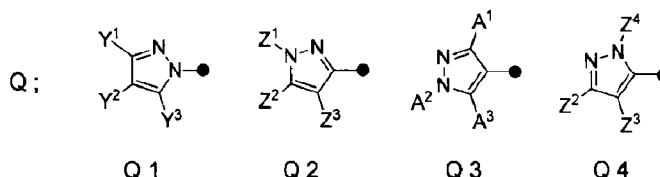
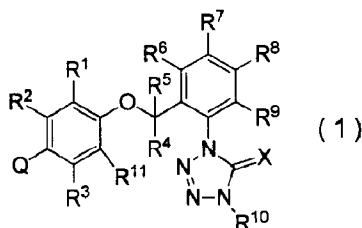




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(54) **Titre : COMPOSES TETRAZOLINONE ET LEUR UTILISATION EN TANT QUE PESTICIDE**
(54) **Title: TETRAZOLINONE COMPOUNDS AND THEIR USE AS PESTICIDES**



(57) **Abrégé/Abstract:**

The present invention provides a compound having an excellent efficacy for controlling pests. A tetrazolinone compound of a formula (1): [wherein Q represents a group selected from the following group: Q1, Q2, Q3 or Q4; R¹, R², R³ and R¹¹ represent independently of each other a halogen atom, an C1-C6 alkyl group, etc.; R⁴ and R⁵ represents independently of each other a hydrogen atom, a halogen atom or an C1-C3 alkyl group, etc.; R⁶ represents an C2-C4 alkynyl group or a C3-C6 cycloalkyl group, etc.; R⁷, R⁸ and R⁹ represent independently of each other a hydrogen atom, a halogen atom, etc.; R¹⁰ represents an C1-C3 alkyl group, etc.; and X represent an oxygen atom, etc.] shows an excellent controlling efficacy on pests.

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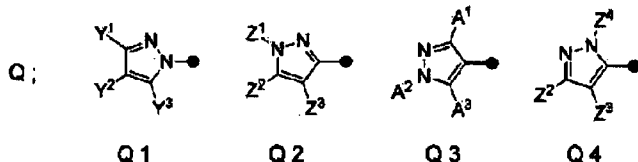
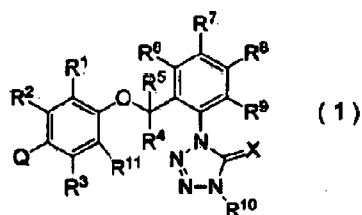
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(54) Title: TETRAZOLINONE COMPOUNDS AND THEIR USE AS PESTICIDES



(57) Abstract: The present invention provides a compound having an excellent efficacy for controlling pests. A tetrazolinone compound of a formula (1): [wherein Q represents a group selected from the following group: Q1, Q2, Q3 or Q4; R¹, R², R³ and R¹¹ represent independently of each other a halogen atom, a C1-C6 alkyl group, etc.; R⁴ and R⁵ represent independently of each other a hydrogen atom, a halogen atom or an C1-C3 alkyl group, etc.; R⁶ represents an C2-C4 alkynyl group or a C3-C6 cycloalkyl group, etc.; R⁷, R⁸ and R⁹ represent independently of each other a hydrogen atom, a halogen atom, etc.; R¹⁰ represents an C1-C3 alkyl group, etc.; and X represents an oxygen atom, etc.] shows an excellent controlling efficacy on pests.

DEMANDES OU BREVETS VOLUMINEUX

**LA PRÉSENTE PARTIE DE CETTE DEMANDE OU CE BREVETS
COMPREND PLUS D'UN TOME.**

CECI EST LE TOME __1__ DE __3__

NOTE: Pour les tomes additionels, veuillez contacter le Bureau Canadien des Brevets.

JUMBO APPLICATIONS / PATENTS

**THIS SECTION OF THE APPLICATION / PATENT CONTAINS MORE
THAN ONE VOLUME.**

THIS IS VOLUME __1__ OF __3__

NOTE: For additional volumes please contact the Canadian Patent Office.

DESCRIPTION

TETRAZOLINONE COMPOUNDS AND THEIR USE AS PESTICIDES

[0001]

This application claims priority to Japanese Patent
5 Application Nos. 2012-216039 filed September 28, 2012
and 2012-280708 filed December 25, 2012.

TECHNICAL FIELD

[0002]

The present invention relates to tetrazolinone
10 compounds and its use.

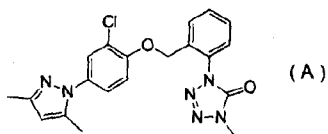
[0003]

BACKGROUND ART

Heretofore, various drugs for controlling pests have
been widely developed and provides in practice use, but in
15 some cases, these drugs may not exert enough efficacy.

Also, as compounds having tetrazolinone ring, 1-{2-{2-
chloro-4-(3,5-dimethyl-pyrazole-1-yl)-phenoxy-methyl}-
phenyl}-4-methyl-1,4-dihydrotetrazole-5-one represented by
the following formula (A):

20



have been known (see Patent Document 1).

CITATION LIST

PATENT DOCUMENT

[0004]

Patent Document 1: WO 1999/46246 pamphlet

5 SUMMARY OF THE INVENTION

[0005]

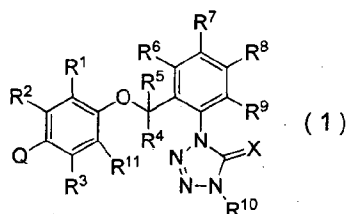
An object of the present invention is to provide a compound having an excellent efficacy for controlling pests.

[0006]

10 The present inventors have intensively studied to find that compounds having an excellent efficacy for controlling pests and as a result, found that a tetrazolinone compound of the following formula (I) has an excellent efficacy for controlling pests, which thus have completed the present
15 invention.

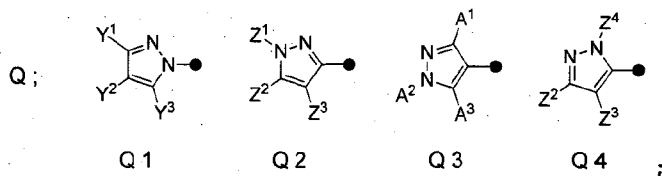
Specifically, the present invention includes the following [1] to [18].

[1] A tetrazolinone compound of a formula (1):



20 [wherein

Q represents a group selected from the following group: Q1, Q2, Q3 or Q4:



R^1 , R^2 , R^3 and R^{11} represent independently of each other a hydrogen atom, a halogen atom, a cyano group, a nitro group, an amino group, a hydroxy group, a thiol group, an C2-C6 alkenyl group, a C2-C6 haloalkenyl group, an C2-C6 alkynyl group, a C2-C6 haloalkynyl group, an C1-C6 alkoxy group, a C1-C6 haloalkoxy group, an C1-C8 alkylamino group, a C1-C8 haloalkylamino group, an C1-C6 alkylthio group, a C1-C6 haloalkylthio group, an C1-C6 alkylsulfinyl group, a C1-C6 haloalkylsulfinyl group, an C1-C6 alkylsulfonyl group, a C1-C6 haloalkylsulfonyl group, a pentafluorosulfanyl group, a C3-C9 trialkylsilyl group, an C2-C6 alkylcarbonyl group, an C2-C6 alkoxy carbonyl group, an C2-C8 alkylaminocarbonyl group, an C1-C6 alkyl group optionally having one or more groups selected from Group P^1 or an C3-C6 cycloalkyl group optionally having one or more groups selected from Group P^1 ;

R^4 and R^5 represent independently of each other a hydrogen atom, a halogen atom or an C1-C3 alkyl group;

R^6 represents a C3-C6 cycloalkyl group, an C2-C4 alkynyl group, a C2-C4 haloalkynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group, an C1-C4 alkylsulfinyl group, an C1-C4 alkylsulfonyl group, a C1-C4

haloalkylthio group, a C1-C4 haloalkylsulfinyl group, a C1-C4 haloalkylsulfonyl group, an C1-C6 alkylamino group, a C1-C6 haloalkylamino group or a C3-C6 halocycloalkyl group;

5 R⁷, R⁸ and R⁹ represent independently of each other a hydrogen atom, a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group, an C2-C3 alkenyl group, a C2-C3 haloalkenyl group or an C1-C3 alkoxy group;

10 R¹⁰ represents an C1-C3 alkyl group, a C1-C3 haloalkyl group, an C2-C3 alkenyl group, a C2-C3 haloalkenyl group, an C2-C3 alkynyl group, a C2-C3 haloalkynyl group, a C3-C5 cycloalkyl group or a C3-C5 halocycloalkyl group;

X represents an oxygen atom or a sulfur atom;

15 A¹ and A³ represent independently of each other a hydrogen atom, a halogen atom, a cyano group, a nitro group, an amino group, a hydroxy group, a thiol group, an C2-C6 alkenyl group, a C2-C6 haloalkenyl group, an C2-C6 alkynyl group, a C2-C6 haloalkynyl group, an C1-C6 alkoxy group, a C1-C6 haloalkoxy group, an C1-C8 alkylamino group, a C1-C8 haloalkylamino group, an C1-C6 alkylthio group, a C1-C6 haloalkylthio group, an C1-C6 alkylsulfinyl group, a C1-C6 haloalkylsulfinyl group, an C1-C6 alkylsulfonyl group, a C1-C6 haloalkylsulfonyl group, a pentafluorosulfanyl group, a C3-C9 trialkylsilyl group, an C2-C6 alkylcarbonyl group, an C2-C6 alkoxy carbonyl group, an C2-C8 alkylaminocarbonyl group, an C1-C6 alkyl group optionally having one or more

25

groups selected from Group P¹, or a C3-C6 cycloalkyl group optionally having one or more groups selected from Group P¹;

A², Z¹ and Z⁴ represent independently of each other a
5 hydrogen atom, an amino group, an C3-C6 alkenyl group, a
C3-C6 haloalkenyl group, an C3-C6 alkynyl group, a C3-C6
haloalkynyl group, an C1-C6 alkylsulfinyl group, a C1-C6
haloalkylsulfinyl group, an C1-C6 alkylsulfonyl group, a
C1-C6 haloalkylsulfonyl group, a C3-C6 cycloalkylsulfonyl
10 group, a C3-C6 halocycloalkylsulfonyl group, an C2-C8
alkylaminosulfonyl group, a C2-C8 haloalkylaminosulfonyl
group, a C3-C9 trialkylsilyl group, an C2-C6 alkylcarbonyl
group, an C2-C6 alkoxy carbonyl group, an C2-C8
alkylaminocarbonyl group, a C4-C7 cycloalkylmethyl group,
15 an C1-C6 alkyl group optionally having one or more groups
selected from Group P¹ or a C3-C6 cycloalkyl group
optionally having one or more groups selected from Group
P¹;

Y¹, Y², Y³, Z² and Z³ represent independently of each
20 other a hydrogen atom, a halogen atom, a cyano group, a
nitro group, an amino group, a hydroxy group, a thiol group,
an aldehyde group, an C2-C6 alkenyl group, a C2-C6
haloalkenyl group, an C2-C6 alkynyl group, a C2-C6
haloalkynyl group, an C1-C6 alkoxy group, a C1-C6
25 haloalkoxy group, an C3-C6 alkenyloxy group, a C3-C6

haloalkenyloxy group, an C3-C6 alkynyloxy group, a C3-C6
haloalkynyloxy group, an C3-C6 alkenylthio group, an C3-C6
alkynylthio group, a C3-C6 haloalkenylthio group, a C3-C6
haloalkynylthio group, an C1-C8 alkylamino group, a C1-C8
5 haloalkylamino group, an C1-C6 alkylthio group, a C1-C6
haloalkylthio group, an C1-C6 alkylsulfinyl group, a C1-C6
haloalkylsulfinyl group, an C1-C6 alkylsulfonyl group, a
C1-C6 haloalkylsulfonyl group, an C2-C8 alkylaminosulfonyl
group, a pentafluorosulfanyl group, a C3-C9 trialkylsilyl
10 group, an C2-C6 alkylcarbonyl group, an C2-C6
alkoxycarbonyl group, an aminocarbonyl group, an C2-C8
alkylaminocarbonyl group, an C1-C6 alkyl group optionally
having one or more groups selected from Group P¹ or a C3-C6
cycloalkyl group optionally having one or more groups
15 selected from Group P¹; or

Y¹ and Y² may combine each other together with the
carbon atom to which they are attached to form a five-,
six- or seven-membered saturated ring, said saturated ring
may optionally contain one or more oxygen atoms or sulfur
20 atoms as the ring-constituent atom, and the saturated ring
may optionally have one or more substituents selected from
Group P¹; or

Y² and Y³ may combine each other together with the
carbon atom to which they are attached to form a five-,
25 six- or seven-membered saturated ring, said saturated ring

may optionally contain one or more oxygen atoms or sulfur atoms as the ring-constituent atom, and the saturated ring may optionally have one or more substituents selected from Group P¹; or

5 Z¹ and Z² may combine each other together with the carbon atom or nitrogen atom to which they are attached to form a five-, six- or seven-membered saturated ring, said the saturated ring may optionally contain one or more oxygen atoms, nitrogen atoms or sulfur atoms as the ring-constituent atom, and the saturated ring may optionally have one or more substituents selected from Group P¹); or

10 Z² and Z³ may combine each other together with the carbon atom to which they are attached to form a five-, six- or seven-membered saturated ring, said saturated ring may optionally contain one or more oxygen atoms, nitrogen atoms or sulfur atoms as the ring-constituent atom, and the saturated ring may optionally have one or more substituents selected from Group P¹); and

20 Group P¹: a group consisting of a halogen atom, a cyano group, a C3-C6 cycloalkyl group, a C3-C6 halocycloalkyl group, an C1-C4 alkoxy group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C1-C4 haloalkylthio group].

[2] The tetrazolinone compound according to [1] wherein Q represents Q1.

25

[3] The tetrazolinone compound according to [1] wherein Q represents Q2.

[4] The tetrazolinone compound according to [1] wherein Q represents Q3.

5 [5] The tetrazolinone compound according to [1] wherein Q represents Q4.

[6] The tetrazolinone compound according to any one of [1] to [5],

wherein

10 R^1 represents an C1-C3 alkyl group, a halogen atom, a C1-C3 haloalkyl group, an C2-C3 alkynyl group, a C2-C3 haloalkynyl group, a C3-C5 cycloalkyl group, a C3-C5 halocycloalkyl group, an C1-C3 alkoxy group or a C1-C3 haloalkoxy group;

15 R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom;

R^3 represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

20 R^6 represents a C3-C6 cycloalkyl group, an C2-C4 alkynyl group, a C2-C4 haloalkynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkythio group, a C1-C4 haloalkylthio group or a C3-C6 halocycloalkyl group;

R^{10} represents a methyl group; and

X represents an oxygen atom.

25 [7] The tetrazolinone compound according to any one of [1],

[2] or [6],

wherein

Y¹ and Y² may combine each other together with the carbon atom to which they are attached to form a five- or
5 six-membered saturated ring;

Y² and Y³ may combine each other together with the carbon atom to which they are attached to form a five- or six-membered saturated ring;

when each of Y¹, Y² and Y³ does not form the five- or
10 six-membered saturated ring,

Y¹ represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, a C3-C6 cycloalkyl group or a C3-C6 halocycloalkyl group;

Y² represents a hydrogen atom, a halogen atom, an C1-
15 C6 alkyl group, a C1-C6 haloalkyl group, an C2-C6 alkynyl group, an C1-C6 alkoxy group, a C1-C6 haloalkoxy group, a C3-C6 cycloalkyl group or a C3-C6 halocycloalkyl group;

Y³ represents a hydrogen atom, an C1-C4 alkyl group or a C1-C4 haloalkyl group.

20 [8] The tetrazolinone compound according to any one of [1], [3] or [6],

wherein

Z¹ represents an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C3-C6 alkynyl group, a C3-C6 haloalkynyl group, a
25 C3-C6 cycloalkyl group, a C3-C6 halocycloalkyl group or a

C4-C7 cycloalkylmethyl group;

Z^2 represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C1-C6 alkoxy group, a C1-C6 haloalkoxy group, a C3-C6 cycloalkyl group or a C3-C6 halocycloalkyl group; alternatively,

Z^1 and Z^2 may combine each other together with the carbon atom or the nitrogen atom to which they are attached to form a five- or six-membered saturated ring; and

Z^3 represents a hydrogen atom, a halogen atom, an C1-C4 alkyl group or a C1-C4 haloalkyl group.

[9] The tetrazolinone compound according to any one of [1], [2], [6] or [7],

wherein

Y^1 and Y^2 connect to each other to represent $-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{CH}_2-$, which combines together with the carbon atoms to which Y^1 and Y^2 are attached to form a six-membered ring;

Y^2 and Y^3 connect to each other to represent $-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{CH}_2-$, which combines together with the carbon atoms to which Y^2 and Y^3 are attached to form a six-membered ring;

when each of Y^1 , Y^2 and Y^3 does not form the six-membered saturated ring,

Y^1 represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group;

Y^2 represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group, a cyano group or an C1-C3 alkoxy

group; and

Y^3 represents a hydrogen atom or a methyl group.

[10] The tetrazolinone compound according to any one of [1],
[3] or [6],

5 wherein

Z^1 represents an C1-C6 alkyl group;

Z^2 represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, a cyano group, an C1-C6 alkoxy group or a C1-C6 alkylthio group; and

10 Z^3 represents a hydrogen atom, a halogen atom or an C1-C4 alkyl group.

[11] The tetrazolinone compound according to any one of [1],
[3] or [6],

wherein

15 Z^1 represents an C1-C3 alkyl group;

Z^2 represents a hydrogen atom, a chlorine atom, a methoxy group, an ethoxy group, a methylthio group, a cyano group, a trifluoromethyl group or an C1-C3 alkyl group; and

20 Z^3 represents a hydrogen atom, a halogen atom or a methyl group.

[12] The tetrazolinone compound according to any one of [1],
[3], [6] or [8],

wherein

Z^1 represents an C1-C3 alkyl group;

25 Z^2 represents a hydrogen atom, a chlorine atom, a

methoxy group, a methylthio group, a trifluoromethyl group
a cyano group, or an C1-C3 alkyl group; and

Z^3 represents a hydrogen atom, a chlorine atom or a
methyl group.

5 [13] The tetrazolinone compound according to any one of [1]
to [12],

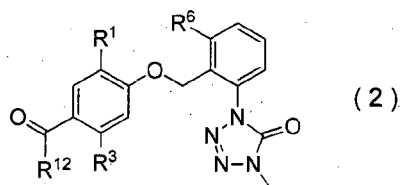
wherein

R^1 represents a methyl group, an ethyl group, a
chlorine atom, a bromine atom or a trifluoromethyl group;

10 R^3 represents a hydrogen atom or a methyl group; and

R^6 represents a cyclopropyl group, an ethynyl group, a
difluoromethoxy group or a methylthio group.

[14] A tetrazolinone compound of a formula (2):



15 [wherein

R^1 represents a methyl group, an ethyl group, a
chlorine atom, a bromine atom, a trifluoromethyl group or a
cyclopropyl group;

R^3 represents a hydrogen atom or a methyl group;

20 R^6 represents a cyclopropyl group, a difluoromethoxy
group, an ethynyl group or a methylthio group; and

R^{12} represents an C1-C6 alkyl group, a C1-C6 haloalkyl
group, a C3-C6 cycloalkyl group or a C1-C6 halocycloalkyl

group].

[15] The tetrazolinone compound according to [14],

wherein

5 R¹ represents a methyl group, an ethyl group, a chlorine atom or a bromine atom;

R³ represents a hydrogen atom or a methyl group;

R⁶ represents a cyclopropyl group; and

R¹² represents a methyl group, an ethyl group or a cyclopropyl group.

10 [16] An agent for controlling pests comprising the tetrazolinone compound according to any one of [1] to [15].

[17] A method for controlling pests comprising applying an effective amount of the tetrazolinone compound according to any one of [1] to [15] to plant or soil.

15 [18] Use of the tetrazolinone compound according to any one of [1] to [15] for controlling pests.

[0007]

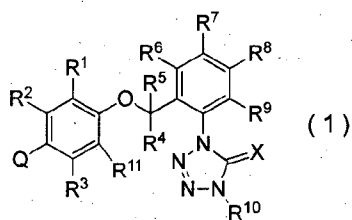
The present invention can control pests.

DESCRIPTION OF EMBODIMENTS

20 [0008]

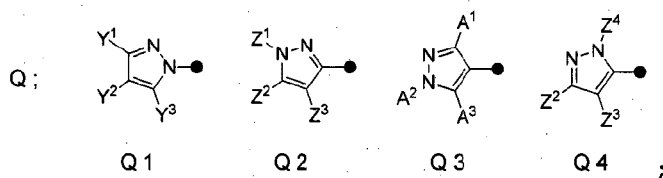
The compound of the present invention (hereinafter, sometimes referred to as 'the present compound') is a tetrazolinone compound of a formula (1):

A tetrazolinone compound of a formula (1):



[wherein

Q represents a group selected from the following group: Q1, Q2, Q3 or Q4:



R^1 , R^2 , R^3 and R^{11} represent independently of each other a hydrogen atom, a halogen atom, a cyano group, a nitro group, an amino group, a hydroxy group, a thiol group, an C2-C6 alkenyl group, a C2-C6 haloalkenyl group, an C2-C6 alkynyl group, a C2-C6 haloalkynyl group, an C1-C6 alkoxy group, a C1-C6 haloalkoxy group, an C1-C8 alkylamino group, a C1-C8 haloalkylamino group, an C1-C6 alkylthio group, a C1-C6 haloalkylthio group, an C1-C6 alkylsulfinyl group, a C1-C6 haloalkylsulfinyl group, an C1-C6 alkylsulfonyl group, a C1-C6 haloalkylsulfonyl group, a pentafluorosulfanyl group, a C3-C9 trialkylsilyl group, an C2-C6 alkylcarbonyl group, an C2-C6 alkoxy carbonyl group, an C2-C8 alkylaminocarbonyl group, an C1-C6 alkyl group optionally having one or more groups selected from Group P¹ or an C3-C6 cycloalkyl group optionally having one or more groups

selected from Group P¹;

R⁴ and R⁵ represent independently of each other a hydrogen atom, a halogen atom or an C1-C3 alkyl group;

R⁶ represents a C3-C6 cycloalkyl group, an C2-C4 alkynyl group, a C2-C4 haloalkynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkythio group, an C1-C4 alkylsulfinyl group, an C1-C4 alkylsulfonyl group, a C1-C4 haloalkylthio group, a C1-C4 haloalkylsulfinyl group, a C1-C4 haloalkylsulfonyl group, an C1-C6 alkylamino group, a C1-C6 haloalkylamino group or a C3-C6 halocycloalkyl group;

R⁷, R⁸ and R⁹ represent independently of each other a hydrogen atom, a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group, an C2-C3 alkenyl group, a C2-C3 haloalkenyl group or an C1-C3 alkoxy group;

R¹⁰ represents an C1-C3 alkyl group, a C1-C3 haloalkyl group, an C2-C3 alkenyl group, a C2-C3 haloalkenyl group, an C2-C3 alkynyl group, a C2-C3 haloalkynyl group, a C3-C5 cycloalkyl group or a C3-C5 halocycloalkyl group;

X represents an oxygen atom or a sulfur atom;

A¹ and A³ represent independently of each other a hydrogen atom, a halogen atom, a cyano group, a nitro group, an amino group, a hydroxy group, a thiol group, an C2-C6 alkenyl group, a C2-C6 haloalkenyl group, an C2-C6 alkynyl group, a C2-C6 haloalkynyl group, an C1-C6 alkoxy group, a C1-C6 haloalkoxy group, an C1-C8 alkylamino group, a C1-C8

haloalkylamino group, an C1-C6 alkylthio group, a C1-C6
haloalkylthio group, an C1-C6 alkylsulfinyl group, a C1-C6
haloalkylsulfinyl group, an C1-C6 alkylsulfonyl group, a
C1-C6 haloalkylsulfonyl group, a pentafluorosulfanyl group,
5 a C3-C9 trialkylsilyl group, an C2-C6 alkylcarbonyl group,
an C2-C6 alkoxycarbonyl group, an C2-C8 alkylaminocarbonyl
group, an C1-C6 alkyl group optionally having one or more
groups selected from Group P¹, or a C3-C6 cycloalkyl group
optionally having one or more groups selected from Group
10 P¹;

A², Z¹ and Z⁴ represent independently of each other a
hydrogen atom, an amino group, an C3-C6 alkenyl group, a
C3-C6 haloalkenyl group, an C3-C6 alkynyl group, a C3-C6
haloalkynyl group, an C1-C6 alkylsulfinyl group, a C1-C6
15 haloalkylsulfinyl group, an C1-C6 alkylsulfonyl group, a
C1-C6 haloalkylsulfonyl group, a C3-C6 cycloalkylsulfonyl
group, a C3-C6 halocycloalkylsulfonyl group, an C2-C8
alkylaminosulfonyl group, a C2-C8 haloalkylaminosulfonyl
group, a C3-C9 trialkylsilyl group, an C2-C6 alkylcarbonyl
20 group, an C2-C6 alkoxycarbonyl group, an C2-C8
alkylaminocarbonyl group, a C4-C7 cycloalkylmethyl group,
an C1-C6 alkyl group optionally having one or more groups
selected from Group P¹ or a C3-C6 cycloalkyl group
optionally having one or more groups selected from Group
25 P¹;

Y^1 , Y^2 , Y^3 , Z^2 and Z^3 represent independently of each other a hydrogen atom, a halogen atom, a cyano group, a nitro group, an amino group, a hydroxy group, a thiol group, an aldehyde group, an C2-C6 alkenyl group, a C2-C6 haloalkenyl group, an C2-C6 alkynyl group, a C2-C6 haloalkynyl group, an C1-C6 alkoxy group, a C1-C6 haloalkoxy group, an C3-C6 alkenyloxy group, a C3-C6 haloalkenyloxy group, an C3-C6 alkynyloxy group, a C3-C6 haloalkynyloxy group, an C3-C6 alkenylthio group, an C3-C6 alkynylthio group, a C3-C6 haloalkenylthio group, a C3-C6 haloalkynylthio group, an C1-C8 alkylamino group, a C1-C8 haloalkylamino group, an C1-C6 alkylthio group, a C1-C6 haloalkylthio group, an C1-C6 alkylsulfinyl group, a C1-C6 haloalkylsulfinyl group, an C1-C6 alkylsulfonyl group, a C1-C6 haloalkylsulfonyl group, an C2-C8 alkylaminosulfonyl group, a pentafluorosulfanyl group, a C3-C9 trialkylsilyl group, an C2-C6 alkylcarbonyl group, an C2-C6 alkoxy carbonyl group, an aminocarbonyl group, an C2-C8 alkylaminocarbonyl group, an C1-C6 alkyl group optionally having one or more groups selected from Group P^1 or a C3-C6 cycloalkyl group optionally having one or more groups selected from Group P^1 ; or

Y^1 and Y^2 may combine each other together with the carbon atom to which they are attached to form a five-, six- or seven-membered saturated ring, said saturated ring

may optionally contain one or more oxygen atoms or sulfur atoms as the ring-constituent atom, and the saturated ring may optionally have one or more substituents selected from Group P¹; or

5 Y² and Y³ may combine each other together with the carbon atom to which they are attached to form a five-, six- or seven-membered saturated ring, said saturated ring may optionally contain one or more oxygen atoms or sulfur atoms as the ring-constituent atom, and the saturated ring
10 may optionally have one or more substituents selected from Group P¹; or

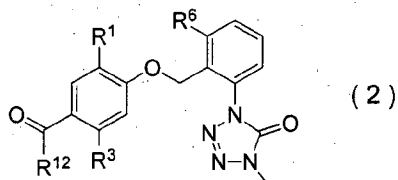
 Z¹ and Z² may combine each other together with the carbon atom or nitrogen atom to which they are attached to form a five-, six- or seven-membered saturated ring, said
15 the saturated ring may optionally contain one or more oxygen atoms, nitrogen atoms or sulfur atoms as the ring-constituent atom, and the saturated ring may optionally have one or more substituents selected from Group P¹); or

 Z² and Z³ may combine each other together with the
20 carbon atom or nitrogen atom to which they are attached to form a five-, six- or seven-membered saturated ring, said saturated ring may optionally contain one or more oxygen atoms, nitrogen atoms or sulfur atoms as the ring-constituent atom, and the saturated ring may optionally
25 have one or more substituents selected from Group P¹); and

Group P¹: a group consisting of a halogen atom, a cyano group, a C3-C6 cycloalkyl group, a C3-C6 halocycloalkyl group, an C1-C4 alkoxy group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C1-C4 haloalkylthio group].

[0009]

Also, in the present invention a tetrazolinone compound represented by a formula (2):



[wherein

R¹ represents a methyl group, an ethyl group, a chlorine atom, a bromine atom, a trifluoromethyl group or a cyclopropyl group;

R³ represents a hydrogen atom or a methyl group;

R⁶ represents a cyclopropyl group, an difluoromethoxy group, an ethynyl group or a methylthio group; and

R¹² represents an C1-C6 alkyl group, a C1-C6 haloalkyl group, a C3-C6 cycloalkyl group or a C1-C6 halocycloalkyl group]

is also included, which is used in a preparation of the present compound and has an excellent efficacy for controlling pests.

[0010]

Hereinafter, the present invention is explained in detail.

The substituent to be used herein is specifically described below.

5 [0011]

The term "halogen atom" includes, for example, a fluorine atom, a chlorine atom, a bromine atom and an iodine atom.

[0012]

10 The term "C1-C6 alkyl group" represents a straight or branched alkyl group of one to six carbon atoms, and includes, for example, a methyl group, an ethyl group, a propyl group, an isopropyl group, a butyl group, an isobutyl group, a sec-butyl group, a tert-butyl group, a
15 pentyl group and a hexyl group.

[0013]

The term "C1-C4 alkyl group" represents a straight or branched alkyl group of one to four carbon atoms, and includes, for example, a methyl group, an ethyl group, a
20 propyl group, an isopropyl group, a butyl group, an isobutyl group, a sec-butyl group and a tert-butyl group.

[0014]

The term "C1-C3 alkyl group" includes, for example, a methyl group, an ethyl group, a propyl group and an
25 isopropyl group.

[0015]

The term "'C1-C6 haloalkyl group'" represents a group wherein at least one hydrogen atom of the straight or branched C1-C6 alkyl group is substituted with a halogen atom, and includes, for example, a monofluoromethyl group, a monochloromethyl group, a dichloromethyl group, a difluoromethyl group, a trifluoromethyl group, a trichloromethyl group, a tribromomethyl group, a 2,2,2-trifluoroethyl group, a 2,2,2-trichloroethyl group, a pentafluoroethyl group, a chlorofluoromethyl group, a dichlorofluoromethyl group, a chlorodifluoromethyl group, a 2,2-difluoroethyl group, a 2-chloro-2-fluoroethyl group, a 2-chloro-2,2-difluoroethyl group, a 2,2-dichloro-2-fluoroethyl group, a 2-fluoropropyl group, a 3-fluoropropyl group, a 2,2-difluoropropyl group, a 3,3,3-trifluoropropyl group, a 3-(fluoromethyl)-2-fluoroethyl group, a 4-fluorobutyl group, and a 2,2-difluorohexyl group. The halogen atom that can be substituted for a hydrogen atom includes a fluorine atom, a chlorine atom, a bromine atom and an iodine atom.

[0016]

The term "'C1-C4 haloalkyl group'" represents a group wherein at least one hydrogen atom of the straight or branched C1-C4 alkyl group is substituted with a halogen atom, and includes, for example, a monofluoromethyl group,

a monochloromethyl group, a dichloromethyl group, a difluoromethyl group, a trifluoromethyl group, a trichloromethyl group, a tribromomethyl group, a 2,2,2-trifluoroethyl group, a 2,2,2-trichloroethyl group, a pentafluoroethyl group, a chlorofluoromethyl group, a dichlorofluoromethyl group, a chlorodifluoromethyl group, a 2,2-difluoroethyl group, a 2-chloro-2-fluoroethyl group, a 2-chloro-2,2-difluoroethyl group, a 2,2-dichloro-2-fluoroethyl group, a 2-fluoropropyl group, a 3-fluoropropyl group, a 2,2-difluoropropyl group, a 3,3,3-trifluoropropyl group, a 3-(fluoromethyl)-2-fluoroethyl group, and a 4-fluorobutyl group. The halogen atom that can be substituted for a hydrogen atom includes a fluorine atom, a chlorine atom, a bromine atom and an iodine atom.

[0017]

The term "'C1-C3 haloalkyl group'" represents a group wherein at least one hydrogen atom of the straight or branched C1-C3 alkyl group is substituted with a halogen atom, and includes, for example, a chloromethyl group, a dichloromethyl group, a fluoromethyl group, a difluoromethyl group, a chlorofluoromethyl group, a dichlorofluoromethyl group, a chlorodifluoromethyl group, a trifluoromethyl group, a trichloromethyl group, a tribromomethyl group, a 2-fluoroethyl group, a 2,2-difluoroethyl group, a 2,2,2-trifluoroethyl group, a 2-

chloroethyl group, a 2,2-dichloroethyl group, a 2,2,2-trichloroethyl group, a pentafluoroethyl group, a pentachloroethyl group, a 2-chloro-2-fluoroethyl group, a 2-chloro-2,2-difluoroethyl group, a 2-fluoropropyl group, a 3-fluoropropyl group, a 2,2-difluoropropyl group, a 2,3-difluoropropyl group, a 3,3,3-trifluoropropyl group, a heptafluoropropyl group and a 1-(fluoromethyl)-2-fluoroethyl group.

[0018]

10 The term "'C3-C6 cycloalkyl group'" represents a cyclic alkyl group of three to six carbon atoms, and encompasses a cycloalkyl group having an alkyl group, and includes, for example, a cyclopropyl group, a cyclobutyl group, a cyclopentyl group, a cyclohexyl group, a 1-methylcyclopropyl group, a 2-methylcyclopropyl group, a 2,2-dimethylcyclopropyl group and a 2,3-dimethylcyclopropyl group.

[0019]

20 The term "'C3-C5 cycloalkyl group'" represents a cyclic alkyl group of three to five carbon atoms, and encompasses a cycloalkyl group having an alkyl group, and includes, for example, a cyclopropyl group, a cyclobutyl group, a cyclopentyl group, a 1-methylcyclopropyl group, a 2-methylcyclopropyl group, a 2,2-dimethylcyclopropyl group and a 2,3-dimethylcyclopropyl group.

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[0020]

The term "'C3-C4 cycloalkyl group'" represents a cyclic alkyl group of three to four carbon atoms, and encompasses a cycloalkyl group having an alkyl group, and includes, for example, a cyclopropyl group, a cyclobutyl group and a 1-methylcyclopropyl group.

[0021]

The term "'C4-C7 cycloalkylmethyl group'" represents a methyl group having a cyclic alkyl of four to seven carbon atoms, and the cyclic alkyl group may further optionally contain alkyl group(s), and the number of carbon atom of the cycloalkylmethyl group is four to seven. The C4-C7 cycloalkyl group includes, for example, a cyclopropylmethyl group, a cyclobutylmethyl group, a cyclopentylmethyl group, a cyclohexylmethyl group, a 1-methylcyclopropylmethyl group, a 2-methylcyclopropylmethyl group and a 2,2-dimethylcyclopropylmethyl group.

[0022]

The term "'C3-C6 halocycloalkyl group'" represents a group wherein at least one hydrogen atom of the C3-C6 cycloalkyl group is substituted with a halogen atom, and includes, for example a 1-fluorocyclopropyl group, a 2-fluorocyclopropyl group, a 2,2-difluorocyclopropyl group, a 1-chlorocyclopropyl group, a 2-chloro-2-fluorocyclopropyl group, a 2,2-dichlorocyclopropyl group, a 2,2-

dibromocyclopropyl group, a 2,2-difluoro-1-methylcyclopropyl group, a 2,2-dichloro-1-methylcyclopropyl group, a 2,2-dibromo-1-methylcyclopropyl group, a 1-(trifluoromethyl)cyclopropyl group, a 2,2,3,3-tetrafluorocyclobutyl group, a 1-fluorocyclobutyl group, a 1-chlorocyclobutyl group, a 2-chlorocyclopentyl group, a 3-chlorocyclopentyl group, a 3,3-difluorocyclopentyl group, a 1-fluorocyclohexyl group, a 2,2-difluorocyclohexyl group, a 3,3-difluorocyclohexyl group and a 4,4-difluorocyclohexyl group. The halogen atom that can be substituted for a hydrogen atom includes a fluorine atom, a chlorine atom, a bromine atom and an iodine atom.

[0023]

The term "C3-C5 halocycloalkyl group" represents a group wherein at least one hydrogen atom of the C3-C5 cycloalkyl group is substituted with a halogen atom, and includes, for example a 1-fluorocyclopropyl group, a 2-fluorocyclopropyl group, a 2,2-difluorocyclopropyl group, a 1-chlorocyclopropyl group, a 2-chloro-2-fluorocyclopropyl group, a 2,2-dichlorocyclopropyl group, a 2,2-dibromocyclopropyl group, a 2,2-difluoro-1-methylcyclopropyl group, a 2,2-dichloro-1-methylcyclopropyl group, a 2,2-dibromo-1-methylcyclopropyl group, a 1-(trifluoromethyl)cyclopropyl group, a 2,2,3,3-tetrafluorocyclobutyl group, a 2-chlorocyclopentyl group

and a 3-chlorocyclopentyl group. The halogen atom that can be substituted for a hydrogen atom includes a fluorine atom, a chlorine atom, a bromine atom and an iodine atom.

[0024]

5 The term "'C3-C4 halocycloalkyl group'" represents a group wherein at least one hydrogen atom of the C3-C4 cycloalkyl group is substituted with a halogen atom, and includes, for example a 2-fluorocyclopropyl group, a 2,2-difluorocyclopropyl group, a 2-chloro-2-fluorocyclopropyl group, a 2,2-dichlorocyclopropyl group, a 2,2-dibromocyclopropyl group, a 2,2-difluoro-1-methylcyclopropyl group, a 2,2-dichloro-1-methylcyclopropyl group, a 2,2-dibromo-1-methylcyclopropyl group, a 1-(trifluoromethyl)cyclopropyl group, a 2,2,3,3-tetrafluorocyclobutyl group and a 2,2,3,3-tetrafluorocyclobutyl group. The halogen atom that can be substituted for a hydrogen atom includes a fluorine atom, a chlorine atom, a bromine atom and an iodine atom.

[0025]

20 The term "'C2-C6 alkenyl group'" represents a straight or branched alkenyl group of two to six carbon atoms, and includes, for example, a vinyl group, a 1-propenyl group, an isopropenyl group, a 2-propenyl group, a 1-butenyl group, a 1-methyl-1-propenyl group, a 2-butenyl group, a 1-methyl-2-propenyl group, a 3-butenyl group, a 2-methyl-1-propenyl

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group, a 2-methyl-2-propenyl group, a 1,3-butadienyl group, a 1-pentenyl group, an 1-ethyl-2-propenyl group, a 2-pentenyl group, a 1-methyl-1-butenyl group, a 3-pentenyl group, a 1-methyl-2-butenyl group, a 4-pentenyl group, a 1-methyl-3-butenyl group, a 3-methyl-1-butenyl group, a 1,2-dimethyl-2-propenyl group, a 1,1-dimethyl-2-propenyl group, a 2-methyl-2-butenyl group, a 3-methyl-2-butenyl group, a 1,2-dimethyl-1-propenyl group, a 2-methyl-3-butenyl group, a 3-methyl-3-butenyl group, a 1,3-pentadienyl group, a 1-vinyl-2-propenyl group, a 1-hexenyl group and a 5-hexenyl group.

[0026]

A term "'C2-C6 haloalkenyl group'" represents a group wherein at least one hydrogen atom of the straight or branched C2-C6 alkenyl group is substituted with a halogen atom, and includes, for example, a 2-chlorovinyl group, a 2-bromovinyl group, an 2-iodovinyl group, a 3-chloro-2-propenyl group, a 3-bromo-2-propenyl group, a 1-chloromethylvinyl group, a 2-bromo-1-methylvinyl group, a 1-trifluoromethylvinyl group, a 3,3,3-trichloro-1-propenyl group, a 3-bromo-3,3-difluoro-1-propenyl group, a 2,3,3,3-tetrachloro-1-propenyl group, a 1-trifluoromethyl-2,2-difluorovinyl group, a 2-chloro-2-propenyl group, a 3,3-difluoro-2-propenyl group, a 2,3,3-trichloro-2-propenyl group, a 4-bromo-3-chloro-3,4,4-trifluoro-1-butenyl group,

a 1-bromomethyl-2-propenyl group, a 3-chloro-2-butenyl group, a 4,4,4-trifluoro-2-butenyl group, a 4-bromo-4,4-difluoro-2-butenyl group, a 3-bromo-3-butenyl group, a 3,4,4-trifluoro-3-butenyl group, a 3,4,4-tribromo-3-butenyl group, a 3-bromo-2-methyl-2-propenyl group, a 3,3-difluoro-2-methyl-2-propenyl group, a 3,3,3-trifluoro-2-methyl-1-propenyl group, a 3-chloro-4,4,4-trifluoro-2-butenyl group, a 3,3,3-trifluoro-1-methyl-1-propenyl group, a 3,4,4-trifluoro-1,3-butadienyl group, a 3,4-dibromo-1-pentenyl group, a 4,4-difluoro-3-methyl-3-butenyl group, a 3,3,4,4,5,5,5-heptafluoro-1-pentenyl group, a 5,5-difluoro-4-pentenyl group, a 4,5,5-trifluoro-4-pentenyl group, a 3,4,4,4-tetrafluoro-3-trifluoromethyl-1-butenyl group, a 4,4,4-trifluoro-3-methyl-2-butenyl group, a 3,5,5-trifluoro-2,4-pentadienyl group, a 4,4,5,5,6,6,6-heptafluoro-2-hexenyl group, a 3,4,4,5,5,5-hexafluoro-3-trifluoromethyl-1-pentenyl group, a 4,5,5,5-tetrafluoro-4-trifluoromethyl-2-pentenyl group and a 5-bromo-4,5,5-trifluoro-4-trifluoromethyl-2-pentenyl group. The halogen atom that can be substituted for a hydrogen atom includes a fluorine atom, a chlorine atom, a bromine atom and an iodine atom.

[0027]

The term "'C3-C6 alkenyl group'" represents a straight or branched alkenyl group of three to six carbon atoms, and

includes, for example, a 2-propenyl group, a 2-butenyl group, a 1-methyl-2-propenyl group, a 3-butenyl group, a 2-methyl-2-propenyl group, an 1-ethyl-2-propenyl group, a 2-pentenyl group, a 3-pentenyl group, a 1-methyl-2-butenyl group, a 4-pentenyl group, a 1-methyl-3-butenyl group, a 1,2-dimethyl-2-propenyl group, a 1,1-dimethyl-2-propenyl group, a 2-methyl-2-butenyl group, a 3-methyl-2-butenyl group, a 2-methyl-3-butenyl group, a 3-methyl-3-butenyl group, a 1-vinyl-2-propenyl group, a 2-hexenyl group, a 3-hexenyl group, a 4-hexenyl group and a 5-hexenyl group.

[0028]

A term "'C3-C6 haloalkenyl group'" represents a group wherein at least one hydrogen atom of the straight or branched C3-C6 alkenyl group is substituted with a halogen atom, and includes, for example, a 3-chloro-2-propenyl group, a 3-bromo-2-propenyl group, a 2-chloro-2-propenyl group, a 3,3-difluoro-2-propenyl group, a 2,3,3-trichloro-2-propenyl group, a 1-bromomethyl-2-propenyl group, a 3-chloro-2-butenyl group, a 4,4,4-trifluoro-2-butenyl group, a 4-bromo-4,4-difluoro-2-butenyl group, a 3-bromo-3-butenyl group, a 3,4,4-trifluoro-3-butenyl group, a 3,4,4-tribromo-3-butenyl group, a 3-bromo-2-methyl-2-propenyl group, a 3,3-difluoro-2-methyl-2-propenyl group, a 3-chloro-4,4,4-trifluoro-2-butenyl group, a 3,4-dibromo-1-pentenyl group, a 4,4-difluoro-3-methyl-3-butenyl group, a 5,5-difluoro-4-

pentenyl group, a 4,5,5-trifluoro-4-pentenyl group, a 4,4,4-trifluoro-3-methyl-2-butenyl group, a 3,5,5-trifluoro-2,4-pentadienyl group, a 4,4,5,5,6,6,6-heptafluoro-2-hexenyl group, a 4,5,5,5-tetrafluoro-4-trifluoromethyl-2-pentenyl group and a 5-bromo-4,5,5-trifluoro-4-trifluoromethyl-2-pentenyl group. The halogen atom that can be substituted for a hydrogen atom includes a fluorine atom, a chlorine atom, a bromine atom and an iodine atom.

10 [0029]

The term 'C2-C3 alkenyl group' includes, for example, a vinyl group, a 1-propenyl group, an isopropenyl group and a 2-propenyl group.

[0030]

15 A term 'C2-C3 haloalkenyl group' represents a group wherein at least one hydrogen atom of the straight or branched C2-C3 alkenyl group is substituted with a halogen atom, and includes, for example, a 2-chlorovinyl group, a 2-bromovinyl group, an 2-iodovinyl group, a 3-chloro-2-propenyl group, a 3-bromo-2-propenyl group, a 1-chloromethylvinyl group, a 2-bromo-1-methylvinyl group, a 1-trifluoromethylvinyl group, a 3,3,3-trichloro-1-propenyl group, a 3-bromo-3,3-difluoro-1-propenyl group, a 2,3,3,3-tetrachloro-1-propenyl group, a 1-trifluoromethyl-2,2-difluorovinyl group, a 2-chloro-2-propenyl group, a 3,3-

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difluoro-2-propenyl group and a 2,3,3-trichloro-2-propenyl group.

[0031]

The term "'C2-C6 alkynyl group'" represents an alkynyl group of two to six carbon atoms which may be straight or branched and includes, for example, an ethynyl group, a propargyl group, a 1-butyne-3-yl group, a 3-methyl-1-butyne-3-yl group, a 2-butyne-1-yl group, a 3-butyne-1-yl group, a 2-pentyne-1-yl group, a 3-pentyne-1-yl group, a 4-pentyne-1-yl group, a 1-hexynyl group and a 5-hexynyl group.

[0032]

The term "'C2-C6 haloalkynyl group'" represents a group wherein at least one hydrogen atom of the straight or branched C2-C6 alkynyl group is substituted with a halogen atom, and includes, for example, a fluoroethynyl group, a 3-fluoro-2-propynyl group, a 3-chloro-2-propynyl group, a 3-bromo-2-propynyl group, an 3-iodo-2-propynyl group, a 3-chloro-1-propynyl group, a 5-chloro-4-pentyne-1-yl group, a 3,3,3-trifluoro-1-propynyl group, a 3,3-difluoro-1-propynyl group, a 4,4,4-trifluoro-2-butyne-1-yl group, a perfluoro-2-butyne-1-yl group, a perfluoro-2-pentyne-1-yl group, a perfluoro-3-pentyne-1-yl group and a perfluoro-1-hexynyl group. The halogen atom that can be substituted for a hydrogen atom includes a fluorine atom, a chlorine atom, a bromine atom and an iodine atom.

[0033]

The term "'C3-C6 alkynyl group'" represents an alkynyl group of three to six carbon atoms which may be straight or branched, and includes, for example, a 2-propynyl group, a 1-butyne-3-yl group, a 3-methyl-1-butyne-3-yl group, a 2-butynyl group, a 3-butynyl group, a 2-pentynyl group, a 3-pentynyl group, a 4-pentynyl group, a 1-hexynyl group and a 5-hexynyl group. The halogen atom that can be substituted for a hydrogen atom includes a fluorine atom, a chlorine atom, a bromine atom and an iodine atom.

[0034]

The term "'C3-C6 haloalkynyl group'" represents a group wherein at least one hydrogen atom of the straight or branched C3-C6 alkynyl group is substituted with a halogen atom, and includes, for example, a 3-chloro-2-propynyl group, a 3-bromo-2-propynyl group, an 3-iodo-2-propynyl group, a 5-chloro-4-pentynyl group, a 4,4,4-trifluoro-2-butynyl group, a perfluoro-2-butynyl group, a perfluoro-2-pentynyl group and a perfluoro-3-pentynyl group. The halogen atom that can be substituted for a hydrogen atom includes a fluorine atom, a chlorine atom, a bromine atom and an iodine atom.

[0035]

The term "'C3-C4 alkynyl group'" includes, for example, a 2-propynyl group, a 2-butynyl group and a 3-butynyl group.

[0036]

The term "'C2-C3 alkynyl group'" includes, for example, an ethynyl group, a 1-propynyl group and a 2-propynyl group.

[0037]

5 The term "'C2-C4 alkynyl group'" includes, for example, an ethynyl group, a 1-propynyl group, a 2-propynyl group, a 1-butynyl group and a 2-butynyl group.

[0038]

10 The term "'C2-C4 haloalkynyl group'" includes, for example, 3,3,3-trifluoropropynyl group, a 3,3-difluoropropynyl group, a 3,3,3-trifluorobutynyl group, 4,4,4-trifluoro-2-butynyl group and a 3,3-difluoro-butynyl group.

[0039]

15 The term "'C2-C3 haloalkynyl group'" includes, for example, a fluoroethynyl group, a 3-fluoro-2-propynyl group, a 3-chloro-2-propynyl group, a 3-bromo-2-propynyl group, an 3-iodo-2-propynyl group, a 3-chloro-1-propynyl group, a 3,3,3-trifluoro-1-propynyl group and a 3,3-difluoro-1-propynyl group.

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[0040]

The term "'C1-C6 alkoxy group'" represents an alkoxy group of one to six carbon atoms which may be straight or branched, and includes, for example, a methoxy group, an ethoxy group, a propyloxy group, an isopropyloxy group, a

25

butyloxy group, an isobutyloxy group, a sec-butyloxy group, a tert-butyloxy group, a pentyloxy group, an isoamyloxy group, a neopentyloxy group, a 2-pentyloxy group, a 3-pentyloxy group, a 2-methylbutyloxy group, a hexyloxy group, an isohexyloxy group, a 3-methylpentyloxy group and a 4-methylpentyloxy group.

[0041]

The term "'C1-C4 alkoxy group'" represents an alkoxy group of one to four carbon atoms which may be straight or branched, and includes, for example, a methoxy group, an ethoxy group, a propyloxy group, an isopropyloxy group, a butyloxy group, an isobutyloxy group, a sec-butyloxy group and a tert-butyloxy group.

[0042]

The term "'C1-C3 alkoxy group'" includes, for example, a methoxy group, an ethoxy group, a propyloxy group and an isopropyloxy group.

[0043]

The term "'C1-C2 alkoxy group'" includes, for example, a methoxy group and an ethoxy group.

[0044]

The term "'C1-C6 haloalkoxy group'" represents a group wherein at least one hydrogen atom of the straight or branched C1-C6 alkoxy group is substituted with a halogen atom, and includes, for example, a trifluoromethoxy group,

a trichloromethoxy group, a chloromethoxy group, a dichloromethoxy group, a fluoromethoxy group, a difluoromethoxy group, a chlorofluoromethoxy group, a dichlorofluoromethoxy group, a chlorodifluoromethoxy group, a pentafluoroethoxy group, a pentachloroethoxy group, a 2,2,2-trichloroethoxy group, a 2,2,2-trifluoroethoxy group, a 2,2,2-tribromoethoxy group, a 2,2,2-triiodoethoxy group, a 2-fluoroethoxy group, a 2-chloroethoxy group, a 2,2-difluoroethoxy group, a 2-chloro-2-fluoroethoxy group, a 2-chloro-2,2-difluoroethoxy group, a heptafluoropropoxy group, a heptachloropropoxy group, a heptabromopropoxy group, a heptaiodopropoxy group, a 3,3,3-trifluoropropoxy group, a 3,3,3-trichloropropoxy group, a 3,3,3-tribromopropoxy group, a 3,3,3-triiodopropoxy group, a 2-fluoropropoxy group, a 3-fluoropropoxy group, a 2,2-difluoropropoxy group, a 2,3-difluoropropoxy group, a 2-chloropropoxy group, a 3-chloropropoxy group, a 2,3-dichloropropoxy group, a 2-bromopropoxy group, a 3-bromopropoxy group, a 3,3,3-trifluoropropoxy group, a nonafluorobutoxy group, a nonachlorobutoxy group, a nonabromobutoxy group, a nonaiodobutoxy group, a perfluoropentyloxy group, a perchloropentyloxy group, a perbromopentyloxy group, a perfluorohexyloxy group, a perchlorohexyloxy group, a perbromohexyloxy group and a periodohexyloxy group. The halogen atom that can be substituted for a hydrogen atom

includes a fluorine atom, a chlorine atom, a bromine atom and an iodine atom.

[0045]

The term "'C1-C4 haloalkoxy group'" represents a group wherein at least one hydrogen atom of the straight or branched C1-C4 alkoxy group is substituted with a halogen atom, and includes, for example, a trifluoromethoxy group, a trichloromethoxy group, a chloromethoxy group, a dichloromethoxy group, a fluoromethoxy group, a difluoromethoxy group, a chlorofluoromethoxy group, a dichlorofluoromethoxy group, a chlorodifluoromethoxy group, a pentafluoroethoxy group, a pentachloroethoxy group, a 2,2,2-trichloroethoxy group, a 2,2,2-trifluoroethoxy group, a 2,2,2-tribromoethoxy group, a 2,2,2-triiodoethoxy group, a 2-fluoroethoxy group, a 2-chloroethoxy group, a 2,2-difluoroethoxy group, a 2,2,2-trifluoroethoxy group, a 2-chloro-2-fluoroethoxy group, a 2-chloro-2,2-difluoroethoxy group, a heptafluoropropoxy group, a heptachloropropoxy group, a heptabromopropoxy group, a heptaiodopropoxy group, a 3,3,3-trifluoropropoxy group, a 3,3,3-trichloropropoxy group, a 3,3,3-tribromopropoxy group, a 3,3,3-triiodopropoxy group, a 2-fluoropropoxy group, a 3-fluoropropoxy group, a 2,2-difluoropropoxy group, a 2,3-difluoropropoxy group, a 2-chloropropoxy group, a 3-chloropropoxy group, a 2,3-dichloropropoxy group, a 2-

bromopropoxy group, a 3-bromopropoxy group, a 2,3,3-trifluoropropoxy group, a nonafluorobutoxy group, a nonachlorobutoxy group, a nonabromobutoxy group and a nonaiodobutoxy group. The halogen atom that can be substituted for a hydrogen atom includes a fluorine atom, a chlorine atom, a bromine atom and an iodine atom.

[0046]

The term "'C1-C3 haloalkoxy group'" represents a group wherein at least one hydrogen atom of the straight or branched C1-C3 alkoxy group is substituted with a halogen atom, and includes, for example, a trifluoromethoxy group, a trichloromethoxy group, a chloromethoxy group, a dichloromethoxy group, a fluoromethoxy group, a difluoromethoxy group, a chlorofluoromethoxy group, a dichlorofluoromethoxy group, a chlorodifluoromethoxy group, a pentafluoroethoxy group, a pentachloroethoxy group, a 2,2,2-trichloroethoxy group, a 2,2,2-trifluoroethoxy group, a 2,2,2-tribromoethoxy group, a 2,2,2-triiodoethoxy group, a 2-fluoroethoxy group, a 2-chloroethoxy group, a 2,2-difluoroethoxy group, a 2,2,2-trifluoroethoxy group, a 2-chloro-2-fluoroethoxy group, a 2-chloro-2,2-difluoroethoxy group, a heptafluoropropoxy group, a heptachloropropoxy group, a heptabromopropoxy group, a heptaiodopropoxy group, a 3,3,3-trifluoropropoxy group, a 3,3,3-trichloropropoxy group, a 3,3,3-tribromopropoxy group, a 3,3,3-

triiodopropoxy group, a 2-fluoropropoxy group, a 3-fluoropropoxy group, a 2,2-difluoropropoxy group, a 2,3-difluoropropoxy group, a 2-chloropropoxy group, a 3-chloropropoxy group, a 2,3-dichloropropoxy group, a 2-bromopropoxy group, a 3-bromopropoxy group and a 3,3,3-trifluoropropoxy group. The halogen atom that can be substituted for a hydrogen atom includes a fluorine atom, a chlorine atom, a bromine atom and an iodine atom.

[0047]

10 The term "'C1-C2 haloalkoxy group'" represents a group wherein at least one hydrogen atom of the straight or branched C1-C2 alkoxy group is substituted with a halogen atom, and includes, for example, a trifluoromethoxy group, a trichloromethoxy group, a chloromethoxy group, a
15 dichloromethoxy group, a fluoromethoxy group, a difluoromethoxy group, a chlorofluoromethoxy group, a dichlorofluoromethoxy group, a chlorodifluoromethoxy group, a pentafluoroethoxy group, a pentachloroethoxy group, a 2,2,2-trichloroethoxy group, a 2,2,2-trifluoroethoxy group,
20 a 2,2,2-tribromoethoxy group, a 2,2,2-triiodoethoxy group, a 2-fluoroethoxy group, a 2-chloroethoxy group, a 2,2-difluoroethoxy group, a 2,2,2-trifluoroethoxy group, a 2-chloro-2-fluoroethoxy group and a 2-chloro-2,2-difluoroethoxy group. The halogen atom that can be
25 substituted for a hydrogen atom includes a fluorine atom, a

chlorine atom, a bromine atom and an iodine atom.

[0048]

The term "'C1-C6 alkylthio group'" represents an alkylthio group of one to six carbon atoms which may be
5 straight or branched, and includes, for example, a methylthio group, an ethylthio group, a propylthio group, an isopropylthio group, a butylthio group, a sec-butylthio group, a tert-butylthio group, a pentylthio group, an isopentylthio group, a neopentylthio group, a hexylthio
10 group, an isohexylthio group and a sec-hexylthio group.

[0049]

The term "'C1-C6 haloalkylthio group'" represents a group wherein at least one hydrogen atom of the straight or branched C1-C6 alkylthio group is substituted with a
15 halogen atom, and includes, for example, a monofluoromethylthio group, a difluoromethylthio group, a trifluoromethylthio group, a trichloromethylthio group, a tribromomethylthio group, a triiodomethylthio group, a chlorofluoromethylthio group, a pentafluoroethylthio group,
20 a pentachloroethylthio group, a pentabromoethylthio group, a pentaiodoethylthio group, a 2,2,2-trichloroethylthio group, a 2,2,2-trifluoroethylthio group, a 2,2,2-tribromoethylthio group, a 2,2,2-triiodoethylthio group, a 2,2-difluoroethylthio group, a heptafluoropropylthio group,
25 a heptachloropropylthio group, a heptabromopropylthio group,

a heptaiodopropylthio group, a 3,3,3-trifluoropropylthio group, a 3,3,3-trichloropropylthio group, a 3,3,3-tribromopropylthio group, a 3,3,3-triiodopropylthio group, a 2,2-difluoropropylthio group, a 2,3,3-trifluoropropylthio group, a nonafluorobutylthio group, a nonachlorobutylthio group, a nonabromobutylthio group, a nonaiodobutylthio group, a perfluoropentylthio group, a perchloropentylthio group, a perbromopentylthio group, a perfluorohexylthio group, a perchlorohexylthio group, a perbromohexylthio group and a periodohexylthio group. The halogen atom that can be substituted for a hydrogen atom includes a fluorine atom, a chlorine atom, a bromine atom and an iodine atom.

[0050]

The term "'C1-C4 alkylthio group'" includes, for example, a methylthio group, an ethylthio group, a propylthio group, an isopropylthio group, a butylthio group, an isobutylthio group and a tert-butylthio group.

[0051]

The term "'C1-C2 alkylthio group'" includes, for example, a methylthio group and an ethylthio group.

[0052]

The term "'C1-C4 haloalkylthio group'" represents a group wherein at least one hydrogen atom of the straight or branched C1-C4 alkylthio group is substituted with a halogen atom, and includes, for example, a

monofluoromethylthio group, a difluoromethylthio group, a trifluoromethylthio group, a trichloromethylthio group, a tribromomethylthio group, a triiodomethylthio group, a chlorofluoromethylthio group, a pentafluoroethylthio group, a pentachloroethylthio group, a pentabromoethylthio group, a pentaiodoethylthio group, a 2,2,2-trichloroethylthio group, a 2,2,2-trifluoroethylthio group, a 2,2,2-tribromoethylthio group, a 2,2,2-triiodoethylthio group and a 2,2-difluoroethylthio group. The halogen atom that can be substituted for a hydrogen atom includes a fluorine atom, a chlorine atom, a bromine atom and an iodine atom.

[0053]

The term "'C3-C6 alkenyloxy group'" represents a straight or branched alkenyloxy group of three to six carbon atoms, and includes, for example, a 2-propenyloxy group, a 2-butenyloxy group, a 1-methyl-2-propenyloxy group, a 3-butenyloxy group, a 2-methyl-2-propenyloxy group, a 2-pentenyloxy group, a 3-pentenyloxy group, a 4-pentenyloxy group, a 1-methyl-3-butenyloxy group, a 1,2-dimethyl-2-propenyloxy group, a 1,1-dimethyl-2-propenyloxy group, a 2-methyl-2-butenyloxy group, a 3-methyl-2-butenyloxy group, a 2-methyl-3-butenyloxy group, a 3-methyl-3-butenyloxy group, a 1-vinyl-2-propenyloxy group and a 5-hexenyloxy group.

[0054]

The term "'C3-C6 haloalkenyloxy group'" represents a

group wherein at least one hydrogen atom of the straight or branched C3-C6 alkenyloxy group is substituted with a halogen atom, and includes, for example, a 3-chloro-2-propenyloxy group, a 3-bromo-2-propenyloxy group, a 3-bromo-3,3-difluoro-1-propenyloxy group, a 2,3,3,3-tetrachloro-1-propenyloxy group, a 2-chloro-2-propenyloxy group, a 3,3-difluoro-2-propenyloxy group, a 2,3,3-trichloro-2-propenyloxy group, a 3,3-dichloro-2-propenyloxy group, a 3,3-dibromo-2-propenyloxy group, a 3-fluoro-3-chloro-2-propenyloxy group, a 4-bromo-3-chloro-3,4,4-trifluoro-1-butenyloxy group, a 1-bromomethyl-2-propenyloxy group, a 3-chloro-2-butenyloxy group, a 4,4,4-trifluoro-2-butenyloxy group, a 4-bromo-4,4-difluoro-2-butenyloxy group, a 3-bromo-3-butenyloxy group, a 3,4,4-trifluoro-3-butenyloxy group, a 3,4,4-tribromo-3-butenyloxy group, a 3-bromo-2-methyl-2-propenyloxy group, a 3,3-difluoro-2-methyl-2-propenyloxy group, a 3-chloro-4,4,4-trifluoro-2-butenyloxy group, a 4,4-difluoro-3-methyl-3-butenyloxy group, a 5,5-difluoro-4-pentenyl-2-oxo group, a 4,5,5-trifluoro-4-pentenyl-2-oxo group, a 4,4,4-trifluoro-3-methyl-2-butenyloxy group, a 3,5,5-trifluoro-2,4-pentadienyloxy group, a 4,4,5,5,6,6,6-heptafluoro-2-hexenyloxy group, a 4,5,5,5-tetrafluoro-4-trifluoromethyl-2-pentenyl-2-oxo group and a 5-bromo-4,5,5-trifluoro-4-trifluoromethyl-2-pentenyl-2-oxo group. The halogen atom that can be

substituted for a hydrogen atom includes a fluorine atom, a chlorine atom, a bromine atom and an iodine atom.

[0055]

The term "'C3-C6 alkynyloxy group'" represents a
5 straight or branched alkynyloxy group of three to six
carbon atoms, and includes, for example, a 2-propynyloxy
group, a 1-butyne-3-yloxy group, a 3-methyl-1-butyne-3-
yloxy group, a 2-butyloxy group, a 3-butyloxy group, a
2-pentyloxy group, a 3-pentyloxy group, a 4-
10 pentyloxy group and a 5-hexyloxy group.

[0056]

The term "'C3-C6 haloalkynyloxy group'" represents a
group wherein at least one hydrogen atom of the straight or
branched C3-C6 alkynyloxy group is substituted with a
15 halogen atom, and includes, for example, a 3-chloro-2-
propynyloxy group, a 3-bromo-2-propynyloxy group, an 3-
iodo-2-propynyloxy group, a 5-chloro-4-pentyloxy group, a
4,4,4-trifluoro-2-butyloxy group, a perfluoro-2-
butyloxy group, a perfluoro-3-butyloxy group, a
20 perfluoro-2-pentyloxy group, a perfluoro-3-pentyloxy
group, a perfluoro-4-pentyloxy group and a perfluoro-5-
hexyloxy group. The halogen atom that can be substituted
for a hydrogen atom includes a fluorine atom, a chlorine
atom, a bromine atom and an iodine atom.

25 [0057]

The term "'C3-C6 alkenylthio group'" represents a straight or branched alkenylthio group of three to six carbon atoms, and includes, for example, a 2-propenylthio group, a 2-butenylthio group, a 1-methyl-2-propenylthio group, a 3-butenylthio group, a 2-methyl-2-propenylthio group, a 2-pentenylthio group, a 3-pentenylthio group, a 4-pentenylthio group, a 1-methyl-3-butenylthio group, a 1,2-dimethyl-2-propenylthio group, a 1,1-dimethyl-2-propenylthio group, a 2-methyl-2-butenylthio group, a 3-methyl-2-butenylthio group, a 2-methyl-3-butenylthio group, a 3-methyl-3-butenylthio group, a 1-vinyl-2-propenylthio group and a 5-hexenylthio group.

[0058]

The term "'C3-C6 haloalkenylthio group'" represents a group wherein at least one hydrogen atom of the straight or branched C3-C6 alkynylthio group is substituted with a halogen atom, and includes, for example, a 3-chloro-2-propenylthio group, a 3-bromo-2-propenylthio group, a 3-bromo-3,3-difluoro-1-propenylthio group, a 2,3,3,3-tetrachloro-1-propenylthio group, a 2-chloro-2-propenylthio group, a 3,3-difluoro-2-propenylthio group, a 2,3,3-trichloro-2-propenylthio group, a 3,3-dichloro-2-propenylthio group, a 3,3-dibromo-2-propenylthio group, a 3-fluoro-3-chloro-2-propenylthio group, a 4-bromo-3-chloro-3,4,4-trifluoro-1-butenylthio group, a 1-bromomethyl-2-

propenylthio group, a 3-chloro-2-butenylthio group, a
4,4,4-trifluoro-2-butenylthio group, a 4-bromo-4,4-
difluoro-2-butenylthio group, a 3-bromo-3-butenylthio group,
a 3,4,4-trifluoro-3-butenylthio group, a 3,4,4-tribromo-3-
5 butenylthio group, a 3-bromo-2-methyl-2-propenylthio group,
a 3,3-difluoro-2-methyl-2-propenylthio group, a 3-chloro-
4,4,4-trifluoro-2-butenylthio group, a 4,4-difluoro-3-
methyl-3-butenylthio group, a 5,5-difluoro-4-pentenylthio
group, a 4,5,5-trifluoro-4-pentenylthio group, a 4,4,4-
10 trifluoromethyl-3-methyl-2-butenylthio group, a 3,5,5-
trifluoro-2,4-pentadienylthio group, a 4,4,5,5,6,6,6-
heptafluoro-2-hexenylthio group, a 4,5,5,5-tetrafluoro-4-
trifluoromethyl-2-pentenylthio group and a 5-bromo-4,5,5-
trifluoro-4-trifluoromethyl-2-pentenylthio group. The
15 halogen atom that can be substituted for a hydrogen atom
includes a fluorine atom, a chlorine atom, a bromine atom
and an iodine atom.

[0059]

The term "'C3-C6 alkynylthio group'" represents a
20 straight or branched alkynylthio group of three to six
carbon atoms, and includes, for example, a propargylthio
group, a 1-butyne-3-ylthio group, a 3-methyl-1-butyne-3-
ylthio group, a 2-butyne-3-ylthio group, a 3-butyne-3-
ylthio group, a 2-pentyne-3-ylthio group, a 3-pentyne-3-
ylthio group, a 4-pentyne-3-ylthio group, a 4-
25 pentyne-3-ylthio group and a 5-hexynylthio group.

[0060]

The term of "'C3-C6 haloalkynythio group'" represents a group wherein at least one hydrogen atom of the straight or branched C3-C6 alkynythio group is substituted with a halogen atom, and includes, for example, a 3-chloro-2-propynylthio group, a 3-bromo-2-propynylthio group, an 3-iodo-2-propynylthio group, a 5-chloro-4-pentynylthio group, a 4,4,4-trifluoro-2-butynylthio group, a perfluoro-2-butynylthio group, a perfluoro-3-butynylthio group, a perfluoro-2-pentynylthio group, a perfluoro-3-pentynylthio group, a perfluoro-4-pentynylthio group and a perfluoro-5-hexynylthio group. The halogen atom that can be substituted for a hydrogen atom includes a fluorine atom, a chlorine atom, a bromine atom and an iodine atom.

[0061]

The term "'C1-C8 alkylamino group'" represents an amino group having the straight or branched C1-C8 alkyl group wherein one or two hydrogen atom(s) on the nitrogen atom of the alkyl group is substituted with the straight and/or branched C1-C4 alkyl group which may be same or different from each other, and includes, for example, a methylamino group, an ethylamino group, a propylamino group, an isopropylamino group, a N,N-dimethylamino group, a N,N-diethylamino group, an N-ethyl-N-methylamino group, a butylamino group, a pentylamino group, a hexylamino group,

a N,N-dibutylamino group and a N-sec-butyl-N-methylamino group.

[0062]

The term "'C1-C6 alkylamino group'" represents an amino group containing the straight or branched C1-C6 alkyl group and includes, for example, a N-methylamino group, an N-ethylamino group, a N-propylamino group, an N-isopropylamino group, a N,N-dimethylamino group, a N,N-diethylamino group, an N-ethyl-N-methylamino group, a N-butylamino group, a N-pentylamino group, a N-hexylamino group, a N,N-dibutylamino group and a N-sec-butyl-N-methylamino group.

[0063]

The term "'C1-C8 haloalkylamino group'" represents a group wherein at least one hydrogen atom of the C1-C8 alkylamino group is substituted with a halogen atom, and includes, for example, a N-trifluoroethylamino group, a N,N-di-trifluoroethylamino group, a N,N-di-trichloroethylamino group and a N-pentafluoropropylamino group. The halogen atom that can be substituted for a hydrogen atom includes a fluorine atom, a chlorine atom, a bromine atom and an iodine atom.

[0064]

The term "'C1-C6 haloalkylamino group'" represents a group wherein at least one hydrogen atom of the C1-C6

alkylamino group is substituted with a halogen atom, and includes, for example, a N-trifluoroethylamino group, a N,N-di-trifluoroethylamino group, a N,N-di-trichloroethylamino group and a N-pentafluoropropylamino group. The halogen atom that can be substituted for a hydrogen atom includes a fluorine atom, a chlorine atom, a bromine atom and an iodine atom.

[0065]

The term "'C2-C6 alkylcarbonyl group'" represents an alkylcarbonyl group of two to six carbon atoms having a straight or branched C1-C5 alkyl group, and includes, for example, a methylcarbonyl group, an ethylcarbonyl group, a propylcarbonyl group, an isopropylcarbonyl group, a pivaloyl group, a butylcarbonyl group and a pentylcarbonyl group.

[0066]

The term "'C2-C6 alkoxy carbonyl group'" represents an alkoxy carbonyl group of two to six carbon atoms having a straight or branched C1-C5 alkyl group, and includes, for example, a methoxycarbonyl group, an ethoxycarbonyl group, a propyloxycarbonyl group, an isopropyloxycarbonyl group, a butyloxycarbonyl group, an isobutyloxycarbonyl group, a sec-butyloxycarbonyl group, a tert-butyloxycarbonyl group, a pentyloxycarbonyl group, an isoamyloxycarbonyl group, a neopentyloxycarbonyl group, a 2-pentyloxycarbonyl group, a

3-pentyloxycarbonyl group and a 2-methylbutyloxycarbonyl group.

[0067]

The term "'C2-C8 alkylaminocarbonyl group'" represents
5 an aminocarbonyl group having the straight or branched C1-
C7 alkylamino group wherein one or two hydrogen atom(s) on
the nitrogen atom of the alkyl group is substituted with
the straight and/or branched C1-C4 alkyl group which may be
same or different from each other, and includes, for
10 example, a methylaminocarbonyl group, an ethylaminocarbonyl
group, a propylaminocarbonyl group, an
isopropylaminocarbonyl group, a butylaminocarbonyl group, a
N,N-dimethylaminocarbonyl group, a N,N-diethylaminocarbonyl
group, a N,N-dipropylaminocarbonyl group and a N,N-
15 diisopropylaminocarbonyl group.

[0068]

The term "'C3-C9 trialkylsilyl group'" represents a
trialkylsilyl group of three to nine carbon atoms having a
straight or branched C3-C9 trialkyl group, and includes,
20 for example, a trimethylsilyl group, a tert-
butyldimethylsilyl group, a triethylsilyl group, an
isopropyldimethylsilyl group and a triisopropylsilyl group.

[0069]

The term "'C1-C6 alkylsulfonyl group'" represents an
25 alkylsulfonyl group having a straight or branched C1-C6

alkyl group, and includes, for example, a methylsulfonyl group, an ethylsulfonyl group, a propylsulfonyl group, an isopropylsulfonyl group, a butylsulfonyl group, an isobutylsulfonyl group, a sec-butylsulfonyl group, a pentylsulfonyl group, an isoamylsulfonyl group, a neopentylsulfonyl group, a 2-pentylsulfonyl group, a 3-pentylsulfonyl group, a 2-methylbutylsulfonyl group, a hexylsulfonyl group, an isohexylsulfonyl group, a 3-methylpentylsulfonyl group and a 4-methylpentylsulfonyl group.

[0070]

The term "C1-C4 alkylsulfonyl group" represents an alkylsulfonyl group having a straight or branched C1-C4 alkyl group, and includes, for example, a methylsulfonyl group, an ethylsulfonyl group, a propylsulfonyl group and an isopropylsulfonyl group.

[0071]

The term "C1-C6 haloalkylsulfonyl group" represents a group wherein at least one hydrogen atom of the straight or branched C1-C6 alkylsulfonyl group is substituted with a halogen atom, and includes, for example, a trifluoromethylsulfonyl group, a trichloromethylsulfonyl group, a tribromomethylsulfonyl group, a triiodomethylsulfonyl group, a pentafluoroethylsulfonyl group, a pentachloroethylsulfonyl group, a

pentabromoethylsulfonyl group, a pentaiodoethylsulfonyl group, a 2,2,2-trichloroethylsulfonyl group, a 2,2,2-trifluoroethylsulfonyl group, a 2,2,2-tribromoethylsulfonyl group, a 2,2,2-triiodoethylsulfonyl group, a heptafluoropropylsulfonyl group, a heptachloropropylsulfonyl group, a heptabromopropylsulfonyl group, a heptaiodopropylsulfonyl group, a 3,3,3-trifluoropropylsulfonyl group, a 3,3,3-trichloropropylsulfonyl group, a 3,3,3-tribromopropylsulfonyl group, a 3,3,3-triiodopropylsulfonyl group, a nonafluorobutylsulfonyl group, a nonachlorobutylsulfonyl group, a nonabromobutylsulfonyl group, a nonaiodobutylsulfonyl group, a perfluoropentylsulfonyl group, a perchloropentylsulfonyl group, a perbromopentylsulfonyl group, a perfluorohexylsulfonyl group, a perchlorohexylsulfonyl group, a perbromohexylsulfonyl group and a periodohexylsulfonyl group. The halogen atom that can be substituted for a hydrogen atom includes a fluorine atom, a chlorine atom, a bromine atom and an iodine atom.

[0072]

The term "'C1-C4 haloalkylsulfonyl group'" represents a group wherein at least one hydrogen atom of the straight or branched C1-C4 alkylsulfonyl group is substituted with a halogen atom, and includes, for example, a

trifluoromethylsulfonyl group, a trichloromethylsulfonyl group, a tribromomethylsulfonyl group, a triiodomethylsulfonyl group, a pentafluoroethylsulfonyl group, a pentachloroethylsulfonyl group, a pentabromoethylsulfonyl group, a pentaiodoethylsulfonyl group, a 2,2,2-trichloroethylsulfonyl group, a 2,2,2-trifluoroethylsulfonyl group, a 2,2,2-tribromoethylsulfonyl group, a 2,2,2-triiodoethylsulfonyl group, a heptafluoropropylsulfonyl group, a heptachloropropylsulfonyl group, a heptabromopropylsulfonyl group, a heptaiodopropylsulfonyl group, a 3,3,3-trifluoropropylsulfonyl group, a 3,3,3-trichloropropylsulfonyl group, a 3,3,3-tribromopropylsulfonyl group and a 3,3,3-triiodopropylsulfonyl group. The halogen atom that can be substituted for a hydrogen atom includes a fluorine atom, a chlorine atom, a bromine atom and an iodine atom.

[0073]

The term "'C3-C6 cycloalkylsulfonyl group'" represents a cyclic alkylsulfonyl group of three to six carbon atoms, and includes, for example, a cyclopropylsulfonyl group, a cyclobutylsulfonyl group, a cyclopentylsulfonyl group, a cyclohexylsulfonyl group, a 1-methylcyclopropylsulfonyl group and a 2,2-dimethylcyclopropylsulfonyl group.

[0074]

The term "'C3-C6 halocycloalkylsulfonyl group'" represents a group wherein at least one hydrogen atom of the C3-C6 cyclic alkylsulfonyl group is substituted with a halogen atom, and includes, for example, a 2-fluorocyclopropylsulfonyl group, a 2,2-difluorocyclopropylsulfonyl group, a 2-chloro-2-fluorocyclopropylsulfonyl group, a 2,2-dichlorocyclopropylsulfonyl group, a 2,2-dibromocyclopropylsulfonyl group, a 2,2-difluoro-1-methylcyclopropylsulfonyl group, a 2,2-dichloro-1-methylcyclopropylsulfonyl group, a 2,2-dibromo-1-methylcyclopropylsulfonyl group, a 1-(trifluoromethyl)cyclopropylsulfonyl group, a 2,2,3,3-tetrafluorocyclobutylsulfonyl group, a 2-chlorocyclohexylsulfonyl group, a 4,4-difluorocyclohexylsulfonyl group and a 4-chlorocyclohexylsulfonyl group. The halogen atom that can be substituted for a hydrogen atom includes a fluorine atom, a chlorine atom, a bromine atom and an iodine atom.

20 [0075]

The term "'C2-C8 alkylaminosulfonyl group'" represents an aminosulfonyl group having the straight or branched C2-C8 alkylamino group wherein one or two hydrogen atom(s) on the nitrogen atom of the alkyl group is substituted with the straight and/or branched C1-C4 alkyl group which may be

same or different from each other, and includes, for example, a methylaminosulfonyl group, an ethylaminosulfonyl group, a propylaminosulfonyl group, an isopropylaminosulfonyl group, a butylaminosulfonyl group, a N,N-dimethylaminosulfonyl group, a N,N-diethylaminosulfonyl group, a N,N-dipropylaminosulfonyl group, a N,N-diisopropylaminosulfonyl group, a pentylaminosulfonyl group and a hexylaminosulfonyl group.

[0076]

10 The term "'C2-C8 haloalkylaminosulfonyl group'" represents a group wherein at least one hydrogen atom of the straight or branched C1-C8 alkylaminosulfonyl group is substituted with a halogen atom, and includes, for example, a 2,2,2-trifluoroethylaminosulfonyl group, a N,N-di-(2,2,2-trifluoroethyl)aminosulfonyl group, a N,N-di-(2,2,2-trichloroethyl)aminosulfonyl group and a pentafluoropropylaminosulfonyl group. The halogen atom that can be substituted for a hydrogen atom includes a fluorine atom, a chlorine atom, a bromine atom and an iodine atom.

[0077]

The term "'C1-C6 alkylsulfinyl group'" represents a straight or branched alkylsulfinyl group of one to six carbon atoms, and includes, for example, a methylsulfinyl group, an ethylsulfinyl group, a propylsulfinyl group, an

isopropylsulfinyl group, a butylsulfinyl group, an isobutylsulfinyl group, a sec-butylsulfinyl group, a pentylsulfinyl group, an isoamylsulfinyl group, a neopentylsulfinyl group, a 2-pentylsulfinyl group, a 3-pentylsulfinyl group, a 2-methylbutylsulfinyl group, a hexylsulfinyl group, an isohexylsulfinyl group, a 3-methylpentylsulfinyl group and a 4-methylpentylsulfinyl group.

[0078]

10 The term "C1-C4 alkylsulfinyl group" represents a straight or branched alkylsulfinyl group of one to four carbon atoms, and includes, for example, a methylsulfinyl group, an ethylsulfinyl group, a propylsulfinyl group, an isopropylsulfinyl group, a butylsulfinyl group, an isobutylsulfinyl group and a sec-butylsulfinyl group.

[0079]

The term "C1-C6 haloalkylsulfinyl group" represents a group wherein at least one hydrogen atom of the straight or branched C1-C6 alkylsulfinyl group is substituted with a halogen atom, and includes, for example, a trifluoromethylsulfinyl group, a trichloromethylsulfinyl group, a tribromomethylsulfinyl group, a triiodomethylsulfinyl group, a pentafluoroethylsulfinyl group, a pentachloroethylsulfinyl group, a pentabromoethylsulfinyl group, a pentaiodoethylsulfinyl

20

25

group, a 2,2,2-trichloroethylsulfinyl group, a 2,2,2-trifluoroethylsulfinyl group, a 2,2,2-tribromoethylsulfinyl group, a 2,2,2-triiodoethylsulfinyl group, a heptafluoropropylsulfinyl group, a heptachloropropylsulfinyl group, a heptabromopropylsulfinyl group, a heptaiodopropylsulfinyl group, a 3,3,3-trifluoropropylsulfinyl group, a 3,3,3-trichloropropylsulfinyl group, a 3,3,3-tribromopropylsulfinyl group, a 3,3,3-triiodopropylsulfinyl group, a nonafluorobutylsulfinyl group, a nonachlorobutylsulfinyl group, a nonabromobutylsulfinyl group, a nonaiodobutylsulfinyl group, a perfluoropentylsulfinyl group, a perchloropentylsulfinyl group, a perbromopentylsulfinyl group, a perfluorohexylsulfinyl group, a perchlorohexylsulfinyl group, a perbromohexylsulfinyl group and a periodohexylsulfinyl group. The halogen atom that can be substituted for a hydrogen atom includes a fluorine atom, a chlorine atom, a bromine atom and an iodine atom.

[0080]

The term "C1-C4 haloalkylsulfinyl group" represents a group wherein at least one hydrogen atom of the straight or branched C1-C4 alkylsulfinyl group is substituted with a halogen atom, and includes, for example, a trifluoromethylsulfinyl group, a trichloromethylsulfinyl

group, a tribromomethylsulfinyl group, a triiodomethylsulfinyl group, a pentafluoroethylsulfinyl group, a pentachloroethylsulfinyl group, a pentabromoethylsulfinyl group, a pentaiodoethylsulfinyl group, a 2,2,2-trichloroethylsulfinyl group, a 2,2,2-trifluoroethylsulfinyl group, a 2,2,2-tribromoethylsulfinyl group, a 2,2,2-triiodoethylsulfinyl group, a heptafluoropropylsulfinyl group, a heptachloropropylsulfinyl group, a heptabromopropylsulfinyl group, a heptaiodopropylsulfinyl group, a 3,3,3-trifluoropropylsulfinyl group, a 3,3,3-trichloropropylsulfinyl group, a 3,3,3-tribromopropylsulfinyl group, a 3,3,3-triiodopropylsulfinyl group, a nonafluorobutylsulfinyl group, a nonachlorobutylsulfinyl group, a nonabromobutylsulfinyl group and a nonaiodobutylsulfinyl group. The halogen atom that can be substituted for a hydrogen atom includes a fluorine atom, a chlorine atom, a bromine atom and an iodine atom.

20 [0081]

The term "'C1-C6 alkyl group optionally having one or more groups selected from Group P¹" represents an C1-C6 alkyl group wherein a hydrogen atom being attached to the carbon atom may be optionally substituted with one or more atom or group selected from Group P¹, and when said C1-C6

alkyl group has two or more atoms or groups selected from Group P¹, the atoms or groups selected from Group P¹ may be same or different from each other.

Examples of the C1-C6 alkyl group optionally having one or more groups selected from Group P¹ includes a trifluoromethyl group, a trichloromethyl group, a tribromomethyl group, a 2,2,2-trifluoroethyl group, a 2,2,2-trichloroethyl group, a 3,3,3-trifluoropropyl group, a difluoromethyl group, a 2,2-difluoroethyl group, a 1,1-difluoroethyl group, a pentafluoroethyl group, a heptafluoroisopropyl group, a 1,1,2,2-tetrafluoroethyl group, a 2,2,3,3,3-pentafluoropropyl group, a 2,2,3,3,3-pentafluorobutyl group, a cyclopropylmethyl group, a cyclopropylethyl group, a cyclopropylpropyl group, a cyclopropylbutyl group, a cyclopropylpentyl group, a cyclopropylhexyl group, a cyclobutylmethyl group, a cyclobutylethyl group, a cyclobutylpropyl group, a cyclobutylbutyl group, a cyclopentylmethyl group, a cyclopentylethyl group, a cyclopentylpropyl group, a cyclohexylethyl group, a cyclohexylpropyl group, a 1-fluorocyclopropylmethyl group, a 1-fluorocyclopropylethyl group, a 1-fluorocyclopropylpropyl group, a 2,2-difluorocyclopropylmethyl group, a 2,2-difluorocyclopropylethyl group, a 2,2-difluorocyclopropylpropyl group, a

pentafluorocyclopropylmethyl group, a
 pentafluorocyclopropylethyl group, a
 pentafluorocyclopropylpropyl group, a 1-
 chlorocyclopropylmethyl group, a 1-chlorocyclopropylethyl
 5 group, a 1-chlorocyclopropylpropyl group, a 2,2-
 dichlorocyclopropylmethyl group, a 2,2-
 dichlorocyclopropylethyl group, a 2,2-
 dichlorocyclopropylpropyl group, a
 pentachlorocyclopropylmethyl group, a
 10 pentachlorocyclopropylethyl group, a
 pentachlorocyclopropylpropyl group, a 1-
 fluorocyclobutylmethyl group, a 1-fluorocyclobutylethyl
 group, a 1-fluorocyclobutylpropyl group, a 2,2-
 difluorocyclobutylmethyl group, a 2,2-
 15 difluorocyclobutylethyl group, a 2,2-
 difluorocyclobutylpropyl group, a 1-chlorocyclobutylmethyl
 group, a 1-chlorocyclobutylethyl group, a 1-
 chlorocyclobutylpropyl group, a 2,2-
 dichlorocyclobutylmethyl group, a 2,2-
 20 dichlorocyclobutylethyl group, a 2,2-
 dichlorocyclobutylpropyl group, a 1-fluorocyclopentylmethyl
 group, a 1-fluorocyclopentylethyl group, a 1-
 fluorocyclopentylpropyl group, a 2,2-
 difluorocyclopentylmethyl group, a 2,2-
 25 difluorocyclopentylethyl group, a 2,2-

	difluorocyclopentylpropyl	group,	a	3,3-		
	difluorocyclopentylmethyl	group,	a	3,3-		
	difluorocyclopentylethyl	group,	a	3,3-		
	difluorocyclopentylpropyl	group,	a	1-		
5	chlorocyclopentylmethyl	group,	a	1-chlorocyclopentylethyl		
	group,	a	1-chlorocyclopentylpropyl	group,	a	2,2-
	dichlorocyclopentylmethyl	group,	a	2,2-		
	dichlorocyclopentylethyl	group,	a	2,2-		
	dichlorocyclopentylpropyl	group,	a	3,3-		
10	dichlorocyclopentylmethyl	group,	a	3,3-		
	dichlorocyclopentylethyl	group,	a	3,3-		
	dichlorocyclopentylpropyl	group,	a	1-fluorocyclohexylmethyl		
	group,	a	1-fluorocyclohexylethyl	group,	a	1-
	fluorocyclohexylpropyl	group,	a	2,2-		
15	difluorocyclohexylmethyl	group,	a	2,2-		
	difluorocyclohexylethyl	group,	a	2,2-		
	difluorocyclohexylpropyl	group,	a	3,3-		
	difluorocyclohexylmethyl	group,	a	3,3-		
	difluorocyclohexylethyl	group,	a	3,3-		
20	difluorocyclohexylpropyl	group,	a	4,4-		
	difluorocyclohexylmethyl	group,	a	4,4-		
	difluorocyclohexylethyl	group,	a	4,4-		
	difluorocyclohexylpropyl	group,	a	1-chlorocyclohexylmethyl		
	group,	a	1-chlorocyclohexylethyl	group,	a	1-
25	chlorocyclohexylpropyl	group,	a	2,2-		

dichlorocyclohexylmethyl group, a 2,2-
 dichlorocyclohexylethyl group, a 2,2-
 dichlorocyclohexylpropyl group, a 3,3-
 dichlorocyclohexylmethyl group, a 3,3-
 5 dichlorocyclohexylethyl group, a 3,3-
 dichlorocyclohexylpropyl group, a methoxymethyl group, an
 ethoxymethyl group, an isopropoxymethyl group, a tert-
 butoxymethyl group, a 2-methoxyethyl group, an 2-
 ethoxyethyl group, a 2-tert-butoxyethyl group, a 3-
 10 methoxypropyl group, an 3-ethoxypropyl group, a
 trifluoromethoxymethyl group, a 2-trifluoromethoxyethyl
 group, a 3-trifluoromethoxypropyl group, a 4-
 trifluoromethoxybutyl group, a difluoromethoxymethyl group,
 a 2-difluoromethoxyethyl group, a 2-pentafluoroethoxyethyl
 15 group, a 3-pentafluoroethoxypropyl group, a 1,1,2,2-
 tetrafluoroethoxymethyl group, a 2-(1,1,2,2-
 tetrafluoroethoxy)-ethyl group, a methylthiomethyl group, a
 2-methylthioethyl group, a 3-methylthiopropyl group, an
 ethylthiomethyl group, an 2-ethylthioethyl group, an 3-
 20 ethylthiopropyl group, a tert-butylthiomethyl group, a 2-(
 tert-butylthio)-ethyl group, a 3-(tert-butylthio)-propyl
 group, a trifluoromethylthiomethyl group, a 2-
 trifluoromethylthioethyl group, a trifluoromethylthiopropyl
 group, a cyanomethyl group, a 2-cyanoethyl group, a 3-
 25 cyanopropyl group, a 1-cyanoethyl group, a 2-cyano-2-

methylethyl group and a 2-cyano-2-methylpropyl group and the others.

[0082]

The term "C3-C6 cycloalkyl group optionally having one or more groups selected from Group P¹" represents an C3-C6 cycloalkyl group wherein a hydrogen atom being attached to the carbon atom may be optionally substituted with one or more atom or group selected from Group P¹, and when said C3-C6 alkyl group has two or more atoms or groups selected from Group P¹, the atoms or groups selected from Group P¹ may be same or different from each other.

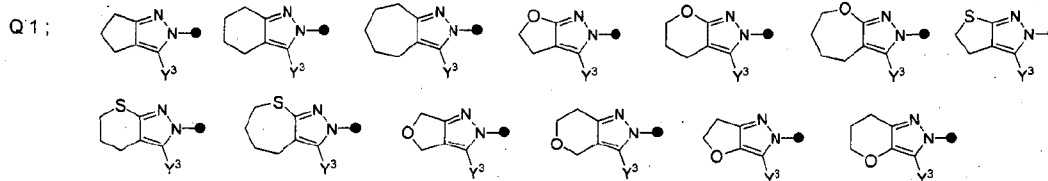
Examples of the C3-C6 cycloalkyl group optionally having one or more groups selected from Group P¹ include a 1-fluorocyclopropyl group, a 2,2-difluorocyclopropyl group, a 1-chloro-2-fluorocyclopropyl group, a 2,2-dichlorocyclopropyl group, a 2,2-dibromocyclopropyl group, a 2,2-difluoro-1-methylcyclopropyl group, a 2,2-dichloro-1-methylcyclopropyl group, a 2,2-dibromo-1-methylcyclopropyl group, a 2,2,3,3-tetrafluorocyclobutyl group, a 2,2,3,3-tetrafluorocyclobutyl group, a 2-chlorocyclopentyl group, a 3-chlorocyclopentyl group, a 3,3-difluorocyclopentyl group, a 1-fluorocyclohexyl group, a 2,2-difluorocyclohexyl group, a 3,3-difluorocyclohexyl group, a 4,4-difluorocyclohexyl group, a 1-cyclopropylcyclopropyl group, a 2-cyclopropylcyclopropyl group, a 2,2-bis-

cyclopropylcyclopropyl group, a 2,3-bis-cyclopropylcyclopropyl group, a 1-cyclopropylcyclobutyl group, a 1-cyclobutylcyclobutyl group, a 2-cyclopropylcyclobutyl group, a 1-cyclopropylcyclopentyl group, a 2-cyclopropylcyclopentyl group, a 1-(1-fluorocyclopropyl)-cyclopropyl group, a 1-(2,2-difluorocyclopropyl)-cyclopropyl group, a 1-(1-chlorocyclopropyl)-cyclopropyl group, a 1-(2,2-dichlorocyclopropyl)-cyclopropyl group, a 1-methoxycyclopropyl group, a 1-methoxycyclobutyl group, a 1-methoxycyclopentyl group, a 1-methoxycyclohexyl group, a 2-methoxycyclopropyl group, a 2-methoxycyclobutyl group, a 2-methoxycyclopentyl group, a 2-methoxycyclohexyl group, an 2-ethoxycyclopropyl group, an 2-ethoxycyclobutyl group, an 2-ethoxycyclopentyl group, an 2-ethoxycyclohexyl group, an 1-ethoxycyclopropyl group, an 1-ethoxycyclobutyl group, an 1-ethoxycyclopentyl group, an 1-ethoxycyclohexyl group, an 1-isopropoxycyclopropyl group, an 1-isopropoxycyclobutyl group, an 1-isopropoxycyclopentyl group, an 1-isopropoxycyclohexyl group, a 1-trifluoromethoxycyclopropyl group, a 2-trifluoromethoxycyclopropyl group, a 1-difluoromethoxycyclopropyl group, a 2-difluoromethoxycyclopropyl group, a 1-(2,2-difluoroethoxy)-cyclopropyl group, a 2-(2,2-difluoroethoxy)-cyclopropyl group, a 1-methylthiocyclopropyl group, an 1-

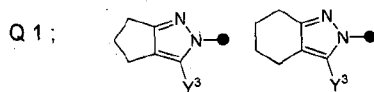
ethylthiocyclopropyl group, a 2-methylthiocyclopropyl group,
 an 2-ethylthiocyclopropyl group, a 1-
 trifluoromethylthiocyclopropyl group, a 2-
 trifluoromethylthiocyclopropyl group, a 1-cyanocyclopropyl
 5 group, a 2-cyanocyclopropyl group and a 2,2-
 dicyanocyclopropyl group and the others.

[0083]

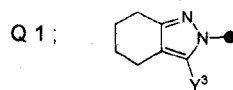
Y^1 and Y^2 may combine each other together with the
 carbon atom to which they are attached to form a five-,
 10 six- or seven-membered saturated ring, and the saturated
 ring may optionally contain one or more oxygen atoms or
 sulfur atoms as the ring-constituent atom, and the
 saturated ring may optionally have one or more groups
 selected from Group P^1 as substituent. Examples of Q1
 15 include the following structures:



In terms of a convenience of production, preferred Q1
 includes the following structures:

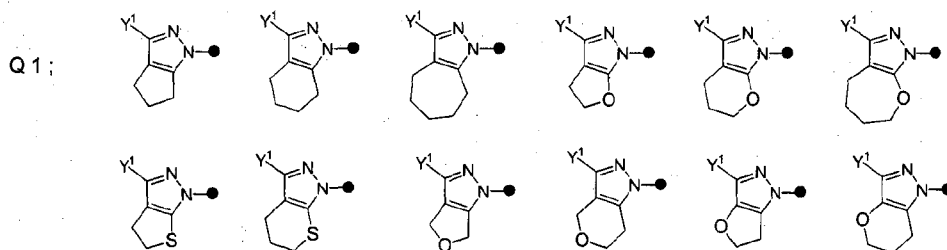


More preferred Q1 includes the following structure:

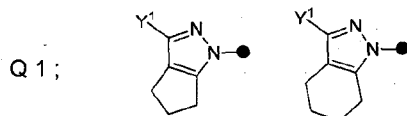


[0084]

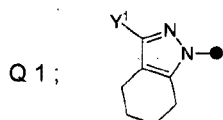
Y² and Y³ may combine each other together with the carbon atom to which they are attached to form a five-, six- or seven-membered saturated ring, and the saturated ring may optionally contain one or more oxygen atoms or sulfur atoms as the ring-constituent atom, and the saturated ring may optionally have one or more groups selected from Group P¹ as substituent. Examples of Q1 include the following structures:



In terms of a convenience of production, preferred Q1 includes the following structures:

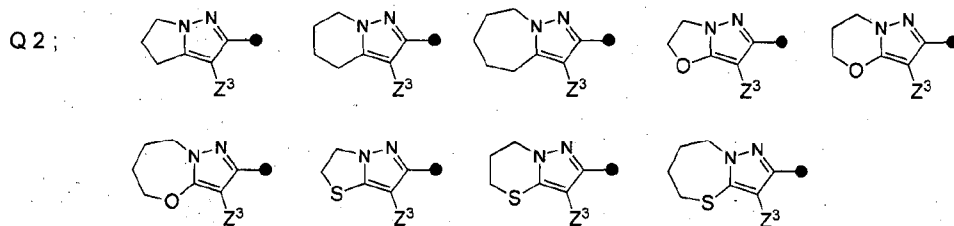


More preferred Q1 includes the following structure:

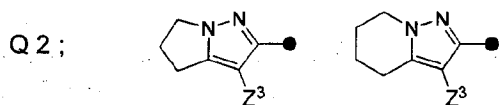


[0085]

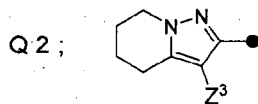
Z^1 and Z^2 may combine each other together with the carbon atom to which they are attached to form a five-, six- or seven-membered saturated ring, and the saturated ring may optionally contain one or more oxygen atoms or sulfur atoms as the ring-constituent atom, and the saturated ring may optionally have one or more groups selected from Group P^1 as substituent. Examples of Q2 include the following structures:



In terms of a convenience of production, preferred Q2 includes the following structures:



More preferred Q2 includes the following structures:

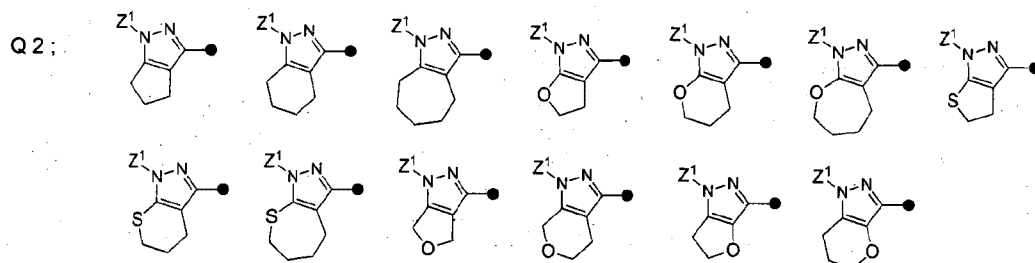


[0086]

Z^2 and Z^3 may combine each other together with the carbon atom to which they are attached to form a five-, six- or seven-membered saturated ring, and the saturated ring may optionally contain one or more oxygen atoms, sulfur atoms or nitrogen atoms as the ring-constituent atom,

and the saturated ring may optionally have one or more substituents selected from Group P¹ as substituent.

Examples of Q2 include the following structures:



5 [0087]

Examples of an embodiment of the present compound include the compounds of the formula (1) wherein the substituents represent the following ones.

[0088]

10 a compound of the formula (1) wherein R¹ represents a methyl group, an ethyl group, a propyl group or a butyl group;

a compound of the formula (1) wherein R¹ represents an ethynyl group, a 1-propynyl group, a 2-propynyl group, a 1-
15 butynyl group or a 2-butynyl group;

a compound of the formula (1) wherein R¹ represents a cyclopropyl group;

a compound of the formula (1) wherein R¹ represents a trifluoromethyl group;

20 a compound of the formula (1) wherein R¹ represents a fluorine atom, a chlorine atom, a bromine atom or an iodine

atom;

a compound of the formula (1) wherein R^2 represents a hydrogen atom or a fluorine atom;

5 a compound of the formula (1) wherein R^4 represents a hydrogen atom or a fluorine atom;

a compound of the formula (1) wherein R^5 represents a hydrogen atom or a fluorine atom;

a compound of the formula (1) wherein R^7 represents a hydrogen atom or a fluorine atom;

10 a compound of the formula (1) wherein R^8 represents a hydrogen atom or a fluorine atom;

a compound of the formula (1) wherein R^9 represents a hydrogen atom or a fluorine atom;

15 a compound of the formula (1) wherein R^{11} represents a hydrogen atom or a fluorine atom;

[0089]

a compound of the formula (1) wherein R^2 represents a hydrogen atom;

20 a compound of the formula (1) wherein R^4 represents a hydrogen atom;

a compound of the formula (1) wherein R^5 represents a hydrogen atom;

a compound of the formula (1) wherein R^7 represents a hydrogen atom;

25 a compound of the formula (1) wherein R^8 represents a

hydrogen atom;

a compound of the formula (1) wherein R⁹ represents a hydrogen atom;

5 a compound of the formula (1) wherein R¹¹ represents a hydrogen atom;

[0090]

a compound of the formula (1) wherein R⁶ represents an ethynyl group or a 1-propynyl group;

10 a compound of the formula (1) wherein R⁶ represents 3-fluoropropionyl group, a 3-chloropropynyl group, 3-bromopropynyl group, an 3-iodopropynyl group, a 3,3-difluoropropionyl group or a 3,3,3-trifluoropropionyl group;

15 a compound of the formula (1) wherein R⁶ represents a difluoromethoxy group, a trifluoromethoxy group, a 2,2-difluoroethoxy group, a 2,2,2-trifluoroethoxy group or a pentafluoroethoxy group;

a compound of the formula (1) wherein R⁶ represents a methylthio group or an ethylthio group;

20 a compound of the formula (1) wherein R⁶ represents a trifluoromethylthio group, a 2,2,2-trifluoroethylthio group, a 2,2,2-trichloromethylthio group or a pentafluoroethylthio group;

25 a compound of the formula (1) wherein R⁶ represents a cyclopropyl group, a cyclobutyl group or a cyclopentyl

group;

a compound of the formula (1) wherein R⁶ represents a
1-fluorocyclopropyl group, a 1-chlorocyclopropyl group, a
1-bromocyclopropyl group, a 2-fluorocyclopropyl group, a 2-
5 chlorocyclopropyl group, a 2-bromocyclopropyl group, a 2,2-
difluorocyclopropyl group, a 2,2-dichlorocyclopropyl group,
a 2,2-dibromocyclopropyl group, a 2,2,3,3-
tetrafluorocyclopropyl group, a 2,2,3,3-
tetrachlorocyclopropyl group or a 2,2,3,3-
10 tetrabromocyclopropyl group;

a compound of the formula (1) wherein R⁶ represents a
methyl group, an ethyl group, a propyl group, a butyl group
or an isobutyl group;

a compound of the formula (1) wherein R⁶ represents a
15 vinyl group, a 1-propenyl group or a 2-propenyl group;

a compound of the formula (1) wherein R⁶ represents a
methoxy group, an ethoxy group or a propyloxy group;

a compound of the formula (1) wherein R⁶ represents a
trifluoromethyl group, a difluoromethyl group, a
20 pentafluoroethyl group, a 3,3,3-trifluoroethyl group or a
2,2-difluoroethyl group;

a compound of the formula (1) wherein R⁶ represents a
fluorine atom, a chlorine atom, a bromine atom or an iodine
atom;

25 a compound of the formula (1) wherein R⁶ represents a

cyano group;

a compound of the formula (1) wherein R^3 represents a hydrogen atom;

5 a compound of the formula (1) wherein R^3 represents a methyl group, an ethyl group, a fluorine atom, a chlorine atom, a bromine atom or an iodine atom;

a compound of the formula (1) wherein R^{10} represents a methyl group, an ethyl group, a difluoromethyl group, a trifluoromethyl group or a 2,2-difluoroethyl group;

10 a compound of the formula (1) wherein R^{10} represents a methyl group;

a compound of the formula (1) wherein X represents an oxygen atom;

15 a compound of the formula (1) wherein X represents a sulfur atom;

[0091]

a compound of the formula (1) wherein A^1 and A^3 may be same or different from each other, and represent independently of each other a hydrogen atom, a halogen atom
20 or a cyano group;

a compound of the formula (1) wherein A^1 and A^3 may be same or different from each other, and represent independently of each other an C1-C6 alkyl group;

25 a compound of the formula (1) wherein A^1 and A^3 may be same or different from each other, and represent

independently of each other a C1-C6 haloalkyl group;

a compound of the formula (1) wherein A^2 and Z^4 may be same or different from each other, and represent independently of each other an C1-C6 alkyl group;

5 a compound of the formula (1) wherein A^2 and Z^4 may be same or different from each other, and represent independently of each other a C1-C6 haloalkyl group;

a compound of the formula (1) wherein A^2 and Z^4 may be same or different from each other, and represent
10 independently of each other an C1-C6 alkynyl group;

a compound of the formula (1) wherein A^2 and Z^4 may be same or different from each other, and represent independently of each other a C1-C6 haloalkynyl group;

a compound of the formula (1) wherein Z^1 represents an
15 C1-C6 alkyl group which may be optionally substituted with a group selected from Group P^1 ;

a compound of the formula (1) wherein Z^2 represents an C1-C6 alkyl group which may be optionally substituted with a group selected from Group P^1 ;

20 [0092]

a compound of the formula (1) wherein R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom;

a compound of the formula (1) wherein R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom and X represents an
25 oxygen atom;

a compound of the formula (1) wherein R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom and R^{10} represents a methyl group;

5 a compound of the formula (1) wherein R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^{10} represents a methyl group, and X represents an oxygen atom;

10 a compound of the formula (1) wherein R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^{10} represents a methyl group, X represents an oxygen atom and Q represents Q1 or Q2;

a compound of the formula (1) wherein R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^{10} represents a methyl group, X represents an oxygen atom and Q represents Q1, Q2 or Q4;

15 a compound of the formula (1) wherein R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^{10} represents a methyl group, X represents an oxygen atom and Q represents Q1;

20 a compound of the formula (1) wherein R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^{10} represents a methyl group, X represents an oxygen atom and Q represents Q2;

25 a compound of the formula (1) wherein R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^{10} represents a methyl group, X represents an oxygen atom and Q represents

Q3;

a compound of the formula (1) wherein R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^{10} represents a methyl group, X represents an oxygen atom and Q represents

5 Q4;

[0093]

a compound of the formula (1) wherein R^1 represents a halogen atom;

a compound of the formula (1) wherein R^1 represents an
10 C1-C3 alkyl group;

a compound of the formula (1) wherein R^1 represents a C1-C3 haloalkyl group;

a compound of the formula (1) wherein R^1 represents an C2-C3 alkynyl group;

15 a compound of the formula (1) wherein R^1 represents a C2-C3 haloalkynyl group;

a compound of the formula (1) wherein R^1 represents a C3-C5 cycloalkyl group;

a compound of the formula (1) wherein R^1 represents a
20 C3-C5 halocycloalkyl group;

a compound of the formula (1) wherein R^1 represents an C1-C3 alkoxy group;

a compound of the formula (1) wherein R^1 represents a C1-C3 haloalkoxy group;

25 a compound of the formula (1) wherein R^1 represents a

halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group;

5 a compound of the formula (1) wherein R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

a compound of the formula (1) wherein R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group;

[0094]

10 a compound of the formula (1) wherein R^3 represents a hydrogen atom;

a compound of the formula (1) wherein R^3 represents a halogen atom;

15 a compound of the formula (1) wherein R^3 represents an C1-C3 alkyl group;

a compound of the formula (1) wherein R^3 represents a C1-C3 haloalkyl group;

a compound of the formula (1) wherein R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group;

20 a compound of the formula (1) wherein R^3 represents a hydrogen atom, a chlorine atom or a methyl group;

a compound of the formula (1) wherein R^3 represents a hydrogen atom or a methyl group;

[0095]

25 a compound of the formula (1) wherein R^6 represents an

ethynyl group or a 1-propynyl group;

a compound of the formula (1) wherein R⁶ represents an C2-C3 alkynyl group;

5 a compound of the formula (1) wherein R⁶ represents a C2-C3 haloalkynyl group;

a compound of the formula (1) wherein R⁶ represents a C1-C4 haloalkoxy group;

a compound of the formula (1) wherein R⁶ represents an C1-C4 alkylthio group;

10 a compound of the formula (1) wherein R⁶ represents an C1-C4 haloalkylthio group;

a compound of the formula (1) wherein R⁶ represents a C3-C6 cycloalkyl group;

15 a compound of the formula (1) wherein R⁶ represents a C3-C6 halocycloalkyl group;

a compound of the formula (1) wherein R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group;

20 a compound of the formula (1) wherein R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group;

a compound of the formula (1) wherein R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a
25 cyclopropyl group;

[0096]

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a

difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q1,
5 R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4
10 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q1,
R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3
15 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4
20 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q1,
R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3
haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷,
25 R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a

hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a

hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen

atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

[0097]

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent

a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q1, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q1, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q1, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent

a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q1, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q1, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q1, R^1 represents a chlorine atom, a bromine atom, a methyl

group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q1, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q1, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

10 a compound of the formula (1) wherein Q represents Q1, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

15 a compound of the formula (1) wherein Q represents Q1, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

10 [0098]

a compound of the formula (1) wherein Q represents Q2, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

20 a compound of the formula (1) wherein Q represents Q2, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2

25

haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q2,
5 R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a
10 difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q2,
R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3
15 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6
20 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q2,
R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3
haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷,
25 R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a

hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q2, R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q2, R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q2, R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 ,

R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q2, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q2, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q2, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent

a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q2, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q2, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q2, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent

a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents
5 a methyl group, and X represents an oxygen atom;

[0099]

a compound of the formula (1) wherein Q represents Q2, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent
10 a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, and X represents an
15 oxygen atom;

a compound of the formula (1) wherein Q represents Q2, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent
20 a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q2,
25 R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-

C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q2, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q2, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q2, R^1 represents a chlorine atom, a bromine atom, a methyl

group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q2, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q2, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q2, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q2, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q2, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰

represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q₂,
R¹ represents a chlorine atom, a bromine atom, a methyl
group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵,
5 R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a
hydrogen atom or a methyl group, R⁶ represents an ethynyl
group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-
C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰
represents a methyl group, and X represents an oxygen atom;

10 a compound of the formula (1) wherein Q represents Q₂,
R¹ represents a chlorine atom, a bromine atom, a methyl
group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵,
R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a
hydrogen atom or a methyl group, R⁶ represents an ethynyl
15 group, a 1-propynyl group, a difluoromethoxy group, a
trifluoromethoxy group, a methylthio group or a cyclopropyl
group, R¹⁰ represents a methyl group, and X represents an
oxygen atom;

[0100]

20 a compound of the formula (1) wherein Q represents Q₃,
R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3
haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷,
R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a
hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶
25 represents an ethynyl group, a 1-propynyl group, a C1-C4

haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q3,
5 R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2
10 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q3,
R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3
15 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a
20 methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q3,
R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3
haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷,
25 R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a

hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q3, R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q3, R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q3, R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3

haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q3, R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q3, R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q3, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-

C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q3, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q3, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q3, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-

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C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q3, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

15 [0101]

a compound of the formula (1) wherein Q represents Q3, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

25 a compound of the formula (1) wherein Q represents Q3,

R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q3, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q3, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q3, R¹ represents a chlorine atom, a bromine atom, a methyl

group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q3, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q3, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q3, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q3, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q3, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a

methylthio group or a cyclopropyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q3, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q3, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q3, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl

group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

[0102]

a compound of the formula (1) wherein Q represents Q4,
5 R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4
10 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q4,
R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3
15 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4
20 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q4,
R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3
haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷,
25 R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a

hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q4, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q4, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q4, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3

haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q4, R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q4, R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q4, R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3

haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q4, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q4, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q4, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-

C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q4, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q4, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

[0103]

a compound of the formula (1) wherein Q represents Q4,

R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q4,
R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q4,
R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q4,

R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q4, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q4, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q4, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q4, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q4, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4

cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q4, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q4, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q4, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-

C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

a compound of the formula (1) wherein Q represents Q4, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, and X represents an oxygen atom;

[0104]

a compound of the formula (1) wherein Y¹ represents a hydrogen atom;

a compound of the formula (1) wherein Y¹ represents an C1-C6 alkyl group;

a compound of the formula (1) wherein Y¹ represents a C1-C6 haloalkyl group;

a compound of the formula (1) wherein Y¹ represents a C3-C6 cycloalkyl group;

a compound of the formula (1) wherein Y¹ represents a C3-C6 halocycloalkyl group;

a compound of the formula (1) wherein Y¹ represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group;

a compound of the formula (1) wherein Y^1 represents a hydrogen atom, an C1-C6 alkyl group or a C1-C6 haloalkyl group;

5 a compound of the formula (1) wherein Y^1 represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

a compound of the formula (1) wherein Y^1 represents a hydrogen atom, a methyl group, an ethyl group or a trifluoromethyl group;

10 a compound of the formula (1) wherein Y^2 represents a hydrogen atom;

a compound of the formula (1) wherein Y^2 represents a halogen atom;

15 a compound of the formula (1) wherein Y^2 represents an C1-C6 alkyl group;

a compound of the formula (1) wherein Y^2 represents a C1-C6 haloalkyl group;

a compound of the formula (1) wherein Y^2 represents an C1-C3 alkynyl group;

20 a compound of the formula (1) wherein Y^2 represents an C1-C6 alkoxy group;

a compound of the formula (1) wherein Y^2 represents a C1-C6 haloalkoxy group;

25 a compound of the formula (1) wherein Y^2 represents a C3-C6 cycloalkyl group;

a compound of the formula (1) wherein Y² represents a C3-C6 halocycloalkyl group;

a compound of the formula (1) wherein Y¹ and Y² connect via a divalent straight saturated carbon chain to form a five-membered or six-membered ring;

a compound of the formula (1) wherein Y¹ and Y² connect to each other to represent -CH₂-CH₂-CH₂- or -CH₂-CH₂-CH₂-CH₂-, which combines together with the carbon atoms to which Y¹ and Y² are attached to form a five-membered or six-membered ring;

[0105]

a compound of the formula (1) wherein Y² represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C1-C3 alkynyl group, an C1-C6 alkoxy group or a C3-C6 cycloalkyl group;

a compound of the formula (1) wherein Y² represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group, an C1-C3 alkynyl group, an C1-C3 alkoxy group or a C3-C4 cycloalkyl group;

a compound of the formula (1) wherein Y² represents a hydrogen atom, a fluorine atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group, a propyl group, an isopropyl group, an ethynyl group, a 1-propynyl group, a trifluoromethyl group, a difluoromethyl group, a methoxy group, an ethoxy group or a cyclopropyl group;

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a compound of the formula (1) wherein Y^3 represents a hydrogen atom;

a compound of the formula (1) wherein Y^3 represents an C1-C4 alkyl group;

5 a compound of the formula (1) wherein Y^3 represents a C1-C4 haloalkyl group;

a compound of the formula (1) wherein Y^3 represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

10 a compound of the formula (1) wherein Y^3 represents a hydrogen atom, a methyl group or an ethyl group;

a compound of the formula (1) wherein Y^2 and Y^3 connect via a divalent straight saturated carbon chain to form a five-membered or six-membered ring;

15 a compound of the formula (1) wherein Y^2 and Y^3 connect to each other to represent $-\text{CH}_2-\text{CH}_2-\text{CH}_2-$ or $-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{CH}_2-$, which combines together with the carbon atoms to which Y^1 and Y^2 are attached to form a five-membered or six-membered ring;

20 [0106]

a compound of the formula (1) wherein Q represents Q1, R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6

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represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C2-C3 alkynyl group, an C1-C6 alkoxy group or a C3-C6 cycloalkyl group, Y³ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C2-C3 alkynyl group, an C1-C6 alkoxy group or a C3-C6 cycloalkyl group, alternatively Y¹ and Y² connect via a divalent straight saturated carbon chain to form a five-

membered or six-membered ring, and Y^3 represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, alternatively Y^2 and Y^3 connect via a divalent straight saturated carbon chain to form a five-membered or six-membered ring;

a compound of the formula (1) wherein Q represents Q1, R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, X represents an oxygen atom, Y^1 represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, Y^2 represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C2-C3 alkynyl group, an C1-C6 alkoxy group or a C3-C6 cycloalkyl group, Y^3 represents a hydrogen atom, a methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q1, R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6

represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, X represents an oxygen atom, Y^1 represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, Y^2 represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group, an C2-C3 alkynyl group, an C1-C3 alkoxy group or an C3-C4 cycloalkyl group, and Y^3 represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

a compound of the formula (1) wherein Q represents Q1, R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, X represents an oxygen atom, Y^1 represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, Y^2 represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group, an C2-C3 alkynyl group, an C1-C3 alkoxy group or an C3-C4 cycloalkyl group, and Y^3 represents a hydrogen atom, a methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, Y² represents a hydrogen atom, a fluorine atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group, a propyl group, an isopropyl group, an ethynyl group, 1-propynyl group, a trifluoromethyl group, a difluoromethyl group, a methoxy group, an ethoxy group or a cyclopropyl group, and Y³ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X

represents an oxygen atom, Y^1 represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, Y^2 represents a hydrogen atom, a fluorine atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group, a propyl group, an isopropyl group, an ethynyl group, 1-propynyl group, a trifluoromethyl group, a difluoromethyl group, a methoxy group, an ethoxy group or cyclopropyl group, and Y^3 represents a hydrogen atom, a methyl group or an ethyl group;

10 [0107]

a compound of the formula (1) wherein Q represents Q1, R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, X represents an oxygen atom, Y^1 represents a hydrogen atom, an C1-C6 alkyl group or a C1-C6 haloalkyl group, Y^2 represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C2-C3 alkynyl group, an C1-C6 alkoxy group or a C3-C6 cycloalkyl group, and Y^3 represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

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a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C6 alkyl group or a C1-C6 haloalkyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C2-C3 alkynyl group, an C1-C6 alkoxy group or a C3-C6 cycloalkyl group, and Y³ represents a hydrogen atom, a methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C6 alkyl group or a C1-C6 haloalkyl group, Y²

represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group, an C2-C3 alkynyl group, an C1-C3 alkoxy group or a C3-C4 cycloalkyl group, and Y³ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

a compound of the formula (1) wherein Q represents Q¹, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C6 alkyl group or a C1-C6 haloalkyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group, an C2-C3 alkynyl group, an C1-C3 alkoxy group or a C3-C4 cycloalkyl group, and Y³ represents a hydrogen atom, a methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q¹, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶

represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C6 alkyl group or a C1-C6 haloalkyl group, Y² represents a hydrogen atom, a fluorine atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group, a propyl group, an isopropyl group, an ethynyl group, 1-propynyl group, a trifluoromethyl group, a difluoromethyl group, a methoxy group, an ethoxy group or a cyclopropyl group, and Y³ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C6 alkyl group or a C1-C6 haloalkyl group, Y² represents a hydrogen atom, a fluorine atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group, a propyl group, an isopropyl group, an ethynyl group, 1-

propynyl group, a trifluoromethyl group, a difluoromethyl group, a methoxy group, an ethoxy group or a cyclopropyl group, and Y³ represents a hydrogen atom, a methyl group or an ethyl group;

5 [0108]

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a
10 hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom,
15 an C1-C3 alkyl group or a C1-C3 haloalkyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C2-C3 alkynyl group, an C1-C6 alkoxy group or a C3-C6 cycloalkyl group, and Y³ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3
20 haloalkyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a
25 hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶

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represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom,
5 an C1-C3 alkyl group or a C1-C3 haloalkyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C2-C3 alkynyl group, an C1-C6 alkoxy group or a C3-C6 cycloalkyl group, and Y³ represents a hydrogen atom, a methyl group or an ethyl
10 group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a
15 hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom,
20 an C1-C3 alkyl group or a C1-C3 haloalkyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group, an C2-C3 alkynyl group, an C1-C3 alkoxy group or a C3-C4 cycloalkyl group, and Y³ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3
25 haloalkyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group, an C2-C3 alkynyl group, an C1-C3 alkoxy group or a C3-C4 cycloalkyl group, Y³ represents a hydrogen atom, a methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, Y²

represents a hydrogen atom, a fluorine atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group, a propyl group, an isopropyl group, an ethynyl group, a 1-propynyl group, a trifluoromethyl group, a difluoromethyl group, a methoxy group, an ethoxy group or a cyclopropyl group, and Y³ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, Y² represents a hydrogen atom, a fluorine atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group, a propyl group, an isopropyl group, an ethynyl group, a 1-propynyl group, a trifluoromethyl group, a difluoromethyl group, a methoxy group, an ethoxy group or a cyclopropyl group, and Y³ represents a hydrogen atom, a methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, a methyl group, an ethyl group or a trifluoromethyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C2-C3 alkynyl group, an C1-C6 alkoxy group or a C3-C6 cycloalkyl group, and Y³ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, a methyl group, an ethyl group or a trifluoromethyl group, Y²

represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C2-C3 alkynyl group, an C1-C6 alkoxy group or a C3-C6 cycloalkyl group, and Y³ represents a hydrogen atom, a methyl group or an ethyl group;

5 a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a
10 hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, a
15 methyl group, an ethyl group or a trifluoromethyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group, an C1-C3 alkynyl group, an C1-C3 alkoxy group or a C3-C4 cycloalkyl group, and Y³ represents an C1-C3 alkyl group or a C1-C3 haloalkyl group;

20 a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶
25 represents an ethynyl group, a 1-propynyl group, a C1-C4

haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, X represents an oxygen atom, Y^1 represents a hydrogen atom, a methyl group, an ethyl group or a trifluoromethyl group, Y^2 represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group, an C2-C3 alkynyl group, an C1-C3 alkoxy group or a C3-C4 cycloalkyl group, and Y^3 represents a hydrogen atom, a methyl group or an ethyl group;

10 a compound of the formula (1) wherein Q represents Q1, R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, X represents an oxygen atom, Y^1 represents a hydrogen atom, a methyl group, an ethyl group or a trifluoromethyl group, Y^2 represents a hydrogen atom, a fluorine atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group, a propyl group, an isopropyl group, an ethynyl group, a 1-propynyl group, a trifluoromethyl group, a difluoromethyl group, a methoxy group, an ethoxy group or a cyclopropyl group, and Y^3 represents a hydrogen atom, an C1-C3 alkyl

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group or a C1-C3 haloalkyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, a methyl group, an ethyl group or a trifluoromethyl group, Y² represents a hydrogen atom, a fluorine atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group, a propyl group, an isopropyl group, an ethynyl group, a 1-propynyl group, a trifluoromethyl group, a difluoromethyl group, a methoxy group, an ethoxy group or a cyclopropyl group, and Y³ represents a hydrogen atom, a methyl group or an ethyl group;

[0110]

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2

alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C2-C3 alkynyl group, an C1-C6 alkoxy group or a C3-C6 cycloalkyl group, and Y³ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

10 a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a
15 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C2-C3 alkynyl group, an C1-C6 alkoxy group or a C3-C6 cycloalkyl group, and Y³ represents a
20 hydrogen atom, a methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q1,
25 R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-

C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents a methyl group, X represents an oxygen atom, Y^1 represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, Y^2 represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group, an C2-C3 alkynyl group, an C1-C3 alkoxy group or a C3-C4 cycloalkyl group, and Y^3 represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

a compound of the formula (1) wherein Q represents Q1, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents a methyl group, X represents an oxygen atom, Y^1 represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, Y^2 represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group, an C2-C3 alkynyl group, an C1-C3 alkoxy

group or a C3-C4 cycloalkyl group, and Y³ represents a hydrogen atom, a methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, Y² represents a hydrogen atom, a fluorine atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group, a propyl group, an isopropyl group, an ethynyl group, a 1-propynyl group, a trifluoromethyl group, a difluoromethyl group, a methoxy group, an ethoxy group or a cyclopropyl group, and Y³ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2

alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, Y² represents a hydrogen atom, a fluorine atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group, a propyl group, an isopropyl group, an ethynyl group, a 1-propynyl group, a trifluoromethyl group, a difluoromethyl group, a methoxy group, an ethoxy group or a cyclopropyl group, and Y³ represents a hydrogen atom, a methyl group or an ethyl group;

[0111]

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C6 alkyl group or a C1-C6 haloalkyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C2-C3 alkynyl group, an C1-C6 alkoxy group or a C3-C6 cycloalkyl group, and Y³ represents a hydrogen atom, an C1-C3 alkyl

group or a C1-C3 haloalkyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent
5 a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents
10 a hydrogen atom, an C1-C6 alkyl group or a C1-C6 haloalkyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C2-C3 alkynyl group, an C1-C6 alkoxy group or a C3-C6 cycloalkyl group, and Y³ represents a hydrogen atom, a methyl group or
15 an ethyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent
20 a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C6 alkyl group or a C1-C6 haloalkyl
25 group, Y² represents a hydrogen atom, a halogen atom, an

C1-C3 alkyl group, a C1-C3 haloalkyl group, an C2-C3 alkynyl group, an C1-C3 alkoxy group or a C3-C4 cycloalkyl group, and Y³ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

5 a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a
10 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C6 alkyl group or a C1-C6 haloalkyl group, Y² represents a hydrogen atom, a halogen atom, an
15 C1-C3 alkyl group, a C1-C3 haloalkyl group, an C2-C3 alkynyl group, an C1-C3 alkoxy group or a C3-C4 cycloalkyl group, and Y³ represents a hydrogen atom, a methyl group or an ethyl group;

[0112]

20 a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a
25 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2

alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C6 alkyl group or a C1-C6 haloalkyl group, Y² represents a hydrogen atom, a fluorine atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group, a propyl group, an isopropyl group, an ethynyl group, a 1-propynyl group, a trifluoromethyl group, a difluoromethyl group, a methoxy group, an ethoxy group or a cyclopropyl group, and Y³ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C6 alkyl group or a C1-C6 haloalkyl group, Y² represents a hydrogen atom, a fluorine atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group, a propyl group, an isopropyl group, an ethynyl group, a 1-propynyl group, a trifluoromethyl group, a difluoromethyl group, a methoxy group, an ethoxy group or a cyclopropyl group, Y³ represents a hydrogen atom, a methyl

group or an ethyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent
5 a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents
10 a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C2-C3 alkynyl group, an C1-C6 alkoxy group or a C3-C6 cycloalkyl group, and Y³ represents a hydrogen atom, an C1-C3 alkyl
15 group or a C1-C3 haloalkyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent
20 a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents
25 a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, Y² represents a hydrogen atom, a halogen atom, an

C1-C6 alkyl group, a C1-C6 haloalkyl group, an C2-C3 alkynyl group, an C1-C6 alkoxy group or a C3-C6 cycloalkyl group, and Y³ represents a hydrogen atom, a methyl group or an ethyl group;

5 [0113]

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 10 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, Y² represents a hydrogen atom, a halogen atom, an 15 C1-C3 alkyl group, a C1-C3 haloalkyl group, an C2-C3 alkynyl group, an C1-C3 alkoxy group or a C3-C4 cycloalkyl group, and Y³ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

20 a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 25 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2

alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group, an C1-C3 alkynyl group, an C1-C3 alkoxy group or a C3-C4 cycloalkyl group, and Y³ represents a hydrogen atom, a methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, Y² represents a hydrogen atom, a fluorine atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group, a propyl group, an isopropyl group, an ethynyl group, a 1-propynyl group, a trifluoromethyl group, a difluoromethyl group, a methoxy group, an ethoxy group or a cyclopropyl group, and Y³ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

a compound of the formula (1) wherein Q represents Q1,

R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C3 alkyl group or an C1-C3 haloalkyl group, Y² represents a hydrogen atom, a fluorine atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group, a propyl group, an isopropyl group, an ethynyl group, a 1-propynyl group, a trifluoromethyl group, a difluoromethyl group, a methoxy group, an ethoxy group or a cyclopropyl group, and Y³ represents a hydrogen atom, a methyl group or an ethyl group;

[0114]

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, a methyl group, an ethyl group or a

trifluoromethyl group, Y^2 represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C2-C3 alkynyl group, an C1-C6 alkoxy group or a C3-C6 cycloalkyl group, and Y^3 represents a hydrogen atom, an C1-C3 alkyl group or an C1-C3 haloalkyl group;

a compound of the formula (1) wherein Q represents Q1, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents a methyl group, X represents an oxygen atom, Y^1 represents a hydrogen atom, a methyl group, an ethyl group or a trifluoromethyl group, Y^2 represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C2-C3 alkynyl group, an C1-C6 alkoxy group or a C3-C6 cycloalkyl group, and Y^3 represents a hydrogen atom, a methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q1, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2

alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, a methyl group, an ethyl group or a trifluoromethyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group, an C1-C3 alkynyl group, an C1-C3 alkoxy group or a C3-C4 cycloalkyl group, and Y³ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, a methyl group, an ethyl group or a trifluoromethyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group, an C1-C3 alkynyl group, an C1-C3 alkoxy group or a C3-C4 cycloalkyl group, and Y³ represents a hydrogen atom, a methyl group or an ethyl group;

[0115]

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-

C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents a methyl group, X represents an oxygen atom, Y^1 represents a hydrogen atom, a methyl group, an ethyl group or a trifluoromethyl group, Y^2 represents a hydrogen atom, a fluorine atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group, a propyl group, an isopropyl group, an ethynyl group, a 1-propynyl group, a trifluoromethyl group, a difluoromethyl group, a methoxy group, an ethoxy group or cyclopropyl group, and Y^3 represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

15 a compound of the formula (1) wherein Q represents Q1, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents a methyl group, X represents an oxygen atom, Y^1 represents a hydrogen atom, a methyl group, an ethyl group or a trifluoromethyl group, Y^2 represents a hydrogen atom, a fluorine atom, a chlorine atom, a bromine atom, a methyl

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group, an ethyl group, a propyl group, an isopropyl group, an ethynyl group, a 1-propynyl group, a trifluoromethyl group, a difluoromethyl group, a methoxy group, an ethoxy group or cyclopropyl group, and Y³ represents a hydrogen atom, a methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C2-C3 alkynyl group, an C1-C6 alkoxy group or a C3-C6 cycloalkyl group, and Y³ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3haloalkyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl

group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, X represents an oxygen atom, Y^1 represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, Y^2 represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C2-C3 alkynyl group, an C1-C6 alkoxy group or a C3-C6 cycloalkyl group, and Y^3 represents a hydrogen atom, a methyl group or an ethyl group;

[0116]

a compound of the formula (1) wherein Q represents Q1, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, X represents an oxygen atom, Y^1 represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, Y^2 represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group, an C2-C3 alkynyl group, an C1-C3 alkoxy group or a C3-C4 cycloalkyl group, and Y^3 represents a hydrogen atom, an C1-C3 alkyl group or

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a C1-C3 haloalkyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group, an C2-C3 alkynyl group, an C1-C3 alkoxy group or a C3-C4 cycloalkyl group, and Y³ represents a hydrogen atom, a methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C6 alkyl

group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, Y² represents a hydrogen atom, a fluorine atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group, a propyl group, an isopropyl group, an ethynyl group, a 1-propynyl group, a trifluoromethyl group, a difluoromethyl group, a methoxy group, an ethoxy group or a cyclopropyl group, and Y³ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, Y² represents a hydrogen atom, a fluorine atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group, a propyl group, an isopropyl group, an ethynyl group, a 1-propynyl group, a trifluoromethyl group, a difluoromethyl group, a methoxy group, an ethoxy group or a cyclopropyl group, and Y³ represents a hydrogen atom, a methyl group or an ethyl group;

[0117]

a compound of the formula (1) wherein Q represents Q1, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵,
5 R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, X represents an
10 oxygen atom, Y¹ represents a hydrogen atom, an C1-C6 alkyl group or a C1-C6 haloalkyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C2-C3 alkynyl group, an C1-C6 alkoxy group or a C3-C6 cycloalkyl group, and Y³ represents a
15 hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵,
20 R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, X represents an
25 oxygen atom, Y¹ represents a hydrogen atom, an C1-C6 alkyl

group or a C1-C6 haloalkyl group, Y^2 represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C2-C3 alkynyl group, an C1-C6 alkoxy group or a C3-C6 cycloalkyl group, and Y^3 represents a
5 hydrogen atom, a methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q1, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a
10 hydrogen atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, X represents an oxygen atom, Y^1 represents a hydrogen atom, an C1-C6 alkyl
15 group or a C1-C6 haloalkyl group, Y^2 represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group, an C1-C3 alkynyl group, an C1-C3 alkoxy group or a C3-C4 cycloalkyl group, and Y^3 represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl
20 group;

a compound of the formula (1) wherein Q represents Q1, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a
25 hydrogen atom or a methyl group, R^6 represents an ethynyl

group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, X represents an oxygen atom, Y^1 represents a hydrogen atom, an C1-C6 alkyl group or a C1-C6 haloalkyl group, Y^2 represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group, an C2-C3 alkynyl group, an C1-C3 alkoxy group or a C3-C4 cycloalkyl group, and Y^3 represents a hydrogen atom, a methyl group or an ethyl group;

10 [0118]

a compound of the formula (1) wherein Q represents Q1, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, X represents an oxygen atom, Y^1 represents a hydrogen atom, an C1-C6 alkyl group or a C1-C6 haloalkyl group, Y^2 represents a hydrogen atom, a fluorine atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group, a propyl group, an isopropyl group, an ethynyl group, a 1-propynyl group, a trifluoromethyl group, a difluoromethyl group, a methoxy group, an ethoxy group or a cyclopropyl group, and Y^3

represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C6 alkyl group or a C1-C6 haloalkyl group, Y² represents a hydrogen atom, a fluorine atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group, a propyl group, an isopropyl group, an ethynyl group, a 1-propynyl group, a trifluoromethyl group, a difluoromethyl group, a methoxy group, an ethoxy group or a cyclopropyl group, and Y³ represents a hydrogen atom, a methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a

trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C2-C3 alkynyl group, an C1-C6 alkoxy group or a C3-C6 cycloalkyl group, and Y³ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C2-C3 alkynyl group, an C1-C6 alkoxy group or a C3-C6 cycloalkyl group, and Y³ represents a hydrogen atom, a methyl group or an ethyl group;

[0119]

a compound of the formula (1) wherein Q represents Q1,

R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group, an C2-C3 alkynyl group, an C1-C3 alkoxy group or a C3-C4 cycloalkyl group, and Y³ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group, a C1-C3

haloalkyl group, an C2-C3 alkynyl group, an C1-C3 alkoxy group or a C3-C4 cycloalkyl group, and Y^3 represents a hydrogen atom, a methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q1,
5 R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a
10 trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, X represents an oxygen atom, Y^1 represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, Y^2 represents a hydrogen atom, a fluorine atom, a chlorine atom, a bromine atom, a
15 methyl group, an ethyl group, a propyl group, an isopropyl group, an ethynyl group, a 1-propynyl group, a trifluoromethyl group, a difluoromethyl group, a methoxy group, an ethoxy group or a cyclopropyl group, and Y^3 represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3
20 haloalkyl group;

a compound of the formula (1) wherein Q represents Q1,
 R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a
25 hydrogen atom or a methyl group, R^6 represents an ethynyl

group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, X represents an oxygen atom, Y^1 represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, Y^2 represents a hydrogen atom, a fluorine atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group, a propyl group, an isopropyl group, an ethynyl group, a 1-propynyl group, a trifluoromethyl group, a difluoromethyl group, a methoxy group, an ethoxy group or a cyclopropyl group, and Y^3 represents a hydrogen atom, a methyl group or an ethyl group;

[0120]

a compound of the formula (1) wherein Q represents Q1, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, X represents an oxygen atom, Y^1 represents a hydrogen atom, a methyl group, an ethyl group or a trifluoromethyl group, Y^2 represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C2-C3 alkynyl group, an C1-C6 alkoxy

group or a C3-C6 cycloalkyl group, and Y³ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

a compound of the formula (1) wherein Q represents Q1,
5 R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a
10 trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, a methyl group, an ethyl group or a trifluoromethyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-
15 C6 haloalkyl group, an C2-C3 alkynyl group, an C1-C6 alkoxy group or a C3-C6 cycloalkyl group, and Y³ represents a hydrogen atom, a methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q1,
R¹ represents a chlorine atom, a bromine atom, a methyl
20 group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a
trifluoromethoxy group, a methylthio group or a cyclopropyl
25 group, R¹⁰ represents a methyl group, X represents an

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oxygen atom, Y¹ represents a hydrogen atom, a methyl group, an ethyl group or a trifluoromethyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group, an C2-C3 alkynyl group, an C1-C3 alkoxy group or a C3-C4 cycloalkyl group, and Y³ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, a methyl group, an ethyl group or a trifluoromethyl group, Y² represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group, an C2-C3 alkynyl group, an C1-C3 alkoxy group or a C3-C4 cycloalkyl group, and Y³ represents a hydrogen atom, a methyl group or an ethyl group;

[0121]

a compound of the formula (1) wherein Q represents Q1, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵,

R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, a methyl group, an ethyl group or a trifluoromethyl group, Y² represents a hydrogen atom, a fluorine atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group, a propyl group, an isopropyl group, an ethynyl group, a 1-propynyl group, a trifluoromethyl group, a difluoromethyl group, a methoxy group, an ethoxy group or a cyclopropyl group, and Y³ represents a hydrogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

15 a compound of the formula (1) wherein Q represents Q1, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, a methyl group, an ethyl group or a trifluoromethyl group, Y² represents a hydrogen atom, a fluorine atom, a chlorine atom, a bromine

atom, a methyl group, an ethyl group, a propyl group, an isopropyl group, an ethynyl group, a 1-propynyl group, a trifluoromethyl group, a difluoromethyl group, a methoxy group, an ethoxy group or a cyclopropyl group, and Y³ represents a hydrogen atom, a methyl group or an ethyl group, alternatively Y¹ and Y² connect to each other to represent -CH₂-CH₂-CH₂- or -CH₂-CH₂-CH₂-CH₂-, which combines together with the carbon atoms to which Y¹ and Y² are attached to form a five-membered or six-membered ring, or Y² and Y³ connect to each other to represent -CH₂-CH₂-CH₂- or -CH₂-CH₂-CH₂-CH₂-, which combines together with the carbon atoms to which Y² and Y³ are attached to form a five-membered or six-membered ring;

a compound of the formula (1) wherein Q represents Q1, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom, a methyl group, an ethyl group or a trifluoromethyl group, Y² represents a hydrogen atom, a fluorine atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group, a propyl group, an

isopropyl group, an ethynyl group, a 1-propynyl group, a trifluoromethyl group, a difluoromethyl group, a methoxy group, an ethoxy group or a cyclopropyl group, and Y³ represents a hydrogen atom, a methyl group or an ethyl group;

[0122]

a compound of the formula (1) wherein Z¹ represents an C1-C6 alkyl group;

a compound of the formula (1) wherein Z¹ represents a C1-C6 haloalkyl group;

a compound of the formula (1) wherein Z¹ represents an C3-C6 alkynyl group;

a compound of the formula (1) wherein Z¹ represents a C3-C6 haloalkynyl group;

a compound of the formula (1) wherein Z¹ represents a C3-C6 cycloalkyl group;

a compound of the formula (1) wherein Z¹ represents a C4-C7 cycloalkylmethyl group;

a compound of the formula (1) wherein Z¹ represents an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C3-C6 alkynyl group or a C4-C7 cycloalkylmethyl group;

a compound of the formula (1) wherein Z¹ represents an C1-C4 alkyl group, a C1-C3 haloalkyl group, an C3-C4 alkynyl group or a cyclopropylmethyl group;

a compound of the formula (1) wherein Z¹ represents a

methyl group, an ethyl group, a propyl group, an isopropyl group, a difluoromethyl group, a trifluoromethyl group, a 2-propynyl group, a 2-butyryl group or a cyclopropylmethyl group;

5 [0123]

a compound of the formula (1) wherein Z^2 represents a hydrogen atom;

a compound of the formula (1) wherein Z^2 represents a halogen atom;

10 a compound of the formula (1) wherein Z^2 represents an C1-C6 alkyl group;

a compound of the formula (1) wherein Z^2 represents a C1-C6 haloalkyl group;

15 a compound of the formula (1) wherein Z^2 represents a C3-C6 cycloalkyl group;

a compound of the formula (1) wherein Z^2 represents an C1-C6 alkoxy group;

a compound of the formula (1) wherein Z^2 represents a C1-C6 haloalkoxy group;

20 a compound of the formula (1) wherein Z^2 represents an C2-C6 alkynyl group;

a compound of the formula (1) wherein Z^2 represents a C2-C6 haloalkynyl group;

25 a compound of the formula (1) wherein Z^2 represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl

group or a C3-C6 cycloalkyl group;

a compound of the formula (1) wherein Z^2 represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group;

5 a compound of the formula (1) wherein Z^2 represents a hydrogen atom, a methyl group, an ethyl group, an isopropyl group or a cyclopropyl group;

[0124]

10 a compound of the formula (1) wherein Z^3 represents a hydrogen atom;

a compound of the formula (1) wherein Z^3 represents a halogen atom;

a compound of the formula (1) wherein Z^3 represents an C1-C6 alkyl group;

15 a compound of the formula (1) wherein Z^3 represents a C1-C6 haloalkyl group;

a compound of the formula (1) wherein Z^3 represents a C3-C6 cycloalkyl group;

20 a compound of the formula (1) wherein Z^3 represents an C1-C6 alkoxy group;

a compound of the formula (1) wherein Z^3 represents a C1-C6 haloalkoxy group;

a compound of the formula (1) wherein Z^3 represents an C2-C6 alkynyl group;

25 a compound of the formula (1) wherein Z^3 represents a

C2-C6 haloalkynyl group;

a compound of the formula (1) wherein Z^3 represents a hydrogen atom, a C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group;

5 a compound of the formula (1) wherein Z^3 represents a hydrogen atom, a methyl group or an ethyl group;

[0125]

a compound of the formula (1) wherein Q represents Q2, R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, X represents an oxygen atom, Z^1 represents an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C3-C6 alkynyl group or a C4-C7 cycloalkylmethyl group, Z^2 represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, and Z^3 represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group;

a compound of the formula (1) wherein Q represents Q2, R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 ,

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R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C3-C6 alkynyl group or a C4-C7 cycloalkylmethyl group, Z² represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, and Z³ represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group, alternatively Z¹ and Z² connect via a divalent straight saturated carbon chain to form a five- or six-membered ring;

15 a compound of the formula (1) wherein Q represents Q2, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C3-C6 alkynyl group or a C4-C7 cycloalkylmethyl group, Z² represents a hydrogen atom,

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an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, and Z³ represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group, alternatively Z¹ and Z² connect via a divalent
5 straight saturated carbon chain to form a five- or six-membered ring;

a compound of the formula (1) wherein Q represents Q2, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷,
10 R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X
15 represents an oxygen atom, Z¹ represents an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C3-C6 alkynyl group or a C4-C7 cycloalkylmethyl group, Z² represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, and Z³ represents a hydrogen atom, a
20 methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q2, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷,
R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a
25 hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶

represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, X represents an oxygen atom, Z^1 represents an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C3-C6 alkynyl group or a C4-C7 cycloalkylmethyl group, Z^2 represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group, and Z^3 represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group;

[0126]

a compound of the formula (1) wherein Q represents Q2, R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, X represents an oxygen atom, Z^1 represents an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C3-C6 alkynyl group or a C4-C7 cycloalkylmethyl group, Z^2 represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group, and Z^3 represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl

group;

a compound of the formula (1) wherein Q represents Q₂, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C3-C6 alkynyl group or a C4-C7 cycloalkylmethyl group, Z² represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group, and Z³ represents a hydrogen atom, a methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q₂, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C3-C6 alkynyl group or a

C4-C7 cycloalkylmethyl group, Z^2 represents a hydrogen atom, a methyl group, an ethyl group, an isopropyl group or a cyclopropyl group, and Z^3 represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group;

a compound of the formula (1) wherein Q represents Q2, R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, X represents an oxygen atom, Z^1 represents an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C3-C6 alkynyl group or a C4-C7 cycloalkylmethyl group, Z^2 represents a hydrogen atom, a methyl group, an ethyl group, an isopropyl group or a cyclopropyl group, and Z^3 represents a hydrogen atom, a methyl group or an ethyl group;

[0127]

a compound of the formula (1) wherein Q represents Q2, R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6

represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, X represents an oxygen atom, Z^1 represents an C1-C4 alkyl group, a C1-C3 haloalkyl group, an C3-C4 alkynyl group or a cyclopropylmethyl group, Z^2 represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, and Z^3 represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group;

a compound of the formula (1) wherein Q represents Q2, R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, X represents an oxygen atom, Z^1 represents an C1-C4 alkyl group, a C1-C3 haloalkyl group, an C3-C4 alkynyl group or a cyclopropylmethyl group, Z^2 represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, and Z^3 represents a hydrogen atom, a methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q2,

R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents an C1-C4 alkyl group, a C1-C3 haloalkyl group, an C3-C4 alkynyl group or a cyclopropylmethyl group, Z² represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group, and Z³ represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group;

a compound of the formula (1) wherein Q represents Q2,

R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents an C1-C4 alkyl group, a C1-C3 haloalkyl group, an C3-C4 alkynyl group or a cyclopropylmethyl group, Z² represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl

group, and Z^3 represents a hydrogen atom, a methyl group or an ethyl group;

[0128]

a compound of the formula (1) wherein Q represents Q2,
5 R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4
10 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, X represents an oxygen atom, Z^1 represents an C1-C4 alkyl group, a C1-C3 haloalkyl group, an C3-C4 alkynyl group or a cyclopropylmethyl group, Z^2 represents a hydrogen atom, a
15 methyl group, an ethyl group, a isopropyl group or a cyclopropyl group, and Z^3 represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group;

a compound of the formula (1) wherein Q represents Q2,
20 R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4
25 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6

cycloalkyl group, R^{10} represents a methyl group, X represents an oxygen atom, Z^1 represents an C1-C4 alkyl group, a C1-C3 haloalkyl group, an C3-C4 alkynyl group or a cyclopropylmethyl group, Z^2 represents a hydrogen atom, a methyl group, an ethyl group, a isopropyl group or a cyclopropyl group, and Z^3 represents a hydrogen atom, a methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q2, R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, X represents an oxygen atom, Z^1 represents a methyl group, an ethyl group, a propyl group, an isopropyl group, a difluoromethyl group, a trifluoromethyl group, a 2-propenyl group, a 2-butenyl group or a cyclopropylmethyl group, Z^2 represents a hydrogen atom, an C1-C6 alkyl group, a C1-C3 haloalkyl group or a C3-C6 cycloalkyl group, and Z^3 represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group;

a compound of the formula (1) wherein Q represents Q2, R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3

haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, X represents an oxygen atom, Z^1 represents a methyl group, an ethyl group, a propyl group, an isopropyl group, a difluoromethyl group, a trifluoromethyl group, a 2-propenyl group, a 2-butyryl group or a cyclopropylmethyl group, Z^2 represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, and Z^3 represents a hydrogen atom, a methyl group or an ethyl group;

15 [0129]

a compound of the formula (1) wherein Q represents Q2, R^1 represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or an C1-C3 alkyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R^{10} represents a methyl group, X represents an oxygen atom, Z^1 represents a methyl group, an ethyl group, a propyl group, an isopropyl group, a

difluoromethyl group, a trifluoromethyl group, a 2-propenyl group, a 2-butyryl group or a cyclopropylmethyl group, Z² represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group, and Z³ represents a
5 hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group;

a compound of the formula (1) wherein Q represents Q2, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷,
10 R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X
15 represents an oxygen atom, Z¹ represents a methyl group, an ethyl group, a propyl group, an isopropyl group, a difluoromethyl group, a trifluoromethyl group, a 2-propenyl group, a 2-butyryl group or a cyclopropylmethyl group, Z² represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3
20 haloalkyl group or a cyclopropyl group, and Z³ represents a hydrogen atom, a methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q2, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷,
25 R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a

hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents a methyl group, an ethyl group, a propyl group, an isopropyl group, a difluoromethyl group, a trifluoromethyl group, a 2-propenyl group, a 2-butyryl group or a cyclopropylmethyl group, Z² represents a hydrogen atom, a methyl group, an ethyl group, an isopropyl group or a cyclopropyl group, and Z³ represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group;

a compound of the formula (1) wherein Q represents Q2, R¹ represents a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a C3-C5 cycloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group or a C3-C6 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents a methyl group, an ethyl group, a propyl group, an isopropyl group, a difluoromethyl group, a trifluoromethyl group, a 2-propenyl group, a 2-butyryl group or a cyclopropylmethyl group, Z² represents a hydrogen atom, a methyl group, an ethyl group,

an isopropyl group or a cyclopropyl group, and Z^3 represents a hydrogen atom, a methyl group or an ethyl group;

[0130]

5 a compound of the formula (1) wherein Q represents Q2, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a
10 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents a methyl group, X represents an oxygen atom, Z^1 represents an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C3-C6 alkynyl group or a C4-C7 cycloalkylmethyl group, Z^2
15 represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, and Z^3 represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group;

a compound of the formula (1) wherein Q represents Q2,
20 R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a
1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2
25 alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents

a methyl group, X represents an oxygen atom, Z¹ represents an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C3-C6 alkynyl group or a C4-C7 cycloalkylmethyl group, Z² represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, and Z³ represents a hydrogen atom, a methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q2, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C3-C6 alkynyl group or a C4-C7 cycloalkylmethyl group, Z² represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group, and Z³ represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group;

a compound of the formula (1) wherein Q represents Q2, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine

atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C3-C6 alkynyl group or a C4-C7 cycloalkylmethyl group, Z² represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group, and Z³ represents a hydrogen atom, a methyl group or an ethyl group;

10 [0131]

a compound of the formula (1) wherein Q represents Q2, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C3-C6 alkynyl group or a C4-C7 cycloalkylmethyl group, Z² represents a hydrogen atom, a methyl group, an ethyl group, an isopropyl group or a cyclopropyl group, and Z³ represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group;

25 a compound of the formula (1) wherein Q represents Q2,

R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a
5 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C3-C6 alkynyl group or a C4-C7 cycloalkylmethyl group, Z²
10 represents a hydrogen atom, a methyl group, an ethyl group, an isopropyl group or a cyclopropyl group, and Z³ represents a hydrogen atom, a methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q2,
15 R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2
20 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents an C1-C4 alkyl group, a C1-C3 haloalkyl group, an C3-C4 alkynyl group or a cyclopropylmethyl group, Z² represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl
25 group or a C3-C6 cycloalkyl group, and Z³ represents a

hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group;

a compound of the formula (1) wherein Q represents Q2, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent
5 a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents
10 a methyl group, X represents an oxygen atom, Z¹ represents an C1-C4 alkyl group, a C1-C3 haloalkyl group, an C3-C4 alkynyl group or a cyclopropylmethyl group, Z² represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, and Z³ represents a
15 hydrogen atom, a methyl group or an ethyl group;

[0132]

a compound of the formula (1) wherein Q represents Q2, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent
20 a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents
25 an C1-C4 alkyl group, a C1-C3 haloalkyl group, an C3-C4

alkynyl group or a cyclopropylmethyl group, Z² represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group, and Z³ represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a
5 cyclopropyl group;

a compound of the formula (1) wherein Q represents Q2, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine
10 atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents an C1-C4 alkyl group, a C1-C3 haloalkyl group, an C3-C4
15 alkynyl group or a cyclopropylmethyl group, Z² represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group, and Z³ represents a hydrogen atom, a methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q2, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine
20 atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents
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a methyl group, X represents an oxygen atom, Z¹ represents an C1-C4 alkyl group, a C1-C3 haloalkyl group, an C3-C4 alkynyl group or a cyclopropylmethyl group, Z² represents a hydrogen atom, a methyl group, an ethyl group, an isopropyl group or a cyclopropyl group, and Z³ represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group;

a compound of the formula (1) wherein Q represents Q2, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents an C1-C4 alkyl group, a C1-C3 haloalkyl group, an C3-C4 alkynyl group or a cyclopropylmethyl group, Z² represents a hydrogen atom, a methyl group, an ethyl group, an isopropyl group or a cyclopropyl group, and Z³ represents a hydrogen atom, a methyl group or an ethyl group;

[0133]

a compound of the formula (1) wherein Q represents Q2, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine

atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents a methyl group, an ethyl group, a propyl group, an isopropyl group, a difluoromethyl group, a trifluoromethyl group, a 2-propynyl group, a 2-butyryl group or a cyclopropylmethyl group, Z² represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, and Z³ represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group;

a compound of the formula (1) wherein Q represents Q2, R¹ represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a chlorine atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents a methyl group, an ethyl group, a propyl group, an isopropyl group, a difluoromethyl group, a trifluoromethyl group, a 2-propynyl group, a 2-butyryl group or a cyclopropylmethyl group, Z² represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6

cycloalkyl group, and Z^3 represents a hydrogen atom, a methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q2, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent
5 a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents
10 a methyl group, X represents an oxygen atom, Z^1 represents a methyl group, an ethyl group, a propyl group, an isopropyl group, a difluoromethyl group, a trifluoromethyl group, a 2-propynyl group, a 2-butyryl group or a cyclopropylmethyl group, Z^2 represents a hydrogen atom, an
15 C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group, and Z^3 represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group;

a compound of the formula (1) wherein Q represents Q2, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent
20 a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents
25 a methyl group, X represents an oxygen atom, Z^1 represents

a methyl group, an ethyl group, a propyl group, an isopropyl group, a difluoromethyl group, a trifluoromethyl group, a 2-propynyl group, a 2-butyryl group or a cyclopropylmethyl group, Z^2 represents a hydrogen atom, an
5 C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group, and Z^3 represents a hydrogen atom, a methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q2, R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-
10 C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents
15 a methyl group, X represents an oxygen atom, Z^1 represents a methyl group, an ethyl group, a propyl group, an isopropyl group, a difluoromethyl group, a trifluoromethyl group, a 2-propynyl group, a 2-butyryl group or a cyclopropylmethyl group, Z^2 represents a hydrogen atom, a
20 methyl group, an ethyl group, an isopropyl group or a cyclopropyl group, and Z^3 represents a hydrogen atom, an C1-C3 alkoxy group, a C1-C3 haloalkoxy group or a cyclopropyl group;

a compound of the formula (1) wherein Q represents Q2,
25 R^1 represents a halogen atom, an C1-C3 alkyl group or a C1-

C3 haloalkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a chlorine atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a C1-C2 haloalkoxy group, an C1-C2 alkylthio group or a C3-C4 cycloalkyl group, R^{10} represents a methyl group, X represents an oxygen atom, Z^1 represents a methyl group, an ethyl group, a propyl group, an isopropyl group, a difluoromethyl group, a trifluoromethyl group, a 2-propynyl group, a 2-butyryl group or a cyclopropylmethyl group, Z^2 represents a hydrogen atom, a methyl group, an ethyl group, an isopropyl group or a cyclopropyl group, and Z^3 represents a hydrogen atom, a methyl group or an ethyl group;

[0134]

15 a compound of the formula (1) wherein Q represents Q2, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, X represents an oxygen atom, Z^1 represents an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C3-C6 alkynyl group or a C4-C7 cycloalkylmethyl group, Z^2 represents a hydrogen atom, an

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C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, and Z³ represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group;

5 a compound of the formula (1) wherein Q represents Q2, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C3-C6 alkynyl group or a C4-C7 cycloalkylmethyl group, Z² represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, and Z³ represents a hydrogen atom, a methyl group or an ethyl group;

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a compound of the formula (1) wherein Q represents Q2, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group;

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group, R^{10} represents a methyl group, X represents an oxygen atom, Z^1 represents an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C3-C6 alkynyl group or a C4-C7 cycloalkylmethyl group, Z^2 represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group, and Z^3 represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group;

a compound of the formula (1) wherein Q represents Q2, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, X represents an oxygen atom, Z^1 represents an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C3-C6 alkynyl group or a C4-C7 cycloalkylmethyl group, Z^2 represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group, and Z^3 represents a hydrogen atom, a methyl group or an ethyl group;

[0135]

a compound of the formula (1) wherein Q represents Q2, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 ,

R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C3-C6 alkynyl group or a C4-C7 cycloalkylmethyl group, Z² represents a hydrogen atom, a methyl group, an ethyl group, an isopropyl group or a cyclopropyl group, and Z³ represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group;

a compound of the formula (1) wherein Q represents Q2, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C3-C6 alkynyl group or a C4-C7 cycloalkylmethyl group, Z² represents a hydrogen atom, a methyl group, an ethyl group, an isopropyl group or a cyclopropyl group, and Z³ represents a hydrogen atom, a

methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q2,
R¹ represents a chlorine atom, a bromine atom, a methyl
group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵,
5 R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a
hydrogen atom or a methyl group, R⁶ represents an ethynyl
group, a 1-propynyl group, a difluoromethoxy group, a
trifluoromethoxy group, a methylthio group or a cyclopropyl
group, R¹⁰ represents a methyl group, X represents an
10 oxygen atom, Z¹ represents an C1-C4 alkyl group, a C1-C4
haloalkyl group, an C3-C4 alkynyl group or a
cyclopropylmethyl group, Z² represents a hydrogen atom, an
C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6
cycloalkyl group, and Z³ represents a hydrogen atom, an C1-
15 C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl
group;

a compound of the formula (1) wherein Q represents Q2,
R¹ represents a chlorine atom, a bromine atom, a methyl
group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵,
20 R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a
hydrogen atom or a methyl group, R⁶ represents an ethynyl
group, a 1-propynyl group, a difluoromethoxy group, a
trifluoromethoxy group, a methylthio group or a cyclopropyl
group, R¹⁰ represents a methyl group, X represents an
25 oxygen atom, Z¹ represents an C1-C4 alkyl group, a C1-C4

haloalkyl group, an C3-C4 alkynyl group or a cyclopropylmethyl group, Z² represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, and Z³ represents a hydrogen atom, a methyl group or an ethyl group;

[0136]

a compound of the formula (1) wherein Q represents Q2, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents an C1-C4 alkyl group, a C1-C4 haloalkyl group, an C3-C4 alkynyl group or a cyclopropylmethyl group, Z² represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group, and Z³ represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group;

a compound of the formula (1) wherein Q represents Q2, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl

group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents an C1-C4 alkyl group, a C1-C4 haloalkyl group, an C3-C4 alkynyl group or a cyclopropylmethyl group, Z² represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group, and Z³ represents a hydrogen atom, a methyl group or an ethyl group;

10 a compound of the formula (1) wherein Q represents Q2, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents an C1-C4 alkyl group, a C1-C4 haloalkyl group, an C3-C4 alkynyl group or a cyclopropylmethyl group, Z² represents a hydrogen atom, a methyl group, an ethyl group, an isopropyl group or a cyclopropyl group, and Z³ represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group;

25 a compound of the formula (1) wherein Q represents Q2,

R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents an C1-C4 alkyl group, a C1-C4 haloalkyl group, an C3-C4 alkynyl group or a cyclopropylmethyl group, Z² represents a hydrogen atom, a methyl group, an ethyl group, an isopropyl group or a cyclopropyl group, and Z³ represents a hydrogen atom, a methyl group or an ethyl group;

[0137]

15 a compound of the formula (1) wherein Q represents Q2, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents a methyl group, an ethyl group, a propyl group, an isopropyl group, a difluoromethyl group, a trifluoromethyl group, a 2-propynyl group, a 2-butyne

group or a cyclopropylmethyl group, Z^2 represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, and Z^3 represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group;

a compound of the formula (1) wherein Q represents Q2, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, X represents an oxygen atom, Z^1 represents a methyl group, an ethyl group, a propyl group, an isopropyl group, a difluoromethyl group, a trifluoromethyl group, a 2-propynyl group, a 2-butynyl group or a cyclopropylmethyl group, Z^2 represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group or a C3-C6 cycloalkyl group, and Z^3 represents a hydrogen atom, a methyl group or an ethyl group;

a compound of the formula (1) wherein Q represents Q2, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents an ethynyl

group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, X represents an oxygen atom, Z^1 represents a methyl group, an ethyl group, a propyl group, an isopropyl group, a difluoromethyl group, a trifluoromethyl group, a 2-propynyl group, a 2-butynyl group or a cyclopropylmethyl group, Z^2 represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group, and Z^3 represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group;

a compound of the formula (1) wherein Q represents Q2, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents an ethynyl group, a 1-propynyl group, a difluoromethoxy group, a trifluoromethoxy group, a methylthio group or a cyclopropyl group, R^{10} represents a methyl group, X represents an oxygen atom, Z^1 represents a methyl group, an ethyl group, a propyl group, an isopropyl group, a difluoromethyl group, a trifluoromethyl group, a 2-propynyl group, a 2-butynyl group or a cyclopropylmethyl group, Z^2 represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group, and Z^3 represents a hydrogen

atom, a methyl group or an ethyl group;

[0138]

a compound of the formula (1) wherein Q represents Q2,
R¹ represents a chlorine atom, a bromine atom, a methyl
5 group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵,
R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a
hydrogen atom or a methyl group, R⁶ represents an ethynyl
group, a 1-propynyl group, a difluoromethoxy group, a
trifluoromethoxy group, a methylthio group or a cyclopropyl
10 group, R¹⁰ represents a methyl group, X represents an
oxygen atom, Z¹ represents a methyl group, an ethyl group,
a propyl group, an isopropyl group, a difluoromethyl group,
a trifluoromethyl group, a 2-propynyl group, a 2-butyryl
group or a cyclopropylmethyl group, Z² represents a
15 hydrogen atom, a methyl group, an ethyl group, an isopropyl
group or a cyclopropyl group, and Z³ represents a hydrogen
atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a
cyclopropyl group;

a compound of the formula (1) wherein Q represents Q2,
20 R¹ represents a chlorine atom, a bromine atom, a methyl
group, an ethyl group or a trifluoromethyl group, R², R⁴, R⁵,
R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a
hydrogen atom or a methyl group, R⁶ represents an ethynyl
group, a 1-propynyl group, a difluoromethoxy group, a
25 trifluoromethoxy group, a methylthio group or a cyclopropyl

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group, R^{10} represents a methyl group, X represents an oxygen atom, Z^1 represents a methyl group, an ethyl group, a propyl group, an isopropyl group, a difluoromethyl group, a trifluoromethyl group, a 2-propynyl group, a 2-butyryl group or a cyclopropylmethyl group, Z^2 represents a hydrogen atom, a methyl group, an ethyl group, an isopropyl group or a cyclopropyl group, and Z^3 represents a hydrogen atom, a methyl group or an ethyl group;

[0139]

10 a compound of the formula (1) wherein Q represents Q1, R^1 represents a halogen atom or an C1-C6 alkyl group, R^2 , R^3 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^{10} represents a methyl group, R^6 represents a C3-C6 cycloalkyl group or a C1-C4 haloalkoxy group, X represents an oxygen atom, Y^1 represents a hydrogen atom or an C1-C6 alkyl group, 15 Y^2 represents a hydrogen atom, an C1-C6 alkyl group or an C1-C6 alkoxy group, Y^3 represents a hydrogen atom or an C1-C6 alkoxy group, alternatively Y^1 and Y^2 connect via a divalent saturated carbon chain to form a six-membered ring, 20 or Y^2 and Y^3 connect via a divalent saturated carbon chain to form a six-membered ring;

[0140]

a compound of the formula (1) wherein Q represents Q1, R^1 represents a halogen atom or an C1-C6 alkyl group, R^2 , R^4 , 25 R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3

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represents a hydrogen atom or an C1-C6 alkyl group, R^{10} represents a methyl group, R^6 represents a C3-C6 cycloalkyl group, a C1-C4 haloalkoxy group or an C2-6 alkynyl group, X represents an oxygen atom, Y^1 represents a hydrogen atom, an C1-C6 alkyl group or a C3-C6 cycloalkyl group, Y^2 represents a hydrogen atom, an C1-C6 alkyl group or a C1-C6 haloalkyl group, and Y^3 represents a hydrogen atom or an C1-C6 alkoxy group, alternatively Y^1 and Y^2 connect via a divalent saturated carbon chain to form a six-membered ring, or Y^2 and Y^3 connect via a divalent saturated carbon chain to form a six-membered ring;

[0141]

a compound of the formula (1) wherein Q represents Q2, R^1 represents an C1-C6 alkyl group, R^2 , R^3 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^{10} represents a methyl group, R^6 represents a C3-C6 cycloalkyl group or a C1-C4 haloalkoxy group, X represents an oxygen atom, Z^1 represents an C1-C6 alkyl group, Z^2 represents a hydrogen atom or an C1-C6 alkyl group, and Z^3 represents a hydrogen atom;

[0142]

a compound of the formula (1) wherein Q represents Q2, R^1 represents a halogen atom or an C1-C6 alkyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom or an C1-C6 alkyl group, R^{10}

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represents a methyl group, R⁶ represents a C3-C6 cycloalkyl group or a C1-C4 haloalkoxy group, X represents an oxygen atom, Z¹ represents an C1-C6 alkyl group, Z² represents an C1-C6 alkyl group optionally having halogen atom or a halogen atom, and Z³ represents a hydrogen atom or an C1-C6 alkyl group;

[0143]

a compound of the formula (1) wherein Q represents Q2, R¹ represents an C1-C6 alkyl group, R², R³, R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R¹⁰ represents a methyl group, R⁶ represents a C3-C6 cycloalkyl group or a C1-C4 haloalkoxy group, X represents an oxygen atom, Z¹ represents an C1-C6 alkyl group, Z² represents a hydrogen atom, an C1-C6 alkyl group or a C1-C3 haloalkyl group, and Z³ represents a hydrogen atom or an C1-C3 alkyl group;

[0144]

a compound of the formula (1) wherein Q represents Q3, R¹ represents a halogen atom or an C1-C6 alkyl group, R², R³, R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R¹⁰ represents a methyl group, R⁶ represents an C3-C6 cycloalkyl group, X represents an oxygen atom, A¹ represents a hydrogen atom, A² represents an C1-C6 alkyl group, and A³ represents a hydrogen atom;

[0145]

a compound of the formula (1) wherein Q represents Q4,

R^1 represents a C1-C6 alkyl group, R^2 , R^3 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^{10} represents a methyl group, R^6 represents a C3-C6 cycloalkyl group, X represents an oxygen atom, Z^2 represents a C1-C6 alkyl group, Z^3 represents a hydrogen atom, and Z^4 represents a C1-C6 alkyl group;

[0146]

a compound of the formula (1) wherein Q represents Q1, R^1 represents a hydrogen atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group or a cyclopropyl group, R^3 represents a hydrogen atom or a methyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^{10} represents a methyl group, R^6 represents a cyclopropyl group, a difluoromethoxy group, a methylthio group or an ethynyl group, X represents an oxygen atom or a sulfur atom, Y^1 represents a hydrogen atom or a methyl group, Y^2 represents a hydrogen atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group or a methoxy group, Y^3 represents a hydrogen atom or a methyl group, alternatively Y^1 and Y^2 connect via a divalent saturated carbon chain to form a six-membered ring, or Y^2 and Y^3 connect via a divalent saturated carbon chain to form a six-membered ring;

[0147]

a compound of the formula (1) wherein Q represents Q2, R^1 represents a chlorine atom, a bromine atom, a methyl

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group, an ethyl group or a cyclopropyl group, R^3 represents a hydrogen atom or a methyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^{10} represents a methyl group, R^6 represents a cyclopropyl group, a difluoromethoxy group, a methylthio group or an ethynyl group, X represents an oxygen atom or a sulfur atom, Z^1 represents a methyl group, an ethyl group or an isopropyl group, Z^2 represents a hydrogen atom, a methyl group or a trifluoromethyl group, and Z^3 represents a hydrogen atom, a chlorine atom, a bromine atom or a methyl group;

[0148]

a compound of the formula (1) wherein Q represents Q1, R^1 represents a chlorine atom or a methyl group, R^2 , R^3 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^{10} represents a methyl group, R^6 represents a cyclopropyl group or a difluoromethoxy group, X represents an oxygen atom, Y^1 represents a hydrogen atom or a methyl group, Y^2 represents a hydrogen atom, a methyl group or a methoxy group, and Y^3 represents a hydrogen atom or a methyl group, alternatively Y^1 and Y^2 connect via a divalent saturated carbon chain to form a six-membered ring, or Y^2 and Y^3 connect via a divalent saturated carbon chain to form a six-membered ring;

[0149]

a compound of the formula (1) wherein Q represents Q2,

R¹ represents a methyl group, R², R³, R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R¹⁰ represents a methyl group, R⁶ represents a cyclopropyl group or a difluoromethoxy group, X represents an oxygen atom, Z¹ represents a methyl group, an ethyl group or an isopropyl group, Z² represents a hydrogen atom, a methyl group or a trifluoromethyl group, and Z³ represents a hydrogen atom or a methyl group;

[0150]

a compound of the formula (1) wherein Q represents Q3, R¹ represents a methyl group, R², R³, R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R¹⁰ represents a methyl group, R⁶ represents a cyclopropyl group, X represents an oxygen atom, A¹ represents a hydrogen atom, A² represents a methyl group, and A³ represents a hydrogen atom;

[0151]

a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom or an C1-C6 alkyl group, R², R³, R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R¹⁰ represents a methyl group, R⁶ represents a C3-C6 cycloalkyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom or an C1-C6 alkyl group, Y² represents a hydrogen atom, an C1-C6 alkyl group or an C1-C6 alkoxy group, and Y³ represents a hydrogen atom or an C1-C6 alkyl group, alternatively Y¹ and Y² connect via a divalent saturated carbon chain to form a six-membered ring, or Y²

and Y³ connect via a divalent saturated carbon chain to form a six-membered ring;

[0152]

a compound of the formula (1) wherein Q represents Q2,
5 R¹ represents an C1-C6 alkyl group, R², R³, R⁴, R⁵, R⁷, R⁸,
R⁹ and R¹¹ represent a hydrogen atom, R¹⁰ represents a
methyl group, R⁶ represents a C3-C6 cycloalkyl group, X
represents an oxygen atom, Z¹ represents an C1-C6 alkyl
group, Z² represents a hydrogen atom, an C1-C6 alkyl group
10 or a C1-C3 haloalkyl group, and Z³ represents a hydrogen
atom or an C1-C4 alkyl group;

[0153]

a compound of the formula (1) wherein Q represents Q1,
R¹ represents a chlorine atom, a bromine atom, a methyl
15 group, an ethyl group or a cyclopropyl group, R³ represents
a hydrogen atom or a methyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and
R¹¹ represent a hydrogen atom, R¹⁰ represents a methyl group,
R⁶ represents an C3-C6 cycloalkyl group, X represents an
oxygen atom or a sulfur atom, Y¹ represents a hydrogen atom
20 or a methyl group, Y² represents a hydrogen atom, a
chlorine atom, a bromine atom, a methyl group, an ethyl
group or a methoxy group, Y³ represents a hydrogen atom or
a methyl group, alternatively Y¹ and Y² connect via a
divalent saturated carbon chain to form a six-membered ring,
25 or Y² and Y³ connect via a divalent saturated carbon chain

to form a six-membered ring;

[0154]

a compound of the formula (1) wherein Q represents Q2, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a cyclopropyl group, R³ represents a hydrogen atom or a methyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R¹⁰ represents a methyl group, R⁶ represents an C3-C6 cycloalkyl group, X represents an oxygen atom or a sulfur atom, Z¹ represents a methyl group, an ethyl group or an isopropyl group, Z² represents a hydrogen atom, a methyl group or a trifluoromethyl group, and Z³ represents a hydrogen atom, a chlorine atom, a bromine atom or a methyl group;

[0155]

a compound of the formula (1) wherein Q represents Q1, R¹ represents a chlorine atom or a methyl group, R², R³, R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R¹⁰ represents a methyl group, R⁶ represents a C3-C6 cycloalkyl group, X represents an oxygen atom, Y¹ represents a hydrogen atom or a methyl group, Y² represents a hydrogen atom, a methyl group, an ethyl group or a methoxy group, Y³ represents a hydrogen atom or a methyl group, alternatively Y¹ and Y² connect via a divalent saturated carbon chain to form a six-membered ring, or Y² and Y³ connect via a divalent saturated carbon chain to form a six-membered

ring;

[0156]

a compound of the formula (1) wherein Q represents Q2,
R¹ represents a methyl group, R², R³, R⁴, R⁵, R⁷, R⁸, R⁹ and
5 R¹¹ represent a hydrogen atom, R¹⁰ represents a methyl group,
R⁶ represents a C3-C6 cycloalkyl group, X represents an
oxygen atom, Z¹ represents a methyl group, an ethyl group
or an isopropyl group, Z² represents a hydrogen atom, a
methyl group or a trifluoromethyl group, and Z³ represents
10 a hydrogen atom or a methyl group;

[0157]

a compound of the formula (1) wherein Q represents Q1,
R¹ represents a hydrogen atom or an C1-C6 alkyl group, R²,
R³, R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R¹⁰
15 represents a methyl group, R⁶ represents a cyclopropyl
group, X represents an oxygen atom, Y¹ represents a
hydrogen atom or an C1-C6 alkyl group, Y² represents a
hydrogen atom, an C1-C6 alkyl group or an C1-C6 alkoxy
group, and Y³ represents a hydrogen atom or an C1-C6 alkyl
20 group, alternatively Y¹ and Y² connect via a divalent
saturated carbon chain to form a six-membered ring, or Y²
and Y³ connect via a divalent saturated carbon chain to
form a six-membered ring;

[0158]

25 a compound of the formula (1) wherein Q represents Q2,

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R¹ represents an C1-C6 alkyl group, R², R³, R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R¹⁰ represents a methyl group, R⁶ represents a cyclopropyl group, X represents an oxygen atom, Z¹ represents an C1-C6 alkyl group, Z² represents a hydrogen atom, an C1-C6 alkyl group or a C1-C3 haloalkyl group, and Z³ represents a hydrogen atom or an C1-C4 alkyl group;

[0159]

a compound of the formula (1) wherein Q represents Q1,
R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a cyclopropyl group, R³ represents a hydrogen atom or a methyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R¹⁰ represents a methyl group, R⁶ represents a cyclopropyl group, X represents an oxygen atom or a sulfur atom, Y¹ represents a hydrogen atom or a methyl group, Y² represents a hydrogen atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group or a methoxy group, Y³ represents a hydrogen atom or a methyl group, alternatively Y¹ and Y² connect via a divalent saturated carbon chain to form a six-membered ring, or Y² and Y³ connect via a divalent saturated carbon chain to form a six-membered ring;

[0160]

a compound of the formula (1) wherein Q represents Q2,
R¹ represents a chlorine atom, a bromine atom, a methyl

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group, an ethyl group or a cyclopropyl group, R^3 represents a hydrogen atom or a methyl group, R^2 , R^3 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^{10} represents a methyl group, R^6 represents a cyclopropyl group, X represents an oxygen atom or a sulfur atom, Z^1 represents a methyl group, an ethyl group or an isopropyl group, Z^2 represents a hydrogen atom, a methyl group or a trifluoromethyl group, and Z^3 represents a hydrogen atom, a chlorine atom, a bromine atom or a methyl group;

10 [0161]

a compound of the formula (1) wherein Q represents Q1, R^1 represents a chlorine atom or a methyl group, R^2 , R^3 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^{10} represents a methyl group, R^6 represents a cyclopropyl group, X represents an oxygen atom, Y^1 represents a hydrogen atom or a methyl group, Y^2 represents a hydrogen atom, a methyl group, an ethyl group or a methoxy group, and Y^3 represents a hydrogen atom or a methyl group, alternatively Y^1 and Y^2 connect via a divalent saturated carbon chain to form a six-membered ring, or Y^2 and Y^3 connect via a divalent saturated carbon chain to form a six-membered ring;

20 [0162]

a compound of the formula (1) wherein Q represents Q2, R^1 represents a methyl group, R^2 , R^3 , R^4 , R^5 , R^7 , R^8 , R^9 and

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R¹¹ represent a hydrogen atom, R¹⁰ represents a methyl group, R⁶ represents a C1-C4 haloalkoxy group, X represents an oxygen atom, Y¹ represents a hydrogen atom or an C1-C6 alkyl group, Y² represents a hydrogen atom, an C1-C6 alkyl group or an C1-C6 alkoxy group, Y³ represents a hydrogen atom or an C1-C6 alkyl group, alternatively Y¹ and Y² connect via a divalent saturated carbon chain to form a six-membered ring, or Y² and Y³ connect via a divalent saturated carbon chain to form a six-membered ring;

10 [0163]

a compound of the formula (1) wherein Q represents Q2, R¹ represents an C1-C6 alkyl group, R², R³, R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R¹⁰ represents a methyl group, R⁶ represents an C1-C4 haloalkoxy group, X represents an oxygen atom, Z¹ represents an C1-C6 alkyl group, Z² represents a hydrogen atom, an C1-C6 alkyl group or a C1-C3 haloalkyl group, and Z³ represents a hydrogen atom or an C1-C4 alkyl group;

[0164]

20 a compound of the formula (1) wherein Q represents Q1, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a cyclopropyl group, R³ represents a hydrogen atom or a methyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R¹⁰ represents a methyl group, 25 R⁶ represents a C1-C4 haloalkoxy group, X represents an

oxygen atom or a sulfur atom, Y¹ represents a hydrogen atom or a methyl group, Y² represents a hydrogen atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group or a methoxy group, Y³ represents a hydrogen atom or a methyl group, alternatively Y¹ and Y² connect via a divalent saturated carbon chain to form a six-membered ring, or Y² and Y³ connect via a divalent saturated carbon chain to form a six-membered ring;

[0165]

10 a compound of the formula (1) wherein Q represents Q2, R¹ represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a cyclopropyl group, R³ represents a hydrogen atom or a methyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R¹⁰ represents a methyl group, 15 R⁶ represents a C1-C4 haloalkoxy group, X represents an oxygen atom or a sulfur atom, Z¹ represents a methyl group, an ethyl group or an isopropyl group, Z² represents a hydrogen atom, a methyl group or a trifluoromethyl group, and Z³ represents a hydrogen atom, a chlorine atom, a bromine atom or a methyl group; 20

[0166]

a compound of the formula (1) wherein Q represents Q1, R¹ represents a chlorine atom or a methyl group, R², R³, R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R¹⁰ 25 represents a methyl group, R⁶ represents a C1-C4 haloalkoxy

group, X represents an oxygen atom, Y¹ represents a hydrogen atom or a methyl group, Y² represents a hydrogen atom, a methyl group, an ethyl group or a methoxy group, and Y³ represents a hydrogen atom or a methyl group, alternatively Y¹ and Y² connect via a divalent saturated carbon chain to form a six-membered ring, or Y² and Y³ connect via a divalent saturated carbon chain to form a six-membered ring;

[0167]

10 a compound of the formula (1) wherein Q represents Q2, R¹ represents a methyl group, R², R³, R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R¹⁰ represents a methyl group, R⁶ represents a C1-C4 haloalkoxy group, X represents an oxygen atom, Z¹ represents a methyl group, an ethyl group or an isopropyl group, Z² represents a hydrogen atom, a methyl group or a trifluoromethyl group, and Z³ represents a hydrogen atom or a methyl group;

[0168]

20 a compound of the formula (1) wherein Q represents Q1, R¹ represents a halogen atom or an C1-C6 alkyl group, R², R³, R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R¹⁰ represents a methyl group, R⁶ represents a difluoromethoxy group, X represents an oxygen atom, Y¹ represents a hydrogen atom or an C1-C6 alkyl group, Y² represents a hydrogen atom, an C1-C6 alkyl group or an C1-C6 alkoxy

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group, and Y^3 represents a hydrogen atom or an C1-C6 alkyl group, alternatively Y^1 and Y^2 connect via a divalent saturated carbon chain to form a six-membered ring, or Y^2 and Y^3 connect via a divalent saturated carbon chain to form a six-membered ring;

[0169]

a compound of the formula (1) wherein Q represents Q2, R^1 represents an C1-C6 alkyl group, R^2 , R^3 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^{10} represents a methyl group, R^6 represents a difluoromethoxy group, X represents an oxygen atom, Z^1 represents an C1-C6 alkyl group, Z^2 represents a hydrogen atom, an C1-C6 alkyl group or a C1-C3 haloalkyl group, and Z^3 represents a hydrogen atom or an C1-C4 alkyl group;

[0170]

a compound of the formula (1) wherein Q represents Q1, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a cyclopropyl group, R^3 represents a hydrogen atom or a methyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^{10} represents a methyl group, R^6 represents a difluoromethoxy group, X represents an oxygen atom or a sulfur atom, Y^1 represents a hydrogen atom or a methyl group, Y^2 represents a hydrogen atom, a chlorine atom, a bromine atom, a methyl group, an ethyl group or a methoxy group, and Y^3 represents a hydrogen atom

or a methyl group, alternatively Y^1 and Y^2 connect via a divalent saturated carbon chain to form a six-membered ring, or Y^2 and Y^3 connect via a divalent saturated carbon chain to form a six-membered ring;

5 [0171]

a compound of the formula (1) wherein Q represents Q2, R^1 represents a chlorine atom, a bromine atom, a methyl group, an ethyl group or a cyclopropyl group, R^3 represents a hydrogen atom or a methyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and
10 R^{11} represent a hydrogen atom, R^{10} represents a methyl group, R^6 represents a difluoromethoxy group, X represents an oxygen atom or a sulfur atom, Z^1 represents a methyl group, an ethyl group or an isopropyl group, Z^2 represents a hydrogen atom, a methyl group or a trifluoromethyl group,
15 and Z^3 represents a hydrogen atom, a chlorine atom, a bromine atom or a methyl group;

[0172]

a compound of the formula (1) wherein Q represents Q1, R^1 represents a chlorine atom or a methyl group, R^2 , R^3 , R^4 ,
20 R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^{10} represents a methyl group, R^6 represents a difluoromethoxy group, X represents an oxygen atom, Y^1 represents a hydrogen atom or a methyl group, Y^2 represents a hydrogen atom, a methyl group, an ethyl group or a methoxy group,
25 and Y^3 represents a hydrogen atom or a methyl group,

alternatively Y^1 and Y^2 connect via a divalent saturated carbon chain to form a six-membered ring, or Y^2 and Y^3 connect via a divalent saturated carbon chain to form a six-membered ring;

5 [0173]

a compound of the formula (1) wherein Q represents Q2, R^1 represents a methyl group, R^2 , R^3 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^{10} represents a methyl group, R^6 represents a difluoromethoxy group, X represents an oxygen atom, Z^1 represents a hydrogen atom or a methyl group, Z^2 represents a hydrogen atom, a methyl group, an ethyl group or a methoxy group, and Z^3 represents a hydrogen atom or a methyl group;

[0174]

15 a compound of the formula (1) wherein Q represents Q2, R^1 represents a halogen atom or an C1-C3 alkyl group, R^3 represents a hydrogen atom or a methyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^{10} represents a methyl group, R^6 represents a difluoromethoxy group, a cyclopropyl group or a methylthio group, X represents an oxygen atom, Z^1 represents an C1-C3 alkyl group, Z^2 represents a hydrogen atom, an C1-C6 alkyl group, a C1-C3 haloalkyl group, an C1-C6 alkoxy group, a halogen atom or an C1-C6 alkylthio group, and Z^3 represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group;

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[0175]

a compound of the formula (1) wherein Q represents Q2,
R¹ represents a halogen atom or an C1-C3 alkyl group, R³
represents a hydrogen atom or a methyl group, R², R⁴, R⁵, R⁷,
5 R⁸, R⁹ and R¹¹ represent a hydrogen atom, R¹⁰ represents a
methyl group, R⁶ represents a difluoromethoxy group, a
cyclopropyl group or a methylthio group, X represents an
oxygen atom, Z¹ represents an C1-C3 alkyl group, Z²
represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6
10 haloalkyl group, an C1-C6 alkoxy group, an C1-C6 alkylthio
group, a halogen atom or a cyano group, and Z³ represents a
hydrogen atom, a halogen atom or an C1-C3 alkyl group;

[0176]

a compound of the formula (1) wherein Q represents Q2,
15 R¹ represents a chlorine atom or a methyl group, R³
represents a hydrogen atom or a methyl group, R², R⁴, R⁵, R⁷,
R⁸, R⁹ and R¹¹ represent a hydrogen atom, R¹⁰ represents a
methyl group, R⁶ represents a difluoromethoxy group, a
cyclopropyl group or a methylthio group, X represents an
20 oxygen atom, Z¹ represents a methyl group, an ethyl group
or an isopropyl group, Z² represents a hydrogen atom, a
methyl group, a trifluoromethyl group, a methylthio group,
a methoxy group, an ethoxy group, a chlorine atom or a
cyano group, and Z³ represents a hydrogen atom, a chlorine
25 atom or a methyl group;

[0177]

a compound of the formula (1) wherein Q represents Q2, R¹ represents a chlorine atom or an C1-C3 alkyl group, R³ represents a hydrogen atom or a methyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R¹⁰ represents a methyl group, R⁶ represents a cyclopropyl group, X represents an oxygen atom, Z¹ represents an C1-C3 alkyl group, Z² represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C1-C6 alkoxy group, a halogen atom or an C1-C6 alkylthio group, and Z³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group;

[0178]

a compound of the formula (1) wherein Q represents Q2, R¹ represents a halogen atom or an C1-C3 alkyl group, R³ represents a hydrogen atom or a methyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R¹⁰ represents a methyl group, R⁶ represents a cyclopropyl group, X represents an oxygen atom, Z¹ represents an C1-C3 alkyl group, Z² represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C1-C6 alkoxy group, an C1-C6 alkylthio group, a halogen atom or a cyano group and Z³ represents a hydrogen atom, a halogen atom or an C1-C3 alkyl group;

[0179]

a compound of the formula (1) wherein Q represents Q2,

R¹ represents a chlorine atom or a methyl group, R³ represents a hydrogen atom or a methyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R¹⁰ represents a methyl group, R⁶ represents a cyclopropyl group, X represents an oxygen atom, Z¹ represents a methyl group, an ethyl group or an isopropyl group, Z² represents a hydrogen atom, a methyl group, a trifluoromethyl group, a methylthio group, a methoxy group, an ethoxy group or a chlorine atom, and Z³ represents a hydrogen atom, a chlorine atom or a methyl group;

[0180]

a compound of the formula (1) wherein Q represents Q2, R¹ represents a chlorine atom or a methyl group, R³ represents a hydrogen atom or a methyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R¹⁰ represents a methyl group, R⁶ represents a cyclopropyl group, X represents an oxygen atom, Z¹ represents a methyl group, an ethyl group or an isopropyl group, Z² represents a hydrogen atom, a methyl group, a trifluoromethyl group, a methylthio group, a methoxy group, an ethoxy group, a chlorine atom or a cyano group, and Z³ represents a hydrogen atom, a chlorine atom or a methyl group;

[0181]

a compound of the formula (1) wherein Q represents Q2, R¹ represents a chlorine atom or a methyl group, R², R³, R⁴,

R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R¹⁰ represents a methyl group, R⁶ represents a cyclopropyl group, X represents an oxygen atom, Z¹ represents an C1-C3 alkyl group, Z² represents a hydrogen atom, a methyl group, a trifluoromethyl group, a methylthio group, a methoxy group, an ethoxy group, a chlorine atom or a cyano group, and Z³ represents a hydrogen atom, a chlorine atom or a methyl group;

[0182]

10 a compound of the formula (1) wherein Q represents Q2, R¹ represents an C1-C3 alkyl group, R², R³, R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R¹⁰ represents a methyl group, R⁶ represents a difluoromethoxy group, X represents an oxygen atom, Z¹ represents an C1-C3 alkyl group, Z² represents a hydrogen atom, an C1-C6 alkyl group, an C1-C6 alkoxy group or a halogen atom, and Z³ represents a hydrogen atom or an C1-C3 alkoxy group;

[0183]

20 a compound of the formula (1) wherein Q represents Q2, R¹ represents an C1-C3 alkyl group, R², R³, R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R¹⁰ represents a methyl group, R⁶ represents a difluoromethoxy group, X represents an oxygen atom, Z¹ represents an C1-C3 alkyl group, Z² represents a hydrogen atom, an C1-C6 alkyl group, an C1-C6 alkoxy group, a halogen atom or a cyano group, and

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Z³ represents a hydrogen atom or an C1-C3 alkyl group;

[0184]

a compound of the formula (1) wherein Q represents Q2,
R¹ represents a methyl group, R³ represents a hydrogen atom
5 or a methyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a
hydrogen atom, R¹⁰ represents a methyl group, R⁶ represents
a difluoromethoxy group, X represents an oxygen atom, Z¹
represents a methyl group, Z² represents a hydrogen atom, a
methyl group, a methoxy group, an ethoxy group or a
10 chlorine atom, and Z³ represents a hydrogen atom or a
methyl group;

[0185]

a compound of the formula (1) wherein Q represents Q2,
R¹ represents a methyl group, R³ represents a hydrogen atom
15 or a methyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a
hydrogen atom, R¹⁰ represents a methyl group, R⁶ represents
a difluoromethoxy group, X represents an oxygen atom, Z¹
represents a methyl group, Z² represents a hydrogen atom, a
methyl group, a methoxy group, an ethoxy group, a chlorine
20 atom or a cyano group, and Z³ represents a hydrogen atom or
a methyl group;

[0186]

a compound of the formula (1) wherein Q represents Q2,
R¹ represents an C1-C3 alkyl group, R², R³, R⁴, R⁵, R⁷, R⁸,
25 R⁹ and R¹¹ represent a hydrogen atom, R¹⁰ represents a

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methyl group, R^6 represents a methylthio group, X represents an oxygen atom, Z^1 represents an C1-C3 alkyl group, Z^2 represents an C1-C6 alkoxy group or a halogen atom, and Z^3 represents an C1-C3 alkyl group;

5 [0187]

a compound of the formula (1) wherein Q represents Q2, R^1 represents a methyl group, R^2 , R^3 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^{10} represents a methyl group, R^6 represents a methylthio group, X represents an oxygen atom, Z^1 represents a methyl group, Z^2 represents an ethoxy group or a chlorine atom, and Z^3 represents a methyl group.

[0188]

a compound of the formula (1) wherein Q represents Q1, R^1 represents an C1-C3 alkyl group, a halogen atom, a C1-C3 haloalkyl group, an C2-C3 alkynyl group, a C2-C3 haloalkynyl group, a C3-C5 cycloalkyl group, a C3-C5 halocycloalkyl group, an C1-C3 alkoxy group or a C1-C3 haloalkoxy group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^6 represents a C3-C6 cycloalkyl group, an C2-C4 alkynyl group, a C2-C4 haloalkynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkythio group, a C1-C4 haloalkylthio group or a C3-C6 halocycloalkyl group, R^{10} represents a methyl group, X represents an oxygen atom, Y^1 and Y^2 connect to each other

to represent $-\text{CH}_2-\text{CH}_2-\text{CH}_2-$ or $-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{CH}_2-$, which combines together with the carbon atoms to which Y^1 and Y^2 are attached to form a five-membered or six-membered ring, Y^2 and Y^3 connect to each other to represent $-\text{CH}_2-\text{CH}_2-\text{CH}_2-$ or $-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{CH}_2-$, which combines together with the carbon atoms to which Y^2 and Y^3 are attached to form a five-membered or six-membered ring, when each of Y^1 , Y^2 and Y^3 does not form the five- or six-membered saturated ring, Y^1 represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group, Y^2 represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or an C1-C3 alkoxy group, Y^3 represents a hydrogen atom or a methyl group.

[0189]

a compound of the formula (1) wherein Q represents Q2, R^1 represents an C1-C3 alkyl group, a halogen atom, a C1-C3 haloalkyl group, an C2-C3 alkynyl group, a C2-C3 haloalkynyl group, a C3-C5 cycloalkyl group, a C3-C5 halocycloalkyl group, an C1-C3 alkoxy group or a C1-C3 haloalkoxy group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^6 represents a C3-C6 cycloalkyl group, an C2-C4 alkynyl group, a C2-C4 haloalkynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkythio group, a C1-C4 haloalkylthio group or a C3-C6

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halocycloalkyl group, R^{10} represents a methyl group, X represents an oxygen atom, Z^1 represents an C1-C6 alkyl group, Z^2 represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C1-C6 alkoxy group or a C1-C6 alkylthio group, Z^3 represents a hydrogen atom, a halogen atom or an C1-C4 alkyl group.

[0190]

a compound of the formula (1) wherein Q represents Q2, R^1 represents an C1-C3 alkyl group, a halogen atom, a C1-C3 haloalkyl group, an C2-C3 alkynyl group, a C2-C3 haloalkynyl group, a C3-C5 cycloalkyl group, a C3-C5 halocycloalkyl group, an C1-C3 alkoxy group or a C1-C3 haloalkoxy group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R^6 represents a C3-C6 cycloalkyl group, an C2-C4 alkynyl group, a C2-C4 haloalkynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkythio group, a C1-C4 haloalkylthio group or a C3-C6 halocycloalkyl group, R^{10} represents a methyl group, X represents an oxygen atom, Z^1 represents an C1-C3 alkyl group, Z^2 represents a hydrogen atom, a chloro atom, a methoxy group, an ethoxy group, a methylthio group, a trifluoromethyl group or an C1-C3 alkyl group, Z^3 represents a hydrogen atom, a halogen atom or a methyl group.

25 [0191]

a compound of the formula (1) wherein Q represents Q2, R¹ represents an C1-C3 alkyl group, a halogen atom, a C1-C3 haloalkyl group, an C2-C3 alkynyl group, a C2-C3 haloalkynyl group, a C3-C5 cycloalkyl group, a C3-C5 halocycloalkyl group, an C1-C3 alkoxy group or a C1-C3 haloalkoxy group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group, R⁶ represents a C3-C6 cycloalkyl group, an C2-C4 alkynyl group, a C2-C4 haloalkynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkythio group, a C1-C4 haloalkylthio group or a C3-C6 halocycloalkyl group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents an C1-C6 alkyl group or a C1-C6 haloalkyl group, Z² represents a hydrogen atom or an C1-C3 alkyl group, Z³ represents a hydrogen atom or a methyl group.

[0192]

a compound of the formula (1) wherein Q represents Q1, R¹ represents a methyl group, an ethyl group, a chlorine atom, a bromine atom or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents a cyclopropyl group, an ethynyl group, an difluoromethoxy group or a methylthio group, R¹⁰ represents a methyl group, X represents an oxygen atom, Y¹ and Y² connect to

each other to represent $-\text{CH}_2-\text{CH}_2-\text{CH}_2-$ or $-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{CH}_2-$, which combines together with the carbon atoms to which Y^1 and Y^2 are attached to form a five-membered or six-membered ring, Y^2 and Y^3 connect to each other to represent $-\text{CH}_2-\text{CH}_2-$
5 CH_2- or $-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{CH}_2-$, which combines together with the carbon atoms to which Y^2 and Y^3 are attached to form a five-membered or six-membered ring, when each of Y^1 , Y^2 and Y^3 does not form the five- or six-membered saturated ring, Y^1 represents a hydrogen atom, an C1-C3 alkyl group, a C1-
10 C3 haloalkyl group or a cyclopropyl group, Y^2 represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or an C1-C3 alkoxy group, Y^3 represents a hydrogen atom or a methyl group.

[0193]

15 a compound of the formula (1) wherein Q represents Q2, R^1 represents a methyl group, an ethyl group, a chlorine atom, a bromine atom or a trifluoromethyl group, R^2 , R^4 , R^5 , R^7 , R^8 , R^9 and R^{11} represent a hydrogen atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents a
20 cyclopropyl group, an ethynyl group, an difluoromethoxy group or a methylthio group, group, R^{10} represents a methyl group, X represents an oxygen atom, Z^1 represents an C1-C6 alkyl group, Z^2 represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C1-C6
25 alkoxy group or a C1-C6 alkylthio group, Z^3 represents a

hydrogen atom, a halogen atom or an C1-C4 alkyl group.

[0194]

a compound of the formula (1) wherein Q represents Q2, R¹ represents a methyl group, an ethyl group, a chlorine atom, a bromine atom or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents a cyclopropyl group, an ethynyl group, an difluoromethoxy group or a methylthio group, group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents an C1-C3 alkyl group, Z² represents a hydrogen atom, a chloro atom, a methoxy group, an ethoxy group, a methylthio group, a trifluoromethyl group or an C1-C3 alkyl group, Z³ represents a hydrogen atom, a halogen atom or a methyl group.

[0195]

a compound of the formula (1) wherein Q represents Q2, R¹ represents a methyl group, an ethyl group, a chlorine atom, a bromine atom or a trifluoromethyl group, R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a hydrogen atom or a methyl group, R⁶ represents a cyclopropyl group, an ethynyl group, an difluoromethoxy group or a methylthio group, group, R¹⁰ represents a methyl group, X represents an oxygen atom, Z¹ represents an C1-C6 alkyl group or a C1-C6 haloalkyl group, Z² represents a hydrogen atom or an C1-C3 alkyl group, Z³ represents a

hydrogen atom or a methyl group.

[0196]

a compound of the formula (1) wherein Q represents Q2,
R¹ represents a methyl group, an ethyl group, a chlorine
atom, a bromine atom or a trifluoromethyl group, R², R⁴, R⁵,
5 R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a
hydrogen atom or a methyl group, R⁶ represents a
cyclopropyl group R¹⁰ represents a methyl group, X
represents an oxygen atom, Z¹ represents an C1-C6 alkyl
10 group group, Z² represents a hydrogen atom, a halogen atom,
an C1-C6 alkyl group, a C1-C6 haloalkyl group, a cyano
group, an C1-C6 alkoxy group or a C1-C6 alkylthio group, Z³
represents a hydrogen atom, a halogen atom or an C1-C4
alkyl group.

15 [0197]

a compound of the formula (1) wherein Q represents Q2,
R¹ represents a methyl group, an ethyl group, a chlorine
atom, a bromine atom or a trifluoromethyl group, R², R⁴, R⁵,
R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen atom, R³ represents a
20 hydrogen atom or a methyl group, R⁶ represents a
cyclopropyl group R¹⁰ represents a methyl group, X
represents an oxygen atom, Z¹ represents an C1-C6 alkyl
group group, Z² represents a hydrogen atom, a halogen atom,
an C1-C6 alkyl group, a C1-C6 haloalkyl group, a cyano
25 group, an C1-C6 alkoxy group or a C1-C6 alkylthio group, Z³

represents a hydrogen atom, a halogen atom or an C1-C4 alkyl group, an C1-C6 alkoxy group and a cyano group.

[0198]

Examples of an embodiment of the present compound
5 include the compounds of the formula (2) wherein the substituents represent the following ones.

[0199]

a compound of the formula (2) wherein R^1 represents a methyl group, an ethyl group, a chlorine atom or a bromine
10 atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents a cyclopropyl group, and R^{12} represents an C1-C6 alkyl group;

[0200]

a compound of the formula (2) wherein R^1 represents a
15 methyl group, an ethyl group, a chlorine atom or a bromine atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents a cyclopropyl group, and R^{12} represents a methyl group or an ethyl group;

[0201]

20 a compound of the formula (2) wherein R^1 represents a methyl group, an ethyl group, a chlorine atom or a bromine atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents a difluoromethoxy group, and R^{12} represents an C1-C6 alkyl group;

25 [0202]

a compound of the formula (2) wherein R^1 represents a methyl group, an ethyl group, a chlorine atom or a bromine atom, R^3 represents a hydrogen atom or a methyl group, R^6 represents a difluoromethoxy group, and R^{12} represents a methyl group or an ethyl group.

[0203]

Herein, when in a formula (I), R^4 and R^5 are different from each other, the present compound of the formula (1) may have an asymmetric carbon atom therein, and may thus include optically active substances and racemates, without being limited thereto.

[0204]

Next, a process for preparing the present compound is explained.

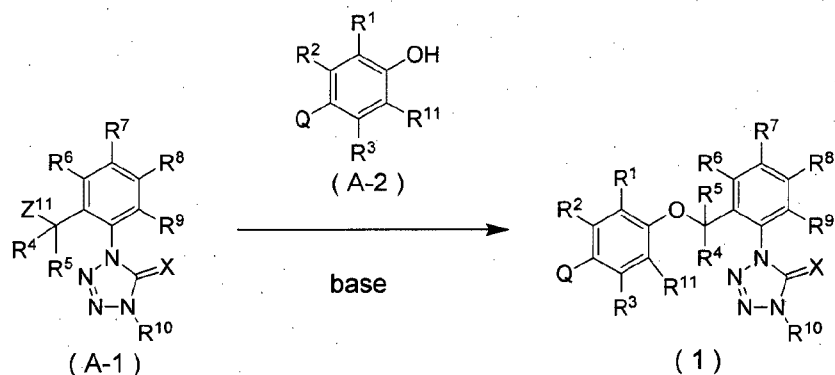
[0205]

The present compound can be prepared, for example, according to the below-mentioned process.

(Process A)

The present compound of the formula (1) can be prepared by reacting a compound of a formula (A-1) (hereinafter, described as Compound (A-1)) with a compound of a formula (A-2) (hereinafter, described as Compound (A-2)) in the presence of a base.

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[wherein

R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^9 , R^{10} , R^{11} , X and Q are the same as defined above, Z^{11} represents a leaving group
 5 such as a chlorine atom, a bromine atom, an iodine atom, a methanesulfonyloxy group, a trifluoromethanesulfonyloxy group, or a p-toluenesulfonyloxy group]

This reaction is usually carried out in a solvent.

Examples of the solvent to be used in the reaction
 10 include hydrocarbons such as heptane, hexane, cyclohexane, pentane, toluene, xylene; ethers such as diethyl ether, tetrahydrofuran, 1,4-dioxane, ethyleneglycol dimethyl ether, anisole, methyl tert-butyl ether, diisopropyl ether; halogenated hydrocarbons such as carbon tetrachloride,
 15 chloroform, dichloromethane, 1,2-dichloroethane, tetrachloroethane, chlorobenzene; acid amides such as N,N-dimethylformamide, 1,3-dimethyl-2-imidazolidinone, N-methylpyrrolidone; esters such as ethyl acetate, methyl acetate; sulfoxides such as dimethyl sulfoxide; ketones
 20 such as acetone, methyl ethyl ketone, methyl isobutyl

ketone; nitriles such as acetonitrile, propionitrile; water; and mixed solvents thereof.

Examples of the base to be used in the reaction include organic bases such as triethylamine, pyridine, N-methylmorpholine, N-methylpiperidine, 4-dimethylaminopyridine, diisopropylethylamine, lutidine, collidine, diazabicycloundecene, diazabicyclononene; alkali metal carbonates such as lithium carbonate, sodium carbonate, potassium carbonate, cesium carbonate; alkali metal bicarbonates such as lithium bicarbonate, sodium bicarbonate, potassium bicarbonate, cesium bicarbonate; alkali metal hydroxides such as lithium hydroxide, sodium hydroxide, potassium hydroxide, cesium hydroxide; alkali metal halides such as sodium fluoride, potassium fluoride, cesium fluoride; alkali metal hydrides such as lithium hydride, sodium hydride, potassium hydride; and alkali metal alkoxides such as sodium tert-butoxide, potassium tert-butoxide.

In the reaction, Compound (A-2) is used usually within a range of 1 to 10 molar ratio(s), and the base is used usually within a range of 1 to 10 molar ratio(s), as opposed to 1 mole of Compound (A-1).

The reaction temperature is usually within a range of -20 to 150°C. The reaction period of the reaction is usually within a range of 0.1 to 24 hours.

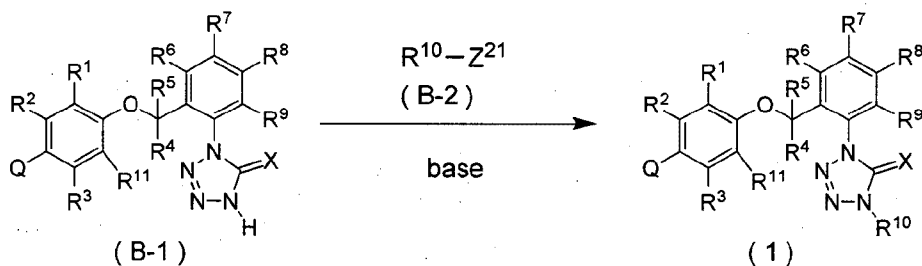
If necessary, sodium iodide, tetrabutylammonium iodide and the others may be added to the reaction and these compounds are used usually within a range of 0.001 to 1.2 molar ratios as opposed to 1 mole of Compound (A-1).

5 When the reaction is completed, the reaction mixtures
are extracted with organic solvent(s), and the resulting
organic layers are worked up (for example, drying and
concentration) to isolate the present compound of the
formula (1). The isolated present compound may be further
10 purified, for example, by chromatography and
recrystallization.

[0206]

(Process B)

The present compound of the formula (1) can be prepared by reacting a compound of a formula (B-1) (hereinafter, described as Compound (B-1)) with a compound of a formula (B-2) (hereinafter, described as Compound (B-2)) in the presence of a base.



20 [wherein

$R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, Z^{11}, X$ and Q are

the same as defined above, Z^{21} represents a leaving group such as a chlorine atom, a bromine atom, an iodine atom, a methanesulfonyloxy group, a methoxysulfonyloxy group, a trifluoromethanesulfonyloxy group, or a p-toluenesulfonyloxy group]

This reaction is usually carried out in a solvent.

Examples of the solvent to be used in the reaction include hydrocarbons such as heptane, hexane, cyclohexane, pentane, toluene, xylene; ethers such as diethyl ether, tetrahydrofuran, 1,4-dioxane, ethyleneglycol dimethyl ether, anisole, methyl tert-butyl ether, diisopropyl ether; halogenated hydrocarbons such as carbon tetrachloride, chloroform, dichloromethane, 1,2-dichloroethane, tetrachloroethane, chlorobenzene; acid amides such as N,N-dimethylformamide, 1,3-dimethyl-2-imidazolidinone, N-methylpyrrolidone; esters such as ethyl acetate, methyl acetate; sulfoxides such as dimethyl sulfoxide; ketones such as acetone, methyl ethyl ketone, methyl isobutyl ketone; nitriles such as acetonitrile, propionitrile; water; and mixed solvents thereof.

Compound (B-2) to be used in the reaction can be usually used as a commercially available product. Specific examples include alkyl halides such as chlorodifluoromethane, methyl bromide, ethyl bromide, propyl bromide, methyl iodide, ethyl iodide, propyl bromide,

aryl bromide, cyclopropyl bromide, 1,1-difluoro-2-iodoethane; alkyl or aryl sulfates such as dimethyl sulfate, methyl p-toluenesulfonate, ethyl p-toluenesulfonate, propyl p-toluenesulfonate, methyl methanesulfonate, ethyl methanesulfonate and propyl methanesulfonate.

Examples of the base to be used in the reaction include organic bases such as triethylamine, pyridine, N-methylmorpholine, N-methylpiperidine, 4-dimethylaminopyridine, diisopropylethylamine, lutidine, collidine, diazabicycloundecene, diazabicyclononene; alkali metal carbonates such as lithium carbonate, sodium carbonate, potassium carbonate, cesium carbonate; alkali metal bicarbonates such as lithium bicarbonate, sodium bicarbonate, potassium bicarbonate, cesium bicarbonate; alkali metal hydroxides such as lithium hydroxide, sodium hydroxide, potassium hydroxide, cesium hydroxide; alkali metal halides such as sodium fluoride, potassium fluoride, cesium fluoride; alkali metal hydrides such as lithium hydride, sodium hydride, potassium hydride; and alkali metal alkoxides such as sodium tert-butoxide, potassium tert-butoxide.

In the reaction, Compound (B-2) is used usually within a range of 1 to 10 molar ratio(s), and the base is used usually within a range of 1 to 10 molar ratios, as opposed to 1 mole of Compound (B-1).

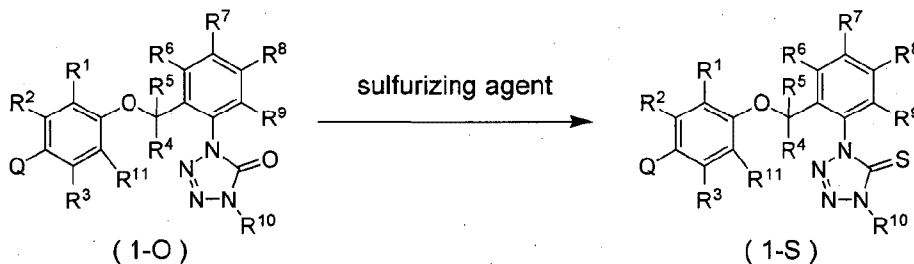
The reaction temperature is usually within a range of -20 to 150°C. The reaction period of the reaction is usually within a range of 0.1 to 24 hours.

When the reaction is completed, the reaction mixtures are extracted with organic solvent(s), and the resulting organic layers are worked up (for example, drying and concentration) to isolate the present compound of the formula (1). The isolated present compound may be further purified, for example, by chromatography and recrystallization.

[0207]

(Process C)

The present compound of the formula (1) wherein X represents a sulfur atom, i.e., the compound of a formula (1-S) (hereinafter, described as Compound (1-S)) can be prepared by reacting the present compound of the formula (1) wherein X represents an oxygen atom (hereinafter, described as Compound (1-O)) by well-known sulfurization.



[wherein

R¹, R², R³, R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, R¹⁰, R¹¹ and Q are the

same as defined above.]

This reaction is usually carried out in a solvent.

Examples of the solvent to be used in the reaction include hydrocarbons such as heptane, hexane, cyclohexane, pentane, toluene, xylene; ethers such as diethyl ether, tetrahydrofuran, 1,4-dioxane, ethyleneglycol dimethyl ether, anisole, methyl tert-butyl ether, diisopropyl ether; halogenated hydrocarbons such as carbon tetrachloride, chloroform, dichloromethane, 1,2-dichloroethane, tetrachloroethane, chlorobenzene; nitriles such as acetonitrile, propionitrile; and mixed solvents thereof.

Examples of the sulfurating agent to be used in the reaction include phosphorus pentasulfide, Lawesson's reagent (2,4-bis(4-methoxyphenyl)-1,3,2,4-dithiadiphosphetane 2,4-disulfide).

In the reaction, the sulfurating agent is used within a range of 0.5 to 10 molar ratios as opposed to 1 mole of Compound (1-0).

The reaction temperature is usually within a range of -20 to 150°C. The reaction period of the reaction is usually within a range of 0.1 to 24 hours.

If necessary, organic bases such as pyridine and triethylamine and inorganic bases such as alkali metal hydroxides and alkali metal carbonates and the others may be added to the reaction and these compounds are used

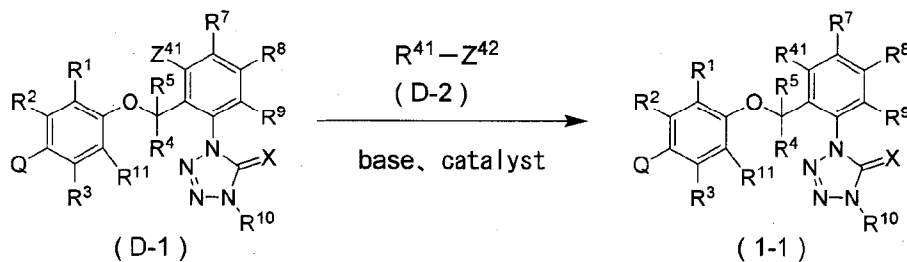
usually within a range of 0.5 to 10 molar ratios as opposed to 1 mole of Compound (1-O).

When the reaction is completed, the reaction mixtures are extracted with organic solvent(s), and the resulting organic layers are worked up (for example, drying and concentration) to isolate the present compound of the formula (1-S). The isolated present compound may be further purified, for example, by chromatography and recrystallization.

[0208]

(Process D)

The present compound of the formula (1) wherein R^6 represents R^{41} , i.e., the compound of a formula (1-1) (hereinafter, described as Compound (1-1)), can be prepared by coupling Compound (D-1) (hereinafter, described as Compound (D-1)) with a compound of a formula (D-2) (hereinafter, described as Compound (D-2)) in the presence of a base and a catalyst.



[wherein

$R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, X$ and Q are

the same as defined above, Z^{41} represents a chlorine atom, a bromine atom, an iodine atom or a trifluoromethanesulfonyloxy group, R^{41} represents a C3-C6 cycloalkyl group or a C3-C6 halocycloalkyl group, and Z^{42} represents a $B(OH)_2$, an alkoxyboryl group or a trifluoroborate salts ($BF_3^- K^+$).]

This reaction is usually carried out in a solvent.

Examples of the solvent to be used in the reaction include hydrocarbons such as heptane, hexane, cyclohexane, pentane, toluene, xylene; ethers such as diethyl ether, tetrahydrofuran, 1,4-dioxane, ethyleneglycol dimethyl ether, anisole, methyl tert-butyl ether, diisopropyl ether; halogenated hydrocarbons such as carbon tetrachloride, chloroform, dichloromethane, 1,2-dichloroethane, tetrachloroethane, chlorobenzene; acid amides such as N,N-dimethylformamide, 1,3-dimethyl-2-imidazolidinone, N-methylpyrrolidone; esters such as ethyl acetate, methyl acetate; sulfoxides such as dimethyl sulfoxide; ketones such as acetone, methyl ethyl ketone, methyl isobutyl ketone; nitriles such as acetonitrile, propionitrile; alcohols such as methanol, ethanol, propanol, butanol; water; and mixed solvents thereof.

Compound (D-2) to be used in the reaction may be usually used as a commercially available product, or may be prepared according to a method described in a review

article of N. Miyaura and A. Suzuki, Chem. Rev. 1995, 95, 2457 and the others. Compound (D-2) to be used in the reaction can be also prepared, for example, by reacting an iodo compound (R^{41} -I) or a bromo compound (R^{41} -Br) with an alkyl lithium (such as butyl lithium), followed by reacting the resulting mixtures with borate esters to obtain boronate ester derivatives. Also, the obtained boronate ester derivatives can be hydrolyzed to the corresponding boronate esters derivatives as needed. Further, according to a method described in a review article of Molander et al. Acc. Chem. Res. 2007, 40, 275 and the others, the above-mentioned boronate ester derivatives can be fluorinated with potassium bifluoride and the like to obtain the trifluoroborate salts ($BF_3^-K^+$).

Examples of the catalyst to be used in the reaction include palladium(II) acetate, dichlorobis(triphenylphosphine)palladium, tetrakis(triphenylphosphine)palladium(0), palladium(II) acetate/triscyclohexylphosphine, bis(diphenylphosphine ferrocenyl)palladium(II) dichloride, 1,3-bis(2,6-diisopropylphenyl)imidazole-2-ylidene (1,4-naphthoquinone)palladium dimer, aryl(chloro)(1,3-dimethyl-1,3-dihydro-2H-imidazole-2-ylidene)palladium or palladium(II) acetate/dicyclohexyl(2',4',6'-triisopropylbiphenyl-2-yl)phosphine, and

tris(dibenzylideneacetone)dipalladium and the others.

Examples of the base to be used in the reaction include organic bases such as triethylamine, pyridine, N-methylmorpholine, N-methylpiperidine, 4-dimethylaminopyridine, diisopropylethylamine, lutidine, collidine, diazabicycloundecene, diazabicyclononene; alkali metal carbonates such as lithium carbonate, sodium carbonate, potassium carbonate, cesium carbonate; alkali metal bicarbonates such as lithium bicarbonate, sodium bicarbonate, potassium bicarbonate, cesium bicarbonate; alkali metal hydroxides such as lithium hydroxide, sodium hydroxide, potassium hydroxide, cesium hydroxide; alkali metal halides such as sodium fluoride, potassium fluoride, cesium fluoride, cesium chloride; alkali metal hydrides such as lithium hydride, sodium hydride, potassium hydride; alkali metal phosphates such as tripotassium phosphate; and alkali metal alkoxides such as sodium methoxide, sodium ethoxide, sodium tert-butoxide, potassium tert-butoxide.

In the reaction, Compound (D-2) is used usually within a range of 1 to 10 molar ratio(s), and the base is used usually within a range of 1 to 10 molar ratio(s), and the catalyst is used usually within a range of 0.0001 to 1 molar ratio(s), as opposed to 1 mole of Compound (D-1).

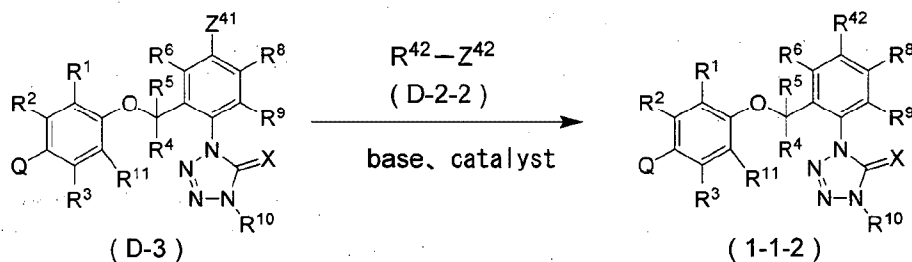
The reaction temperature is usually within a range of 0 to 150°C. The reaction period of the reaction is usually

within a range of 0.1 to 24 hours.

When the reaction is completed, the reaction mixtures are extracted with organic solvent(s), and the resulting organic layers are worked up (for example, drying and concentration) to isolate the present compound of the formula (1-1). The isolated present compound may be further purified, for example, by chromatography and recrystallization.

[0209]

According to the process for preparing the above-mentioned Compound (1-1), the present compound of the formula (1) wherein R^7 represents R^{42} , i.e., compound of a below-mentioned formula (1-1-2) (hereinafter, described as Compound (1-1-2)), can be prepared by coupling compound of a formula (D-3) (hereinafter, describes as Compound (D-3)) with compound of a formula (D-2-2) (hereinafter, describes as Compound (D-2-2)) in the presence of a base and the catalyst.



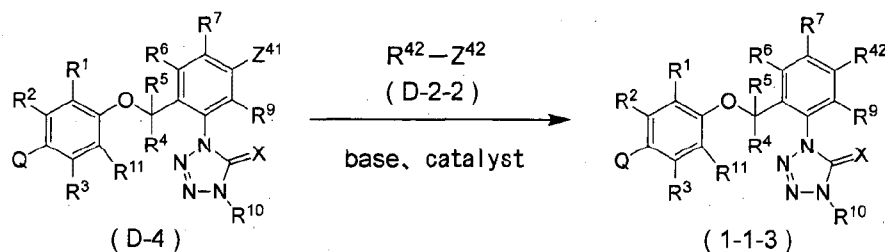
[wherein

$R^1, R^2, R^3, R^4, R^5, R^6, R^8, R^9, R^{10}, R^{11}, X, Q, Z^{41}$ and Z^{42}

are the same as defined above, R^{42} represents an C1-C3 alkyl group, a C1-C3 haloalkyl group, an C2-C3 alkenyl group or a C2-C3 haloalkenyl group]

[0210]

5 According to the process for preparing the above-mentioned Compound (1-1), the present compound of the formula (1) wherein R^8 represents R^{42} , i.e., a compound of a below-mentioned formula (1-1-3) (hereinafter, described as Compound (1-1-3)), can be prepared by coupling a compound
10 of a below-mentioned formula (D-4) (hereinafter, described as Compound (D-4)) with Compound (D-2-2) (hereinafter, described as Compound (D-2-2)) in the presence of a base and a catalyst.



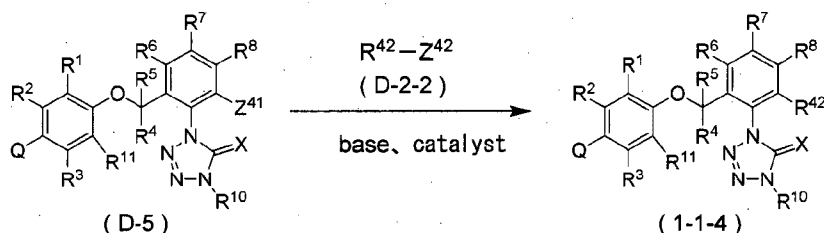
15 [wherein

$R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^9, R^{10}, R^{11}, X, Q, Z^{41}$ and Z^{42} are the same as defined above]

[0211]

According to the process for preparing the above-mentioned Compound (1-1), the present compound of the
20 formula (1) wherein R^9 represents R^{42} , i.e., a compound of a below-mentioned formula (1-1-4) (hereinafter, described as

Compound (1-1-4)), can be prepared by coupling a compound of a below-mentioned formula (D-5) (hereinafter, described as Compound (D-5)) with Compound (D-2-2) (hereinafter, described as Compound (D-2-2)) in the presence of a base and a catalyst.



[wherein

$$R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^{10}, R^{11}, R^{42}, X, Q, Z^{41}$$

and Z^{42} are the same as defined above]

10 [0212]

The present compound of the formula (1) wherein R⁶ represents R⁴¹, and one or more substituents selected from the group consisting of R⁷, R⁸ and R⁹ is R⁴² can be prepared according to the above-mentioned Process D.

15 [0213]

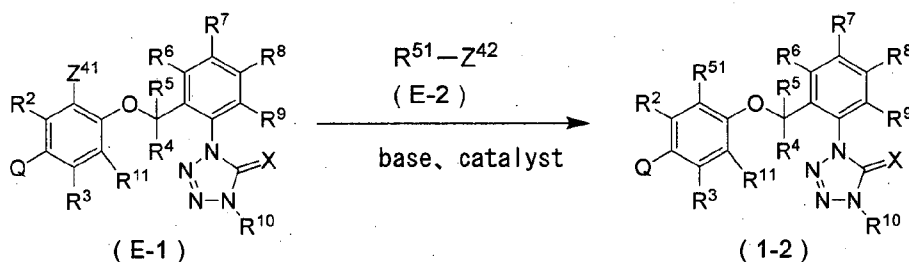
Compound (1-1), Compound (1-1-2), Compound (1-1-3) and Compound (1-1-4) can be prepared by using other known coupling reaction in place of the above-mentioned coupling reaction of Process D.

20 [0214]

(Process E)

The present compound of the formula (1) wherein R¹

represents R^{51} , i.e., the compound of a formula (1-2) (hereinafter, described as Compound (1-2)), can be prepared by coupling Compound (E-1) (hereinafter, described as Compound (E-1)) with a compound of a formula (E-2) (hereinafter, described as Compound (E-2)) in the presence of a base and a catalyst.



[wherein

R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^9 , R^{10} , R^{11} , Z^{41} , Z^{42} , X and Q are the same as defined above, R^{51} represents an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C2-C6 alkenyl group, a C2-C6 haloalkenyl group, an C2-C6 alkynyl group, a C2-C6 haloalkynyl group, a C3-C6 cycloalkyl group or a C3-C6 halocycloalkyl group]

This reaction is usually carried out in a solvent.

Examples of the solvent to be used in the reaction include hydrocarbons such as heptane, hexane, cyclohexane, pentane, toluene, xylene; ethers such as diethyl ether, tetrahydrofuran, 1,4-dioxane, ethyleneglycol dimethyl ether, anisole, methyl tert-butyl ether, diisopropyl ether; halogenated hydrocarbons such as carbon tetrachloride,

chloroform, dichloromethane, 1,2-dichloroethane, tetrachloroethane, chlorobenzene; acid amides such as N,N-dimethylformamide, 1,3-dimethyl-2-imidazolidinone, N-methylpyrrolidone; esters such as ethyl acetate, methyl acetate; sulfoxides such as dimethyl sulfoxide; ketones such as acetone, methyl ethyl ketone, methyl isobutyl ketone; nitriles such as acetonitrile, propionitrile; alcohols such as methanol, ethanol, propanol, butanol; water; and mixed solvents thereof.

10 Compound (E-2) to be used in the reaction may be usually used as a commercially available product, or may be prepared according to a method described in a review article of N. Miyaura and A. Suzuki, Chem. Rev. 1995, 95, 2457 and the others. Compound (E-2) to be used in the
15 reaction can be also prepared, for example, by reacting an iodo compound (R^{51} -I) or a bromo compound (R^{51} -Br) with an alkyl lithium (such as butyl lithium), followed by reacting the resulting mixtures with borate esters to obtain boronate ester derivatives. Also, the obtained boronate
20 ester derivatives can be hydrolyzed to the corresponding boronate esters derivatives as needed. Further, according to a method described in a review article of Molander et al. Acc. Chem. Res. 2007, 40, 275 and the others, the above-mentioned boronate ester derivatives can be fluorinated
25 with potassium bifluoride and the like to obtain the

trifluoroborate salts (BF_3K^+).

Examples of the catalyst to be used in the reaction include palladium(II) acetate, dichlorobis(triphenylphosphine)palladium, tetrakis(triphenylphosphine)palladium(0), palladium(II) acetate/triscyclohexylphosphine, bis(diphenylphosphine ferrocenyl)palladium(II) dichloride, 1,3-bis(2,6-diisopropylphenyl)imidazole-2-ylidene (1,4-naphthoquinone)palladium dimer, aryl(chloro)(1,3-dimethyl-1,3-dihydro-2H-imidazole-2-ylidene)palladium or palladium(II) acetate/dicyclohexyl(2',4',6'-triisopropylbiphenyl-2-yl)phosphine, and tris(dibenzylideneacetone)dipalladium and the others.

Examples of the base to be used in the reaction include organic bases such as triethylamine, pyridine, N-methylmorpholine, N-methylpiperidine, 4-dimethylaminopyridine, diisopropylethylamine, lutidine, collidine, diazabicycloundecene, diazabicyclononene; alkali metal carbonates such as lithium carbonate, sodium carbonate, potassium carbonate, cesium carbonate; alkali metal bicarbonates such as lithium bicarbonate, sodium bicarbonate, potassium bicarbonate, cesium bicarbonate; alkali metal hydroxides such as lithium hydroxide, sodium hydroxide, potassium hydroxide, cesium hydroxide; alkali metal halides such as sodium fluoride, potassium fluoride,

DEMANDES OU BREVETS VOLUMINEUX

**LA PRÉSENTE PARTIE DE CETTE DEMANDE OU CE BREVETS
COMPREND PLUS D'UN TOME.**

CECI EST LE TOME __1__ DE __3__

NOTE: Pour les tomes additionels, veuillez contacter le Bureau Canadien des Brevets.

JUMBO APPLICATIONS / PATENTS

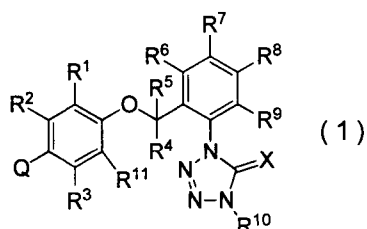
**THIS SECTION OF THE APPLICATION / PATENT CONTAINS MORE
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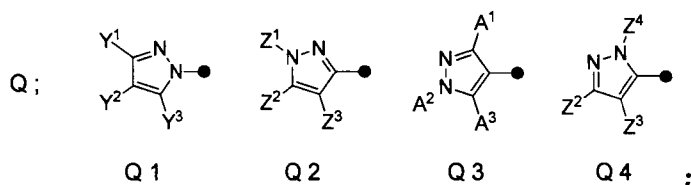
CLAIMS:

1. A tetrazolinone compound of a formula (1):



5 wherein

Q represents Q1, Q2, Q3 or Q4:



10 R^1 , R^2 , R^3 and R^{11} represent independently of each other a hydrogen atom, a halogen atom, a cyano group, a nitro group, an amino group, a hydroxy group, a thiol group, an C2-C6 alkenyl group, a C2-C6 haloalkenyl group, an C2-C6 alkynyl group, a C2-C6 haloalkynyl group, an C1-C6 alkoxy group, a C1-C6 haloalkoxy group, an C1-C8 alkylamino group, a C1-C8 haloalkylamino group, an C1-C6 alkylthio group, a C1-C6 haloalkylthio group, an C1-C6 alkylsulfinyl group, a C1-C6 haloalkylsulfinyl group, an C1-C6 alkylsulfonyl group, a C1-C6 haloalkylsulfonyl group, a pentafluorosulfanyl group, a C3-C9 trialkylsilyl group, an C2-C6 alkylcarbonyl group, an C2-C6 alkoxy carbonyl group, an C2-C8

alkylaminocarbonyl group, an C1-C6 alkyl group optionally having one or more substituents selected from the group consisting of Group P¹ or an C3-C6 cycloalkyl group optionally having one or more substituents selected from the group
5 consisting of Group P¹;

R⁴ and R⁵ represent independently of each other a hydrogen atom, a halogen atom or an C1-C3 alkyl group;

R⁶ represents a C3-C6 cycloalkyl group, an C2-C4 alkynyl group, a C2-C4 haloalkynyl group, a C1-C4 haloalkoxy group, an
10 C1-C4 alkythio group, an C1-C4 alkylsulfinyl group, an C1-C4 alkylsulfonyl group, a C1-C4 haloalkylthio group, a C1-C4 haloalkylsulfinyl group, a C1-C4 haloalkylsulfonyl group, an C1-C6 alkylamino group, a C1-C6 haloalkylamino group or a C3-C6 halocycloalkyl group;

15 R⁷, R⁸ and R⁹ represent independently of each other a hydrogen atom, a halogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group, an C2-C3 alkenyl group, a C2-C3 haloalkenyl group or an C1-C3 alkoxy group;

R¹⁰ represents an C1-C3 alkyl group, a C1-C3 haloalkyl
20 group, an C2-C3 alkenyl group, a C2-C3 haloalkenyl group, an C2-C3 alkynyl group, a C2-C3 haloalkynyl group, a C3-C5 cycloalkyl group or a C3-C5 halocycloalkyl group;

X represents an oxygen atom or a sulfur atom;

A¹ and A³ represent independently of each other a hydrogen
25 atom, a halogen atom, a cyano group, a nitro group, an amino group, a hydroxy group, a thiol group, an C2-C6

alkenyl group, a C2-C6 haloalkenyl group, an C2-C6 alkynyl group, a C2-C6 haloalkynyl group, an C1-C6 alkoxy group, a C1-C6 haloalkoxy group, an C1-C8 alkylamino group, a C1-C8 haloalkylamino group, an C1-C6 alkylthio group, a C1-C6 haloalkylthio group, an C1-C6 alkylsulfinyl group, a C1-C6 haloalkylsulfinyl group, an C1-C6 alkylsulfonyl group, a C1-C6 haloalkylsulfonyl group, a pentafluorosulfanyl group, a C3-C9 trialkylsilyl group, an C2-C6 alkylcarbonyl group, an C2-C6 alkoxy carbonyl group, an C2-C8 alkylaminocarbonyl group, an C1-C6 alkyl group optionally having one or more substituents selected from the group consisting of Group P¹, or a C3-C6 cycloalkyl group optionally having one or more substituents selected from the group consisting of Group P¹;

A², Z¹ and Z⁴ represent independently of each other a hydrogen atom, an amino group, an C3-C6 alkenyl group, a C3-C6 haloalkenyl group, an C3-C6 alkynyl group, a C3-C6 haloalkynyl group, an C1-C6 alkylsulfinyl group, a C1-C6 haloalkylsulfinyl group, an C1-C6 alkylsulfonyl group, a C1-C6 haloalkylsulfonyl group, a C3-C6 cycloalkylsulfonyl group, a C3-C6 halocycloalkylsulfonyl group, an C2-C8 alkylaminosulfonyl group, a C2-C8 haloalkylaminosulfonyl group, a C3-C9 trialkylsilyl group, an C2-C6 alkylcarbonyl group, an C2-C6 alkoxy carbonyl group, an C2-C8 alkylaminocarbonyl group, a C4-C7 cycloalkylmethyl group, an C1-C6 alkyl group optionally having one or more substituents

selected the group consisting of from Group P¹ or a C3-C6 cycloalkyl group optionally having one or more substituents selected from the group consisting of Group P¹;

Y¹, Y², Y³, Z² and Z³ represent independently of each other

5 a hydrogen atom, a halogen atom, a cyano group, a nitro group, an amino group, a hydroxy group, a thiol group, an aldehyde group, an C2-C6 alkenyl group, a C2-C6 haloalkenyl group, an C2-C6 alkynyl group, a C2-C6 haloalkynyl group, an C1-C6 alkoxy group, a C1-C6 haloalkoxy group, an C3-C6 alkenyloxy group, a

10 C3-C6 haloalkenyloxy group, an C3-C6 alkynyloxy group, a C3-C6 haloalkynyloxy group, an C3-C6 alkenylthio group, an C3-C6 alkynylthio group, a C3-C6 haloalkenylthio group, a C3-C6 haloalkynylthio group, an C1-C8 alkylamino group, a C1-C8 haloalkylamino group, an C1-C6 alkylthio group, a C1-C6

15 haloalkylthio group, an C1-C6 alkylsulfinyl group, a C1-C6 haloalkylsulfinyl group, an C1-C6 alkylsulfonyl group, a C1-C6 haloalkylsulfonyl group, an C2-C8 alkylaminosulfonyl group, a pentafluorosulfanyl group, a C3-C9 trialkylsilyl group, an C2-C6 alkylcarbonyl group, an C2-C6 alkoxy carbonyl group, an

20 aminocarbonyl group, an C2-C8 alkylaminocarbonyl group, an C1-C6 alkyl group optionally having one or more substituents selected from the group consisting of Group P¹ or a C3-C6 cycloalkyl group optionally having one or more substituents selected from the group consisting of Group P¹; or

Y¹ and Y² may combine with each other together with the carbon atom to which they are attached to form a five-, six- or seven-membered saturated ring, said saturated ring may optionally contain one or more oxygen atoms or sulfur atoms as the ring-constituent atom, and the saturated ring may optionally have one or more substituents selected from the group consisting of Group P¹; or

Y² and Y³ may combine with each other together with the carbon atom to which they are attached to form a five-, six- or seven-membered saturated ring, said saturated ring may optionally contain one or more oxygen atoms or sulfur atoms as the ring-constituent atom, and the saturated ring may optionally have one or more substituents selected from the group consisting of Group P¹; or

Z¹ and Z² may combine with each other together with the carbon atom or nitrogen atom to which they are attached to form a five-, six- or seven-membered saturated ring, said the saturated ring may optionally contain one or more oxygen atoms, nitrogen atoms or sulfur atoms as the ring-constituent atom, and the saturated ring may optionally have one or more substituents selected from the group consisting of Group P¹; or

Z² and Z³ may combine with each other together with the carbon atom to which they are attached to form a five-, six- or seven-membered saturated ring, said saturated ring may optionally contain one or more oxygen atoms, nitrogen

atoms or sulfur atoms as the ring-constituent atom, and the saturated ring may optionally have one or more substituents selected from the group consisting of Group P¹; and

Group P¹: a group consisting of a halogen atom, a cyano group, a C3-C6 cycloalkyl group, a C3-C6 halocycloalkyl group, an C1-C4 alkoxy group, a C1-C4 haloalkoxy group, an C1-C4 alkylthio group and a C1-C4 haloalkylthio group.

2. The tetrazolinone compound according to claim 1 wherein Q represents Q1.

3. The tetrazolinone compound according to claim 1 wherein Q represents Q2.

4. The tetrazolinone compound according to claim 1 wherein Q represents Q3.

5. The tetrazolinone compound according to claim 1 wherein Q represents Q4.

6. The tetrazolinone compound according to any one of claims 1 to 5,

wherein

R¹ represents an C1-C3 alkyl group, a halogen atom, a C1-C3 haloalkyl group, an C2-C3 alkynyl group, a C2-C3 haloalkynyl group, a C3-C5 cycloalkyl group, a C3-C5 halocycloalkyl group, an C1-C3 alkoxy group or a C1-C3 haloalkoxy group;

R², R⁴, R⁵, R⁷, R⁸, R⁹ and R¹¹ represent a hydrogen

atom;

R³ represents a hydrogen atom, a halogen atom, an C1-C3 alkyl group or a C1-C3 haloalkyl group;

5 R⁶ represents a C3-C6 cycloalkyl group, an C2-C4 alkynyl group, a C2-C4 haloalkynyl group, a C1-C4 haloalkoxy group, an C1-C4 alkythio group, a C1-C4 haloalkylthio group or a C3-C6 halocycloalkyl group;

R¹⁰ represents a methyl group; and

X represents an oxygen atom.

10 7. The tetrazolinone compound according to claim 1, 2 or 6, wherein

Y¹ and Y² may combine with each other together with the carbon atom to which they are attached to form a five- or six-membered saturated ring;

15 Y² and Y³ may combine with each other together with the carbon atom to which they are attached to form a five- or six-membered saturated ring;

when each of Y¹, Y² and Y³ does not form the five- or six-membered saturated ring,

20 Y¹ represents a hydrogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, a C3-C6 cycloalkyl group or a C3-C6 halocycloalkyl group;

Y² represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, an C2-C6 alkynyl

group, an C1-C6 alkoxy group, a C1-C6 haloalkoxy group, a C3-C6 cycloalkyl group or a C3-C6 halocycloalkyl group;

Y³ represents a hydrogen atom, an C1-C4 alkyl group or a C1-C4 haloalkyl group.

- 5 8. The tetrazolinone compound according to claim 1, 3 or 6,
 wherein

 Z¹ represents an C1-C6 alkyl group, a C1-C6 haloalkyl
group, an C3-C6 alkynyl group, a C3-C6 haloalkynyl group, a C3-
C6 cycloalkyl group, a C3-C6 halocycloalkyl group or a C4-C7
10 cycloalkylmethyl group;

 Z² represents a hydrogen atom, a halogen atom, an C1-C6
alkyl group, a C1-C6 haloalkyl group, an C1-C6 alkoxy group, a
C1-C6 haloalkoxy group, a C3-C6 cycloalkyl group or a C3-C6
halocycloalkyl group; alternatively,

- 15 Z¹ and Z² may combine with each other together with the
carbon atom or the nitrogen atom to which they are attached to
form a five- or six-membered saturated ring; and

 Z³ represents a hydrogen atom, a halogen atom, an C1-C4
alkyl group or a C1-C4 haloalkyl group.

- 20 9. The tetrazolinone compound according to claim 1, 2 or 6,
 wherein

 Y¹ and Y² combine with each other to represent -CH₂-CH₂-CH₂-
CH₂-, which combines together with the carbon atoms to

which Y¹ and Y² are attached to form a six-membered ring;

Y² and Y³ combine with each other to represent -CH₂-CH₂-CH₂-CH₂-, which combines together with the carbon atoms to which Y² and Y³ are attached to form a six-membered ring;

5 when each of Y¹, Y² and Y³ does not form the six-membered saturated ring,

Y¹ represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group or a cyclopropyl group;

10 Y² represents a hydrogen atom, an C1-C3 alkyl group, a C1-C3 haloalkyl group, a cyano group or an C1-C3 alkoxy group; and

Y³ represents a hydrogen atom or a methyl group.

10. The tetrazolinone compound according to claim 1, 3 or 6, wherein

Z¹ represents an C1-C6 alkyl group;

15 Z² represents a hydrogen atom, a halogen atom, an C1-C6 alkyl group, a C1-C6 haloalkyl group, a cyano group, an C1-C6 alkoxy group or a C1-C6 alkylthio group; and

Z³ represents a hydrogen atom, a halogen atom or an C1-C4 alkyl group.

20 11. The tetrazolinone compound according to claim 1, 3 or 6, wherein

Z¹ represents an C1-C3 alkyl group;

Z^2 represents a hydrogen atom, a chlorine atom, a methoxy group, an ethoxy group, a methylthio group, a cyano group, a trifluoromethyl group or an C1-C3 alkyl group; and

5 Z^3 represents a hydrogen atom, a halogen atom or a methyl group.

12. The tetrazolinone compound according to claim 1, 3 or 6, wherein

Z^1 represents an C1-C3 alkyl group;

10 Z^2 represents a hydrogen atom, a chlorine atom, a methoxy group, a methylthio group, a trifluoromethyl group a cyano group, or an C1-C3 alkyl group; and

Z^3 represents a hydrogen atom, a chlorine atom or a methyl group.

15 13. The tetrazolinone compound according to any one of claims 1 to 12,

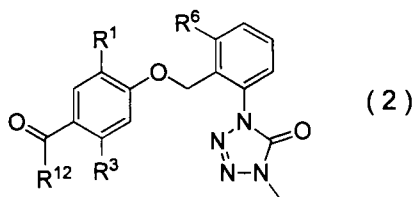
wherein

R^1 represents a methyl group, an ethyl group, a chlorine atom, a bromine atom or a trifluoromethyl group;

R^3 represents a hydrogen atom or a methyl group; and

20 R^6 represents a cyclopropyl group, an ethynyl group, a difluoromethoxy group or a methylthio group.

14. A tetrazolinone compound of a formula (2):



wherein

R^1 represents a methyl group, an ethyl group, a chlorine atom, a bromine atom, a trifluoromethyl group or a cyclopropyl group;

R^3 represents a hydrogen atom or a methyl group;

R^6 represents a cyclopropyl group, a difluoromethoxy group, an ethynyl group or a methylthio group; and

R^{12} represents an C1-C6 alkyl group, a C1-C6 haloalkyl group, a C3-C6 cycloalkyl group or a C1-C6 halocycloalkyl group.

15. The tetrazolinone compound according to claim 14,

wherein

R^1 represents a methyl group, an ethyl group, a chlorine atom or a bromine atom;

R^3 represents a hydrogen atom or a methyl group;

R^6 represents a cyclopropyl group; and

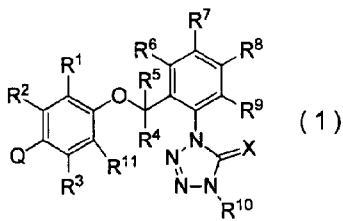
R^{12} represents a methyl group, an ethyl group or a cyclopropyl group.

16. An agent for controlling pests comprising the tetrazolinone compound according to any one of claims 1 to 15.

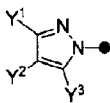
17. A method for controlling pests comprising applying an

effective amount of the tetrazolinone compound according to any one of claims 1 to 15 to plant or soil.

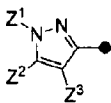
18. Use of the tetrazolinone compound according to any one of claims 1 to 15 for controlling pests.



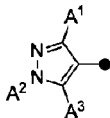
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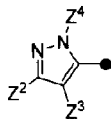
Q 1



Q 2



Q 3



Q 4