 7.91 (s, 1H).[3]	254.8[a]

b*-002		**^{1}H NMR** (400 MHz, $CDCl_3$): δ =8.20 (s, 1H), 8.10 – 8.15 (m, 1H), 7.83 (s, 1H), 3.96 (s, 3H).[3)]	
b*-003		**^{1}H NMR** (400 MHz, d_6-DMSO): δ =14.27 – 14.20 (br s, 1H), 8.51 (s, 1H), 8.49 (s, 1H), 8.38 (s, 1H).	287.0[a]
b*-004		**^{1}H NMR** (400 MHz, d_6-DMSO): δ = 13.76 (br s, 1H), 8.03 (s, 1H), 7.98 – 7.95 (m, 1H), 7.93 – 7.89 (m, 1H).	239.1[a]
c*-001		**^{1}H NMR** (400 MHz, Varian machine, MeOD): δ = 7.89 (s, 1H), 7.88 (s, 1H), 7.54 (s, 1 H), 1.78 - 1.82 (m, 2 H), 1.55 - 1.59 (m, 2 H).	220.1[a]
d*-001		**^{1}H NMR** (400 MHz, d_6-DMSO): δ = 13.92 (br s, 1H), 8.27 (t, *J*=1.6 Hz, 1H), 8.25 – 8.20 (m, 2H), 3.13 – 3.05 (m, 1H), 1.25 – 1.05 (m, 4 H).	259.1[a]
d*-002		**^{1}H NMR** (400 MHz, d_6-DMSO): δ = 13.90 (br s, 1H), 8.27 (t, *J*=1.4 Hz, 1H), 8.23 (t, *J*=1.0 Hz, 1H), 8.21 (t, *J*=1.8 Hz, 1H), 3.46 (q, *J*=7.2 Hz 2H), 1.12 (t, *J*=7.2 Hz 3H).	247.1[a]
d*-003		**^{1}H NMR** (400 MHz, d_6-DMSO): δ = 13.94 (br s, 1H), 8.34 (t, *J*=1.4 Hz, 1H), 8.32 – 8.30 (m, 1H), 8.22 – 8.14 (m, 3H), 7.53 – 7.45 (m, 2H).	313.0[a]
d*-004		**^{1}H NMR** (400 MHz, d_6-DMSO): δ = 13.55 (br s, 1H), 7.97 – 7.92 (m, 2H), 7.79 (t, *J*=1.8 Hz, 1H), 1.27 (s, 9H).	243.1[a]
d*-005		**^{1}H NMR** (400 MHz, d_6-DMSO): δ = 13.50 (br s, 1H), 7.77 (t, *J*=1.6 Hz, 1H), 7.72 (t, *J*=1.8 Hz, 1H), 7.67 (t, *J*=1.8 Hz, 1H), 3.67 (sep, *J*=6.8 Hz 1H), 1.27 (d, *J*=6.8 Hz 6H).	229.1[a]
d*-006		**^{1}H NMR** (400 MHz, d_6-DMSO): δ = 13.55 (br s, 1H), 7.94 – 7.88 (m, 2H), 7.77 (t, *J*=1.6 Hz, 1H), 4.20 (q, *J*=10.3 Hz 2H).	269.0[a]

e*-001		**^{1}H NMR** (400 MHz, d$_6$-DMSO): δ = 13.37 (br s, 1H), 7.65 (t, *J*=1.6 Hz, 1H), 7.58 – 7.54 (m, 1H), 7.34 (br s, 1H), 2.14 – 2.05 (m, 1H), 1.10 – 1.00 (m, 2H), 0.85 – 0.75 (m, 2 H).	245.1[#]

[1)] '260 K' denotes that the measurement was conducted at 260 K.

[2)] The stated mass corresponds to the peak from the isotope pattern of the $[M+H]^+$ ion with the highest intensity. [#] denotes that the $[M-H]^-$ ion was recorded.

[3)] Referenced to the signal of trace $CHCl_3$ at 7.25 ppm.

Biological examples

Ctenocephalides felis – in-vitro contact test adult cat flea

9 mg compound is solved in 1 ml acetone and diluted with acetone to the desired concentration. 250µl of the test solution is filled in 25ml glass test tubes and homogeneously distributed on the inner walls by rotation and tilting on a shaking device (2 h at 30 rpm). With a compound concentration of 900 ppm, an inner surface of 44,7 cm² and a homogeneous distribution, a dose of 5µg/cm² is achieved.

After the solvent has evaporated, each test tube is filled with 5-10 adult cat fleas (*Ctenocephalides felis*), closed with a perforated lid and incubated in a lying position at room temperature and relative humidity. After 48 hours efficacy is determined. The fleas are patted on the ground of the tubes and are incubated on a heating plate at 45-50°C for at most 5 minutes. Immotile or uncoordinated moving fleas, which are not able to escape the heat by climbing upwards, are marked as dead or moribund.

A compound shows a good efficacy against *Ctenocephalides felis*, if at a compound concentration of 5µg/cm² an efficacy of at least 80 % is monitored. An efficacy of 100 % means all fleas are dead or moribund; 0 % means no fleas are dead or moribund.

In this test, for example, the following compounds from the preparation examples showed good activity of 100% at an application rate of 5 µg/cm² (= 500g/ha): I-002, I-003, I-007, I-019, I-020, I-021, I-024, I-025, I-034, I-035, I-036, I-037, I-038, I-039, I-040, I-042, I-044, I-045, I-046, I-050, I-057, I-066, I-069, I-070, I-089, I-091, I-095.

In this test, for example, the following compounds from the preparation examples showed good activity of 90% at an application rate of 5 µg/cm² (= 500g/ha): I-005, I-006, I-041, I-043, , I-067, I-068, I-073, I-074, I-075, I-098.

In this test, for example, the following compounds from the preparation examples showed good activity of 80% at an application rate of 5 µg/cm² (= 500g/ha): I-001, I-051, I-054, I-059, I-092.

Rhipicephalus sanguineus - in-vitro contact test with adult brown dog ticks

9 mg compound is solved in 1 ml acetone and diluted with acetone to the desired concentration. 250µl of the test solution is filled in 25ml glass test tubes and homogeneously distributed on the inner walls by rotation and tilting on a shaking device (2 h at 30 rpm). With a compound concentration of 900 ppm, an inner surface of 44,7 cm^2 and a homogeneous distribution, a dose of 5µg/cm² is achieved.

After the solvent has evaporated, each test tube is filled with 5-10 adult brown dog ticks (*Rhipicephalus sanguineus*), closed with a perforated lid and incubated in a lying position at room temperature and relative humidity. After 48 hours efficacy is determined. The ticks are patted on the ground of the tubes and are incubated on a heating plate at 45-50°C for at most 5 minutes. Immotile or uncoordinated moving ticks, which are not able to escape the heat by climbing upwards, are marked as dead or moribund.

A compound shows a good efficacy against *Rhipicephalus sanguineus*, if at a compound concentration of 5 µg/cm² an efficacy of at least 80 % is monitored. An efficacy of 100 % means all ticks are dead or moribund; 0 % means no ticks are dead or moribund.

In this test, for example, the following compounds from the preparation examples showed good activity of 100% at an application rate of 5 µg/cm² (= 500g/ha): I-001, I-003, I-040, I-045, I-053.

In this test, for example, the following compounds from the preparation examples showed good activity of 80% at an application rate of 5 µg/cm² (= 500g/ha): I-002, I-004, I-006, I-021, I-034, I-036, I-037, I-042, I-066.

Boophilus microplus – injection test

Solvent: dimethyl sulfoxide

To produce a suitable preparation of active compound, 10 mg of active compound are dissolved in 0.5 ml solvent, and the concentrate is diluted with solvent to the desired concentration.

Five adult engorged female ticks (*Boophilus microplus*) are injected with 1 µl compound solution into the abdomen. The ticks are transferred into replica plates and incubated in a climate chamber.

After 7 days egg deposition of fertile eggs is monitored. Eggs where fertility is not visible are stored in a climate chamber till hatching after about 42 days. An efficacy of 100 % means all eggs are infertile; 0 % means all eggs are fertile.

In this test, for example, the following compounds from the preparation examples showed good activity of 100% at an application rate of 20µg /animal: I-001, I-002, I-003, I-006, I-019, I-020,I-024, I-025, I-034, I-035, I-036, I-037, I-038, I-039, I-040, I-041, I-042, I-043, I-044, I-045, I-046, I-048, I-049, I-050, I-051, I-052, I-068, I-069, I-070, I-072, I-073, I-074, I-075, I-076, I-077.

In this test, for example, the following compounds from the preparation examples showed good activity of 80% at an application rate of 20µg /animal: I-021, I-067, I-080.

Boophilus microplus – dip test

Test animal: cattle ticks *(Boophilus microplus)* strane Parhurst, SP-resistant

Solvent: dimethyl sulfoxide

To produce a suitable preparation of active compound, 10 mg of active compound are dissolved in 0.5 ml solvent, and the concentrate is diluted with water to the desired concentration.

This compound solution is pipetted into tubes. 8-10 engorged, adult, female cattle ticks *(Boophilus microplus)* are placed in perforated tubes. These tubes are immersed in the aqueous compound solution until the ticks are completely moistened. After the liquid has drained off, the ticks are transferred to a filter paper in a plastic tray and stored in a climate chamber.

After 7 days egg deposition of fertile eggs is monitored. Eggs where fertility is not visible are stored in a climate chamber till hatching after about 42 days. An efficacy of 100 % means all eggs are infertile; 0 % means all eggs are fertile.

In this test, for example, the following compounds from the preparation examples showed good activity of 100 % at an application rate of 100ppm: I-020, I-034, I-035, I-037, I-038, I-042, I-044, I-046.

In this test, for example, the following compounds from the preparation examples showed good activity of 90 % at an application rate of 100ppm: I-036, I-050.

Ctenocephalides felis – oral test

Solvent: dimethyl sulfoxide

To produce a suitable preparation of active compound, 10 mg of active compound are dissolved in 0.5 ml solvent, and the concentrate is diluted with cattle blood to the desired concentration.

Approximately 20 adult unfed cat fleas *(Ctenocephalides felis)* are placed in flea chambers. The blood chamber, sealed with parafilm on the bottom, are filled with cattle blood supplied with compound

solution and placed on the gauze covered top of the flea chamber, so that the fleas are able to suck the blood. The blood chamber is heated to 37 °C whereas the flea chamber is kept at room temperature.

After 2 days mortality in % is determined. 100 % means all the fleas have been killed; 0 % means none of the fleas have been killed.

In this test, for example, the following compounds from the preparation examples showed good activity of 100% at an application rate of 100ppm: I-001, I-002, I-003, I-004, I-006, I-007, I-009, I-010, I-012, I-019, I-020, I-021, I-024, I-025, I-028, I-034, I-035, I-036, I-037, I-038, I-039, I-040, I-041, I-042, I-043, I-044, I-045, I-046, I-048, I-049, I-050, I-051, I-052, I-053, I-054, I-057, I-058, I-059, I-060, I-066, I-067, I-068, I-069, I-070, I-071, I-072, I-073, I-074, I-075, I-076, I-080, I-081, I-088, I-089, I-090, I-091.

In this test, for example, the following compounds from the preparation examples showed good activity of 90% at an application rate of 100ppm: I-056, I-077.

Diabrotica balteata – spray test

Solvent: 78.0 parts by weight of acetone

1.5 parts by weight of dimethylformamide

Emulsifier: alkylarylpolyglycol ether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent, and the concentrate is diluted with water, containing an emulsifier concentration of 1000 ppm, to the desired concentration. Further test concentrations are prepared by dilution with emulsifier containing water.

Soaked wheat seeds (*Triticum aestivum*) are placed in a multiple well plate filled with agar and some water and are incubated for 1 day to germinate (5 seeds per well). The germinated wheat seeds are sprayed with a test solution containing the desired concentration of the active ingredient. Afterwards each unit is infected with 10-20 larvae of the banded cucumber beetle (*Diabrotica balteata*).

After 7 days efficacy in % is determined. 100 % means all the seedlings have grown up like in the untreated, uninfected control; 0 % means none of the seedlings have grown.

In this test, for example, the following compounds from the preparation examples showed good activity of 100% at an application rate of 160µg/well: I-003, I-004, I-005, I-006, I-007, I-008, I-009, I-011, I-012, I-014, I-016, I-019, I-020, I-024, I-025, I-026, I-028, I-033, I-034, I-035, I-036, I-037, I-039, I-040, I-041, I-042, I-043, I-044, I-045, I-048, I-049, I-051, I-053, I-054, I-060, I-063, I-064, I-066, I-067,I-068, I-069, I-070,I-072, I-073, I-074, I-075, I-077, I-078, I-079, I-089, I-090, I-091,I-092, I-093, I-094,

I-095, I-097, I-098, I-099, I-100, I-104, I-107, I-113, I-114, I-115, I-117, I-118, I-119, I-120, I-121, I-123, I-124, I-125.

In this test, for example, the following compounds from the preparation examples showed good activity of 80% at an application rate of 160µg/well: I-050, I-057.

Myzus persicae – oral test

Solvent: 100 parts by weight acetone

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent, and the concentrate is diluted with water to the desired concentration.

50 µl compound solution is filled in microtiter plates and 150 µl IPL41 insect medium (33% + 15% sugar) is added to obtain a total volume of 200 µl per well. Afterwards the plates are sealed with parafilm through which a mixed population of the green peach aphid (*Myzus persicae*) can suck on the compound preparation.

After 5 days mortality in % is determined. 100 % means all aphids have been killed and 0 % means none of the aphids have been killed.

In this test, for example, the following compounds from the preparation examples showed good activity of 100% at an application rate of 20ppm: I-001, I-003, I-004, I-005, I-006, I-007, I-008, I-009, I-012, I-019, I-020, I-024, I-025.

In this test, for example, the following compounds from the preparation examples showed good activity of 100% at an application rate of 4ppm: I-007, I-008, I-009, I-019, I-020, I-024, I-033, I-034, I-035, I-036, I-037, I-038, I-039, I-040, I-041, I-042, I-043, I-044, I-046, I-048, I-050, I-051, I-057, I-063, I-067, I-069, I-070,I-074,I-075, I-080, I-090, I-091, I-092, I-095, I-096, I-097, I-099, I-117, I-119.

In this test, for example, the following compounds from the preparation examples showed good activity of 90% at an application rate of 4ppm: I-003, I-005, I-006, I-066, I-068, I-086, I-093, I-118.

Myzus persicae – spray test

Solvent: 78.0 parts by weight acetone

1.5 parts by weight dimethylformamide

Emulsifier: alkylarylpolyglycol ether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvents and is diluted with water, containing an emulsifier concentration of 1000 ppm, to the desired concentration. Further test concentrations are prepared by dilution with emulsifier containing water.

Chinese cabbage (*Brassica pekinensis*) leaf disks infected with all instars of the green peach aphid (*Myzus persicae*), are sprayed with a preparation of the active ingredient of the desired concentration.

After 5 days mortality in % is determined. 100 % means all aphids have been killed and 0 % means none of the aphids have been killed.

In this test, for example, the following compounds from the preparation examples showed good activity of 100 % at an application rate of 500 g/ha: I-036, I-039, I-041, I-044, I-045, I-046, I-050, I-070, I-092, I-099, I-121, I-124, I-125.

In this test, for example, the following compounds from the preparation examples showed good activity of 90 % at an application rate of 500 g/ha: I-034, I-035, I-037, I-040, I-042, I-043, I-057, I-066, I-073, I-074, I-075, I-091, I-095, I-096, I-100, I-114, I-118, I-119.

Nezara viridula – spray test

Solvent: 78.0 parts by weight of acetone

1.5 parts by weight of dimethylformamide

Emulsifier: alkylarylpolyglycol ether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent, and the concentrate is diluted with water, containing an emulsifier concentration of 1000 ppm, to the desired concentration. Further test concentrations are prepared by dilution with emulsifier containing water.

Barley plants (*Hordeum vulgare*) infested with larvae of the southern green stink bug (*Nezara viridula*) are sprayed with a test solution containing the desired concentration of the active ingredient.

After 4 days mortality in % is determined. 100 % means all the stink bugs have been killed; 0 % means none of the stink bugs have been killed.

In this test, for example, the following compounds from the preparation examples showed good activity of 100% at an application rate of 500g/ha: I-001, I-002, I-003, I-004, I-005, I-006, I-007, I-008, I-016, I-019, I-020, I-025, I-033, I-034, I-035, I-036, I-037, I-038, I-039, I-040, I-041, I-042, I-043, I-044, I-045, I-046, I-049, I-050, I-051, I-057, I-060, I-063, I-066, I-067, I-068, I-069, I-070, I-073, I-074, I-075, I-

078, I-080, I-089, I-090, I-091, I-092, I-093, I-095, I-096, I-097, I-098, I-099, I-100, I-104, I-107, I-110, I-117, I-118, I-119, I-120, I-121, I-124, I-125.

In this test, for example, the following compounds from the preparation examples showed good activity of 90% at an application rate of 500g/ha: I-109, I-113.

Nilaparvata lugens – spray test

Solvent: 78.0 parts by weight of acetone

1.5 parts by weight of dimethylformamide

Emulsifier: alkylarylpolyglycol ether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvents and is diluted with water, containing an emulsifier concentration of 1000 ppm, to the desired concentration. Further test concentrations are prepared by dilution with emulsifier containing water.

Rice plants (*Oryza sativa*) are sprayed with a preparation of the active ingredient of the desired concentration and the plants are infested with the brown planthopper (*Nilaparvata lugens*).

After 4 days mortality in % is determined. 100 % means all planthoppers have been killed and 0 % means none of the planthoppers have been killed.

In this test, for example, the following compounds from the preparation examples showed good activity of 100% at an application rate of 500g/ha: I-001, I-003, I-004, I-005, I-006, I-008, I-018, I-019, I-020, I-024, I-025, I-033, I-034, I-037, I-039, I-040, I-041, I-042, I-043, I-044, I-049, I-050, I-059, I-092, I-100, I-111, I-118, I-120.

In this test, for example, the following compounds from the preparation examples showed good activity of 90% at an application rate of 500g/ha: I-045, I-046.

Phaedon cochleariae – spray test

Solvent: 78.0 parts by weight of acetone

1.5 parts by weight of dimethylformamide

Emulsifier: alkylarylpolyglycol ether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvents and is diluted with water, containing an emulsifier concentration of

1000 ppm, to the desired concentration. Further test concentrations are prepared by dilution with emulsifier containing water.

Chinese cabbage (*Brassica pekinensis*) leaf disks are sprayed with a preparation of the active ingredient of the desired concentration. Once dry, the leaf disks are infested with mustard beetle larvae (*Phaedon cochleariae*).

After 7 days mortality in % is determined. 100 % means all beetle larvae have been killed and 0 % means none of the beetle larvae have been killed.

In this test, for example, the following compounds from the preparation examples showed good activity of 100% at an application rate of 500g/ha: I-001, I-003, I-004, I-005, I-006, I-008, I-009, I-010, I-012, I-016, I-019, I-020, I-024, I-026, I-028.

In this test, for example, the following compounds from the preparation examples showed good activity of 83% at an application rate of 500g/ha: I-025.

Spodoptera frugiperda – spray test

Solvent:	78.0	parts by weight acetone
	1.5	parts by weight dimethylformamide
Emulsifier:	alkylarylpolyglycol ether	

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvents and is diluted with water, containing an emulsifier concentration of 1000 ppm, to the desired concentration. Further test concentrations are prepared by dilution with emulsifier containing water.

Maize (*Zea mays*) leaf sections are sprayed with a preparation of the active ingredient of the desired concentration. Once dry, the leaf sections are infested with fall armyworm larvae (*Spodoptera frugiperda*).

After 7 days mortality in % is determined. 100% means all caterpillars have been killed and 0% means none of the caterpillars have been killed.

In this test, for example, the following compounds from the preparation examples showed good activity of 100 % at an application rate of 500g/ha: I-005, I-008, I-009, I-012, I-019, I-033, I-035, I-036, I-038, I-040, I-043, I-045, I-046, I-050, I-051, I-053, I-054, I-057, I-063, I-064, I-066, I-067, I-068, I-069, I-070, I-072, I-073, I-074, I-075, I-077, I-078, I-079, I-089, I-090, I-095, I-096, I-097, I-099, I-100, I-104, I-106, I-110, I-113, I-117, I-118, I-119, I-120, I-121, I-123, I-125.

In this test, for example, the following compounds from the preparation examples showed good activity of 83% at an application rate of 500g/ha: I-004, I-034, I-037, I-042, I-044, I-091, I-094, I-098.

Tetranychus urticae – spray test OP-resistant

Solvent: 78.0 parts by weight acetone

1.5 parts by weight dimethylformamide

Emulsifier: alkylarylpolyglycol ether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvents and is diluted with water, containing an emulsifier concentration of 1000 ppm, to the desired concentration. Further test concentrations are prepared by dilution with emulsifier containing water.

French bean (*Phaseolus vulgaris*) leaf disks infected with all instars of the two spotted spidermite (*Tetranychus urticae*), are sprayed with a preparation of the active ingredient of the desired concentration.

After 6 days mortality in % is determined. 100% means all spider mites have been killed and 0% means none of the spider mites have been killed.

In this test, for example, the following compounds from the preparation examples showed good activity of 95% at an application rate of 500g/ha: I-006, I-008.

In this test, for example, the following compounds from the preparation examples showed good activity of 90% at an application rate of 500g/ha: I-040, I-042, I-056, I-112.

In this test, for example, the following compounds from the preparation examples showed good activity of 80% at an application rate of 500g/ha: I-005.

Aedes aegypti test (AEDSAE surface treatment & contact assay)

Solvent: Aceton + 2000ppm rapeseed oil methyl ester (RME)

In order to produce a sufficient, active ingredient containing solution it is necessary to solve the test-compound in the solvent-mix (Acetone at 2mg/ml / RME 2000ppm). This solution is pipetted onto a glazed tile and after evaporation of the Acetone, adult mosquitoes of the species Aedes aegypti strain MONHEIM are placed onto the dried surface. The exposure time is 30 minutes.

Mortality in percent (%) is determined 24 hours after contact to the treated surface. 100% mortality means that all test-insects are dead, whereas 0% means that not a single insect died.

The following compound-example-numbers showed in this test efficacy of 90-100% at a surface concentration of 20mg/m^2: I-001, I-019, I-024, I-025, I-034, I-035, I-036, I-037, I-038, I-040, I-041, I-042, I-043, I-044, I-045, I-046, I-048, I-049, I-050, I-053, I-054, I-057, I-063, I-066, I-067, I-068, I-069, I-070, I-073, I-074, I-075, I-077, I-078, I-089, I-091, I-092, I-093, I-098, I-100, I-104.

The following compound-example-numbers showed in this test efficacy of 80-100% at a surface concentration of 4mg/m^2: I-001, I-019, I-034, I-035, I-036, I-037, I-038, I-040, I-041, I-042, I-043, I-044, I-045, I-049, I-050, I-053, I-054, I-057, I-063, I-066, I-067, I-068, I-069, I-070, I-073, I-075, I-078, I-089, I-091, I-092, I-093, I-100, I-104.

Culex quinquefasciatus test (CULXFA surface treatment & contact assay)

Solvent: Aceton + 2000ppm rapeseed oil methyl ester (RME)

In order to produce a sufficient, active ingredient containing solution it is necessary to solve the test-compound in the solvent-mix (Acetone at 2mg/ml / RME 2000ppm). This solution is pipetted onto a glazed tile and after evaporation of the Acetone, adult mosquitoes of the species Culex quinquefasciatus strain P00 are placed onto the dried surface. The exposure time is 30 minutes.

Mortality in percent (%) is determined 24 hours after contact to the treated surface. 100% mortality means that all test-insects are dead, whereas 0% means that not a single insect died.

The following compound-example-numbers showed in this test efficacy of 80-100% at a surface concentration of 20mg/m^2: I-001, I-019, I-025, I-034, I-035, I-036, I-037, I-038, I-040, I-041, I-042, I-043, I-044, I-045, I-046, I-049, I-050, I-057, I-063, I-066, I-067, I-068, I-069, I-070, I-073, I-074, I-075, I-078, I-089, I-091, I-092, I-093, I-098, I-100, I-104, I-107.

The following compound-example-numbers showed in this test efficacy of 80-100% at a surface concentration of 4mg/m^2: I-019, I-034, I-035, I-036, I-037, I-038, I-040, I-041, I-042, I-043, I-044, I-045, I-050, I-063, I-066, I-067, I-068, I-069, I-070, I-073, I-075, I-078, I-089, I-091, I-092, I-093, I-100, I-104.

Anopheles funestus test (ANPHFU surface treatment & contact assay)

Solvent: Aceton + 2000ppm rapeseed oil methyl ester (RME)

In order to produce a sufficient, active ingredient containing solution it is necessary to solve the test-compound in the solvent-mix (Acetone at 2mg/ml / RME 2000ppm). This solution is pipetted onto a

glazed tile and after evaporation of the Acetone, adult mosquitoes of the species Anopheles funestus strain FUMOZ-R (Hunt et al., Med Vet Entomol. 2005 Sep; 19(3):271-5) are placed onto the dried surface. The exposure time is 30 minutes.

Mortality in percent (%) is determined 24 hours after contact to the treated surface. 100% mortality means that all test-insects are dead, wheras 0% means that not a single isect died.

The following compound-example-numbers showed in this test efficacy of 85-100% at a surface concentration of 20mg/m^2: I-001, I-024, I-025, I-041, I-042, I-045, I-049, I-066, I-068, I-070, I-073, I-078, I-091, I-100,

The following compound-example-numbers showed in this test efficacy of 85-100% at a surface concentration of 4mg/m^2: I-001, I-024, I-025, I-034, I-041, I-045, I-049, I-066, I-068, I-070, I-092, I-093, I-100,

Musca domestica test (MUSCDO surface treatment & contact assay)

Solvent: Aceton + 2000ppm rapeseed oil methyl ester (RME)

In order to produce a sufficient, active ingredient containing solution it is necessary to solve the test-compound in the solvent-mix (Acetone at 2mg/ml / RME 2000ppm). This solution is pipetted onto a glazed tile and after evaporation of the Acetone, adult flies of the species Musca domestica strain WHO-N are placed onto the dried surface. The exposure time is 30 minutes.

Mortality in percent (%) is determined 24 hours after contact to the treated surface. 100% mortality means that all test-insects are dead, whereas 0% means that not a single insect died.

The following compound-example-numbers showed in this test efficacy of 80-100% at a surface concentration of 20mg/m^2: I-019, I-025, I-035, I-040, I-042, I-043, I-045, I-050, I-053, I-054, I-066, I-067, I-068, I-069, I-070, I-073, I-074, I-075, I-078, I-100, I-104.

The following compound-example-numbers showed in this test efficacy of 80-100% at a surface concentration of 4mg/m^2: I-019, I-035, I-042, I-045, I-050, I-053, I-054, I-068, I-069, I-100, I-104.

Blattella germanica test (BLTTGE surface treatment & contact assay)

Solvent: Aceton + 2000ppm rapeseed oil methyl ester (RME)

In order to produce a sufficient, active ingredient containing solution it is necessary to solve the test-compound in the solvent-mix (Acetone at 2mg/ml / RME 2000ppm). This solution is pipetted onto a glazed tile and after evaporation of the Acetone, adult animals of the species Blattella germanica strain PAULINIA are placed onto the dried surface. The exposure time is 30 minutes.

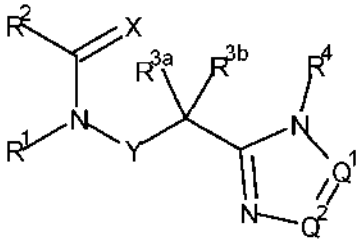
Mortality in percent (%) is determined 24 hours after contact to the treated surface. 100% mortality means that all test-insects are dead, whereas 0% means that not a single insect died.

The following compound-example-numbers showed in this test efficacy of 80-100% at a surface concentration of 20mg/m^2: I-035, I-036, I-037.

5

Claims:

1. Compound of the formula (I)



(I),

in which

X is O or S;

Q^1 and Q^2 are independently CR^5 or N, provided at least one of Q^1 and Q^2 is N;

Y is a direct bond or optionally substituted CH_2;

R^1 is hydrogen; C_1-C_6alkyl optionally substituted with one substituent selected from -CN, -$CONH_2$, -COOH, -NO_2 and -$Si(CH_3)_3$; C_1-C_6haloalkyl; C_2-C_6alkenyl; C_2-C_6haloalkenyl; C_2-C_6alkynyl; C_2-C_6haloalkynyl; C_3-C_4cycloalkyl-C_1-C_2alkyl- wherein the C_3-C_4cycloalkyl is optionally substituted with one or two halogen atoms; oxetan-3-yl-CH_2- or benzyl optionally substituted with halogen or C_1-C_3haloalkyl;

R^2 is phenyl, pyridine, pyrimidine, pyrazine or pyridazine, wherein the phenyl, pyridine, pyrimidine, pyrazine or pyridazine is substituted with one to five substituents, provided at least one substituent is on either carbon adjacent to the carbon bonded to the C=X group, each independently selected from the group consisting of

halogen, hydroxy, -NH_2, -CN, -SF_5, -COOH, -$CONH_2$, -NO_2,

and in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl, C_3-C_6cycloalkyl-C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_1-C_6haloalkylthio, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_1-C_6haloalkylsulfinyl, C_1-C_6haloalkylsulfonyl, phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, -NH(C_1-C_6alkyl), -N(C_1-C_6alkyl)$_2$, -NHCO-C_1-C_6alkyl, -N(C_1-C_6alkyl)CO-C_1-C_6alkyl, -NHCO-phenyl, -$CO_2$$C_1$-$C_6$alkyl, -CONH($C_1$-$C_6$alkyl), -CON($C_1$-$C_6$alkyl)$_2$, -CONH($C_3$-$C_6$cycloalkyl), -

$CON(C_1\text{-}C_6alkyl)(C_3\text{-}C_6cycloalkyl)$, $-C(=NOC_1\text{-}C_6alkyl)H$, $-C(=NOC_1\text{-}C_6alkyl)\text{-}C_1\text{-}C_6alkyl$;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, in each case optionally substituted $C_1\text{-}C_6alkyl$, $C_1\text{-}C_6haloalkyl$ and $C_1\text{-}C_6alkoxy$;

and an optionally substituted 4- to 6-membered saturated or partially unsaturated heterocyclic ring;

or

R^2 is phenyl, pyridine, pyrimidine, pyrazine or pyridazine, wherein the phenyl, pyridine, pyrimidine, pyrazine or pyridazine is substituted with a total of one to three substituents, provided the substituent(s) are not on either carbon adjacent to the carbon bonded to the C=X group and at least one and up to three substituent(s) are independently selected from group A consisting of

optionally substituted $C_4\text{-}C_6alkyl$;

$C_1\text{-}C_6alkylthio$, optionally substituted by one to three substituents independently selected from the group consisting of $-NH_2$, -OH, $-NO_2$, -CN, -SH, $CO_2C_1\text{-}C_4alkyl$, $-CONH_2$, SF_5, $-SO_2NH_2$, $C_1\text{-}C_4alkyl$, $C_3\text{-}C_4cycloalkyl$, $C_2\text{-}C_4alkenyl$, $C_5\text{-}C_6cycloalkenyl$, $C_2\text{-}C_4alkynyl$, $-NH(C_1\text{-}C_6alkyl)$, $-N(C_1\text{-}C_6alkyl)_2$, *N*-$C_1\text{-}C_4alkanoylamino$, $C_1\text{-}C_4alkoxy$, $C_1\text{-}C_4haloalkoxy$, $C_2\text{-}C_4alkenyloxy$, $C_2\text{-}C_4alkynyloxy$, $C_3\text{-}C_4cycloalkoxy$, $C_5\text{-}C_6cycloalkenyloxy$, $C_1\text{-}C_4alkoxycarbonyl$, $C_2\text{-}C_4alkenyloxycarbonyl$, $C_2\text{-}C_4alkynyloxycarbonyl$, $C_6\text{-},C_{10}\text{-},C_{14}\text{-}aryloxycarbonyl$, $C_1\text{-}C_4alkanoyl$, $C_2\text{-}C_4alkenylcarbonyl$, $C_2\text{-}C_4alkynylcarbonyl$, $C_6\text{-},C_{10}\text{-},C_{14}\text{-}arylcarbonyl$, $C_1\text{-}C_4alkylthio$, $C_1\text{-}C_4haloalkylthio$, $C_3\text{-}C_4cycloalkylthio$, $C_2\text{-}C_4alkenylthio$, $C_5\text{-}C_6cycloalkenylthio$, $C_2\text{-}C_4alkynylthio$, $C_1\text{-}C_4alkylsulfinyl$, $C_1\text{-}C_4haloalkylsulfinyl$, $C_1\text{-}C_4alkylsulfonyl$, $C_1\text{-}C_4haloalkylsulfonyl$, $-SO_2\text{-}NH(C_1\text{-}C_6alkyl)$, $-SO_2\text{-}N(C_1\text{-}C_6alkyl)_2$, $C_1\text{-}C_4alkylphosphinyl$, $C_1\text{-}C_4alkylphosphonyl$, *N*-$C_1\text{-}C_4alkylaminocarbonyl$, *N,N*-di-$C_1\text{-}C_4alkylaminocarbonyl$, *N*-$C_1\text{-}C_4alkanoylaminocarbonyl$, *N*-$C_1\text{-}C_4alkanoyl\text{-}N\text{-}C_1\text{-}C_4alkylaminocarbonyl$, $C_6\text{-},C_{10}\text{-},C_{14}\text{-}aryl$, $C_6\text{-},C_{10}\text{-},C_{14}\text{-}aryloxy$, benzyl, benzyloxy, benzylthio, $C_6\text{-},C_{10}\text{-},C_{14}\text{-}arylthio$, $C_6\text{-},C_{10}\text{-},C_{14}\text{-}arylamino$, benzylamino, heterocyclyl, heteroaryl and trialkylsilyl, substituents bonded via a double bond, such as $C_1\text{-}C_4alkylidene$ (e.g. methylidene or ethylidene), an oxo group, an imino group and a substituted imino group;

and in each case optionally substituted C_4-C_6haloalkylthio, C_4-C_6haloalkoxy, C_4-C_6alkoxy, C_4-C_6haloalkyl, C_3-C_6cycloalkyl, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_1-C_6haloalkylsulfinyl, C_1-C_6haloalkylsulfonyl, C_2-C_6alkenylsulfanyl, C_2-C_6alkenylsulfinyl, C_2-C_6alkenylsulfonyl, C_2-C_6alkinylsulfanyl, C_2-C_6alkinylsulfinyl, C_2-C_6alkinylsulfonyl, phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, heterocyclylsulfanyl, heterocyclylsulfinyl, heterocyclylsulfonyl, heteroarylsulfanyl, heteroarylsulfinyl, heteroarylsulfonyl, S-C_1-C_6alkylsulfinimidoyl, S-C_3-C_6cycloalkylsulfinimidoyl, S-C_2-C_6alkenylsulfinimidoyl, S-C_2-C_6alkinylsulfinimidoyl, S-phenylsulfinimidoyl, S-heterocyclylsulfinimidoyl, S-heteroarylsulfinimidoyl, S-C_1-C_6alkylsulfonimidoyl, S-C_3-C_6cycloalkylsulfonimidoyl, S-C_2-C_6alkenylsulfonimidoyl, S-C_2-C_6alkinylsulfonimidoyl, S-phenylsulfonimidoyl, S-heterocyclylsulfonimidoyl, S-heteroarylsulfonimidoyl, -NH(C_1-C_6alkyl), -N(C_1-C_6alkyl)$_2$, -NHCO-C_1-C_6alkyl, -N(C_1-C_6alkyl)CO-C_1-C_6alkyl, -N(C_3-C_6cycloalkyl)CO-C_1-C_6alkyl, -NHCO-phenyl, -N(C_1-C_6alkyl)CO-phenyl, -N(C_3-C_6cycloalkyl)CO-phenyl, -NHCO-C_3-C_6cycloalkyl, -N(C_1-C_6alkyl)CO-(C_3-C_6cycloalkyl), -N(C_3-C_6cycloalkyl)CO-(C_3-C_6cycloalkyl), -NHCO-heteroaryl, -N(C_1-C_6alkyl)CO-heteroaryl, -N(C_3-C_6cycloalkyl)CO-heteroaryl, -NHCO-heterocyclyl, -N(C_1-C_6alkyl)CO-heterocyclyl, -N(C_3-C_6cycloalkyl)CO-heterocyclyl, -$CO_2$$C_1$-$C_6$alkyl, -CONH($C_1$-$C_6$alkyl), -CON($C_1$-$C_6$alkyl)$_2$, -CONH($C_3$-$C_6$cycloalkyl), -CON($C_1$-$C_6$alkyl)($C_3$-$C_6$cycloalkyl), -CON($C_3$-$C_6$cycloalkyl)$_2$, -CONH-phenyl, -CON($C_1$-$C_6$alkyl)phenyl, -CON($C_3$-$C_6$cycloalkyl)phenyl, -CONH-heteroaryl, -CON(C_1-C_6alkyl)heteroaryl, -CON(C_3-C_6cycloalkyl)heteroaryl, -CONH-heterocyclyl, -CON(C_1-C_6alkyl)heterocyclyl, -CON(C_3-C_6cycloalkyl)heterocyclyl, -C(=NOC_1-C_6alkyl)H, -C(=NOC_1-C_6alkyl)-C_1-C_6alkyl, -NHSO$_2$-C_1-C_6alkyl, -N(C_1-C_6alkyl)SO$_2$-C_1-C_6alkyl, -N(C_3-C_6cycloalkyl)SO$_2$-C_1-C_6alkyl, -NHSO$_2$-phenyl, -N(C_1-C_6alkyl)SO$_2$-phenyl, -N(C_3-C_6cycloalkyl)SO$_2$-phenyl, -NHSO$_2$-C_3-C_6cycloalkyl, -N(C_1-C_6alkyl)SO$_2$-(C_3-C_6cycloalkyl), -N(C_3-C_6cycloalkyl)SO$_2$-(C_3-C_6cycloalkyl), -NHSO$_2$-heterocyclyl, -N(C_1-C_4alkyl)SO$_2$-heterocyclyl, -N(C_3-C_6cycloalkyl)SO$_2$-heterocyclyl, -NHSO$_2$-heteroaryl, -N(C_1-C_6alkyl)SO$_2$-heteroaryl, -N(C_3-C_6cycloalkyl)SO$_2$-heteroaryl, -SO$_2$NH(C_1-C_6alkyl), -SO$_2$N(C_1-C_6alkyl)$_2$, -SO$_2$N(C_1-C_6alkyl)(C_3-C_6cycloalkyl), -SO$_2$NH(C_3-C_6cycloalkyl), -SO$_2$N(C_3-C_6cycloalkyl)$_2$, -SO$_2$NH(phenyl), -SO$_2$N(C_1-C_6alkyl)(phenyl), -SO$_2$N(C_1-C_4cycloalkyl)(phenyl), -SO$_2$NH(heteroaryl), -SO$_2$N(C_1-C_6alkyl)(heteroaryl), -SO$_2$N(C_3-C_6cycloalkyl)(heteroaryl), -SO$_2$NH(heterocyclyl), -SO$_2$N(C_1-C_4alkyl)(heterocyclyl), -SO$_2$N(C_3-C_6cycloalkyl)(heterocyclyl);

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently

selected from the group consisting of halogen, -CN, in each case optionally substituted C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6alkoxy and C_1-C_6haloalkoxy;

and an optionally substituted 4- to 6-membered saturated or partially unsaturated heterocyclic ring;

and -SO_2NH_2;

and the other one to two optional substituent(s) are each independently selected from group B consisting of

halogen, hydroxy, -NH_2, -CN, -SF_5, -COOH, -$CONH_2$, -NO_2,

and in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl, C_3-C_6cycloalkyl-C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_1-C_6haloalkylthio, C_1-C_6haloalkylsulfinyl, C_1-C_6haloalkylsulfonyl, phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, -NH(C_1-C_6alkyl), -N(C_1-C_6alkyl)$_2$, -NHCO-C_1-C_6alkyl, -N(C_1-C_6alkyl)CO-C_1-C_6alkyl, -NHCO-phenyl, -CO_2C_1-C_6alkyl, -CONH(C_1-C_6alkyl), -CON(C_1-C_6alkyl)$_2$, -CONH(C_3-C_6cycloalkyl), -CON(C_1-C_6alkyl)(C_3-C_6cycloalkyl), -C(=NOC_1-C_6alkyl)H, -C(=NOC_1-C_6alkyl)-C_1-C_6alkyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, in each case optionally substituted C_1-C_6alkyl, C_1-C_6haloalkyl and C_1-C_6alkoxy;

or

R^2 is naphthyl optionally substituted by one to three substituents independently selected from the group consisting of

halogen, hydroxy, -CN, -COOH, -$CONH_2$, -NO_2, -SF_5, -NH_2,

and in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl, C_3-C_6cycloalkyl-C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_1-C_6haloalkylthio, C_1-C_6haloalkylsulfinyl, C_1-C_6haloalkylsulfonyl, phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, -NH(C_1-C_6alkyl), -N(C_1-C_6alkyl)$_2$, -NHCO-C_1-C_6alkyl, -N(C_1-C_6alkyl)CO-C_1-C_6alkyl, -NHCO-phenyl, -

CO_2C_1-C_6alkyl, -CONH(C_1-C_6alkyl), -CON(C_1-C_6alkyl)$_2$, -C(=NOC_1-C_6alkyl)H, -C(=NOC_1-C_6alkyl)-C_1-C_6alkyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, in each case optionally substituted C_1-C_6alkyl, C_1-C_6haloalkyl and C_1-C_6alkoxy;

or

R^2 is a heterocyclic ring which is selected from the group consisting of 4- to 10-membered saturated and partially unsaturated heterocyclyl, 5-membered heteroaryl, 9-membered heteroaryl and 10-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of

halogen, =O (oxo), hydroxy, -CN, -COOH, -$CONH_2$, -NO_2, -SF_5, -NH_2,

and in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl, C_3-C_6cycloalkyl-C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_1-C_6haloalkylthio, C_1-C_6haloalkylsulfinyl, C_1-C_6haloalkylsulfonyl, phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, -NH(C_1-C_6alkyl), -N(C_1-C_6alkyl)$_2$, -NHCO-C_1-C_6alkyl, -N(C_1-C_6alkyl)CO-C_1-C_6alkyl, -NHCO-phenyl, -CO_2C_1-C_6alkyl, -CONH(C_1-C_6alkyl), -CON(C_1-C_6alkyl)$_2$, -C(=NOC_1-C_6alkyl)H, -C(=NOC_1-C_6alkyl)-C_1-C_6alkyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, in each case optionally substituted C_1-C_6alkyl, C_1-C_6haloalkyl and C_1-C_6alkoxy;

or

R^2 is in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl or C_1-C_6haloalkyl;

R^{3a}, R^{3b} are independently selected from the group consisting of hydrogen; halogen; -CN; C_1-C_6alkyl optionally substituted by one to three substituents independently selected from the group consisting of halogen, hydroxy, -CN, -COOH, -$CONH_2$, -NO_2, -NH_2, in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_6alkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, -NH(C_1-C_6alkyl), -N(C_1-C_6alkyl)$_2$, -NHCO-C_1-C_6alkyl,

-N(C_1-C_6alkyl)CO-C_1-C_6alkyl, -$CO_2$$C_1$-$C_6$alkyl, -CONH($C_1$-$C_6$alkyl), and -CON($C_1$-$C_6$alkyl)$_2$; optionally substituted C_3-C_6cycloalkyl; optionally substituted C_1-C_6haloalkyl; optionally substituted C_2-C_6alkenyl; optionally substituted C_2-C_6haloalkenyl; optionally substituted C_2-C_6alkynyl; benzyl wherein the phenyl substituent is optionally substituted with one to five substituents, each independently selected from the group consisting of halogen, hydroxy, -CN, -COOH, -$CONH_2$, -NO_2, -NH_2, -SF_5, in each case optionally substituted C_1-C_6alkyl, C_1-C_6alkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, and C_1-C_6alkylsulfonyl; heterocyclyl-C_1-C_6alkyl wherein the heterocyclyl substituent is selected from the group consisting of 4- to 10-membered saturated and partially unsaturated heterocyclyl, 5-membered heteroaryl and 6-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of halogen, =O (oxo), hydroxy, -CN, -COOH, -$CONH_2$, -NO_2, -NH_2, in each case optionally substituted C_1-C_6alkyl, and C_1-C_6alkoxy; phenyl optionally substituted with one to five substituents, each independently selected from the group consisting of halogen, hydroxy, -CN, -COOH, -$CONH_2$, -NO_2, -NH_2, -SF_5, in each case optionally substituted C_1-C_6alkyl, C_1-C_6alkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, and C_1-C_6alkylsulfonyl; or heterocyclyl wherein the heterocyclyl substituent is selected from the group consisting of 4- to 10-membered saturated and partially unsaturated heterocyclyl, 5-membered heteroaryl and 6-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of halogen, =O (oxo), hydroxy, -CN, -COOH, -$CONH_2$, -NO_2, -NH_2, in each case optionally substituted C_1-C_6alkyl, and C_1-C_6alkoxy;

or

R^{3a}, R^{3b} form together with the carbon to which they are connected a C_3-C_6-carbocyclic or 3- to 6-membered heterocyclic ring system, optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, in each case optionally substituted C_1-C_6alkyl, C_1-C_6alkoxy and C_1-C_6haloalkoxy;

R^4 is pyridine, pyrimidine, pyrazine, pyridazine or 5-membered heteroaryl, wherein the pyridine, pyrimidine, pyrazine, pyridazine or 5-membered heteroaryl is optionally substituted with one to three substituents selected from the group consisting of halogen, hydroxy, -CN, -COOH, -CO_2-C_1-C_6alkyl, -SO_2NH_2, -$CONH_2$, -$CSNH_2$, -NO_2, -NH_2, in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_6haloalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_1-C_6haloalkylthio, C_1-C_6haloalkylsulfinyl, C_1-C_6haloalkylsulfonyl, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_2-C_4alkenylsulfanyl, C_2-

C_4alkenylsulfinyl, C_2-C_4alkenylsulfonyl, C_2-C_4alkinylsulfanyl, C_2-C_4alkinylsulfinyl, C_2-C_4alkinylsulfonyl, phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, S-C_1-C_6alkylsulfinimidoyl, S-C_3-C_6cycloalkylsulfinimidoyl, S-C_2-C_6alkenylsulfinimidoyl, S-C_2-C_6alkinylsulfinimidoyl, S-phenylsulfinimidoyl, S-C_1-C_6alkylsulfonimidoyl, S-C_3-C_6cycloalkylsulfonimidoyl, S-C_2-C_6alkenylsulfonimidoyl, S-C_2-C_6alkinylsulfonimidoyl, S-phenylsulfonimidoyl, -NH(C_1-C_6alkyl), -N(C_1-C_6alkyl)$_2$, -NHCO-C_1-C_6alkyl, -N(C_1-C_6alkyl)CO-C_1-C_6alkyl, -N(C_3-C_6cycloalkyl)CO-C_1-C_6alkyl, -NHCO-C_3-C_6cycloalkyl, -N(C_1-C_6alkyl)CO-(C_3-C_6cycloalkyl), -N(C_3-C_6cycloalkyl)CO-(C_3-C_6cycloalkyl), -N(C_1-C_6alkyl)CO-phenyl, -N(C_3-C_6cycloalkyl)CO-phenyl, -NHCO-phenyl, -N(CO-C_1-C_6alkyl)$_2$, -N(CO-C_3-C_6cycloalkyl)$_2$, -N(CO-phenyl)$_2$, -N(CO-C_3-C_6cycloalkyl)(CO-C_1-C_6alkyl), -N(CO-C_3-C_6cycloalkyl)(CO-phenyl), -N(CO-C_1-C_6alkyl)(CO-phenyl), -CONH(C_1-C_6alkyl), -CON(C_1-C_6alkyl)$_2$, -CONH(C_3-C_6cycloalkyl), -CON(C_1-C_6alkyl)(C_3-C_6cycloalkyl), -CON(C_3-C_6cycloalkyl)$_2$, -CONH-SO_2-C_1-C_6alkyl, -CONH-SO_2-phenyl, -CONH-SO_2-(C_3-C_6cycloalkyl), -CON(C_1-C_6alkyl)-SO_2-C_1-C_6alkyl, -CON(C_1-C_6alkyl)-SO_2-phenyl, -CON(C_1-C_6alkyl)-SO_2-(C_3-C_6cycloalkyl), -CONH-phenyl, -CON(C_1-C_6alkyl)phenyl, -CON(C_3-C_6cycloalkyl)phenyl, -N(SO_2C_1-C_6alkyl)$_2$, -N(SO_2C_1-C_6haloalkyl)$_2$, -N(SO_2C_3-C_6cycloalkyl)$_2$, -N(SO_2C_1-C_6alkyl)SO_2-phenyl, -N(SO_2C_3-C_6cycloalkyl)SO_2-phenyl, -NHSO_2-C_1-C_6alkyl, -NHSO_2-C_1-C_6haloalkyl, -N(C_1-C_6alkyl)SO_2-C_1-C_6alkyl, -N(C_3-C_6cycloalkyl)SO_2-C_1-C_6alkyl, -NHSO_2-phenyl, -N(C_1-C_6alkyl)SO_2-phenyl, -N(C_3-C_6cycloalkyl)SO_2-phenyl, -NHSO_2-C_3-C_6cycloalkyl, -N(C_1-C_6alkyl)SO_2-(C_3-C_6cycloalkyl), -N(C_3-C_6cycloalkyl)SO_2-(C_3-C_6cycloalkyl), -SO_2NH(C_1-C_6alkyl), -SO_2N(C_1-C_6alkyl)$_2$, -SO_2N(C_1-C_6alkyl)(C_3-C_6cycloalkyl), -SO_2NH(C_3-C_6cycloalkyl), -SO_2N(C_3-C_6cycloalkyl)$_2$, -SO_2NH(phenyl), -SO_2N(C_1-C_6alkyl)(phenyl), -SO_2N(C_1-C_4cycloalkyl)(phenyl), -C(=NOC_1-C_6alkyl)H and -C(=NOC_1-C_6alkyl)-C_1-C_6alkyl;

R^5 is hydrogen, halogen, -CN, or in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_6alkoxy, C_1-C_6alkoxyC(O)-, (C_1-C_6alkoxy)$_2$CH-, -CO_2C_1-C_6alkyl, -CONH(C_1-C_6alkyl), -CON(C_1-C_6alkyl)$_2$, -NHCO-C_1-C_6alkyl, -N(C_1-C_6alkyl)CO-C_1-C_6alkyl, -C(=NOC_1-C_6alkyl)H, or -C(=NOC_1-C_6alkyl)-C_1-C_6alkyl.

2. Compound according to Claim 1, in which

X is O or S;

Q^1 and Q^2 are independently CR^5 or N, provided at least one of Q^1 and Q^2 is N;

Y is a direct bond or CH_2;

R^1 is hydrogen; C_1-C_6alkyl optionally substituted with one substituent selected from -CN, -$CONH_2$, -COOH, -NO_2 and -$Si(CH_3)_3$; C_1-C_6haloalkyl; C_2-C_6alkenyl; C_2-C_6haloalkenyl; C_2-C_6alkynyl; C_2-C_6haloalkynyl; C_3-C_4cycloalkyl-C_1-C_2alkyl- wherein the C_3-C_4cycloalkyl is optionally substituted with one or two halogen atoms; oxetan-3-yl-CH_2-; or benzyl optionally substituted with halogen or C_1-C_3haloalkyl;

R^2 is phenyl, pyridine, pyrimidine, pyrazine or pyridazine, wherein the phenyl, pyridine, pyrimidine, pyrazine or pyridazine is substituted with one to five substituents, provided at least one substituent is on either carbon adjacent to the carbon bonded to the C=X group, each independently selected from the group consisting of

halogen, hydroxy, -NH_2, -CN, -SF_5, -COOH, -$CONH_2$, -NO_2, C_1-C_6alkyl,

optionally substituted C_3-C_6cycloalkyl;

C_3-C_6cycloalkyl-C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, wherein in each case the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl;

-NH(C_1-C_4alkyl), -N(C_1-C_4alkyl)$_2$, -NHCO-C_1-C_4alkyl, -N(C_1-C_4alkyl)CO-C_1-C_4alkyl;

-NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl;

-$CO_2$$C_1$-$C_4$alkyl, -CONH($C_1$-$C_4$alkyl), -CON($C_1$-$C_4$alkyl)$_2$, -CONH($C_3$-$C_6$cycloalkyl), -CON($C_1$-$C_4$alkyl)($C_3$-$C_6$cycloalkyl), -C(=NO$C_1$-$C_4$alkyl)H, -C(=NO$C_1$-$C_4$alkyl)-$C_1$-$C_4$alkyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

or

R^2 is phenyl, pyridine, pyrimidine, pyrazine or pyridazine, wherein the phenyl, pyridine, pyrimidine, pyrazine or pyridazine is substituted with a total of one to three substituents, provided the substituent(s) are not on either carbon adjacent to the carbon bonded to the C=X group and at least one and up to three substituent(s) are independently selected from group A consisting of

C_3-C_6-alkyl, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, wherein in each case the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl;

optionally substituted C_3-C_6cycloalkyl;

-NH(C_1-C_4alkyl), -N(C_1-C_4alkyl)$_2$, -NHCO-C_1-C_4alkyl, -N(C_1-C_4alkyl)CO-C_1-C_4alkyl, -NHCO-C_3-C_4cycloalkyl, -NHSO$_2$-phenyl;

-NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_6alkyl and C_1-C_3haloalkyl;

-CO$_2$$C_1$-$C_4$alkyl, -CONH($C_1$-$C_4$alkyl), -CON($C_1$-$C_4$alkyl)$_2$, -CONH($C_3$-$C_6$cycloalkyl), -CON($C_1$-$C_4$alkyl)($C_3$-$C_6$cycloalkyl), -C(=NO$C_1$-$C_4$alkyl)H, -C(=NO$C_1$-$C_4$alkyl)-$C_1$-$C_4$alkyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy and C_1-C_4haloalkoxy;

and the other one to two optional substituent(s) are each independently selected from group B consisting of

halogen, hydroxy, -NH$_2$, -CN, -SF$_5$, -COOH, -CONH$_2$, -NO$_2$, C_1-C_6alkyl,

optionally substituted C_3-C_6cycloalkyl;

C_3-C_6cycloalkyl-C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, wherein in each case the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl;

-NH(C_1-C_4alkyl), -N(C_1-C_4alkyl)$_2$, -NHCO-C_1-C_4alkyl, -N(C_1-C_4alkyl)CO-C_1-C_4alkyl; -NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl;

-$CO_2$$C_1$-$C_4$alkyl, -CONH($C_1$-$C_4$alkyl), -CON($C_1$-$C_4$alkyl)$_2$, -CONH($C_3$-$C_6$cycloalkyl), -CON($C_1$-$C_4$alkyl)($C_3$-$C_6$cycloalkyl), -C(=NO$C_1$-$C_4$alkyl)H, -C(=NO$C_1$-$C_4$alkyl)-$C_1$-$C_4$alkyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

or

R^2 is naphthyl optionally substituted by one to three substituents independently selected from the group consisting of

halogen, hydroxy, -CN, -COOH, -$CONH_2$, -NO_2, -SF_5, -NH_2, C_1-C_6alkyl,

optionally substituted C_3-C_6cycloalkyl;

C_3-C_6cycloalkyl-C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, wherein in each case the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl;

-NH(C_1-C_4alkyl), -N(C_1-C_4alkyl)$_2$, -NHCO-C_1-C_4alkyl, -N(C_1-C_4alkyl)CO-C_1-C_4alkyl;

-NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl;

-CO_2C_1-C_4alkyl, -CONH(C_1-C_4alkyl), -CON(C_1-C_4alkyl)$_2$, -C(=NOC_1-C_4alkyl)H, -C(=NOC_1-C_4alkyl)-C_1-C_4alkyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

or

R^2 is a heterocyclic ring which is selected from the group consisting of 4- to 10-membered saturated and partially unsaturated heterocyclyl, 5-membered heteroaryl, 9-membered heteroaryl and 10-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of

halogen, =O (oxo), hydroxy, -CN, -COOH, -$CONH_2$, -NO_2, -SF_5, -NH_2, C_1-C_6alkyl,

optionally substituted C_3-C_6cycloalkyl;

C_3-C_6cycloalkyl-C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, wherein in each case the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl;

-NH(C_1-C_4alkyl), -N(C_1-C_4alkyl)$_2$, -NHCO-C_1-C_4alkyl, -N(C_1-C_4alkyl)CO-C_1-C_4alkyl; -NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl;

-CO_2C_1-C_4alkyl, -CONH(C_1-C_4alkyl), -CON(C_1-C_4alkyl)$_2$, -C(=NOC_1-C_4alkyl)H, -C(=NOC_1-C_4alkyl)-C_1-C_4alkyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently

selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

or

R^2 is C_1-C_6alkyl substituted with one substituent selected from the group consisting of

C_1-C_3alkoxy-, C_1-C_3haloalkoxy-, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

C_3-C_6cycloalkyl optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, -COOH, -$CONH_2$, C_1-C_6alkyl, C_1-C_6haloalkyl, C_3-C_6cycloalkyl, C_1-C_6alkoxy, -CO_2C_1-C_4alkyl, -CONH(C_1-C_4alkyl), and -CON(C_1-C_4alkyl)$_2$;

and C_1-C_6haloalkyl;

R^{3a}, R^{3b} are independently selected from the group consisting of hydrogen; halogen; -CN; C_1-C_6alkyl optionally substituted by one to three substituents independently selected from the group consisting of hydroxy, -CN, -COOH, -$CONH_2$, -NO_2, -NH_2, C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl, -NH(C_1-C_4alkyl), -N(C_1-C_4alkyl)$_2$, -NHCO-C_1-C_4alkyl, -N(C_1-C_4alkyl)CO-C_1-C_4alkyl, -CO_2C_1-C_4alkyl, -CONH(C_1-C_4alkyl), and -CON(C_1-C_4alkyl)$_2$; C_3-C_6cycloalkyl optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, -COOH, -$CONH_2$, C_1-C_6alkyl, C_1-C_6haloalkyl, C_3-C_6cycloalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, -CO_2C_1-C_4alkyl, -CONH(C_1-C_4alkyl), and -CON(C_1-C_4alkyl)$_2$; C_1-C_6haloalkyl optionally substituted with one to two substituents selected from the group consisting of hydroxy, -CN, C_3-C_6cycloalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, -CO_2C_1-C_4alkyl, -CONH(C_1-C_4alkyl), and -CON(C_1-C_4alkyl)$_2$; C_2-C_6alkenyl; C_2-C_6haloalkenyl; C_2-C_6alkynyl; C_2-C_6haloalkynyl; benzyl wherein the phenyl substituent is optionally substituted with one to five substituents, each independently selected from the group consisting of halogen, hydroxy, -CN, -COOH, -$CONH_2$, -NO_2, -NH_2, -SF_5, C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, and C_1-

C_3haloalkylsulfonyl; heterocyclyl-C_1-C_6alkyl wherein the heterocyclyl substituent is selected from the group consisting of 4- to 10-membered saturated and partially unsaturated heterocyclyl, 5-membered heteroaryl and 6-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of halogen, =O (oxo), hydroxy, -CN, -COOH, $-CONH_2$, $-NO_2$, $-NH_2$, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy; phenyl optionally substituted with one to five substituents, each independently selected from the group consisting of halogen, hydroxy, -CN, -COOH, $-CONH_2$, $-NO_2$, $-NH_2$, $-SF_5$, C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, and C_1-C_3haloalkylsulfonyl; and heterocyclyl wherein the heterocyclyl substituent is selected from the group consisting of 4- to 10-membered saturated and partially unsaturated heterocyclyl, 5-membered heteroaryl and 6-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of halogen, =O (oxo), hydroxy, -CN, -COOH, $-CONH_2$, $-NO_2$, $-NH_2$, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

or

R^{3a}, R^{3b} form together with the carbon to which they are connected a C_3-C_6-carbocyclic or 3- to 6-membered heterocyclic ring system, optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy and C_1-C_3haloalkoxy;

R^4 is pyridine, pyrimidine, pyrazine, pyridazine or 5-membered heteroaryl, wherein the pyridine, pyrimidine, pyrazine, pyridazine or 5-membered heteroaryl is optionally substituted with one to three substituents selected from the group consisting of halogen, hydroxy, -CN, -COOH, $-CO_2$-C_1-C_6alkyl, $-CONH_2$, $-CSNH_2$, $-NO_2$, $-NH_2$, C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl, $-NH(C_1$-C_4alkyl), $-N(C_1$-C_4alkyl)$_2$, $-NHCO$-C_1-C_4alkyl, wherein the alkyl is optionally substituted with -CN, C_1-C_6alkyl and C_1-C_4alkoxy; -NHCO-C_1-C_3haloalkyl, -NHCO-C_3-C_6cycloalkyl, wherein the cycloalkyl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_6alkyl or C_1-C_4alkoxy; -NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_6alkyl and C_1-C_3haloalkyl; $-N(C_1$-C_4alkyl)CO-C_1-C_4alkyl, $-N(C_1$-C_4alkyl)CO-C_3-C_6cycloalkyl; $-N(C_1$-C_4alkyl)CO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-

C_3haloalkyl; -$N(SO_2C_1$-C_3alkyl)$_2$, -$NH(SO_2C_1$-C_3alkyl), -$N(C_1$-C_4alkyl)(SO_2C_1-C_3alkyl), -$N(SO_2C_1$-C_3haloalkyl)$_2$, -$NH(SO_2C_1$-C_3haloalkyl), -$CONH(C_1$-C_4alkyl), -$CON(C_1$-C_4alkyl)$_2$, -$CONH$-SO_2-C_1-C_3alkyl, -$CON(C_1$-C_4alkyl)(C_3-C_6cycloalkyl), -$CONH(C_1$-C_4haloalkyl), -$CONH(C_3$-C_6cycloalkyl), -$CONH(C_3$-C_6cyanocycloalkyl), -$C(=NOC_1$-C_4alkyl)H and -$C(=NOC_1$-C_4alkyl)-C_1-C_4alkyl; and -CONH-phenyl, wherein the phenyl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

R^5 is hydrogen, halogen, -CN, C_1-C_3alkyl, C_1-C_3haloalkyl, C_3-C_4cycloalkyl, C_1-C_3alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkoxyC(O)-, (C_1-C_3alkoxy)$_2$CH-, -CO_2C_1-C_4alkyl, -$CONH(C_1$-C_4alkyl), -$CON(C_1$-C_4alkyl)$_2$, -NHCO-C_1-C_4alkyl, -$N(C_1$-C_4alkyl)CO-C_1-C_4alkyl, -$C(=NOC_1$-C_4alkyl)H, or -$C(=NOC_1$-C_4alkyl)-C_1-C_4alkyl.

3. Compound according to Claim 1 or 2, in which

X is O or S;

Q^1 and Q^2 are independently CR^5 or N, provided at least one of Q^1 and Q^2 is N;

Y is a direct bond or CH_2;

R^1 is hydrogen; C_1-C_3alkyl optionally substituted with one substituent selected from -CN, -$CONH_2$, -COOH, -NO_2 and -$Si(CH_3)_3$; C_1-C_3haloalkyl; C_2-C_4alkenyl; C_2-C_4haloalkenyl; C_2-C_4alkynyl; C_2-C_4haloalkynyl; C_3-C_4cycloalkyl-C_1-C_2alkyl- wherein the C_3-C_4cycloalkyl is optionally substituted with one or two halogen atoms; oxetan-3-yl-CH_2-; or benzyl optionally substituted with halogen or C_1-C_3haloalkyl;

R^2 is phenyl, pyridine, pyrimidine, pyrazine or pyridazine, wherein the phenyl, pyridine, pyrimidine, pyrazine or pyridazine is substituted with one to five substituents, provided at least one substituent is on either carbon adjacent to the carbon bonded to the C=X group, each independently selected from the group consisting of

halogen, -CN, -NO_2, C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_3-C_4cycloalkylsulfanyl, C_3-C_4cycloalkylsulfinyl, C_3-C_4cycloalkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl and C_1-C_3haloalkyl;

or

R^2 is phenyl, pyridine, pyrimidine, pyrazine or pyridazine, wherein the phenyl, pyridine, pyrimidine, pyrazine or pyridazine is substituted with a total of one to three substituents, provided the substituent(s) are not on either carbon adjacent to the carbon bonded to the C=X group and at least one and up to two substituent(s) are independently selected from group A consisting of

C_4-alkyl, C_3-C_4cycloalkyl, wherein the C_3-C_4cycloalkyl is optionally substituted with -CN or halogen, C_1-C_4alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_3-C_4cycloalkylsulfanyl, C_3-C_4cycloalkylsulfinyl, C_3-C_4cycloalkylsulfonyl, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

and phenylsulfanyl wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl and C_1-C_3haloalkyl;

phenylsulfinyl wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl and C_1-C_3haloalkyl;

phenylsulfonyl wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl and C_1-C_3haloalkyl;

-NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl;

-NHCO-C_1-C_3alkyl, -NHCO-C_3-C_4cycloalkyl, -NHSO$_2$-phenyl;

-CONH(C_3-C_4cycloalkyl), -CON(C_1-C_3alkyl)(C_3-C_4cycloalkyl), -C(=NOC_1-C_3alkyl)-C_1-C_3alkyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl, C_1-C_3haloalkyl and C_1-C_3haloalkoxy;

and the other one to two optional substituent(s) are each independently selected from group B consisting of

halogen, -CN, -NO_2, C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl and 5- to 6-membered heteroaryl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl and C_1-C_3haloalkyl;

or

R^2 is thiophene, furane, pyrazole, thiazole, isothiazole, oxazole or isoxazole each of which is optionally substituted by one to three substituents independently selected from the group consisting of

halogen, hydroxy, -CN, -NO_2, C_1-C_6alkyl, C_3-C_4cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_3-C_4cycloalkylsulfanyl, C_3-C_4cycloalkylsulfinyl, C_3-C_4cycloalkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl and C_1-C_3haloalkyl

or

R^2 is C_1-C_6alkyl substituted with one substituent selected from the group consisting of

C_1-C_3alkoxy-, C_1-C_3haloalkoxy-, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

and phenyl, wherein the phenyl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

or

R^2 is naphthyl optionally substituted by one to three substituents independently selected from the group consisting of

halogen, hydroxy, -CN, -NO_2, C_1-C_6alkyl, C_3-C_4cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_3-

C_4cycloalkylsulfanyl, C_3-C_4cycloalkylsulfinyl, C_3-C_4cycloalkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl and C_1-C_3haloalkyl

or

R^2 is a 9-membered or 10-membered heteroaryl, which is optionally substituted by one to three substituents independently selected from the group consisting of

halogen, hydroxy, -CN, -NO_2, C_1-C_6alkyl, C_3-C_4cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_3-C_4cycloalkylsulfanyl, C_3-C_4cycloalkylsulfinyl, C_3-C_4cycloalkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl and C_1-C_3haloalkyl;

R^{3a}, R^{3b} are independently selected from the group consisting of hydrogen; C_1-C_6alkyl optionally substituted by one to three substituents independently selected from the group consisting of C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, and C_1-C_3haloalkylsulfonyl; C_3-C_6cycloalkyl; C_1-C_6haloalkyl; C_2-C_6alkenyl; C_2-C_6haloalkenyl; C_2-C_6alkynyl; C_2-C_6haloalkynyl; benzyl wherein the phenyl substituent is optionally substituted with one to three substituents independently selected from the group consisting of halogen, -CN, -NO_2, C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, and C_1-C_4haloalkoxy; or heterocyclyl-C_1-C_6alkyl wherein the heterocyclyl substituent is selected from the group consisting of 4 - to 10-membered heterocyclyl, 5-membered heteroaryl and 6-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of halogen, -CN, -NO_2, C_1-C_6alkyl, C_1-C_3haloalkyl, and C_1-C_4alkoxy; or phenyl optionally substituted with one substituent selected from the group consisting of halogen, -CN, -NO_2, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

or

R^{3a}, R^{3b} form together with the carbon to which they are connected a cyclopropane, cyclobutane, oxetane or tetrahydropyrane ring optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

R^4 is pyridine, pyrimidine, pyrazine, pyridazine or thiazole, wherein (A) the pyridine, pyrimidine, pyrazine or pyridazine is optionally substituted with one to three substituents selected from the group consisting of halogen, -CN, $-NH_2$, $-NO_2$, -COOH, $-CONH_2$, $-CSNH_2$, $-CO_2$-C_1-C_3alkyl, C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl, -NHCO-C_1-C_3alkyl, -NHCO-C_1-C_3haloalkyl, -NHCO-C_1-C_3cyanoalkyl, -NHCO-C_3-C_4cycloalkyl, wherein the cycloalkyl is optionally substituted with one to two substituents selected from the group consisting of fluorine, chlorine, -CN, C_1-C_6alkyl or C_1-C_4alkoxy; -NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl, C_1-C_3haloalkyl, C_1-C_3alkoxy and C_1-C_3haloalkoxy; $-NHSO_2$-C_1-C_3alkyl, $-NHSO_2$-C_1-C_3haloalkyl, -CONH(C_1-C_3alkyl), -CON(C_1-C_3alkyl)$_2$, -CONH-SO_2-C_1-C_3alkyl, -CON(C_1-C_3alkyl)(C_3-C_6cycloalkyl), -CONH(C_1-C_3haloalkyl), -CONH(C_3-C_6cycloalkyl), -CONH(1-cyano-C_3-C_6cycloalkyl), -CONH-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl, C_1-C_3haloalkyl, C_1-C_3alkoxy and C_1-C_3haloalkoxy;

and (B) the thiazole is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, $-NO_2$, C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl and C_1-C_3haloalkylsulfonyl;

R^5 is hydrogen, halogen, -CN, C_1-C_3alkyl, C_1-C_3haloalkyl, C_3-C_4cycloalkyl, or C_1-C_3alkoxy.

4. Compound according to any of Claims 1 to 3, in which

X is O or S;

Q^1 and Q^2 are independently CR^5 or N, provided at least one of Q^1 and Q^2 is N;

Y is a direct bond or CH_2;

R^1 is hydrogen; C_1-C_3alkyl optionally substituted with -CN, $-Si(CH_3)_3$ or one to three substituents selected from the group consisting of fluorine, chlorine or bromine; C_2-C_4alkenyl; C_2-C_4alkynyl; C_3-C_4cycloalkyl-C_1-C_2alkyl- wherein the C_3-C_4cycloalkyl is

optionally substituted with one to two substituents selected from the group consisting of fluorine, chlorine and bromine;

R^2 is phenyl or pyridine wherein the phenyl or pyridine is substituted with one to three substituents, provided at least one substituent is on either carbon adjacent to the carbon bonded to the C=X group, each independently selected from the group consisting of

fluorine, chlorine, bromine, -CN, $-NO_2$, methyl, cyclopropyl, difluoromethyl, trifluoromethyl, methoxy, trifluoromethoxy, difluoromethoxy, methylthio, methylsulfinyl, methylsulfonyl, ethylthio, ethylsulfinyl, ethylsulfonyl, isopropylthio, isopropylsulfinyl, isopropylsulfonyl, cyclopropylthio, cyclopropylsulfinyl, cyclopropylsulfonyl, difluoromethylthio, difluoromethylsulfinyl, difluoromethylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl, trifluoromethylsulfonyl,

and phenyl, wherein the phenyl is optionally substituted with one two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, difluoromethyl and trifluoromethyl;

or

R^2 is phenyl or pyridine, wherein the phenyl or pyridine is substituted with a total of one to three substituents, provided the substituent(s) are not on either carbon adjacent to the carbon bonded to the C=X group and one substituent is independently selected from group A consisting of

tert-butyl, cyclopropyl, 1-cyanocyclopropyl, methylthio, methylsulfinyl, methylsulfonyl, ethylthio, ethylsulfinyl, ethylsulfonyl, isopropylthio, isopropylsulfinyl, isopropylsulfonyl, tert-butylthio, tert-butylsulfinyl, tert-butylsulfonyl, cyclopropylthio, cyclopropylsulfinyl, cyclopropylsulfonyl, difluoromethylsulfinyl, difluoromethylsulfonyl, trifluoromethylsulfinyl, trifluoromethylsulfonyl, trifluoroethylsulfinyl, trifluoroethylsulfonyl;

phenylsulfonyl wherein the phenyl is optionally substituted with one two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, difluoromethyl and trifluoromethyl;

-NHCO-phenyl wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of fluorine, chlorine, CN, methyl and trifluoromethyl;

(cyclopropylamino)carbonyl, 1-(methoxyimino)ethyl, acetamido, (cyclopropylcarbonyl)amino, (phenylsulfonyl)amino;

and phenyl and 5-membered heteroaryl wherein the phenyl or 5-membered heteroaryl is optionally substituted with one two substituents selected from the group consisting of fluorine, chlorine bromine, -CN, difluoromethyl, trifluoromethyl and trifluoromethoxy;

and the other one to two optional substituent(s) are each independently selected from group B consisting of

fluorine, chlorine, bromine, -CN, $-NO_2$, methyl, cyclopropyl, difluoromethyl, trifluoromethyl, methoxy, trifluoromethoxy, difluoromethoxy, methylthio, methylsulfinyl, methylsulfonyl, difluoromethylthio, difluoromethylsulfinyl, difluoromethylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl, trifluoromethylsulfonyl

and phenyl, wherein the phenyl is optionally substituted with one two substituents selected from the group consisting of fluorine, chlorine bromine, -CN, difluoromethyl and trifluoromethyl;

or

R^2 is thiophene, furane, pyrazole, thiazole, oxazole or isoxazole each of which is optionally substituted by one to three substituents independently selected from the group consisting of of

fluorine, chlorine, bromine, -CN, $-NO_2$, methyl, cyclopropyl, difluoromethyl, trifluoromethyl, methoxy, trifluoromethoxy, difluoromethoxy, methylthio, methylsulfinyl, methylsulfonyl, difluoromethylthio, difluoromethylsulfinyl, difluoromethylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl, trifluoromethylsulfonyl

and phenyl, wherein the phenyl is optionally substituted with one two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, difluoromethyl and trifluoromethyl

or

R^2 is C_1-C_3alkyl substituted with one substituent selected from the group consisting of

methoxy, trifluoromethoxy, difluoromethoxy, methylthio, methylsulfinyl, methylsulfonyl, difluoromethylthio, difluoromethylsulfinyl, difluoromethylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl, trifluoromethylsulfonyl

and phenyl, wherein the phenyl is optionally substituted with one two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, difluoromethyl and trifluoromethyl

or

R^2 is naphthyl; or pyrazolo[1.5-a]pyridin-2-yl, optionally substituted with trifluoromethyl or chlorine;

R^{3a}, R^{3b} are independently selected from the group consisting of hydrogen; C_1-C_3alkyl optionally substituted by one to three substituents independently selected from the group consisting of methyl, ethyl, iso-propyl, n-propyl, cyclopropyl, cyclobutyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, difluoromethoxy, trifluoromethoxy, methylthio, methylsulfinyl, methylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl, and trifluoromethylsulfonyl; cyclopropyl, difluoromethyl, trifluoromethyl, difluoromethyl, trifluoromethyl, 2,2-difluoroethyl, 2,2,2-trifluoroethyl, ethinyl, 2-propen-1-yl and 2-propin-1-yl; benzyl wherein the phenyl substituent is optionally substituted with one to three substituents independently selected from the group consisting of fluorine, chlorine, bromine, -CN, NO_2, methyl, trifluoromethyl and methoxy; heterocyclyl-methyl wherein the heterocyclyl substituent is selected from the group consisting of 4 - to 10-membered heterocyclyl, 5-membered heteroaryl and 6-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of fluorine, chlorine, bromine, -CN, -NO_2, methyl, trifluoromethyl and methoxy; and phenyl optionally substituted with one substituent selected from the group consisting of fluorine, chlorine, bromine, -CN, -NO_2, methyl, trifluoromethyl and methoxy;

or

R^{3a}, R^{3b} form together with the carbon to which they are connected a cyclopropane, cyclobutane, oxetane or tetrahydropyrane ring;

R^4 is pyridine, pyrimidine, pyrazine or thiazole, wherein (A) the pyridine, pyrimidine or pyrazine is optionally substituted with one to three substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, -NH_2, -NO_2, -COOH, -$CONH_2$, -$CSNH_2$, -CO_2Me, methyl, ethyl, difluoromethyl, trifluoromethyl, pentafluoroethyl, cyclopropyl, methoxy, difluoromethoxy, trifluoromethoxy, methylthio, methylsulfinyl, methylsulfonyl,

difluoromethylthio, difluoromethylsulfinyl, difluoromethylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl, trifluoromethylsulfonyl, -NHCO-methyl, -NHCO-trifluoromethyl, -NHCO-CH_2CN, -NHCO-cyclopropyl, -NHCO-1-cyanocyclopropyl, -$NHSO_2$-methyl, -$NHSO_2$-trifluoromethyl, -NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, methyl, difluoromethyl, trifluoromethyl, methoxy, difluoromethoxy and trifluoromethoxy; -CONH-methyl, -CONH-SO_2-methyl, -CON-(N-methyl)-N-cyclopropyl, -CONH-difluoroethyl, -CONH-trifluoroethyl, -CONH-cyclopropyl, -CONH-1-cyanocyclopropyl, -CONH-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, methyl, difluoromethyl, trifluoromethyl, methoxy, difluoromethoxy and trifluoromethoxy;

and (B) the thiazole is optionally substituted with one to two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, -NO_2, methyl, ethyl, difluoromethyl, trifluoromethyl, pentafluoroethyl, cyclopropyl, methoxy, difluoromethoxy, trifluoromethoxy, methylthio, methylsulfinyl, methylsulfonyl, difluoromethylthio, difluoromethylsulfinyl, difluoromethylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl and trifluoromethylsulfonyl;

R^5 is hydrogen, fluorine, chlorine, bromine, -CN, methyl, ethyl, iso-propyl, difluoromethyl, trifluoromethyl, cyclopropyl, methoxy, or ethoxy.

5. Compound according to any of Claims 1 to 4, in which

X is O or S;

Q^1 is N

Q^2 is CR^5

Y is a direct bond or CH_2;

R^1 is hydrogen, methyl, ethyl, 2-(trimethylsilyl)ethyl, 2,2-difluoroethyl, 2,2,2-trifluoroethyl, 3,3,3-trifluoropropyl, or cyclopropyl-CH_2- ;

R^2 3-chloro-2-fluoro-5-(trifluoromethyl)phenyl, 3-chloro-5-(methylsulfonyl)phenyl, 3-methylsulfonyl-5-(trifluoromethyl)phenyl, 5-(methylsulfonyl)pyridin-3-yl, 3-(methylsulfonyl)phenyl, 3-(trifluoromethylsulfonyl)phenyl, 5-[(trifluoromethyl)sulfonyl]pyridin-3-yl, 3-chloro-5-[(cyclopropylamino)carbonyl]phenyl, 3-cyclopropyl-5-(trifluoromethyl)phenyl, 2,3,5-trichlorophenyl, 3-phenyl-5-

(trifluoromethyl)phenyl, [3-chloro-5-(trifluoromethyl)phenyl]methyl, 3-(4-fluorophenyl)-5-(trifluoromethyl)phenyl, 2-chlorophenyl, 2,5-dichlorophenyl, 2,3,4-trichlorophenyl, 2,3-dichlorophenyl, 2,4-dichlorophenyl, 2,6-difluorophenyl, 3-fluoro-5-(trifluoromethylsulfonyl)phenyl, 3-chloro-5-(trifluoromethylsulfonyl)phenyl, 5-chloro-3-thienyl, 3,4,5-trichloro-2-thienyl, 2,5-dichloro-3-thienyl, 4,5-dichloro-2-thienyl, 1-methyl-5-(trifluoromethyl)-1H-pyrazol-3-yl, 4-chloro-1-methyl-3-(trifluoromethyl)-1H-pyrazol-5-yl,5-methyl-1,2-oxazol-3-yl, 5-cyclopropyl-1,2-oxazol-3-yl, 3-chloro-1,2-oxazol-5-yl, 2-chloro-1,3-thiazol-5-yl, 1-methyl-1H-pyrazol-4-yl, 5-chloro-1-methyl-1H-pyrazol-4-yl, 3-chloro-5-cyclopropylsulfonylphenyl, 3-chloro-5-(4-fluorophenyl)sulfonylphenyl, 3-chloro-5-ethylsulfonylphenyl, 3-cyclopropyl-5-fluorophenyl, 3-chloro-5-(isopropylthio)phenyl, 3-chloro-5-(1H-pyrazol-1-yl)phenyl, 3-chloro-5-(1H-1,2,4-triazol-1-yl)phenyl, 3-tert-butyl-5-chlorophenyl, 3-tert-butyl-5-bromophenyl, 3-fluoro-5-cyclopropylphenyl, 3-chloro-5-cyclopropylphenyl, 3-chloro-5-isopropylsulfonylphenyl, 1-(4-fluorophenyl)-3-(trifluoromethyl)-1H-pyrazol-5-yl, 3-cyclopropyl-5-(trifluoromethoxy)phenyl, 4-(trifluoromethylsulfonyl)phenyl, 3-chloro-5-[1-(methoxyimino)ethyl]phenyl, 3-(tert-butylthio)-5-chlorophenyl, 1-(4-fluorophenyl)-1H-pyrazol-4-yl, 1-(4-fluorophenyl)-5-(trifluoromethyl)-1H-pyrazol-3-yl, 5-[4-(trifluoromethoxy)phenyl]pyridin-3-yl, 3-chloro-5-methylsulfanylphenyl, 3-chloro-5-methylsulfinylphenyl, 3-benzamido-5-chlorophenyl, 3-(tert-butylsulfonyl)-5-chlorophenyl, 5-[4-(trifluoromethyl)phenyl]-pyridin-3-yl, 5-[4-(trifluoromethoxy)phenyl]-pyridin-3-yl, 5-(4-chlorophenyl)pyridin-3-yl, 5-(4-fluorophenyl)pyridin-3-yl, 3-chloro-5-[(phenylsulfonyl)amino]phenyl, 3-acetamido-5-chlorophenyl, 3-chloro-5-[(cyclopropylcarbonyl)amino]phenyl, 3-chloro-5-[(2,2,2-trifluoroethyl)sulfinyl]phenyl, 3-chloro-5-[(2,2,2-trifluoroethyl)sulfonyl]phenyl, 3-chloro-5-[3-(trifluoromethyl)-1H-pyrazol-1-yl]phenyl, 3,5-bis(methylsulfonyl)phenyl, pyrazolo[1,5-a]pyridin-2-yl, 7-(trifluoromethyl)pyrazolo[1,5-a]pyridin-2-yl, 6-chloropyrazolo[1,5-a]pyridin-2-yl, naphth-2-yl, 3-[4'-(trifluoromethoxy)phenyl]-phenyl, 3-(4'-fluorophenyl)-5-(trifluoromethyl)phenyl or 3-chloro-5-(1-cyanocyclopropyl)phenyl;

R^{3a} is hydrogen, methyl or methoxymethyl;

R^{3b} is methyl or methoxymethyl if R^{3a} is hydrogen;

R^{3b} is hydrogen if R^{3a} is methyl or methoxymethyl;

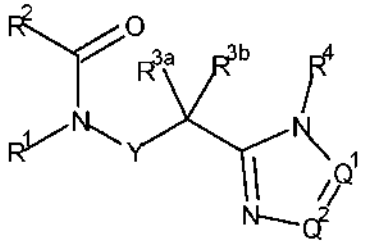
R^{3a} and R^{3b} form together with the carbon to which they are connected a cyclopropane ring;

R^4 is pyridin-2-yl, pyrimidin-2-yl, pyrimidin-4-yl, 5-fluoropyrimidin-2-yl, 5-chloropyrimidin-2-yl, 5-cyanopyrimidin-2-yl, 5-(trifluoromethyl)pyrimidin-2-yl, 5-methylpyrimidin-2-yl, 5-fluoropyridin-2-yl, 5-chloropyridin-2-yl, 2-chloropyridin-4-yl, 5-cyanopyridin-2-yl, 4-

cyano-pyridin-2-yl, 6-cyano-pyridin-2-yl, 5-methoxy-pyridin-2-yl, 5-(trifluoromethyl)-pyridin-2-yl, 5-(difluoromethoxy)pyridin-2-yl, 5-(trifluoromethylthio)pyridin-2-yl, 5-nitropyridin-2-yl, 5-aminopyridin-2-yl, 3,5-difluoropyridin-2-yl, 5-chloro-3-fluoropyridin-2-yl, pyridin-2-yl-5-carboxylic acid, methyl pyridin-2-yl-5-carboxylate, N-methyl-pyridin-2-yl-5-carboxamide, N-cyclopropyl-pyridin-2-yl-5-carboxamide, N-cyclopropyl-N-methyl-pyridin-2-yl-5-carboxamide, N-(1-cyanocyclopropyl)-pyridin-2-yl-5-carboxamide, N-(2,2-difluoroethyl)-pyridin-2-yl-5-carboxamide, N-(2,2,2-trifluoroethyl)-pyridin-2-yl-5-carboxamide, N-methylsulfonyl-pyridin-2-yl-5-carboxamide, N-(4-fluorophenyl)-pyridin-2-yl-5-carboxamide, 5-acetamidopyridin-2-yl, 5-(trifluoroacetamido)-pyridin-2-yl, 5-(2-cyanoacetylamino)-pyridin-2-yl, 5-[(cyclopropylcarbonyl)amino]pyridin-2-yl, 5-[(1-cyanocyclopropylcarbonyl)amino]-pyridin-2-yl, 5-(methanesulfonamido)-pyridin-2-yl, 5-(trifluoromethylsulfonamido)-pyridin-2-yl, 5-[(4-fluorobenzoyl)amino]pyridine-2-yl pyrazin-2-yl, 2-cyano-pyrazin-5-yl, or 1,3-thiazol-2-yl;

R^5 is hydrogen, methyl or trifluoromethyl.

6. Compound according to any of Claims 1 to 5, characterized in that it has a structure according to formula (I')



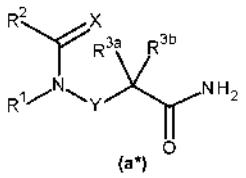
(I'),

in which the structural elements Y, Q^1, Q^2, R^1, R^2, R^{3a}, R^{3b}, R^4 and R^5 have the meanings given in Claim 1 or the meanings given in Claim 2 or the meanings given in Claim 3 or the meanings given in Claim 4 or the meanings given in Claim 5.

7. Compound according to any of Claims 1 to 6, in which Q^1 represents N or CR^5 and Q^2 represents N and all further structural elements Y, R^1, R^2, R^{3a}, R^{3b}, R^4 and R^5 have the meanings given in Claim 1 or the meanings given in Claim 2 or the meanings given in Claim 3 or the meanings given in Claim 4 or the meanings given in Claim 5.

8. Compound according to any of Claims 1 to 6, in Q^1 represents N and Q^2 represents CR^5 and all further structural elements Y, R^1, R^2, R^{3a}, R^{3b}, R^4 and R^5 have the meanings given in Claim 1 or the meanings given in Claim 2 or the meanings given in Claim 3 or the meanings given in Claim 4 or the meanings given in Claim 5.

9. Compound of the formula (a*)

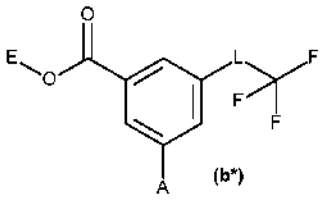


(a*)

,

in which the structural elements Y, R^1, R^2, R^{3a} and R^{3b} have the meanings given in Claim 1 or the meanings given in Claim 2 or the meanings given in Claim 3 or the meanings given in Claim 4 or the meanings given in Claim 5.

10. Compound of the formula (**b***), in which



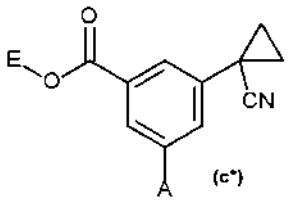
(b*)

E is hydrogen or C_1-C_6alkyl;

A is -CN, chlorine or fluorine;

L is S, SO or SO_2.

11. Compound of the formula (**c***), in which

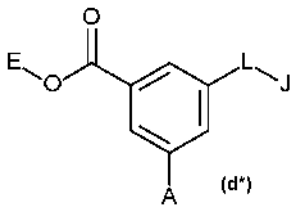


(c*)

E is hydrogen or C_1-C_6alkyl;

A is bromine, chlorine, fluorine, -CN or trifluoromethyl, preferably chlorine.

12. Compound of the formula (**d***), in which



(d*)

E is hydrogen or C_1-C_6alkyl;

A is bromine, chlorine or fluorine, preferably chlorine;

L is S, SO or SO_2, preferably S or SO_2, more preferably SO_2;

J is ethyl, iso-propyl, tert-butyl, cyclopropyl, 2,2,2-trifluoroethyl or 4-fluorophenyl;

and wherein the compound of formula (d*) is not 3-(ethylsulfanyl)-5-fluorobenzoic acid or 3-(tert-butylsulfanyl)-5-fluorobenzoic acid.

13. A compound which is selected from 3-cyclopropyl-5-(trifluoromethoxy)benzoic acid and methyl 3-cyclopropyl-5-(trifluoromethoxy)benzoate.

14. Formulation, especially agrochemical formulation, comprising at least one compound of the formula (I) according to any of Claims 1 to 8.

15. Formulation according to Claim 14, further comprising at least one extender and/or at least one surface-active substance.

16. Formulation according to Claim 14 or 15, characterized in that the compound of the formula (I) is in a mixture with at least one further active compound.

17. Method for controlling pests, especially animal pests, characterized in that a compound of the formula (I) according to any of Claims 1 to 8 or a formulation according to any of Claims 14 to 16 is allowed to act on the pests and/or their habitat.

18. Method according to Claim 17, characterized in that the pest is an animal pest and comprises an insect, an arachnid or a nematode, or in that the pest is an insect, an arachnid or a nematode.

19. Use of a compound of the formula (I) according to any of Claims 1 to 8 or of a formulation according to any of Claims 14 to 16 for controlling animal pests.

20. Use according to Claim 19, characterized in that the animal pest comprises an insect, an arachnid or a nematode, or in that the animal pest is an insect, an arachnid or a nematode.

21. Use according to Claim 19 or 20 in crop protection.

22. Use according to Claim 19 or 20 in the field of animal health.

23. Method for protecting seed or a germinating plant from pests, especially animal pests, comprising a method step in which the seed is contacted with a compound of the formula (I) according to any of Claims 1 to 8 or with a formulation according to any of Claims 14 to 16.

24. Seed obtained by a method according to Claim 23.