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United States Patent [19]

[11] E

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Oya et al.

[45] **Reissued Date of Patent: Nov. 8, 1994****[54] PYRAZOLE DERIVATIVES AND HERBICIDES CONTAINING THEM**

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[73] **Assignee:** Nissan Chemical Industries Ltd., Tokyo, Japan

[21] **Appl. No.:** 946,900

[22] **Filed:** Sep. 18, 1992

Related U.S. Patent Documents

Reissue of:

[64] **Patent No.:** 4,986,845
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Appl. No.: 369,523
Filed: Jun. 21, 1989

[30] Foreign Application Priority Data

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[51] **Int. Cl.⁵** A01N 43/56; C07D 401/12; C07D 413/12; C07D 231/20

[52] **U.S. Cl.** 504/282; 548/365.7; 548/366.1; 548/366.4; 548/366.7; 548/367.1; 548/369.4; 548/119; 548/364.1; 546/211; 546/22; 504/197; 504/196; 504/248; 504/225; 544/140

[58] **Field of Search** 548/365.7, 366.1, 366.4, 548/366.7, 367.1, 369.4, 119; 504/282, 196, 197; 546/211, 22

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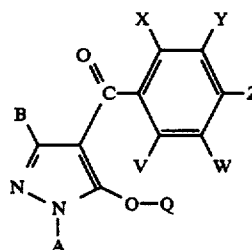
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Primary Examiner—John M. Ford
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[57] ABSTRACT

A pyrazole derivative of the formula I

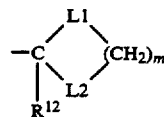


(I)

wherein A is C₁-C₄ alkyl, C₂-C₄ alkenyl or C₂-C₄ alky-
 nyl; B is hydrogen, C₁-C₃ alkyl, halogen, C₁-C₃ haloal-
 kyl, C₁-C₃ alkoxy, C₁-C₃ alkylthio, C₂-C₄ alkoxyalkyl,
 C₂-C₄ alkylthioalkyl or C₂-C₄ alkoxyalkyl; X is
 C₁-C₆ alkyl, C₁-C₆ alkoxy, halogen, nitro, cyano, etc.;
 Y is -OR¹ (wherein R¹ is C₃-C₈ cycloalkyl, etc),
 -O-L-O-R¹ (wherein L is C₁-C₆ alkylene which
 may be substituted by C₁-C₃ alkyl), -O-L-OH,
 -O-L-O-L-O-R² (wherein R² is hydrogen,
 C₁-C₆ alkyl group, etc.), -O-L-R³ (wherein R³ is
 phenyl which may be substituted by C₁-C₃ alkyl, etc.),
 -O-M (wherein M is a 3- to 6-membered alicyclic
 group), -O-L-M, -O-L-NR⁴R⁵ (wherein each
 of R⁴ and R⁵ is hydrogen or C₁-C₆ alkyl, or R⁴ and R⁵
 form a ring together with the adjacent nitrogen atom),
 -O-L-COOR⁴, -O-CH=CH-COOR⁴, -O-
 L-CN, -O-L-C(O)-R², -O-L-S(O)_n-R⁴
 (wherein n is an integer of from 0 to 2), -O-COOR⁴,
 -O-CONR⁴R⁵, -OP(O)(OR⁴)₂, -S(O)_nR¹, or -S-
 (O)_n-L-O-R¹; Z is halogen, nitro, C₁-C₃ alkoxy,

(Abstract continued on next page.)

etc.; V is hydrogen, halogen, C₁-C₄ alkyl or C₁-C₄ alkoxy; W is hydrogen, halogen, C₁-C₄ alkyl, etc.; Q is hydrogen, C₁-C₆ alkyl which may be substituted by halogen, . . . -C(O)-R⁷ (wherein R⁷ is phenyl which may be substituted), -S(O)₂R⁷, -P(O)(OR⁷)₂, -L-C(O)-R⁷, -L-C(O)-N(R⁸)(R⁹) (wherein each of R⁸ and R⁹ is hydrogen or C₁-C₆ alkyl), -L-R¹⁰ (wherein R¹⁰ is phenyl group may be substituted, C₁-C₆ alkyl, C₁-C₇ alkoxy, or hydroxyl), -L-N(R⁸)(R⁹), -L-OR¹¹ (wherein R¹¹ is hydrogen, C₁-C₆ alkyl, or C₁-C₆ alkenyl), -L-OC(O)R¹² (wherein R¹² is C₁-C₆ alkyl or C₁-C₆ alkoxy), -L-S(O)_nR¹¹, -L-SC(O)R⁸,



(wherein each of L¹ and L² is methylene, oxygen or sulfur, R¹² is hydrogen or C₁-C₃ alkyl, and m is 2 or 3); and a salt thereof.

10 Claims, No Drawings

**PYRAZOLE DERIVATIVES AND HERBICIDES
CONTAINING THEM**

Matter enclosed in heavy brackets [] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates the additions made by reissue.

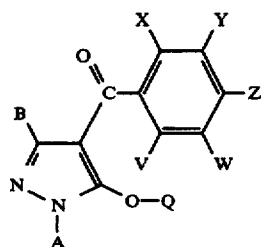
The present invention relates to novel 4-benzoylpyrazole derivatives and selective herbicides containing such derivatives as active ingredients, which are useful particularly as upland field herbicides.

Various herbicides have been developed for practical use from extensive research and development of herbicides for many years, and such herbicides have contributed to a reduction of the labor force required for controlling weeds or to improvement of the productivity of agricultural or horticultural plants.

Even now, it is still desired to develop a new herbicide having superior herbicidal properties. In particular, it is desired to develop an agricultural or horticultural herbicide which is capable of selectively controlling weeds without adversely affecting the crop plant and at a low dose. However, conventional herbicides do not necessarily provide such desired herbicidal properties.

On the other hand, certain compounds of 4-benzoylpyrazole derivatives are known to have herbicidal activities. For example, pyrazolate (common name) and pyrazoxyfen (common name) are practically used as herbicides for paddy fields. While exhibiting excellent herbicidal activities as paddy field herbicides, these compounds are not suitable as upland herbicides since their herbicidal activities are weak against weeds of upland fields. Among 4-benzoylpyrazole derivatives, it is desired to develop a superior compound useful as an upland field herbicide.

The present invention provides a pyrazole derivative having the formula:



wherein

A is a C₁-C₄ alkyl group, a C₂-C₄ alkenyl group or a C₂-C₄ alkynyl group;

B is a hydrogen atom, a C₁-C₃ alkyl group, a halogen atom, a C₁-C₃ haloalkyl group, a C₁-C₃ alkoxy group, a C₁-C₃ alkylthio group, a C₂-C₄ alkoxyalkyl group, a C₂-C₄ alkylthioalkyl group or a C₂-C₄ alkoxyalkyl group;

X is a C₁-C₆ alkyl group, a C₁-C₆ alkoxy group, a halogen atom, a nitro group, a cyano group, a C₁-C₆ haloalkyl group, a C₂-C₆ alkoxyalkyl group, a C₂-C₆ alkylcarbonyl group, a C₂-C₆ alkoxyalkyl group, an aminocarbonyl group substituted independently by hydrogen or by a C₁-C₆ alkyl group, a C₁-C₆ haloalkoxy group, a C₁-C₆ alkylthio group or a C₂-C₆ alkylthioalkyl group;

Y is —OR¹ (Wherein R¹ is a C₃-C₈ cycloalkyl group, a C₄-C₈ cycloalkylalkyl group, a C₃-C₆ alkenyl group, a C₂-C₆ alkynyl group, a C₁-C₆ haloalkyl group, a C₃ C₈ halocycloalkylalkyl group, a C₃-C₆ haloalkenyl group, a C₂-C₆ haloalkynyl group, a C₂-C₆ nitroalkyl group or a phenyl group which may be substituted by a C₁-C₃ alkyl group, a halogen atom, a nitro group or a C₁-C₃ alkoxy group), —O—L—O—R¹ (Wherein L is a C₁-C₆ alkylene group which may be substituted by a C₁-C₃ alkyl group, and R¹ is as defined above), —O—L—OH (wherein L is as defined above), —O—L—O—L—O—R² (wherein L is as defined above, and R² is a hydrogen atom, a C₁-C₆ alkyl group or a phenyl group which may be substituted by a C₁-C₃ alkyl group, a halogen atom, a nitro group or a C₁-C₃ alkoxy group), —O—L—R³ (wherein L is as defined above, and R³ is a phenyl group which may be substituted by a C₁-C₃ alkyl group, a halogen atom, a nitro group or a C₁-C₃ alkoxy group), —O—M (wherein M is a 3- to 6-membered alicyclic group containing not more than two sulfur or oxygen atoms and formed by a linkage of from 1 to 4 carbon atoms), —O—L—M (wherein L and M are as defined above), —O—L—NR⁴R⁵ (wherein L is as defined above and each of R⁴ and R⁵ which may be the same or different is a hydrogen atom or a C₁-C₆ alkyl group, or R⁴ and R⁵ form a ring together with the adjacent nitrogen atom), —O—L—COOR⁴ (wherein L and R⁴ are as defined above), —O—CH=CH—COOR⁴ (wherein R⁴ is as defined above), —O—L—CN (wherein L is as defined above), —O—L—C(O)—R² (wherein L and R² are as defined above), —O—L—S(O)_n—R⁴ (wherein L and R⁴ are as defined above, and n is an integer of from 0 to 2), —O—COOR⁴ (wherein R⁴ are as defined above), —O—CONR⁴R⁵ (wherein R⁴ and R⁵ are as defined above), —OP(O)(OR⁴)₂ (wherein R⁴ is as defined above), —S(O)_nR¹ (wherein R¹ and n are as defined above), or —S(O)_n—L—O—R¹ (wherein L, R¹ and n are as defined above);

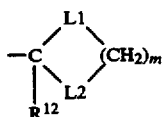
Z is a halogen atom, a nitro group, a C₁-C₃ alkoxy group, a trifluoromethyl group, a trifluoromethoxy group, a cyano group or —S(O)_nR⁶ (wherein n is as defined above, and R⁶ is a C₁-C₃ alkyl group or a C₁-C₃ haloalkyl group);

V is a hydrogen atom, a halogen atom, a C₁-C₄ alkyl group or a C₁-C₄ alkoxy group;

W is a hydrogen atom, a halogen atom, a C₁-C₄ alkyl group, a C₁-C₄ haloalkyl group, a C₁-C₄ alkoxy group, a C₂-C₆ alkoxyalkyl group, a C₂-C₅ alkoxyalkyl group, a C₁-C₃ haloalkoxy group, a nitro group, a cyano group or —S(O)_n—R⁶ (wherein n and R⁶ are as defined above); and

Q is a hydrogen atom, a C₁-C₆ alkyl group which may be substituted by a halogen atom, a C₁-C₆ alkenyl group which may be substituted by a halogen atom, a C₁-C₆ alkynyl group which may be substituted by a halogen atom, a cyanomethyl group, —C(O)—R⁷ (wherein R⁷ is a phenyl group which may be substituted by the same or different substituents selected from the group consisting of a C₁-C₆ alkyl group, a C₁-C₆ alkenyl group, a C₁-C₆ alkynyl group, a C₁-C₆ haloalkyl group, a C₁-C₆ haloalkenyl group, a C₁-C₆ haloalkynyl group, a halogen atom, a nitro group and a trifluoromethyl group, a C₁-C₆ alkyl group, a C₁-C₆ alkoxy group, or a hydroxyl group), —S(O)₂R⁷ (wherein R⁷ is as defined above), —P(O)(OR⁷)₂ (wherein R⁷ is as defined above), —L—C(O)—R⁷ (wherein L and R⁷ are as defined above), —L—C(O)—N(R⁸)(R⁹) (wherein L is

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 as defined above, and each of R⁸ and R⁹ which may be the same or different is a hydrogen atom or a C₁-C₆ alkyl group), -L-R¹⁰ (wherein L is as defined above, and R¹⁰ is a phenyl group which may be substituted by the same or different substituents selected from the group consisting of a halogen atom, a nitro group and a trifluoromethyl group, a C₁-C₆ alkyl group, a C₁-C₆ alkoxy group, or a hydroxyl group), -L-N(R⁸)(R⁹) (wherein L, R⁸ and R⁹ are as defined above), -L-OR¹¹ (wherein L is as defined above, and R¹¹ is a hydrogen atom, a C₁-C₆ alkyl group, or a C₁-C₆ alkenyl group), -L-OC(O)R¹² (wherein L is as defined above, and R¹² is a C₁-C₆ alkyl group or a C₁C₆ alkoxy group), -L-S(O)_nR¹¹ (wherein L, n and R¹¹ are as defined above), -L-SC(O)R⁸ (wherein L and R⁸ are as defined above),

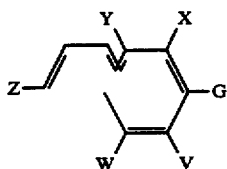


(wherein each of L1 and L2 which may be the same or different is a methylene group, an oxygen atom or a sulfur atom, R¹² is a hydrogen atom or a C₁-C₃ alkyl group, and m is 2 or 3); and a salt thereof.

The present invention also provides a selective herbicidal composition comprising a herbicidally effective amount of at least one pyrazole derivative of the formula I as defined above or its salt and an agricultural carrier or diluent.

Further, the present invention provides a method for selectively controlling weeds, which comprises applying the pyrazole derivative of the formula I as defined above or its salt to the locus to be protected.

Furthermore, the present invention provides a substituted benzene derivative of the formula:



wherein G is a carboxyl group, a halocarbonyl group or a cyanocarbonyl group, and X, Y, Z, V and W are as defined above.

Now, the present invention will be described in detail with reference to the preferred embodiments.

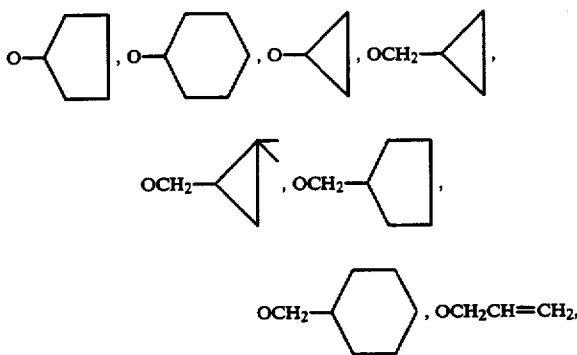
In the compound of the formula I of the present invention, A, B, X, Y, Z and Q are preferably selected from the following substituents, respectively:

- A: Me, Et, n-Pr, i-Pr, CH₂CH=CH₂, CH₂C≡CH, t-Bu
 B: H, Me, Et, n-Pr, i-Pr, Cl, Br, CH₂Cl, CF₃, OMe, OEt, OPr-i, SMe, CH₂OMe, CH₂SMe, CO₂Me, CO₂Et
 X: Me, Et, n-Pr, i-Pr, n-Bu, i-Bu, s-Bu, t-Bu, OMe, OEt, OPr-n, OPr-i, OPr-i, OBU-n, OBU-s, OBU-t, F, Cl, Br, I, NO₂CN, CH₂F, CHF₂, CF₃, CH₂CF₃, CH₂Cl, CCl₃, CHClMe, CH₂CH₂Cl, CHClCH₂Cl, CH₂Br, CHBrMe, CH₂CH₂Br, CH₂OMe, CH₂OEt, CH₂OPr-n, CH₂OPr-i, CH₂OBu-n, CH₂OBu-i, CH₂OBu-s, CH₂OBu-t, CHMeOMe, CHMeOEt, CHMeOPr-n, CHMeOPr-i, CHMeOBu-n, CHMeO-
 Bu-i, CHMeObu-s, CHMeObu-t, CH₂CH₂OMe, CH₂CH₂OEt, CH₂CH₂OPr-i, Ac, COEt, COPr-n, COPr-i, COOMe, COOEt, COOPr-i, CONHMe,

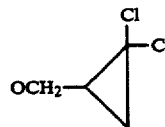
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- CONHEt, CONMe₂, CONEt₂, CONEtMe, OCHF₂, OCF₃, OCH₂CF₃, SMe, SEt, CH₂SMe, CH₂SEt, CHMeSMe, CHMeSEt

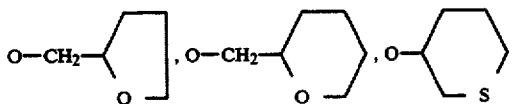
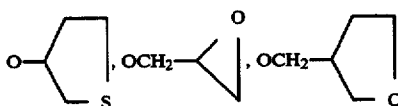
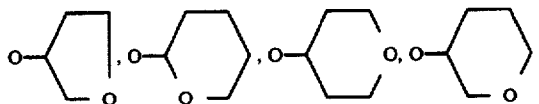
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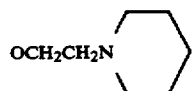
- OCHMeCH=CH₂, OCM₂CH=CH₂, OCH₂CMe=CH₂, OCH₂CH=CHMe, OCH₂CH=CMe₂, OCH₂C≡CH, OCHMeC≡CH, OCHMe₂C≡CH, OCH₂≡CMe, OCH₂CH₂F, OCH₂CHF₂, OCH₂CF₃, OCH₂CH₂Cl, OCHMeCH₂Cl, OCH₂CCl₃, OCH₂CH₂CH₂Cl, OCH₂CH₂Br,



- OCH₂CCl=CH₂, OCH₂CH₂CH=CH₂, OCH₂CCl=CHCl, OCH₂CH₂NO₂, OPh, OPh-Me-2, OPh-Cl-4, OPh-NO₂-4, OPh₂CH₂OMe, OCH₂C-H₂OEt, OCH₂CH₂OPr-n, OCH₂CH₂OPr-i, OCH₂C-H₂OBu-n, OCH₂CH₂OBu-i, OCH₂CH₂Bu-s, OCH₂CH₂OBu-t, OCHMeCH₂OMe, OCH₂C-H₂OPh, OCH₂CH₂OCH₂CH₂OMe, OCH₂CH₂OH, OCH₂CH₂OCHMeCH₂OMe, OCH₂Ph, OCHMePh, OCH₂Ph-4-Me, OCH₂Ph-4-Cl, OCH₂CH₂Ph,

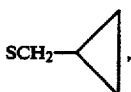


- OCH₂CH₂NH₂, OCH₂CH₂NHMe, OCH₂CH₂NMe₂, OCH₂CH₂NEt₂,

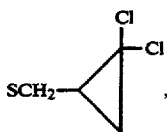


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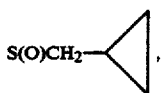
OCH₂COOMe, OCH₂COOEt, OCH₂COOPr-n,
 OCH₂COOPr-i, OCH₂COOBu-t, OCHMeCOOMe,
 OCHMeCOOEt OCHMeCOOPr-n, OCH-
 MeCOOPr-i, OCHMeCOOBu-t OCH₂CH₂CN,
 OCH₂CN, OCHMeCN, OCH₂SMe, OCH₂C(O)Ph,
 OCH₂C(O)Me, OCH₂CH₂SMe, OCH₂CH₂SOMe,
 OCH₂CH₂SO₂Me, OCH₂CH₂SEt, OCH₂CH₂SO₂Et,
 OCOOMe, OCOOEt, OCOOPr-i, OCONH₂,
 OCONHMe, OCONMe₂, OP(O)(OMe)₂, OP(O)(O-
 Et)₂,



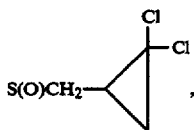
SCH₂CH=CH₂, SCH₂C≡CH, SCH₂CF₃,
 SCH₂CH₂Cl, SCH₂CCl₃,



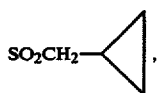
SPh, SCH₂CH₂OMe, SCH₂CH₂OEt, SCH₂CH₂OPr-
 i, SCH₂CH₂OPh,



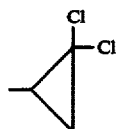
S(O)CH₂=CH₂, S(O)CH₂CH=CH₂, S(O)CH₂CF₃,
 S(O)CH₂CH₂Cl,



S(O)Ph, S(O)CH₂CH₂OMe, S(O)CH₂CH₂OEt,
 S(O)CH₂CH₂OPr-i, S(O)CH₂CH₂OPh,



SO₂CH₂CH=CH₂, SO₂CH₂C≡CH, SO₂CH₂CF₃,
 SO₂CH₂CH₂Cl, SO₂CH₂



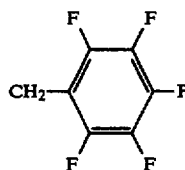
SO₂Ph, SO₂CH₂CH₂OMe, SO₂CH₂CH₂OEt,
 SO₂CH₂CH₂OPr-i,

Z : F, Cl, Br, I, NO₂, OMe, OEt, OPr-n, OPr-i, CF₃,
 CN, SMe, SOMe, SO₂Me, SCF₃, SOCF₃, SO₂CF₃.

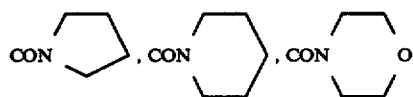
Q : H, Me, Et, n-Pr, i-Pr, n-Bu, i-Bu, s-Bu, t-Bu,
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 CHClCH₂Cl, CH₂CH=CH₂, CH₂CME=CH₂,
 CH₂CH=CHMe, CH₂C≡CH, CH₂CCl=CH₂,

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CH₂CN, CH₂Ph, CH₂Ph-Cl-2, CH₂Ph-Cl-3, CH₂Ph-
 Me-2,



CH₂Ph-Me₂-2,4, CH₂Ph-Me-4, CHMePh, CHEtPh,
 CH₂Ph-NO₂-2, CH₂Ph-CF₃-3, CH₂OMe, CH₂OEt,
 CH₂OH, CHMeOH, CH₂NHMe, CH₂NMe₂,
 CHMeNM₂, CH₂COPh, CH₂COPh-NO₂-4,
 CH₂COPh-Me-4, CH₂COPh-Cl-4, CH₂COPh-Me₂-
 2,4, CH₂COPh-CF₃-4, CH₂Ac, CH₂COEt,
 CHMeAc, CH₂CO₂Me, CH₂CO₂Et, CH₂CO₂Pr-n,
 CH₂CO₂Pr-i, CH₂CO₂Bu-t, CH₂CO₂H, CHMe-
 CO₂H, CH₂CONHMe, CH₂CONMe₂, CH₂CON-
 HEt, CH₂CONEt₂, CH₂CONPr-n₂,
 CH₂OCH₂CH=CH₂, CH₂OAc, CH₂COEt,
 CH₂COPr-i, CH₂COBu-t, CH₂OCO₂Me, CH₂OCO-
 2Et, CH₂OCO₂Pr-i, CH₂OCO₂Bu-t, CH₂SMe,
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 CH₂SCOBu-t, CH₂SO₂Me, CH₂SO₂Et,
 CH₂SO₂CH₂CH=CH₂, CH₂NHCH₂CH=CH₂,
 CH₂NMeCH₂CH=CH₂, CH₂NHAc, CH₂NHCOEt,
 CH₂NHCO₂Me, CH₂NHCO₂Et, CH₂NMeCO₂Me,
 COPh, COPh-Me-4, COPh-NO₂-2, COPh-Cl₂-2,4,
 Ac, COEt, COPr-n, COPr-i, COBu-n, COBu-t,
 COCH₂Cl, COCHCl₂, COCCl₃, COCF₃, COCH-
 2OMe, COCH₂OPh, COCH₂CH=CHCH₃, CO₂Me,
 CO₂Et, CO₂Bu-t, CO₂Pr-i, CONHMe, CONMe₂,
 CONHEt, CONEt₂, CONPr-n₂,
 CON(CH₂CH=CH₂)₂, CONMePh,



CO₂CH₂Ph, CO₂Ph, SO₂Me, SO₂Et,
 SO₂CH₂CH=CH₂, SO₂Ph, SO₂Ph-Me-4, SO₂Ph-Cl-
 4, SO₂Ph-(NO₂)₂-2,4 SO₂CF₃, P(=O)(OMe)₂,
 P(=O)(OEt)₂, P(=O)(OPr-n)₂, P(=O)(OPr-i)₂,
 P(=S)(OMe)₂, P(=S)(OEt)₂, P(=O)OMeOPh,
 P(=O)(OCH₂CH=CH₂)₂, P(=O)O-
 PhOCH₂CH=CH₂

When Q is a hydrogen atom, the compound may
 readily from a salt with a metal or with an organic base.

As such a metal, sodium, potassium, calcium, lithium,
 barium, magnesium, iron, copper, nickel or manganese
 may be mentioned.

As such an organic base, methylamine, dimethylam-
 ine, trimethylamine, ethylamine, diethylamine, triethyl-
 amine, n-propylamine, di-n-propylamine, i-propylam-
 ine, di-i-propylamine, n-butylamine, i-butylamine,
 sec-butylamine, tert-butylamine, piperidine, pyrroli-
 dine, morpholine, pyridine, N,N-dimethylaniline or
 choline may be mentioned.

In the course of researches on the herbicidal proper-
 ties of various organic compounds with an aim to de-
 velop useful herbicides, the present inventors have
 found that the above-mentioned compound of the pres-
 ent invention exhibits excellent herbicidal activities
 against narrow leaf weeds (gramineous and cypera-

aceous weeds) and against broad leaf weeds and no substantial phytotoxicity against useful plants e.g. crop plants such as *Zea mays* (corn), *Sorghum bicolor* (sorgo), *Triticum spp* (wheat) and *Hordeum vulgare* (barley). The present invention has been accomplished on the basis of this discovery.

The compound of the present invention exhibits strong herbicidal activities in each of soil treatment, soil incorporation treatment and foliage treatment. On the other hand, it exhibits no phytotoxicity against crop plants such as *Zea mays*, *Sorghum bicolor*, *Triticum spp* and *Hordeum vulgare* in a practical application in any of soil treatment, soil incorporation treatment and foliage treatment. Thus, the compound of the present invention has high selectivity and it is extremely effective for controlling weeds during the cultivation of these crop plants. Namely, the compound of the present invention exhibits strong herbicidal activities against noxious weeds such as *Setaria viridis* (green foxtail), *Echinochloa crus-galli* (barnyardgrass), *Amarathus lividus* (livid amaranth), *Polygonum longisetum* (*persicaria blumei* gross), *Xanthium strumarium* (cocklebur), *Abutilon theophrasti* (velvet leaf) and *Cyperus esculentus* (yellow nutsedge), which develop during the cultivation of *Zea mays* or *Sorghum bicolor*. The herbicidal activities against gramineous weeds and *Cyperus esculentus* are remarkably high and extremely unique. Heretofore, during the cultivation of *Zea mays* or *Sorghum bicolor*, it has been common to employ atrazine or cyanazine as a triazine-type herbicide, or alachlor or metolachlor as an acid anilide type herbicide. However, atrazine and cyanazine have poor herbicidal activities against gramineous weeds although they show high activities against broad leaf weeds, and their activities against *Cyperus esculentus* are very low. On the other hand, alachlor and metolachlor have poor activities against broad leaf weeds although their activities against gramineous weeds are high, and their activities against *Cyperus esculentus* are very poor. Thus, it has been difficult to eradicate all the weed species by a single application of such herbicides.

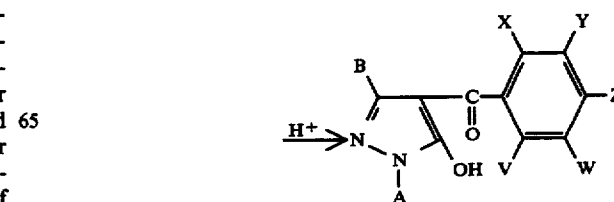
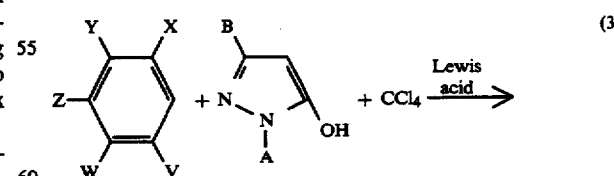
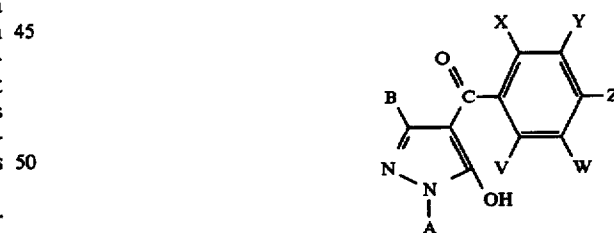
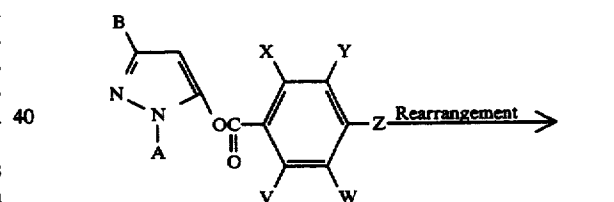
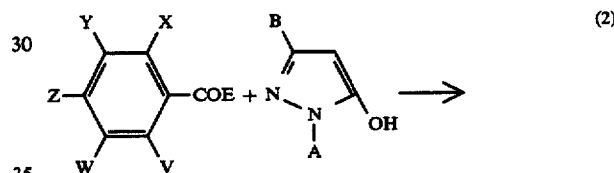
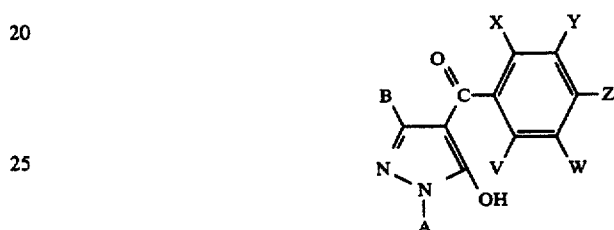
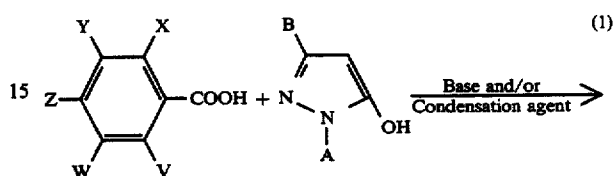
As a result of various studies, the present inventors have found the compound of the present invention which exhibits excellent herbicidal effects against a wide range of weeds, and the present invention has been accomplished on the basis of this discovery. The compound of the present invention also has a feature that it exhibits no phytotoxicity against crop plants such as *Zea mays*, *Sorghum bicolor*, *Triticum spp* and *Hordeum vulgare* and thus can safely be applied to the fields for such crop plants.

Further, the compound of the present invention includes a compound which shows selectivity between *Oryza sativa* (rice) and *Echinochloa crus-galli* (barnyardgrass), and it also includes a compound having selectivity for a useful plant such as *Gossypium spp* (cotton), *Beta vulgaris* (sugar beat) or *Clycine max* (soybean).

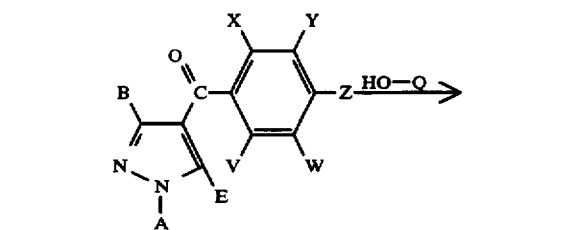
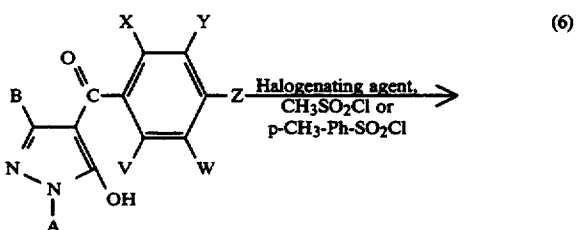
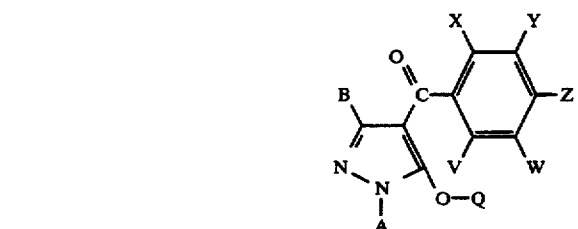
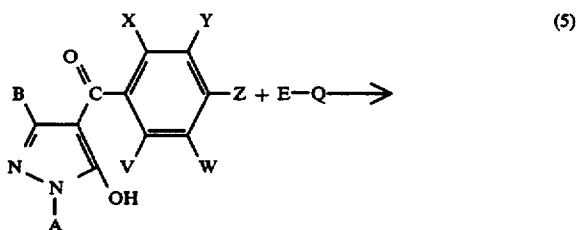
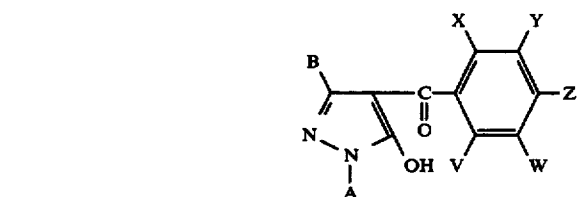
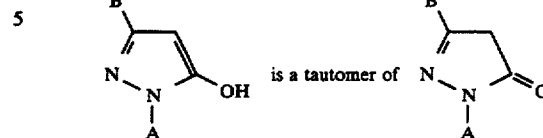
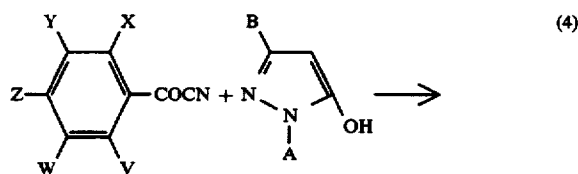
Heretofore, it has been known that 4-benzoylpyrazole derivatives have excellent herbicidal activities. For example, pyrazolate (common name) is commercially available and widely used for practical application. However, such conventional herbicides are restricted in their application to paddy fields, and their activities are very poor in their application to upland fields. Whereas, as a result of extensive research for many years on 4-benzoylpyrazole derivatives, the present inventors have finally found that the compound of

the present invention which simultaneously satisfies the various conditions for substituents in the structure as specified above, exhibits strong herbicidal activities in the application to upland fields in each of soil treatment, soil incorporation treatment and foliage treatment. It has been found that the compound of the present invention exhibits particularly high activities against gramineous weeds and *Cyperus esculentus*.

The compound of the present invention can readily be prepared by any one of the following reactions.



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-continued



In the above formulas, A, B, V, W, X, Y, Z and Q are as defined above, E is a halogen atom, a methanesul-

fonyloxy group or a p-toluenesulfonyloxy group. Further,

and may be represented by either formula.

Reaction scheme (1) represents a reaction wherein benzoic acid having suitable substituents and 5-hydroxypyrazole are reacted in an inert solvent in the presence of a condensation agent and a base to obtain 4-benzoyl-5-hydroxypyrazole. The condensation agent is used in an amount of from 1.0 to 1.5 mols per mol of the benzoic acid and pyrazole. As the condensation agent, N,N'-dicyclohexylcarbodiimide may be mentioned. The solvent may be any solvent so long as it is inert to the reaction. Particularly preferred is tert-butyl alcohol, tert-amyl alcohol or isopropyl alcohol. The base may not necessarily be required. However, in general, the yield can be improved by using a base. There is no particular restriction as to the base, but potassium carbonate or sodium carbonate may preferably be employed. The reaction temperature may range from room temperature to boiling point of the solvent, but is preferably from 50° to 100° C.

The reaction time is usually from 0.5 to 20 hours.

Reaction scheme (2) shows a reaction wherein benzoyl chloride having suitable substituents and 5-hydroxypyrazole are reacted to form a benzoyl ester, which is then rearranged to a 4-benzoyl compound.

The benzoyl esterification can be accomplished in an inert solvent (such as an aromatic hydrocarbon, a fatty acid ester, a halogenated hydrocarbon, an ether, acetonitrile, dimethylsulfoxide or N,N'-dimethylformamide) or in a two phase system with such a solvent and water or in a mixture of such solvents in the presence of a suitable dehydrochlorinating agent (e.g. an inorganic base such as sodium hydroxide, potassium hydroxide or sodium hydrogencarbonate, or an organic base such as pyridine or triethylamine) at a temperature of from room temperature to 100° C. for from 10 minutes to 5 hours.

The rearrangement reaction can be accomplished by means of a Lewis acid such as anhydrous aluminum chloride or a base. As the base, potassium carbonate, calcium hydroxide or sodium carbonate may be used. The Lewis acid or base is used usually in an amount of from 1 to 10 mol times.

No solvent is required. However, in some cases, it is advantageous to use a solvent having a suitable boiling point to improve the operation efficiency or the yield. As such an advantageous example, use of dioxane, toluene or xylene diglyme, may be mentioned.

The reaction temperature is usually from 50° to 150° C., and the reaction time is usually from 15 minutes to 30 hours.

Reaction scheme (3) shows a reaction wherein a benzene derivative, a 5-hydroxypyrazole derivative and carbon tetrachloride are condensed in the presence of a Lewis acid in an inert solvent or in the absence of a solvent, followed by hydrolysis to obtain a 4-benzoyl-5-hydroxypyrazole derivative. As the Lewis acid, anhydrous aluminum chloride or anhydrous aluminum bro-

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 mide in an amount of at least the theoretical amount for the reaction is preferred. The solvent may be of any type so long as it is inert to the reaction. However, a chlorine-type solvent such as methylene chloride, dichloroethane or tetrachloroethane is preferred. The temperature for condensation may range from 0° C. to the boiling point of the solvent, but it is preferably from 10° to 80° C. The hydrolysis is conducted in the presence of hydrochloric acid or sulfuric acid. The temperature for the hydrolysis is preferably from room temperature to 100° C. The time for the hydrolysis is usually from 0.1 to 10 hours.

Reaction scheme (4) shows a reaction wherein a benzoyl cyanide derivative and a 5-hydroxypyrazole derivative are reacted in the presence of a Lewis acid and a base in an inert solvent or in the absence of a solvent to obtain a 4-benzoyl-5-hydroxypyrazole. As the Lewis acid, zinc chloride, aluminum chloride or aluminum bromide may be used. As the base, pyridine or triethylamine may be mentioned. The Lewis acid and the base are used usually in an amount of from 1 to 10 mol times. As the solvent, methylene chloride, dichloroethane or tetrachloroethane may be mentioned. The reaction temperature is usually from 0° to 80° C., preferably from 10° to 50° C. The reaction time is from 0.5 to 20 hours.

Reaction scheme (5) shows a reaction wherein 4-benzoyl-5-hydroxypyrazole is condensed with a halide, a methanesulfonic acid ester or a p-toluenesulfonic acid ester.

For this reaction, it is preferred to employ from 1 to 3 mol times of a dehydrohalogenating agent. As such a dehydrohalogenating agent, an inorganic base such as sodium hydroxide, potassium hydroxide, sodium carbonate, sodium hydrogencarbonate or potassium carbonate, or an organic base such as pyridine or triethylamine, may be mentioned.

There is no particular restriction as to the solvent so long as it is inert to the reaction. A wide range of solvents including an aromatic hydrocarbon, a fatty acid ester, a halogenated hydrocarbon, an ether, a ketone, an aliphatic hydrocarbon, acetonitrile, dimethylsulfoxide and dimethylformamide may be used.

The reaction temperature may be optionally selected within a range of from room temperature to the boiling point of the solvent. The reaction time is usually from 30 minutes to 30 hours.

Reaction scheme (6) shows a reaction wherein 4-benzoyl-5-hydroxypyrazole is converted to a 5 halogeno compound by a halogenating agent, or to a methanesulfonate compound or a p-toluenesulfonate compound by methane sulfonyl chloride or p-toluenesulfonyl chloride, followed by condensation with a suitable alcohol or acid.

As the halogenating agent, phosphorus oxychloride, phosphorus pentachloride or thionyl chloride may be mentioned.

As the solvent, a wide range of solvents inert to the reaction, such as dimethylformamide, may be employed. However, the reaction can be conducted without any solvent.

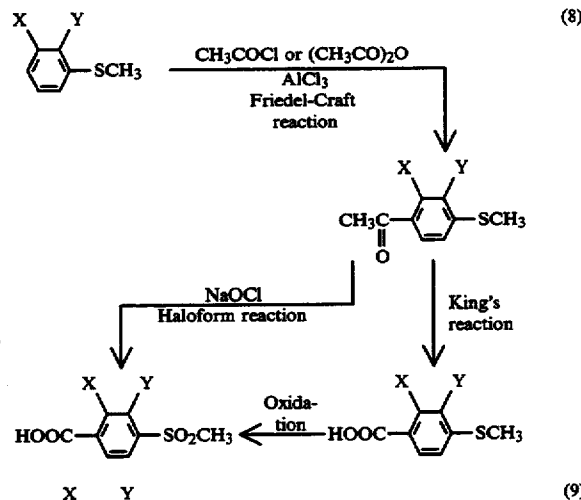
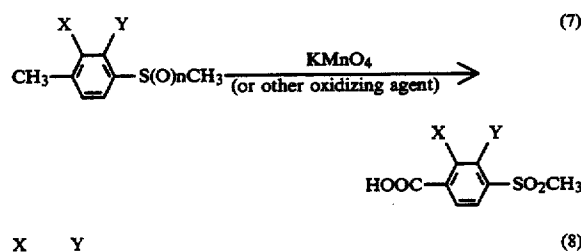
The reaction temperature is preferably from 30° to 150° C, and the reaction time is usually from 30 minutes to 10 hours. In some cases, the reaction time may be shortened or the yield may be improved by an addition of a dehydrohalogenating agent.

The condensation reaction with an alcohol or acid is conducted by an addition of a dehydrohalogenating agent.

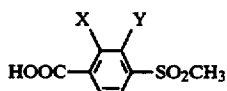
As such a dehydrohalogenating agent, a base such as sodium hydroxide, potassium hydroxide, sodium carbonate, potassium carbonate, sodium alkoxide or sodium hydride may be employed.

The solvent may be any solvent which is inert to the reaction (such as an aromatic hydrocarbon, an ether, a ketone or N,N'-dimethylformamide). The reaction temperature may be selected within a range of from room temperature to the boiling point of the solvent.

The substituted benzene derivatives used as the starting materials for the compounds of the present invention have novel structures, and they may readily be prepared by a proper combination of various known syntheses. For instance, compounds wherein the substituent Z in the benzene ring is $-S(O)_nCH_3$ can be prepared in accordance with the following reaction schemes.



-continued



In the above formulas, X and Y are as defined above, and Hal is a halogen atom.

Now, the preparation of the substituted benzene derivatives and pyrazole derivatives will be described in detail with reference to Examples. However, it should be understood that the present invention is by no means restricted by such specific Examples.

EXAMPLE 1

Preparation of

4-(2-chloro-4-methanesulfonyl-3-(2-methoxy)ethoxybenzoyl)-1-ethyl-5-hydroxypyrazole

(1) (2-methoxy)ethyl

2-chloro-4-methanesulfonyl-3-(2-methoxy)ethoxybenzoate

1.2 g of 2-chloro-3-hydroxy-4-methanesulfonylbenzoic acid, 1.4 g of potassium carbonate and 2.1 g of 2-bromoethyl methyl ether were put into 20 ml of N,N-dimethylformamide and reacted under heating at a temperature of from 60° to 70° C. for from 6 to 7 hours. Then, the solvent was distilled off, and after an addition of water, the reaction mixture was extracted with chloroform. The extract was dried over anhydrous sodium sulfate, and the solvent was distilled off to obtain 1.9 g of a crude product of the above identified compound.

(2)

2-chloro-4-methanesulfonyl-3-(2-methoxy)ethoxybenzoic acid

1.9 g of the crude product of (2-methoxy)ethyl 2-chloro-4-methanesulfonyl-3-(2-methoxy)ethoxybenzoate was dissolved in 50 ml of ethanol, and 20 ml of an aqueous solution containing 1 g of sodium hydroxide was added thereto. The mixture was stirred at room temperature for 30 minutes. Then, ethanol was distilled off, and water was added to the residue. The mixture was washed with chloroform, then acidified with concentrated hydrochloric acid and extracted with chloroform. The extract was dried over anhydrous sodium sulfate. Then, the solvent was distilled off to obtain 1.4 g of a crude product of the above identified compound. To the crude product, n-hexane was added, and the mixture was left to stand, whereby the desired product was gradually crystallized. Melting point: 89°-92° C.

(3)

4-(2-chloro-4-methanesulfonyl-3-(2-methoxy)ethoxybenzoyl)-1-ethyl-5-hydroxypyrazole

1.2 g of the crude product of 2-chloro-4-methanesulfonyl-3-(2-methoxy)ethoxybenzoic acid, 0.3 g of potassium carbonate, 0.45 g of 1-ethyl-5-hydroxypyrazole and 0.77 g of N,N'-dicyclohexyl carbodiimide were put into 40 ml of t-amyl alcohol, and the mixture was stirred under heating at a temperature of from 80° to 90° C. for from 4 to 5 hours. The solvent was distilled off, and a dilute potassium carbonate aqueous solution was added to the residue. The mixture was washed with chloroform. The aqueous layer was acidified with concentrated hydrochloric acid and extracted with chloroform. The extract was dried over anhydrous sodium sulfate. Then, the solvent was distilled off to obtain a crude product of the above identified compound. The

crude product was recrystallized from ethanol to obtain 0.3 g of the desired product. Melting point: 159°-160° C.

EXAMPLE 2

Preparation of

4-(3-benzyloxy-2-chloro-4-methanesulfonylbenzoyl)-1-ethyl-5-hydroxypyrazole (1) Benzyl 3-benzyloxy-2-chloro-4-methanesulfonylbenzoate

1.5 g of 2-chloro-3-hydroxy-4-methanesulfonylbenzoic acid, 1.7 g of potassium carbonate and 5.1 g of benzyl bromide were put into 50 ml of dimethylformamide, and the mixture was stirred at room temperature overnight and then heated at a temperature of from 60° to 70° C. for 3 hours. The solvent was distilled off, and water was added to the residue. The mixture was extracted with chloroform. The extract was dried over anhydrous sodium sulfate. Then, the solvent was distilled off to obtain a crude product of the above identified compound. The crude product was recrystallized from ethanol to obtain 2.5 g of the desired product.

(2) 3-benzyloxy-2-chloro-4-methanesulfonylbenzoic acid

2.5 g of benzyl 3-benzyloxy-2-chloro-4-methanesulfonylbenzoate was put into 50 ml of ethanol, and 25 ml of an aqueous solution containing 1 g of sodium hydrochloride was added thereto. The mixture was stirred at room temperature for 30 minutes. Then, ethanol was distilled off, and water was added to the residue. The mixture was washed with chloroform. The aqueous layer was acidified with concentrated hydrochloric acid and then extracted with chloroform. The extract was dried over anhydrous sodium sulfate. Then, the solvent was distilled off to obtain a crude product of the above identified compound. The crude product was washed with ethanol-isopropyl ether to obtain 1.0 g of the desired product.

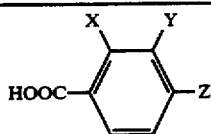
(3) 4-(3-benzyloxy-2-chloro-4-methanesulfonylbenzoyl)-ethyl-5-hydroxypyrazole

1.0 g of 3-benzyloxy-2-chloro-4-methanesulfonylbenzoic acid, 0.23 g of potassium carbonate, 0.24 g of 1-ethyl-5-hydroxy-pyrazole and 0.59 g of N,N'-dicyclohexylcarbodiimide were put into 20 ml of t-amyl alcohol, and the mixture was stirred under heating at a temperature of from 80° to 90° C. for 4 hours. The solvent was distilled off, and then an aqueous potassium carbonate solution was added to the residue. The mixture was washed with chloroform. The aqueous layer was acidified with concentrated hydrochloric acid and then extracted with chloroform. The extract was dried over anhydrous sodium sulfate. Then, the solvent was distilled off to obtain a crude product of the above identified compound. The crude product was recrystallized from ethanol to obtain 0.3 g of the desired product. Melting point: 162°-165° C.

The physical properties of the benzoic acids and the pyrazole derivatives prepared in accordance with the preceding Examples will be given in Tables 1 and 2 including those of the preceding Examples.

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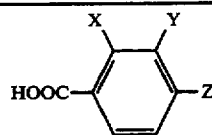
TABLE 1



X	Y	Z	Melting point (°C.)
Cl		SO ₂ Me	102~107
Cl	OCH ₂ CH ₂ OPh	SO ₂ Me	147~151

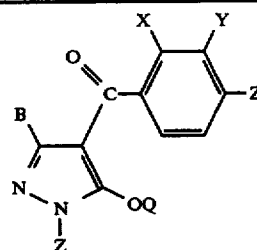
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TABLE 1-continued



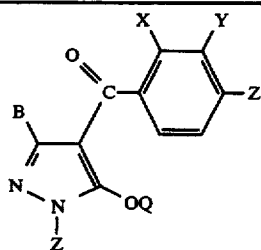
X	Y	Z	Melting point (°C.)
Cl		SO ₂ Me	153~157
Cl	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	90~94
Cl	OCH ₂ CH=CHMe	SO ₂ Me	113~118
Cl	OCH ₂ CH ₂ OMe	SO ₂ Me	89~92

TABLE 2



Compound No.	A	B	X	Y	Z	Q	Melting point (°C.)
1	Et	H	Cl	OCH ₂ CH ₂ OMe	SO ₂ Me	H	159~160
2	Et	H	Cl	OCH ₂ Ph	SO ₂ Me	H	162~165
3	Et	H	Cl		SO ₂ Me	H	156~159
4	Et	H	Cl		SO ₂ Me	H	153~157
5	Et	H	Cl	OCH ₂ CH ₂ OPh	SO ₂ Me	H	148~150
6	Et	H	Cl	OCH ₂ C≡CH	SO ₂ Me	H	150.7~152.4
7	Et	H	Cl	OCH ₂ CH ₂ OEt	SO ₂ Me	H	152.3~154.9
8	Et	H	Cl	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H	131~134
9	Et	H	Cl	OCH ₂ CH ₂ SMe	SO ₂ Me	H	Oily substance
10	Et	H	Cl	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H	206~208
11	Et	H	Cl	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H	171~174
12	Et	H	Cl		SO ₂ Me	H	191~193
13	Me	Me	Cl		SO ₂ Me	H	181~183.5
14	Et	H	Cl		SO ₂ Me	H	100~101

TABLE 2-continued

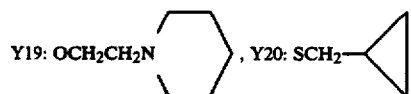
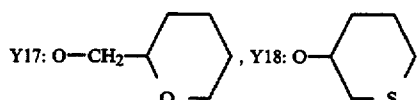
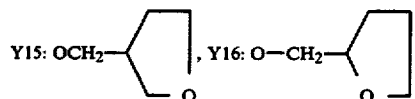
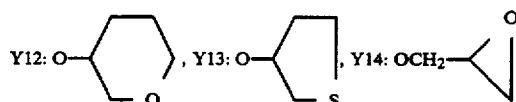
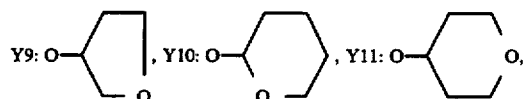
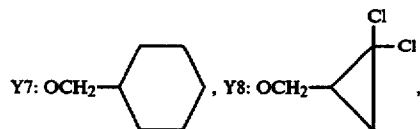
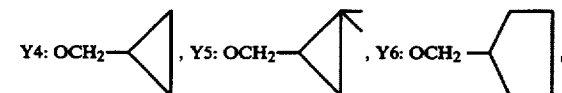
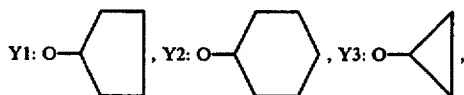


Compound No.	A	B	X	Y	Z	Q	Melting point (°C.)
15	Et	H	Cl			SO ₂ Me H	171~173
16	Me	Me	Cl			SO ₂ Me H	138~142
17	Me	Me	Cl			SO ₂ Me H	100.5~101
18	Et	H	Cl			SO ₂ Me H	154~158
19	Et	H	Cl			SO ₂ Me H	175~179
20	i-Pr	H	Cl	OCH ₂ CH ₂ OMe		SO ₂ Me H	180~183

-continued

Compounds which can be prepared in the same manner as the preceding Examples will be given in Tables 3 to 8 including those of the preceding Examples. However, the present invention is not restricted to such compounds.

Various symbols used in Tables 3 to 8 have the following meanings.



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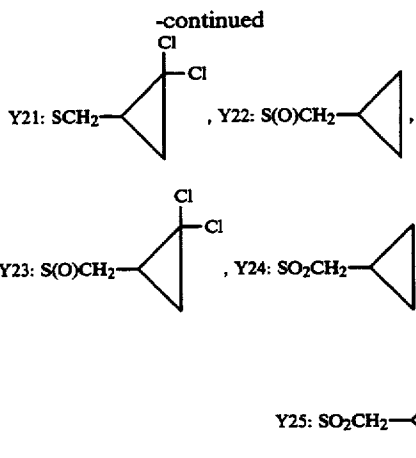
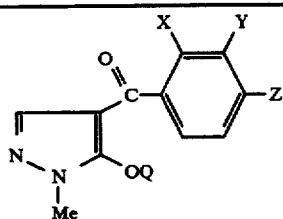


TABLE 3

X	Y	Z	Q
Me	Y1	SO ₂ Me	H
Me	Y2	SO ₂ Me	H
Me	Y3	SO ₂ Me	H
Me	Y4	SO ₂ Me	H
Me	Y5	SO ₂ Me	H
Me	Y6	SO ₂ Me	H
Me	Y7	SO ₂ Me	H
Me	OCH ₂ CH=CH ₂	SO ₂ Me	H
Me	OCHMeCH=CH ₂	SO ₂ Me	H
Me	OCMe ₂ CH=CH ₂	SO ₂ Me	H
Me	OCH ₂ CMe=CH ₂	SO ₂ Me	H
Me	OCH ₂ CH=CHMe	SO ₂ Me	H
Me	OCH ₂ CH=CHMe ₂	SO ₂ Me	H
Me	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
Me	OCH ₂ C≡CH	SO ₂ Me	H
Me	OCHMeC≡CH	SO ₂ Me	H
Me	OCMe ₂ C≡CH	SO ₂ Me	H
Me	OCH ₂ C≡CMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ F	SO ₂ Me	H
Me	OCH ₂ CHF ₂	SO ₂ Me	H
Me	OCH ₂ CF ₃	SO ₂ Me	H
Me	OCH ₂ CH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CCl ₃	SO ₂ Me	H
Me	OCHMeCH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CH ₂ Br	SO ₂ Me	H
Me	Y8	SO ₂ Me	H
Me	OCH ₂ CCl=CH ₂	SO ₂ Me	H
Me	OCH ₂ CCl=CHCl	SO ₂ Me	H
Me	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H
Me	OPh	SO ₂ Me	H
Me	OPh-Me-2	SO ₂ Me	H
Me	OPh-Cl-4	SO ₂ Me	H
Me	OPh-NO ₂ -4	SO ₂ Me	H
Me	OCH ₂ CH ₂ OMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ OEt	SO ₂ Me	H
Me	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H
Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H
Me	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H
Me	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H
Me	OCH ₂ CH ₂ -Y4	SO ₂ Me	H
Me	OCHMeCH ₂ OMe	SO ₂ Me	H
Me	OCH ₂ CHMeOMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ OPh	SO ₂ Me	H



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TABLE 3-continued

X	Y	Z	Q
Me	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ OH	SO ₂ Me	H
Me	OCH ₂ Ph	SO ₂ Me	H
Me	OCHMePh	SO ₂ Me	H
Me	OCH ₂ CH ₂ Ph	SO ₂ Me	H
Me	OCH ₂ Ph-2-Cl	SO ₂ Me	H
Me	OCH ₂ Ph-3-Me	SO ₂ Me	H
Me	OCH ₂ Ph-4-OMe	SO ₂ Me	H
Me	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
Me	Y9	SO ₂ Me	H
Me	Y10	SO ₂ Me	H
Me	Y11	SO ₂ Me	H
Me	Y12	SO ₂ Me	H
Me	Y13	SO ₂ Me	H
Me	Y14	SO ₂ Me	H
Me	Y15	SO ₂ Me	H
Me	Y16	SO ₂ Me	H
Me	Y17	SO ₂ Me	H
Me	Y18	SO ₂ Me	H
Me	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
Me	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
Me	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
Me	Y19	SO ₂ Me	H
Me	OCH ₂ COOMe	SO ₂ Me	H
Me	OCH ₂ COOEt	SO ₂ Me	H
Me	OCH ₂ COOPr-i	SO ₂ Me	H
Me	OCH ₂ COOBu-i	SO ₂ Me	H
Me	OCH ₂ COOBu-t	SO ₂ Me	H
Me	OCH ₂ COO-Y4	SO ₂ Me	H
Me	OCHMeCOOMe	SO ₂ Me	H
Me	OCHMeCOOEt	SO ₂ Me	H
Me	OCHMeCOOPr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ CN	SO ₂ Me	H
Me	OCH ₂ SMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ SMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
Me	OCOOMe	SO ₂ Me	H
Me	OCOOPr-i	SO ₂ Me	H
Me	OCONH ₂	SO ₂ Me	H
Me	OCONHMe	SO ₂ Me	H
Me	OCONMe ₂	SO ₂ Me	H
Me	OP(O)(OMe) ₂	SO ₂ Me	H
Me	Y20	SO ₂ Me	H
Me	SCH ₂ CH-CH ₂	SO ₂ Me	H
Me	SCH ₂ CH-CMe ₂	SO ₂ Me	H
Me	SCH ₂ C≡CH	SO ₂ Me	H
Me	SCH ₂ CF ₃	SO ₂ Me	H
Me	SCH ₂ CCl ₃	SO ₂ Me	H
Me	Y21	SO ₂ Me	H
Me	SPh	SO ₂ Me	H
Me	SCH ₂ CH ₂ OMe	SO ₂ Me	H
Me	SCH ₂ CH ₂ OEt	SO ₂ Me	H
Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Me	Y22	SO ₂ Me	H
Me	S(O)CH ₂ CH-CH ₂	SO ₂ Me	H
Me	S(O)CH ₂ CH-CMe ₂	SO ₂ Me	H
Me	S(O)CH ₂ C≡CH	SO ₂ Me	H
Me	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
Me	Y23	SO ₂ Me	H
Me	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
Me	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
Me	SO ₂ CH ₂ C≡CH	SO ₂ Me	H

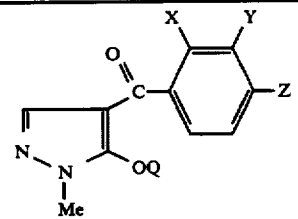
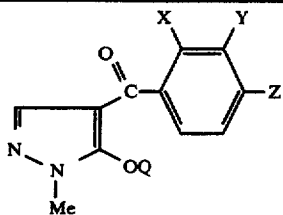
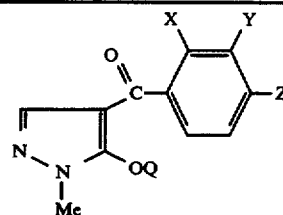


TABLE 3-continued



X	Y	Z	Q
Me	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
Me	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
Me	Y24	SO ₂ Me	H
Me	Y25	SO ₂ Me	H
Me	SO ₂ Ph	SO ₂ Me	H
Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
Me	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Me	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
Me	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Me	SO ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
Me	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ OMe	Cl	H
Me	OCH ₂ CH ₂ OEt	Cl	H
Me	OCH ₂ CH ₂ OPr-i	Cl	H
Me	OCHMeCH ₂ OMe	Cl	H
Me	OCH ₂ COOMe	Cl	H
Me	OCH ₂ CH ₂ SMe	Cl	H
Me	OCH ₂ CH ₂ SO ₂ Me	Cl	H
Me	SCH ₂ CH ₂ OMe	Cl	H
Me	SO ₂ CH ₂ CH ₂ OMe	Cl	H
Me	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
Me	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
Me	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
Me	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
Me	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
Me	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
Me	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
Me	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
Me	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
Me	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
Me	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
Me	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
Cl	Y1	SO ₂ Me	H
Cl	Y2	SO ₂ Me	H
Cl	Y3	SO ₂ Me	H
Cl	Y4	SO ₂ Me	H
Cl	Y5	SO ₂ Me	H
Cl	Y6	SO ₂ Me	H
Cl	Y7	SO ₂ Me	H
Cl	OCH ₂ CH=CH ₂	SO ₂ Me	H
Cl	OCHMeCH=CH ₂	SO ₂ Me	H
Cl	OCMe ₂ CH=CH ₂	SO ₂ Me	H
Cl	OCH ₂ CMe=CH ₂	SO ₂ Me	H
Cl	OCH ₂ CH=CHMe	SO ₂ Me	H
Cl	OCH ₂ CH=CMe ₂	SO ₂ Me	H
Cl	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
Cl	OCH ₂ C≡CH	SO ₂ Me	H
Cl	OCHMeC≡CH	SO ₂ Me	H

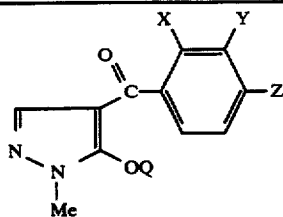
TABLE 3-continued



5
10

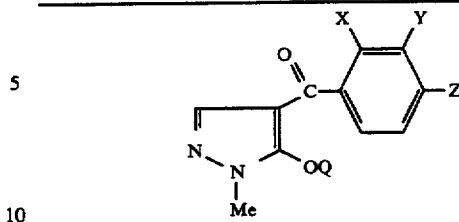
X	Y	Z	Q	
Cl	OCMe ₂ C≡CH	SO ₂ Me	H	
Cl	OCH ₂ C≡CMe	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ F	SO ₂ Me	H	
15	Cl	OCH ₂ CHF ₂	SO ₂ Me	H
Cl	OCH ₂ CF ₃	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ Cl	SO ₂ Me	H	
Cl	OCH ₂ CCl ₃	SO ₂ Me	H	
Cl	OCHMeCH ₂ Cl	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H	
20	Cl	OCH ₂ CH ₂ Br	SO ₂ Me	H
Cl	Y8	SO ₂ Me	H	
Cl	OCH ₂ CCl=CH ₂	SO ₂ Me	H	
Cl	OCH ₂ CCl=CHCl	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H	
Cl	OPh	SO ₂ Me	H	
25	Cl	OPh-Me-2	SO ₂ Me	H
Cl	OPh-Cl-4	SO ₂ Me	H	
Cl	OPh-NO ₂ -4	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OMe	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OEt	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H	
30	Cl	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ -Y4	SO ₂ Me	H	
35	Cl	OCHMeCH ₂ OMe	SO ₂ Me	H
Cl	OCH ₂ CHMeOMe	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OPh	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H	
40	Cl	OCH ₂ CH ₂ OH	SO ₂ Me	H
Cl	OCH ₂ Ph	SO ₂ Me	H	
Cl	OCHMePh	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ Ph	SO ₂ Me	H	
Cl	OCH ₂ Ph-2-Cl	SO ₂ Me	H	
Cl	OCH ₂ Ph-3-Me	SO ₂ Me	H	
Cl	OCH ₂ Ph-4-OMe	SO ₂ Me	H	
45	Cl	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
Cl	Y9	SO ₂ Me	H	
Cl	Y10	SO ₂ Me	H	
Cl	Y11	SO ₂ Me	H	
Cl	Y12	SO ₂ Me	H	
Cl	Y13	SO ₂ Me	H	
50	Cl	Y14	SO ₂ Me	H
Cl	Y15	SO ₂ Me	H	
Cl	Y16	SO ₂ Me	H	
Cl	Y17	SO ₂ Me	H	
Cl	Y18	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ NHMe	SO ₂ Me	H	
55	Cl	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
Cl	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H	
Cl	Y19	SO ₂ Me	H	
Cl	OCH ₂ COOMe	SO ₂ Me	H	
Cl	OCH ₂ COOEt	SO ₂ Me	H	
60	Cl	OCH ₂ COOPr-i	SO ₂ Me	H
Cl	OCH ₂ COOBu-i	SO ₂ Me	H	
Cl	OCH ₂ COOBu-t	SO ₂ Me	H	
Cl	OCH ₂ COO-Y4	SO ₂ Me	H	
Cl	OCHMeCOOMe	SO ₂ Me	H	
Cl	OCHMeCOOEt	SO ₂ Me	H	
65	Cl	OCHMeCOOPr-i	SO ₂ Me	H
Cl	OCH ₂ CH ₂ CN	SO ₂ Me	H	
Cl	OCH ₂ SMe	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ SMe	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H	

TABLE 3-continued



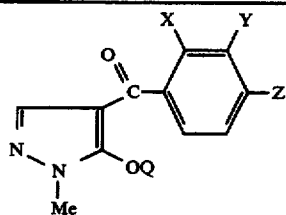
X	Y	Z	Q
Cl	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
Cl	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
Cl	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
Cl	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
Cl	OCO ₂ Me	SO ₂ Me	H
Cl	OCOOPr-i	SO ₂ Me	H
Cl	OCONH ₂	SO ₂ Me	H
Cl	OCONHMe	SO ₂ Me	H
Cl	OCONMe ₂	SO ₂ Me	H
Cl	OP(O)(OMe) ₂	SO ₂ Me	H
Cl	Y20	SO ₂ Me	H
Cl	SCH ₂ CH=CH ₂	SO ₂ Me	H
Cl	SCH ₂ CH=CMe ₂	SO ₂ Me	H
Cl	SCH ₂ C≡CH	SO ₂ Me	H
Cl	SCH ₂ CF ₃	SO ₂ Me	H
Cl	SCH ₂ CCl ₃	SO ₂ Me	H
Cl	Y21	SO ₂ Me	H
Cl	SPh	SO ₂ Me	H
Cl	SCH ₂ CH ₂ OMe	SO ₂ Me	H
Cl	SCH ₂ CH ₂ OEt	SO ₂ Me	H
Cl	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Cl	Y22	SO ₂ Me	H
Cl	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
Cl	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
Cl	S(O)CH ₂ C≡CH	SO ₂ Me	H
Cl	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
Cl	Y23	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
Cl	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
Cl	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
Cl	Y24	SO ₂ Me	H
Cl	Y25	SO ₂ Me	H
Cl	SO ₂ Ph	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Cl	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
Cl	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Cl	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Cl	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Cl	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ COPh
Cl	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Cl	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Cl	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Cl	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ OMe	Cl	H
Cl	OCH ₂ CH ₂ OEt	Cl	H
Cl	OCH ₂ CH ₂ OPr-i	Cl	H
Cl	OCHMeCH ₂ OMe	Cl	H
Cl	OCH ₂ COOMe	Cl	H
Cl	OCH ₂ CH ₂ SMe	Cl	H
Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	H

TABLE 3-continued



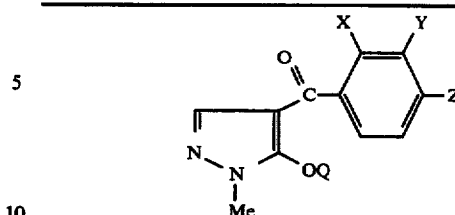
X	Y	Z	Q	
Cl	SCH ₂ CH ₂ OMe	Cl	H	
Cl	SO ₂ CH ₂ CH ₂ OMe	Cl	H	
Cl	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph	
15	Cl	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
Cl	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph	
Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph	
Cl	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph	
Cl	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph	
Cl	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh	
20	Cl	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh	
Cl	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh	
Cl	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh	
Cl	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh	
Ome	Y1	SO ₂ Me	H	
25	Ome	Y2	SO ₂ Me	H
Ome	Y3	SO ₂ Me	H	
Ome	Y4	SO ₂ Me	H	
Ome	Y5	SO ₂ Me	H	
Ome	Y6	SO ₂ Me	H	
Ome	Y7	SO ₂ Me	H	
30	Ome	OCH ₂ CH=CH ₂	SO ₂ Me	H
Ome	OCHMeCH=CH ₂	SO ₂ Me	H	
Ome	OCMe ₂ CH=CH ₂	SO ₂ Me	H	
Ome	OCH ₂ CM=CH ₂	SO ₂ Me	H	
Ome	OCH ₂ CH=CHMe	SO ₂ Me	H	
Ome	OCH ₂ CH=CMe ₂	SO ₂ Me	H	
Ome	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H	
35	Ome	OCH ₂ C≡CH	SO ₂ Me	H
Ome	OCHMeC≡CH	SO ₂ Me	H	
Ome	OCMe ₂ C≡CH	SO ₂ Me	H	
Ome	OCH ₂ C≡CMe	SO ₂ Me	H	
Ome	OCH ₂ CH ₂ F	SO ₂ Me	H	
Ome	OCH ₂ CHF ₂	SO ₂ Me	H	
40	Ome	OCH ₂ CF ₃	SO ₂ Me	H
Ome	OCH ₂ CH ₂ Cl	SO ₂ Me	H	
Ome	OCH ₂ CCl ₃	SO ₂ Me	H	
Ome	OCHMeCH ₂ Cl	SO ₂ Me	H	
Ome	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H	
Ome	OCH ₂ CH ₂ Br	SO ₂ Me	H	
45	Ome	Y8	SO ₂ Me	H
Ome	OCH ₂ CCl=CH ₂	SO ₂ Me	H	
Ome	OCH ₂ CCl=CHCl	SO ₂ Me	H	
Ome	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H	
Ome	OPh	SO ₂ Me	H	
Ome	OPh-Me-2	SO ₂ Me	H	
Ome	OPh-Cl-4	SO ₂ Me	H	
50	Ome	OPh-NO ₂ -4	SO ₂ Me	H
Ome	OCH ₂ CH ₂ OMe	SO ₂ Me	H	
Ome	OCH ₂ CH ₂ OEt	SO ₂ Me	H	
Ome	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H	
Ome	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H	
Ome	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H	
55	Ome	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H
Ome	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H	
Ome	OCH ₂ CH ₂ -Y4	SO ₂ Me	H	
Ome	OCHMeCH ₂ OMe	SO ₂ Me	H	
Ome	OCH ₂ CHMeOMe	SO ₂ Me	H	
60	Ome	OCH ₂ CH ₂ OPh	SO ₂ Me	H
Ome	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H	
Ome	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H	
Ome	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H	
Ome	OCH ₂ CH ₂ OH	SO ₂ Me	H	
Ome	OCH ₂ Ph	SO ₂ Me	H	
65	Ome	OCHMePh	SO ₂ Me	H
Ome	OCH ₂ CH ₂ Ph	SO ₂ Me	H	
Ome	OCH ₂ Ph-2-Cl	SO ₂ Me	H	
Ome	OCH ₂ Ph-3-Me	SO ₂ Me	H	
Ome	OCH ₂ Ph-4-OMe	SO ₂ Me	H	

TABLE 3-continued



X	Y	Z	Q
OMe	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
OMe	Y9	SO ₂ Me	H
OMe	Y10	SO ₂ Me	H
OMe	Y11	SO ₂ Me	H
OMe	Y12	SO ₂ Me	H
OMe	Y13	SO ₂ Me	H
OMe	Y14	SO ₂ Me	H
OMe	Y15	SO ₂ Me	H
OMe	Y16	SO ₂ Me	H
OMe	Y17	SO ₂ Me	H
OMe	Y18	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
OMe	Y19	SO ₂ Me	H
OMe	OCH ₂ COOMe	SO ₂ Me	H
OMe	OCH ₂ COOEt	SO ₂ Me	H
OMe	OCH ₂ COOPr-i	SO ₂ Me	H
OMe	OCH ₂ COOBu-i	SO ₂ Me	H
OMe	OCH ₂ COOBu-t	SO ₂ Me	H
OMe	OCH ₂ COO-Y4	SO ₂ Me	H
OMe	OCHMeCOOMe	SO ₂ Me	H
OMe	OCHMeCOOEt	SO ₂ Me	H
OMe	OCHMeCOOPr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ CN	SO ₂ Me	H
OMe	OCH ₂ SMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
OMe	OCOOMe	SO ₂ Me	H
OMe	OCOOPr-i	SO ₂ Me	H
OMe	OCNH ₂	SO ₂ Me	H
OMe	OCNHMe	SO ₂ Me	H
OMe	OCNMe ₂	SO ₂ Me	H
OMe	OP(O)(OMe) ₂	SO ₂ Me	H
OMe	Y20	SO ₂ Me	H
OMe	SCH ₂ CH=CH ₂	SO ₂ Me	H
OMe	SCH ₂ CH=CMe ₂	SO ₂ Me	H
OMe	SCH ₂ C≡CH	SO ₂ Me	H
OMe	SCH ₂ CF ₃	SO ₂ Me	H
OMe	SCH ₂ CCl ₃	SO ₂ Me	H
OMe	Y21	SO ₂ Me	H
OMe	SPh	SO ₂ Me	H
OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	H
OMe	SCH ₂ CH ₂ OEt	SO ₂ Me	H
OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
OMe	Y22	SO ₂ Me	H
OMe	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
OMe	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
OMe	S(O)CH ₂ C≡CH	SO ₂ Me	H
OMe	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
OMe	Y23	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
OMe	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
OMe	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
OMe	Y24	SO ₂ Me	H
OMe	Y25	SO ₂ Me	H
OMe	SO ₂ Ph	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph

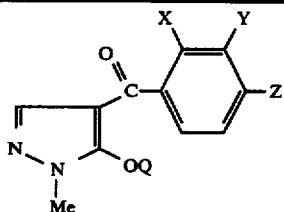
TABLE 3-continued



X	Y	Z	Q	
OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph	
OMe	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph	
OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph	
15	OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph	
OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph	
OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph	
OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph	
OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph	
20	OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph	
OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph	
OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh	
OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh	
OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh	
25	OMe	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh	
OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh	
OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh	
OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh	
OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh	
30	OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh	
OMe	OCH ₂ CH ₂ OMe	Cl	H	
OMe	OCH ₂ CH ₂ OEt	Cl	H	
OMe	OCH ₂ CH ₂ OPr-i	Cl	H	
OMe	OCHMeCH ₂ OMe	Cl	H	
OMe	OCH ₂ COOMe	Cl	H	
35	OMe	OCH ₂ CH ₂ SMe	Cl	H
OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	H	
OMe	SCH ₂ CH ₂ OMe	Cl	H	
OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	H	
OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph	
OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph	
40	OMe	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph	
OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph	
OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph	
OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh	
OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh	
45	OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh	
OMe	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh	
OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh	
CH ₂ OMe	Y1	SO ₂ Me	H	
CH ₂ OMe	Y2	SO ₂ Me	H	
50	CH ₂ OMe	Y3	SO ₂ Me	H
CH ₂ OMe	Y4	SO ₂ Me	H	
CH ₂ OMe	Y5	SO ₂ Me	H	
CH ₂ OMe	Y6	SO ₂ Me	H	
CH ₂ OMe	Y7	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH=CH ₂	SO ₂ Me	H	
CH ₂ OMe	OCHMeCH=CH ₂	SO ₂ Me	H	
55	CH ₂ OMe	OCMe ₂ CH=CH ₂	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CMe=CH ₂	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH=CHMe	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH=CMe ₂	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ C≡CH	SO ₂ Me	H	
60	CH ₂ OMe	OCHMeC≡CH	SO ₂ Me	H
CH ₂ OMe	OCMe ₂ C≡CH	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ C≡CMe	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH ₂ F	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CHF ₂	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CF ₃	SO ₂ Me	H	
65	CH ₂ OMe	OCH ₂ CH ₂ Cl	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CCl ₃	SO ₂ Me	H	
CH ₂ OMe	OCHMeCH ₂ Cl	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH ₂ Br	SO ₂ Me	H	

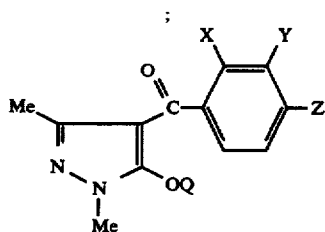
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TABLE 3-continued



X	Y	Z	Q
CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
CH ₂ OMe	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh

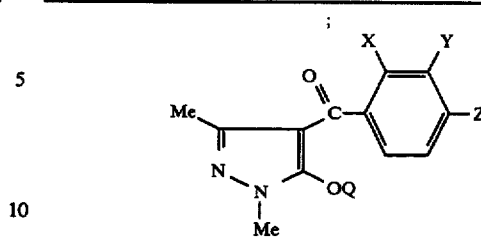
TABLE 4



X	Y	Z	Q
Me	Y1	SO ₂ Me	H
Me	Y2	SO ₂ Me	H
Me	Y3	SO ₂ Me	H
Me	Y4	SO ₂ Me	H
Me	Y5	SO ₂ Me	H
Me	Y6	SO ₂ Me	H
Me	Y7	SO ₂ Me	H
Me	OCH ₂ CH=CH ₂	SO ₂ Me	H
Me	OCHMeCH=CH ₂	SO ₂ Me	H
Me	OCMe ₂ CH=CH ₂	SO ₂ Me	H
Me	OCH ₂ CM _e =CH ₂	SO ₂ Me	H
Me	OCH ₂ CH=CHMe	SO ₂ Me	H
Me	OCH ₂ CH=CM _e ₂	SO ₂ Me	H
Me	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
Me	OCH ₂ C≡CH	SO ₂ Me	H
Me	OCHMeC≡CH	SO ₂ Me	H
Me	OCMe ₂ C≡CH	SO ₂ Me	H
Me	OCH ₂ C≡CMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ F	SO ₂ Me	H
Me	OCH ₂ CHF ₂	SO ₂ Me	H
Me	OCH ₂ CF ₃	SO ₂ Me	H
Me	OCH ₂ CH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CCl ₃	SO ₂ Me	H
Me	OCHMeCH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CH ₂ Br	SO ₂ Me	H
Me	Y8	SO ₂ Me	H
Me	OCH ₂ CCl=CH ₂	SO ₂ Me	H
Me	OCH ₂ CCl=CHCl	SO ₂ Me	H
Me	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H
Me	OPh	SO ₂ Me	H
Me	OPh-Me-2	SO ₂ Me	H
Me	OPh-Cl-4	SO ₂ Me	H
Me	OPh-NO ₂ -4	SO ₂ Me	H
Me	OCH ₂ CH ₂ OMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ OEt	SO ₂ Me	H
Me	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H
Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H
Me	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H
Me	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H
Me	OCH ₂ CH ₂ -Y4	SO ₂ Me	H
Me	OCHMeCH ₂ OMe	SO ₂ Me	H
Me	OCH ₂ CHMeOMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ OPh	SO ₂ Me	H
Me	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H

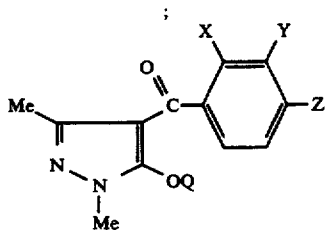
30

TABLE 4-continued



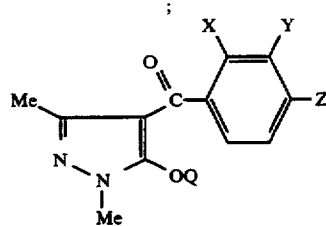
X	Y	Z	Q
Me	OCH ₂ CH ₂ OH	SO ₂ Me	H
Me	OCH ₂ Ph	SO ₂ Me	H
Me	OCHMePh	SO ₂ Me	H
Me	OCH ₂ CH ₂ Ph	SO ₂ Me	H
Me	OCH ₂ Ph-2-Cl	SO ₂ Me	H
Me	OCH ₂ Ph-3-Me	SO ₂ Me	H
Me	OCH ₂ Ph-4-OMe	SO ₂ Me	H
Me	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
Me	Y9	SO ₂ Me	H
Me	Y10	SO ₂ Me	H
Me	Y11	SO ₂ Me	H
Me	Y12	SO ₂ Me	H
Me	Y13	SO ₂ Me	H
Me	Y14	SO ₂ Me	H
Me	Y15	SO ₂ Me	H
Me	Y16	SO ₂ Me	H
Me	Y17	SO ₂ Me	H
Me	Y18	SO ₂ Me	H
Me	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
Me	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
Me	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
Me	Y19	SO ₂ Me	H
Me	OCH ₂ COOMe	SO ₂ Me	H
Me	OCH ₂ COOEt	SO ₂ Me	H
Me	OCH ₂ COOPr-i	SO ₂ Me	H
Me	OCH ₂ COOBu-i	SO ₂ Me	H
Me	OCH ₂ COOBu-t	SO ₂ Me	H
Me	OCH ₂ COO-Y4	SO ₂ Me	H
Me	OCHMeCOOMe	SO ₂ Me	H
Me	OCHMeCOOEt	SO ₂ Me	H
Me	OCHMeCOOPr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ CN	SO ₂ Me	H
Me	OCH ₂ SMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ SMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
Me	OCOOMe	SO ₂ Me	H
Me	OCOOPr-i	SO ₂ Me	H
Me	OCONH ₂	SO ₂ Me	H
Me	OCONHMe	SO ₂ Me	H
Me	OCONMe ₂	SO ₂ Me	H
Me	OP(O)(OMe) ₂	SO ₂ Me	H
Me	Y20	SO ₂ Me	H
Me	SCH ₂ CH=CH ₂	SO ₂ Me	H
Me	SCH ₂ CH=CMe ₂	SO ₂ Me	H
Me	SCH ₂ C≡CH	SO ₂ Me	H
Me	SCH ₂ CF ₃	SO ₂ Me	H
Me	SCH ₂ CCl ₃	SO ₂ Me	H
Me	Y21	SO ₂ Me	H
Me	SPh	SO ₂ Me	H
Me	SCH ₂ CH ₂ OMe	SO ₂ Me	H
Me	SCH ₂ CH ₂ OEt	SO ₂ Me	H
Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Me	Y22	SO ₂ Me	H
Me	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
Me	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
Me	S(O)CH ₂ C≡CH	SO ₂ Me	H
Me	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
Me	Y23	SO ₂ Me	H
Me	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
Me	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
Me	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
Me	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
Me	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H

TABLE 4-continued



X	Y	Z	Q
Me	Y24	SO ₂ Me	H
Me	Y25	SO ₂ Me	H
Me	SO ₂ Ph	SO ₂ Me	H
Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
Me	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Me	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
Me	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
Me	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ OMe	Cl	H
Me	OCH ₂ CH ₂ OEt	Cl	H
Me	OCH ₂ CH ₂ OPr-i	Cl	H
Me	OCHMeCH ₂ OMe	Cl	H
Me	OCH ₂ COOMe	Cl	H
Me	OCH ₂ CH ₂ SMe	Cl	H
Me	OCH ₂ CH ₂ SO ₂ Me	Cl	H
Me	SCH ₂ CH ₂ OMe	Cl	H
Me	SO ₂ CH ₂ CH ₂ OMe	Cl	H
Me	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
Me	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
Me	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
Me	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
Me	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
Me	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
Me	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
Me	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
Me	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
Me	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
Me	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
Me	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
Cl	Y1	SO ₂ Me	H
Cl	Y2	SO ₂ Me	H
Cl	Y3	SO ₂ Me	H
Cl	Y4	SO ₂ Me	H
Cl	Y5	SO ₂ Me	H
Cl	Y6	SO ₂ Me	H
Cl	Y7	SO ₂ Me	H
Cl	OCH ₂ CH=CH ₂	SO ₂ Me	H
Cl	OCHMeCH=CH ₂	SO ₂ Me	H
Cl	OCMe ₂ CH=CH ₂	SO ₂ Me	H
Cl	OCH ₂ CMe=CH ₂	SO ₂ Me	H
Cl	OCH ₂ CH=CHMe	SO ₂ Me	H
Cl	OCH ₂ CH=CMe ₂	SO ₂ Me	H
Cl	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
Cl	OCH ₂ C≡CH	SO ₂ Me	H
Cl	OCHMeC≡CH	SO ₂ Me	H
Cl	OCMe ₂ C≡CH	SO ₂ Me	H

TABLE 4-continued

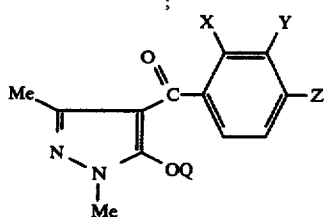


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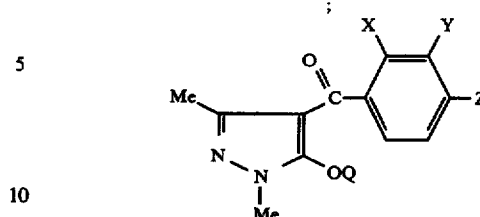
X	Y	Z	Q
Cl	OCH ₂ C≡CMe	SO ₂ Me	H
Cl	OCH ₂ CH ₂ F	SO ₂ Me	H
15	Cl	OCH ₂ CHF ₂	SO ₂ Me H
Cl	OCH ₂ CF ₃	SO ₂ Me	H
Cl	OCH ₂ CH ₂ Cl	SO ₂ Me	H
Cl	OCH ₂ CCl ₃	SO ₂ Me	H
Cl	OCHMeCH ₂ Cl	SO ₂ Me	H
Cl	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
20	Cl	OCH ₂ CH ₂ Br	SO ₂ Me H
Cl	Y8	SO ₂ Me	H
Cl	OCH ₂ CCl=CH ₂	SO ₂ Me	H
Cl	OCH ₂ CCl=CHCl	SO ₂ Me	H
Cl	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H
Cl	OPh	SO ₂ Me	H
25	Cl	OPh—Me-2	SO ₂ Me H
Cl	OPh—Cl-4	SO ₂ Me	H
Cl	OPh—NO ₂ -4	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OMe	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OEt	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
30	Cl	OCH ₂ CH ₂ OBu-n	SO ₂ Me H
Cl	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H
Cl	OCH ₂ CH ₂ —Y4	SO ₂ Me	H
Cl	OCHMeCH ₂ OMe	SO ₂ Me	H
35	Cl	OCH ₂ CHMeOMe	SO ₂ Me H
Cl	OCH ₂ CH ₂ OPh	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OH	SO ₂ Me	H
40	Cl	OCH ₂ Ph	SO ₂ Me H
Cl	OCHMePh	SO ₂ Me	H
Cl	OCH ₂ CH ₂ Ph	SO ₂ Me	H
Cl	OCH ₂ Ph-2-Cl	SO ₂ Me	H
Cl	OCH ₂ Ph-3-Me	SO ₂ Me	H
Cl	OCH ₂ Ph-4-OMe	SO ₂ Me	H
45	Cl	OCH ₂ Ph-4-NO ₂	SO ₂ Me H
Cl	Y9	SO ₂ Me	H
Cl	Y10	SO ₂ Me	H
Cl	Y11	SO ₂ Me	H
Cl	Y12	SO ₂ Me	H
Cl	Y13	SO ₂ Me	H
Cl	Y14	SO ₂ Me	H
50	Cl	Y15	SO ₂ Me H
Cl	Y16	SO ₂ Me	H
Cl	Y17	SO ₂ Me	H
Cl	Y18	SO ₂ Me	H
Cl	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
Cl	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
55	Cl	OCH ₂ CH ₂ NHPr-i	SO ₂ Me H
Cl	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
Cl	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
Cl	Y19	SO ₂ Me	H
Cl	OCH ₂ COOMe	SO ₂ Me	H
Cl	OCH ₂ COOEt	SO ₂ Me	H
60	Cl	OCH ₂ COOPr-i	SO ₂ Me H
Cl	OCH ₂ COOBu-i	SO ₂ Me	H
Cl	OCH ₂ COOBu-t	SO ₂ Me	H
Cl	OCH ₂ COO—Y4	SO ₂ Me	H
Cl	OCHMeCOOMe	SO ₂ Me	H
Cl	OCHMeCOOEt	SO ₂ Me	H
Cl	OCHMeCOOPr-i	SO ₂ Me	H
65	Cl	OCH ₂ CH ₂ CN	SO ₂ Me H
Cl	OCH ₂ SMe	SO ₂ Me	H
Cl	OCH ₂ CH ₂ SMe	SO ₂ Me	H
Cl	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H

TABLE 4-continued



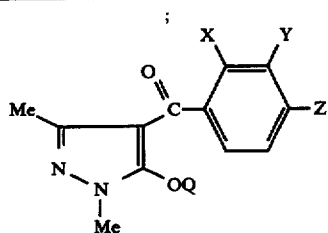
X	Y	Z	Q
Cl	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
Cl	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
Cl	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
Cl	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
Cl	OCOOMe	SO ₂ Me	H
Cl	OCOOPr-i	SO ₂ Me	H
Cl	OCONH ₂	SO ₂ Me	H
Cl	OCONHMe	SO ₂ Me	H
Cl	OCONMe ₂	SO ₂ Me	H
Cl	OP(O)(OMe) ₂	SO ₂ Me	H
Cl	Y20	SO ₂ Me	H
Cl	SCH ₂ CH=CH ₂	SO ₂ Me	H
Cl	SCH ₂ CH=CMe ₂	SO ₂ Me	H
Cl	SCH ₂ C≡CH	SO ₂ Me	H
Cl	SCH ₂ CF ₃	SO ₂ Me	H
Cl	SCH ₂ CCl ₃	SO ₂ Me	H
Cl	Y21	SO ₂ Me	H
Cl	SPh	SO ₂ Me	H
Cl	SCH ₂ CH ₂ OMe	SO ₂ Me	H
Cl	SCH ₂ CH ₂ OEt	SO ₂ Me	H
Cl	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Cl	Y22	SO ₂ Me	H
Cl	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
Cl	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
Cl	S(O)CH ₂ C≡CH	SO ₂ Me	H
Cl	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
Cl	Y23	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
Cl	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
Cl	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
Cl	Y24	SO ₂ Me	H
Cl	Y25	SO ₂ Me	H
Cl	SO ₂ Ph	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Cl	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
Cl	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Cl	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Cl	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Cl	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ COPh
Cl	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Cl	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ OMe	Cl	H
Cl	OCH ₂ CH ₂ OEt	Cl	H
Cl	OCH ₂ CH ₂ OPr-i	Cl	H
Cl	OCHMeCH ₂ OMe	Cl	H
Cl	OCH ₂ COOMe	Cl	H
Cl	OCH ₂ CH ₂ SMe	Cl	H

TABLE 4-continued



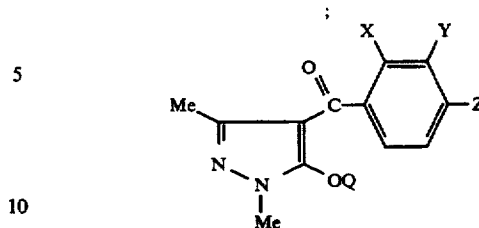
X	Y	Z	Q
Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	H
Cl	SCH ₂ CH ₂ OMe	Cl	H
15	SO ₂ CH ₂ CH ₂ OMe	Cl	H
Cl	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
Cl	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
Cl	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
Cl	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
20	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
Cl	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
Cl	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
Cl	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
Cl	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
25	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
OMe	Y1	SO ₂ Me	H
OMe	Y2	SO ₂ Me	H
OMe	Y3	SO ₂ Me	H
OMe	Y4	SO ₂ Me	H
OMe	Y5	SO ₂ Me	H
30	OMe	SO ₂ Me	H
OMe	Y6	SO ₂ Me	H
OMe	Y7	SO ₂ Me	H
OMe	OCH ₂ CH=CH ₂	SO ₂ Me	H
OMe	OCHMeCH=CH ₂	SO ₂ Me	H
OMe	OCMe ₂ CH=CH ₂	SO ₂ Me	H
OMe	OCH ₂ CM=CH ₂	SO ₂ Me	H
OMe	OCH ₂ CH=CHMe	SO ₂ Me	H
35	OMe	SO ₂ Me	H
OMe	OCH ₂ CH=CMe ₂	SO ₂ Me	H
OMe	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
OMe	OCH ₂ C≡CH	SO ₂ Me	H
OMe	OCHMeC≡CH	SO ₂ Me	H
OMe	OCMe ₂ C≡CH	SO ₂ Me	H
OMe	OCH ₂ C≡CMe	SO ₂ Me	H
40	OMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ F	SO ₂ Me	H
OMe	OCH ₂ CHF ₂	SO ₂ Me	H
OMe	OCH ₂ CF ₃	SO ₂ Me	H
OMe	OCH ₂ CH ₂ Cl	SO ₂ Me	H
OMe	OCH ₂ CCl ₃	SO ₂ Me	H
OMe	OCHMeCH ₂ Cl	SO ₂ Me	H
45	OMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
OMe	OCH ₂ CH ₂ Br	SO ₂ Me	H
OMe	Y8	SO ₂ Me	H
OMe	OCH ₂ CCl=CH ₂	SO ₂ Me	H
OMe	OCH ₂ CCl=CHCl	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H
50	OMe	SO ₂ Me	H
OMe	OPh	SO ₂ Me	H
OMe	OPh-Me-2	SO ₂ Me	H
OMe	OPh-Cl-4	SO ₂ Me	H
OMe	OPh-NO ₂ -4	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
55	OMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OBU-n	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OBU-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OBU-s	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OBU-t	SO ₂ Me	H
OMe	OCH ₂ CH ₂ -Y4	SO ₂ Me	H
60	OMe	SO ₂ Me	H
OMe	OCHMeCH ₂ OMe	SO ₂ Me	H
OMe	OCH ₂ CHMeOMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OPh	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
65	OMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OH	SO ₂ Me	H
OMe	OCH ₂ Ph	SO ₂ Me	H
OMe	OCHMePh	SO ₂ Me	H
OMe	OCH ₂ CH ₂ Ph	SO ₂ Me	H
OMe	OCH ₂ Ph-2-Cl	SO ₂ Me	H

TABLE 4-continued



X	Y	Z	Q
OMe	OCH ₂ Ph-3-Me	SO ₂ Me	H
OMe	OCH ₂ Ph-4-OMe	SO ₂ Me	H
OMe	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
OMe	Y9	SO ₂ Me	H
OMe	Y10	SO ₂ Me	H
OMe	Y11	SO ₂ Me	H
OMe	Y12	SO ₂ Me	H
OMe	Y13	SO ₂ Me	H
OMe	Y14	SO ₂ Me	H
OMe	Y15	SO ₂ Me	H
OMe	Y16	SO ₂ Me	H
OMe	Y17	SO ₂ Me	H
OMe	Y18	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
OMe	Y19	SO ₂ Me	H
OMe	OCH ₂ COOMe	SO ₂ Me	H
OMe	OCH ₂ COOEt	SO ₂ Me	H
OMe	OCH ₂ COOPr-i	SO ₂ Me	H
OMe	OCH ₂ COOBu-i	SO ₂ Me	H
OMe	OCH ₂ COOBu-t	SO ₂ Me	H
OMe	OCH ₂ COO—Y4	SO ₂ Me	H
OMe	OCHMeCOOMe	SO ₂ Me	H
OMe	OCHMeCOOEt	SO ₂ Me	H
OMe	OCHMeCOOPr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ CN	SO ₂ Me	H
OMe	OCH ₂ SMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
OMe	OCOOMe	SO ₂ Me	H
OMe	OCOPr-i	SO ₂ Me	H
OMe	OCONH ₂	SO ₂ Me	H
OMe	OCONHMe	SO ₂ Me	H
OMe	OCONMe ₂	SO ₂ Me	H
OMe	OP(O)(OMe) ₂	SO ₂ Me	H
OMe	Y20	SO ₂ Me	H
OMe	SCH ₂ CH=CH ₂	SO ₂ Me	H
OMe	SCH ₂ CH=CHMe ₂	SO ₂ Me	H
OMe	SCH ₂ C≡CH	SO ₂ Me	H
OMe	SCH ₂ CF ₃	SO ₂ Me	H
OMe	SCH ₂ CCl ₃	SO ₂ Me	H
OMe	Y21	SO ₂ Me	H
OMe	SPh	SO ₂ Me	H
OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	H
OMe	SCH ₂ CH ₂ OEt	SO ₂ Me	H
OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
OMe	Y22	SO ₂ Me	H
OMe	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
OMe	S(O)CH ₂ CH=CHMe ₂	SO ₂ Me	H
OMe	S(O)CH ₂ C≡CH	SO ₂ Me	H
OMe	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
OMe	Y23	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH=CHMe ₂	SO ₂ Me	H
OMe	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
OMe	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
OMe	Y24	SO ₂ Me	H
OMe	Y25	SO ₂ Me	H
OMe	SO ₂ Ph	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H

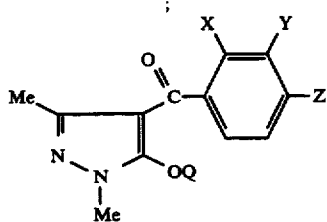
TABLE 4-continued



X	Y	Z	Q
OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
15	OMe	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
OMe	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
20	OMe	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
25	OMe	SO ₂ Me	CH ₂ Ph
OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
OMe	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
30	OMe	SO ₂ Me	CH ₂ COPh
OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
35	OMe	Cl	H
OMe	OCH ₂ CH ₂ OEt	Cl	H
OMe	OCH ₂ CH ₂ OPr-i	Cl	H
OMe	OCHMeCH ₂ OMe	Cl	H
OMe	OCH ₂ COOMe	Cl	H
OMe	OCH ₂ CH ₂ SMe	Cl	H
OMe	OCH ₂ CH ₂ SOMe	Cl	H
OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	H
40	OMe	Cl	H
OMe	SCH ₂ CH ₂ OMe	Cl	H
OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
OMe	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
45	OMe	Cl	CH ₂ Ph
OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
OMe	OCH ₂ CH ₂ SOMe	Cl	CH ₂ COPh
OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
50	OMe	Cl	CH ₂ COPh
OMe	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
CH ₂ OMe	Y1	SO ₂ Me	H
CH ₂ OMe	Y2	SO ₂ Me	H
CH ₂ OMe	Y3	SO ₂ Me	H
CH ₂ OMe	Y4	SO ₂ Me	H
CH ₂ OMe	Y5	SO ₂ Me	H
55	CH ₂ OMe	SO ₂ Me	H
CH ₂ OMe	Y6	SO ₂ Me	H
CH ₂ OMe	Y7	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH=CH ₂	SO ₂ Me	H
CH ₂ OMe	OCHMeCH=CH ₂	SO ₂ Me	H
CH ₂ OMe	OCMe ₂ CH=CH ₂	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CMe=CH ₂	SO ₂ Me	H
60	CH ₂ OMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH=CHMe ₂	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
CH ₂ OMe	OCH ₂ C≡CH	SO ₂ Me	H
CH ₂ OMe	OCHMeC≡CH	SO ₂ Me	H
CH ₂ OMe	OCMe ₂ C≡CH	SO ₂ Me	H
65	CH ₂ OMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ C≡CMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ F	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CHF ₂	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CF ₃	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ Cl	SO ₂ Me	H

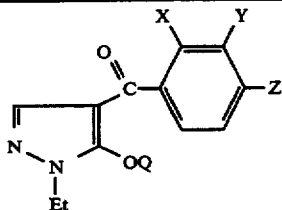
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TABLE 4-continued



X	Y	Z	Q
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
CH ₂ OMe	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh

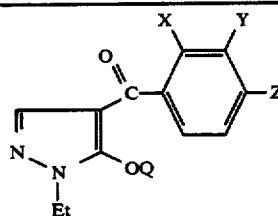
TABLE 5



X	Y	Z	Q
Me	Y1	SO ₂ Me	H
Me	Y2	SO ₂ Me	H
Me	Y3	SO ₂ Me	H
Me	Y4	SO ₂ Me	H
Me	Y5	SO ₂ Me	H
Me	Y6	SO ₂ Me	H
Me	Y7	SO ₂ Me	H
Me	OCH ₂ CH=CH ₂	SO ₂ Me	H
Me	OCHMeCH=CH ₂	SO ₂ Me	H
Me	OCMe ₂ CH=CH ₂	SO ₂ Me	H
Me	OCH ₂ CMe=CH ₂	SO ₂ Me	H
Me	OCH ₂ CH=CHMe	SO ₂ Me	H
Me	OCH ₂ CH=CMe ₂	SO ₂ Me	H
Me	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
Me	OCH ₂ C≡CH	SO ₂ Me	H
Me	OCHMeC≡CH	SO ₂ Me	H
Me	OCHMe ₂ C≡CH	SO ₂ Me	H
Me	OCH ₂ C≡CMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ F	SO ₂ Me	H
Me	OCH ₂ CHF ₂	SO ₂ Me	H
Me	OCH ₂ CF ₃	SO ₂ Me	H
Me	OCH ₂ CH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CCl ₃	SO ₂ Me	H
Me	OCHMeCH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CH ₂ Br	SO ₂ Me	H
Me	Y8	SO ₂ Me	H
Me	OCH ₂ CCl=CH ₂	SO ₂ Me	H
Me	OCH ₂ CCl=CHCl	SO ₂ Me	H
Me	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H
Me	OPh	SO ₂ Me	H
Me	OPh-Me-2	SO ₂ Me	H
Me	OPh-Cl-4	SO ₂ Me	H
Me	OPh-NO ₂ -4	SO ₂ Me	H
Me	OCH ₂ CH ₂ OMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ OEt	SO ₂ Me	H
Me	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H
Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H
Me	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H
Me	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H
Me	OCH ₂ CH ₂ -Y4	SO ₂ Me	H

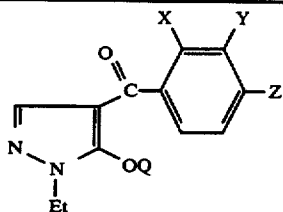
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TABLE 5-continued



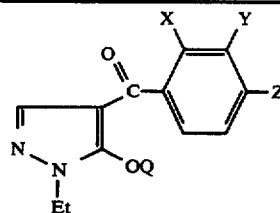
X	Y	Z	Q	
Me	OCHMeCH ₂ OMe	SO ₂ Me	H	
Me	OCH ₂ CHMeOMe	SO ₂ Me	H	
Me	OCH ₂ CH ₂ OPh	SO ₂ Me	H	
15	Me	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H	
Me	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H	
Me	OCH ₂ CH ₂ OH	SO ₂ Me	H	
Me	OCH ₂ Ph	SO ₂ Me	H	
Me	OCHMePh	SO ₂ Me	H	
20	Me	OCH ₂ CH ₂ Ph	SO ₂ Me	H
Me	OCH ₂ Ph-2-Cl	SO ₂ Me	H	
Me	OCH ₂ Ph-3-Me	SO ₂ Me	H	
Me	OCH ₂ Ph-4-OMe	SO ₂ Me	H	
Me	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H	
Me	Y9	SO ₂ Me	H	
25	Me	Y10	SO ₂ Me	H
Me	Y11	SO ₂ Me	H	
Me	Y12	SO ₂ Me	H	
Me	Y13	SO ₂ Me	H	
Me	Y14	SO ₂ Me	H	
Me	Y15	SO ₂ Me	H	
30	Me	Y16	SO ₂ Me	H
Me	Y17	SO ₂ Me	H	
Me	Y18	SO ₂ Me	H	
Me	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H	
Me	OCH ₂ CH ₂ NHMe	SO ₂ Me	H	
Me	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H	
35	Me	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
Me	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H	
Me	Y19	SO ₂ Me	H	
Me	OCH ₂ COOMe	SO ₂ Me	H	
Me	OCH ₂ COOEt	SO ₂ Me	H	
Me	OCH ₂ COOPr-i	SO ₂ Me	H	
Me	OCH ₂ COOBu-t	SO ₂ Me	H	
40	Me	OCH ₂ COOBu-t	SO ₂ Me	H
Me	OCH ₂ COO-Y4	SO ₂ Me	H	
Me	OCHMeCOOMe	SO ₂ Me	H	
Me	OCHMeCOOEt	SO ₂ Me	H	
Me	OCHMeCOOPr-i	SO ₂ Me	H	
Me	OCH ₂ CH ₂ CN	SO ₂ Me	H	
45	Me	OCH ₂ SMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ SMe	SO ₂ Me	H	
Me	OCH ₂ CH ₂ (S(O)Me)	SO ₂ Me	H	
Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H	
Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H	
Me	OCH ₂ CH ₂ (S(O)Pr-i)	SO ₂ Me	H	
50	Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
Me	OCOOMe	SO ₂ Me	H	
Me	OCOOPr-i	SO ₂ Me	H	
Me	OCONH ₂	SO ₂ Me	H	
Me	CONHMe	SO ₂ Me	H	
Me	CONMe ₂	SO ₂ Me	H	
Me	OP(O)(OMe) ₂	SO ₂ Me	H	
55	Me	Y20	SO ₂ Me	H
Me	SCH ₂ CH=CH ₂	SO ₂ Me	H	
Me	SCH ₂ CH=CMe ₂	SO ₂ Me	H	
Me	SCH ₂ C≡CH	SO ₂ Me	H	
Me	SCH ₂ CF ₃	SO ₂ Me	H	
Me	SCH ₂ CCl ₃	SO ₂ Me	H	
60	Me	Y21	SO ₂ Me	H
Me	SPh	SO ₂ Me	H	
Me	SCH ₂ CH ₂ OMe	SO ₂ Me	H	
Me	SCH ₂ CH ₂ OEt	SO ₂ Me	H	
Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H	
Me	Y22	SO ₂ Me	H	
65	Me	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
Me	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H	
Me	S(O)CH ₂ C≡CH	SO ₂ Me	H	
Me	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H	
Me	Y23	SO ₂ Me	H	

TABLE 5-continued



X	Y	Z	Q
Me	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
Me	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
Me	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
Me	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
Me	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
Me	Y24	SO ₂ Me	H
Me	Y25	SO ₂ Me	H
Me	SO ₂ Ph	SO ₂ Me	H
Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
Me	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Me	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
Me	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
Me	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ OMe	Cl	H
Me	OCH ₂ CH ₂ OEt	Cl	H
Me	OCH ₂ CH ₂ OPr-i	Cl	H
Me	OCHMeCH ₂ OMe	Cl	H
Me	OCH ₂ COOMe	Cl	H
Me	OCH ₂ CH ₂ SMe	Cl	H
Me	OCH ₂ CH ₂ SO ₂ Me	Cl	H
Me	SCH ₂ CH ₂ OMe	Cl	H
Me	SO ₂ CH ₂ CH ₂ OMe	Cl	H
Me	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
Me	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
Me	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
Me	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
Me	SCH ₂ SH ₂ OMe	Cl	CH ₂ Ph
Me	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
Me	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
Me	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
Me	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
Me	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
Me	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
Me	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
Cl	Y1	SO ₂ Me	H
Cl	Y2	SO ₂ Me	H
Cl	Y3	SO ₂ Me	H
Cl	Y4	SO ₂ Me	H
Cl	Y5	SO ₂ Me	H
Cl	Y6	SO ₂ Me	H
Cl	Y7	SO ₂ Me	H
Cl	OCH ₂ CH=CH ₂	SO ₂ Me	H
Cl	OCHMeCH=CH ₂	SO ₂ Me	H
Cl	OCHMe ₂ CH=CH ₂	SO ₂ Me	H
Cl	OCH ₂ CMe=CH ₂	SO ₂ Me	H
Cl	OCH ₂ CH=CHMe	SO ₂ Me	H
Cl	OCH ₂ CH=CMe ₂	SO ₂ Me	H

TABLE 5-continued

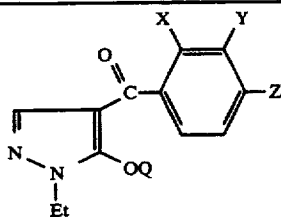


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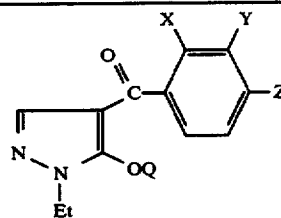
X	Y	Z	Q
Cl	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
Cl	OCH ₂ C≡CH	SO ₂ Me	H
Cl	OCHMeC≡CH	SO ₂ Me	H
15	OCHMe ₂ C≡CH	SO ₂ Me	H
Cl	OCH ₂ C≡CMe	SO ₂ Me	H
Cl	OCH ₂ CH ₂ F	SO ₂ Me	H
Cl	OCH ₂ CHF ₂	SO ₂ Me	H
Cl	OCH ₂ CF ₃	SO ₂ Me	H
Cl	OCH ₂ CH ₂ Cl	SO ₂ Me	H
20	OCH ₂ CCl ₃	SO ₂ Me	H
Cl	OCHMeCH ₂ Cl	SO ₂ Me	H
Cl	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
Cl	OCH ₂ CH ₂ Br	SO ₂ Me	H
Cl	Y8	SO ₂ Me	H
Cl	OCH ₂ CCl=CH ₂	SO ₂ Me	H
25	OCH ₂ CCl=CHCl	SO ₂ Me	H
Cl	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H
Cl	OPh	SO ₂ Me	H
Cl	OPh-Me-2	SO ₂ Me	H
Cl	OPh-Cl-4	SO ₂ Me	H
Cl	OPh-NO ₂ -4	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OMe	SO ₂ Me	H
30	OCH ₂ CH ₂ OEt	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H
35	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H
Cl	OCH ₂ CH ₂ -Y4	SO ₂ Me	H
Cl	OCHMeCH ₂ OMe	SO ₂ Me	H
Cl	OCH ₂ CHMeOMe	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OPh	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H
40	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OH	SO ₂ Me	H
Cl	OCH ₂ Ph	SO ₂ Me	H
Cl	OCHMePh	SO ₂ Me	H
Cl	OCH ₂ CH ₂ Ph	SO ₂ Me	H
45	OCH ₂ Ph-2-Cl	SO ₂ Me	H
Cl	OCH ₂ Ph-3-Me	SO ₂ Me	H
Cl	OCH ₂ Ph-4-OMe	SO ₂ Me	H
Cl	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
Cl	Y9	SO ₂ Me	H
Cl	Y10	SO ₂ Me	H
Cl	Y11	SO ₂ Me	H
50	Y12	SO ₂ Me	H
Cl	Y13	SO ₂ Me	H
Cl	Y14	SO ₂ Me	H
Cl	Y15	SO ₂ Me	H
Cl	Y16	SO ₂ Me	H
Cl	Y17	SO ₂ Me	H
55	Y18	SO ₂ Me	H
Cl	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
Cl	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
Cl	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
Cl	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
Cl	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
60	Y19	SO ₂ Me	H
Cl	OCH ₂ COOMe	SO ₂ Me	H
Cl	OCH ₂ COOEt	SO ₂ Me	H
Cl	OCH ₂ COOPr-i	SO ₂ Me	H
Cl	OCH ₂ COOBu-i	SO ₂ Me	H
Cl	OCH ₂ COOBu-t	SO ₂ Me	H
65	OCH ₂ COO-Y4	SO ₂ Me	H
Cl	OCHMeCOOMe	SO ₂ Me	H
Cl	OCHMeCOOEt	SO ₂ Me	H
Cl	OCHMeCOOPr-i	SO ₂ Me	H
Cl	OCH ₂ CH ₂ CN	SO ₂ Me	H

TABLE 5-continued



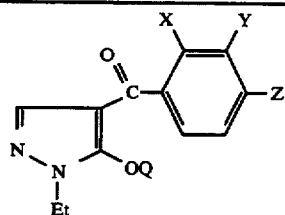
X	Y	Z	Q
Cl	OCH ₂ SMe	SO ₂ Me	H
Cl	OCH ₂ CH ₂ SMe	SO ₂ Me	H
Cl	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
Cl	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
Cl	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
Cl	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
Cl	OCH ₂ CH ₂ CO ₂ Pr-i	SO ₂ Me	H
Cl	OCOOMe	SO ₂ Me	H
Cl	OCOOPr-i	SO ₂ Me	H
Cl	OCONH ₂	SO ₂ Me	H
Cl	OCONHMe	SO ₂ Me	H
Cl	OCONMe ₂	SO ₂ Me	H
Cl	OP(O)(OMe) ₂	SO ₂ Me	H
Cl	Y20	SO ₂ Me	H
Cl	SCH ₂ CH=CH ₂	SO ₂ Me	H
Cl	SCH ₂ CH=CMe ₂	SO ₂ Me	H
Cl	SCH ₂ C≡CH	SO ₂ Me	H
Cl	SCH ₂ CF ₃	SO ₂ Me	H
Cl	SCH ₂ CCl ₃	SO ₂ Me	H
Cl	Y21	SO ₂ Me	H
Cl	SPh	SO ₂ Me	H
Cl	SCH ₂ CH ₂ OMe	SO ₂ Me	H
Cl	SCH ₂ CH ₂ OEt	SO ₂ Me	H
Cl	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Cl	Y22	SO ₂ Me	H
Cl	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
Cl	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
Cl	S(O)CH ₂ C≡CH	SO ₂ Me	H
Cl	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
Cl	Y23	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
Cl	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
Cl	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
Cl	Y24	SO ₂ Me	H
Cl	Y25	SO ₂ Me	H
Cl	SO ₂ Ph	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Cl	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
Cl	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Cl	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Cl	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Cl	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ COPh
Cl	SCH ₂ CH ₂ OMe	SO ₂ Cl	CH ₂ COPh
Cl	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Cl	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Cl	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ OMe	Cl	H
Cl	OCH ₂ CH ₂ OEt	Cl	H
Cl	OCH ₂ CH ₂ OPr-i	Cl	H
Cl	OCHMeCH ₂ OMe	Cl	H

TABLE 5-continued



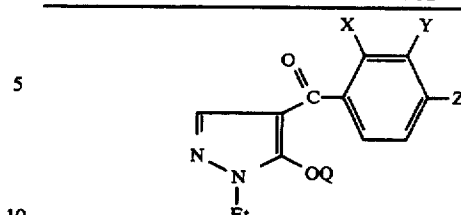
X	Y	Z	Q	
Cl	OCH ₂ COOMe	Cl	H	
Cl	OCH ₂ CH ₂ SMe	Cl	H	
Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	H	
15	Cl	SCH ₂ CH ₂ OMe	Cl	H
Cl	SO ₂ CH ₂ CH ₂ OMe	Cl	H	
Cl	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph	
Cl	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph	
Cl	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph	
Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph	
20	Cl	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
Cl	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph	
Cl	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh	
Cl	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh	
Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh	
Cl	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh	
Cl	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh	
25	Cl	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
OMe	Y1	SO ₂ Me	H	
OMe	Y2	SO ₂ Me	H	
OMe	Y3	SO ₂ Me	H	
OMe	Y4	SO ₂ Me	H	
30	OMe	Y5	SO ₂ Me	H
OMe	Y6	SO ₂ Me	H	
OMe	Y7	SO ₂ Me	H	
OMe	OCH ₂ CH=CH ₂	SO ₂ Me	H	
OMe	OCHMeCH=CH ₂	SO ₂ Me	H	
OMe	OCMe ₂ CH=CH ₂	SO ₂ Me	H	
OMe	OCH ₂ CMe=CH ₂	SO ₂ Me	H	
35	OMe	OCH ₂ CH=CHMe	SO ₂ Me	H
OMe	OCH ₂ CH=CMe ₂	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H	
OMe	OCH ₂ C≡CH	SO ₂ Me	H	
OMe	OCHMeC≡CH	SO ₂ Me	H	
OMe	OCHMe ₂ C≡CH	SO ₂ Me	H	
40	OMe	OCH ₂ C≡CMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ F	SO ₂ Me	H	
OMe	OCH ₂ CHF ₂	SO ₂ Me	H	
OMe	OCH ₂ CF ₃	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ Cl	SO ₂ Me	H	
OMe	OCH ₂ CCl ₃	SO ₂ Me	H	
45	OMe	OCHMeCH ₂ Cl	SO ₂ Me	H
OMe	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ Br	SO ₂ Me	H	
OMe	Y8	SO ₂ Me	H	
OMe	OCH ₂ CCl=CH ₂	SO ₂ Me	H	
OMe	OCH ₂ CCl=CHCl	SO ₂ Me	H	
50	OMe	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H
OMe	OPh	SO ₂ Me	H	
OMe	OPh-Me-2	SO ₂ Me	H	
OMe	OPh-Cl-4	SO ₂ Me	H	
OMe	OPh-NO ₂ -4	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	H	
55	OMe	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H	
60	OMe	OCH ₂ CH ₂ -Y4	SO ₂ Me	H
OMe	OCHMeCH ₂ OMe	SO ₂ Me	H	
OMe	OCH ₂ CHMeOMe	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ OPh	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H	
65	OMe	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OH	SO ₂ Me	H	
OMe	OCH ₂ Ph	SO ₂ Me	H	
OMe	OCHMePh	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ Ph	SO ₂ Me	H	

TABLE 5-continued



X	Y	Z	Q
OMe	OCH ₂ Ph-2-Cl	SO ₂ Me	H
OMe	OCH ₂ Ph-3-Me	SO ₂ Me	H
OMe	OCH ₂ Ph-4-OMe	SO ₂ Me	H
OMe	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
OMe	Y9	SO ₂ Me	H
OMe	Y10	SO ₂ Me	H
OMe	Y11	SO ₂ Me	H
OMe	Y12	SO ₂ Me	H
OMe	Y13	SO ₂ Me	H
OMe	Y14	SO ₂ Me	H
OMe	Y15	SO ₂ Me	H
OMe	Y16	SO ₂ Me	H
OMe	Y17	SO ₂ Me	H
OMe	Y18	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
OMe	Y19	SO ₂ Me	H
OMe	OCH ₂ COOMe	SO ₂ Me	H
OMe	OCH ₂ COOEt	SO ₂ Me	H
OMe	OCH ₂ COOPr-i	SO ₂ Me	H
OMe	OCH ₂ COOBu-i	SO ₂ Me	H
OMe	OCH ₂ COOBu-t	SO ₂ Me	H
OMe	OCH ₂ COO—Y4	SO ₂ Me	H
OMe	OCHMeCOOMe	SO ₂ Me	H
OMe	OCHMeCOOEt	SO ₂ Me	H
OMe	OCHMeCOOPr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ CN	SO ₂ Me	H
OMe	OCH ₂ SMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
OMe	OCOOMe	SO ₂ Me	H
OMe	OCOPr-i	SO ₂ Me	H
OMe	OCONH ₂	SO ₂ Me	H
OMe	OCONHMe	SO ₂ Me	H
OMe	OCONMe ₂	SO ₂ Me	H
OMe	OP(O)(OMe) ₂	SO ₂ Me	H
OMe	Y20	SO ₂ Me	H
OMe	SCH ₂ CH=CH ₂	SO ₂ Me	H
OMe	SCH ₂ CH=CMe ₂	SO ₂ Me	H
OMe	SCH ₂ C≡CH	SO ₂ Me	H
OMe	SCH ₂ CF ₃	SO ₂ Me	H
OMe	SCH ₂ CCl ₃	SO ₂ Me	H
OMe	Y21	SO ₂ Me	H
OMe	SPh	SO ₂ Me	H
OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	H
OMe	SCH ₂ CH ₂ OEt	SO ₂ Me	H
OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
OMe	Y22	SO ₂ Me	H
OMe	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
OMe	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
OMe	S(O)CH ₂ C≡CH	SO ₂ Me	H
OMe	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
OMe	Y23	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
OMe	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
OMe	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
OMe	Y24	SO ₂ Me	H
OMe	Y25	SO ₂ Me	H
OMe	SO ₂ Ph	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H

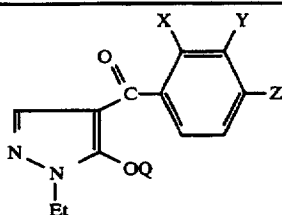
TABLE 5-continued



X	Y	Z	Q	
OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph	
OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph	
15	OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
OMe	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph	
OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph	
OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph	
OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph	
OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph	
20	OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph	
OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph	
OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph	
OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph	
OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph	
25	OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh	
OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh	
OMe	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh	
OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh	
OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh	
30	OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
OMe	SCH ₂ CH ₂ OMe	SO ₂ Cl	CH ₂ COPh	
OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh	
OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh	
OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh	
OMe	OCH ₂ CH ₂ OMe	Cl	H	
35	OMe	OCH ₂ CH ₂ OEt	Cl	H
OMe	OCH ₂ CH ₂ OPr-i	Cl	H	
OMe	OCHMeCH ₂ OMe	Cl	H	
OMe	OCH ₂ COOMe	Cl	H	
OMe	OCH ₂ CH ₂ SMe	Cl	H	
OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	H	
OMe	SCH ₂ CH ₂ OMe	Cl	H	
40	OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	H
OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph	
OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph	
OMe	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph	
OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph	
45	OMe	SCH ₂ SH ₂ OMe	Cl	CH ₂ Ph
OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph	
OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh	
OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh	
OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh	
OMe	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh	
50	OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
CH ₂ OMe	Y1	SO ₂ Me	H	
CH ₂ OMe	Y2	SO ₂ Me	H	
CH ₂ OMe	Y3	SO ₂ Me	H	
CH ₂ OMe	Y4	SO ₂ Me	H	
CH ₂ OMe	Y5	SO ₂ Me	H	
CH ₂ OMe	Y6	SO ₂ Me	H	
55	CH ₂ OMe	Y7	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH=CH ₂	SO ₂ Me	H	
CH ₂ OMe	OCHMeCH=CH ₂	SO ₂ Me	H	
CH ₂ OMe	OCMe ₂ CH=CH ₂	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CMe=CH ₂	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH=CHMe	SO ₂ Me	H	
60	CH ₂ OMe	OCH ₂ CH=CMe ₂	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ C≡CH	SO ₂ Me	H	
CH ₂ OMe	OCHMeC≡CH	SO ₂ Me	H	
CH ₂ OMe	OCHMe ₂ C≡CH	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ C≡CMe	SO ₂ Me	H	
65	CH ₂ OMe	OCH ₂ CH ₂ F	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CHF ₂	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CF ₃	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH ₂ Cl	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CCl ₃	SO ₂ Me	H	

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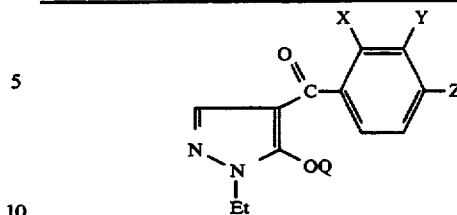
TABLE 5-continued



X	Y	Z	Q
CH ₂ OMe	OCHMeCH ₂ Cl	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ Br	SO ₂ Me	H
CH ₂ OMe	Y8	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CCl=CH ₂	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CCl=CHCl	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H
CH ₂ OMe	OPh	SO ₂ Me	H
CH ₂ OMe	OPh-Me-2	SO ₂ Me	H
CH ₂ OMe	OPh-Cl-4	SO ₂ Me	H
CH ₂ OMe	OPh-NO ₂ -4	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ -Y4	SO ₂ Me	H
CH ₂ OMe	OCHMeCH ₂ OMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CHMeOMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OPh	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OH	SO ₂ Me	H
CH ₂ OMe	OCH ₂ Ph	SO ₂ Me	H
CH ₂ OMe	OCHMePh	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ Ph	SO ₂ Me	H
CH ₂ OMe	OCH ₂ Ph-2-Cl	SO ₂ Me	H
CH ₂ OMe	OCH ₂ Ph-3-Me	SO ₂ Me	H
CH ₂ OMe	OCH ₂ Ph-4-OMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
CH ₂ OMe	Y9	SO ₂ Me	H
CH ₂ OMe	Y10	SO ₂ Me	H
CH ₂ OMe	Y11	SO ₂ Me	H
CH ₂ OMe	Y12	SO ₂ Me	H
CH ₂ OMe	Y13	SO ₂ Me	H
CH ₂ OMe	Y14	SO ₂ Me	H
CH ₂ OMe	Y15	SO ₂ Me	H
CH ₂ OMe	Y16	SO ₂ Me	H
CH ₂ OMe	Y17	SO ₂ Me	H
CH ₂ OMe	Y18	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
CH ₂ OMe	Y19	SO ₂ Me	H
CH ₂ OMe	OCH ₂ COOMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ COOEt	SO ₂ Me	H
CH ₂ OMe	OCH ₂ COOPr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ COOBu-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ COOBu-t	SO ₂ Me	H
CH ₂ OMe	OCH ₂ COO-Y4	SO ₂ Me	H
CH ₂ OMe	OCHMeCOOMe	SO ₂ Me	H
CH ₂ OMe	OCHMeCOOEt	SO ₂ Me	H
CH ₂ OMe	OCHMeCOOPr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ CN	SO ₂ Me	H
CH ₂ OMe	OCH ₂ SMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ CO ₂ Pr-i	SO ₂ Me	H
CH ₂ OMe	OCO ₂ Me	SO ₂ Me	H
CH ₂ OMe	OCOOPr-i	SO ₂ Me	H
CH ₂ OMe	CONH ₂	SO ₂ Me	H

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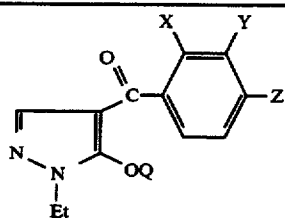
TABLE 5-continued



X	Y	Z	Q
CH ₂ OMe	CONHMe	SO ₂ Me	H
CH ₂ OMe	CONMe ₂	SO ₂ Me	H
CH ₂ OMe	OP(O)(OMe) ₂	SO ₂ Me	H
CH ₂ OMe	Y20	SO ₂ Me	H
CH ₂ OMe	SCH ₂ CH=CH ₂	SO ₂ Me	H
CH ₂ OMe	SCH ₂ CH=CMe ₂	SO ₂ Me	H
CH ₂ OMe	SCH ₂ C≡CH	SO ₂ Me	H
CH ₂ OMe	SCH ₂ CF ₃	SO ₂ Me	H
CH ₂ OMe	SCH ₂ CCl ₃	SO ₂ Me	H
CH ₂ OMe	Y21	SO ₂ Me	H
CH ₂ OMe	SPh	SO ₂ Me	H
CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	H
CH ₂ OMe	SCH ₂ CH ₂ OEt	SO ₂ Me	H
CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
CH ₂ OMe	Y22	SO ₂ Me	H
CH ₂ OMe	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
CH ₂ OMe	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
CH ₂ OMe	S(O)CH ₂ C≡CH	SO ₂ Me	H
CH ₂ OMe	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
CH ₂ OMe	Y23	SO ₂ Me	H
CH ₂ OMe	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
CH ₂ OMe	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
CH ₂ OMe	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
CH ₂ OMe	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
CH ₂ OMe	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
CH ₂ OMe	Y24	SO ₂ Me	H
CH ₂ OMe	SO ₂ Ph	SO ₂ Me	H
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
CH ₂ OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ COPh
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
CH ₂ OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
CH ₂ OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ COPh
CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Cl	CH ₂ COPh
CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	Cl	H
CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	H
CH ₂ OMe	OCH ₂ CH ₂ OEt	Cl	H
CH ₂ OMe	OCH ₂ CH ₂ OPr-i	Cl	H
CH ₂ OMe	OCHMeCH ₂ OMe	Cl	H
CH ₂ OMe	OCH ₂ COOMe	Cl	H
CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	H
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	H
CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	H
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	H
CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ S(O)Me	Cl	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph

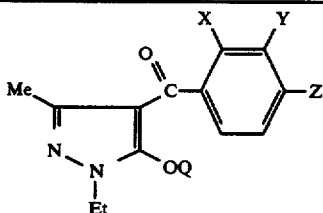
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TABLE 5-continued



X	Y	Z	Q
CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
CH ₂ OMe	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh

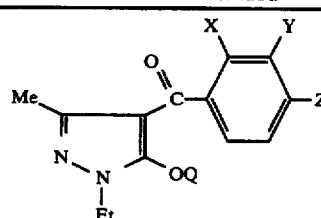
TABLE 6



X	Y	Z	Q
Me	Y1	SO ₂ Me	H
Me	Y2	SO ₂ Me	H
Me	Y3	SO ₂ Me	H
Me	Y4	SO ₂ Me	H
Me	Y5	SO ₂ Me	H
Me	Y6	SO ₂ Me	H
Me	Y7	SO ₂ Me	H
Me	OCH ₂ CH=CH ₂	SO ₂ Me	H
Me	OCHMeCH=CH ₂	SO ₂ Me	H
Me	OCMe ₂ CH=CH ₂	SO ₂ Me	H
Me	OCH ₂ CMe=CH ₂	SO ₂ Me	H
Me	OCH ₂ CH=CHMe	SO ₂ Me	H
Me	OCH ₂ CH=CMe ₂	SO ₂ Me	H
Me	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
Me	OCH ₂ C≡CH	SO ₂ Me	H
Me	OCHMeC≡CH	SO ₂ Me	H
Me	OCMe ₂ C≡CH	SO ₂ Me	H
Me	OCH ₂ C≡CMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ F	SO ₂ Me	H
Me	OCH ₂ CHF ₂	SO ₂ Me	H
Me	OCH ₂ CF ₃	SO ₂ Me	H
Me	OCH ₂ CH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CCl ₃	SO ₂ Me	H
Me	OCHMeCH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CH ₂ Br	SO ₂ Me	H
Me	Y8	SO ₂ Me	H
Me	OCH ₂ CCl=CH ₂	SO ₂ Me	H
Me	OCH ₂ CCl=CHCl	SO ₂ Me	H
Me	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H
Me	OPh	SO ₂ Me	H
Me	OPh-Me-2	SO ₂ Me	H
Me	OPh-Cl-4	SO ₂ Me	H
Me	OPh-NO ₂ -4	SO ₂ Me	H
Me	OCH ₂ CH ₂ OMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ OEt	SO ₂ Me	H
Me	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H
Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H
Me	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H
Me	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H
Me	OCH ₂ CH ₂ -Y4	SO ₂ Me	H
Me	OCHMeCH ₂ OMe	SO ₂ Me	H
Me	OCH ₂ CHMeOMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ OPh	SO ₂ Me	H
Me	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H

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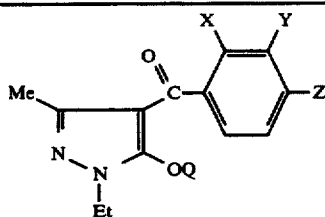
TABLE 6-continued



X	Y	Z	Q
Me	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ OH	SO ₂ Me	H
Me	OCH ₂ Ph	SO ₂ Me	H
Me	OCHMePh	SO ₂ Me	H
Me	OCH ₂ CH ₂ Ph	SO ₂ Me	H
Me	OCH ₂ Ph-2-Cl	SO ₂ Me	H
Me	OCH ₂ Ph-3-Me	SO ₂ Me	H
Me	OCH ₂ Ph-4-OMe	SO ₂ Me	H
Me	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
Me	Y9	SO ₂ Me	H
Me	Y10	SO ₂ Me	H
Me	Y11	SO ₂ Me	H
Me	Y12	SO ₂ Me	H
Me	Y13	SO ₂ Me	H
Me	Y14	SO ₂ Me	H
Me	Y15	SO ₂ Me	H
Me	Y16	SO ₂ Me	H
Me	Y17	SO ₂ Me	H
Me	Y18	SO ₂ Me	H
Me	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
Me	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
Me	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
Me	Y19	SO ₂ Me	H
Me	OCH ₂ COOMe	SO ₂ Me	H
Me	OCH ₂ COOEt	SO ₂ Me	H
Me	OCH ₂ COOPr-i	SO ₂ Me	H
Me	OCH ₂ COOBu-i	SO ₂ Me	H
Me	OCH ₂ COOBu-t	SO ₂ Me	H
Me	OCH ₂ COO-Y4	SO ₂ Me	H
Me	OCHMeCOOMe	SO ₂ Me	H
Me	OCHMeCOOEt	SO ₂ Me	H
Me	OCHMeCOOPr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ CN	SO ₂ Me	H
Me	OCH ₂ SMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ SMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
Me	OCOOMe	SO ₂ Me	H
Me	OCOPr-i	SO ₂ Me	H
Me	OCONH ₂	SO ₂ Me	H
Me	OCONHMe	SO ₂ Me	H
Me	OCONMe ₂	SO ₂ Me	H
Me	OP(O)(OMe) ₂	SO ₂ Me	H
Me	Y20	SO ₂ Me	H
Me	SCH ₂ CH=CH ₂	SO ₂ Me	H
Me	SCH ₂ CH=CMe ₂	SO ₂ Me	H
Me	SCH ₂ C≡CH	SO ₂ Me	H
Me	SCH ₂ CF ₃	SO ₂ Me	H
Me	SCH ₂ CCl ₃	SO ₂ Me	H
Me	Y21	SO ₂ Me	H
Me	SPh	SO ₂ Me	H
Me	SCH ₂ CH ₂ OMe	SO ₂ Me	H
Me	SCH ₂ CH ₂ OEt	SO ₂ Me	H
Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Me	Y22	SO ₂ Me	H
Me	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
Me	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
Me	S(O)CH ₂ C≡CH	SO ₂ Me	H
Me	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
Me	Y23	SO ₂ Me	H
Me	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
Me	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
Me	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
Me	SO ₂ CH ₂ CF ₃	SO ₂ Me	H

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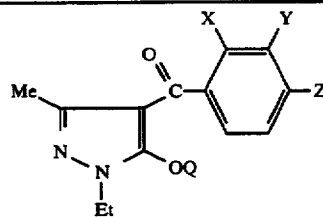
TABLE 6-continued



X	Y	Z	Q
Me	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
Me	Y24	SO ₂ Me	H
Me	Y25	SO ₂ Me	H
Me	SO ₂ Ph	SO ₂ Me	H
Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
Me	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Me	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
Me	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
Me	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ OMe	Cl	H
Me	OCH ₂ CH ₂ OEt	Cl	H
Me	OCH ₂ CH ₂ OPr-i	Cl	H
Me	OCHMeCH ₂ OMe	Cl	H
Me	OCH ₂ COOMe	Cl	H
Me	OCH ₂ CH ₂ SMe	Cl	H
Me	OCH ₂ CH ₂ SO ₂ Me	Cl	H
Me	SCH ₂ CH ₂ OMe	Cl	H
Me	SO ₂ CH ₂ CH ₂ OMe	Cl	H
Me	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
Me	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
Me	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
Me	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
Me	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
Me	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
Me	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
Me	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
Me	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
Me	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
Me	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
Me	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
Cl	Y1	SO ₂ Me	H
Cl	Y2	SO ₂ Me	H
Cl	Y3	SO ₂ Me	H
Cl	Y4	SO ₂ Me	H
Cl	Y5	SO ₂ Me	H
Cl	Y6	SO ₂ Me	H
Cl	Y7	SO ₂ Me	H
Cl	OCH ₂ CH=CH ₂	SO ₂ Me	H
Cl	OCHMeCH=CH ₂	SO ₂ Me	H
Cl	OCMe ₂ CH=CH ₂	SO ₂ Me	H
Cl	OCH ₂ CMe=CH ₂	SO ₂ Me	H
Cl	OCH ₂ CH=CHMe	SO ₂ Me	H
Cl	OCH ₂ CH=CMe ₂	SO ₂ Me	H
Cl	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
Cl	OCH ₂ C≡CH	SO ₂ Me	H
Cl	OCHMeC≡CH	SO ₂ Me	H
Cl	OCMe ₂ C≡CH	SO ₂ Me	H

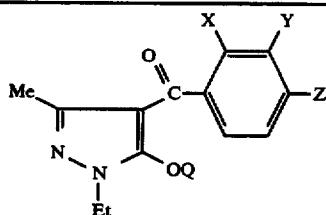
52

TABLE 6-continued



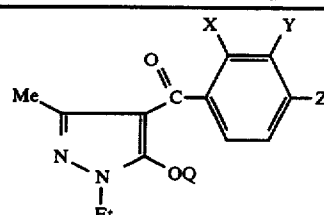
X	Y	Z	Q	
Cl	OCH ₂ C≡CMe	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ F	SO ₂ Me	H	
Cl	OCH ₂ CHF ₂	SO ₂ Me	H	
15	Cl	OCH ₂ CF ₃	SO ₂ Me	H
Cl	OCH ₂ CH ₂ Cl	SO ₂ Me	H	
Cl	OCH ₂ CCl ₃	SO ₂ Me	H	
Cl	OCHMeCH ₂ Cl	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ Br	SO ₂ Me	H	
20	Cl	Y8	SO ₂ Me	H
Cl	OCH ₂ CCl=CH ₂	SO ₂ Me	H	
Cl	OCH ₂ CCl=CHCl	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H	
Cl	OPh	SO ₂ Me	H	
Cl	OPh-Me-2	SO ₂ Me	H	
25	Cl	OPh-Cl-4	SO ₂ Me	H
Cl	OPh-NO ₂ -4	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OMe	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OEt	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H	
30	Cl	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ -Y4	SO ₂ Me	H	
Cl	OCHMeCH ₂ OMe	SO ₂ Me	H	
Cl	OCH ₂ CHMeOMe	SO ₂ Me	H	
35	Cl	OCH ₂ CH ₂ OPh	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OH	SO ₂ Me	H	
Cl	OCH ₂ Ph	SO ₂ Me	H	
40	Cl	OCHMePh	SO ₂ Me	H
Cl	OCH ₂ CH ₂ Ph	SO ₂ Me	H	
Cl	OCH ₂ Ph-2-Cl	SO ₂ Me	H	
Cl	OCH ₂ Ph-3-Me	SO ₂ Me	H	
Cl	OCH ₂ Ph-4-OMe	SO ₂ Me	H	
Cl	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H	
45	Cl	Y9	SO ₂ Me	H
Cl	Y10	SO ₂ Me	H	
Cl	Y11	SO ₂ Me	H	
Cl	Y12	SO ₂ Me	H	
Cl	Y13	SO ₂ Me	H	
Cl	Y14	SO ₂ Me	H	
Cl	Y15	SO ₂ Me	H	
50	Cl	Y16	SO ₂ Me	H
Cl	Y17	SO ₂ Me	H	
Cl	Y18	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ NHMe	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H	
55	Cl	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
Cl	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H	
Cl	Y19	SO ₂ Me	H	
Cl	OCH ₂ COOMe	SO ₂ Me	H	
Cl	OCH ₂ COOEt	SO ₂ Me	H	
Cl	OCH ₂ COOPr-i	SO ₂ Me	H	
60	Cl	OCH ₂ COOBu-i	SO ₂ Me	H
Cl	OCH ₂ COOBu-t	SO ₂ Me	H	
Cl	OCH ₂ COO-Y4	SO ₂ Me	H	
Cl	OCHMeCOOMe	SO ₂ Me	H	
Cl	OCHMeCOOEt	SO ₂ Me	H	
Cl	OCHMeCOOPr-i	SO ₂ Me	H	
65	Cl	OCH ₂ CH ₂ CN	SO ₂ Me	H
Cl	OCH ₂ SMe	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ SMe	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H	

TABLE 6-continued



X	Y	Z	Q
Cl	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
Cl	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
Cl	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
Cl	OCOOme	SO ₂ Me	H
Cl	OCOOPr-i	SO ₂ Me	H
Cl	OCONH ₂	SO ₂ Me	H
Cl	OCONHMe	SO ₂ Me	H
Cl	OCONMe ₂	SO ₂ Me	H
Cl	OP(O)(OMe) ₂	SO ₂ Me	H
Cl	Y20	SO ₂ Me	H
Cl	SCH ₂ CH=CH ₂	SO ₂ Me	H
Cl	SCH ₂ CH=CMe ₂	SO ₂ Me	H
Cl	SCH ₂ C≡CH	SO ₂ Me	H
Cl	SCH ₂ CF ₃	SO ₂ Me	H
Cl	SCH ₂ CCl ₃	SO ₂ Me	H
Cl	Y21	SO ₂ Me	H
Cl	SPh	SO ₂ Me	H
Cl	SCH ₂ CH ₂ OMe	SO ₂ Me	H
Cl	SCH ₂ CH ₂ OEt	SO ₂ Me	H
Cl	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Cl	Y22	SO ₂ Me	H
Cl	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
Cl	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
Cl	S(O)CH ₂ C≡CH	SO ₂ Me	H
Cl	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
Cl	Y23	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
Cl	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
Cl	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
Cl	Y24	SO ₂ Me	H
Cl	Y25	SO ₂ Me	H
Cl	SO ₂ Ph	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Cl	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
Cl	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Cl	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Cl	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Cl	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
Cl	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Cl	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Cl	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Cl	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ OMe	Cl	H
Cl	OCH ₂ CH ₂ OEt	Cl	H
Cl	OCH ₂ CH ₂ OPr-i	Cl	H
Cl	OCHMeCH ₂ OMe	Cl	H
Cl	OCH ₂ COOMe	Cl	H
Cl	OCH ₂ CH ₂ SMe	Cl	H
Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	H
Cl	SCH ₂ CH ₂ OMe	Cl	H

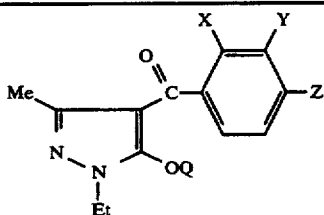
TABLE 6-continued



X	Y	Z	Q	
Cl	SO ₂ CH ₂ CH ₂ OMe	Cl	H	
Cl	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph	
Cl	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph	
15	Cl	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph	
Cl	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph	
Cl	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph	
Cl	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh	
Cl	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh	
20	Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
Cl	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh	
Cl	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh	
Cl	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh	
Cl	Y1	SO ₂ Me	H	
Cl	OMe	Y2	SO ₂ Me	H
25	OMe	Y3	SO ₂ Me	H
Cl	OMe	Y4	SO ₂ Me	H
Cl	OMe	Y5	SO ₂ Me	H
Cl	OMe	Y6	SO ₂ Me	H
Cl	OMe	Y7	SO ₂ Me	H
Cl	OMe	OCH ₂ CH=CH ₂	SO ₂ Me	H
30	OMe	OCHMeCH=CH ₂	SO ₂ Me	H
Cl	OMe	OCMe ₂ CH=CH ₂	SO ₂ Me	H
Cl	OMe	OCH ₂ CMe=CH ₂	SO ₂ Me	H
Cl	OMe	OCH ₂ CH=CHMe	SO ₂ Me	H
Cl	OMe	OCH ₂ CH=CMe ₂	SO ₂ Me	H
Cl	OMe	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
35	OMe	OCH ₂ C≡CH	SO ₂ Me	H
Cl	OMe	OCHMeC≡CH	SO ₂ Me	H
Cl	OMe	OCMe ₂ C≡CH	SO ₂ Me	H
Cl	OMe	OCH ₂ C≡CMe	SO ₂ Me	H
Cl	OMe	OCH ₂ CH ₂ F	SO ₂ Me	H
Cl	OMe	OCH ₂ CHF ₂	SO ₂ Me	H
40	OMe	OCH ₂ CF ₃	SO ₂ Me	H
Cl	OMe	OCH ₂ CH ₂ Cl	SO ₂ Me	H
Cl	OMe	OCH ₂ CCl ₃	SO ₂ Me	H
Cl	OMe	OCHMeCH ₂ Cl	SO ₂ Me	H
Cl	OMe	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
Cl	OMe	OCH ₂ CH ₂ Br	SO ₂ Me	H
Cl	OMe	Y8	SO ₂ Me	H
45	OMe	OCH ₂ CCl=CH ₂	SO ₂ Me	H
Cl	OMe	OCH ₂ CCl=CHCl	SO ₂ Me	H
Cl	OMe	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H
Cl	OMe	OPh	SO ₂ Me	H
Cl	OMe	OPh-Me-2	SO ₂ Me	H
Cl	OMe	OPh-Cl-4	SO ₂ Me	H
50	OMe	OPh-NO ₂ -4	SO ₂ Me	H
Cl	OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	H
Cl	OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	H
Cl	OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Cl	OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Cl	OMe	OCH ₂ CH ₂ OBU-n	SO ₂ Me	H
55	OMe	OCH ₂ CH ₂ OBU-i	SO ₂ Me	H
Cl	OMe	OCH ₂ CH ₂ OBU-s	SO ₂ Me	H
Cl	OMe	OCH ₂ CH ₂ OBU-t	SO ₂ Me	H
Cl	OMe	OCH ₂ CH ₂ -Y4	SO ₂ Me	H
Cl	OMe	OCHMeCH ₂ OMe	SO ₂ Me	H
Cl	OMe	OCH ₂ CHMeOMe	SO ₂ Me	H
Cl	OMe	OCH ₂ CH ₂ OPh	SO ₂ Me	H
60	OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H
Cl	OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Cl	OMe	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
Cl	OMe	OCH ₂ CH ₂ OH	SO ₂ Me	H
Cl	OMe	OCH ₂ Ph	SO ₂ Me	H
Cl	OMe	OCHMePh	SO ₂ Me	H
65	OMe	OCH ₂ CH ₂ Ph	SO ₂ Me	H
Cl	OMe	OCH ₂ Ph-2-Cl	SO ₂ Me	H
Cl	OMe	OCH ₂ Ph-3-Me	SO ₂ Me	H
Cl	OMe	OCH ₂ Ph-4-OMe	SO ₂ Me	H
Cl	OMe	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H

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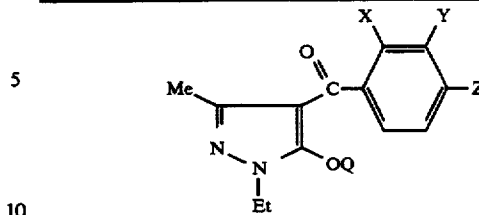
TABLE 6-continued



X	Y	Z	Q
OMe	Y9	SO ₂ Me	H
OMe	Y10	SO ₂ Me	H
OMe	Y11	SO ₂ Me	H
OMe	Y12	SO ₂ Me	H
OMe	Y13	SO ₂ Me	H
OMe	Y14	SO ₂ Me	H
OMe	Y15	SO ₂ Me	H
OMe	Y16	SO ₂ Me	H
OMe	Y17	SO ₂ Me	H
OMe	Y18	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
OMe	Y19	SO ₂ Me	H
OMe	OCH ₂ COOMe	SO ₂ Me	H
OMe	OCH ₂ COOEt	SO ₂ Me	H
OMe	OCH ₂ COOPr-i	SO ₂ Me	H
OMe	OCH ₂ COOBu-t	SO ₂ Me	H
OMe	OCH ₂ COOBu-t	SO ₂ Me	H
OMe	OCH ₂ COO—Y4	SO ₂ Me	H
OMe	OCHMeCOOMe	SO ₂ Me	H
OMe	OCHMeCOOEt	SO ₂ Me	H
OMe	OCHMeCOOPr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ CN	SO ₂ Me	H
OMe	OCH ₂ SMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
OMe	OCOOMe	SO ₂ Me	H
OMe	OCOOPr-i	SO ₂ Me	H
OMe	OCONH ₂	SO ₂ Me	H
OMe	OCONHMe	SO ₂ Me	H
OMe	OCONMe ₂	SO ₂ Me	H
OMe	OP(O)(OMe) ₂	SO ₂ Me	H
OMe	Y20	SO ₂ Me	H
OMe	SCH ₂ CH=CH ₂	SO ₂ Me	H
OMe	SCH ₂ CH=CMe ₂	SO ₂ Me	H
OMe	SCH ₂ C≡CH	SO ₂ Me	H
OMe	SCH ₂ CF ₃	SO ₂ Me	H
OMe	SCH ₂ CCl ₃	SO ₂ Me	H
OMe	Y21	SO ₂ Me	H
OMe	SPh	SO ₂ Me	H
OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	H
OMe	SCH ₂ CH ₂ OEt	SO ₂ Me	H
OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
OMe	Y22	SO ₂ Me	H
OMe	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
OMe	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
OMe	S(O)CH ₂ C≡CH	SO ₂ Me	H
OMe	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
OMe	Y23	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
OMe	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
OMe	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
OMe	Y24	SO ₂ Me	H
OMe	Y25	SO ₂ Me	H
OMe	SO ₂ Ph	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph

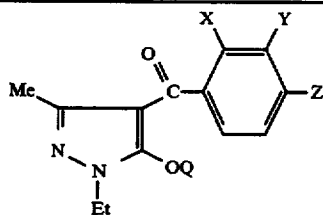
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TABLE 6-continued



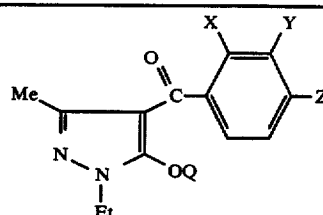
X	Y	Z	Q
OMe	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
OMe	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ COPh
OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
OMe	OCH ₂ CH ₂ OMe	Cl	H
OMe	OCH ₂ CH ₂ OEt	Cl	H
OMe	OCH ₂ CH ₂ OPr-i	Cl	H
OMe	OCHMeCH ₂ OMe	Cl	H
OMe	OCH ₂ COOMe	Cl	H
OMe	OCH ₂ CH ₂ SMe	Cl	H
OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	H
OMe	SCH ₂ CH ₂ OMe	Cl	H
OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	H
OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
OMe	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
OMe	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
CH ₂ OMe	Y1	SO ₂ Me	H
CH ₂ OMe	Y2	SO ₂ Me	H
CH ₂ OMe	Y3	SO ₂ Me	H
CH ₂ OMe	Y4	SO ₂ Me	H
CH ₂ OMe	Y5	SO ₂ Me	H
CH ₂ OMe	Y6	SO ₂ Me	H
CH ₂ OMe	Y7	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH=CH ₂	SO ₂ Me	H
CH ₂ OMe	OCHMeCH=CH ₂	SO ₂ Me	H
CH ₂ OMe	OCMe ₂ CH=CH ₂	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CMe=CH ₂	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH=CHMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH=CMe ₂	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH=CH ₂	SO ₂ Me	H
CH ₂ OMe	OCH ₂ C≡CH	SO ₂ Me	H
CH ₂ OMe	OCHMeC≡CH	SO ₂ Me	H
CH ₂ OMe	OCMe ₂ C≡CH	SO ₂ Me	H
CH ₂ OMe	OCH ₂ C≡CMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ F	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CF ₂	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CF ₃	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ Cl	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CCl ₃	SO ₂ Me	H
CH ₂ OMe	OCHMeCH ₂ Cl	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ Br	SO ₂ Me	H
CH ₂ OMe	Y8	SO ₂ Me	H

TABLE 6-continued



X	Y	Z	Q
CH ₂ OMe	OCH ₂ CCl=CH ₂	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CCl=CHCl	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H
CH ₂ OMe	OPh	SO ₂ Me	H
CH ₂ OMe	OPh-Me-2	SO ₂ Me	H
CH ₂ OMe	OPh-Cl-4	SO ₂ Me	H
CH ₂ OMe	OPh-NO ₂ -4	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ -Y ₄	SO ₂ Me	H
CH ₂ OMe	OCHMeCH ₂ OMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CHMeOMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OPh	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OH	SO ₂ Me	H
CH ₂ OMe	OCH ₂ Ph	SO ₂ Me	H
CH ₂ OMe	OCHMePh	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ Ph	SO ₂ Me	H
CH ₂ OMe	OCH ₂ Ph-2-Cl	SO ₂ Me	H
CH ₂ OMe	OCH ₂ Ph-3-Me	SO ₂ Me	H
CH ₂ OMe	OCH ₂ Ph-4-OMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
CH ₂ OMe	Y ₉	SO ₂ Me	H
CH ₂ OMe	Y ₁₀	SO ₂ Me	H
CH ₂ OMe	Y ₁₁	SO ₂ Me	H
CH ₂ OMe	Y ₁₂	SO ₂ Me	H
CH ₂ OMe	Y ₁₃	SO ₂ Me	H
CH ₂ OMe	Y ₁₄	SO ₂ Me	H
CH ₂ OMe	Y ₁₅	SO ₂ Me	H
CH ₂ OMe	Y ₁₆	SO ₂ Me	H
CH ₂ OMe	Y ₁₇	SO ₂ Me	H
CH ₂ OMe	Y ₁₈	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
CH ₂ OMe	Y ₁₉	SO ₂ Me	H
CH ₂ OMe	OCH ₂ COOMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ COOEt	SO ₂ Me	H
CH ₂ OMe	OCH ₂ COOPr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ COOBu-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ COOBu-t	SO ₂ Me	H
CH ₂ OMe	OCH ₂ COO-Y ₄	SO ₂ Me	H
CH ₂ OMe	OCHMeCOOMe	SO ₂ Me	H
CH ₂ OMe	OCHMeCOOEt	SO ₂ Me	H
CH ₂ OMe	OCHMeCOOPr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ CN	SO ₂ Me	H
CH ₂ OMe	OCH ₂ SMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
CH ₂ OMe	OCOOPr-i	SO ₂ Me	H
CH ₂ OMe	CONH ₂	SO ₂ Me	H
CH ₂ OMe	OCONHMe	SO ₂ Me	H
CH ₂ OMe	OCONMe ₂	SO ₂ Me	H
CH ₂ OMe	OP(O)(OMe) ₂	SO ₂ Me	H
CH ₂ OMe	Y ₂₀	SO ₂ Me	H

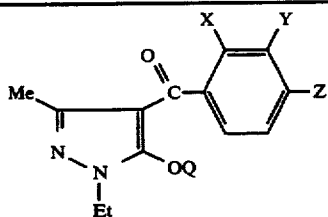
TABLE 6-continued



X	Y	Z	Q
CH ₂ OMe	SCH ₂ CH=CH ₂	SO ₂ Me	H
CH ₂ OMe	SCH ₂ CH=CMe ₂	SO ₂ Me	H
CH ₂ OMe	SCH ₂ C≡CH	SO ₂ Me	H
CH ₂ OMe	SCH ₂ CF ₃	SO ₂ Me	H
CH ₂ OMe	SCH ₂ CCl ₃	SO ₂ Me	H
CH ₂ OMe	Y ₂₁	SO ₂ Me	H
CH ₂ OMe	SPh	SO ₂ Me	H
CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	H
CH ₂ OMe	SCH ₂ CH ₂ OEt	SO ₂ Me	H
CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
CH ₂ OMe	Y ₂₂	SO ₂ Me	H
CH ₂ OMe	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
CH ₂ OMe	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
CH ₂ OMe	S(O)CH ₂ C≡CH	SO ₂ Me	H
CH ₂ OMe	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
CH ₂ OMe	Y ₂₃	SO ₂ Me	H
CH ₂ OMe	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
CH ₂ OMe	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
CH ₂ OMe	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
CH ₂ OMe	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
CH ₂ OMe	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
CH ₂ OMe	Y ₂₄	SO ₂ Me	H
CH ₂ OMe	SO ₂ Ph	SO ₂ Me	H
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	H
CH ₂ OMe	OCH ₂ CH ₂ OEt	Cl	H
CH ₂ OMe	OCH ₂ CH ₂ OPr-i	Cl	H
CH ₂ OMe	OCHMeCH ₂ OMe	Cl	H
CH ₂ OMe	OCH ₂ COOMe	Cl	H
CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	H
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	H
CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	H
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	H
CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph

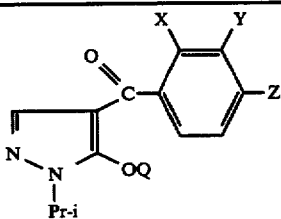
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TABLE 6-continued



X	Y	Z	Q
CH ₂ OMe	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh

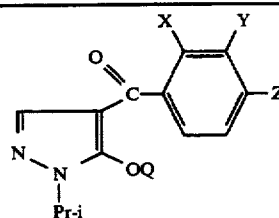
TABLE 7



X	Y	Z	Q
Me	Y1	SO ₂ Me	H
Me	Y2	SO ₂ Me	H
Me	Y3	SO ₂ Me	H
Me	Y4	SO ₂ Me	H
Me	Y5	SO ₂ Me	H
Me	Y6	SO ₂ Me	H
Me	Y7	SO ₂ Me	H
Me	OCH ₂ CH=CH ₂	SO ₂ Me	H
Me	OCHMeCH=CH ₂	SO ₂ Me	H
Me	OCMe ₂ CH=CH ₂	SO ₂ Me	H
Me	OCH ₂ CMe=CH ₂	SO ₂ Me	H
Me	OCH ₂ CH=CHMe	SO ₂ Me	H
Me	OCH ₂ CH=CHMe ₂	SO ₂ Me	H
Me	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
Me	OCH ₂ C≡CH	SO ₂ Me	H
Me	OCHMeC≡CH	SO ₂ Me	H
Me	OCMe ₂ C≡CH	SO ₂ Me	H
Me	OCH ₂ C≡CMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ F	SO ₂ Me	H
Me	OCH ₂ CHF ₂	SO ₂ Me	H
Me	OCH ₂ CF ₃	SO ₂ Me	H
Me	OCH ₂ CH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CCl ₃	SO ₂ Me	H
Me	OCHMeCH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CH ₂ Br	SO ₂ Me	H
Me	Y8	SO ₂ Me	H
Me	OCH ₂ CCl=CH ₂	SO ₂ Me	H
Me	OCH ₂ CCl=CHCl	SO ₂ Me	H
Me	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H
Me	OPh	SO ₂ Me	H
Me	OPh-Me-2	SO ₂ Me	H
Me	OPh-Cl-4	SO ₂ Me	H
Me	OPh-NO ₂ -4	SO ₂ Me	H
Me	OCH ₂ CH ₂ OMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ OEt	SO ₂ Me	H
Me	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H
Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H
Me	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H
Me	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H
Me	OCH ₂ CH ₂ -Y4	SO ₂ Me	H
Me	OCHMeCH ₂ OMe	SO ₂ Me	H
Me	OCH ₂ CHMeOMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ OPh	SO ₂ Me	H
Me	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ OH	SO ₂ Me	H
Me	OCH ₂ Ph	SO ₂ Me	H

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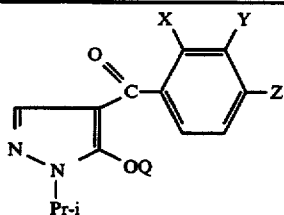
TABLE 7-continued



X	Y	Z	Q	
Me	OCHMePh	SO ₂ Me	H	
Me	OCH ₂ CH ₂ Ph	SO ₂ Me	H	
Me	OCH ₂ Ph-2-Cl	SO ₂ Me	H	
15	Me	OCH ₂ Ph-3-Me	SO ₂ Me	H
Me	OCH ₂ Ph-4-OMe	SO ₂ Me	H	
Me	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H	
Me	Y9	SO ₂ Me	H	
Me	Y10	SO ₂ Me	H	
Me	Y11	SO ₂ Me	H	
20	Me	Y12	SO ₂ Me	H
Me	Y13	SO ₂ Me	H	
Me	Y14	SO ₂ Me	H	
Me	Y15	SO ₂ Me	H	
Me	Y16	SO ₂ Me	H	
Me	Y17	SO ₂ Me	H	
25	Me	Y18	SO ₂ Me	H
Me	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H	
Me	OCH ₂ CH ₂ NHMe	SO ₂ Me	H	
Me	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H	
Me	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H	
Me	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H	
30	Me	Y19	SO ₂ Me	H
Me	OCH ₂ COOMe	SO ₂ Me	H	
Me	OCH ₂ COOEt	SO ₂ Me	H	
Me	OCH ₂ COOPr-i	SO ₂ Me	H	
Me	OCH ₂ COOBu-i	SO ₂ Me	H	
Me	OCH ₂ COOBu-t	SO ₂ Me	H	
Me	OCH ₂ COO-Y4	SO ₂ Me	H	
35	Me	OCHMeCOOMe	SO ₂ Me	H
Me	OCHMeCOOEt	SO ₂ Me	H	
Me	OCHMeCOOPr-i	SO ₂ Me	H	
Me	OCH ₂ CH ₂ CN	SO ₂ Me	H	
Me	OCH ₂ SMe	SO ₂ Me	H	
Me	OCH ₂ CH ₂ SMe	SO ₂ Me	H	
40	Me	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H	
Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H	
Me	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H	
Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H	
Me	OCOOMe	SO ₂ Me	H	
45	Me	OCOOPr-i	SO ₂ Me	H
Me	OCNHG ₂	SO ₂ Me	H	
Me	OCONHMe	SO ₂ Me	H	
Me	OCONMe ₂	SO ₂ Me	H	
Me	OP(O)(OMe) ₂	SO ₂ Me	H	
Me	Y20	SO ₂ Me	H	
50	Me	SCH ₂ CH=CH ₂	SO ₂ Me	H
Me	SCH ₂ CH=CMe ₂	SO ₂ Me	H	
Me	SCH ₂ C≡CH	SO ₂ Me	H	
Me	SCH ₂ CF ₃	SO ₂ Me	H	
Me	SCH ₂ CCl ₃	SO ₂ Me	H	
Me	Y21	SO ₂ Me	H	
Me	SPh	SO ₂ Me	H	
55	Me	SCH ₂ CH ₂ OMe	SO ₂ Me	H
Me	SCH ₂ CH ₂ OEt	SO ₂ Me	H	
Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H	
Me	Y22	SO ₂ Me	H	
Me	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H	
Me	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H	
60	Me	S(O)CH ₂ C≡CH	SO ₂ Me	H
Me	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H	
Me	Y23	SO ₂ Me	H	
Me	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H	
Me	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H	
Me	SO ₂ CH ₂ C≡CH	SO ₂ Me	H	
65	Me	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
Me	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H	
Me	Y24	SO ₂ Me	H	
Me	Y25	SO ₂ Me	H	
Me	SO ₂ Ph	SO ₂ Me	H	

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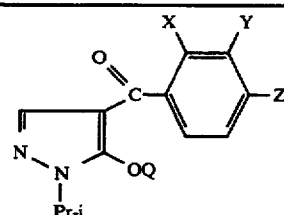
TABLE 7-continued



X	Y	Z	Q
Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
Me	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Me	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
Me	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
Me	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ OMe	Cl	H
Me	OCH ₂ CH ₂ OEt	Cl	H
Me	OCH ₂ CH ₂ OPr-i	Cl	H
Me	OCHMeCH ₂ OMe	Cl	H
Me	OCH ₂ COOMe	Cl	H
Me	OCH ₂ CH ₂ SMe	Cl	H
Me	OCH ₂ CH ₂ SO ₂ Me	Cl	H
Me	SCH ₂ CH ₂ OMe	Cl	H
Me	SO ₂ CH ₂ CH ₂ OMe	Cl	H
Me	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
Me	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
Me	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
Me	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
Me	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
Me	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
Me	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
Me	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
Me	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
Me	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
Me	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
Me	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
Cl	Y1	SO ₂ Me	H
Cl	Y2	SO ₂ Me	H
Cl	Y3	SO ₂ Me	H
Cl	Y4	SO ₂ Me	H
Cl	Y5	SO ₂ Me	H
Cl	Y6	SO ₂ Me	H
Cl	Y7	SO ₂ Me	H
Cl	OCH ₂ CH=CH ₂	SO ₂ Me	H
Cl	OCHMeCH=CH ₂	SO ₂ Me	H
Cl	OCMe ₂ CH=CH ₂	SO ₂ Me	H
Cl	OCH ₂ CMe=CH ₂	SO ₂ Me	H
Cl	OCH ₂ CH=CHMe	SO ₂ Me	H
Cl	OCH ₂ CH=CMe ₂	SO ₂ Me	H
Cl	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
Cl	OCH ₂ C≡CH	SO ₂ Me	H
Cl	OCHMeC≡CH	SO ₂ Me	H
Cl	OCMe ₂ C≡CH	SO ₂ Me	H
Cl	OCH ₂ C≡CMe	SO ₂ Me	H
Cl	OCH ₂ CH ₂ F	SO ₂ Me	H
Cl	OCH ₂ CHF ₂	SO ₂ Me	H
Cl	OCH ₂ CF ₃	SO ₂ Me	H

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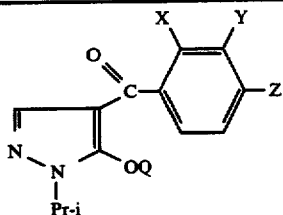
TABLE 7-continued



X	Y	Z	Q	
Cl	OCH ₂ CH ₂ Cl	SO ₂ Me	H	
Cl	OCH ₂ CCl ₃	SO ₂ Me	H	
Cl	OCHMeCH ₂ Cl	SO ₂ Me	H	
15	Cl	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
Cl	OCH ₂ CH ₂ Br	SO ₂ Me	H	
Cl	Y8	SO ₂ Me	H	
Cl	OCH ₂ CCl=CH ₂	SO ₂ Me	H	
Cl	OCH ₂ CCl=CHCl	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H	
20	Cl	OPh	SO ₂ Me	H
Cl	OPh-Me-2	SO ₂ Me	H	
Cl	OPh-Cl-4	SO ₂ Me	H	
Cl	OPh-NO ₂ -4	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OMe	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OEt	SO ₂ Me	H	
25	Cl	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H	
30	Cl	OCH ₂ CH ₂ -Y4	SO ₂ Me	H
Cl	OCHMeCH ₂ OMe	SO ₂ Me	H	
Cl	OCH ₂ CHMeOMe	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OPh	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H	
35	Cl	OCH ₂ CH ₂ OH	SO ₂ Me	H
Cl	OCH ₂ Ph	SO ₂ Me	H	
Cl	OCHMePh	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ Ph	SO ₂ Me	H	
Cl	OCH ₂ Ph-2-Cl	SO ₂ Me	H	
40	Cl	OCH ₂ Ph-3-Me	SO ₂ Me	H
Cl	OCH ₂ Ph-4-OMe	SO ₂ Me	H	
Cl	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H	
Cl	Y9	SO ₂ Me	H	
Cl	Y10	SO ₂ Me	H	
Cl	Y11	SO ₂ Me	H	
Cl	Y12	SO ₂ Me	H	
45	Cl	Y13	SO ₂ Me	H
Cl	Y14	SO ₂ Me	H	
Cl	Y15	SO ₂ Me	H	
Cl	Y16	SO ₂ Me	H	
Cl	Y17	SO ₂ Me	H	
Cl	Y18	SO ₂ Me	H	
50	Cl	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
Cl	OCH ₂ CH ₂ NHMe	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H	
55	Cl	Y19	SO ₂ Me	H
Cl	OCH ₂ COOMe	SO ₂ Me	H	
Cl	OCH ₂ COOEt	SO ₂ Me	H	
Cl	OCH ₂ COOPr-i	SO ₂ Me	H	
Cl	OCH ₂ COOBu-i	SO ₂ Me	H	
Cl	OCH ₂ COOBu-t	SO ₂ Me	H	
Cl	OCH ₂ COO-Y4	SO ₂ Me	H	
Cl	OCHMeCOOMe	SO ₂ Me	H	
60	Cl	OCHMeCOOEt	SO ₂ Me	H
Cl	OCHMeCOOPr-i	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ CN	SO ₂ Me	H	
Cl	OCH ₂ SMe	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ SMe	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H	
65	Cl	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
Cl	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H	
Cl	OCOOMe	SO ₂ Me	H	

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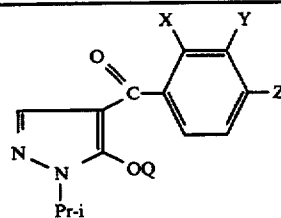
TABLE 7-continued



X	Y	Z	Q
Cl	OCOOPr-i	SO ₂ Me	H
Cl	OC(=O)NH ₂	SO ₂ Me	H
Cl	OC(=O)NHMe	SO ₂ Me	H
Cl	OC(=O)NMe ₂	SO ₂ Me	H
Cl	OP(O)(OMe) ₂	SO ₂ Me	H
Cl	Y20	SO ₂ Me	H
Cl	SCH ₂ CH=CH ₂	SO ₂ Me	H
Cl	SCH ₂ CH=CMe ₂	SO ₂ Me	H
Cl	SCH ₂ C≡CH	SO ₂ Me	H
Cl	SCH ₂ CF ₃	SO ₂ Me	H
Cl	SCH ₂ CCl ₃	SO ₂ Me	H
Cl	Y21	SO ₂ Me	H
Cl	SPh	SO ₂ Me	H
Cl	SCH ₂ CH ₂ OMe	SO ₂ Me	H
Cl	SCH ₂ CH ₂ OEt	SO ₂ Me	H
Cl	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Cl	Y22	SO ₂ Me	H
Cl	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
Cl	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
Cl	S(O)CH ₂ C≡CH	SO ₂ Me	H
Cl	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
Cl	Y23	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
Cl	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
Cl	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
Cl	Y24	SO ₂ Me	H
Cl	Y25	SO ₂ Me	H
Cl	SO ₂ Ph	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Cl	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
Cl	OCH ₃ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
Cl	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Cl	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Cl	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Cl	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
Cl	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Cl	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Cl	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Cl	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ OMe	Cl	H
Cl	OCH ₂ CH ₂ OEt	Cl	H
Cl	OCH ₂ CH ₂ OPr-i	Cl	H
Cl	OCHMeCH ₂ OMe	Cl	H
Cl	OCH ₂ COOMe	Cl	H
Cl	OCH ₂ CH ₂ SMe	Cl	H
Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	H
Cl	SCH ₂ CH ₂ OMe	Cl	H
Cl	SO ₂ CH ₂ CH ₂ OMe	Cl	H
Cl	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
Cl	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
Cl	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph

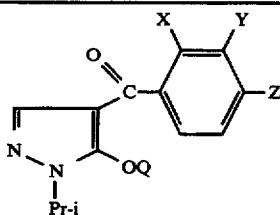
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TABLE 7-continued



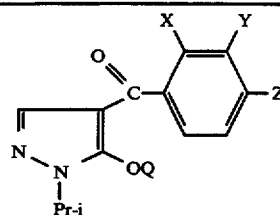
X	Y	Z	Q
Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
Cl	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
Cl	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
15	Cl	Cl	CH ₂ COPh
Cl	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
Cl	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
Cl	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
Cl	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
Cl	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
20	OMe	SO ₂ Me	H
OMe	Y1	SO ₂ Me	H
OMe	Y2	SO ₂ Me	H
OMe	Y3	SO ₂ Me	H
OMe	Y4	SO ₂ Me	H
OMe	Y5	SO ₂ Me	H
OMe	Y6	SO ₂ Me	H
25	OMe	SO ₂ Me	H
OMe	Y7	SO ₂ Me	H
OMe	OCH ₂ CH=CH ₂	SO ₂ Me	H
OMe	OCHMeCH=CH ₂	SO ₂ Me	H
OMe	OCMe ₂ CH=CH ₂	SO ₂ Me	H
OMe	OCH ₂ CMe=CH ₂	SO ₂ Me	H
OMe	OCH ₂ CH=CHMe	SO ₂ Me	H
30	OMe	SO ₂ Me	H
OMe	OCH ₂ CH=CMe ₂	SO ₂ Me	H
OMe	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
OMe	OCH ₂ C≡CH	SO ₂ Me	H
OMe	OCHMeC≡CH	SO ₂ Me	H
OMe	OCMe ₂ C≡CH	SO ₂ Me	H
OMe	OCH ₂ C≡CMe	SO ₂ Me	H
35	OMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ F	SO ₂ Me	H
OMe	OCH ₂ CHF ₂	SO ₂ Me	H
OMe	OCH ₂ CF ₃	SO ₂ Me	H
OMe	OCH ₂ CH ₂ Cl	SO ₂ Me	H
OMe	OCH ₂ CCl ₃	SO ₂ Me	H
OMe	OCHMeCH ₂ Cl	SO ₂ Me	H
OMe	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
40	OMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ Br	SO ₂ Me	H
OMe	Y8	SO ₂ Me	H
OMe	OCH ₂ CCl=CH ₂	SO ₂ Me	H
OMe	OCH ₂ CCl=CHCl	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H
OMe	OPh	SO ₂ Me	H
45	OMe	SO ₂ Me	H
OMe	OPh-Me-2	SO ₂ Me	H
OMe	OPh-Cl-4	SO ₂ Me	H
OMe	OPh-NO ₂ -4	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H
50	OMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H
OMe	OCH ₂ CH ₂ -Y4	SO ₂ Me	H
55	OMe	SO ₂ Me	H
OMe	OCHMeCH ₂ OMe	SO ₂ Me	H
OMe	OCH ₂ CHMeOMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OPh	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OH	SO ₂ Me	H
60	OMe	SO ₂ Me	H
OMe	OCH ₂ Ph	SO ₂ Me	H
OMe	OCHMePh	SO ₂ Me	H
OMe	OCH ₂ CH ₂ Ph	SO ₂ Me	H
OMe	OCH ₂ Ph-2-Cl	SO ₂ Me	H
OMe	OCH ₂ Ph-3-Me	SO ₂ Me	H
OMe	OCH ₂ Ph-4-OMe	SO ₂ Me	H
65	OMe	SO ₂ Me	H
OMe	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
OMe	Y9	SO ₂ Me	H
OMe	Y10	SO ₂ Me	H
OMe	Y11	SO ₂ Me	H
OMe	Y12	SO ₂ Me	H

TABLE 7-continued



X	Y	Z	Q
OMe	Y13	SO ₂ Me	H
OMe	Y14	SO ₂ Me	H
OMe	Y15	SO ₂ Me	H
OMe	Y16	SO ₂ Me	H
OMe	Y17	SO ₂ Me	H
OMe	Y18	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
OMe	Y19	SO ₂ Me	H
OMe	OCH ₂ COOMe	SO ₂ Me	H
OMe	OCH ₂ COOEt	SO ₂ Me	H
OMe	OCH ₂ COOPr-i	SO ₂ Me	H
OMe	OCH ₂ COOBu-t	SO ₂ Me	H
OMe	OCH ₂ COOBu-t	SO ₂ Me	H
OMe	OCH ₂ COO-Y4	SO ₂ Me	H
OMe	OCHMeCOOMe	SO ₂ Me	H
OMe	OCHMeCOOEt	SO ₂ Me	H
OMe	OCHMeCOOPr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ CN	SO ₂ Me	H
OMe	OCH ₂ SMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
OMe	OCOOMe	SO ₂ Me	H
OMe	OCOOPr-i	SO ₂ Me	H
OMe	OCONH ₂	SO ₂ Me	H
OMe	OCONHMe	SO ₂ Me	H
OMe	OCONMe ₂	SO ₂ Me	H
OMe	OP(O)(OMe) ₂	SO ₂ Me	H
OMe	Y20	SO ₂ Me	H
OMe	SCH ₂ CH=CH ₂	SO ₂ Me	H
OMe	SCH ₂ CH=CMe ₂	SO ₂ Me	H
OMe	SCH ₂ C≡CH	SO ₂ Me	H
OMe	SCH ₂ CF ₃	SO ₂ Me	H
OMe	SCH ₂ CCl ₃	SO ₂ Me	H
OMe	Y21	SO ₂ Me	H
OMe	SPh	SO ₂ Me	H
OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	H
OMe	SCH ₂ CH ₂ OEt	SO ₂ Me	H
OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
OMe	Y22	SO ₂ Me	H
OMe	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
OMe	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
OMe	S(O)CH ₂ C≡CH	SO ₂ Me	H
OMe	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
OMe	Y23	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
OMe	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
OMe	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
OMe	Y24	SO ₂ Me	H
OMe	Y25	SO ₂ Me	H
OMe	SO ₂ Ph	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
OMe	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph

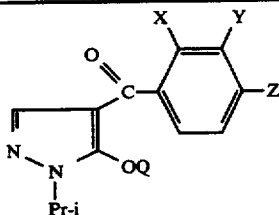
TABLE 7-continued



X	Y	Z	Q	
OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph	
OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph	
OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph	
15	OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph	
OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph	
OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph	
OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh	
OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh	
20	OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
OMe	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh	
OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₁ Me	CH ₂ COPh	
OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh	
OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh	
OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh	
25	OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh	
OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh	
OMe	OCH ₂ CH ₂ OMe	Cl	H	
OMe	OCH ₂ CH ₂ OEt	Cl	H	
OMe	OCH ₂ CH ₂ OPr-i	Cl	H	
OMe	OCHMeCH ₂ OMe	Cl	H	
30	OMe	OCH ₂ COOMe	Cl	H
OMe	OCH ₂ CH ₂ SMe	Cl	H	
OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	H	
OMe	SCH ₂ CH ₂ OMe	Cl	H	
OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	H	
35	OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph	
OMe	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph	
OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph	
OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph	
OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph	
40	OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh	
OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh	
OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh	
OMe	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh	
OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh	
45	CH ₂ OMe	Y1	SO ₂ Me	H
CH ₂ OMe	Y2	SO ₂ Me	H	
CH ₂ OMe	Y3	SO ₂ Me	H	
CH ₂ OMe	Y4	SO ₂ Me	H	
CH ₂ OMe	Y5	SO ₂ Me	H	
CH ₂ OMe	Y6	SO ₂ Me	H	
CH ₂ OMe	Y7	SO ₂ Me	H	
50	CH ₂ OMe	OCH ₂ CH=CH ₂	SO ₂ Me	H
CH ₂ OMe	OCHMeCH=CH ₂	SO ₂ Me	H	
CH ₂ OMe	OCMe ₂ CH=CH ₂	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CMe=CH ₂	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH=CHMe	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH=CMe ₂	SO ₂ Me	H	
55	CH ₂ OMe	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
CH ₂ OMe	OCH ₂ C≡CH	SO ₂ Me	H	
CH ₂ OMe	OCHMeC≡CH	SO ₂ Me	H	
CH ₂ OMe	OCMe ₂ C≡CH	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ C≡CMe	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH ₂ F	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CHF ₂	SO ₂ Me	H	
60	CH ₂ OMe	OCH ₂ CF ₃	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ Cl	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CCl ₃	SO ₂ Me	H	
CH ₂ OMe	OCHMeCH ₂ Cl	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH ₂ Br	SO ₂ Me	H	
65	CH ₂ OMe	Y8	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CCl=CH ₂	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CCl=CHCl	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H	
CH ₂ OMe	OPh	SO ₂ Me	H	

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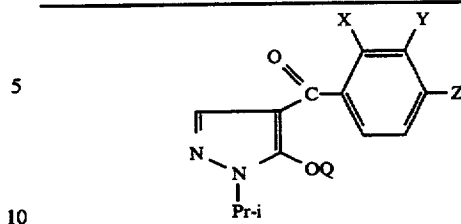
TABLE 7-continued



X	Y	Z	Q
CH ₂ OMe	OPh-Me-2	SO ₂ Me	H
CH ₂ OMe	OPh-Cl-4	SO ₂ Me	H
CH ₂ OMe	OPh-N ₂ -4	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ -Y4	SO ₂ Me	H
CH ₂ OMe	OCHMeCH ₂ OMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CHMeOMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OPh	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OH	SO ₂ Me	H
CH ₂ OMe	OCH ₂ Ph	SO ₂ Me	H
CH ₂ OMe	OCHMePh	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ Ph	SO ₂ Me	H
CH ₂ OMe	OCH ₂ Ph-2-Cl	SO ₂ Me	H
CH ₂ OMe	OCH ₂ Ph-3-Me	SO ₂ Me	H
CH ₂ OMe	OCH ₂ Ph-4-OMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
CH ₂ OMe	Y9	SO ₂ Me	H
CH ₂ OMe	Y10	SO ₂ Me	H
CH ₂ OMe	Y11	SO ₂ Me	H
CH ₂ OMe	Y12	SO ₂ Me	H
CH ₂ OMe	Y13	SO ₂ Me	H
CH ₂ OMe	Y14	SO ₂ Me	H
CH ₂ OMe	Y15	SO ₂ Me	H
CH ₂ OMe	Y16	SO ₂ Me	H
CH ₂ OMe	Y17	SO ₂ Me	H
CH ₂ OMe	Y18	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
CH ₂ OMe	Y19	SO ₂ Me	H
CH ₂ OMe	OCH ₂ COOMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ COOEt	SO ₂ Me	H
CH ₂ OMe	OCH ₂ COOPr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ COOBu-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ COOBu-t	SO ₂ Me	H
CH ₂ OMe	OCH ₂ COO-Y4	SO ₂ Me	H
CH ₂ OMe	OCHMeCOOMe	SO ₂ Me	H
CH ₂ OMe	OCHMeCOOEt	SO ₂ Me	H
CH ₂ OMe	OCHMeCOOPr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ CN	SO ₂ Me	H
CH ₂ OMe	OCH ₂ SMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
CH ₂ OMe	OCOOMe	SO ₂ Me	H
CH ₂ OMe	OCOOPr-i	SO ₂ Me	H
CH ₂ OMe	OC(=O)NH ₂	SO ₂ Me	H
CH ₂ OMe	OC(=O)NHMe	SO ₂ Me	H
CH ₂ OMe	OC(=O)NMe ₂	SO ₂ Me	H
CH ₂ OMe	OP(O)(OMe) ₂	SO ₂ Me	H
CH ₂ OMe	Y20	SO ₂ Me	H
CH ₂ OMe	SCH ₂ CH=CH ₂	SO ₂ Me	H
CH ₂ OMe	SCH ₂ CH=CMe ₂	SO ₂ Me	H
CH ₂ OMe	SCH ₂ C≡CH	SO ₂ Me	H
CH ₂ OMe	SCH ₂ CF ₃	SO ₂ Me	H

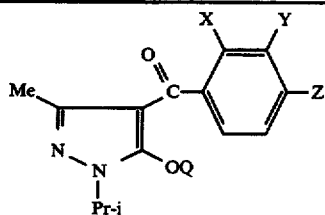
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TABLE 7-continued



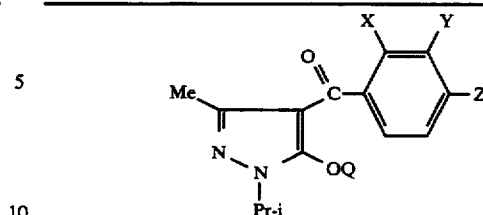
X	Y	Z	Q	
CH ₂ OMe	SCH ₂ CCl ₃	SO ₂ Me	H	
CH ₂ OMe	Y21	SO ₂ Me	H	
CH ₂ OMe	SPh	SO ₂ Me	H	
15	CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	H
CH ₂ OMe	SCH ₂ CH ₂ OEt	SO ₂ Me	H	
CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H	
CH ₂ OMe	Y22	SO ₂ Me	H	
CH ₂ OMe	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H	
CH ₂ OMe	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H	
20	CH ₂ OMe	S(O)CH ₂ C≡CH	SO ₂ Me	H
CH ₂ OMe	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H	
CH ₂ OMe	Y23	SO ₂ Me	H	
CH ₂ OMe	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H	
CH ₂ OMe	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H	
CH ₂ OMe	SO ₂ CH ₂ C≡CH	SO ₂ Me	H	
25	CH ₂ OMe	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
CH ₂ OMe	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H	
CH ₂ OMe	Y24	SO ₂ Me	H	
CH ₂ OMe	SO ₂ Ph	SO ₂ Me	H	
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H	
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H	
30	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph	
CH ₂ OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph	
CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph	
CH ₂ OMe	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph	
CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph	
35	CH ₂ OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph	
CH ₂ OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph	
CH ₂ OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph	
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph	
CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph	
40	CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph	
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph	
CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh	
CH ₂ OMe	OCH ₂ CH ₂ Pr-i	SO ₂ Me	CH ₂ COPh	
CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh	
CH ₂ OMe	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh	
45	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
CH ₂ OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh	
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh	
CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh	
50	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	H	
CH ₂ OMe	OCH ₂ CH ₂ OEt	Cl	H	
CH ₂ OMe	OCH ₂ CH ₂ OPr-i	Cl	H	
CH ₂ OMe	OCHMeCH ₂ OMe	Cl	H	
CH ₂ OMe	OCH ₂ COOMe	Cl	H	
55	CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	H
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	H	
CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	H	
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	H	
CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph	
CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph	
CH ₂ OMe	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph	
60	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph	
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph	
CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh	
CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh	
CH ₂ OMe	OCH ₂ CH ₂ SOMe	Cl	CH ₂ COPh	
65	CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
CH ₂ OMe	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh	
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh	

TABLE 8



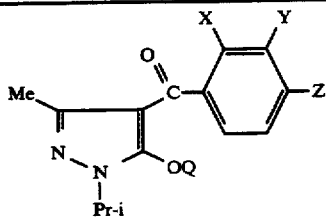
X	Y	Z	Q
Me	Y1	SO ₂ Me	H
Me	Y2	SO ₂ Me	H
Me	Y3	SO ₂ Me	H
Me	Y4	SO ₂ Me	H
Me	Y5	SO ₂ Me	H
Me	Y6	SO ₂ Me	H
Me	Y7	SO ₂ Me	H
Me	OCH ₂ CH=CH ₂	SO ₂ Me	H
Me	OCHMeCH=CH ₂	SO ₂ Me	H
Me	OCMe ₂ CH=CH ₂	SO ₂ Me	H
Me	OCH ₂ CMe=CH ₂	SO ₂ Me	H
Me	OCH ₂ CH=CHMe	SO ₂ Me	H
Me	OCH ₂ CH=CM ₂	SO ₂ Me	H
Me	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
Me	OCH ₂ C≡CH	SO ₂ Me	H
Me	OCHMeC≡CH	SO ₂ Me	H
Me	OCMe ₂ C≡CH	SO ₂ Me	H
Me	OCH ₂ C≡CMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ F	SO ₂ Me	H
Me	OCH ₂ CHF ₂	SO ₂ Me	H
Me	OCH ₂ CF ₃	SO ₂ Me	H
Me	OCH ₂ CH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CCl ₃	SO ₂ Me	H
Me	OCHMeCH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CH ₂ Br	SO ₂ Me	H
Me	Y8	SO ₂ Me	H
Me	OCH ₂ CCl=CH ₂	SO ₂ Me	H
Me	OCH ₂ CCl=CHCl	SO ₂ Me	H
Me	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H
Me	OPh	SO ₂ Me	H
Me	OPh-Me-2	SO ₂ Me	H
Me	OPh-Cl-4	SO ₂ Me	H
Me	OPh-NO ₂ -4	SO ₂ Me	H
Me	OCH ₂ CH ₂ OMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ OEt	SO ₂ Me	H
Me	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H
Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H
Me	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H
Me	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H
Me	OCH ₂ CH ₂ -Y4	SO ₂ Me	H
Me	OCHMeCH ₂ OMe	SO ₂ Me	H
Me	OCH ₂ CHMeOMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ OPh	SO ₂ Me	H
Me	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ OH	SO ₂ Me	H
Me	OCH ₂ Ph	SO ₂ Me	H
Me	OCHMePh	SO ₂ Me	H
Me	OCH ₂ CH ₂ Ph	SO ₂ Me	H
Me	OCH ₂ Ph-2-Cl	SO ₂ Me	H
Me	OCH ₂ Ph-3-Me	SO ₂ Me	H
Me	OCH ₂ Ph-4-OMe	SO ₂ Me	H
Me	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
Me	Y9	SO ₂ Me	H
Me	Y10	SO ₂ Me	H
Me	Y11	SO ₂ Me	H
Me	Y12	SO ₂ Me	H
Me	Y13	SO ₂ Me	H
Me	Y14	SO ₂ Me	H
Me	Y15	SO ₂ Me	H
Me	Y16	SO ₂ Me	H
Me	Y17	SO ₂ Me	H
Me	Y18	SO ₂ Me	H
Me	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
Me	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H

TABLE 8-continued



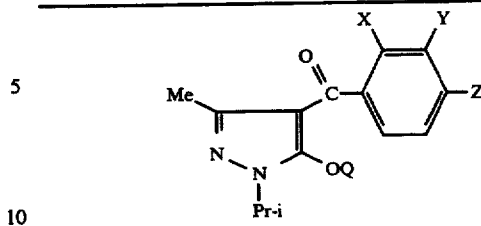
X	Y	Z	Q	
Me	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H	
Me	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H	
Me	Y19	SO ₂ Me	H	
15	Me	OCH ₂ COOMe	SO ₂ Me	H
Me	OCH ₂ COEt	SO ₂ Me	H	
Me	OCH ₂ COOPr-i	SO ₂ Me	H	
Me	OCH ₂ COOBu-i	SO ₂ Me	H	
Me	OCH ₂ COOBu-t	SO ₂ Me	H	
Me	OCH ₂ COO-Y4	SO ₂ Me	H	
20	Me	OCHMeCOOMe	SO ₂ Me	H
Me	OCHMeCOEt	SO ₂ Me	H	
Me	OCHMeCOOPr-i	SO ₂ Me	H	
Me	OCH ₂ CH ₂ CN	SO ₂ Me	H	
Me	OCH ₂ SMe	SO ₂ Me	H	
Me	OCH ₂ CH ₂ SMe	SO ₂ Me	H	
25	Me	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H	
Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H	
Me	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H	
Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H	
Me	OCOOMe	SO ₂ Me	H	
30	Me	OCOOPr-i	SO ₂ Me	H
Me	OCONH ₂	SO ₂ Me	H	
Me	OCONHMe	SO ₂ Me	H	
Me	OCONMe ₂	SO ₂ Me	H	
Me	OP(O)(OMe) ₂	SO ₂ Me	H	
Me	Y20	SO ₂ Me	H	
35	Me	SCH ₂ CH=CH ₂	SO ₂ Me	H
Me	SCH ₂ CH=CMe ₂	SO ₂ Me	H	
Me	SCH ₂ C≡CH	SO ₂ Me	H	
Me	SCH ₂ CF ₃	SO ₂ Me	H	
Me	SCH ₂ CCl ₃	SO ₂ Me	H	
Me	Y21	SO ₂ Me	H	
Me	SPh	SO ₂ Me	H	
40	Me	SCH ₂ CH ₂ OMe	SO ₂ Me	H
Me	SCH ₂ CH ₂ OEt	SO ₂ Me	H	
Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H	
Me	Y22	SO ₂ Me	H	
Me	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H	
Me	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H	
45	Me	S(O)CH ₂ C≡CH	SO ₂ Me	H
Me	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H	
Me	Y23	SO ₂ Me	H	
Me	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H	
Me	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H	
Me	SO ₂ CH ₂ C≡CH	SO ₂ Me	H	
50	Me	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
Me	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H	
Me	Y24	SO ₂ Me	H	
Me	Y25	SO ₂ Me	H	
Me	SO ₂ Ph	SO ₂ Me	H	
Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H	
Me	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H	
55	Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
Me	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph	
Me	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph	
Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph	
Me	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph	
Me	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph	
60	Me	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph	
Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph	
Me	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph	
Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph	
Me	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph	
65	Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph	
Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph	
Me	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh	
Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh	

TABLE 8-continued



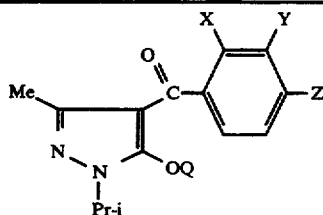
X	Y	Z	Q
Me	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
Me	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Me	OCH ₂ CH ₂ OMe	Cl	H
Me	OCH ₂ CH ₂ OEt	Cl	H
Me	OCH ₂ CH ₂ OPr-i	Cl	H
Me	OCHMeCH ₂ OMe	Cl	H
Me	OCH ₂ COOMe	Cl	H
Me	OCH ₂ CH ₂ SMe	Cl	H
Me	OCH ₂ CH ₂ SO ₂ Me	Cl	H
Me	SCH ₂ CH ₂ OMe	Cl	H
Me	SO ₂ CH ₂ CH ₂ OMe	Cl	H
Me	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
Me	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
Me	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
Me	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
Me	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
Me	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
Me	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
Me	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
Me	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
Me	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
Me	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
Me	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
Cl	Y1	SO ₂ Me	H
Cl	Y2	SO ₂ Me	H
Cl	Y3	SO ₂ Me	H
Cl	Y4	SO ₂ Me	H
Cl	Y5	SO ₂ Me	H
Cl	Y6	SO ₂ Me	H
Cl	Y7	SO ₂ Me	H
Cl	OCH ₂ CH=CH ₂	SO ₂ Me	H
Cl	OCHMeCH=CH ₂	SO ₂ Me	H
Cl	OCMe ₂ CH=CH ₂	SO ₂ Me	H
Cl	OCH ₂ CMe=CH ₂	SO ₂ Me	H
Cl	OCH ₂ CH=CHMe	SO ₂ Me	H
Cl	OCH ₂ CH=CMe ₂	SO ₂ Me	H
Cl	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
Cl	OCH ₂ C≡CH	SO ₂ Me	H
Cl	OCHMeC≡CH	SO ₂ Me	H
Cl	OCMe ₂ C≡CH	SO ₂ Me	H
Cl	OCH ₂ C≡CMe	SO ₂ Me	H
Cl	OCH ₂ CH ₂ F	SO ₂ Me	H
Cl	OCH ₂ CHF ₂	SO ₂ Me	H
Cl	OCH ₂ CF ₃	SO ₂ Me	H
Cl	OCH ₂ CH ₂ Cl	SO ₂ Me	H
Cl	OCH ₂ CCl ₃	SO ₂ Me	H
Cl	OCHMeCH ₂ Cl	SO ₂ Me	H
Cl	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
Cl	OCH ₂ CH ₂ Br	SO ₂ Me	H
Cl	Y8	SO ₂ Me	H
Cl	OCH ₂ CCl=CH ₂	SO ₂ Me	H
Cl	OCH ₂ CCl=CHCl	SO ₂ Me	H
Cl	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H
Cl	OPh	SO ₂ Me	H
Cl	OPh-Me-2	SO ₂ Me	H
Cl	OPh-Cl-4	SO ₂ Me	H
Cl	OPh-NO ₂ -4	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OMe	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OEt	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H

TABLE 8-continued



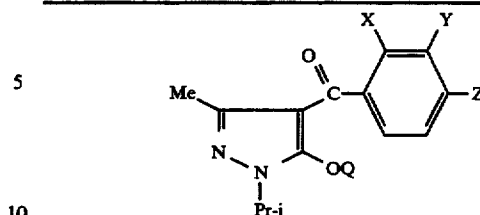
X	Y	Z	Q	
Cl	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ -Y4	SO ₂ Me	H	
15	Cl	OCHMeCH ₂ OMe	SO ₂ Me	H
Cl	OCH ₂ CHMeOMe	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OPh	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H	
20	Cl	OCH ₂ CH ₂ OH	SO ₂ Me	H
Cl	OCH ₂ Ph	SO ₂ Me	H	
Cl	OCHMePh	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ Ph	SO ₂ Me	H	
Cl	OCH ₂ Ph-2-Cl	SO ₂ Me	H	
25	Cl	OCH ₂ Ph-3-Me	SO ₂ Me	H
Cl	OCH ₂ Ph-4-OMe	SO ₂ Me	H	
Cl	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H	
Cl	Y9	SO ₂ Me	H	
Cl	Y10	SO ₂ Me	H	
Cl	Y11	SO ₂ Me	H	
Cl	Y12	SO ₂ Me	H	
Cl	Y13	SO ₂ Me	H	
30	Cl	Y14	SO ₂ Me	H
Cl	Y15	SO ₂ Me	H	
Cl	Y16	SO ₂ Me	H	
Cl	Y17	SO ₂ Me	H	
Cl	Y18	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H	
35	Cl	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
Cl	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H	
Cl	Y19	SO ₂ Me	H	
Cl	OCH ₂ COOMe	SO ₂ Me	H	
40	Cl	OCH ₂ COOEt	SO ₂ Me	H
Cl	OCH ₂ COOPr-i	SO ₂ Me	H	
Cl	OCH ₂ COOBu-i	SO ₂ Me	H	
Cl	OCH ₂ COOBu-t	SO ₂ Me	H	
Cl	OCH ₂ COO-Y4	SO ₂ Me	H	
Cl	OCHMeCOOMe	SO ₂ Me	H	
45	Cl	OCHMeCOOEt	SO ₂ Me	H
Cl	OCHMeCOOPr-i	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ CN	SO ₂ Me	H	
Cl	OCH ₂ SMe	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ SMe	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H	
50	Cl	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
Cl	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H	
Cl	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H	
Cl	OCOOMe	SO ₂ Me	H	
Cl	OCOOPr-i	SO ₂ Me	H	
Cl	OCONH ₂	SO ₂ Me	H	
55	Cl	OCONHMe	SO ₂ Me	H
Cl	OCONMe ₂	SO ₂ Me	H	
Cl	OP(O)(OMe) ₂	SO ₂ Me	H	
Cl	Y20	SO ₂ Me	H	
Cl	SCH ₂ CH=CH ₂	SO ₂ Me	H	
Cl	SCH ₂ CH=CMe ₂	SO ₂ Me	H	
60	Cl	SCH ₂ C≡CH	SO ₂ Me	H
Cl	SCH ₂ CF ₃	SO ₂ Me	H	
Cl	SCH ₂ CCl ₃	SO ₂ Me	H	
Cl	Y21	SO ₂ Me	H	
Cl	SPh	SO ₂ Me	H	
Cl	SCH ₂ CH ₂ OMe	SO ₂ Me	H	
Cl	SCH ₂ CH ₂ OEt	SO ₂ Me	H	
65	Cl	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
Cl	Y22	SO ₂ Me	H	
Cl	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H	
Cl	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H	

TABLE 8-continued



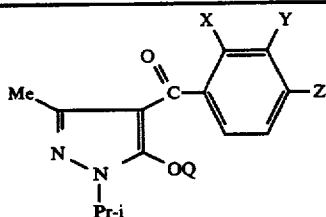
X	Y	Z	Q
Cl	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
Cl	Y23	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
Cl	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
Cl	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
Cl	Y24	SO ₂ Me	H
Cl	Y25	SO ₂ Me	H
Cl	SO ₂ Ph	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
Cl	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
Cl	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Cl	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
Cl	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Cl	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Cl	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
Cl	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
Cl	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
Cl	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Cl	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
Cl	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
Cl	OCH ₂ CH ₂ OMe	Cl	H
Cl	OCH ₂ CH ₂ OEt	Cl	H
Cl	OCH ₂ CH ₂ OPr-i	Cl	H
Cl	OCHMeCH ₂ OMe	Cl	H
Cl	OCH ₂ COOMe	Cl	H
Cl	OCH ₂ CH ₂ SMe	Cl	H
Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	H
Cl	SCH ₂ CH ₂ OMe	Cl	H
Cl	SO ₂ CH ₂ CH ₂ OMe	Cl	H
Cl	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
Cl	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
Cl	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
Cl	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
Cl	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
Cl	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
Cl	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
Cl	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
Cl	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
Cl	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
OMe	Y1	SO ₂ Me	H
OMe	Y2	SO ₂ Me	H
OMe	Y3	SO ₂ Me	H
OMe	Y4	SO ₂ Me	H
OMe	Y5	SO ₂ Me	H
OMe	Y6	SO ₂ Me	H
OMe	Y7	SO ₂ Me	H
OMe	OCH ₂ CH=CH ₂	SO ₂ Me	H
OMe	OCHMeCH=CH ₂	SO ₂ Me	H
OMe	OCMe ₂ CH=CH ₂	SO ₂ Me	H
OMe	OCH ₂ CMe=CH ₂	SO ₂ Me	H

TABLE 8-continued



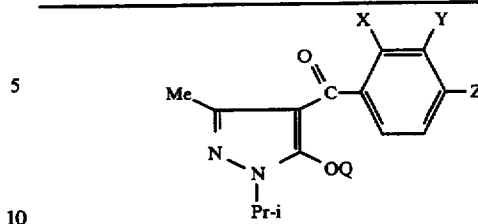
X	Y	Z	Q	
OMe	OCH ₂ CH=CHMe	SO ₂ Me	H	
OMe	OCH ₂ CH=CMe ₂	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H	
15	OMe	OCH ₂ C≡CH	SO ₂ Me	H
OMe	OCHMeC≡CH	SO ₂ Me	H	
OMe	OCMe ₂ C≡CH	SO ₂ Me	H	
OMe	OCH ₂ C≡CMe	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ F	SO ₂ Me	H	
OMe	OCH ₂ CHF ₂	SO ₂ Me	H	
20	OMe	OCH ₂ CF ₃	SO ₂ Me	H
OMe	OCH ₂ CH ₂ Cl	SO ₂ Me	H	
OMe	OCH ₂ CCl ₃	SO ₂ Me	H	
OMe	OCHMeCH ₂ Cl	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ Br	SO ₂ Me	H	
25	OMe	Y8	SO ₂ Me	H
OMe	OCH ₂ CCl=CH ₂	SO ₂ Me	H	
OMe	OCH ₂ CCl=CHCl	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H	
OMe	OPh	SO ₂ Me	H	
OMe	OPh-Me-2	SO ₂ Me	H	
OMe	OPh-Cl-4	SO ₂ Me	H	
30	OMe	OPh-NO ₂ -4	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H	
35	OMe	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ -Y4	SO ₂ Me	H	
OMe	OCHMeCH ₂ OMe	SO ₂ Me	H	
OMe	OCH ₂ CHMeOMe	SO ₂ Me	H	
40	OMe	OCH ₂ CH ₂ OPh	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ OH	SO ₂ Me	H	
OMe	OCH ₂ Ph	SO ₂ Me	H	
45	OMe	OCHMePh	SO ₂ Me	H
OMe	OCH ₂ CH ₂ Ph	SO ₂ Me	H	
OMe	OCH ₂ Ph-2-Cl	SO ₂ Me	H	
OMe	OCH ₂ Ph-3-Me	SO ₂ Me	H	
OMe	OCH ₂ Ph-4-OMe	SO ₂ Me	H	
OMe	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H	
50	OMe	Y9	SO ₂ Me	H
OMe	Y10	SO ₂ Me	H	
OMe	Y11	SO ₂ Me	H	
OMe	Y12	SO ₂ Me	H	
OMe	Y13	SO ₂ Me	H	
OMe	Y14	SO ₂ Me	H	
OMe	Y15	SO ₂ Me	H	
55	OMe	Y16	SO ₂ Me	H
OMe	Y17	SO ₂ Me	H	
OMe	Y18	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ NHMe	SO ₂ Me	H	
OMe	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H	
60	OMe	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
OMe	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H	
OMe	Y19	SO ₂ Me	H	
OMe	OCH ₂ COOMe	SO ₂ Me	H	
OMe	OCH ₂ COOEt	SO ₂ Me	H	
OMe	OCH ₂ COOPr-i	SO ₂ Me	H	
65	OMe	OCH ₂ COOBu-i	SO ₂ Me	H
OMe	OCH ₂ COOBu-t	SO ₂ Me	H	
OMe	OCH ₂ COO-Y4	SO ₂ Me	H	
OMe	OCHMeCOOMe	SO ₂ Me	H	
OMe	OCHMeCOOEt	SO ₂ Me	H	

TABLE 8-continued



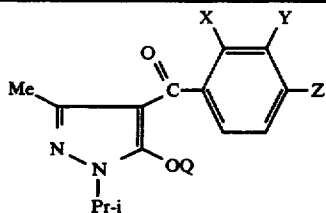
X	Y	Z	Q
OMe	OCHMeCOOPr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ CN	SO ₂ Me	H
OMe	OCH ₂ SMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	H
OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
OMe	OCOOMe	SO ₂ Me	H
OMe	OCOOPr-i	SO ₂ Me	H
OMe	OCONH ₂	SO ₂ Me	H
OMe	OCONHMe	SO ₂ Me	H
OMe	OCONMe ₂	SO ₂ Me	H
OMe	OP(O)(OMe) ₂	SO ₂ Me	H
OMe	Y20	SO ₂ Me	H
OMe	SCH ₂ CH=CH ₂	SO ₂ Me	H
OMe	SCH ₂ CH=CMe ₂	SO ₂ Me	H
OMe	SCH ₂ C≡CH	SO ₂ Me	H
OMe	SCH ₂ CF ₃	SO ₂ Me	H
OMe	SCH ₂ CCl ₃	SO ₂ Me	H
OMe	Y21	SO ₂ Me	H
OMe	SPh	SO ₂ Me	H
OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	H
OMe	SCH ₂ CH ₂ OEt	SO ₂ Me	H
OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
OMe	Y22	SO ₂ Me	H
OMe	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
OMe	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
OMe	S(O)CH ₂ C≡CH	SO ₂ Me	H
OMe	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
OMe	Y23	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
OMe	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
OMe	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
OMe	Y24	SO ₂ Me	H
OMe	Y25	SO ₂ Me	H
OMe	SO ₂ Ph	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
OMe	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
OMe	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
OMe	OCH ₂ CH ₂ OMe	Cl	H
OMe	OCH ₂ CH ₂ OEt	Cl	H

TABLE 8-continued



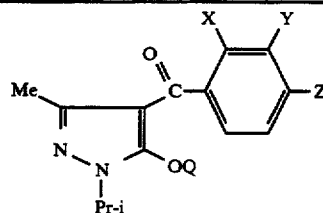
X	Y	Z	Q	
OMe	OCH ₂ CH ₂ OPr-i	Cl	H	
OMe	OCHMeCH ₂ OMe	Cl	H	
OMe	OCH ₂ COOMe	Cl	H	
15	OMe	OCH ₂ CH ₂ SMe	Cl	H
OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	H	
OMe	SCH ₂ CH ₂ OMe	Cl	H	
OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	H	
OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph	
OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph	
20	OMe	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph	
OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph	
OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph	
OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh	
OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh	
25	OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh	
OMe	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh	
OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh	
CH ₂ OMe	Y1	SO ₂ Me	H	
CH ₂ OMe	Y2	SO ₂ Me	H	
30	CH ₂ OMe	Y3	SO ₂ Me	H
CH ₂ OMe	Y4	SO ₂ Me	H	
CH ₂ OMe	Y5	SO ₂ Me	H	
CH ₂ OMe	Y6	SO ₂ Me	H	
CH ₂ OMe	Y7	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH=CH ₂	SO ₂ Me	H	
35	CH ₂ OMe	OCHMeCH=CH ₂	SO ₂ Me	H
CH ₂ OMe	OCHMe ₂ CH=CH ₂	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CMe=CH ₂	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH=CHMe	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH=CMe ₂	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H	
40	CH ₂ OMe	OCH ₂ C≡CH	SO ₂ Me	H
CH ₂ OMe	OCHMeC≡CH	SO ₂ Me	H	
CH ₂ OMe	OCMe ₂ C≡CH	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ C≡CMe	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH ₂ F	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CHF ₂	SO ₂ Me	H	
45	CH ₂ OMe	OCH ₂ CF ₃	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ Cl	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CCl ₃	SO ₂ Me	H	
CH ₂ OMe	OCHMeCH ₂ Cl	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH ₂ Br	SO ₂ Me	H	
50	CH ₂ OMe	Y8	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CCl=CH ₂	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CCl=CHCl	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H	
CH ₂ OMe	OPh	SO ₂ Me	H	
CH ₂ OMe	OPh-Me-2	SO ₂ Me	H	
CH ₂ OMe	OPh-Cl-4	SO ₂ Me	H	
55	CH ₂ OMe	OPh-NO ₂ -4	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H	
60	CH ₂ OMe	OCH ₂ CH ₂ OBU-n	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OBU-i	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH ₂ OBU-s	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH ₂ OBU-t	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH ₂ -Y4	SO ₂ Me	H	
CH ₂ OMe	OCHMeCH ₂ OMe	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CHMeOMe	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH ₂ OPh	SO ₂ Me	H	
65	CH ₂ OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ CH ₂ OH	SO ₂ Me	H	
CH ₂ OMe	OCH ₂ Ph	SO ₂ Me	H	

TABLE 8-continued



X	Y	Z	Q
CH ₂ OMe	OCHMePh	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ Ph	SO ₂ Me	H
CH ₂ OMe	OCH ₂ Ph-2-Cl	SO ₂ Me	H
CH ₂ OMe	OCH ₂ Ph-3-Me	SO ₂ Me	H
CH ₂ OMe	OCH ₂ Ph-4-OMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
CH ₂ OMe	Y9	SO ₂ Me	H
CH ₂ OMe	Y10	SO ₂ Me	H
CH ₂ OMe	Y11	SO ₂ Me	H
CH ₂ OMe	Y12	SO ₂ Me	H
CH ₂ OMe	Y13	SO ₂ Me	H
CH ₂ OMe	Y14	SO ₂ Me	H
CH ₂ OMe	Y15	SO ₂ Me	H
CH ₂ OMe	Y16	SO ₂ Me	H
CH ₂ OMe	Y17	SO ₂ Me	H
CH ₂ OMe	Y18	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
CH ₂ OMe	Y19	SO ₂ Me	H
CH ₂ OMe	OCH ₂ COOMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ COOEt	SO ₂ Me	H
CH ₂ OMe	OCH ₂ COOPr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ COOBu-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ COOBu-t	SO ₂ Me	H
CH ₂ OMe	OCH ₂ COO—Y4	SO ₂ Me	H
CH ₂ OMe	OCHMeCOOMe	SO ₂ Me	H
CH ₂ OMe	OCHMeCOOEt	SO ₂ Me	H
CH ₂ OMe	OCHMeCOOPr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ CN	SO ₂ Me	H
CH ₂ OMe	OCH ₂ SMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
CH ₂ OMe	OCOOMe	SO ₂ Me	H
CH ₂ OMe	OCOOPr-i	SO ₂ Me	H
CH ₂ OMe	OCONH ₂	SO ₂ Me	H
CH ₂ OMe	OCONHMe	SO ₂ Me	H
CH ₂ OMe	OCONMe ₂	SO ₂ Me	H
CH ₂ OMe	OP(O)(OMe) ₂	SO ₂ Me	H
CH ₂ OMe	Y20	SO ₂ Me	H
CH ₂ OMe	SCH ₂ CH=CH ₂	SO ₂ Me	H
CH ₂ OMe	SCH ₂ CH=CMe ₂	SO ₂ Me	H
CH ₂ OMe	SCH ₂ C≡CH	SO ₂ Me	H
CH ₂ OMe	SCH ₂ CF ₃	SO ₂ Me	H
CH ₂ OMe	SCH ₂ CCl ₃	SO ₂ Me	H
CH ₂ OMe	Y21	SO ₂ Me	H
CH ₂ OMe	SPh	SO ₂ Me	H
CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	H
CH ₂ OMe	SCH ₂ CH ₂ OEt	SO ₂ Me	H
CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
CH ₂ OMe	Y22	SO ₂ Me	H
CH ₂ OMe	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
CH ₂ OMe	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
CH ₂ OMe	S(O)CH ₂ C≡CH	SO ₂ Me	H
CH ₂ OMe	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
CH ₂ OMe	Y23	SO ₂ Me	H
CH ₂ OMe	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
CH ₂ OMe	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
CH ₂ OMe	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
CH ₂ OMe	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
CH ₂ OMe	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
CH ₂ OMe	Y24	SO ₂ Me	H
CH ₂ OMe	SO ₂ Ph	SO ₂ Me	H
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H

TABLE 8-continued



X	Y	Z	Q
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	SCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
CH ₂ OMe	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
CH ₂ OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	H
CH ₂ OMe	OCH ₂ CH ₂ OEt	Cl	H
CH ₂ OMe	OCH ₂ CH ₂ OPr-i	Cl	H
CH ₂ OMe	OCHMeCH ₂ OMe	Cl	H
CH ₂ OMe	OCH ₂ COOMe	Cl	H
CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	H
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	H
CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	H
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	H
CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
CH ₂ OMe	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh

When the compound of the present invention is to be used as an agricultural or horticultural herbicide, it is usually mixed with a suitable carrier, for instance, a solid carrier such as clay, talc, bentonite or diatomaceous earth, or a liquid carrier such as water, an alcohol (such as benzene, toluene or xylene), a chlorinated hydrocarbon, an ether, a ketone, an ester (such as ethyl acetate) or an acid amide (such as dimethylformamide). If desired, an emulsifier, a dispersing agent, a suspending agent, a penetrating agent, a spreader or a stabilizer may be added to prepare an optional formulation such as a liquid formulation, an emulsifiable concentrate, a wettable powder, a dust, a granule or a flowable.

Further, if desired, other herbicides, various insecticides, bacteriocides, plant regulating agents or synergism agents may be combined at the time of the prepara-

tion of the formulations or at the time of the application of the herbicides.

As other herbicides to be combined with the herbicide of the present invention, there may be mentioned, for instance, compounds disclosed in Farm Chemicals Handbook, the 73rd Edition (1987). Among them, there may be mentioned, for example, atrazine, cyanazine, alachlor, metolachlor, EPTC, 2,4-D, butylate, dicamba, bromoxynil, tridiphane, isoproturon, chlortoluron, triallate, diflufenican, diclofop methyl, diphenzoquat, imazamethabenz methyl, ioxynil, methabenzthazuron, fluroxypil, chloresulfuron and N-[(4,6-di(difluoromethoxy)pyrimidin-2-yl)aminocarbonyl]-2-methoxycarbonylbenzenesulfonamide. N-[(4,6-dimethoxypyrimidin-2-yl)-aminocarbonyl]-3-chloro-4-methoxycarbonyl-1-methylpyrazole-5-sulfonamide or N-[(4,6-dimethoxypyrimidin-2-yl)aminocarbonyl]-3-bromo-4-methoxycarbonyl-1-methylpyrazole-5-sulfonamide as disclosed in U.S. Pat. No. 4,668,277, or N-[(4,6-dimethoxypyrimidin-2-yl)aminocarbonyl]-3-dimethylaminocarbonyl-pyridine-2-sulfonamide as disclosed in Japanese Unexamined Patent Publication No. 223180/1987 may also be combined with the herbicide of the present invention.

The dose varies depending upon the application site, the season for application, the method for application, the type of the crop plant, etc. In general, however, the dose is usually within a range of from 0.001 to 10 kg per hectare as the amount of the active ingredient.

Now, Formulation Examples of the herbicides containing the compounds of the present invention as active ingredients, will be given. However, it should be understood that the present invention is by no means restricted to such specific Examples. In the following Formulation Examples, "parts" means "parts by weight".

FORMULATION EXAMPLE 1

Wettable powder

Compound No. 1 of the present invention	60 parts
Zeeklite PFP (tradename for a kaolin-type clay, manufactured by Zeeklite Industries, Co., Ltd.)	33 parts
Sorpol 5039 (tradename for a mixture of a nonionic surfactant and an anionic surfactant, manufactured by Toho Chemical Co., Ltd.)	5 parts
Carplex (tradename for a coagulation-preventing agent composed of a mixture of a surfactant and fine silica powder, manufactured by Shionogi Pharmaceutical Co., Ltd.)	2 parts

The above ingredients are homogeneously pulverized and mixed to form a wettable powder.

FORMULATION EXAMPLE 2

Emulsifiable concentrate

Compound No. 1 of the present invention	1.5 parts
Xylene	78.5 parts
N,N-dimethylformamide	15 parts
Sorpol 2680 (tradename for a mixture of a nonionic surfactant and an anionic surfactant, manufactured by Toho Chemical Co., Ltd.)	5 parts

The above ingredients are homogeneously mixed to form an emulsifiable concentrate.

FORMULATION EXAMPLE 3

Flowable

Compound No. 1 of the present invention	40 parts
Agrizole B-710 (tradename for a nonionic surfactant, manufactured by Kao Corporation)	10 parts
Runox 1000C (tradename for an anionic surfactant, manufactured by Toho Chemical Co., Ltd.)	0.5 part
1% Rodopol water (tradename for a thickener, manufactured by Rhone-Poulenc)	20 parts
Water	29.5 parts

The above ingredients are homogeneously mixed to form a flowable.

FORMULATION EXAMPLE 4

Liquid formulation

Sodium salt of Compound No 1 of the present invention	30 parts
Nippol (tradename for a nonionic surfactant, manufactured by Nissan Chemical Industries Ltd.)	10 parts
Water	60 parts

The above ingredients are homogeneously mixed to obtain a liquid formulation.

FORMULATION EXAMPLE 5

Liquid formulation

Potassium salt of Compound No. 1 of the present invention	30 parts
Nippol (tradename for a nonionic surfactant, manufactured by Nissan Chemical Industries Ltd.)	10 parts
Water	60 parts

The above ingredients are homogeneously mixed to obtain a liquid formulation.

FORMULATION EXAMPLE 6

Liquid formulation

Calcium salt of Compound No. 1 of the present invention	30 parts
Nippol (tradename for a nonionic surfactant, manufactured by Nissan Chemical Industries Ltd.)	10 parts
Water	60 parts

The above ingredients are homogeneously mixed to obtain a liquid formulation.

FORMULATION EXAMPLE 7

Liquid formulation

Isopropylamine salt of Compound No. 1 of the present invention	10 parts
Sorpol W-150 (tradename for a nonionic surfactant, manufactured by Toho Chemical Co., Ltd.)	10 parts

-continued

Water	80 parts
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The above ingredients are homogeneously mixed to form a liquid formulation.

In their use, the above wettable powder, emulsifiable concentrates, flowables or liquid formulations are diluted with water from 50 to 1,000 times and applied so that the respective active ingredients will be from 0.001 to 5 kg per hectare.

The compounds of the present invention are applicable not only to agricultural and horticultural fields such as upland fields, paddy fields and orchards, but also to non-agricultural fields such as athletic fields, vacant fields and railway sides for the control of various weeds. The dose in their application varies depending upon the application site, the season for application, the type of crop plants, etc. However, it is usually within a range of from 0.001 to 5 kg per hectare.

Now, the herbicidal activities of the compounds of the present invention will be described with respect to specific Test Examples.

TEST EXAMPLE 1:

Test on the herbicidal effects in soil treatment

A plastic box having a length of 15 cm, a width of 22 cm and a depth of 6 cm was filled with a sterilized diluvium soil, and seeds of *Echinochloa crus-galli*, *Setaria viridis*, *Eleusine indica*, *Digitaria adscendens*, *Panicum dichotomiflorum*, *Abutilon theophrasti*, *Amaranthus lividus*, *Polygonum longisetum* and *Zea mays* were sown, and tubers of *Cyperus esculentus* were further planted. The soil was covered thereon in the thickness of about 1.5 cm, and then a herbicide solution was applied onto the surface of the soil uniformly so that the active ingredient was distributed at a predetermined concentration. The herbicide solution was prepared by diluting the wettable powder, the emulsifiable concentrate, the liquid formulation or the flowable as described in the foregoing Formulation Examples with water and applied onto the entire soil surface by means of a small spray. Three weeks after the application of the herbicidal solution, the herbicidal effects against each weed were determined on the basis of the following standard ratings. The results thereby obtained are shown in Table 9. The Compound Nos. correspond to the Compound Nos. in Table 2.

Standard ratings

- 5: Growth control rate of more than 90% (almost completely withered)
- 4: Growth control rate of from 70 to 90%
- 3: Growth control rate of from 40 to 70%
- 2: Growth control rate of from 20 to 40%
- 1: Growth control rate of from 5 to 20%
- 0: Growth control rate of less than 5% (almost non-effective)

The above growth control rates were calculated by the following equation:

$$\text{Growth control rate (\%)} = \left(1 - \frac{T}{N}\right) \times 100$$

where

T: Weight of the weed growth above the soil surface of the treated area

N: Weight of the weed growth above the soil surface of the non-treated area

TEST EXAMPLE 2:

Test 1 on the herbicidal effects in foliage treatment

A plastic box having a length of 15 cm, a width of 22 cm and a depth of 6 cm was filled with a sterilized diluvium soil, and seeds of *Echinochloa crus-galli*, *Setaria viridis*, *Eleusine indica*, *Digitaria adscendens*, *Panicum dichotomiflorum*, *Xanthium strumarium*, *Abutilon theophrasti*, *Amaranthus lividus*, *Polygonum longisetum* and *Zea mays* were spot-wisely sown, and tubers of *Cyperus esculentus* were further planted. Then, the soil was covered thereon in a thickness of about 1.5 cm. When the various weeds and crop plant grew to the 2 or 3 leaf stage, a herbicidal solution was uniformly sprayed on the foliages so that the active ingredient was applied in a predetermined concentration.

The herbicidal solution was prepared by diluting the wettable powder, the emulsifiable concentrate, the liquid formulation or the flowable as described in the above Formulation Examples with water and applied onto the entire surface of the foliages of the weeds and the crop plants by a small spray. Two weeks after the application of the herbicide solution, the herbicidal effects against each weed and *Zea mays* were determined on the basis of the standard ratings described in Test Example 1. The results are shown in Table 10. The Compound Nos. in Table 10 correspond to the Compound Nos. in Table 2.

TEST EXAMPLE 3

Test 2 on the herbicidal effects in foliage treatment

A plastic box having a length of 15 cm, a width of 22 cm and a depth of 6 cm was filled with a sterilized diluvium soil, and seeds of *Veronica persica*, *Stellaria media*, *Galium spurium*, *Matricaria matricarioides*, *Polygonum persicaria*, *Lamium purpureum*, *Solanum nigrum* and *Triticum aestivum* were spot-wisely sown. Then, the soil was covered thereon in a thickness of about 1.5 cm. When the various weeds and crop plant grew to the 2 or 3 leaf atage, a herbicidal solution was uniformly sprayed on the foliages so that the active ingredient was applied in a predetermined concentration.

The herbicidal solution was prepared by diluting the wettable powder, the emulsifiable concentrate, the liquid formulation or the flowable as described in the above Formulation Examples with water and applied onto the entire surface of the foliages of the weeds and *Triticum aestivum* by a small spray. Two weeks after the application of the herbicide solution, the herbicidal effects against each weed and *Triticum aestivum* were determined on the basis of the standard ratings described in Test Example 1. The results are shown in Table 11. The Compound Nos in Table 11 correspond to Compound Nos. in Table 2.

In Tables 9, 10 and 11, the following abbreviations are used.

- Dose: Dose of active ingredient (g/are)
- EC: *Echinochloa crus-galli* (barnyardgrass)
- SE: *Setaria viridis* (green foxtail)
- EL: *Eleusine indica* (goosegrass)
- DI: *Digitaria adscendens* (large crabgrass)
- PA: *Panicum dichotomiflorum* (fall panicum)

AB: *Abutilon theophrasti* (velvet leaf)
 AM: *Amaranthus lividus* (livid amaranth)
 PO: *Polygonum longisetum* (*persicaria blumei* gross)
 XA: *Xanthium strumarium* (cocklebur)
 CY: *Cyperus esculentus* (yellow nutsedge)
 ZE: *Zea mays* (corn)
 VE: *Veronica persia* (birdseye speedweel)

ST: *Stellaria media* (chickweed)
 GA: *Galium spurium* (catchweed)
 MA: *Matricaria matricarioides* (pineappleweed)
 PP: *Polygonum persicaria* (ladysthumb)
 LA: *Lamium purpureum* (red deadnettle)
 SO: *Solanum nigrum* (black nighthshade)
 TR: *Triticum aestivum* (wheat)

TABLE 9

Compound No.	Dose g/are	EC	SE	EL	DI	PA	AB	AM	PO	CY	ZE
1	1	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	0
4	1	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	0
6	1	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	0
7	1	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	0
11	1	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	0
18	1	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	0
19	1	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	0
20	1	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	0
Comparative Compound A	4	3	1	3	3	1	4	5	5	0	0
	8	4	2	4	4	2	5	5	5	0	0
	16	5	3	5	5	3	5	5	5	1	1
Comparative Compound B	4	5	5	5	5	5	1	1	1	2	0
	8	5	5	5	5	5	2	2	2	3	0
	16	5	5	5	5	5	3	3	3	4	1

TABLE 10

Compound No.	Dose g/are	EC	SE	EL	DI	PA	AB	AM	PO	XA	CY	ZE
1	1	5	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	5	0
4	1	5	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	5	0
6	1	5	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	5	0
7	1	5	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	5	0
11	1	5	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	5	0
18	1	5	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	5	0
19	1	5	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	5	0
20	1	5	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	5	0
Comparative Compound A	4	3	1	2	3	0	3	5	5	4	0	0
	8	4	2	3	4	1	5	5	5	5	0	1
	16	4	2	3	4	1	5	5	5	5	0	1
Comparative Compound B	4	4	3	3	4	3	0	2	2	0	1	0
	8	4	4	4	4	4	1	3	3	1	2	1
	16	5	5	5	5	5	2	4	4	2	3	2

TABLE 10-continued

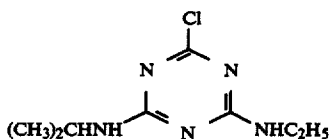
Compound No.	Dose g/are	EC	SE	EL	DI	PA	AB	AM	PO	XA	CY	ZE
B												

TABLE 11

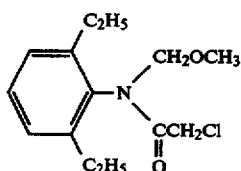
Compound No.	Dose g/are	VE	ST	GA	MA	PP	LA	SO	TR
1	0.5	5	5	5	5	5	5	5	0
	1	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	0
7	0.5	5	5	5	5	5	5	5	0
	1	5	5	5	5	5	5	5	0
11	0.5	5	5	5	5	5	5	5	0
	1	5	5	5	5	5	5	5	0
18	0.5	5	5	5	5	5	5	5	0
	1	5	5	5	5	5	5	5	0
Comparative Compound C	1	4	4	3	2	4	2	4	0
	2	5	5	4	4	5	4	5	1

In Tables 9 and 10, the Comparative Compounds are as follows:

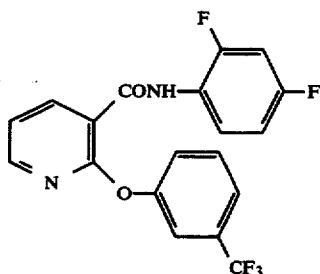
Comparative Compound A: Atrazine



Comparative Compound B: Alachlor

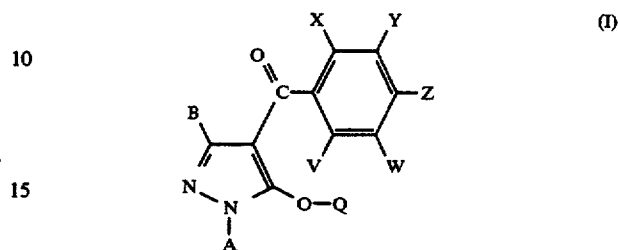


In Table 11, the Comparative Compound is as follows:



We claim:

1. A pyrazole derivative of the formula I



wherein

- 10 A is a C₁-C₄ alkyl group, a C₂-C₄ alkenyl group or a C₂-C₄ alkynyl group;
- 15 B is a hydrogen atom, a C₁-C₃ alkyl group, a halogen atom, a C₁-C₃ haloalkyl group, a C₁-C₃ alkoxy group, a C₁-C₃ alkylthio group, a C₂-C₄ alkoxyalkyl group, a C₂-C₄ alkylthioalkyl group or a C₂-C₄ alkoxy carbonyl group;
- 20 X is a C₁-C₆ alkyl group, a C₁-C₆ alkoxy group, a halogen atom, a nitro group, a cyano group, a C₁-C₆ haloalkyl group, a C₂-C₆ alkoxyalkyl group, a C₂-C₆ alkylcarbonyl group, a C₂-C₆ alkoxy carbonyl group, an aminocarbonyl group substituted independently by hydrogen or by a C₁-C₆ alkyl group, a C₁-C₆ haloalkoxy group, a C₁-C₆ alkylthio group or a C₂-C₆ alkylthioalkyl group;
- 25 Y is -OR¹ (wherein R¹ is a C₃-C₈ cycloalkyl group, a C₄-C₈ cycloalkylalkyl group, a C₃-C₆ alkenyl group, a C₂-C₆ alkynyl group, a C₁-C₆ haloalkyl group, a C₃-C₈ halocycloalkylalkyl group, a C₃-C₆ haloalkenyl group, a C₂-C₆ haloalkynyl group, or a C₂-C₆ nitroalkyl group) [a C₂-C₆ nitroalkyl group or a phenyl group which may be substituted by a C₁-C₃ alkyl group, a halogen atom, a nitro group or a C₁-C₃ alkoxy group], -O-L-O-R¹ (wherein L is a C₁-C₆ alkylene group which may be substituted by a C₁-C₃ alkyl group, and R¹ is as defined above), -O-L-OH (wherein L is as defined above), -O-L-O-L-O-R² (wherein L is as defined above, and R² is a hydrogen atom, a C₁-C₆ alkyl group or a phenyl group which may be substituted by a C₁-C₃ alkyl group, a halogen atom, a nitro group or a C₁-C₃ alkoxy group), -O-L-R³ (wherein L is as defined above, and R³ is a phenyl group which may be substituted by a C₁-C₃ alkyl group, a halogen atom, a nitro group or a C₁-C₃ alkoxy group), -O-M (wherein M is a 3- to 6-membered alicyclic group containing not more than two sulfur or oxygen atoms and formed by a linkage of from 1 to 4 carbon atoms), -O-L-M (wherein L and M are as defined above), -O-L-NR⁴R⁵ (wherein L is as defined above and each of R⁴ and R⁵ which may be the same or different is a hydrogen atom or a C₁-C₆ alkyl group, or R⁴ and R⁵ form a 6-membered ring together with the adjacent nitrogen atom), -O-L-COOR⁴ (wherein L and R⁴ are as defined above), -O-CH=CH-COOR⁴ (wherein R⁴ is as defined above), -O-L-CN (wherein L is as defined above), -O-L-C-

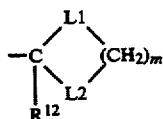
(O)—R² (wherein L and R² are as defined above),
 —O—L—S(O)_n—R⁴ (wherein L and R⁴ are as defined above, and n is an integer of from 0 to 2),
 —O—COOR⁴ (wherein R⁴ are as defined above),
 —O—CONR⁴R⁵ (wherein R⁴ and R⁵ are as defined above), or —OP(O)(OR⁴)₂ (wherein R⁴ is as defined above), [—S(O)_nR¹ (wherein R¹ and n are as defined above), or —S(O)_n—L—O—R¹ (wherein L, R¹ and n are as defined above)];

Z is a halogen atom, a nitro group, a C₁–C₃ alkoxy group, a trifluoromethyl group, a trifluoromethoxy group, a cyano group or —S(O)_nR⁶ (wherein n is as defined above, and R⁶ is a C₁–C₃ alkyl group or a C₁–C₃ haloalkyl group);

V is a hydrogen atom, a halogen atom, a C₁–C₄ alkyl group or a C₁–C₄ alkoxy group;

W is a hydrogen atom, a halogen atom, a C₁–C₄ alkyl group, a C₁–C₄ haloalkyl group, a C₁–C₄ alkoxy group, a C₂–C₆ alkoxyalkyl group, a C₂–C₅ alkoxy-carbonyl group, a C₁–C₃ haloalkoxy group, a nitro group, a cyano group or —S(O)_nR⁶ (wherein n and R⁶ are as defined above) and

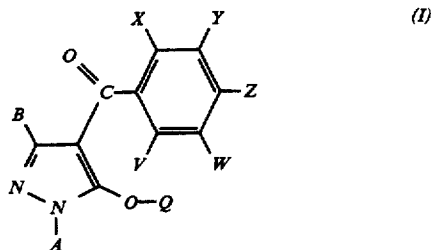
Q is a hydrogen atom, a C₁–C₆ alkyl group which may be substituted by a halogen atom, a C₁–C₆ alkenyl group which may be substituted by a halogen atom, a C₁–C₆ alkynyl group which may be substituted by a halogen atom, a cyanomethyl group, —C(O)—R⁷ (wherein R⁷ is a phenyl group which may be substituted by the same or different substituents selected from the group consisting of a C₁–C₆ alkyl group, a C₁–C₆ alkenyl group, a C₁–C₆ alkynyl group, a C₁–C₆ haloalkyl group, a C₁–C₆ haloalkenyl group, a C₁–C₆ haloalkynyl group, a halogen atom, a nitro group and a trifluoromethyl group, a C₁–C₆ alkyl group, a C₁–C₆ alkoxy group, or a hydroxyl group), —S(O)₂R⁷ (wherein R⁷ is as defined above), —P(O)(OR⁷)₂ (wherein R⁷ is as defined above), —L—C(O)—R⁷ (wherein L and R⁷ are as defined above), —L—C(O)—N(R⁸)(R⁹) (wherein L is as defined above, and each of R⁸ and R⁹ which may be the same or different is a hydrogen atom or a C₁–C₆ alkyl group), —L—R¹⁰ (wherein L is as defined above, and R¹⁰ is a phenyl group which may be substituted by the same or different substituents selected from the group consisting of a halogen atom, a nitro group and a trifluoromethyl group, a C₁–C₆ alkyl group, a C₁–C₆ alkoxy group, or a hydroxyl group), —L—N(R⁸)(R⁹) (wherein L, R⁸ and R⁹ are as defined above), —L—OR¹¹ (wherein L is as defined above, and R¹¹ is a hydrogen atom, a C₁–C₆ alkyl group, or a C₁–C₆ alkenyl group), —L—OC(O)R¹² (wherein L is as defined above, and R¹² is a C₁–C₆ alkyl group or a C₁–C₆ alkoxy group), —L—S(O)_nR¹¹ (wherein L, n and R¹¹ are as defined above), —L—SC(O)R⁸ (wherein L and R⁸ are as defined above),



(wherein each of L1 and L2 which may be the same or different is a methylene group, an oxygen atom or a sulfur atom, R¹² is a hydrogen atom or a

C₁–C₃ alkyl group, and m is 2 or 3); and a salt thereof.

2. [The] A pyrazole derivative of the formula I [according to claim 1],



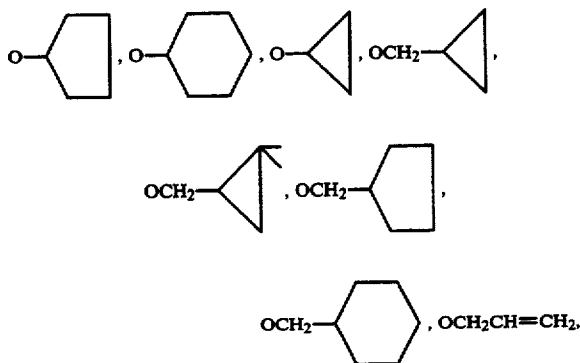
wherein A, B, X, Y, Z and Q are as follows:

A: Me, Et, n-Pr, i-Pr, CH₂CH=CH₂, CH₂C≡CH, t-Bu

B: H, Me, Et, n-Pr, i-Pr, Cl, Br, CH₂Cl, CF₃, OMe, OEt, OPr-i, SMe, CH₂OMe, CH₂SMe, CO₂Me, CO₂Et

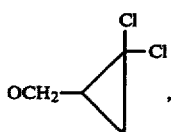
X: Me, Et, n-Pr, i-Pr, n-Bu, i-Bu, S-Bu, t-Bu, OMe, OEt, OPr-n, OPr-i, OBU-n, OBU-i, OBU-s, OBU-t, F, Cl, Br, I, NO₂, CN, CH₂F, CHF₂, CF₃, CH₂CF₃, CHCl, CCl₃, CHClMe, CH₂CH₂Cl, CHClCH₂Cl, CH₂Br, CHBrMe, CH₂CH₂Br, CH₂CH₂Br, CH₂OMe, CH₂OEt, CH₂OPr-n, CH₂OPr-i, CH₂OBU-n, CH₂OBU-i, CH₂OBU-s, CH₂OBU-t, CHMeOMe, CHMeOEt, CHMeOPr-n, CHMeOPr-i, CHMeOBU-n, CHMeOBU-i, CHMeOBU-s, CHMeOBU-t, CH₂CH₂OMe, CH₂CH₂OEt, CH₂CH₂OPr-i, Ac, COEt, COPr-n, COPr-i, COOMe, COOEt, COOPr-i, CONHMe, CONHEt, CONMe₂, CONEt₂, CONEtMe, OCHF₂, OCF₃, OCH₂CF₃, SMe, SEt, CH₂SMe, CH₂SEt, CHMeSMe, CHMeSEt

Y:



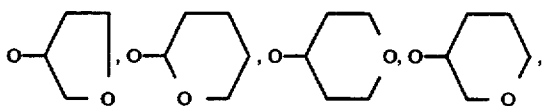
OCHMeCH=CH₂, OCMe₂CH=CH₂, OCH₂-CMe=CH₂, OCH₂CH=CHMe, OCH₂CH=CMe₂, OCH₂C≡CH, OCHMeC≡CH, OCMe₂-C≡CH, OCH₂C≡CMe, OCH₂CH₂F, OCH₂CHF₂, OCH₂CF₃, OCH₂CH₂Cl, OCHMeCH₂Cl, OCH₂CCl₃, OCH₂CH₂CH₂Cl, OCH₂CH₂Br,

89

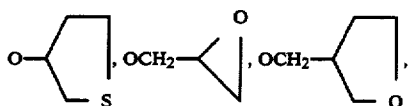


5

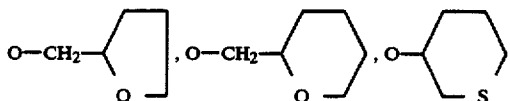
OCH₂CCl=CH₂, OCH₂CH₂CH=CH₂,
 OCH₂CCl=CHCl, OCH₂CH₂NO₂, [OPh, OPh-
 Me-2, OPh-Cl-4, OPh-NO₂-4,] OCH₂CH₂OMe,
 OCH₂CH₂OEt, OCH₂CH₂OPr-n, OCH₂CH₂OPr-
 i, OCH₂CH₂OBu-N, OCH₂CH₂OBu-i, OCH₂CH-
 2Bu-s, OCH₂CH₂OBu-t, OCHMeCH₂OMe, 15
 OCH₂CH₂OPh, OCH₂CH₂OCH₂CH₂OMe,
 OCH₂CH₂OH, OCH₂CH₂OCHMeCH₂OMe,
 OCH₂Ph, OCHMePh, OCH₂Ph-4-Me, OCH₂Ph-4-
 Cl, OCH₂CH₂Ph, 20



25

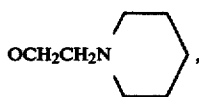


30



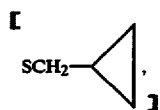
35

OCH₂CH₂NH₂, OCH₂CH₂NHMe, OCH₂CH₂-
 NMe₂, OCH₂CH₂NEt₂, 40



45

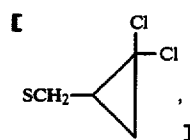
OCH₂COOMe, OCH₂COOEt, OCH₂COOPr-n,
 OCH₂COOPr-i, OCH₂COOBu-t, OCH-
 MeCOOMe, OCHMeCOOEt, OCHMeCOOPr-n, 50
 OCHMeCOOPr-i, OCHMeCOOBu-t,
 OCH₂CH₂CN, OCH₂CN, OCHMeCN,
 OCH₂SMe, OCH₂C(O)Ph, OCH₂C(O)Me,
 OCH₂CH₂SMe, OCH₂CH₂SOMe, OCH₂CH-
 2SO₂Me, OCH₂CH₂SEt, OCH₂CH₂SO₂Et, 55
 OCOOMe, OCOOEt, OCOOPr-i, OCONH₂,
 OCONHMe, OCONMe₂, OP(O)(OMe)₂, OP(O)-
 (OEt)₂, 60



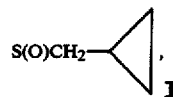
65

[SCH₂CH=CH₂, SCH₂C≡CH, SCH₂CF₃,
 SCH₂CH₂Cl, SCH₂CCl₃,]

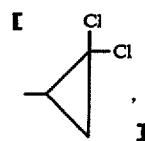
90



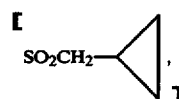
[SPh, SCH₂CH₂OMe, SCH₂CH₂OEt,
 SCH₂CH₂OPr-i, SCH₂CH₂OPh,]



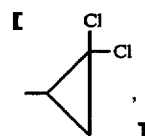
[S(O)CH₂CH=CH₂,] 2CH≡CH, S(O)CH₂CF₃,
 S(O)CH₂CH₂Cl, S(O)CH₂



[S(O)Ph, S(O)CH₂CH₂OMe, S(O)CH₂CH₂OEt,
 S(O)CH₂CH₂OPr-i, S(O)CH₂CH₂OPh,]

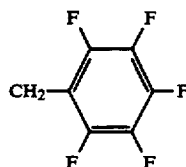


[SO₂CH₂CH=CH₂, SO₂CH₂C≡CH,
 SO₂CH₂CF₃, SO₂CH₂CH₂Cl, SO₂CH₂]



[SO₂Ph, SO₂CH₂CH₂OMe, SO₂CH₂CH₂OEt,
 SO₂CH₂CH₂OPr-i,]

Z: F, Cl, Br, I, NO₂, OMe, OEt, OPr-n, OPr-I, CF₃,
 CN, SMe, SOMe, SO₂Me, SCF₃, SOCF₃, SO₂CF₃
 Q: H, Me, Et, n-Pr, i-Pr, n-Bu, i-Bu, s-Bu, t-Bu,
 CH₂CH₂Cl, CH₂CF₃, CHClMe, CH₂CH₂Br,
 CHClCH₂Cl, CH₂CH=CH₂, CH₂CMe=CH₂,
 CH₂CH=CHMe, CH₂C≡CH, CH₂CCl=CH₂,
 CH₂CN, CH₂Ph, CH₂Ph-Cl-2, CH₂Ph-Cl-3,
 CH₂Ph-Me-2,



CH₂Ph-Me₂-2,4, CH₂Ph-Me-4, CHMePh,
 CH₂Ph-NO₂-2, CH₂Ph-CF₃-3,
 CH₂Ome, CH₂OEt, CH₂OH, CHMeOH,
 CH₂NHMe, CH₂NMe₂, CHMeNMe₂, CH₂COPh,
 CH₂COPh-NO₂-4, CH₂COPh-Me-4, CH₂COPh-
 Cl-4, CH₂COPh-Me-2,4, CH₂COPh-CF₃-4,

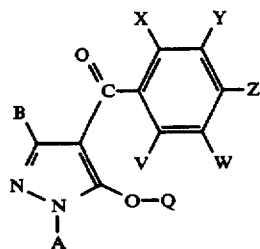
CH₂Ac, CH₂COEt, CHMeAc, CH₂CO₂Me, CH₂CO₂Et, CH₂CO₂Pr-n, CH₂COPr-i, CH₂CO₂-Bu-t, CH₂CO₂H, CHMeCO₂H, CH₂CONHMe, CH₂CONMe₂, CH₂CONHEt, CH₂CONEt₂, CH₂CONPr-n₂, CH₂OCH₂CH=CH₂, CH₂OAc, CH₂COEt, CH₂COPr-i, CH₂COBu-t, CH₂O-CO₂Me, CH₂OCO₂Et, CH₂OCO₂Pr-i, CH₂OCO₂-Bu-t, CH₂SMe, CH₂SEt, CH₂SCH₂CH=CH₂, CH₂SAc, CH₂SCOBu-t, CH₂SO₂Me, CH₂SO₂Et, CH₂SO₂CH₂CH=CH₂, CPh, CPh-Me-4, CPh-NO₂-2, CPh-Cl₂-2,4, Ac, COEt, COPr-n, COPr-i, COBu-n, COBu-t, CO₂Me, CO₂Et, CO₂-Bu-t, CO₂Pr-i, CO₂Ph, SO₂Me, SO₂Et, SO₂Ph, SO₂Ph-Me-4, SO₂Ph-Cl-4, SO₂Ph-(NO₂)₂-2,4, P(=O)(OMe)₂, P(=O)(OEt)₂, P(=O)(OPr-n)₂, P(=O)(OPr-i)₂, P(=O)OMeOPh;

and a salt thereof.

3. A selective herbicidal composition comprising a herbicidally effective amount of a pyrazole derivative of the formula I as defined in claim 1 or its salt and an agricultural carrier or diluent.

4. A method for controlling weeds, which comprise applying a herbicidally effective amount of a pyrazole derivative of the formula I as defined in claim 1 or its salt to a locus to be protected.

5. A pyrazole derivative of the formula I



(I)

wherein

- A is a C₁-C₄ alkyl group, a C₂-C₄ alkenyl group or a C₂-C₄ alkynyl group;
- B is a hydrogen atom, a C₁-C₃ alkyl group, a halogen atom, a C₁-C₃ haloalkyl group, a C₁-C₃ alkoxy group, a C₁-C₃ alkylthio group, a C₂-C₄ alkoxyalkyl group, a C₂-C₄ alkylthioalkyl group or a C₂-C₄ alkoxy-carbonyl group;
- X is a C₁-C₆ alkyl group, a C₁-C₆ alkoxy group, a halogen atom, a nitro group, a cyano group, a C₁-C₆ haloalkyl group, a C₂-C₆ alkoxyalkyl group, a C₂-C₆ alkylcarbonyl group, a C₂-C₆ alkoxy-carbonyl group, an aminocarbonyl group substituted independently by hydrogen or by a C₁-C₆ alkyl group, a C₁-C₆ haloalkoxy group, a C₁-C₆ alkylthio group or a C₂-C₆ alkylthioalkyl group;
- Y is -OR¹ (wherein R¹ is a C₃-C₈ cycloalkyl group, a C₄-C₈ cycloalkylalkyl group, a C₃-C₆ alkenyl group, a C₂-C₆ alkynyl group, a C₁-C₆ haloalkyl group, a C₃-C₈ halocycloalkylalkyl group, a C₃-C₆ haloalkenyl group, a C₂-C₆ haloalkynyl group, a C₂-C₆ nitroalkyl group or a phenyl group which may be substituted by a C₁-C₃ alkyl group, a halogen atom, a nitro group or a C₁-C₃ alkoxy group), -O-L-O-R¹ (wherein L is a C₁-C₆ alkylene group which may be substituted by a C₁-C₃ alkyl group, and R¹ is as defined above), -O-L-OH (wherein L is as defined above), -O-L-O-L-O-R² (wherein L is as defined above, and R² is a hydrogen atom, a C₁-C₆ alkyl group or a phenyl group which may be substituted

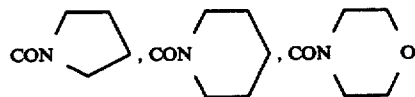
by a C₁-C₃ alkyl group, a halogen atom, a nitro group or a C₁-C₃ alkoxy group), -O-L-R³ (wherein L is as defined above, and R³ is a phenyl group which may be substituted by a C₁-C₃ alkyl group, a halogen atom, a nitro group or a C₁-C₃ alkoxy group), -O-M (wherein M is a 3- to 6-membered alicyclic group containing not more than two sulfur or oxygen atoms and formed by a linkage of from 1 to 4 carbon atoms), -O-L-M (wherein L and M are as defined above), -O-L-NR⁴R⁵ (wherein L is as defined above and each of R⁴ and R⁵ which may be the same or different is a hydrogen atom or a C₁-C₆ alkyl group, or R⁴ and R⁵ form a 6-membered ring together with the adjacent nitrogen atom), -O-L-COOR⁴ (wherein L and R⁴ are as defined above), -O-CH=CH-COOR⁴ (wherein R⁴ is as defined above), -O-L-CN (wherein L is as defined above), -O-L-C(O)-R² (wherein L and R² are as defined above), -O-L-S(O)_n-R⁴ (wherein L and R⁴ are as defined above, and n is an integer of from 0 to 2), -O-COOR⁴ (wherein R⁴ is as defined above), -O-CONR⁴R⁵ (wherein R⁴ and R⁵ are as defined above), -OP(O)(OR⁴)₂ (wherein R⁴ is as defined above), -S(O)_nR¹ (wherein R¹ and n are as defined above), or -S(O)_n-L-O-R¹ (wherein L, R¹ and n are as defined above);

Z is a halogen atom, a nitro group, a C₁-C₃ alkoxy group, a trifluoromethyl group, a trifluoromethoxy group, a cyano group or -S(O)_nR⁶ (wherein n is as defined above, and R⁶ is a C₁-C₃ alkyl group or a C₁-C₃ haloalkyl group);

V is a hydrogen atom, a halogen atom, a C₁-C₄ alkyl group or a C₁-C₄ alkoxy group;

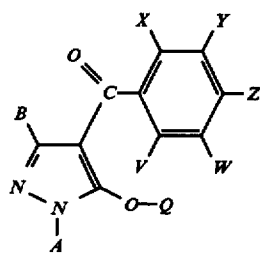
W is a hydrogen atom, a halogen atom, a C₁-C₄ alkyl group, a C₁-C₄ haloalkyl group, a C₁-C₄ alkoxy group, a C₂-C₆ alkoxyalkyl group, a C₂-C₅ alkoxy-carbonyl group, a C₁-C₃ haloalkoxy group, a nitro group, a cyano group or -S(O)_n-R⁶ (wherein n and R⁶ are as defined above); and

Q is selected from the group consisting of CH₂NHCH₂CH=CH₂, CH₂NMeCH₂CH=CH₂, CH₂NHAc, CH₂NHCOEt, CH₂NHCO₂Me, CH₂NHCO₂Et, CH₂NMeCO₂Me, COCH₂Cl, COCHCl₂, COCCl₃, COCF₃, COCH₂OMe, COCH₂OPh, COCH₂CH=CHCH₃, CONHMe, CONMe₂, CONHEt, CONEt₂, CONPr-n₂, CON(CH₂CH=CH₂)₂, CONMePh,



CO₂CH₂Ph, SO₂CH₂CH=CH₂, SO₂CF₃, P(=S)(OMe)₂, P(=S)(OEt)₂, P(=O)-(OCH₂CH=CH₂)₂, P(=O)OPhOCH₂CH=CH₂; and salts thereof.

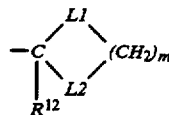
6. A pyrazole derivative of the formula I



wherein

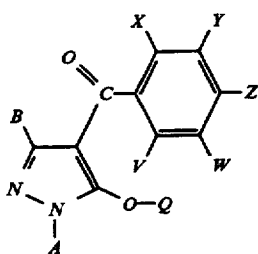
- A* is a C₁-C₄-group, a C₂-C₄-alkenyl group, or a C₂-C₄ 15
alkynyl group;
B is a hydrogen, a C₁-C₃ alkyl group, a halogen atom,
a C₁-C₃-haloalkyl group, a C₁-C₃-alkoxy group, a
C₁-C₃-alkylthio group, a C₂-C₄-alkoxyalkyl group, a
C₂-C₄-alkylthioalkyl group or C₂-C₄-alkoxycarbo- 20
nyl group;
X is a C₁-C₆-alkyl group, a C₁-C₆-alkoxy group, a
halogen atom, a nitro group, a cyano group, a C₁-C₆-
haloalkyl group, a C₂-C₆-alkoxyalkyl group, a
C₂-C₆-alkylcarbonyl group, a C₂-C₆-alkoxycarbonyl 25
group, an aminocarbonyl group substituted independ-
ently by hydrogen or by a C₁-C₆-alkyl group, a
C₁-C₆-haloalkoxy group, a C₁-C₆-alkylthio group or
a C₂-C₆-alkylthioalkyl group;
Y is —OR¹ (wherein R¹ is a C₃-C₈-cycloalkyl group, a
C₄-C₈-cycloalkylalkyl group, a C₃-C₆-alkenyl group, 30
a C₂-C₆-alkynyl group, a C₁-C₆ haloalkyl group, a
C₃-C₈-halocycloalkylalkyl group, a C₃-C₆ haloalk-
enyl group, a C₂-C₆ haloalkynyl group, or a C₂-C₆
nitroalkyl group), —O—L—O—R (wherein L is a
C₁-C₆ alkylene group which may be substituted by a
C₁-C₃ alkyl group, and R is a C₁-C₄ alkyl group),
—O—L—O—R¹ (wherein L is a C₁-C₆ alkylene
group which may be substituted by a C₁-C₃-alkyl
group, and R¹ is as defined above), —O—L—OH 40
(wherein L is as defined above), O—L—O—
L—O—R² (wherein L is as defined above, and R² is
a hydrogen atom, a C₁-C₆ alkyl group or a phenyl
group which may be substituted by a C₁-C₃ alkyl
group, a halogen atom, a nitro group or a C₁-C₃
alkoxy group), —O—L—R³ (wherein L is as defined 45
above, and R³ is a phenyl group which may be
substituted by a C₁-C₃ alkyl group, a halogen atom,
a nitro group or a C₁-C₃ alkoxy group), —O—M
(wherein M is a 3- to 6-membered alicyclic group
containing not more than two sulfur or oxygen atoms
and formed by a linkage of from 1 to 4 carbon atoms),
O—L—M (wherein L and M are as defined above),
—O—L—NR⁴R⁵ (wherein L is as defined above and
each of R⁴ and R⁵ which may be the same or different 55
is a hydrogen atom or a C₁-C₆ alkyl group, or R⁴ and
R⁵ form a 6-membered ring together with the adjacent
nitrogen atom), —O—L—COOR⁴ (wherein L and
R⁴ are as defined above), —O—CH=CH—COOR⁴
(wherein R⁴ is as defined above), —O—L—CN
(wherein L is as defined above), —O—L—C(O)—R² 60
(wherein L and R² are as defined above), —O—
L—S(O)_n—R⁴ (wherein L and R⁴ are as defined
above, and n is an integer of from 0 to 2) —O—
COOR⁴ (wherein R⁴ are as defined above), —O—
CONR⁴R⁵ (wherein R⁴ and R⁵ are as defined above, 65
or —OP(O)(OR⁴)₂ (wherein R⁴ is as defined above);
Z is a halogen atom, a nitro group, a C₁-C₃ alkoxy
group, a trifluoromethyl group, a trifluoromethoxy

- group, a cyano group or —S(O)_nR⁶ (wherein n is as
defined above, and R⁶ is a C₁-C₃ alkyl group or a
C₁-C₃ haloalkyl group);
V is a hydrogen atom, a halogen atom, a C₁-C₄ alkyl
group or a C₁-C₄ alkoxy group;
W is a hydrogen atom, a halogen atom, a C₁-C₄ alkyl
group, a C₁-C₄ haloalkyl group, a C₁-C₄ alkoxy
group, a C₂-C₆ alkoxyalkyl group, a C₂-C₅ alkoxy-
carbonyl group, a C₁-C₃ haloalkoxy group, a nitro
group, a cyano group or —S(O)_n—R⁶ (wherein n and
R⁶ are as defined above) and
O is a hydrogen atom, a C₁-C₆ alkyl group which may
be substituted by a halogen atom, a C₁-C₆ alkenyl
group which may be substituted by a halogen atom, a
C₁-C₆ alkynyl group which may be substituted by a
halogen atom, a cyanomethyl group —C(O)—R⁷
(wherein R⁷ is a phenyl group which may be substi-
tuted by the same or different substituents selected
from the group consisting of a C₁-C₆ alkyl group, a
C₁-C₆ alkenyl group, a C₁-C₆ alkynyl group, a
C₁-C₆ haloalkyl group, a C₁-C₆ haloalkenyl group, a
C₁-C₆ haloalkynyl group, a halogen atom, a nitro
group and a trifluoromethyl group, a C₁-C₆ alkyl
group, a C₁-C₆ alkoxy group, or a hydroxyl group),
—S(O)₂R⁷ (wherein R⁷ is as defined above), —P(O)-
(OR⁷)₂ (wherein R⁷ is as defined above), —L—C-
(O)—R⁷ (wherein L and R⁷ are as defined above,
—L—C—(O)—N(R⁸)(R⁹) (wherein L is as defined
above, and each of R⁸ and R⁹ which may be the same
or different is a hydrogen atom or a C₁-C₆ alkyl
group), —L—R¹⁰ (wherein L is as defined above, and
R¹⁰ is a phenyl group which may be substituted by the
same or different substituents selected from the group
consisting of a halogen atom, a nitro group and a
trifluoromethyl group, a C₁-C₆ alkyl group, a C₁-C₆
alkoxy group, or a hydroxy group), —L—N(R⁸)(R⁹)
(wherein L, R⁸ and R⁹ are as defined above),
—L—OR¹¹ (wherein L is as defined above, and R¹¹ is
a hydrogen atom, a C₁-C₆ alkyl group, or a C₁-C₆
alkenyl group), —L—OC(O)R¹² (wherein L is as
defined above, and R¹² is a C₁-C₆ alkyl group or a
C₁-C₆ alkoxy group), —L—S(O)_nR¹¹ (wherein L, n
and R¹¹ are as defined above, —L—SC(O)R⁸
(wherein L and R⁸ are as defined above),



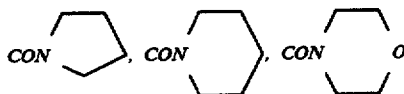
(wherein each of L1 and L2 which may be the same or
different is a methylene group, an oxygen atom or a sulfur
atom, R¹² is a hydrogen atom or a C₁-C₃ alkyl group, and
m is 2 or 3); and a salt thereof.

7. A pyrazole derivative of the formula I



- A* is a C₁-C₄-alkyl group, a C₂-C₄-alkenyl group, or a C₂-C₄-alkynyl group;
- B* is a hydrogen, a C₁-C₃-alkyl group, a halogen atom, a C₁-C₃-haloalkyl group, a C₁-C₃-alkoxy group, a C₁-C₃-alkylthio group, a C₂-C₄-alkoxyalkyl group, a C₂-C₄-alkylthioalkyl group or C₂-C₄-alkoxycarbonyl group;
- X* is a C₁-C₆-alkyl group, a C₁-C₆-alkoxy group, a halogen atom, a nitro group, a cyano group, a C₁-C₆-haloalkyl group, a C₂-C₆-alkoxyalkyl group, a C₂-C₆-alkylcarbonyl group, a C₂-C₆-alkoxycarbonyl group, an aminocarbonyl group substituted independently by hydrogen or by a C₁-C₆-alkyl group, a C₁-C₆-haloalkoxy group, a C₁-C₆-alkylthio group or a C₂-C₆-alkylthioalkyl group;
- Y* is —OR¹ (wherein R¹ is a C₃-C₈-cycloalkyl group, C₄-C₈-cycloalkylalkyl group, a C₃-C₆-alkenyl group, a C₂-C₆-alkynyl group, a C₃-C₈-halocycloalkylalkyl group, a C₃-C₆-haloalkenyl group, a C₂-C₆-haloalkynyl group, or a C₂-C₆-nitroalkyl group), —O—L—O—R (wherein L is a C₁-C₆-alkylene group which may be substituted by a C₁-C₃-alkyl group, and R is a C₁-C₄-alkyl group), —O—L—O—R¹ (wherein L is a C₁-C₆-alkylene group which may be substituted by a C₁-C₃-alkyl group, and R¹ is as defined above), —O—L—OH (wherein L is as defined above), O—L—O—L—O—R² (wherein L is as defined above, and R² is a hydrogen atom, a C₁-C₆-alkyl group or a phenyl group which may be substituted by a C₁-C₃-alkyl group, a halogen atom, a nitro group or a C₁-C₃-alkoxy group), —O—L—R³ (wherein L is as defined above, and R³ is a phenyl group which may be substituted by a C₁-C₃-alkyl group, a halogen atom, a nitro group or a C₁-C₃-alkoxy group), —O—M (wherein M is a 3- to 6-membered alicyclic group containing not more than two sulfur or oxygen atoms and formed by a linkage of from 1 to 4 carbon atoms), O—L—M (wherein L and M are as defined above), O—L—NR⁴R⁵ (wherein L is as defined above and each of R⁴ and R⁵ which may be the same or different is a hydrogen atom or a C₁-C₆-alkyl group, or R⁴ and R⁵ form a 6-membered ring together with the adjacent

- nitrogen atom), —O—L—COOR⁴ (wherein L and R⁴ are as defined above), —O—CH=CH—COOR⁴ (wherein R⁴ is as defined above), —O—L—CN (wherein L is as defined above), —O—L—C(O)—R² (wherein L and R² are as defined above, and n is an integer of from 0 to 2), —O—COOR⁴ (wherein R⁴ are as defined above), —O—CONR⁴R⁵ (wherein R⁴ and R⁵ are as defined above, or —OP(O)(OR⁴)₂ (wherein R⁴ is as defined above);
- Z* is a halogen atom, a nitro group, a C₁-C₃-alkoxy group, a trifluoromethyl group, a trifluoromethoxy group, a cyano group or —S(O)_nR⁶ (wherein n is as defined above, and R⁶ is a C₁-C₃-alkyl group or a C₁-C₃-haloalkyl group);
- V* is a hydrogen atom, a halogen atom, a C₁-C₄-alkyl group or a C₁-C₄-alkoxy group;
- W* is a hydrogen atom, a halogen atom, a C₁-C₄-alkyl group, a C₁-C₄-haloalkyl group, a C₁-C₄-alkoxy group, a C₂-C₆-alkoxyalkyl group, a C₂-C₅-alkoxy-carbonyl group, a C₁-C₃-haloalkoxy group, a nitro group, a cyano group or —S(O)_n—R⁶ (wherein n and R⁶ are as defined above) and
- O* is selected from the group consisting of CH₂NHCH₂CH=CH₂, CH₂NMeCH₂CH=CH₂, CH₂NHAc, CH₂NHCOEt, CH₂NHCO₂Me, CH₂NHCO₂Et, CH₂NMeCO₂Me, COCH₂Cl, COCHCl₂, COCCl₃, COCF₃, COCH₂OMe, COCH₂OⁱPh, COCH₂CH=CHCH₃, CONHMe, CONMe₂, CONHEt, CONEt₂, CONPr-n₂, CON(CH₂CH=CH₂)₂, CONMePh,



CO₂CH₂Ph, SO₂CH₂CH=CH₂, SO₂CF₃, P(=S)(OMe)₂, P(=S)(OEt)₂, P(=O)(OCH₂CH=CH₂)₂, P(=O)OPHOCH₂CH=CH₂; and salts thereof.

8. The pyrazole derivative of the formula I according to claim 6, wherein *A* is ethyl, *B* is hydrogen, *Q* is hydrogen, *X* is Cl, *Z* is SO₂Me, and *Y* is —O—L—O—R wherein L is a C₂-alkylene group which may be substituted by a methyl group and R is a C₁₋₄-alkyl group.

9. The pyrazole derivative of the formula I according to claim 8, wherein *Y* is —OCH₂CH₂OMe, —OCH₂CH₂OEt, —OCH₂CH₂OⁱPr-n, —CH₂CH₂OⁱPr-i, —OCH₂CH₂OⁿBu-n, —OCH₂CH₂OⁱBu-i, —OCH₂CH₂O^sBu-s, —OCH₂CH₂O^tBu-t, —OCMeCH₂OMe or —OCH₂CHMeOMe.

10. The pyrazole derivative of the formula I according to claim 9, wherein *Y* is —OCH₂CH₂OMe.

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CERTIFICATE OF CORRECTION

PATENT NO. : RE. 34,779

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DATED : November 8, 1994

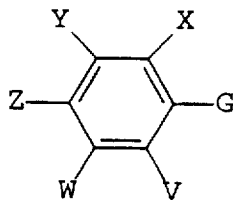
INVENTOR(S) : Eiichi OYA et al

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 2, line 34, delete "are as" and insert --is as--.

Column 3, line 5, delete "sam" and insert --same--.

Column 3, line 40, delete Formula II and insert therefor the following:



Column 6, line 52, delete "from" and insert --form--

Column 10, line 20, delete "aolvent" and insert --solvent--.

Column 13, line 24, delete "2bromoethyl" and insert --2-bromoethyl--.

Column 14, line 8, delete "}" and insert --)---.

Column 82, line 58, insert a period after the "1".

Column 83, line 3, delete "gross" and insert --grass--.

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : RE. 34,779

Page 2 of 2

DATED : November 8, 1994

INVENTOR(S) : Eiichi OYA et al

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 87, line 4, delete "are as" and insert --is as--.

Column 93, line 35, delete "gorup" and insert --group--.

Column 93, line 45, delete "deined" and insert
--defined--.

Column 95, line 30, claim 7, after "group" insert --a C₁-
C₆ haloalkyl group--.

Signed and Sealed this
Eleventh Day of June, 1996

Attest:



BRUCE LEHMAN

Attesting Officer

Commissioner of Patents and Trademarks