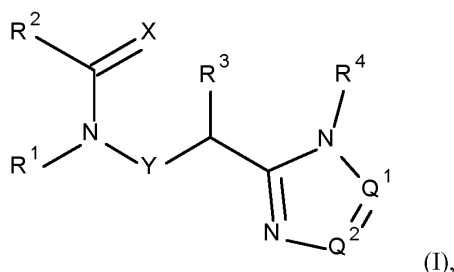


Claims:

1. Compound of the formula (I)



in which

- 5 X is O or S;

Q^1 and Q^2 are independently CR⁵ or N, provided at least one of Q^1 and Q^2 is N;

Y is a direct bond or CH₂;

- 10 R^1 is hydrogen; C₁-C₆alkyl optionally substituted with one substituent selected from -CN, -CONH₂, -COOH, -NO₂ and -Si(CH₃)₃; C₁-C₆haloalkyl; C₂-C₆alkenyl; C₂-C₆haloalkenyl; C₂-C₆alkynyl; C₂-C₆haloalkynyl; C₃-C₄cycloalkyl-C₁-C₂alkyl- wherein the C₃-C₄cycloalkyl is optionally substituted with one or two halogen atoms; oxetan-3-yl-CH₂- or benzyl optionally substituted with halogen atoms or C₁-C₃haloalkyl;

- 15 R^2 is phenyl, pyridine, pyrimidine, pyrazine or pyridazine, wherein the phenyl, pyridine, pyrimidine, pyrazine or pyridazine is optionally substituted with one to three substituents, provided the substituent(s) are not on either carbon adjacent to the carbon bonded to the C=X-group, each independently selected from the group consisting of C₁-C₃alkyl, C₁-C₃haloalkyl, C₁-C₃haloalkylthio, C₁-C₃alkoxy, C₁-C₃haloalkoxy, halogen, -NO₂, -SF₅, -CN, -CONH₂, -COOH and -C(S)NH₂;

R^3 is C₁-C₃alkyl or C₁-C₃haloalkyl;

- 20 R^4 is pyridine, pyrimidine, pyrazine or pyridazine, wherein the pyridine, pyrimidine, pyrazine or pyridazine is substituted with two to three substituents independently selected from the group consisting of

halogen, hydroxy, -CN, -COOH, -SO₂NH₂, -CONH₂, -CSNH₂, -NO₂, -SF₅, -NH₂;

and in each case optionally substituted C₁-C₆alkyl, C₃-C₆cycloalkyl, C₁-C₆haloalkyl, C₁-C₆alkoxy, C₁-C₆haloalkoxy, C₁-C₆alkylthio, C₁-C₆alkylsulfinyl, C₁-C₆alkylsulfonyl, C₃-C₆cycloalkylsulfanyl, C₃-C₆cycloalkylsulfinyl, C₃-C₆cycloalkylsulfonyl, C₁-C₆haloalkylthio, C₁-C₆haloalkylsulfinyl, C₁-C₆haloalkylsulfonyl, -NH(C₁-C₆alkyl), -N(C₁-C₆alkyl)₂, -NHCO-C₁-C₆alkyl, -N(C₁-C₆alkyl)CO-C₁-C₆alkyl, -CO₂C₁-C₆alkyl, -CONH(C₁-C₆alkyl), -CON(C₁-C₆alkyl)₂, -C(=NOC₁-C₆alkyl)H, -C(=NOC₁-C₆alkyl)-C₁-C₆alkyl, phenyl and 5- to 6-membered heteroaryl;

or

10 R⁴ is pyridine, pyrimidine, pyrazine or pyridazine, wherein the pyridine, pyrimidine, pyrazine or pyridazine is substituted with a total of one to three substituent(s), provided at least one and up to three substituent(s) are independently selected from group A consisting of

-CN, -COOH, -SO₂NH₂, -CONH₂, -CSNH₂, -NO₂, -SF₅, -NH₂, substituted C₃-C₄cycloalkyl;

15 and C₁-C₃alkyl and C₁-C₃alkoxy, both substituted by one to three substituents independently selected from the group consisting of -NH₂, -OH, -NO₂, -CN, -SH, CO₂C₁-C₄alkyl, -CONH₂, SF₅, -SO₂NH₂, C₃-C₄cycloalkyl, C₂-C₄alkenyl, C₅-C₆cycloalkenyl, C₂-C₄alkynyl, -NH(C₁-C₆alkyl), -N(C₁-C₆alkyl)₂, *N*-C₁-C₄alkanoylamino, C₁-C₄alkoxy, C₁-C₄haloalkoxy, C₂-C₄alkenyloxy, C₂-C₄alkynyloxy, C₃-C₄cycloalkoxy, C₅-C₆cycloalkenyloxy, C₁-C₄alkoxycarbonyl, C₂-C₄alkenyloxycarbonyl, C₂-C₄alkynyloxycarbonyl, C₆-, C₁₀-, C₁₄-aryloxycarbonyl, C₁-C₄alkanoyl, C₂-C₄alkenylcarbonyl, C₂-C₄alkynylcarbonyl, C₆-, C₁₀-, C₁₄-arylcarbonyl, C₁-C₄alkylthio, C₁-C₄haloalkylthio, C₃-C₄cycloalkylthio, C₂-C₄alkenylthio, C₅-C₆cycloalkenylthio, C₂-C₄alkynylthio, C₁-C₄alkylsulfinyl, C₁-C₄haloalkylsulfinyl, C₁-C₄alkylsulfonyl, C₁-C₄haloalkylsulfonyl, -SO₂-NH(C₁-C₆alkyl), -SO₂-N(C₁-C₆alkyl)₂, C₁-C₄alkylphosphinyl, C₁-C₄alkylphosphonyl, *N*-C₁-C₄alkylaminocarbonyl, *N,N*-di-C₁-C₄alkylaminocarbonyl, *N*-C₁-C₄alkanoylaminocarbonyl, *N*-C₁-C₄alkanoyl-*N*-C₁-C₄alkylaminocarbonyl, C₆-, C₁₀-, C₁₄-aryl, C₆-, C₁₀-, C₁₄-aryloxy, benzyl, benzyloxy, benzylthio, C₆-, C₁₀-, C₁₄-arylthio, C₆-, C₁₀-, C₁₄-arylamino, benzylamino, heterocyclyl, heteroaryl and trialkylsilyl, and substituents bonded via a double bond, such as C₁-C₄alkylidene (e.g. methylenidene or ethylenidene), an oxo group, an imino group and a substituted imino group;

and in each case optionally substituted -CO₂-C₁-C₆alkyl, C₅-C₆cycloalkyl, C₄-C₆alkyl, C₄-C₆haloalkyl, C₄-C₆alkoxy, C₁-C₆haloalkoxy, C₁-C₆alkylthio, C₁-

C₆alkylsulfinyl, C₁-C₆alkylsulfonyl, C₃-C₆cycloalkylsulfanyl, C₃-
 C₆cycloalkylsulfinyl, C₃-C₆cycloalkylsulfonyl, C₁-C₆haloalkylthio, C₁-
 C₆haloalkylsulfinyl, C₁-C₆haloalkylsulfonyl, C₂-C₄alkenylsulfanyl, C₂-
 C₄alkenylsulfinyl, C₂-C₄alkenylsulfonyl, C₂-C₄alkinylsulfanyl, C₂-C₄alkinylsulfinyl,
 5 C₂-C₄alkinylsulfonyl, phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, S-C₁-
 C₆alkylsulfinimidoyl, S-C₃-C₆cycloalkylsulfinimidoyl, S-C₂-C₆alkenylsulfinimidoyl,
 S-C₂-C₆alkinylsulfinimidoyl, S-phenylsulfinimidoyl, S-C₁-C₆alkylsulfonimidoyl, S-
 C₃-C₆cycloalkylsulfonimidoyl, S-C₂-C₆alkenylsulfonimidoyl, S-C₂-
 C₆alkinylsulfonimidoyl, S-phenylsulfonimidoyl, -NH(C₁-C₆alkyl), -N(C₁-C₆alkyl)₂, -
 10 NHCO-C₁-C₆alkyl, -N(C₁-C₆alkyl)CO-C₁-C₆alkyl, -N(C₃-C₆cycloalkyl)CO-C₁-
 C₆alkyl, -NHCO-C₃-C₆cycloalkyl, -NHCO-C₁-C₆alkyl-C₃-C₆cycloalkyl, -N(C₁-
 C₆alkyl)CO-(C₃-C₆cycloalkyl), -N(C₃-C₆cycloalkyl)CO-(C₃-C₆cycloalkyl), -N(C₁-
 C₆alkyl)CO-phenyl, -N(C₃-C₆cycloalkyl)CO-phenyl, -NHCO-phenyl, -N(CO-C₁-
 C₆alkyl)₂, -N(CO-C₃-C₆cycloalkyl)₂, -N(CO-phenyl)₂, -N(CO-C₃-C₆cycloalkyl)(CO-
 15 C₁-C₆alkyl), -N(CO-C₃-C₆cycloalkyl)(CO-phenyl), -N(CO-C₁-C₆alkyl)(CO-phenyl),
 -CONH(C₁-C₆alkyl), -CON(C₁-C₆alkyl)₂, -CONH(C₃-C₆cycloalkyl), -CON(C₁-
 C₆alkyl)(C₃-C₆cycloalkyl), -CON(C₃-C₆cycloalkyl)₂, -CONH-SO₂-C₁-C₆alkyl, -
 CONH-SO₂-phenyl, -CONH-SO₂-(C₃-C₆cycloalkyl), -CON(C₁-C₆alkyl)-SO₂-C₁-
 C₆alkyl, -CON(C₁-C₆alkyl)-SO₂-phenyl, -CON(C₁-C₆alkyl)-SO₂-(C₃-C₆cycloalkyl), -
 20 CONH-phenyl, -CON(C₁-C₆alkyl)phenyl, -CON(C₃-C₆cycloalkyl)phenyl, -N(SO₂C₁-
 C₆alkyl)₂, -N(SO₂C₁-C₆haloalkyl)₂, -N(SO₂C₃-C₆cycloalkyl)₂, -N(SO₂C₁-
 C₆alkyl)SO₂-phenyl, -N(SO₂C₃-C₆cycloalkyl)SO₂-phenyl, -NHSO₂-C₁-C₆alkyl, -
 NHSO₂-C₁-C₆haloalkyl, -N(C₁-C₆alkyl)SO₂-C₁-C₆alkyl, -N(C₃-C₆cycloalkyl)SO₂-C₁-
 C₆alkyl, -NHSO₂-phenyl, -N(C₁-C₆alkyl)SO₂-phenyl, -N(C₃-C₆cycloalkyl)SO₂-
 25 phenyl, -NHSO₂-C₃-C₆cycloalkyl, -N(C₁-C₆alkyl)SO₂-(C₃-C₆cycloalkyl), -N(C₃-
 C₆cycloalkyl)SO₂-(C₃-C₆cycloalkyl), -SO₂NH(C₁-C₆alkyl), -SO₂N(C₁-C₆alkyl)₂, -
 SO₂N(C₁-C₆alkyl)(C₃-C₆cycloalkyl), -SO₂NH(C₃-C₆cycloalkyl), -SO₂N(C₃-
 C₆cycloalkyl)₂, -SO₂NH(phenyl), -SO₂N(C₁-C₆alkyl)(phenyl), -SO₂N(C₁-
 C₄cycloalkyl)(phenyl), -NHCS-C₁-C₆alkyl, -N(C₁-C₆alkyl)CS-C₁-C₆alkyl, -N(C₃-
 30 C₆cycloalkyl)CS-C₁-C₆alkyl, -NHCS-C₃-C₆cycloalkyl, -N(C₁-C₆alkyl)CS-(C₃-
 C₆cycloalkyl), -N(C₃-C₆cycloalkyl)CS-(C₃-C₆cycloalkyl), -N(C₁-C₆alkyl)CS-phenyl,
 -N(C₃-C₆cycloalkyl)CS-phenyl, -NHCS-phenyl, -CSNH(C₁-C₆alkyl), -CSN(C₁-
 C₆alkyl)₂, -CSNH(C₃-C₆cycloalkyl), -CSN(C₁-C₆alkyl)(C₃-C₆cycloalkyl), -CSN(C₃-
 C₆cycloalkyl)₂, -CSNH-phenyl, -CSN(C₁-C₆alkyl)phenyl, -CSN(C₃-
 35 C₆cycloalkyl)phenyl, -C(=NOC₁-C₆alkyl)H, -C(=NOC₁-C₆alkyl)-C₁-C₆alkyl, phenyl
 and 5- to 6-membered heteroaryl;

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

halogen, hydroxy, -CN, -COOH, -CONH₂, -NO₂, -NH₂;

and in each case optionally substituted C₁-C₆alkyl, C₃-C₆cycloalkyl, C₁-C₆haloalkyl, C₁-C₆alkoxy, C₁-C₆haloalkoxy, C₁-C₆alkylthio, C₁-C₆alkylsulfinyl, C₁-C₆alkylsulfonyl, C₁-C₆haloalkylthio, C₁-C₆haloalkylsulfinyl, C₁-C₆haloalkylsulfonyl, -NH(C₁-C₆alkyl), -N(C₁-C₆alkyl)₂, -NHCO-C₁-C₆alkyl, -N(C₁-C₆alkyl)CO-C₁-C₆alkyl, -CO₂C₁-C₆alkyl, -CONH(C₁-C₆alkyl), -CON(C₁-C₆alkyl)₂, -C(=NOC₁-C₆alkyl)H, -C(=NOC₁-C₆alkyl)-C₁-C₆alkyl, phenyl and 5- to 6-membered heteroaryl;

or

R⁴ is a 5-membered heteroaryl optionally substituted with one to three substituents independently selected from the group consisting of

halogen, hydroxy, -CN, -COOH, -CONH₂, -CSNH₂, -SO₂NH₂, -NO₂, -SF₅, -NH₂;

and in each case optionally substituted -CO₂-C₁-C₆alkyl, C₁-C₆alkyl, C₃-C₆cycloalkyl, C₁-C₆haloalkyl, C₁-C₆alkoxy, C₁-C₆haloalkoxy, C₁-C₆alkylthio, C₁-C₆alkylsulfinyl, C₁-C₆alkylsulfonyl, C₃-C₆cycloalkylsulfinyl, C₃-C₆cycloalkylsulfonyl, C₁-C₆haloalkylthio, C₁-C₆haloalkylsulfinyl, C₁-C₆haloalkylsulfonyl, C₂-C₄alkenylsulfinyl, C₂-C₄alkenylsulfonyl, C₂-C₄alkinylsulfinyl, C₂-C₄alkinylsulfonyl, phenylsulfinyl, phenylsulfonyl, S-C₁-C₆alkylsulfinimidoyl, S-C₃-C₆cycloalkylsulfinimidoyl, S-C₂-C₆alkenylsulfinimidoyl, S-C₂-C₆alkinylsulfinimidoyl, S-phenylsulfinimidoyl, S-C₁-C₆alkylsulfonimidoyl, S-C₃-C₆cycloalkylsulfonimidoyl, S-C₂-C₆alkenylsulfonimidoyl, S-C₂-C₆alkinylsulfonimidoyl, S-phenylsulfonimidoyl, -NH(C₁-C₆alkyl), -N(C₁-C₆alkyl)₂, -NHCO-C₁-C₆alkyl, -N(C₁-C₆alkyl)CO-C₁-C₆alkyl, -N(C₃-C₆cycloalkyl)CO-C₁-C₆alkyl, -NHCO-C₃-C₆cycloalkyl, -N(C₁-C₆alkyl)CO-(C₃-C₆cycloalkyl), -N(C₃-C₆cycloalkyl)CO-(C₃-C₆cycloalkyl), -N(C₁-C₆alkyl)CO-phenyl, -N(C₃-C₆cycloalkyl)CO-phenyl, -NHCO-phenyl, -N(CO-C₁-C₆alkyl)₂, -N(CO-C₃-C₆cycloalkyl)₂, -N(CO-phenyl)₂, -N(CO-C₃-C₆cycloalkyl)(CO-C₁-C₆alkyl), -N(CO-C₃-C₆cycloalkyl)(CO-phenyl), -N(CO-C₁-C₆alkyl)(CO-phenyl), -CONH(C₁-C₆alkyl), -CON(C₁-C₆alkyl)₂, -CONH(C₃-C₆cycloalkyl), -CON(C₁-C₆alkyl)(C₃-C₆cycloalkyl), -CON(C₃-C₆cycloalkyl)₂, -CONH-SO₂-C₁-C₆alkyl, -CONH-SO₂-phenyl, -CONH-SO₂-(C₃-C₆cycloalkyl), -CON(C₁-C₆alkyl)-SO₂-C₁-C₆alkyl, -CON(C₁-C₆alkyl)-SO₂-

phenyl, -CON(C₁-C₆alkyl)-SO₂-(C₃-C₆cycloalkyl), -CONH-phenyl, -CON(C₁-C₆alkyl)phenyl, -CON(C₃-C₆cycloalkyl)phenyl, -N(SO₂C₁-C₆alkyl)₂, -N(SO₂C₁-C₆haloalkyl)₂, -N(SO₂C₃-C₆cycloalkyl)₂, -N(SO₂C₁-C₆alkyl)SO₂-phenyl, -N(SO₂C₃-C₆cycloalkyl)SO₂-phenyl, -NHSO₂-C₁-C₆alkyl, -NHSO₂-C₁-C₆haloalkyl, -N(C₁-C₆alkyl)SO₂-C₁-C₆alkyl, -N(C₃-C₆cycloalkyl)SO₂-C₁-C₆alkyl, -NHSO₂-phenyl, -N(C₁-C₆alkyl)SO₂-phenyl, -N(C₃-C₆cycloalkyl)SO₂-phenyl, -NHSO₂-C₃-C₆cycloalkyl, -N(C₁-C₆alkyl)SO₂-(C₃-C₆cycloalkyl), -N(C₃-C₆cycloalkyl)SO₂-(C₃-C₆cycloalkyl), -SO₂NH(C₁-C₆alkyl), -SO₂N(C₁-C₆alkyl)₂, -SO₂N(C₁-C₆alkyl)(C₃-C₆cycloalkyl), -SO₂NH(C₃-C₆cycloalkyl), -SO₂N(C₃-C₆cycloalkyl)₂, -SO₂NH(phenyl), -SO₂N(C₁-C₆alkyl)(phenyl), -SO₂N(C₁-C₄cycloalkyl)(phenyl), -NHCS-C₁-C₆alkyl, -N(C₁-C₆alkyl)CS-C₁-C₆alkyl, -N(C₃-C₆cycloalkyl)CS-C₁-C₆alkyl, -NHCS-C₃-C₆cycloalkyl, -N(C₁-C₆alkyl)CS-(C₃-C₆cycloalkyl), -N(C₃-C₆cycloalkyl)CS-(C₃-C₆cycloalkyl), -N(C₁-C₆alkyl)CS-phenyl, -N(C₃-C₆cycloalkyl)CS-phenyl, -NHCS-phenyl, -CSNH(C₁-C₆alkyl), -CSN(C₁-C₆alkyl)₂, -CSNH(C₃-C₆cycloalkyl), -CSN(C₁-C₆alkyl)(C₃-C₆cycloalkyl), -CSN(C₃-C₆cycloalkyl)₂, -CSNH-phenyl, -CSN(C₁-C₆alkyl)phenyl, -CSN(C₃-C₆cycloalkyl)phenyl, -C(=NOC₁-C₆alkyl)H, -C(=NOC₁-C₆alkyl)-C₁-C₆alkyl, phenyl and 5- to 6-membered heteroaryl;

or

20 R⁴ is a heterocyclic ring which is selected from the group consisting of 4- to 10-membered saturated or partially unsaturated heterocyclyl, 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

25 halogen, =O (oxo), hydroxy, -CN, -COOH, -SO₂NH₂, -CONH₂, -CSNH₂, -NO₂, -SF₅, -NH₂;

and in each case optionally substituted -CO₂-C₁-C₆alkyl, C₁-C₆alkyl, C₃-C₆cycloalkyl, C₃-C₆cycloalkyl-C₁-C₆alkyl, C₁-C₆haloalkyl, C₁-C₆alkoxy, C₁-C₆haloalkoxy, C₁-C₆alkylthio, C₁-C₆alkylsulfinyl, C₁-C₆alkylsulfonyl, C₃-C₆cycloalkylsulfonyl, C₃-C₆cycloalkylsulfinyl, C₃-C₆cycloalkylsulfonyl, C₁-C₆haloalkylthio, C₁-C₆haloalkylsulfinyl, C₁-C₆haloalkylsulfonyl, C₂-C₄alkenylsulfonyl, C₂-C₄alkenylsulfinyl, C₂-C₄alkenylsulfonyl, C₂-C₄alkenylsulfonyl, C₂-C₄alkenylsulfinyl, C₂-C₄alkenylsulfonyl, phenylsulfonyl, phenylsulfinyl, phenylsulfonyl, S-C₁-C₆alkylsulfinimidoyl, S-C₃-C₆cycloalkylsulfinimidoyl, S-C₂-C₆alkenylsulfinimidoyl, S-C₂-C₆alkenylsulfinimidoyl, S-phenylsulfinimidoyl, S-C₁-C₆alkylsulfonimidoyl, S-C₃-C₆cycloalkylsulfonimidoyl, S-C₂-

C₆alkenylsulfonimidoyl, S-C₂-C₆alkinylsulfonimidoyl, S-phenylsulfonimidoyl, -
 NH(C₁-C₆alkyl), -N(C₁-C₆alkyl)₂, -NHCO-C₁-C₆alkyl, -N(C₁-C₆alkyl)CO-C₁-
 C₆alkyl, -N(C₃-C₆cycloalkyl)CO-C₁-C₆alkyl, -NHCO-C₃-C₆cycloalkyl, -N(C₁-
 C₆alkyl)CO-(C₃-C₆cycloalkyl), -N(C₃-C₆cycloalkyl)CO-(C₃-C₆cycloalkyl), -N(C₁-
 C₆alkyl)CO-phenyl, -N(C₃-C₆cycloalkyl)CO-phenyl, -NHCO-phenyl, -N(CO-C₁-
 C₆alkyl)₂, -N(CO-C₃-C₆cycloalkyl)₂, -N(CO-phenyl)₂, -N(CO-C₃-C₆cycloalkyl)(CO-
 C₁-C₆alkyl), -N(CO-C₃-C₆cycloalkyl)(CO-phenyl), -N(CO-C₁-C₆alkyl)(CO-phenyl),
 -CONH(C₁-C₆alkyl), -CON(C₁-C₆alkyl)₂, -CONH(C₃-C₆cycloalkyl), -CON(C₁-
 C₆alkyl)(C₃-C₆cycloalkyl), -CON(C₃-C₆cycloalkyl)₂, -CONH-SO₂-C₁-C₆alkyl, -
 CONH-SO₂-phenyl, -CONH-SO₂-(C₃-C₆cycloalkyl), -CON(C₁-C₆alkyl)-SO₂-C₁-
 C₆alkyl, -CON(C₁-C₆alkyl)-SO₂-phenyl, -CON(C₁-C₆alkyl)-SO₂-(C₃-C₆cycloalkyl), -
 CONH-phenyl, -CON(C₁-C₆alkyl)phenyl, -CON(C₃-C₆cycloalkyl)phenyl, -N(SO₂C₁-
 C₆alkyl)₂, -N(SO₂C₁-C₆haloalkyl)₂, -N(SO₂C₃-C₆cycloalkyl)₂, -N(SO₂C₁-
 C₆alkyl)SO₂-phenyl, -N(SO₂C₃-C₆cycloalkyl)SO₂-phenyl, -NHSO₂-C₁-C₆alkyl, -
 NHSO₂-C₁-C₆haloalkyl, -N(C₁-C₆alkyl)SO₂-C₁-C₆alkyl, -N(C₃-C₆cycloalkyl)SO₂-C₁-
 C₆alkyl, -NHSO₂-phenyl, -N(C₁-C₆alkyl)SO₂-phenyl, -N(C₃-C₆cycloalkyl)SO₂-
 phenyl, -NHSO₂-C₃-C₆cycloalkyl, -N(C₁-C₆alkyl)SO₂-(C₃-C₆cycloalkyl), -N(C₃-
 C₆cycloalkyl)SO₂-(C₃-C₆cycloalkyl), -SO₂NH(C₁-C₆alkyl), -SO₂N(C₁-C₆alkyl)₂, -
 SO₂N(C₁-C₆alkyl)(C₃-C₆cycloalkyl), -SO₂NH(C₃-C₆cycloalkyl), -SO₂N(C₃-
 C₆cycloalkyl)₂, -SO₂NH(phenyl), -SO₂N(C₁-C₆alkyl)(phenyl), -SO₂N(C₁-
 C₄cycloalkyl)(phenyl), -NHCS-C₁-C₆alkyl, -N(C₁-C₆alkyl)CS-C₁-C₆alkyl, -N(C₃-
 C₆cycloalkyl)CS-C₁-C₆alkyl, -NHCS-C₃-C₆cycloalkyl, -N(C₁-C₆alkyl)CS-(C₃-
 C₆cycloalkyl), -N(C₃-C₆cycloalkyl)CS-(C₃-C₆cycloalkyl), -N(C₁-C₆alkyl)CS-phenyl,
 -N(C₃-C₆cycloalkyl)CS-phenyl, -NHCS-phenyl, -CSNH(C₁-C₆alkyl), -CSN(C₁-
 C₆alkyl)₂, -CSNH(C₃-C₆cycloalkyl), -CSN(C₁-C₆alkyl)(C₃-C₆cycloalkyl), -CSN(C₃-
 C₆cycloalkyl)₂, -CSNH-phenyl, -CSN(C₁-C₆alkyl)phenyl, -CSN(C₃-
 C₆cycloalkyl)phenyl, -C(=NOC₁-C₆alkyl)H, -C(=NOC₁-C₆alkyl)-C₁-C₆alkyl, phenyl
 and 5- to 6-membered heteroaryl;

R⁵ is hydrogen, halogen, -CN, or in each case optionally substituted C₁-C₆alkyl, C₃-
 C₆cycloalkyl, C₁-C₆alkoxy, -C(O)C₁-C₆alkoxy, -CH(C₁-C₆alkoxy)₂, -CO₂C₁-C₆alkyl, -
 CONH(C₁-C₆alkyl), -CON(C₁-C₆alkyl)₂, -NHCO-C₁-C₆alkyl, -N(C₁-C₆alkyl)CO-C₁-
 C₆alkyl, -C(=NOC₁-C₆alkyl)H, or -C(=NOC₁-C₆alkyl)-C₁-C₆alkyl.

2. Compound according to Claim 1, in which

X is O or S;

35 Q¹ and Q² are independently CR⁵ or N, provided at least one of Q¹ and Q² is N;

- Y is a direct bond or CH₂;
- R¹ is hydrogen; C₁-C₆alkyl optionally substituted with one substituent selected from -CN, -CONH₂, -COOH, -NO₂ and -Si(CH₃)₃; C₁-C₆haloalkyl; C₂-C₆alkenyl; C₂-C₆haloalkenyl; C₂-C₆alkynyl; C₂-C₆haloalkynyl; C₃-C₄cycloalkyl-C₁-C₂alkyl- wherein the C₃-C₄cycloalkyl is optionally substituted with one or two halogen atoms; oxetan-3-yl-CH₂- or benzyl optionally substituted with halogen atoms or C₁-C₃haloalkyl;
- 5 R² is phenyl, pyridine, pyrimidine, pyrazine or pyridazine, wherein the phenyl, pyridine, pyrimidine, pyrazine or pyridazine is optionally substituted with one to three substituents, provided the substituent(s) are not on either carbon adjacent to the carbon bonded to the C=X-group, each independently selected from the group consisting of C₁-C₃alkyl, C₁-C₃haloalkyl, C₁-C₃haloalkylthio, C₁-C₃alkoxy, C₁-C₃haloalkoxy, halogen, -NO₂, -SF₅, -CN, -CONH₂, -COOH and -C(S)NH₂;
- 10 R³ is C₁-C₃alkyl or C₁-C₃haloalkyl;
- R⁴ is pyridine, pyrimidine, pyrazine or pyridazine, wherein the pyridine, pyrimidine, pyrazine or pyridazine is substituted with two to three substituents independently selected from the group consisting of
- 15 halogen, hydroxy, -CN, -COOH, -CONH₂, -CSNH₂, -NO₂, -NH₂, C₁-C₆alkyl, optionally substituted C₃-C₆cycloalkyl, C₁-C₃haloalkyl, C₁-C₄alkoxy, C₁-C₃haloalkoxy, C₁-C₆alkylthio, C₁-C₆alkylsulfinyl, C₁-C₆alkylsulfonyl, C₃-C₆cycloalkylsulfonyl, C₃-C₆cycloalkylsulfinyl, C₃-C₆cycloalkylsulfonyl, C₁-C₃haloalkylthio, C₁-C₃haloalkylsulfinyl, C₁-C₃haloalkylsulfonyl, -NH(C₁-C₄alkyl), -N(C₁-C₄alkyl)₂, -NHCO-C₁-C₄alkyl, -N(C₁-C₄alkyl)CO-C₁-C₄alkyl, -CO₂C₁-C₄alkyl, -CONH(C₁-C₄alkyl), -CON(C₁-C₄alkyl)₂, -C(=NOC₁-C₄alkyl)H, -C(=NOC₁-C₄alkyl)-C₁-C₄alkyl;
- 20 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, C₁-C₆alkyl, C₁-C₃haloalkyl and C₁-C₄alkoxy;
- or
- 25 R⁴ is pyridine, pyrimidine, pyrazine or pyridazine, wherein the pyridine, pyrimidine, pyrazine or pyridazine is substituted with a total of one to three substituent(s), provided at least one and up to three substituent(s) are independently selected from group A consisting of
- 30

- 200 -

5 -CN, -COOH, -CONH₂, -CSNH₂, -NO₂, -NH₂, C₃-C₆cycloalkyl, substituted C₃-C₄cycloalkyl, C₁-C₄haloalkoxy, C₁-C₆alkylthio, C₁-C₆alkylsulfinyl, C₁-C₆alkylsulfonyl, C₃-C₆cycloalkylsulfanyl, C₃-C₆cycloalkylsulfinyl, C₃-C₆cycloalkylsulfonyl, C₁-C₃haloalkylthio, C₁-C₃haloalkylsulfinyl, C₁-C₃haloalkylsulfonyl, -NH(C₁-C₄alkyl), -N(C₁-C₄alkyl)₂, -NHCO-C₁-C₄alkyl, -NHCO-C₁-C₄haloalkyl, -NHCO-C₁-C₄cyanoalkyl, -NHCO-C₃-C₆cycloalkyl, wherein the cycloalkyl is optionally substituted with one to three substituents selected from the group consisting of cyano, halogen, C₁-C₃alkyl and C₂-C₄haloalkenyl; -NHCO-C₁-C₄alkyl-C₃-C₆cycloalkyl, -NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C₁-C₆alkyl and C₁-C₃haloalkyl; -N(SO₂C₁-C₃alkyl)₂, -NH(SO₂C₁-C₃alkyl), -N(C₁-C₄alkyl)CO-C₁-C₄alkyl, -NHSO₂C₁-C₄haloalkyl, -NHCS-C₁-C₄alkyl, -NHCS-C₃-C₅cycloalkyl, -NHCS-C₁-C₄alkyl-C₃-C₅cycloalkyl, -CO₂C₁-C₄alkyl, -CONH(C₁-C₅alkyl), wherein the alkyl is optionally substituted with one to three substituents selected from the group consisting of cyano and halogen; -CON(C₁-C₄alkyl)₂, -CONH-C₃-C₅cycloalkyl, wherein the cycloalkyl is optionally substituted with one to three substituents selected from the group consisting of cyano and halogen; -CON(C₁-C₅alkyl)(C₃-C₅cycloalkyl), CONH-phenyl, wherein the phenyl is optionally substituted with one to three substituents selected from the group consisting of cyano and halogen; -CONHSO₂-C₁-C₄alkyl, -C(=NOC₁-C₄alkyl)H, -C(=NOC₁-C₄alkyl)-C₁-C₄alkyl;

10

15

20

25 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, C₁-C₆alkyl, C₁-C₃haloalkyl and C₁-C₄alkoxy;

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

30 halogen, hydroxy, -CN, -COOH, -CONH₂, -NO₂, -NH₂, C₁-C₆alkyl, C₃-C₆cycloalkyl, C₁-C₃haloalkyl, C₁-C₄alkoxy, C₁-C₃haloalkoxy, C₁-C₆alkylthio, C₁-C₆alkylsulfinyl, C₁-C₆alkylsulfonyl, C₃-C₆cycloalkylsulfanyl, C₃-C₆cycloalkylsulfinyl, C₃-C₆cycloalkylsulfonyl, C₁-C₃haloalkylthio, C₁-C₃haloalkylsulfinyl, C₁-C₃haloalkylsulfonyl, -NH(C₁-C₄alkyl), -N(C₁-C₄alkyl)₂, -NHCO-C₁-C₄alkyl, -N(C₁-C₄alkyl)CO-C₁-C₄alkyl, -CO₂C₁-C₄alkyl, -CONH(C₁-C₄alkyl), -CON(C₁-C₄alkyl)₂, -C(=NOC₁-C₄alkyl)H, -C(=NOC₁-C₄alkyl)-C₁-C₄alkyl;

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, C₁-C₆alkyl, C₁-C₃haloalkyl and C₁-C₄alkoxy;

5 or

R⁴ is a 5-membered heteroaryl optionally substituted with one to three substituents independently selected from the group consisting of

10 halogen, hydroxy, -CN, -COOH, -CONH₂, -CSNH₂, -NO₂, -NH₂, C₁-C₆alkyl, C₃-C₆cycloalkyl, C₁-C₃haloalkyl, C₁-C₄alkoxy, C₁-C₃haloalkoxy, C₁-C₆alkylthio, C₁-C₆alkylsulfinyl, C₁-C₆alkylsulfonyl, C₃-C₆cycloalkylsulfinyl, C₃-C₆cycloalkylsulfonyl, C₁-C₃haloalkylthio, C₁-C₃haloalkylsulfinyl, C₁-C₃haloalkylsulfonyl, -NH(C₁-C₄alkyl), -N(C₁-C₄alkyl)₂, -NHCO-C₁-C₄alkyl, -N(C₁-C₄alkyl)CO-C₁-C₄alkyl, -CO₂C₁-C₄alkyl, -CONH(C₁-C₄alkyl), -CON(C₁-C₄alkyl)₂, -C(=NOC₁-C₄alkyl)H, -C(=NOC₁-C₄alkyl)-C₁-C₄alkyl;

15 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, C₁-C₆alkyl, C₁-C₃haloalkyl and C₁-C₄alkoxy;

or

20 R⁴ is a heterocyclic ring which is selected from the group consisting of 4- to 10-membered saturated or partially unsaturated heterocyclyl, 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

25 halogen, =O (oxo), hydroxy, -CN, -COOH, -CONH₂, -CSNH₂, -NO₂, -SF₅, -NH₂, C₁-C₆alkyl, C₃-C₆cycloalkyl, C₃-C₆cycloalkyl-C₁-C₆alkyl, C₁-C₃haloalkyl, C₁-C₄alkoxy, C₁-C₃haloalkoxy, C₁-C₆alkylthio, C₁-C₆alkylsulfinyl, C₁-C₆alkylsulfonyl, C₃-C₆cycloalkylsulfinyl, C₃-C₆cycloalkylsulfonyl, C₁-C₃haloalkylthio, C₁-C₃haloalkylsulfinyl, C₁-C₃haloalkylsulfonyl, -NH(C₁-C₄alkyl), -N(C₁-C₄alkyl)₂, -NHCO-C₁-C₄alkyl, -N(C₁-C₄alkyl)CO-C₁-C₄alkyl, -CO₂C₁-C₄alkyl, -CONH(C₁-C₄alkyl), -CON(C₁-C₄alkyl)₂, -C(=NOC₁-C₄alkyl)H, -C(=NOC₁-C₄alkyl)-C₁-C₄alkyl;

30

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, C₁-C₆alkyl, C₁-C₃haloalkyl and C₁-C₄alkoxy;

- 5 R⁵ is hydrogen, halogen, -CN, C₁-C₃alkyl, C₁-C₃haloalkyl, C₃-C₄cycloalkyl, C₁-C₃alkoxy, C₁-C₃haloalkoxy, -C(O)C₁-C₃alkoxyC, -CH(C₁-C₃alkoxy)₂, -CO₂C₁-C₄alkyl, -CONH(C₁-C₄alkyl), -CON(C₁-C₄alkyl)₂, -NHCO-C₁-C₄alkyl, -N(C₁-C₄alkyl)CO-C₁-C₄alkyl, -C(=NOC₁-C₄alkyl)H, or -C(=NOC₁-C₄alkyl)-C₁-C₄alkyl.
3. Compound according to Claim 1 or 2, in which
- 10 X is O or S;
- Q¹ and Q² are independently CR⁵ or N, provided at least one of Q¹ and Q² is N;
- Y is a direct bond or CH₂;
- 15 R¹ is hydrogen; C₁-C₃alkyl optionally substituted with one substituent selected from -CN, -CONH₂, -COOH, -NO₂ and -Si(CH₃)₃; C₁-C₃haloalkyl; C₂-C₄alkenyl; C₂-C₄haloalkenyl; C₂-C₄alkynyl; C₂-C₄haloalkynyl; C₃-C₄cycloalkyl-C₁-C₂alkyl- wherein the C₃-C₄cycloalkyl is optionally substituted with one or two halogen atoms; oxetan-3-yl-CH₂-; or benzyl optionally substituted with halogen atoms or C₁-C₃haloalkyl;
- 20 R² is phenyl, pyridine, pyrimidine, pyrazine or pyridazine, wherein the phenyl, pyridine, pyrimidine, pyrazine or pyridazine is optionally substituted with one to three substituents, provided the substituent(s) are not on either carbon adjacent to the carbon bonded to the C=X-group, each independently selected from the group consisting of C₁-C₃alkyl, C₁-C₃haloalkyl, C₁-C₃haloalkylthio, C₁-C₃alkoxy, C₁-C₃haloalkoxy, halogen, -NO₂, -SF₅, -CN, -CONH₂, -COOH and -C(S)NH₂;
- R³ is C₁-C₃alkyl or C₁-C₃haloalkyl;
- 25 R⁴ is pyridine, pyrimidine, pyrazine or pyridazine, wherein the pyridine, pyrimidine, pyrazine or pyridazine is substituted with two to three substituents independently selected from the group consisting of
- 30 halogen, -CN, C₁-C₆alkyl, C₃-C₆cycloalkyl, C₁-C₃haloalkyl, C₁-C₄alkoxy, C₁-C₃haloalkoxy, C₁-C₃alkylthio, C₁-C₃alkylsulfinyl, C₁-C₃alkylsulfonyl, C₁-C₃haloalkylthio, C₁-C₃haloalkylsulfinyl, C₁-C₃haloalkylsulfonyl, -NHCO-C₁-C₄alkyl,

- 203 -

-CONH(C₁-C₄alkyl), -CON(C₁-C₄alkyl)₂, -C(=NOC₁-C₄alkyl)H, -C(=NOC₁-C₄alkyl)-C₁-C₄alkyl;

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, C₁-C₆alkyl and C₁-C₃haloalkyl;

or

R⁴ is pyridine, pyrimidine, pyrazine or pyridazine, wherein the pyridine, pyrimidine, pyrazine or pyridazine is substituted with a total of one to three substituent(s), provided at least one and up to three substituent(s) are independently selected from group A consisting of

-CONH₂, -CN, -NO₂, -NH₂, C₅-C₆cycloalkyl, substituted C₃-C₄cycloalkyl, C₁-C₄haloalkoxy, C₁-C₃alkylthio, C₁-C₃alkylsulfinyl, C₁-C₃alkylsulfonyl, C₁-C₃haloalkylthio, C₁-C₃haloalkylsulfinyl, C₁-C₃haloalkylsulfonyl, -NHCO-C₁-C₄alkyl, -NHCO-C₁-C₄haloalkyl, -NHCO-C₁-C₄cyanoalkyl, -NHCO-C₃-C₆cycloalkyl, wherein the cycloalkyl is optionally substituted with one to three substituents selected from the group consisting of cyano, halogen, C₁-C₃alkyl and C₂-C₄haloalkenyl; -NHCO-C₁-C₃alkyl-C₃-C₄cycloalkyl, -NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of fluorine and chlorine; -N(SO₂C₁-C₃alkyl)₂, -NH(SO₂C₁-C₃alkyl), -NHSO₂C₁-C₄haloalkyl, -NHCS-C₁-C₄alkyl, -NHCS-C₃-C₅cycloalkyl, -NHCS-C₁-C₄alkyl-C₃-C₅cycloalkyl, -CO₂C₁-C₄alkyl, -CONH(C₁-C₅alkyl), wherein the alkyl is optionally substituted with one to three substituents selected from the group consisting of cyano and halogen; -CON(C₁-C₄alkyl)₂, -CONH-C₃-C₅cycloalkyl, wherein the cycloalkyl is optionally substituted with one to three substituents selected from the group consisting of cyano and halogen; -CON(C₁-C₅alkyl)(C₃-C₅cycloalkyl), CONH-phenyl, wherein the phenyl is optionally substituted with one to three substituents selected from the group consisting of cyano and halogen; -CONHSO₂-C₁-C₄alkyl -C(=NOC₁-C₄alkyl)H, -C(=NOC₁-C₄alkyl)-C₁-C₄alkyl;

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, C₁-C₆alkyl and C₁-C₃haloalkyl;

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

5 halogen, -CN, C₁-C₆alkyl, C₃-C₆cycloalkyl, C₁-C₃haloalkyl, C₁-C₄alkoxy, C₁-C₃haloalkoxy, C₁-C₃alkylthio, C₁-C₃alkylsulfinyl, C₁-C₃alkylsulfonyl, C₁-C₃haloalkylthio, C₁-C₃haloalkylsulfinyl, C₁-C₃haloalkylsulfonyl, -NHCO-C₁-C₄alkyl, -CONH(C₁-C₄alkyl), -CON(C₁-C₄alkyl)₂, -C(=NOC₁-C₄alkyl)H, -C(=NOC₁-C₄alkyl)-C₁-C₄alkyl;

10 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, C₁-C₆alkyl and C₁-C₃haloalkyl;

or

R⁴ is a 5-membered heteroaryl optionally substituted with one to three substituents independently selected from the group consisting of

15 halogen, -CN, C₁-C₆alkyl, C₃-C₆cycloalkyl, C₁-C₃haloalkyl, C₁-C₄alkoxy, C₁-C₃haloalkoxy, C₁-C₃alkylthio, C₁-C₃alkylsulfinyl, C₁-C₃alkylsulfonyl, C₁-C₃haloalkylthio, C₁-C₃haloalkylsulfinyl, C₁-C₃haloalkylsulfonyl, -NHCO-C₁-C₄alkyl, -CONH(C₁-C₄alkyl), -CON(C₁-C₄alkyl)₂, -C(=NOC₁-C₄alkyl)H, -C(=NOC₁-C₄alkyl)-C₁-C₄alkyl;

20 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, C₁-C₆alkyl and C₁-C₃haloalkyl

or

25 R⁴ is a heterocyclic ring which is selected from the group consisting of 4- to 10-membered saturated or partially unsaturated heterocyclyl, 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

30 halogen, =O (oxo), -CN, C₁-C₆alkyl, C₃-C₆cycloalkyl, C₁-C₃haloalkyl, C₁-C₃alkoxy, C₁-C₃haloalkoxy, C₁-C₃alkylthio, C₁-C₃alkylsulfinyl, C₁-C₃alkylsulfonyl, C₃-C₄cycloalkylsulfonyl, C₃-C₄cycloalkylsulfinyl, C₃-C₄cycloalkylsulfonyl, C₁-

C₃haloalkylthio, C₁-C₃haloalkylsulfinyl, C₁-C₃haloalkylsulfonyl, -NHCO-C₁-C₄alkyl, -N(C₁-C₄alkyl)CO-C₁-C₄alkyl, -CONH(C₁-C₄alkyl), -CON(C₁-C₄alkyl)₂, -C(=NOC₁-C₄alkyl)H, -C(=NOC₁-C₄alkyl)-C₁-C₄alkyl;

5 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, C₁-C₆alkyl and C₁-C₃haloalkyl;

R⁵ is hydrogen, halogen, -CN, C₁-C₃alkyl, C₁-C₃haloalkyl, C₃-C₄cycloalkyl, or C₁-C₃alkoxy.

4. Compound according to any of Claims 1 to 3, in which

10 X is O or S;

Q¹ and Q² are independently CR⁵ or N, provided at least one of Q¹ and Q² is N;

Y is a direct bond or CH₂;

15 R¹ is hydrogen; C₁-C₃alkyl optionally substituted with -CN, -Si(CH₃)₃ or one to three substituents selected from the group consisting of fluorine, chlorine or bromine; C₂-C₄alkenyl; C₂-C₄alkynyl; or C₃-C₄cycloalkyl-C₁-C₂alkyl- wherein the C₃-C₄cycloalkyl is optionally substituted with one to two substituents selected from the group consisting of fluorine, chlorine and bromine;

20 R² is phenyl or pyridine, wherein the phenyl or pyridine is optionally substituted with one to three substituents, provided the substituent(s) are not 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, -NO₂, -SF₅, methyl, difluoromethyl, trifluoromethyl, heptafluoropropyl, methoxy, trifluoromethoxy, difluoromethoxy, difluoromethylthio, and trifluoromethylthio;

R³ is C₁-C₃alkyl;

25 R⁴ is pyridine, pyrimidine, pyrazine or pyridazine, wherein the pyridine, pyrimidine, pyrazine or pyridazine is substituted with two to three substituents independently selected from the group consisting of

30 fluorine, chlorine, bromine, iodine, -CN, 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 to two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, difluoromethyl and trifluoromethyl;

5 or

R⁴ is pyridine, pyrimidine, pyrazine or pyridazine, wherein the pyridine, pyrimidine, pyrazine or pyridazine is substituted with a total of one to three substituent(s), provided at least one and up to three substituent(s) are independently selected from group A consisting of

10 -CONH₂, -CN, -NO₂, -NH₂, cyclopentyl, cyclohexyl, trifluoromethoxy, difluoromethoxy, 2,2,2-trifluoroethoxy, 2,2,3,3,3-pentafluoropropoxy, 4,4,4-trifluorobutoxy, methylthio, methylsulfinyl, methylsulfonyl, difluoromethylthio, difluoromethylsulfinyl, difluoromethylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl, trifluoromethylsulfonyl, methoxyiminomethyl, -NHCO-C₁-C₃alkyl, -NHCO-C₁-C₃haloalkyl, -NHCO-C₁-C₃cyanoalkyl, -NHCO-C₃-C₅cycloalkyl, wherein the cycloalkyl is optionally substituted with one to three substituents selected from the group consisting of cyano, fluorine, chlorine, methyl and C₂-C₄haloalkenyl; -NHCO-C₁-C₃alkyl-C₃-C₄cycloalkyl, -NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of fluorine and chlorine; -N(SO₂C₁-C₃alkyl)₂, -NHSO₂C₁-C₃alkyl, -NHSO₂C₁-C₃haloalkyl, -NHCS-C₁-C₃alkyl, -NHCS-C₃-C₄cycloalkyl, -NHCS-C₁-C₃alkyl-C₃-C₄cycloalkyl, -CONH(C₁-C₅alkyl), wherein the alkyl is optionally substituted with one to three substituents selected from the group consisting of cyano, fluorine and chlorine; -CON(C₁-C₃alkyl)₂, -CONH-C₃-C₄cycloalkyl, wherein the cycloalkyl is optionally substituted with one to three substituents selected from the group consisting of cyano, fluorine and chlorine; -CON(C₁-C₃alkyl)(C₃-C₄cycloalkyl), -CONH-phenyl, wherein the phenyl is optionally substituted with one to three substituents selected from the group consisting of cyano, fluorine and chlorine; -CONHSO₂-C₁-C₃alkyl, -CO₂C₁-C₄alkyl;

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

the other one to two optional substituents are each independently selected from group B consisting of

5 fluorine, chlorine, bromine, iodine, -CN, 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 to two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, difluoromethyl and trifluoromethyl;

or

10 R^4 is a 5-membered heteroaryl optionally substituted with one to three substituents independently selected from the group consisting of

15 fluorine, chlorine, bromine, iodine, -CN, 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 to two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, difluoromethyl and trifluoromethyl;

or

20 R^4 is a heterocyclic ring which is selected from the group consisting of 5-membered saturated or partially unsaturated heterocyclyl, 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

25 fluorine, chlorine, bromine, iodine, =O (oxo), -CN, 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 to two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, difluoromethyl and trifluoromethyl;

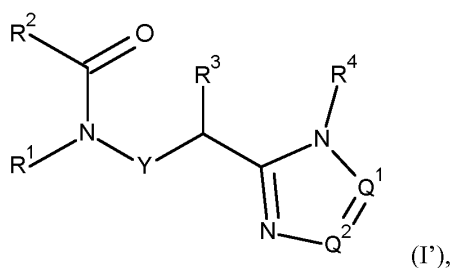
30 R^5 is hydrogen, fluorine, chlorine, bromine, -CN, methyl, ethyl, propyl, iso-propyl, difluoromethyl, trifluoromethyl, cyclopropyl, methoxy, or ethoxy.

5. Compound according to any of Claims 1 to 4, in which
- X is O or S;
- Q¹ is N;
- Q² is CR⁵;
- 5 Y is a direct bond;
- R¹ is hydrogen, ethyl, cyclopropyl-CH₂-, 2-trimethylsilylethyl or 2,2,2-trifluoroethyl;
- R² 3-chloro-5-(trifluoromethyl)phenyl, 3-cyano-5-fluorophenyl, 3-fluoro-5-(trifluoromethyl)phenyl, 3,4,5-trifluorophenyl, 4-chloro-3,5-difluorophenyl, 3-methyl-5-(trifluoromethyl)phenyl, 3-chloro-5-(trifluoromethoxy)phenyl, 3-chloro-5-(trifluoromethylthio)phenyl, 3-bromo-5-chlorophenyl, 3,5-dichlorophenyl, 3-chloro-5-(pentafluoro-λ⁶-sulfanyl)phenyl, 3,5-bis(trifluoromethyl)phenyl, 5-bromopyridin-3-yl, 5-iodopyridin-3-yl, 5-(trifluoromethyl)pyridin-3-yl, 3-chloro-5-methoxyphenyl, 3-bromo-5-(trifluoromethyl)phenyl, 3-methoxy-5-(trifluoromethyl)phenyl, 3-chloro-5-(difluoromethoxy)phenyl, 3-bromo-5-cyanophenyl, 3-cyano-5-(trifluoromethyl), 3-bromo-5-fluorophenyl, 3-fluoro-5-(trifluoromethylthio)phenyl, 3-chloro-5-nitrophenyl, 5,6-bis(trifluoromethyl)pyridin-3-yl, 5-chloropyridin-3-yl, 3-((1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethyl)phenyl, 6-chloro-4-(trifluoromethyl)pyridin-2-yl, or 3-chlorophenyl;
- 10 R³ is methyl or ethyl;
- R⁴ is 4,6-dimethylpyrimidin-2-yl, 4-methoxy-6-methylpyrimidin-2-yl, 1,3-thiazol-2-yl, quinoxalin-2-yl, [1,2,4]triazolo[1,5-a]pyridin-2-yl, 1-methyl-1H-pyrazol-3-yl, 5-cyanopyridin-2-yl, 5-cyanopyrimidin-2-yl, 5-(trifluoromethoxy)pyrimidin-2-yl, 5-(difluoromethoxy)pyrimidin-2-yl, 5-chloro-3-fluoropyridin-2-yl, 3,5-difluoropyridin-2-yl, 4-cyanopyridin-2-yl, 5-(trifluoromethoxy)pyridin-2-yl, 5-(trifluoromethyl)-1,3,4-thiadiazol-2-yl, 5-chloro-4-(difluoromethyl)-1,3-thiazol-2-yl, 5-(4-fluorophenyl)-1,3,4-thiadiazol-2-yl, 1,1-dioxothiolan-3-yl, 5-(trifluoromethylthio)pyridin-2-yl, 5-(trifluoromethylsulfonyl)pyridin-2-yl, 5-nitropyridin-2-yl, 5-(difluoromethoxy)pyridin-2-yl, 5-aminopyridin-2-yl, 5-(methoxycarbonyl)pyridin-2-yl, 3-(difluoromethyl)-1-methyl-1H-pyrazol-4-yl, 5-(acetylamino)pyridin-2-yl, 5-[(cyclopropylcarbonyl)amino]pyridin-2-yl, 4-(4-chlorophenyl)-1,3-thiazol-2-yl, 5-[(4-fluorobenzoyl)amino]pyridin-2-yl, 5-[bis(methylsulfonyl)amino]pyridin-2-yl, 5-(methylcarbamoyl)pyridin-2-yl, 5-(2,2,2-trifluoroethoxy)pyridin-2-yl, 4-(2-fluorophenyl)-1,3-thiazol-2-yl, 1-methyl-3-(trifluoromethyl)-1H-pyrazol-4-yl, 5-[3-(trifluoromethyl)-1H-pyrazol-1-yl]pyridin-2-yl, 4-
- 15
- 20
- 25
- 30

(3-chlorophenyl)-1,3-thiazol-2-yl, 4-(4-fluorophenyl)-1,3-thiazol-2-yl, 5-(methylsulfonamido)pyridin-2-yl, 6-cyanopyridin-2-yl, 1,3-benzoxazol-2-yl, 6-(2,2,2-trifluoroethoxy)pyridin-2-yl, 5-(2,2,3,3,3-pentafluoropropoxy)pyridin-2-yl, N-cyclopropylpyridin-2-yl-5-carboxamide, 5-methylsulfonylpyridin-2-yl, 6-methylsulfonylpyridin-2-yl, 5-(methoxyiminomethyl)pyridin-2-yl, 5-((2,2,2-trifluoroacetyl)amino)pyridin-2-yl, 5-((2-cyanoacetyl)amino)pyridin-2-yl, 5-pyrazolylpyridin-2-yl, 4,5-dihydrothiazol-2-yl, 5-((1-cyanocyclopropylcarbonyl)amino)pyridin-2-yl, N-(2,2,2-trifluoroethyl)pyridin-2-yl-5-carboxamide, 5-bromothiazol-2-yl, 4-(trifluoromethyl)thiazol-2-yl, 5-(trifluoromethyl)thiazol-2-yl, 5-imidazolylpyridin-2-yl, 5-(1,2,4-triazolyl)pyridin-2-yl, 5-chlorothiazol-2-yl, 5-(trifluoromethylsulfonylamino)pyridin-2-yl, 5-((cyclopropylethylthioyl)amino)pyridin-2-yl, 5-(cyclopropylcarbothioylamino)pyridin-2-yl, 5-(2-methylpropylthioylamino)pyridin-2-yl, pyridin-2-yl-5-carboxamide, 5-((1-chlorocyclopropylcarbonyl)amino)pyridin-2-yl, N-(4-fluorophenyl)pyridin-2-yl-5-carboxamide, N-cyclopropyl-N-methylpyridin-2-yl-5-carboxamide, N-methylsulfonylpyridin-2-yl-5-carboxamide, N-(1-cyanocyclopropyl)pyridin-2-yl-5-carboxamide, 5-iodothiazol-2-yl, 4-(2,4-difluorophenyl)thiazol-2-yl, N,N-dimethylpyridin-2-yl-5-carboxamide, N,N-diethylpyridin-2-yl-5-carboxamide, N-isobutylpyridin-2-yl-5-carboxamide, 5-((2-cyclopropylacetyl)amino)pyridin-2-yl, 5-((2,2-difluorocyclopropylcarbonyl)amino)pyridin-2-yl, 5-((3,3-((Z)-2-chloro-3,3,3-trifluoroprop-1-enyl)-2,2-dimethylcyclopropylcarbonyl)amino)pyridin-2-yl, 5-(propanoylamino)pyridin-2-yl, 5-((3-chlorobenzoyl)amino)pyridin-2-yl, 5-(4,4,4-trifluorobutoxy)pyridin-2-yl, N-ethylpyridin-2-yl-5-carboxamide, N-(1,2-dimethylpropyl)pyridin-2-yl-5-carboxamide, 5-((2-chlorobenzoyl)amino)pyridin-2-yl, N-cyanomethylpyridin-2-yl-5-carboxamide, N-(2-chlorophenyl)pyridin-2-yl-5-carboxamide, N-(4-chlorophenyl)pyridin-2-yl-5-carboxamide, N-(3-chlorophenyl)pyridin-2-yl-5-carboxamide, or 4-pyrazol-1-ylpyridin-2-yl;

R⁵ is hydrogen, methyl, propyl or trifluoromethyl.

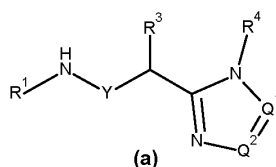
6. Compound according to any of Claims 1 to 5, characterized in that it has a structure according to formula (I')



30

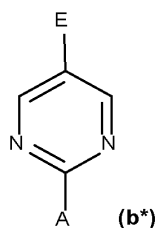
in which the structural elements Y, Q¹, Q², R¹, R², R³, R⁴ and R⁵ have the meanings given in Claim 1 or the meanings given in Claim 2 or the meanings given in Claim 3 or the meanings given in Claim 4 or the meanings given in Claim 5.

7. Compound according to any of Claims 1 to 6, in which Q¹ represents N or CR⁵ and Q² represents N and all further structural elements Y, R¹, R², R³, R⁴ and R⁵ 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 which Q¹ represents N and Q² represents CR⁵ and all further structural elements Y, R¹, R², R³, R⁴ and R⁵ 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)



15. in which the structural elements Y, R¹, R² and R³ 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 and wherein the compound of formula (a) is not N-{1-[1-(2,3-dihydro-1,4-benzodioxin-6-yl)-1H-tetrazol-5-yl]propyl}prop-2-yn-1-amine.

10. Compound of the formula (b*)



20. in which

E is trifluoromethoxy or difluoromethoxy;

A is methylsulfonyl or hydrazinyl;

and wherein the compound of formula (b*) is not 5-(difluoromethoxy)-2-(methylsulfonyl)pyrimidine.

11. Compound 5-(difluoromethoxy)-2-hydrazinopyridine and salts thereof.
12. Formulation, especially agrochemical formulation, comprising at least one compound of the formula (I) according to any of Claims 1 to 8.
13. Formulation according to Claim 12, further comprising at least one extender and/or at least one surface-active substance.
14. Formulation according to Claim 12 or 13, characterized in that the compound of the formula (I) is in a mixture with at least one further active compound.
15. 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 12 to 14 is allowed to act on the pests and/or their habitat.
16. Method according to Claim 15, 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.
17. 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 12 to 14 for controlling animal pests.
18. Use according to Claim 17, 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.
19. Use according to Claim 17 or 18 in crop protection.
20. Use according to Claim 17 or 18 in the field of animal health.
21. 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 12 to 14.
22. Seed obtained by a method according to Claim 21.