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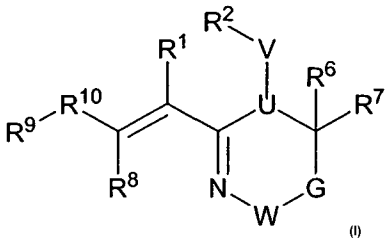
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(54) Title: GAMMA SECRETASE MODULATORS



(I)

(57) Abstract: In its many embodiments, the present invention provides a novel class of heterocyclic compounds of the formula: as modulators of gamma secretase, methods of preparing such compounds, pharmaceutical compositions containing one or more such compounds, methods of preparing pharmaceutical formulations comprising one or more such compounds, and methods of treatment, prevention, inhibition, or amelioration of one or more diseases associated with the central nervous system using such compounds or pharmaceutical compositions.

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GAMMA SECRETASE MODULATORS

Reference to Related Application

This application claims the benefit of U.S. Provisional Application No. 60/941405 filed June 1, 2007, and of U.S. Provisional Application No. 60/984484 filed November 1, 2007.

Field of the Invention

The present invention relates to certain heterocyclic compounds useful as gamma secretase modulators (including inhibitors, antagonists and the like), pharmaceutical compositions containing the compounds, and methods of treatment using the compounds and compositions to treat various diseases including central nervous system disorders such as, for example, neurodegenerative diseases such as Alzheimer's disease and other diseases relating to the deposition of amyloid protein. They are especially useful for reducing Amyloid beta (hereinafter referred to as Aβ) production which is effective in the treatment of diseases caused by Aβ such as, for example, Alzheimers and Down Syndrome.

Background of the Invention

Alzheimer's disease is a disease characterized by degeneration and loss of neurons and also by the formation of senile plaques and neurofibrillary change. Presently, treatment of Alzheimer's disease is limited to symptomatic therapies with a symptom-improving agent represented by an acetylcholinesterase inhibitor, and the basic remedy which prevents progress of the disease has not been developed. A method of controlling the cause of onset of pathologic conditions needs to be developed for creation of the basic remedy of Alzheimer's disease.

Aβ protein, which is a metabolite of amyloid precursor protein (hereinafter referred to as APP), is considered to be greatly involved in degeneration and loss of neurons as well as onset of demential conditions (for example, see Klein W L, et al *Proceeding National Academy of Science USA*,

Sep. 2, 2003, 100(18), p. 10417-22, suggest a molecular basis for reversible memory loss.

Nitsch R M, and 16 others, *Antibodies against β-amyloid slow cognitive decline in Alzheimer's disease,* Neuron, May 22, 2003, 38(4), p. 547-554) suggest that the main components of Aβ protein are Aβ40 consisting of 40 amino acids and Aβ42 having two additional amino acids at the C-terminal. The Aβ40 and Aβ42 tend to aggregate (for example, see Jarrell J T et al, *The carboxy terminus of the β amyloid protein is critical for the seeding of amyloid formation: implications for the pathogenesis of Alzheimer's disease*, Biochemistry, May 11,1993, 32(18), p. 4693-4697) and constitute main components of senile plaques (for example, (Glenner GG, et al, *Alzheimer's disease: initial report of the purification and characterization of a novel cerebrovascular amyloid protein*, Biochemical and Biophysical Research Communications, May 16, 1984, 120(3), p. 885-90. See also Masters C L, et al, *Amyloid plaque core protein in Alzheimer disease and Down syndrome*, Proceeding National Academy of Science USA, June 1985, 82(12), p. 4245-4249.).

Furthermore, it is known that mutations of APP and presenelin genes, which is observed in familial Alzheimer's disease, increase production of Aβ40 and Aβ42 (for example, see Gouras G K, et al, *Intraneuronal Aβ142 accumulation in human brain*, American Journal of Pathology, January 2000, 156(1), p. 15-20. Also, see Scheuner D, et al, Nature Medicine, August 1996, 2(8), p. 864-870; and Forman M S, et al, *Differential effects of the Swedish mutant amyloid precursor protein on β-amyloid accumulation and secretion in neurons and nonneuronal cells*, Journal of Biological Chemistry, Dec. 19, 1997, 272(51), p. 32247-32253.). Therefore, compounds which reduce production of Aβ40 and Aβ42 are expected as an agent for controlling progress of Alzheimer's disease or for preventing the disease.

These Aβs are produced when APP is cleaved by beta secretase and subsequently clipped by gamma secretase. In consideration of this, creation of inhibitors of γ secretase and β secretase has been attempted for the purpose of

reducing production of Aβs. Many of these secretase inhibitors already known are peptides or peptidomimetics such as L-685,458. L-685,458, an aspartyl protease transition stale mimic, is a potent inhibitor of amyloid β-protein precursor γ-secretase activity, Biochemistry, Aug. 1, 2000, 39(30), p. 8698-8704).

Also of interest in connection with the present invention are: US 2007/0117798 (Eisai, published May 24, 2007); US 2007/0117839 (Eisai, published May 24, 2007); US 2006/0004013 (Eisai, published January 5, 2006); WO 2005/110422 (Boehringer Ingelheim, published November 24, 2005); WO 2006/045554 (Cellzone AG, published may 4, 2006); WO 2004/110350 (Neurogenetics , published December 23, 2004); WO 2004/071431 (Myriad Genetics, published August 26, 2004); US 2005/0042284 (Myriad Genetics, published February 23, 2005) and WO 2006/001877 (Myriad Genetics, published January 5, 2006).

There is a need for new compounds, formulations, treatments and therapies to treat diseases and disorders associated with Aβ. It is, therefore, an object of this invention to provide compounds useful in the treatment or prevention or amelioration of such diseases and disorders.

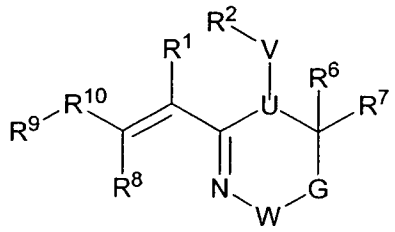
Summary of the Invention

In its many embodiments, the present invention provides a novel class of heterocyclic compounds as gamma secretase modulators (including inhibitors, antagonists and the like), methods of preparing such compounds, pharmaceutical compositions comprising one or more such compounds, methods of preparing pharmaceutical formulations comprising one or more such compounds, and methods of treatment, prevention, inhibition or amelioration of one or more diseases associated with the Aβ using such compounds or pharmaceutical compositions.

The compounds of this invention (Formula I) can be useful as gamma secretase modulators and can be useful in the treatment and prevention of

diseases such as, for example, Alzheimers disease, mild cognitive impairment (MCI), Downs Syndrome, Glaucoma (Guo et.al., Proc. Natl. Acad. Sci. USA 104, 13444-13449 (2007)), Cerebral amyloid angiopathy, stroke or dementia (Frangione et al., Amyloid: J. Protein folding Disord. 8, suppl. 1, 36-42 (2001), Microgliosis and brain inflammation (M P Lamber, Proc. Natl. Acad. Sci. USA 95, 6448-53 (1998)), Olfactory function loss (Getchell, et.al. Neurobiology of Aging, 663-673, 24, 2003).

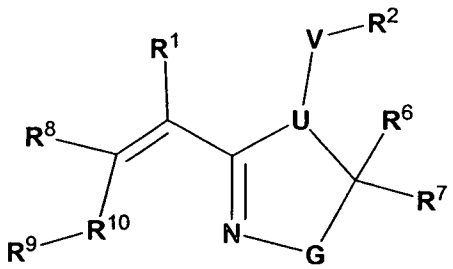
This invention provides compounds of formula I:



Formula I

wherein R^1, R^2, R^6, R^7, R^8, R^9, R^{10}, G, U and W are as defined below.

In one embodiment, the present application discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in Formula IA:



Formula IA

wherein R^1, R^2, R^6, R^7, R^8, R^9, R^{10}, G, U and V are as definied below.

The compounds of Formula I can be useful as gamma secretase modulators and can be useful in the treatment and prevention of diseases such as, for example, central nervous system disorders such as Alzheimers disease and Downs Syndrome.

This invention also provides compounds of formula I.

This invention also provides pharmaceutically acceptable salts of the compounds of formula I.

This invention also provides pharmaceutically acceptable esters of the compounds of formula I.

This invention also provides pharmaceutically solvates of the compounds of formula I.

This invention also provides compounds of formula I in pure and isolated form.

This invention also provides compounds of formula I in pure form.

This invention also provides compounds of formula I in isolated form.

This invention also provides compounds 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1..

This invention also provides compounds 1 to 20 (i.e., the compounds in Table 1).

This invention also provides compounds 1 to 20, and 23.

This invention also provides compounds 21, 22, and 24.

This invention also provides pharmaceutical compositions comprising an effective amount of one or more (e.g., one) compounds of formula I, or a pharmaceutically acceptable salt, ester or solvate thereof, and a pharmaceutically acceptable carrier.

This invention also provides pharmaceutical compositions comprising an effective amount of one or more (e.g., one) compounds of formula I, or a pharmaceutically acceptable salt, ester or solvate thereof, and an effective amount of one or more (e.g., one) other pharmaceutically active ingredients (e.g., drugs), and a pharmaceutically acceptable carrier.

This invention also provides a method for modulating (including inhibiting, antagonizing and the like) gamma-secretase, comprising administering an effective (i.e., therapeutically effective) amount of one or more compounds of formula I to a patient in need of treatment.

This invention also provides a method for modulating (including inhibiting, antagonizing and the like) gamma-secretase, comprising administering an effective (i.e., therapeutically effective) amount of a compound of formula I to a patient in need of treatment.

This invention also provides a method of treating one or more neurodegenerative diseases, comprising administering an effective (i.e., therapeutically effective) amount of one or more compounds of formula I to a patient in need of treatment.

This invention also provides a method of treating one or more neurodegenerative diseases, comprising administering an effective (i.e., therapeutically effective) amount of a compound of formula I to a patient in need of treatment.

This invention also provides a method of inhibiting the deposition of amyloid protein (e.g., amyloid beta protein) in, on or around neurological tissue (e.g., the brain), comprising administering an effective (i.e., therapeutically effective) amount of one or more compounds of formula I to a patient in need of treatment.

This invention also provides a method of inhibiting the deposition of amyloid protein (e.g., amyloid beta protein) in, on or around neurological tissue (e.g., the brain), comprising administering an effective (i.e., therapeutically effective) amount of a compound of formula I to a patient in need of treatment.

This invention also provides a method of treating Alzheimer's disease, comprising administering an effective (i.e., therapeutically effective) amount of one or more compounds of formula I to a patient in need of treatment.

This invention also provides a method of treating Alzheimer's disease, comprising administering an effective (i.e., therapeutically effective) amount of a compound of formula I to a patient in need of treatment.

This invention also provides a method of treating Alzheimer's disease, comprising administering an effective (i.e., therapeutically effective) amount of one or more compounds of formula I, in combination with an effective (i.e.,

therapeutically effective) amount of one or more cholinesterase inhibitors (such as, for example, (±)-2,3-dihydro-5,6-dimethoxy-2-[[1-(phenylmethyl)-4-piperidinyl]methyl]-1 *H* -inden-1-one hydrochloride, i.e., donepezil hydrochloride, available as the Aricept® brand of donepezil hydrochloride), to a patient in need of treatment.

This invention also provides a method of treating Alzheimer's disease, comprising administering an effective (i.e., therapeutically effective) amount of one or more compounds of formula I, in combination with an effective (i.e., therapeutically effective) amount of one or more compounds selected from the group consisting of Aβ antibody inhibitors, gamma secretase inhibitors and beta secretase inhibitors.

This invention also provides combinations comprising an effective (i.e., therapeutically effective) amount of one or more compounds of formula I, in combination with an effective (i.e., therapeutically effective) amount of one or more compounds selected from the group consisting of cholinesterase inhibitors (such as, for example, (±)-2,3-dihydro-5,6-dimethoxy-2-[[1-(phenylmethyl)-4-piperidinyl]methyl]-1 *H* -inden-1-one hydrochloride, i.e., donepezil hydrochloride, available as the Aricept® brand of donepezil hydrochloride), Aβ antibody inhibitors, gamma secretase inhibitors and beta secretase inhibitors.

This invention also provides a method of treating Alzheimer's disease, comprising administering an effective (i.e., therapeutically effective) amount of a compound of formula I, in combination with an effective (i.e., therapeutically effective) amount of one or more (e.g., one) cholinesterase inhibitors (such as, for example, (±)-2,3-dihydro-5,6-dimethoxy-2-[[1-(phenylmethyl)-4-piperidinyl]methyl]-1 *H* -inden-1-one hydrochloride, i.e., donepezil hydrochloride, available as the Aricept® brand of donepezil hydrochloride), to a patient in need of treatment.

This invention also provides a method of treating Downs syndrome, comprising administering an effective (i.e., therapeutically effective) amount of one or more compounds of formula I to a patient in need of treatment.

This invention also provides a method of treating Downs syndrome, comprising administering an effective (i.e., therapeutically effective) amount of a compound of formula I to a patient in need of treatment.

This invention also provides a method of treating Downs syndrome, comprising administering an effective (i.e., therapeutically effective) amount of one or more compounds of formula I, in combination with an effective (i.e., therapeutically effective) amount of one or more cholinesterase inhibitors (such as, for example, (±)-2,3-dihydro-5,6-dimethoxy-2-[[1-(phenylmethyl)-4-piperidinyl]methyl]-1 *H* -inden-1-one hydrochloride, i.e., donepezil hydrochloride, available as the Aricept® brand of donepezil hydrochloride), to a patient in need of treatment.

This invention also provides a method of treating Downs syndrome, comprising administering an effective (i.e., therapeutically effective) amount of a compound of formula I, in combination with an effective (i.e., therapeutically effective) amount of one or more (e.g., one) cholinesterase inhibitors (such as, for example, (±)-2,3-dihydro-5,6-dimethoxy-2-[[1-(phenylmethyl)-4-piperidinyl]methyl]-1 *H* -inden-1-one hydrochloride, i.e., donepezil hydrochloride, available as the Aricept® brand of donepezil hydrochloride), to a patient in need of treatment.

This invention also provides combination therapies for (1) modulating gamma-secretase, or (2) treating one or more neurodegenerative diseases, or (3) inhibiting the deposition of amyloid protein (e.g., amyloid beta protein) in, on or around neurological tissue (e.g., the brain), or (4) treating Alzheimer's disease. The combination therapies are directed to methods comprising the administration of an effective amount of one or more (e.g. one) compounds of formula I and the administration of an effective amount of one or more (e.g., one) other pharmaceutical active ingredients (e.g., drugs).

This invention also provides a method of treating mild cognitive impairment, comprising administering an effective amount of one or more (e.g., one) compounds of formula I to a patient in need of treatment.

This invention also provides a method of treating glaucoma, comprising administering an effective amount of one or more (e.g., one) compounds of formula I to a patient in need of treatment.

This invention also provides a method of treating cerebral amyloid angiopathy, comprising administering an effective amount of one or more (e.g., one) compounds of formula I to a patient in need of treatment.

This invention also provides a method of treating stroke, comprising administering an effective amount of one or more (e.g., one) compounds of formula I to a patient in need of treatment.

This invention also provides a method of treating dementia, comprising administering an effective amount of one or more (e.g., one) compounds of formula I to a patient in need of treatment.

This invention also provides a method of treating microgliosis, comprising administering an effective amount of one or more (e.g., one) compounds of formula I to a patient in need of treatment.

This invention also provides a method of treating brain inflammation, comprising administering an effective amount of one or more (e.g., one) compounds of formula I to a patient in need of treatment.

This invention also provides a method of treating olfactory function loss, comprising administering an effective amount of one or more (e.g., one) compounds of formula I to a patient in need of treatment.

This invention also provides pharmaceutical compositions comprising a combination of an effective amount of one or more (e.g., one) compounds of formula I, in combination with an effective amount of one or more compounds selected from the group consisting of cholinesterase inhibitors, Aβ antibody inhibitors, gamma secretase inhibitors and beta secretase inhibitors. The pharmaceutical compositions also comprise a pharmaceutically acceptable carrier.

This invention also provides a kit comprising, in separate containers, in a single package, pharmaceutical compositions for use in combination, wherein one

container comprises an effective amount of a compound of formula I in a pharmaceutically acceptable carrier, and another container (i.e., a second container) comprises an effective amount of another pharmaceutically active ingredient, the combined quantities of the compound of formula I and the other pharmaceutically active ingredient being effective to: (a) treat Alzheimer's disease, or (b) inhibit the deposition of amyloid protein in, on or around neurological tissue (e.g., the brain), or (c) treat neurodegenerative diseases, or (d) modulate the activity of gamma-secretase.

This invention also provides a kit comprising, in separate containers, in a single package, pharmaceutical compositions for use in combination, wherein one container comprises an effective amount of a compound of formula I in a pharmaceutically acceptable carrier, and another container (i.e., a second container) comprises an effective amount of another pharmaceutically active ingredient (as described below), the combined quantities of the compound of formula I and the other pharmaceutically active ingredient being effective to: (a) treat Alzheimer's disease, or (b) inhibit the deposition of amyloid protein (e.g., amyloid beta protein) in, on or around neurological tissue (e.g., the brain), or (c) treat neurodegenerative diseases, or (d) modulate the activity of gamma-secretase.

This invention also provides any one of the methods disclosed above and below wherein the compound is selected from the group consisting of the compounds 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

This invention also provides any one of the methods disclosed above and below wherein the compound of formula I is selected from the group consisting of the compounds 1 to 20, and 23.

This invention also provides any one of the methods disclosed above and below wherein the compound of formula I is selected from the group consisting of the compounds 21, 22 and 24.

This invention also provides any one of the methods disclosed above and below wherein the compound of formula I is selected from the group consisting of the compounds 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

This invention also provides any one of the pharmaceutical compositions disclosed above and below wherein the compound is selected from the group consisting of the compounds 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

This invention also provides any one of the pharmaceutical compositions disclosed above and below wherein the compound is any one of the compounds 1 to 20, and 23.

This invention also provides any one of the pharmaceutical compositions disclosed above and below wherein the compound is any one of the compounds 21, 22 and 24.

This invention also provides any one of the pharmaceutical compositions disclosed above and below wherein the compound is any one of the compounds 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

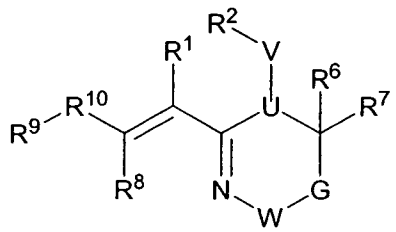
Other embodiments of this invention are directed to any one of the embodiments above or below that are directed to formula I, or the use of formula I (e.g. the embodiments directed to methods of treatment, pharmaceutical compositions and kits), wherein the compound is a compound of formula IA instead of formula I. Those skilled in the art will appreciate that the compounds of formula I and formula IA are isomers of each other.

This invention also provides any one of the above mentioned methods of treatment wherein the compound of formula I is selected from the group consisting of the compounds in **Table 1**.

Detailed Description

In one embodiment, the present invention discloses compounds which are represented by structural Formula I, or a pharmaceutically acceptable salt, solvate, ester or prodrug thereof, wherein the various moieties are described below.

In one embodiment, the present application discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in Formula I:



Formula I

wherein:

either (i) R^1 and R^2 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; or (ii) R^2 and R^6 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; or (iii) R^1 and R^2 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5

substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; and R^2 and R^6 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; or (iv) R^6 and either R^3 or R^4 of the -C(R^3)(R^4)- G moiety, are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; or (v) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with said heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; and

U is $\overset{}{\underset{}{\}}}$—C($R^5$) or N;

W is selected from the group consisting of a bond; -O-, -C(O)-, -S-, -S(O)-, -S(O_2)-, and -C(R^{11})(R^{12})-;

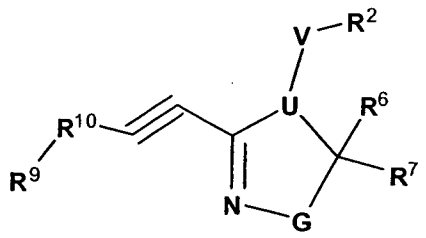
G is selected from the group consisting of -C(R^3)(R^4)-, -C(O)- and -N(R^{13})-, with the proviso that when W is -O- or -S-, G is not -N(R^{13})- or -C(O)-;

V is selected from the group consisting of a bond, -O-, -C(O)-, and -N(R^{14})-;

R^1 (when R^1 is not joined to R^2), R^2 (when R^2 is not joined to R^1 or R^6), R^5, R^6 (when R^6 is not joined to R^2), and R^7can be the same or different, each being independently selected from the group consisting of H, alkyl-, alkenyl-, alkynyl-,

aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

or, alternatively, R^1 (when R^1 is not joined to R^2) and R^8 are taken together to form a bond (i.e., there is a triple bond between the carbon atom to which R^1 was bonded to and the carbon to which R^8 was bonded to, i.e., the compound of formula I is a compound of formula II:



formula II

and R^2, R^5, R^6, and R^7 are as defined above, and R^3, R^4, R^{11} and R^{12} are as defined below);

R^3 is selected from the group consisting of H, halo (and in one example, F), $-OR^{15}$ (and in one example R^{15} is H), -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-C(O)R^{15}$, $-C(O)OR^{15}$,$-C(=NOR^{15})R^{16}$, $-C(O)N(R^{15})(R^{16})$, $-S(O)N(R^{15})(R^{16})$, $S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, $-N_3$, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents

which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; or

R^3 and R^6 taken together form a bond (i.e., R^3 and R^6 form a bond between G and the carbon to which R^6 is bound), provided that when R^3 and R^6 form a bond: (1) W is not a bond, (2) R^2 and R^6 are not joined together to form a cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety (as described in (ii) and (iii) above) (3) R^6 and either R^3 or R^4 of the $-C(R^3)(R^4)-$ G moiety are not joined together to form a cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety (as described in (iv) above), and (4) R^6 and R^{13} of the $-N(R^{13})-$ G moiety are not joined together to form a heterocyclyl or heterocyclenyl moiety (as described in (v) above);

R^4, R^{11} and R^{12} can be the same or different, each being independently selected from the group consisting of H, halo (and in one example, F), $-OR^{15}$ (and in one example R^{15} is H), -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-C(O)R^{15}$, $-C(O)OR^{15}$,$-C(=NOR^{15})R^{16}$, $-C(O)N(R^{15})(R^{16})$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, $-N_3$, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below,

provided that when one of R^3 or R^4 is selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$, then the other is not selected from the

group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, and $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$ (i.e., if one of R^3 or R^4 is $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$, then the other one is not $-OR^{15}$, -CN, $-SR^{15}$, and $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$);

provided that when one of R^{11} or R^{12} is selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$, then the other is not selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$ (i.e., if one of R^{11} or R^{12} is $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$, then the other is not $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$,

$-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$);

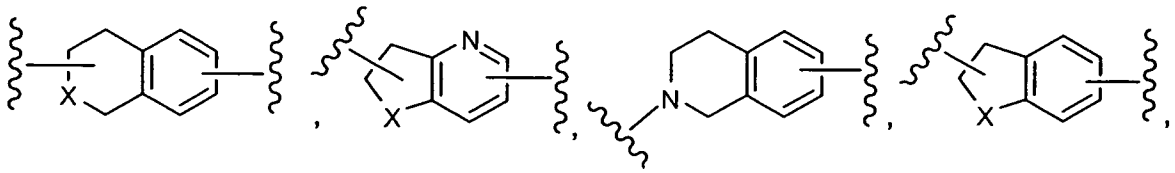
R^{13} is independently selected from the group consisting of H, alkyl, arylalkyl-, heteroarylalkyl-, cycloalkylalkyl-, heterocycloalkylalkyl-, arylcycloalkylalkyl-, heteroarylcycloalkylalkyl-, arylheterocycloalkylalkyl-, heteroarylheterocycloalkylalkyl-, cycloalkyl, arylcycloalkyl-, heteroarylcycloalkyl-, heterocycloalkyl-, arylheterocycloalkyl-, heteroarylheterocycloalkyl-, alkenyl, arylalkenyl-, cycloalkenyl, arylcycloalkenyl-, heteroarylcycloalkenyl-, heterocycloalkenyl-, arylheterocycloalkenyl-, heteroarylheterocycloalkenyl-, alkynyl, arylalkynyl-, aryl, cycloalkylaryl-, heterocycloalkylaryl-, heterocycloalkenylaryl-, heteroaryl, cycloalkylheteroaryl-, heterocycloalkylheteroaryl-, cycloalkenylaryl-, heterocycloalkenylaryl-, $-OR^{15}$, -CN, $-C(O)R^8$, $-C(O)OR^9$, $-S(O)R^{10}$, $-S(O)_2R^{10}$, $-C(O)N(R^{11})(R^{12})$, $-S(O)N(R^{11})(R^{12})$, $-S(O)_2N(R^{11})(R^{12})$, $-NO_2$, $-N=C(R^8)_2$ and $-N(R^8)_2$; and wherein said R^{13} alkyl, arylalkyl-, heteroarylalkyl-, cycloalkylalkyl-, heterocycloalkylalkyl-, arylcycloalkylalkyl-, heteroarylcycloalkylalkyl-, arylheterocycloalkylalkyl-, heteroarylheterocycloalkylalkyl-, cycloalkyl, arylcycloalkyl-, heteroarylcycloalkyl-, heterocycloalkyl, arylheterocycloalkyl-, heteroarylheterocycloalkyl-, alkenyl, arylalkenyl-, cycloalkenyl, arylcycloalkenyl-, heteroarylcycloalkenyl-, heterocycloalkenyl-, arylheterocycloalkenyl-, heteroarylheterocycloalkenyl-, alkynyl, arylalkynyl-, aryl, cycloalkylaryl-, heterocycloalkylaryl-, heterocycloalkenylaryl-, heteroaryl, cycloalkylheteroaryl-, heterocycloalkylheteroaryl-, cycloalkenylaryl-, and heterocycloalkenylaryl- groups are optionally substituted with 1 to 5 groups independently selected from the group consisting of: alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, halo, -CN, $-OR^{15}$, $-C(O)R^{15}$, $-C(O)OR^{15}$, $-C(O)N(R^{15})(R^{16})$, $-SR^{15}$, $-S(O)N(R^{15})(R^{16})$, $-CH(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$,$-C(=NOR^{15})R^{16}$, $-P(O)(OR^{15})(OR^{16})$, $-N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, $-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-R^{15}$; $-CH_2N(R^{15})(R^{16})$,

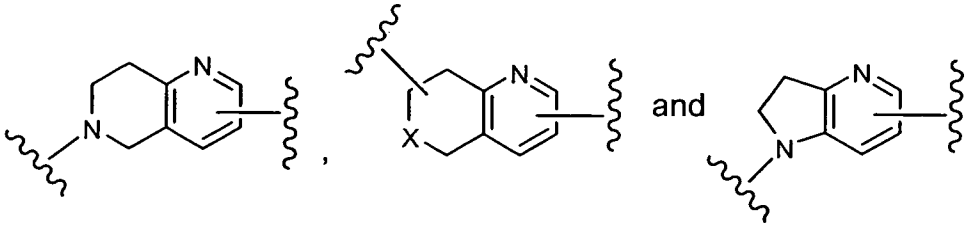
$-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-CH_2-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-CH_2-N(R^{15})C(O)OR^{16}$, $-S(O)R^{15}$, $=NOR^{15}$, $-N_3$, $-NO_2$ and $-S(O)_2R^{15}$;

R^{14} is selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, -CN, $-C(O)R^{15}$, $-C(O)OR^{15}$, $-C(O)N(R^{15})(R^{16})$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-C(=NOR^{15})R^{16}$, and $-P(O)(OR^{15})(OR^{16})$;

R^8 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, with each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- being unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

R^{10} is selected from the group consisting of a bond, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl-, heterocyclylalkyl- and the moieties:





where X is O, $N(R^{14})$ or S;

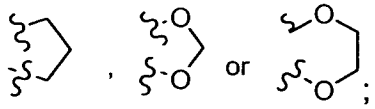
wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl-heterocyclylalkyl- for R^{10} as well as the above-noted moieties for R^{10} can be unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of the moieties shown below; and

R^9 is selected from the group consisting of alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-can be unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below,

R^{15}, R^{16} and R^{17} are independently selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, arylcycloalkyl-, arylheterocyclyl-, R^{18}-alkyl, R^{18}-cycloalkyl, R^{18}-cycloalkylalkyl-, R^{18}-heterocyclyl, R^{18}-heterocyclylalkyl-, R^{18}-aryl, R^{18}-arylalkyl-, R^{18}-heteroaryl and R^{18}-heteroarylalkyl-;

R^{18} is 1-5 substituents independently selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, arylalkyl-, arylalkenyl-, arylalkynyl-, $-NO_2$, halo, heteroaryl, HO-alkyoxyalkyl-, $-CF_3$, -CN, alkyl-CN, $-C(O)R^{19}$, -C(O)OH, $-C(O)OR^{19}$, $-C(O)NHR^{20}$, $-C(O)NH_2$, $-C(O)NH_2$-C(O)N(alkyl)$_2$, -C(O)N(alkyl)(aryl), -C(O)N(alkyl)(heteroaryl), $-SR^{19}$, $-S(O)_2R^{20}$, $-S(O)NH_2$, -S(O)NH(alkyl), -S(O)N(alkyl)(alkyl), -S(O)NH(aryl), $-S(O)_2NH_2$, $-S(O)_2NHR^{19}$, $-S(O)_2$NH(heterocyclyl), $-S(O)_2$N(alkyl)$_2$, $-S(O)_2$N(alkyl)(aryl), $-OCF_3$, -OH, $-OR^{20}$, -O-heterocyclyl, -O-cycloalkylalkyl, -O-heterocyclylalkyl, $-NH_2$, $-NHR^{20}$, -N(alkyl)$_2$, -N(arylalkyl)$_2$, -N(arylalkyl)-(heteroarylalkyl), $-NHC(O)R^{20}$, $-NHC(O)NH_2$, -NHC(O)NH(alkyl), -NHC(O)N(alkyl)(alkyl), -N(alkyl)C(O)NH(alkyl), -N(alkyl)C(O)N(alkyl)(alkyl), $-NHS(O)_2R^{20}$, $-NHS(O)_2$NH(alkyl),

-NHS(O)$_2$N(alkyl)(alkyl), -N(alkyl)S(O)$_2$NH(alkyl) and
–N(alkyl)S(O)$_2$N(alkyl)(alkyl);

or, alternately, two R^{18} moieties on adjacent carbons can be linked together to form:  ;

R^{19} is alkyl, cycloalkyl, aryl, arylalkyl- or heteroarylalkyl-;

R^{20} is alkyl, cycloalkyl, aryl, halo substituted aryl, arylalkyl-, heteroaryl or heteroarylalkyl-;

wherein each of the alkyl, cycloalkyl, cycloalkenyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, alkylaryl-, heteroaryl, heteroarylalkyl-, alkenyl and alkynyl groups in R^1, R^2, R^1-R^2, R^2-R^6, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12} and R^{14} is independently unsubstituted or optionally substituted by 1 to 5 R^{21} groups independently selected from the group consisting of alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, halo, -CN, -OR^{15}, -C(O)R^{15}, -C(O)OR^{15}, -C(O)N(R^{15})(R^{16}), -SR^{15}, -S(O)N(R^{15})(R^{16}), -CH(R^{15})(R^{16}), -S(O)$_2$N(R^{15})(R^{16}), –C(=NOR^{15})R^{16}, -P(O)(OR^{15})(OR^{16}), -N(R^{15})(R^{16}), -alkyl-N(R^{15})(R^{16}), -N(R^{15})C(O)R^{16}, -CH$_2$-N(R^{15})C(O)R^{16}, -CH$_2$-N(R^{15})C(O)N(R^{16})(R^{17}), -CH$_2$-R^{15}; -CH$_2$N(R^{15})(R^{16}), -N(R^{15})S(O)R^{16}, -N(R^{15})S(O)$_2$R^{16}, -CH$_2$-N(R^{15})S(O)$_2$R^{16}, -N(R^{15})S(O)$_2$N(R^{16})(R^{17}), -N(R^{15})S(O)N(R^{16})(R^{17}), -N(R^{15})C(O)N(R^{16})(R^{17}), -CH$_2$-N(R^{15})C(O)N(R^{16})(R^{17}), -N(R^{15})C(O)OR^{16}, -CH$_2$-N(R^{15})C(O)OR^{16}, -S(O)R^{15}, =NOR^{15}, -N$_3$, -NO$_2$ and -S(O)$_2$R^{15};

wherein each of the alkyl, cycloalkenyl, cycloalkyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, alkenyl and alkynyl groups in R^{21} is independently unsubstituted or substituted by 1 to 5 R^{22} groups independently selected from the group consisting of alkyl, cycloalkyl, cycloalkenyl, heterocyclyl, aryl, heteroaryl, halo, -CF$_3$, -CN, -OR^{15}, -C(O)R^{15}, -C(O)OR^{15}, -alkyl-C(O)OR^{15}, C(O)N(R^{15})(R^{16}), -SR^{15}, -S(O)N(R^{15})(R^{16}), -S(O)$_2$N(R^{15})(R^{16}), –C(=NOR^{15})R^{16}, -P(O)(OR^{15})(OR^{16}), -N(R^{15})(R^{16}),

-alkyl-$N(R^{15})(R^{16})$, $-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-CH_2-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-CH_2-N(R^{15})C(O)OR^{16}$, $-N_3$, $=NOR^{15}$, $-NO_2$, $-S(O)R^{15}$ and $-S(O)_2R^{15}$.

The statement above: "either (i) R^1 and R^2 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; or (ii) R^2 and R^6 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; or (iii) R^1 and R^2 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; and R^2 and R^6 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; or (iv) R^6 and either R^3 or R^4 of the $-C(R^3)(R^4)-$ G moiety, are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl

moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; or (v) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; " means that the occurrences of (i), (ii), (iii), (iv) and (v) are mutually exclusive and that only one of (i), (ii), (iii), (iv) and (v) can be present at any given time.

It should be understood that when R^1 and R^2 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, each of said cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety independently may optionally additionally be fused with an aryl or heteroaryl ring, wherein the ring moiety resulting from the fusion may be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown above (i.e., each substitutent is independently selected from the group consisting of the R^{21} substitutents).

It should also be understood that when R^2 and R^6 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, each of said cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety independently may optionally additionally be fused with an aryl or heteroaryl ring, wherein the ring moiety resulting from the fusion may be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown above

(i.e., each substitutent is independently selected from the group consisting of the R^{21} substitutents).

It should be understood that when R^6 and either R^3 or R^4 of the -C(R^3)(R^4)- G moiety, are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, each of said cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety independently may optionally additionally be fused with an aryl or heteroaryl ring, wherein the ring moiety resulting from the fusion may be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown above (i.e., each substitutent is independently selected from the group consisting of the R^{21} substitutents).

It should be understood that when R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, each of said cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety independently may optionally additionally be fused with an aryl or heteroaryl ring, wherein the ring moiety resulting from the fusion may be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown above (i.e., each substitutent is independently selected from the group consisting of the R^{21} substitutents).

In one embodiment, either:

(i) R^1 and R^2 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown above (i.e., each substitutent is independently selected from the group consisting of the R^{21} substitutents); or

(ii) R^2 and R^6 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown above (i.e., each substitutent is independently selected from the group consisting of the R^{21} substitutents); or

(iii) R^1 and R^2 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; and R^2 and R^6 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown above (i.e., each substitutent is independently selected from the group consisting of the R^{21} substitutents).

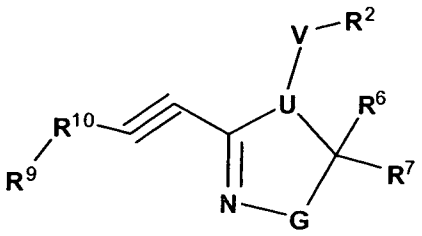
In one embodiment, R^1 (when R^1 is not joined to R^2), R^2 (when R^2 is not joined to R^1 or R^6), R^3, R^4, R^5, R^6 (when R^6 is not joined to R^2), R^7, R^{11} and R^{12} can be the same or different, each being independently selected from the group consisting of H, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown above

(i.e., each substitutent is independently selected from the group consisting of the R^{21} substitutents).

In one embodiment, each of the alkyl, cycloalkyl, cycloalkylalkyl, heterocyclyl, heterocyclylalkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl, alkenyl and alkynyl groups in R^1, R^2, R^1-R^2, R^2-R^6, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12} and R^{14} is independently unsubstituted or optionally substituted by 1 to 5 R^{21} groups independently selected from the group consisting of alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl, cycloalkenyl, heterocyclyl, heterocyclylalkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl, halo, -CN, -OR^{15}, -$C(O)R^{15}$, -$C(O)OR^{15}$, -$C(O)N(R^{15})(R^{16})$, -SR^{15}, -$S(O)N(R^{15})(R^{16})$, -$CH(R^{15})(R^{16})$, -$S(O)_2N(R^{15})(R^{16})$, –$C(=NOR^{15})R^{16}$, -$P(O)(OR^{15})(OR^{16})$, -$N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, -$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$R^{15}$; -$CH_2N(R^{15})(R^{16})$, -$N(R^{15})S(O)R^{16}$, -$N(R^{15})S(O)_2R^{16}$, -$CH_2$-$N(R^{15})S(O)_2R^{16}$, -$N(R^{15})S(O)_2N(R^{16})(R^{17})$, -$N(R^{15})S(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)OR^{16}$, -$CH_2$-$N(R^{15})C(O)OR^{16}$, -$S(O)R^{15}$, $=NOR^{15}$, -N_3, -NO_2 and -$S(O)_2R^{15}$; and each of the alkyl, cycloalkenyl, cycloalkyl, cycloalkylalkyl, heterocyclyl, heterocyclylalkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl, alkenyl and alkynyl groups in R^{21} is independently unsubstituted or substituted by 1 to 5 R^{22} groups independently selected from the group consisting of alkyl, cycloalkyl, cycloalkenyl, heterocyclyl, aryl, heteroaryl, halo, -CF_3, -CN, -OR^{15}, -$C(O)R^{15}$, -$C(O)OR^{15}$, -alkyl-$C(O)OR^{15}$, $C(O)N(R^{15})(R^{16})$, -SR^{15}, -$S(O)N(R^{15})(R^{16})$, -$S(O)_2N(R^{15})(R^{16})$, –$C(=NOR^{15})R^{16}$, -$P(O)(OR^{15})(OR^{16})$, -$N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, -$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)R^{16}$, -$N(R^{15})S(O)R^{16}$, -$N(R^{15})S(O)_2R^{16}$, -CH_2-$N(R^{15})S(O)_2R^{16}$, -$N(R^{15})S(O)_2N(R^{16})(R^{17})$, -$N(R^{15})S(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)OR^{16}$, -$CH_2$-$N(R^{15})C(O)OR^{16}$, -$N_3$, $=NOR^{15}$, -NO_2, -$S(O)R^{15}$ and -$S(O)_2R^{15}$.

In another embodiment, R^1 (when R^1 is not joined to R^2) and R^8 are taken together to form a bond (i.e., there is a triple bond between the carbon atom to

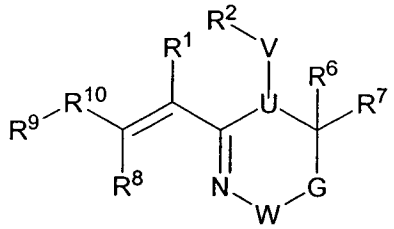
which R^1 was bonded to and the carbon to which R^8 was bonded to, i.e., the compound of formula I is a compound of formula II:



formula II

and R^2, R^3, R^4, R^5, R^6, R^7, R^{11} and R^{12} are as defined above).

Thus, one embodiment is directed to a compound of formula I:



Formula I

or a pharmaceutically acceptable salt, solvate, ester or prodrug thereof, wherein:

either

(i) R^1 and R^2 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (a) said cycloalkyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, (b) said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (c) said cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents; or

(ii) R^2 and R^6 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (a) said cycloalkyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, (b) said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (c) said cycloalkyl,

cycloalkenyl, heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents; or

(iii)

(a) R^1 and R^2 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (1) said cycloalkyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (2) said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and

(b) R^2 and R^6 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (1) said cycloalkyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (2) said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents; and

(c) said R^2 and R^6 cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents; or

(iv) R^6 and either R^3 or R^4 of the -C(R^3)(R^4)- G moiety, are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (a) said cycloalkyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, (b) said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (c) said cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents; or

(v) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (a) said cycloalkyl moiety is optionally

substituted with 1-5 independently selected R^{21} substituents, (b) said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (c) said cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents;

U is $\}$—$C(R^5)$ or N;

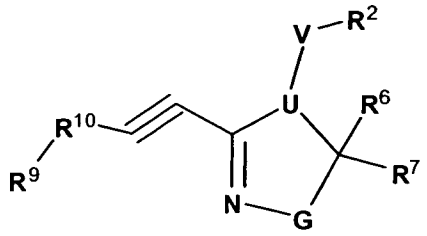
W is selected from the group consisting of a bond; -O-, -C(O)-, -S-, -S(O)-, $-S(O_2)-$, and $-C(R^{11})(R^{12})-$;

G is selected from the group consisting of $-C(R^3)(R^4)-$, -C(O)- and $-N(R^{13})-$, with the proviso that when W is -O- or -S-, G is not $-N(R^{13})-$ or -C(O)-;

V is selected from the group consisting of a bond, -O-, -C(O)- and $-N(R^{14})-$;

R^1 (when R^1 is not joined to R^2), R^2 (when R^2 is not joined to R^1 or R^6), R^5, R^6 (when R^6 is not joined to R^2), and R^7can be the same or different, each being independently selected from the group consisting of H, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

or, alternatively, R^1 (when R^1 is not joined to R^2) and R^8 are taken together to form a bond (i.e., there is a triple bond between the carbon atom to which R^1 was bonded to and the carbon to which R^8 was bonded to, i.e., the compound of formula I is a compound of formula II:



formula II

and R^2, R^5, R^6, and R^7 are as defined above, and R^3, R^4, R^{11} and R^{12} are as defined below);

R^3 is selected from the group consisting of H, halo (and in one example, F), $-OR^{15}$ (and in one example R^{15} is H), -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-C(O)R^{15}$, $-C(O)OR^{15}$,$-C(=NOR^{15})R^{16}$, $-C(O)N(R^{15})(R^{16})$, $-S(O)N(R^{15})(R^{16})$, $S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, $-N_3$, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; or

R^3 and R^6 taken together form a bond (i.e., R^3 and R^6 form a bond between G and the carbon to which R^6 is bound), provided that when R^3 and R^6 form a bond: (1) W is not a bond, (2) R^2 and R^6 are not joined together to form a cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety (as described in (ii) and (iii) above) (3) R^6 and either R^3 or R^4 of the $-C(R^3)(R^4)-$ G moiety are not joined together to form a cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety (as described in (iv) above), and (4) R^6 and R^{13} of the $-N(R^{13})-$ G moiety are not joined together to form a heterocyclyl or heterocyclenyl moiety (as described in (v) above);

R^4, R^{11} and R^{12} can be the same or different, each being independently selected from the group consisting of H, halo (and in one example, F), $-OR^{15}$ (and in one example R^{15} is H), -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-C(O)R^{15}$, $-C(O)OR^{15}$,$-C(=NOR^{15})R^{16}$, $-C(O)N(R^{15})(R^{16})$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, $-N_3$, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below, and

provided that when one of R^3 or R^4 is selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$, then the other is not selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, and $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$ (i.e., if one of R^3 or R^4 is $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$, then the other one is not $-OR^{15}$, -CN, $-SR^{15}$, and $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$,

$-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$);

provided that when one of R^{11} or R^{12} is selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$, then the other is not selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$ (i.e., if one of R^{11} or R^{12} is $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$, then the other is not $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$);

R^{13} is independently selected from the group consisting of H, alkyl, arylalkyl-, heteroarylalkyl-, cycloalkylalkyl-, heterocycloalkylalkyl-, arylcycloalkylalkyl-, heteroarylcycloalkylalkyl-, arylheterocycloalkylalkyl-, heteroarylheterocycloalkylalkyl-, cycloalkyl, arylcycloalkyl-, heteroarylcycloalkyl-, heterocycloalkyl-, arylheterocycloalkyl-, heteroarylheterocycloalkyl-, alkenyl, arylalkenyl-, cycloalkenyl, arylcycloalkenyl-, heteroarylcycloalkenyl-, heterocycloalkenyl-, arylheterocycloalkenyl-, heteroarylheterocycloalkenyl-, alkynyl, arylalkynyl-, aryl, cycloalkylaryl-, heterocycloalkylaryl-, heterocycloalkenylaryl-, heteroaryl, cycloalkylheteroaryl-, heterocycloalkylheteroaryl-, cycloalkenylaryl-, heterocycloalkenylaryl-, $-OR^{15}$,

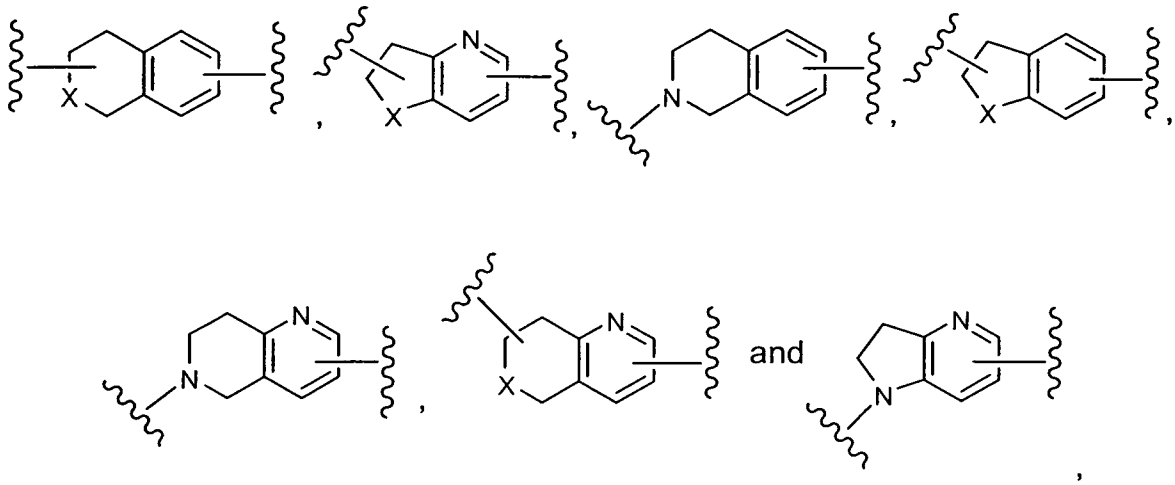
-CN, -C(O)R^8, -C(O)OR^9, -S(O)R^{10}, -$S(O)_2R^{10}$, -C(O)N(R^{11})(R^{12}), -S(O)N(R^{11})(R^{12}), -$S(O)_2$N(R^{11})(R^{12}), -NO_2, -N=C(R^8)$_2$ and –N(R^8)$_2$; and wherein said R^{13} alkyl, arylalkyl-, heteroarylalkyl-, cycloalkylalkyl-, heterocycloalkylalkyl-, arylcycloalkylalkyl-, heteroarylcycloalkylalkyl-, arylheterocycloalkylalkyl-, heteroarylheterocycloalkylalkyl-, cycloalkyl, arylcycloalkyl-, heteroarylcycloalkyl-, heterocycloalkyl, arylheterocycloalkyl-, heteroarylheterocycloalkyl-, alkenyl, arylalkenyl-, cycloalkenyl, arylcycloalkenyl-, heteroarylcycloalkenyl-, heterocycloalkenyl-, arylheterocycloalkenyl-, heteroarylheterocycloalkenyl-, alkynyl, arylalkynyl-, aryl, cycloalkylaryl-, heterocycloalkylaryl-, heterocycloalkenylaryl-, heteroaryl, cycloalkylheteroaryl-, heterocycloalkylheteroaryl-, cycloalkenylaryl-, and heterocycloalkenylaryl- groups are optionally substituted with 1 to 5 groups independently selected from the group consisting of: alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, halo, -CN, -OR^{15}, -C(O)R^{15}, -C(O)OR^{15}, -C(O)N(R^{15})(R^{16}), -SR^{15}, -S(O)N(R^{15})(R^{16}), -CH(R^{15})(R^{16}), -$S(O)_2$N(R^{15})(R^{16}),–C(=NOR^{15})R^{16}, -P(O)(OR^{15})(OR^{16}), -N(R^{15})(R^{16}), -alkyl-N(R^{15})(R^{16}), -N(R^{15})C(O)R^{16}, -CH_2-N(R^{15})C(O)R^{16}, -CH_2-N(R^{15})C(O)N(R^{16})(R^{17}), -CH_2-R^{15}; -CH_2N(R^{15})(R^{16}), -N(R^{15})S(O)R^{16}, -N(R^{15})$S(O)_2R^{16}$, -CH_2-N(R^{15})$S(O)_2R^{16}$, -N(R^{15})$S(O)_2$N(R^{16})(R^{17}), -N(R^{15})S(O)N(R^{16})(R^{17}), -N(R^{15})C(O)N(R^{16})(R^{17}), -CH_2-N(R^{15})C(O)N(R^{16})(R^{17}), -N(R^{15})C(O)OR^{16}, -CH_2-N(R^{15})C(O)OR^{16}, -S(O)R^{15}, =NOR^{15}, -N_3, -NO_2 and -$S(O)_2R^{15}$;

R^8 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, with each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- being optionally substituted with 1-3 independently selected R^{21} substituents;

R^9 is selected from the group consisting of alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-,

heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each R^9 group is optionally substituted with 1-3 independently selected R^{21} substituents;

R^{10} is selected from the group consisting of a bond, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl-, heterocyclylalkyl- and the moieties:



where X is O, N(R^{14}) or S;

wherein each R^{10} group (except for the bond) is optionally substituted with 1-3 independently selected R^{21} substituents;

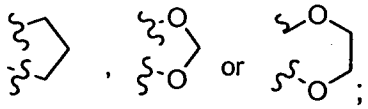
R^{14} is selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, -CN, -C(O)R^{15}, -C(O)OR^{15}, -C(O)N(R^{15})(R^{16}), -S(O)N(R^{15})(R^{16}), -$S(O)_2$N(R^{15})(R^{16}), –C(=NOR^{15})R^{16}, and -P(O)(OR^{15})(OR^{16}), wherein each of said alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, and heteroarylalkyl- is optionally substituted with 1-5 independently selected R^{21} substitutents;

R^{15}, R^{16} and R^{17} are independently selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, arylcycloalkyl-, arylheterocyclyl-, $(R^{18})_r$-alkyl, $(R^{18})_r$-cycloalkyl, $(R^{18})_r$-cycloalkylalkyl-, $(R^{18})_r$-heterocyclyl, $(R^{18})_r$-

heterocyclylalkyl-, $(R^{18})_r$-aryl, $(R^{18})_r$-arylalkyl-, $(R^{18})_r$-heteroaryl and $(R^{18})_r$-heteroarylalkyl-; wherein r is 1-5;

Each R^{18} is independently selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, arylalkyl-, arylalkenyl-, arylalkynyl-, $-NO_2$, halo, heteroaryl, HO-alkyoxyalkyl-, $-CF_3$, -CN, alkyl-CN, $-C(O)R^{19}$, -C(O)OH, $-C(O)OR^{19}$, $-C(O)NHR^{20}$, $-C(O)NH_2$, $-C(O)NH_2$-$C(O)N(alkyl)_2$, -C(O)N(alkyl)(aryl), -C(O)N(alkyl)(heteroaryl), $-SR^{19}$, $-S(O)_2R^{20}$, $-S(O)NH_2$, -S(O)NH(alkyl), -S(O)N(alkyl)(alkyl), -S(O)NH(aryl), $-S(O)_2NH_2$, $-S(O)_2NHR^{19}$, $-S(O)_2NH$(heterocyclyl), $-S(O)_2N(alkyl)_2$, $-S(O)_2N$(alkyl)(aryl), $-OCF_3$, -OH, $-OR^{20}$, -O-heterocyclyl, -O-cycloalkylalkyl, -O-heterocyclylalkyl, $-NH_2$, $-NHR^{20}$, $-N(alkyl)_2$, $-N(arylalkyl)_2$, -N(arylalkyl)-(heteroarylalkyl), $-NHC(O)R^{20}$, $-NHC(O)NH_2$, -NHC(O)NH(alkyl), -NHC(O)N(alkyl)(alkyl), -N(alkyl)C(O)NH(alkyl), -N(alkyl)C(O)N(alkyl)(alkyl), $-NHS(O)_2R^{20}$, $-NHS(O)_2$NH(alkyl), $-NHS(O)_2$N(alkyl)(alkyl), -N(alkyl)$S(O)_2$NH(alkyl) and –N(alkyl)$S(O)_2$N(alkyl)(alkyl);

or, alternately, two R^{18} moieties on adjacent carbons can be linked together to form:



;

R^{19} is selected from the group consisting of: alkyl, cycloalkyl, aryl, arylalkyl- and heteroarylalkyl-;

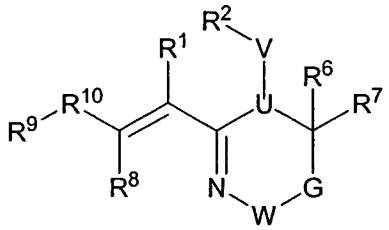
R^{20} is selected from the group consisting of: alkyl, cycloalkyl, aryl, halo substituted aryl, arylalkyl-, heteroaryl and heteroarylalkyl-;

Each R^{21} group is independently selected from the group consisting of alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, halo, -CN, $-OR^{15}$, $-C(O)R^{15}$, $-C(O)OR^{15}$, $-C(O)N(R^{15})(R^{16})$, $-SR^{15}$, $-S(O)N(R^{15})(R^{16})$, $-CH(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $–C(=NOR^{15})R^{16}$, $-P(O)(OR^{15})(OR^{16})$, $-N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, $-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-R^{15}$; $-CH_2N(R^{15})(R^{16})$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-CH_2-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$,

$-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-CH_2-N(R^{15})C(O)OR^{16}$, $-S(O)R^{15}$, $=NOR^{15}$, $-N_3$, $-NO_2$ and $-S(O)_2R^{15}$; and wherein each of the R^{21} alkyl, cycloalkenyl, cycloalkyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, alkenyl and alkynyl groups is optionally substituted with 1 to 5 independently selected R^{22} groups; and

Each R^{22} is independently selected from the group consisting of: alkyl, cycloalkyl, cycloalkenyl, heterocyclyl, aryl, heteroaryl, halo, $-CF_3$, -CN, $-OR^{15}$, $-C(O)R^{15}$, $-C(O)OR^{15}$, -alkyl-$C(O)OR^{15}$, $C(O)N(R^{15})(R^{16})$, $-SR^{15}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-C(=NOR^{15})R^{16}$, $-P(O)(OR^{15})(OR^{16})$, $-N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, $-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-CH_2-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-CH_2-N(R^{15})C(O)OR^{16}$, $-N_3$, $=NOR^{15}$, $-NO_2$, $-S(O)R^{15}$ and $-S(O)_2R^{15}$.

In another embodiment, the present application discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in Formula I:



Formula I

wherein:

R^1 and R^2 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being

independently selected from the group consisting of the moieties shown below;

U is $\overset{\S}{\underset{\S}{}}$—C($R^5$) or N;

W is selected from the group consisting of a bond, -O-, -C(O)-, -S-, -S(O)-, -S(O_2)-, and -C(R^{11})(R^{12})-;

G is selected from the group consisting of -C(R^3)(R^4)-, -C(O)- and -N(R^{13})-; with the proviso that when W is -O- or -S-; G is not -N(R^{13})- or -C(O)-;

V is selected from the group consisting of a bond, -O-, -C(O)-, and -N(R^{14})-;

R^5, R^6, and R^7 can be the same or different, each being independently selected from the group consisting of H, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

R^3 is selected from the group consisting of H, halo (and in one example, F), -OR^{15} (and in one example R^{15} is H), -CN, -SR^{15}, -N$R^{15}R^{16}$, -N(R^{15})C(O)R^{16}, -N(R^{15})S(O)R^{16}, -N(R^{15})S(O_2)R^{16}, -N(R^{15})S(O_2)N(R^{16})(R^{17}), -N(R^{15})S(O)N(R^{16})(R^{17}), -N(R^{15})C(O)N(R^{16})(R^{17}), -N(R^{15})C(O)OR^{16}, -C(O)R^{15}, -C(O)OR^{15},–C(=NOR^{15})R^{16} , -C(O)N(R^{15})(R^{16}), -S(O)N(R^{15})(R^{16}), S(O_2)N(R^{15})(R^{16}), -S(O)R^{15}, -S(O_2)R^{15}, -P(O)(OR^{15})(OR^{16}), =NOR^{15}, -N_3, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; or

R^3 and R^6 taken together form a bond (i.e., R^3 and R^6 form a bond between G and the carbon to which R^6 is bound), provided that when R^3 and R^6 form a bond W is not a bond;

R^4, R^{11} and R^{12} can be the same or different, each being independently selected from the group consisting of H, halo (and in one example, F), $-OR^{15}$ (and in one example R^{15} is H), -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-C(O)R^{15}$, $-C(O)OR^{15}$,$-C(=NOR^{15})R^{16}$, $-C(O)N(R^{15})(R^{16})$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, $-N_3$, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below,

provided that when one of R^3 or R^4 is selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$, then the other is not selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, and $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$ (i.e., if one of R^3 or R^4 is $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$,

$-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$, then the other one is not $-OR^{15}$, -CN, $-SR^{15}$, and $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$);

provided that when one of R^{11} or R^{12} is selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$, then the other is not selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$ (i.e., if one of R^{11} or R^{12} is $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$, then the other is not $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$);

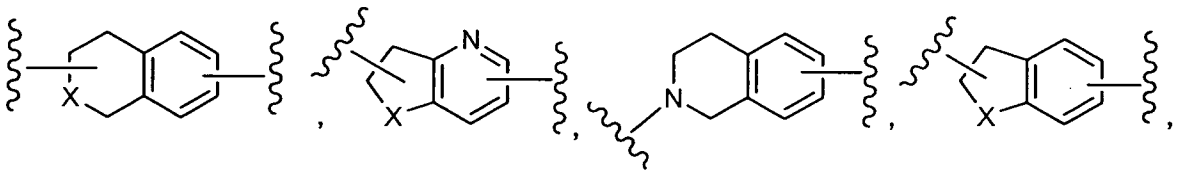
R^{13} is independently selected from the group consisting of H, alkyl, arylalkyl-, heteroarylalkyl-, cycloalkylalkyl-, heterocycloalkylalkyl-, arylcycloalkylalkyl-, heteroarylcycloalkylalkyl-, arylheterocycloalkylalkyl-, heteroarylheterocycloalkylalkyl-, cycloalkyl, arylcycloalkyl-, heteroarylcycloalkyl-, heterocycloalkyl-, arylheterocycloalkyl-, heteroarylheterocycloalkyl-, alkenyl, arylalkenyl-, cycloalkenyl, arylcycloalkenyl-, heteroarylcycloalkenyl-, heterocycloalkenyl-, arylheterocycloalkenyl-, heteroarylheterocycloalkenyl-,

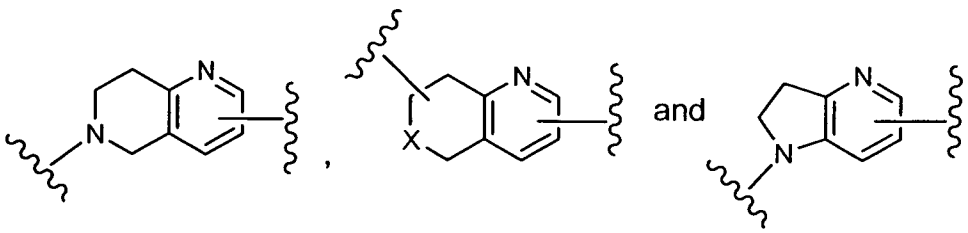
alkynyl, arylalkynyl-, aryl, cycloalkylaryl-, heterocycloalkylaryl-, heterocycloalkenylaryl-, heteroaryl, cycloalkylheteroaryl-, heterocycloalkylheteroaryl-, cycloalkenylaryl-, heterocycloalkenylaryl-, $-OR^{15}$, -CN, $-C(O)R^{8}$, $-C(O)OR^{9}$, $-S(O)R^{10}$, $-S(O)_2R^{10}$, $-C(O)N(R^{11})(R^{12})$, $-S(O)N(R^{11})(R^{12})$, $-S(O)_2N(R^{11})(R^{12})$, $-NO_2$, $-N=C(R^{8})_2$ and $-N(R^{8})_2$; and wherein said R^{13} alkyl, arylalkyl-, heteroarylalkyl-, cycloalkylalkyl-, heterocycloalkylalkyl-, arylcycloalkylalkyl-, heteroarylcycloalkylalkyl-, arylheterocycloalkylalkyl-, heteroarylheterocycloalkylalkyl-, cycloalkyl, arylcycloalkyl-, heteroarylcycloalkyl-, heterocycloalkyl-, arylheterocycloalkyl-, heteroarylheterocycloalkyl-, alkenyl, arylalkenyl-, cycloalkenyl, arylcycloalkenyl-, heteroarylcycloalkenyl-, heterocycloalkenyl-, arylheterocycloalkenyl-, heteroarylheterocycloalkenyl-, alkynyl, arylalkynyl-, aryl, cycloalkylaryl-, heterocycloalkylaryl-, heterocycloalkenylaryl-, heteroaryl, cycloalkylheteroaryl-, heterocycloalkylheteroaryl-, cycloalkenylaryl-, and heterocycloalkenylaryl- groups are optionally substituted with 1 to 5 groups independently selected from the group consisting of: alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, halo, -CN, $-OR^{15}$, $-C(O)R^{15}$, $-C(O)OR^{15}$, $-C(O)N(R^{15})(R^{16})$, $-SR^{15}$, $-S(O)N(R^{15})(R^{16})$, $-CH(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$,$-C(=NOR^{15})R^{16}$, $-P(O)(OR^{15})(OR^{16})$, $-N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, $-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-R^{15}$; $-CH_2N(R^{15})(R^{16})$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-CH_2-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-CH_2-N(R^{15})C(O)OR^{16}$, $-S(O)R^{15}$, $=NOR^{15}$, $-N_3$, $-NO_2$ and $-S(O)_2R^{15}$;

R^{14} is selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, -CN, $-C(O)R^{15}$, $-C(O)OR^{15}$, $-C(O)N(R^{15})(R^{16})$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-C(=NOR^{15})R^{16}$, and $-P(O)(OR^{15})(OR^{16})$;

R^8 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, with each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- being unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

R^{10} is selected from the group consisting of a bond, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl-, heterocyclylalkyl- and the moieties:





where X is O, N(R^{14}) or S;

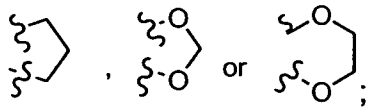
wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- heterocyclylalkyl- for R^{10} as well as the above-noted moieties for R^{10} can be unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of the moieties shown below; and

R^9 is selected from the group consisting of alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-,

heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-can be unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below,

R^{15}, R^{16} and R^{17} are independently selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, arylcycloalkyl-, arylheterocyclyl, R^{18}-alkyl, R^{18}-cycloalkyl, R^{18}-cycloalkylalkyl-, R^{18}-heterocyclyl, R^{18}-heterocyclylalkyl-, R^{18}-aryl, R^{18}-arylalkyl-, R^{18}-heteroaryl and R^{18}-heteroarylalkyl-;

R^{18} is 1-5 substituents independently selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, arylalkyl-, arylalkenyl-, arylalkynyl-, $-NO_2$, halo, heteroaryl, HO-alkyoxyalkyl, $-CF_3$, -CN, alkyl-CN, $-C(O)R^{19}$, -C(O)OH, $-C(O)OR^{19}$, $-C(O)NHR^{20}$, $-C(O)NH_2$, $-C(O)NH_2$-$C(O)N(alkyl)_2$, -C(O)N(alkyl)(aryl), -C(O)N(alkyl)(heteroaryl), $-SR^{19}$, $-S(O)_2R^{20}$, $-S(O)NH_2$, -S(O)NH(alkyl), -S(O)N(alkyl)(alkyl), -S(O)NH(aryl), $-S(O)_2NH_2$, $-S(O)_2NHR^{19}$, $-S(O)_2NH$(heterocyclyl), $-S(O)_2N(alkyl)_2$, $-S(O)_2N$(alkyl)(aryl), $-OCF_3$, -OH, $-OR^{20}$, -O-heterocyclyl, -O-cycloalkylalkyl, -O-heterocyclylalkyl, $-NH_2$, $-NHR^{20}$, $-N(alkyl)_2$, $-N(arylalkyl)_2$, -N(arylalkyl)-(heteroarylalkyl), $-NHC(O)R^{20}$, $-NHC(O)NH_2$, -NHC(O)NH(alkyl), -NHC(O)N(alkyl)(alkyl), -N(alkyl)C(O)NH(alkyl), -N(alkyl)C(O)N(alkyl)(alkyl), $-NHS(O)_2R^{20}$, $-NHS(O)_2NH$(alkyl), $-NHS(O)_2N$(alkyl)(alkyl), -N(alkyl)$S(O)_2NH$(alkyl) and –N(alkyl)$S(O)_2N$(alkyl)(alkyl);

or, alternately, two R^{18} moieties on adjacent carbons can be linked together to form:  ;

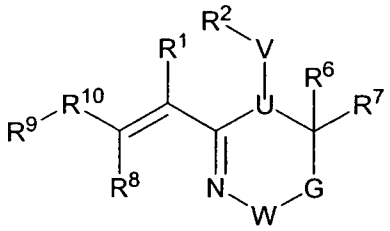
R^{19} is alkyl, cycloalkyl, aryl, arylalkyl- or heteroarylalkyl-;

R^{20} is alkyl, cycloalkyl, aryl, halo substituted aryl, arylalkyl-, heteroaryl or heteroarylalkyl-;

wherein each of the alkyl, cycloalkyl, cycloalkenyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, alkylaryl-, heteroaryl, heteroarylalkyl-, alkenyl and alkynyl groups in R^1-R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12} and R^{14} is independently unsubstituted or optionally substituted by 1 to 5 R^{21} groups independently selected from the group consisting of alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl, cycloalkenyl, heterocyclyl, heterocyclylalkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl, halo, -CN, -OR^{15}, -$C(O)R^{15}$, -$C(O)OR^{15}$, -$C(O)N(R^{15})(R^{16})$, -SR^{15}, -$S(O)N(R^{15})(R^{16})$, -$CH(R^{15})(R^{16})$, -$S(O)_2N(R^{15})(R^{16})$, –$C(=NOR^{15})R^{16}$, -$P(O)(OR^{15})(OR^{16})$, -$N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, -$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$R^{15}$; -$CH_2N(R^{15})(R^{16})$, -$N(R^{15})S(O)R^{16}$, -$N(R^{15})S(O)_2R^{16}$, -$CH_2$-$N(R^{15})S(O)_2R^{16}$, -$N(R^{15})S(O)_2N(R^{16})(R^{17})$, -$N(R^{15})S(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)OR^{16}$, -$CH_2$-$N(R^{15})C(O)OR^{16}$, -$S(O)R^{15}$, =$NOR^{15}$, -$N_3$, -$NO_2$ and -$S(O)_2R^{15}$;

wherein each of the alkyl, cycloalkenyl, cycloalkyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, alkenyl and alkynyl groups in R^{21} is independently unsubstituted or substituted by 1 to 5 R^{22} groups independently selected from the group consisting of alkyl, cycloalkyl, cycloalkenyl, heterocyclyl, aryl, heteroaryl, halo, -CF_3, -CN, -OR^{15}, -$C(O)R^{15}$, -$C(O)OR^{15}$, -alkyl-$C(O)OR^{15}$, $C(O)N(R^{15})(R^{16})$, -SR^{15}, -$S(O)N(R^{15})(R^{16})$, -$S(O)_2N(R^{15})(R^{16})$, –$C(=NOR^{15})R^{16}$, -$P(O)(OR^{15})(OR^{16})$, -$N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, -$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)R^{16}$, -$N(R^{15})S(O)R^{16}$, -$N(R^{15})S(O)_2R^{16}$, -CH_2-$N(R^{15})S(O)_2R^{16}$, -$N(R^{15})S(O)_2N(R^{16})(R^{17})$, -$N(R^{15})S(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)OR^{16}$, -$CH_2$-$N(R^{15})C(O)OR^{16}$, -$N_3$, =$NOR^{15}$, -$NO_2$, -$S(O)R^{15}$ and -$S(O)_2R^{15}$.

In another embodiment, the present application discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in Formula I:



Formula I

wherein:

R^2 and R^6 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

U is $\overset{\S}{}$—C(R^5) or N;

W is selected from the group consisting of a bond, -O-, -C(O)-, -S-, -S(O)-, -S(O_2)-, and -C(R^{11})(R^{12})-;

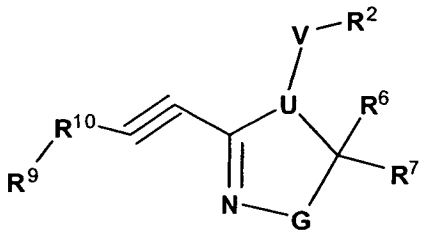
G is -C(R^3)(R^4)-, -C(O)- and -N(R^{13})-; with the proviso that when W is -O- or -S-, G is not -N(R^{13})- or -C(O)- ;

V is selected from the group consisting of a bond, -O-, -C(O)-, and -N(R^{14})-;

R^1 (when R^1 is not joined to R^2), R^5, R^6 (when R^6 is not joined to R^2), and R^7can be the same or different, each being independently selected from the group consisting of H, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

or, alternatively, R^1 (when R^1 is not joined to R^2) and R^8 are taken together to form a bond (i.e., there is a triple bond between the carbon atom to which R^1

was bonded to and the carbon to which R^8 was bonded to, i.e., the compound of formula I is a compound of formula II:



formula II

and R^2, R^5, R^6, and R^7 are as defined above, and R^3, R^4, R^{11} and R^{12} are as defined below);

R^3 is selected from the group consisting of H, halo (and in one example, F), $-OR^{15}$ (and in one example R^{15} is H), -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-C(O)R^{15}$, $-C(O)OR^{15}$,$-C(=NOR^{15})R^{16}$, $-C(O)N(R^{15})(R^{16})$, $-S(O)N(R^{15})(R^{16})$, $S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, $-N_3$, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; or

R^4, R^{11} and R^{12} can be the same or different, each being independently selected from the group consisting of H, halo (and in one example, F), $-OR^{15}$ (and in one example R^{15} is H), -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-C(O)R^{15}$, $-C(O)OR^{15}$,$-C(=NOR^{15})R^{16}$, $-C(O)N(R^{15})(R^{16})$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, $-N_3$, alkyl-,

alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below,

provided that when one of R^3 or R^4 is selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$, then the other is not selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, and $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$ (i.e., if one of R^3 or R^4 is $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$, then the other one is not $-OR^{15}$, -CN, $-SR^{15}$, and $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$);

provided that when one of R^{11} or R^{12} is selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$, then the other is not

selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$ (i.e., if one of R^{11} or R^{12} is $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$, then the other is not $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$);

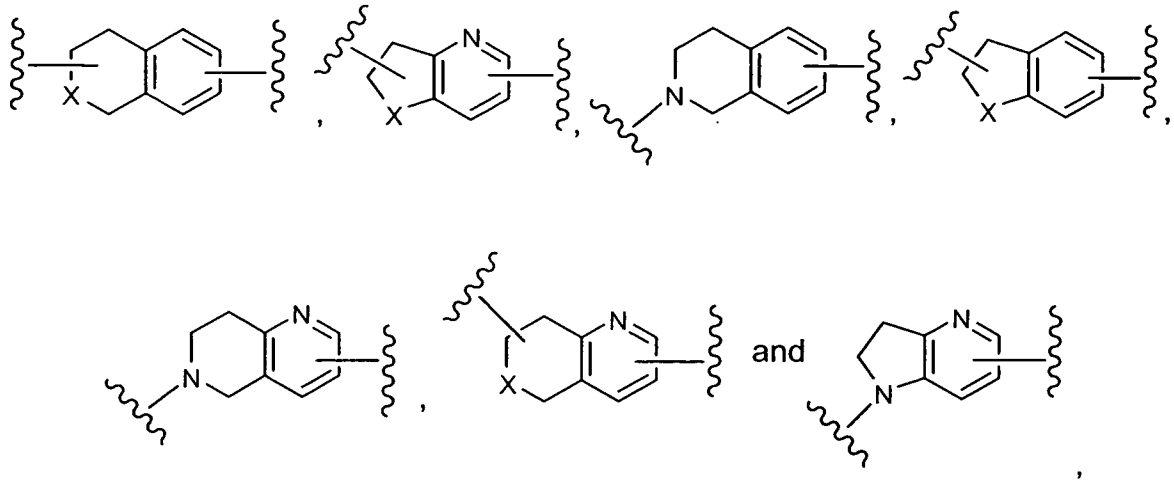
R^{13} is independently selected from the group consisting of H, alkyl, arylalkyl-, heteroarylalkyl-, cycloalkylalkyl-, heterocycloalkylalkyl-, arylcycloalkylalkyl-, heteroarylcycloalkylalkyl-, arylheterocycloalkylalkyl-, heteroarylheterocycloalkylalkyl-, cycloalkyl-, arylcycloalkyl-, heteroarylcycloalkyl-, heterocycloalkyl-, arylheterocycloalkyl-, heteroarylheterocycloalkyl-, alkenyl, arylalkenyl-, cycloalkenyl, arylcycloalkenyl-, heteroarylcycloalkenyl-, heterocycloalkenyl-, arylheterocycloalkenyl-, heteroarylheterocycloalkenyl-, alkynyl, arylalkynyl-, aryl, cycloalkylaryl-, heterocycloalkylaryl-, heterocycloalkenylaryl-, heteroaryl, cycloalkylheteroaryl-, heterocycloalkylheteroaryl-, cycloalkenylaryl-, heterocycloalkenylaryl-, $-OR^{15}$, -CN, $-C(O)R^{8}$, $-C(O)OR^{9}$, $-S(O)R^{10}$, $-S(O)_2R^{10}$, $-C(O)N(R^{11})(R^{12})$, $-S(O)N(R^{11})(R^{12})$, $-S(O)_2N(R^{11})(R^{12})$, $-NO_2$, $-N=C(R^{8})_2$ and $-N(R^{8})_2$; and wherein said R^{13} alkyl, arylalkyl-, heteroarylalkyl-, cycloalkylalkyl-, heterocycloalkylalkyl-, arylcycloalkylalkyl-, heteroarylcycloalkylalkyl-, arylheterocycloalkylalkyl-, heteroarylheterocycloalkylalkyl-, cycloalkyl, arylcycloalkyl-, heteroarylcycloalkyl-, heterocycloalkyl, arylheterocycloalkyl-, heteroarylheterocycloalkyl-, alkenyl, arylalkenyl, cycloalkenyl, arylcycloalkenyl-, heteroarylcycloalkenyl-,

heterocycloalkenyl, arylheterocycloalkenyl-, heteroarylheterocycloalkenyl-, alkynyl, arylalkynyl-, aryl, cycloalkylaryl, heterocycloalkylaryl-, heterocycloalkenylaryl-, heteroaryl, cycloalkylheteroaryl-, heterocycloalkylheteroaryl-, cycloalkenylaryl-, and heterocycloalkenylaryl- groups are optionally substituted with 1 to 5 groups independently selected from the group consisting of: alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, halo, -CN, -OR^{15}, -$C(O)R^{15}$, -$C(O)OR^{15}$, -$C(O)N(R^{15})(R^{16})$, -SR^{15}, -$S(O)N(R^{15})(R^{16})$, -$CH(R^{15})(R^{16})$, -$S(O)_2N(R^{15})(R^{16})$, –$C(=NOR^{15})R^{16}$, -$P(O)(OR^{15})(OR^{16})$, -$N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, -$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$R^{15}$; -$CH_2N(R^{15})(R^{16})$, -$N(R^{15})S(O)R^{16}$, -$N(R^{15})S(O)_2R^{16}$, -$CH_2$-$N(R^{15})S(O)_2R^{16}$, -$N(R^{15})S(O)_2N(R^{16})(R^{17})$, -$N(R^{15})S(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)OR^{16}$, -$CH_2$-$N(R^{15})C(O)OR^{16}$, -$S(O)R^{15}$, =$NOR^{15}$, -$N_3$, -$NO_2$ and -$S(O)_2R^{15}$;

R^{14} is selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, -CN, -$C(O)R^{15}$, -$C(O)OR^{15}$, -$C(O)N(R^{15})(R^{16})$, -$S(O)N(R^{15})(R^{16})$, -$S(O)_2N(R^{15})(R^{16})$, –$C(=NOR^{15})R^{16}$, and -$P(O)(OR^{15})(OR^{16})$;

R^8 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, with each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- being unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

R^{10} is selected from the group consisting of a bond, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl-, heterocyclylalkyl- and the moieties:



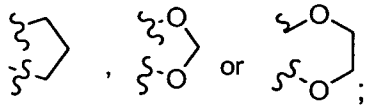
where X is O, N(R^{14}) or S;

wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl-heterocyclylalkyl- for R^{10} as well as the above-noted moieties for R^{10} can be unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of the moieties shown below;

R^9 is selected from the group consisting of alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-can be unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below,

R^{15}, R^{16} and R^{17} are independently selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, arylcycloalkyl- arylheterocyclyl-, R^{18}-alkyl, R^{18}-cycloalkyl, R^{18}-cycloalkylalkyl-, R^{18}-heterocyclyl, R^{18}-heterocyclylalkyl-, R^{18}-aryl, R^{18}-arylalkyl-, R^{18}-heteroaryl and R^{18}-heteroarylalkyl-;

R^{18} is 1-5 substituents independently selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, arylalkyl-, arylalkenyl-, arylalkynyl-, $-NO_2$, halo, heteroaryl, HO-alkyoxyalkyl, $-CF_3$, -CN, alkyl-CN, $-C(O)R^{19}$, -C(O)OH, $-C(O)OR^{19}$, $-C(O)NHR^{20}$, $-C(O)NH_2$, $-C(O)NH_2$-$C(O)N(alkyl)_2$, -C(O)N(alkyl)(aryl), -C(O)N(alkyl)(heteroaryl), $-SR^{19}$, $-S(O)_2R^{20}$, $-S(O)NH_2$, -S(O)NH(alkyl), -S(O)N(alkyl)(alkyl), -S(O)NH(aryl), $-S(O)_2NH_2$, $-S(O)_2NHR^{19}$, $-S(O)_2NH$(heterocyclyl), $-S(O)_2N(alkyl)_2$, $-S(O)_2N$(alkyl)(aryl), $-OCF_3$, -OH, $-OR^{20}$, -O-heterocyclyl, -O-cycloalkylalkyl, -O-heterocyclylalkyl, $-NH_2$, $-NHR^{20}$, $-N(alkyl)_2$, $-N(arylalkyl)_2$, -N(arylalkyl)-(heteroarylalkyl), $-NHC(O)R^{20}$, $-NHC(O)NH_2$, -NHC(O)NH(alkyl), -NHC(O)N(alkyl)(alkyl), -N(alkyl)C(O)NH(alkyl), -N(alkyl)C(O)N(alkyl)(alkyl), $-NHS(O)_2R^{20}$, $-NHS(O)_2NH$(alkyl), $-NHS(O)_2N$(alkyl)(alkyl), $-N(alkyl)S(O)_2NH$(alkyl) and $-N(alkyl)S(O)_2N$(alkyl)(alkyl);

or, alternately, two R^{18} moieties on adjacent carbons can be linked together to form: ;

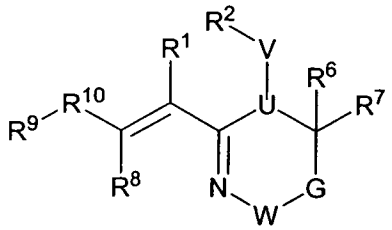
R^{19} is alkyl, cycloalkyl, aryl, arylalkyl- or heteroarylalkyl-;

R^{20} is alkyl, cycloalkyl, aryl, halo substituted aryl, arylalkyl-, heteroaryl or heteroarylalkyl-;

wherein each of the alkyl, cycloalkyl, cycloalkenyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, alkylaryl-, heteroaryl, heteroarylalkyl-, alkenyl and alkynyl groups in R^1, R^2-R^6, R^3, R^4, R^5, R^7, R^8, R^9, R^{10}, R^{11}, R^{12} and R^{14} is independently unsubstituted or optionally substituted by 1 to 5 R^{21} groups independently selected from the group consisting of alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl, heteroaryl, heteroarylalkyl-, halo, -CN, $-OR^{15}$, $-C(O)R^{15}$, $-C(O)OR^{15}$, $-C(O)N(R^{15})(R^{16})$, $-SR^{15}$, $-S(O)N(R^{15})(R^{16})$, $-CH(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-C(=NOR^{15})R^{16}$, $-P(O)(OR^{15})(OR^{16})$, $-N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, $-N(R^{15})C(O)R^{16}$, $-CH_2$-$N(R^{15})C(O)R^{16}$, $-CH_2$-$N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2$-R^{15}; $-CH_2N(R^{15})(R^{16})$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-CH_2$-$N(R^{15})S(O)_2R^{16}$,

$-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-CH_2-N(R^{15})C(O)OR^{16}$, $-S(O)R^{15}$, $=NOR^{15}$, $-N_3$, $-NO_2$ and $-S(O)_2R^{15}$; wherein each of the alkyl, cycloalkenyl-, cycloalkyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, alkenyl and alkynyl groups in R^{21} is independently unsubstituted or substituted by 1 to 5 R^{22} groups independently selected from the group consisting of alkyl, cycloalkyl, cycloalkenyl-, heterocyclyl, aryl, heteroaryl, halo, $-CF_3$, -CN, $-OR^{15}$, $-C(O)R^{15}$, $-C(O)OR^{15}$, -alkyl-$C(O)OR^{15}$, $C(O)N(R^{15})(R^{16})$, $-SR^{15}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-C(=NOR^{15})R^{16}$, $-P(O)(OR^{15})(OR^{16})$, $-N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, $-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-CH_2-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-CH_2-N(R^{15})C(O)OR^{16}$, $-N_3$, $=NOR^{15}$, $-NO_2$, $-S(O)R^{15}$ and $-S(O)_2R^{15}$.

In another embodiment, the present application discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in Formula I:



Formula I

wherein:

R^1 and R^2 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown

below; and R^2 and R^6 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

U is $\overset{\sim}{\sim}C(R^5)$ or N;

W is selected from the group consisting of a bond, -O-, -C(O)-, -S-, -S(O)-, $-S(O_2)-$, and $-C(R^{11})(R^{12})-$;

G is $-C(R^3)(R^4)-$, -C(O)- and $-N(R^{13})-$; with the proviso that when W is -O- or -S-, G is not $-N(R^{13})-$ or -C(O)- ;

V is selected from the group consisting of a bond, -O-, -C(O)- and $-N(R^{14})-$;

R^5, R^6, and R^7can be the same or different, each being independently selected from the group consisting of H, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

R^3 is selected from the group consisting of H, halo (and in one example, F), $-OR^{15}$ (and in one example R^{15} is H), -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-C(O)R^{15}$, $-C(O)OR^{15}$,–$C(=NOR^{15})R^{16}$, $-C(O)N(R^{15})(R^{16})$, $-S(O)N(R^{15})(R^{16})$, $S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, $-N_3$, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of

said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; or

R^4, R^{11} and R^{12} can be the same or different, each being independently selected from the group consisting of H, halo (and in one example, F), $-OR^{15}$ (and in one example R^{15} is H), -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-C(O)R^{15}$, $-C(O)OR^{15}$,$-C(=NOR^{15})R^{16}$, $-C(O)N(R^{15})(R^{16})$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, $-N_3$, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below,

provided that when one of R^3 or R^4 is selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$, then the other is not selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, and $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$ (i.e., if one of R^3 or R^4 is $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$,

$-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$, then the other one is not $-OR^{15}$, -CN, $-SR^{15}$, and $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$);

provided that when one of R^{11} or R^{12} is selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$, then the other is not selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$ (i.e., if one of R^{11} or R^{12} is $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$, then the other is not $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$);

R^{13} is independently selected from the group consisting of H, alkyl, arylalkyl-, heteroarylalkyl-, cycloalkylalkyl-, heterocycloalkylalkyl-, arylcycloalkylalkyl-, heteroarylcycloalkylalkyl-, arylheterocycloalkylalkyl-, heteroarylheterocycloalkylalkyl-, cycloalkyl, arylcycloalkyl-, heteroarylcycloalkyl-, heterocycloalkyl-, arylheterocycloalkyl-, heteroarylheterocycloalkyl-, alkenyl,

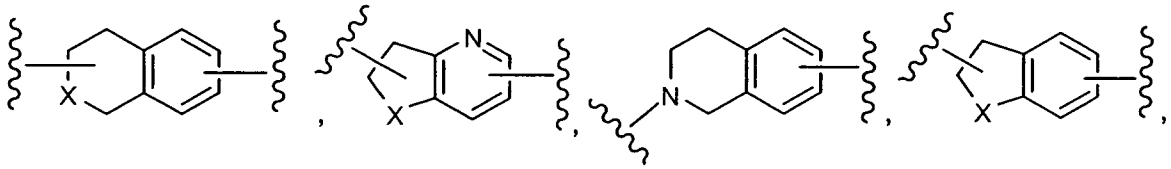
arylalkenyl-, cycloalkenyl, arylcycloalkenyl-, heteroarylcycloalkenyl-, heterocycloalkenyl, arylheterocycloalkenyl-, heteroarylheterocycloalkenyl-, alkynyl, arylalkynyl-, aryl, cycloalkylaryl-, heterocycloalkylaryl-, heterocycloalkenylaryl-, heteroaryl, cycloalkylheteroaryl-, heterocycloalkylheteroaryl-, cycloalkenylaryl-, heterocycloalkenylaryl-, $-OR^{15}$, -CN, $-C(O)R^{8}$, $-C(O)OR^{9}$, $-S(O)R^{10}$, $-S(O)_2R^{10}$, $-C(O)N(R^{11})(R^{12})$, $-S(O)N(R^{11})(R^{12})$, $-S(O)_2N(R^{11})(R^{12})$, $-NO_2$, $-N=C(R^{8})_2$ and $-N(R^{8})_2$; and wherein said R^{13} alkyl, arylalkyl-, heteroarylalkyl-, cycloalkylalkyl-, heterocycloalkylalkyl-, arylcycloalkylalkyl-, heteroarylcycloalkylalkyl-, arylheterocycloalkylalkyl-, heteroarylheterocycloalkylalkyl-, cycloalkyl, arylcycloalkyl-, heteroarylcycloalkyl-, heterocycloalkyl-, arylheterocycloalkyl-, heteroarylheterocycloalkyl-, alkenyl, arylalkenyl-, cycloalkenyl, arylcycloalkenyl, heteroarylcycloalkenyl-, heterocycloalkenyl-, arylheterocycloalkenyl-, heteroarylheterocycloalkenyl-, alkynyl, arylalkynyl-, aryl, cycloalkylaryl-, heterocycloalkylaryl-, heterocycloalkenylaryl-, heteroaryl, cycloalkylheteroaryl-, heterocycloalkylheteroaryl-, cycloalkenylaryl-, and heterocycloalkenylaryl- groups are optionally substituted with 1 to 5 groups independently selected from the group consisting of: alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, halo, -CN, $-OR^{15}$, $-C(O)R^{15}$, $-C(O)OR^{15}$, $-C(O)N(R^{15})(R^{16})$, $-SR^{15}$, $-S(O)N(R^{15})(R^{16})$, $-CH(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$,$-C(=NOR^{15})R^{16}$, $-P(O)(OR^{15})(OR^{16})$, $-N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, $-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-R^{15}$; $-CH_2N(R^{15})(R^{16})$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-CH_2-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-CH_2-N(R^{15})C(O)OR^{16}$, $-S(O)R^{15}$, $=NOR^{15}$, $-N_3$, $-NO_2$ and $-S(O)_2R^{15}$;

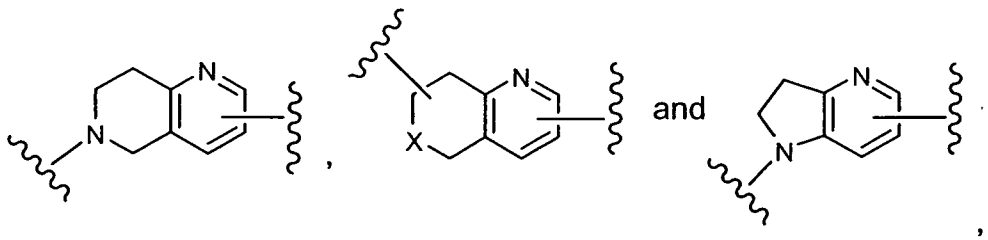
R^{14} is selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, -CN, $-C(O)R^{15}$, $-C(O)OR^{15}$,

-C(O)N(R^{15})(R^{16}), -S(O)N(R^{15})(R^{16}), -$S(O)_2$N(R^{15})(R^{16}), –C(=NOR^{15})R^{16}, and -P(O)(OR^{15})(OR^{16});

R^8 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, with each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- being unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

R^{10} is selected from the group consisting of a bond, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl-, heterocyclylalkyl- and the moieties:





where X is O, N(R^{14}) or S;

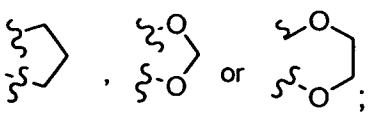
wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- heterocyclylalkyl- for R^{10} as well as the above-noted moieties for R^{10} can be unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of the moieties shown below; and

R^9 is selected from the group consisting of alkyl-, alkenyl- and alkynyl-,

aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-can be unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below,

R^{15}, R^{16} and R^{17} are independently selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, arylcycloalkyl-, arylheterocyclyl-, R^{18}-alkyl, R^{18}-cycloalkyl, R^{18}-cycloalkylalkyl-, R^{18}-heterocyclyl, R^{18}-heterocyclylalkyl-, R^{18}-aryl, R^{18}-arylalkyl-, R^{18}-heteroaryl and R^{18}-heteroarylalkyl-;

R^{18} is 1-5 substituents independently selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, arylalkyl-, arylalkenyl-, arylalkynyl-, $-NO_2$, halo, heteroaryl, HO-alkyoxyalkyl, $-CF_3$, -CN, alkyl-CN, $-C(O)R^{19}$, -C(O)OH, $-C(O)OR^{19}$, $-C(O)NHR^{20}$, $-C(O)NH_2$, $-C(O)NH_2$-C(O)N(alkyl)$_2$, -C(O)N(alkyl)(aryl), -C(O)N(alkyl)(heteroaryl), $-SR^{19}$, $-S(O)_2R^{20}$, $-S(O)NH_2$, -S(O)NH(alkyl), -S(O)N(alkyl)(alkyl), -S(O)NH(aryl), $-S(O)_2NH_2$, $-S(O)_2NHR^{19}$, $-S(O)_2$NH(heterocyclyl), $-S(O)_2$N(alkyl)$_2$, $-S(O)_2$N(alkyl)(aryl), $-OCF_3$, -OH, $-OR^{20}$, -O-heterocyclyl, -O-cycloalkylalkyl, -O-heterocyclylalkyl, $-NH_2$, $-NHR^{20}$, -N(alkyl)$_2$, -N(arylalkyl)$_2$, -N(arylalkyl)-(heteroarylalkyl), $-NHC(O)R^{20}$, $-NHC(O)NH_2$, -NHC(O)NH(alkyl), -NHC(O)N(alkyl)(alkyl), -N(alkyl)C(O)NH(alkyl), -N(alkyl)C(O)N(alkyl)(alkyl), $-NHS(O)_2R^{20}$, $-NHS(O)_2$NH(alkyl), $-NHS(O)_2$N(alkyl)(alkyl), -N(alkyl)$S(O)_2$NH(alkyl) and –N(alkyl)$S(O)_2$N(alkyl)(alkyl);

or, alternately, two R^{18} moieties on adjacent carbons can be linked together to form: ;

R^{19} is alkyl, cycloalkyl, aryl, arylalkyl- or heteroarylalkyl-;

R^{20} is alkyl, cycloalkyl, aryl, halo substituted aryl, arylalkyl-, heteroaryl or heteroarylalkyl-;

wherein each of the alkyl, cycloalkyl, cycloalkenyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, alkylaryl-, heteroaryl, heteroarylalkyl-, alkenyl and alkynyl groups in R^1-R^2, R^2-R^6, R^3, R^4, R^5, R^7, R^8, R^9, R^{10}, R^{11}, R^{12} and R^{14} is independently unsubstituted or optionally substituted by 1 to 5 R^{21} groups independently selected from the group consisting of alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, halo, -CN, -OR^{15}, -$C(O)R^{15}$, -$C(O)OR^{15}$, -$C(O)N(R^{15})(R^{16})$, -SR^{15}, -$S(O)N(R^{15})(R^{16})$, -$CH(R^{15})(R^{16})$, -$S(O)_2N(R^{15})(R^{16})$, –$C(=NOR^{15})R^{16}$, -$P(O)(OR^{15})(OR^{16})$, -$N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, -$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$R^{15}$; -$CH_2N(R^{15})(R^{16})$, -$N(R^{15})S(O)R^{16}$, -$N(R^{15})S(O)_2R^{16}$, -$CH_2$-$N(R^{15})S(O)_2R^{16}$, -$N(R^{15})S(O)_2N(R^{16})(R^{17})$, -$N(R^{15})S(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)OR^{16}$, -$CH_2$-$N(R^{15})C(O)OR^{16}$, -$S(O)R^{15}$, =$NOR^{15}$, -$N_3$, -$NO_2$ and -$S(O)_2R^{15}$;

wherein each of the alkyl, cycloalkenyl, cycloalkyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, alkenyl and alkynyl groups in R^{21} is independently unsubstituted or substituted by 1 to 5 R^{22} groups independently selected from the group consisting of alkyl, cycloalkyl, cycloalkenyl, heterocyclyl, aryl, heteroaryl, halo, -CF_3, -CN, -OR^{15}, -$C(O)R^{15}$, -$C(O)OR^{15}$, -alkyl-$C(O)OR^{15}$, $C(O)N(R^{15})(R^{16})$, -SR^{15}, -$S(O)N(R^{15})(R^{16})$, -$S(O)_2N(R^{15})(R^{16})$, –$C(=NOR^{15})R^{16}$, -$P(O)(OR^{15})(OR^{16})$, -$N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, -$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)R^{16}$, -$N(R^{15})S(O)R^{16}$, -$N(R^{15})S(O)_2R^{16}$, -CH_2-$N(R^{15})S(O)_2R^{16}$, -$N(R^{15})S(O)_2N(R^{16})(R^{17})$, -$N(R^{15})S(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)OR^{16}$, -$CH_2$-$N(R^{15})C(O)OR^{16}$, -$N_3$, =$NOR^{15}$, -$NO_2$, -$S(O)R^{15}$ and -$S(O)_2R^{15}$.

In another embodiment, U is $C(R^5)$.

In another embodiment, U is N.

In another embodiment, R^2 is H.

In another embodiment, R^2 is alkyl.

In another embodiment, R^2 is methyl.

In another embodiment, R^2 is alkoxyalkyl-.

In another embodiment, R^2 is 3-methoxypropyl-.

In another embodiment, U is N and R^2 is 3-methoxypropyl-.

In another embodiment, W is a bond.

In another embodiment, W is –O-.

In another embodiment, W is –C(O)-.

In another embodiment, W is –S-.

In another embodiment, W is –S(O)-.

In another embodiment, W is $-S(O_2)-$.

In another embodiment, W is $-C(R^{11})(R^{12})-$.

In another embodiment, =N-W-G- is $=N-C(R^{11}R^{12})-C(O)-$.

In another embodiment, G is $-C(R^3)(R^4)-$.

In another embodiment, G is –C(O)-.

In another embodiment, G is $-N(R^{13})-$.

In another embodiment, V is a bond.

In another embodiment, V is –O-.

In another embodiment, V is –C(O)-.

In another embodiment, V is $-N(R^{14})-$.

In another embodiment, R^2 is arylalkyl-.

In another embodiment, R^2 is phenylmethyl-.

In another embodiment, R^2 is (4-alkoxy)phenylmethyl-.

In another embodiment, R^2 is (4-methoxy)phenylmethyl-.

In another embodiment, R^1 is H.

In another embodiment, R^1 is alkyl.

In another embodiment, R^1 is methyl.

In another embodiment, R^1 and R^2 are joined together to form a cyclopentyl ring, which is unsubstituted.

In another embodiment, R^1 and R^2 are joined together to form a cyclopentyl ring, which is substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl), $-N(alkyl)_2$, hydroxy and alkoxy groups.

In another embodiment, R^1 and R^2 are joined together to form a cyclohexyl ring, which is unsubstituted.

In another embodiment, R^1 and R^2 are joined together to form a cyclohexyl ring, which is substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl),$-N(alkyl)_2$, hydroxy and alkoxy groups.

In another embodiment, U is N, and R^1 and R^2 are joined together to form a piperidinyl ring including the N of U as the nitrogen of said piperidinyl ring, which is unsubstituted.

In another embodiment, U is N, and R^1 and R^2 are joined together to form a piperidinyl ring including the N of U as the nitrogen of said piperidinyl ring, wherein said piperidinyl ring is substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl), $-N(alkyl)_2$, hydroxy and alkoxy groups.

In another embodiment, U is N, and R^1 and R^2 are joined together to form a pyrrolidinyl ring including the N of U as the nitrogen of said pyrrolidinyl ring, which is unsubstituted.

In another embodiment, U is N, and R^1 and R^2 are joined together to form a pyrrolidinyl ring including the N of U as the nitrogen of said pyrrolidinyl ring, wherein said pyrrolidinyl ring is substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl), $-N(alkyl)_2$, hydroxy and alkoxy groups.

In another embodiment, U is N, and R^1 and R^2 are joined together to form a piperazinyl ring including the N of U as a nitrogen of said piperazinyl ring, which is unsubstituted.

In another embodiment, U is N, and R^1 and R^2 are joined together to form a piperazinyl ring including the N of U as a nitrogen of said piperazinyl ring, wherein said piperazinyl ring is substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl), $-N(alkyl)_2$, hydroxy and alkoxy groups.

In another embodiment R^1 and R^2 are joined together to form a ring optionally substituted with 1 to 5 independently selected R^{21} substitutents, and said ring is fused with an aryl or heteroaryl ring, and said resulting fused ring is optionally substituted with 1 to 5 independently selected R^{21} substitutents.

In another embodiment R^1 and R^2 are joined together to form a ring substituted with 1 to 5 independently selected R^{21} substitutents, and said ring is fused with an aryl or heteroaryl ring, and said resulting fused ring is optionally substituted with 1 to 5 independently selected R^{21} substitutents.

In another embodiment R^1 and R^2 are joined together to form a ring optionally substituted with 1 to 5 independently selected R^{21} substitutents.

In another embodiment R^1 and R^2 are joined together to form a ring.

In another embodiment R^1 and R^2 are joined together to form a heterocyclyl ring optionally substituted with 1 to 5 independently selected R^{21} substitutents.

In another embodiment R^1 and R^2 are joined together to form a heterocyclyl ring substituted with 1 to 5 independently selected R^{21} substitutents.

In another embodiment U is N, and R^1 and R^2 are joined together to form a heterocyclyl ring optionally substituted with 1 to 5 independently selected R^{21} substitutents.

In another embodiment U is N, and R^1 and R^2 are joined together to form a heterocyclyl ring substituted with 1 to 5 independently selected R^{21} substitutents.

In another embodiment R^1 and R^2 are joined together to form a ring, and said ring is fused with an aryl or heteroaryl ring, and said resulting fused ring is optionally substituted with 1 to 5 independently selected R^{21} substitutents.

In another embodiment R^1 and R^2 are joined together to form a heterocyclyl ring.

In another embodiment U is N, and R^1 and R^2 are joined together to form a heterocyclyl ring.

In another embodiment R^1 and R^2 are joined together to form a piperidinyl ring optionally substituted with 1 to 5 independently selected R^{21} substitutents.

In another embodiment R^1 and R^2 are joined together to form a piperidinyl ring substituted with 1 to 5 independently selected R^{21} substitutents.

In another embodiment U is N, and R^1 and R^2 are joined together to form a piperidinyl ring optionally substituted with 1 to 5 independently selected R^{21} substitutents.

In another embodiment U is N, and R^1 and R^2 are joined together to form a piperidinyl ring substituted with 1 to 5 independently selected R^{21} substitutents.

In another embodiment R^1 and R^2 are joined together to form a piperidinyl ring optionally substituted with a =O moiety.

In another embodiment U is N, and R^1 and R^2 are joined together to form a piperidinyl ring optionally substituted with a =O moiety.

In another embodiment R^1 and R^2 are joined together to form a piperidinyl.

In another embodiment U is N, and R^1 and R^2 are joined together to form a piperidinyl ring.

In another embodiment R^1 and R^2 are joined together to form a piperidinyl ring substituted with a =O moiety.

In another embodiment U is N, and R^1 and R^2 are joined together to form a piperidinyl ring substituted with a =O moiety.

In another embodiment R^2 and R^6 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (a) said cycloalkyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, (b) said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (c) said cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents.

In another embodiment:

(a) R^1 and R^2 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (1) said cycloalkyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (2) said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and

(b) R^2 and R^6 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (1) said cycloalkyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (2) said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents; and

(c) said R^2 and R^6 cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents.

In another embodiment R^6 and either R^3 or R^4 of the -C(R^3)(R^4)- G moiety, are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (a) said cycloalkyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, (b) said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (c) said cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (a) said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (b) said heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the

ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein said heterocyclyl moiety is substituted with 1-5 independently selected R^{21} substituents.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (a) said heterocyclyl moiety is optionally substituted with a =O, and (b) said heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein said heterocyclyl moiety is optionally substituted with a =O.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein said heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (a) said heterocyclyl moiety is substituted with a =O, and (b) said heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein said heterocyclyl moiety is substituted with a =O.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5 membered heterocyclyl moiety, wherein: (a) said heterocyclyl moiety is optionally substituted with with 1-5 independently selected R^{21} substituents, and (b) said heterocyclyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5 membered heterocyclyl moiety, wherein said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5 membered heterocyclyl moiety, wherein: (a) said heterocyclyl moiety is optionally substituted with a =O, and (b) said heterocyclyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5 membered heterocyclyl moiety, wherein said heterocyclyl moiety is optionally substituted with a =O.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5 membered heterocyclyl moiety, wherein said heterocyclyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety

resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5 membered heterocyclyl moiety.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5 membered heterocyclyl moiety, wherein: (a) said heterocyclyl moiety is substituted with a =O, and (b) said heterocyclyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5 membered heterocyclyl moiety, wherein said heterocyclyl moiety is substituted with a =O.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a pyrrolidinyl ring, wherein: (a) said pyrrolidinyl ring is optionally substituted with 1-5 independently selected R^{21} substituents, and (b) said pyrrolidinyl ring is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5 pyrrolidinyl ring, wherein said pyrrolidinyl ring is optionally substituted with 1-5 independently selected R^{21} substituents.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a pyrrolidinyl ring, wherein: (a) said pyrrolidinyl ring is optionally substituted with a =O, and (b) said pyrrolidinyl ring is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a pyrrolidinyl ring, wherein said pyrrolidinyl ring is optionally substituted with a =O.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a pyrrolidinyl ring, wherein said pyrrolidinyl ring is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a pyrrolidinyl ring.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a pyrrolidinyl ring, wherein: (a) said pyrrolidinyl ring is substituted with a =O, and (b) said pyrrolidinyl ring is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a pyrrolidinyl ring, wherein said pyrrolidinyl ring is substituted with a =O.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5 membered heterocyclyl moiety, wherein: (a) said heterocyclyl moiety is substituted with with 1-5 independently selected R^{21} substituents, and (b) said heterocyclyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5 membered heterocyclyl moiety, wherein said heterocyclyl moiety is substituted with 1-5 independently selected R^{21} substituents.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a pyrrolidinyl ring, wherein: (a) said pyrrolidinyl ring is substituted with 1-5 independently selected R^{21} substituents, and (b) said pyrrolidinyl ring is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents.

In another embodiment R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5 pyrrolidinyl ring, wherein said pyrrolidinyl ring is substituted with 1-5 independently selected R^{21} substituents.

In another embodiment, R^6 is H.

In another embodiment, R^6 is alkyl.

In another embodiment, R^6 is methyl.

In another embodiment, R^7 is aryl.

In another embodiment, R^7 is an unsubstituted phenyl.

In another embodiment, R^7 is a phenyl which is substituted with 1-4 substituents which can be the same or different, each substituent being independently selected from the group consisting of halo, alkyl, -CN, -NH_2, -NH(alkyl), -N(alkyl)$_2$, hydroxy, alkoxy, aryl and heteroaryl groups.

In another embodiment, R^7 is unsubstituted naphthyl.

In another embodiment, R^7 is naphthyl which is substituted with 1-4 substituents which can be the same or different, each substituent being independently selected from the group consisting of halo, alkyl, -CN, -NH_2, -NH(alkyl), -N(alkyl)$_2$, hydroxy, alkoxy, aryl and heteroaryl groups.

In another embodiment, R^7 is unsubstituted biphenyl.

In another embodiment, R^7 is biphenyl which is substituted with 1-4 substituents which can be the same or different, each substituent being independently selected from the group consisting of halo, alkyl, -CN, -NH_2, -NH(alkyl), -N(alkyl)$_2$, hydroxy and alkoxy groups.

In another embodiment, R^7 is R^7 is 3-(1,1'-biphenyl)-yl.

In another embodiment, R^7 is R^7 is 4-(1,1'-biphenyl)-yl.

In another embodiment, R^6 is H and R^7 is a biphenyl which can be unsubstituted or optionally independently substituted with 1-4 substituents which can be the same or different, each substituent being independently selected from the group consisting of halo, alkyl, -CN, -NH_2, -NH(alkyl), -N(alkyl)$_2$, hydroxy and alkoxy groups.

In another embodiment, R^6 is methyl, and R^7 is a biphenyl which can be unsubstituted or optionally independently substituted with 1-4 substituents which can be the same or different, each substituent being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl), $-N(alkyl)_2$, hydroxy and alkoxy groups.

In another embodiment, R^6 is H, and R^7 is a phenyl which can be unsubstituted or optionally independently substituted with 1-4 substituents which can be the same or different, each substituent being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl), $-N(alkyl)_2$, hydroxy and alkoxy groups.

In another embodiment, R^6 is methyl, and R^7 is a biphenyl which can be unsubstituted or optionally independently substituted with 1-4 substituents which can be the same or different, each substituent being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl), $-N(alkyl)_2$, hydroxy and alkoxy groups.

In another embodiment, R^2 and R^6 are joined together to form a cyclopentyl ring.

In another embodiment, R^2 and R^6 are joined together to form a cyclopentyl ring, which is substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl), $-N(alkyl)_2$, hydroxy and alkoxy groups.

In another embodiment, R^2 and R^6 are joined together to form a cyclohexyl ring.

In another embodiment, R^2 and R^6 are joined together to form a cyclohexyl ring, which is substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl),$-N(alkyl)_2$, hydroxy and alkoxy groups.

In another embodiment, U is N, and R^2 and R^6 are joined together to form a piperidinyl ring including the N of U as the nitrogen of said piperidinyl ring, which is unsubstituted.

In another embodiment, U is N, and R^2 and R^6 are joined together to form a piperidinyl ring including the N of U as the nitrogen of said piperidinyl ring, wherein said piperidinyl ring is substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl), $-N(alkyl)_2$, hydroxy and alkoxy groups.

In another embodiment, U is N, and R^2 and R^6 are joined together to form a pyrrolidinyl ring including the N of U as the nitrogen of said pyrrolidinyl ring, which is unsubstituted.

In another embodiment, U is N, and R^2 and R^6 are joined together to form a pyrrolidinyl ring including the N of U as the nitrogen of said pyrrolidinyl ring, wherein said pyrrolidinyl ring is substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl), $-N(alkyl)_2$, hydroxy and alkoxy groups.

In another embodiment, U is N, and R^2 and R^6 are joined together to form a piperazinyl ring including the N of U as a nitrogen of said piperazinyl ring, which is unsubstituted.

In another embodiment, U is N, and R^2 and R^6 are joined together to form a piperazinyl ring including the N of U as a nitrogen of said piperazinyl ring, wherein said piperazinyl ring is substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl), $-N(alkyl)_2$, hydroxy and alkoxy groups.

In another embodiment, R^2 and R^6 are joined together to form a morpholinyl ring which is unsubstituted.

In another embodiment, R^2 and R^6 are joined together to form a morpholinyl ring, which is substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl),$-N(alkyl)_2$, hydroxy and alkoxy groups.

In another embodiment, R^2 and R^6 are joined together to form a pyranyl ring which is unsubstituted.

In another embodiment, R^2 and R^6 are joined together to form a pyranyl ring, which is substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl),-N(alkyl)$_2$, hydroxy and alkoxy groups.

In another embodiment, R^2 and R^6 are joined together to form a pyrrolidinyl ring which is unsubstituted.

In another embodiment, R^2 and R^6 are joined together to form a pyrrolidinyl ring, which is substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl),-N(alkyl)$_2$, hydroxy and alkoxy groups.

In another embodiment, both (R^1 and R^2) and (R^2 and R^6) are joined together to form independent cycloalkyl rings.

In another embodiment, both (R^1 and R^2) and (R^2 and R^6) are joined together to form independent cycloalkyl rings, each of which is independently optionally substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl), -N(alkyl)$_2$, hydroxy and alkoxy groups.

In another embodiment, both (R^1 and R^2) and (R^2 and R^6) are joined together to form independent heterocyclyl rings.

In another embodiment, both (R^1 and R^2) and (R^2 and R^6) are joined together to form independent heterocyclyl rings, each of which is independently optionally substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl), -N(alkyl)$_2$, hydroxy and alkoxy groups.

In another embodiment, both (R^1 and R^2) and (R^2 and R^6) are joined together to form independent cycloalkyl rings.

In another embodiment, both R^1 and R^2 are joined together to form a cycloalkyl ring, and R^2 and R^6 are joined together to form a heterocyclyl ring, each of which is independently optionally substituted with 1-3 substituents which can be the same or different, each being independently selected from the group

consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl), $-N(alkyl)_2$, hydroxy and alkoxy groups.

In another embodiment, both R^1 and R^2 are joined together to form a heterocyclyl ring, and R^2 and R^6 are joined together to form a cycloalkyl ring, each of which is independently optionally substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl), $-N(alkyl)_2$, hydroxy and alkoxy groups.

In another embodiment, R^7 is aryl.

In another embodiment, R^7 is an unsubstituted phenyl.

In another embodiment, R^7 is a phenyl which is substituted with 1-4 substituents which can be the same or different, each substituent being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl), $-N(alkyl)_2$, hydroxy, alkoxy, aryl and heteroaryl groups.

In another embodiment, R^7 is 4-fluorophenyl.

In another embodiment, R^7 is unsubstituted naphthyl.

In another embodiment, R^7 is naphthyl which is substituted with 1-4 substituents which can be the same or different, each substituent being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl), $-N(alkyl)_2$, hydroxy, alkoxy, aryl and heteroaryl groups.

In another embodiment, R^7 is unsubstituted biphenyl.

In another embodiment, R^7 is biphenyl which is substituted with 1-4 substituents which can be the same or different, each substituent being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl), $-N(alkyl)_2$, hydroxy and alkoxy groups.

In another embodiment, R^7 is R^7 is 3-(1,1'-biphenyl)-yl.

In another embodiment, R^7 is R^7 is 4-(1,1'-biphenyl)-yl.

In another embodiment, R^8 is H.

In another embodiment, R^8 is alkyl.

In another embodiment, R^8 is methyl.

In another embodiment, R^{10} is aryl.

In another embodiment, R^{10} is phenyl.

In another embodiment R^{10} is aryl substituted with 1 halo.

In another embodiment R^{10} is aryl substituted with 1 halo, and said halo is F.

In another embodiment R^{10} is aryl substituted with 1 to 3 independently selected R^{21} moieties.

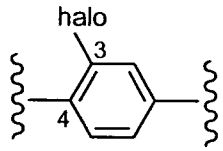
In another embodiment R^{10} is aryl substituted with 1 to 3 R^{21} moieties, wherein each R^{21} moiety is the same or different $-OR^{15}$ group.

In another embodiment R^{10} is aryl substituted with 1 R^{21} moiety.

In another embodiment R^{10} is phenyl substituted with 1 halo.

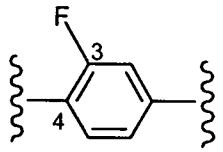
In another embodiment R^{10} is phenyl substituted with 1 halo, and said halo is F.

In another embodiment R^{10} is 3-halo-phenyl:



(wherein the bond from the carbon labeled as 4 is to the R^9 group).

In another embodiment R^{10} is 3-F-phenyl:



(wherein the bond from the carbon labeled as 4 is to the R^9 group).

In another embodiment R^{10} is aryl substituted with one $-OR^{15}$ group.

In another embodiment R^{10} is aryl substituted with one $-OR^{15}$ group, and said R^{15} is alkyl (e.g., methyl).

In another embodiment R^{10} is phenyl substituted with 1 to 3 independently selected R^{21} moieties.

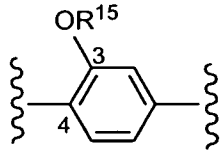
In another embodiment R^{10} is phenyl substituted with 1 to 3 R^{21} moieties, wherein each R^{21} moiety is the same or different $-OR^{15}$ group.

In another embodiment R^{10} is phenyl substituted with 1 R^{21} moiety.

In another embodiment R^{10} is phenyl substituted with one $-OR^{15}$ group.

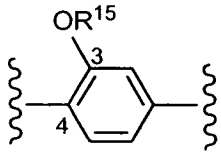
In another embodiment R^{10} is phenyl substituted with one $-OR^{15}$ group, and said R^{15} is alkyl (e.g., methyl).

In another embodiment R^{10} is 3-OR^{15}-phenyl:



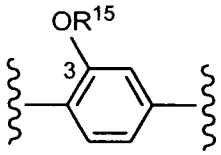
(wherein the bond from the carbon labeled as 4 is to the R^9 group).

In another embodiment R^{10} is 3-OR^{15}-phenyl:



wherein R^{15} is alkyl (wherein the bond from the carbon labeled as 4 is to the R^9 group).

In another embodiment R^{10} is 3-OR^{15}-phenyl:



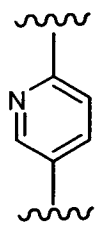
wherein R^{15} is methyl (i.e., R^{10} is 3-methoxy-phenyl).

In another embodiment, R^{10} is heteroaryl.

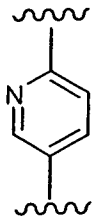
In another embodiment, R^{10} is unsubstituted heteroaryl.

In another embodiment R^{10} is unsubstituted heteroaryl wherein said heteroaryl is pyridyl.

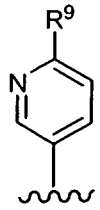
In another embodiment R^{10} is:



In another embodiment R^{10} is:



wherein the $-R^{10}-R^9$ moiety is:



In another embodiment R^{10} is aryl substituted with 1 to 3 R^{21} moieties, wherein each R^{21} moiety is the same or different halo.

In another embodiment R^{10} is aryl substituted with 1 to 3 R^{21} moieties, wherein each R^{21} moiety is F.

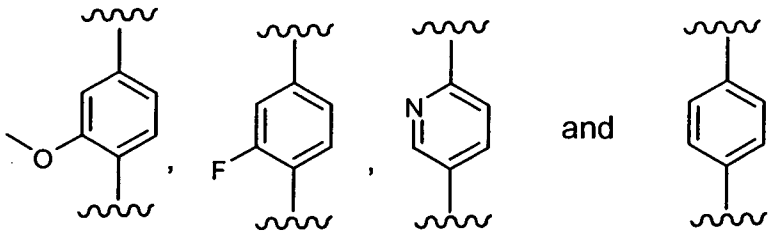
In another embodiment R^{10} is aryl substituted with one R^{21} moiety, and said R^{21} moiety is halo.

In another embodiment R^{10} is aryl substituted with one R^{21} moiety, said R^{21} moiety is –halo, and said halo is F.

In another embodiment R^{10} is phenyl substituted with 1 to 3 R^{21} moieties, wherein each R^{21} moiety is the same or different halo.

In another embodiment R^{10} is phenyl substituted with 1 to 3 R^{21} moieties, wherein each R^{21} moiety is F.

In another embodiment R^{10} is selected from the group consisting of:



In another embodiment of this invention R^9 is selected from the group consisting of heteroaryl and heteroaryl substituted with 1-3 R^{21} groups, and wherein each R^{21} is independently selected.

In another embodiment, R^9 is unsubstituted heteroaryl.

In another embodiment, R^9 is heteroaryl which is substituted with 1-3 substituents which can be the same or different, each substituent being independently selected from the group consisting of halo, alkyl, CN, NH_2, NH(alkyl), N(alkyl)$_2$, hydroxy and alkoxy groups.

In another embodiment, R^9 is heteroaryl substituted with 1 to 3 independently selected alkyl groups.

In another embodiment, R^9 is heteroaryl substituted with one is alkyl group (e.g., methyl).

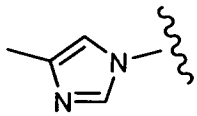
In another embodiment of this invention R^9 is selected from the group consisting of imidazolyl and imidazolyl substituted with 1-3 R^{21} groups, and wherein each R^{21} is independently selected.

In another embodiment of this invention R^9 is imidazolyl substituted with 1-3 R^{21} groups, and wherein each R^{21} is independently selected.

In another embodiment, R^9 is imidazolyl substituted with 1-3 substituents independently selected from the group consisting of halo, alkyl, CN, NH_2, NH(alkyl), N(alkyl)$_2$, hydroxy and alkoxy groups.

In another embodiment, R^9 is imidazol-1-yl.

In another embodiment, R^9 is 4-methyl-imidazol-1-yl:



In another embodiment, R^9 is 5-chloro-4-methyl-imidazol-1-yl.

In another embodiment R^{10} is selected from the group consisting of aryl and aryl substituted with one or more R^{21} groups, and R^9 is selected from the group consisting of heteroaryl and heteroaryl substituted with one or more R^{21} groups, and wherein each R^{21} is independently selected.

In another embodiment R^{10} is selected from the group consisting of phenyl and phenyl substituted with 1-3 independently selected R^{21} groups, and R^9 is selected from the group consisting of imidazolyl and imidazolyl substituted with 1-3 independently selected R^{21} groups.

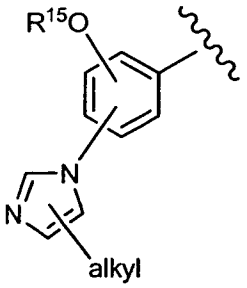
In another embodiment R^{10} is phenyl substituted with 1-3 independently selected R^{21} groups, and R^9 is selected from the group consisting of imidazolyl and imidazolyl substituted with 1-3 independently selected R^{21} groups.

In another embodiment R^{10} is selected from the group consisting of heteroaryl and heteroaryl substituted with 1-3 R^{21} groups, and the R^9 group is selected from the group consisting of heteroaryl and heteroaryl substituted with 1-3 R^{21} groups, and wherein each R^{21} is independently selected.

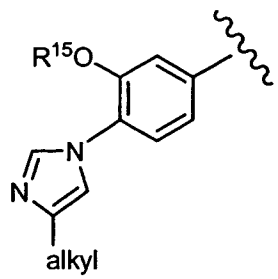
In another embodiment R^{10} is selected from the group consisting of pyridyl and pyridyl substituted with 1-3 R^{21} groups, and the R^9 group is selected from the group consisting of imidazolyl and imidazolyl substituted with 1-3 R^{21} groups, and wherein each R^{21} is independently selected.

In another embodiment R^{10} is pyridyl, and the R^9 group is imidazolyl substituted with 1-3 R^{21} groups, and wherein each R^{21} is independently selected.

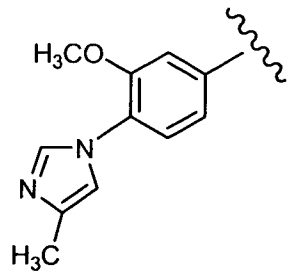
In another embodiment the R^9-R^{10}- moiety is:



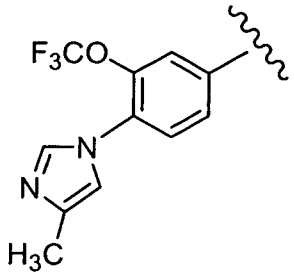
In another embodiment the R^9-R^{10}- moiety is:



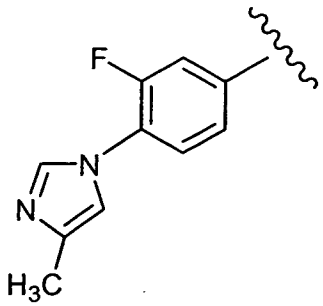
In another embodiment the R^9-R^{10}- moiety is:



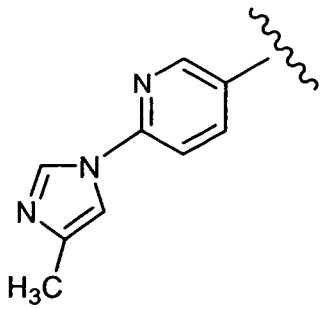
In another embodiment the R^9-R^{10}- moiety is:



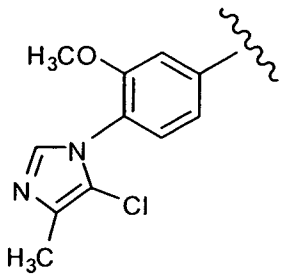
In another embodiment the R^9-R^{10}- moiety is:



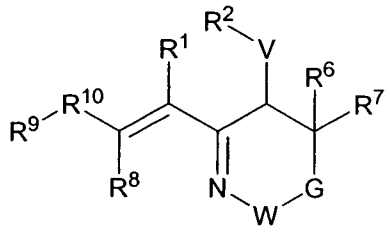
In another embodiment R^9-R^{10}- moiety is:



In another embodiment R^9-R^{10}- moiety is:



In another embodiment, the present application discloses a compound of formula I, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure of Formula IB:



Formula IB

wherein:

either (i) R^1 and R^2 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; or (ii) R^2 and R^6 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; or (iii) R^1 and R^2 are joined together to form a C4-C8 cycloalkyl, C4-

C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; and R^2 and R^6 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

and

W is selected from the group consisting of a bond; -O-, -C(O)-, -S-, -S(O)-, $-S(O_2)-$, and $-C(R^{11})(R^{12})-$;

G is selected from the group consisting of $-C(R^3)(R^4)-$, -C(O)-, -S-, -S(O)-, $-S(O_2)-$, -C(O)-O-, and $-N(R^{13})-$;

V is selected from the group consisting of a bond, -O-, and $-N(R^{14})-$;

R^1 (when R^1 is not joined to R^2), R^2 (when R^2 is not joined to R^1 or R^6), R^3, R^4, R^5, R^6 (when R^6 is not joined to R^2), R^7, R^{11} and R^{12} can be the same or different, each being independently selected from the group consisting of H, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

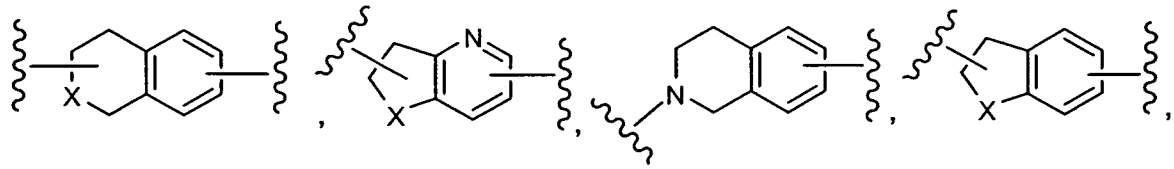
R^{13} is independently selected from the group consisting of H, alkyl, arylalkyl-, heteroarylalkyl-, cycloalkylalkyl-, heterocycloalkylalkyl-, arylcycloalkylalkyl-, heteroarylcycloalkylalkyl-, arylheterocycloalkylalkyl-, heteroarylheterocycloalkylalkyl-, cycloalkyl, arylcycloalkyl-, heteroarylcycloalkyl-, heterocycloalkyl-, arylheterocycloalkyl-, heteroarylheterocycloalkyl-, alkenyl, arylalkenyl-, cycloalkenyl, arylcycloalkenyl-, heteroarylcycloalkenyl-, heterocycloalkenyl-, arylheterocycloalkenyl-, heteroarylheterocycloalkenyl-, alkynyl, arylalkynyl-, aryl, cycloalkylaryl-, heterocycloalkylaryl-, heterocycloalkenylaryl-, heteroaryl, cycloalkylheteroaryl-, heterocycloalkylheteroaryl-, cycloalkenylaryl-, heterocycloalkenylaryl-, $-OR^{15}$, -CN, $-C(O)R^8$, $-C(O)OR^9$, $-S(O)R^{10}$, $-S(O)_2R^{10}$, $-C(O)N(R^{11})(R^{12})$, $-S(O)N(R^{11})(R^{12})$, $-S(O)_2N(R^{11})(R^{12})$, $-NO_2$, $-N=C(R^8)_2$ and $-N(R^8)_2$; and wherein said R^{13} alkyl, arylalkyl-, heteroarylalkyl-, cycloalkylalkyl-, heterocycloalkylalkyl-, arylcycloalkylalkyl-, heteroarylcycloalkylalkyl-, arylheterocycloalkylalkyl-, heteroarylheterocycloalkylalkyl-, cycloalkyl, arylcycloalkyl-, heteroarylcycloalkyl-, heterocycloalkyl, arylheterocycloalkyl-, heteroarylheterocycloalkyl-, alkenyl, arylalkenyl-, cycloalkenyl, arylcycloalkenyl-, heteroarylcycloalkenyl-, heterocycloalkenyl-, arylheterocycloalkenyl-, heteroarylheterocycloalkenyl-, alkynyl, arylalkynyl-, aryl, cycloalkylaryl-, heterocycloalkylaryl-, heterocycloalkenylaryl-, heteroaryl, cycloalkylheteroaryl-, heterocycloalkylheteroaryl-, cycloalkenylaryl-, and heterocycloalkenylaryl- groups are optionally substituted with 1 to 5 groups independently selected from the group consisting of: alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, halo, -CN, $-OR^{15}$, $-C(O)R^{15}$, $-C(O)OR^{15}$, $-C(O)N(R^{15})(R^{16})$, $-SR^{15}$, $-S(O)N(R^{15})(R^{16})$, $-CH(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$,$-C(=NOR^{15})R^{16}$, $-P(O)(OR^{15})(OR^{16})$, $-N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, $-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-R^{15}$; $-CH_2N(R^{15})(R^{16})$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-CH_2-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$,

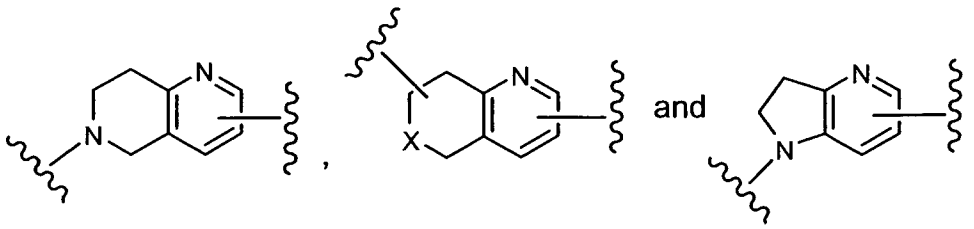
$-N(R^{15})C(O)OR^{16}$, $-CH_2-N(R^{15})C(O)OR^{16}$, $-S(O)R^{15}$, $=NOR^{15}$, $-N_3$, $-NO_2$ and $-S(O)_2R^{15}$;

R^{14} is selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, -CN, $-C(O)R^{15}$, $-C(O)OR^{15}$, $-C(O)N(R^{15})(R^{16})$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-C(=NOR^{15})R^{16}$, and $-P(O)(OR^{15})(OR^{16})$;

R^8 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, with each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- being unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

R^{10} is selected from the group consisting of a bond, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl-, heterocyclylalkyl- and the moieties:





where X is O, $N(R^{14})$ or S;

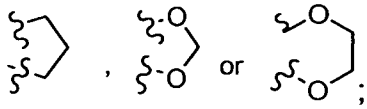
wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl-

heterocyclylalkyl- for R^{10} as well as the above-noted moieties for R^{10} can be unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of the moieties shown below; and

R^9 is selected from the group consisting of alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-can be unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below,

R^{15}, R^{16} and R^{17} are independently selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl, heteroaryl, heteroarylalkyl-, arylcycloalkyl-, arylheterocyclyl-, R^{18}-alkyl, R^{18}-cycloalkyl, R^{18}-cycloalkylalkyl-, R^{18}-heterocyclyl, R^{18}-heterocyclylalkyl-, R^{18}-aryl, R^{18}-arylalkyl, R^{18}-heteroaryl and R^{18}-heteroarylalkyl-;

R^{18} is 1-5 substituents independently selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, arylalkyl-, arylalkenyl-, arylalkynyl-, $-NO_2$, halo, heteroaryl, HO-alkyoxyalkyl, $-CF_3$, -CN, alkyl-CN, $-C(O)R^{19}$, -C(O)OH, $-C(O)OR^{19}$, $-C(O)NHR^{20}$, $-C(O)NH_2$, $-C(O)NH_2$-$C(O)N(alkyl)_2$, -C(O)N(alkyl)(aryl), -C(O)N(alkyl)(heteroaryl), $-SR^{19}$, $-S(O)_2R^{20}$, $-S(O)NH_2$, -S(O)NH(alkyl), -S(O)N(alkyl)(alkyl), -S(O)NH(aryl), $-S(O)_2NH_2$, $-S(O)_2NHR^{19}$, $-S(O)_2NH$(heterocyclyl), $-S(O)_2N(alkyl)_2$, $-S(O)_2N$(alkyl)(aryl), $-OCF_3$, -OH, $-OR^{20}$, -O-heterocyclyl, -O-cycloalkylalkyl, -O-heterocyclylalkyl, $-NH_2$, $-NHR^{20}$, $-N(alkyl)_2$, $-N(arylalkyl)_2$, -N(arylalkyl)-(heteroarylalkyl), $-NHC(O)R^{20}$, $-NHC(O)NH_2$, -NHC(O)NH(alkyl), -NHC(O)N(alkyl)(alkyl), -N(alkyl)C(O)NH(alkyl), -N(alkyl)C(O)N(alkyl)(alkyl), $-NHS(O)_2R^{20}$, $-NHS(O)_2NH$(alkyl), $-NHS(O)_2N$(alkyl)(alkyl), -N(alkyl)$S(O)_2NH$(alkyl) and –N(alkyl)$S(O)_2N$(alkyl)(alkyl);

or, alternately, two R^{18} moieties on adjacent carbons can be linked together to form: ;

R^{19} is alkyl, cycloalkyl, aryl, arylalkyl or heteroarylalkyl;

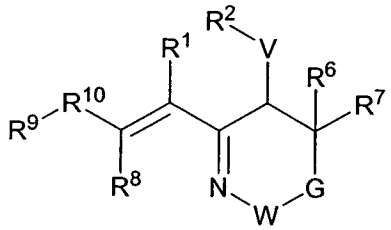
R^{20} is alkyl, cycloalkyl, aryl, halo substituted aryl, arylalkyl, heteroaryl or heteroarylalkyl;

wherein each of the alkyl, cycloalkyl, cycloalkenyl, cycloalkylalkyl, heterocyclyl, heterocyclylalkyl, aryl, arylalkyl, alkylaryl, heteroaryl, heteroarylalkyl, alkenyl and alkynyl groups in R^1, R^2, R^1-R^2, R^2-R^6, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12} and R^{14} is independently unsubstituted or optionally substituted by 1 to 5 R^{21} groups independently selected from the group consisting of alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, halo, -CN, -OR^{15}, -$C(O)R^{15}$, -$C(O)OR^{15}$, -$C(O)N(R^{15})(R^{16})$, -SR^{15}, -$S(O)N(R^{15})(R^{16})$, -$CH(R^{15})(R^{16})$, -$S(O)_2N(R^{15})(R^{16})$, –$C(=NOR^{15})R^{16}$, -$P(O)(OR^{15})(OR^{16})$, -$N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, -$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$R^{15}$; -$CH_2N(R^{15})(R^{16})$, -$N(R^{15})S(O)R^{16}$, -$N(R^{15})S(O)_2R^{16}$, -$CH_2$-$N(R^{15})S(O)_2R^{16}$, -$N(R^{15})S(O)_2N(R^{16})(R^{17})$, -$N(R^{15})S(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)OR^{16}$, -$CH_2$-$N(R^{15})C(O)OR^{16}$, -$S(O)R^{15}$, =$NOR^{15}$, -$N_3$, -$NO_2$ and -$S(O)_2R^{15}$;

wherein each of the alkyl, cycloalkenyl, cycloalkyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, alkenyl and alkynyl groups in R^{21} is independently unsubstituted or substituted by 1 to 5 R^{22} groups independently selected from the group consisting of alkyl, cycloalkyl, cycloalkenyl, heterocyclyl, aryl, heteroaryl, halo, -CF_3, -CN, -OR^{15}, -$C(O)R^{15}$, -$C(O)OR^{15}$, -alkyl-$C(O)OR^{15}$, $C(O)N(R^{15})(R^{16})$, -SR^{15}, -$S(O)N(R^{15})(R^{16})$, -$S(O)_2N(R^{15})(R^{16})$, –$C(=NOR^{15})R^{16}$, -$P(O)(OR^{15})(OR^{16})$, -$N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, -$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)R^{16}$, -$N(R^{15})S(O)R^{16}$, -$N(R^{15})S(O)_2R^{16}$, -CH_2-$N(R^{15})S(O)_2R^{16}$, -$N(R^{15})S(O)_2N(R^{16})(R^{17})$,

$-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-CH_2-N(R^{15})C(O)OR^{16}$, $-N_3$, $=NOR^{15}$, $-NO_2$, $-S(O)R^{15}$ and $-S(O)_2R^{15}$.

In another embodiment, the present application discloses a compound of formula I, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure of Formula IB:



Formula IB

wherein:

either

(i) R^1 and R^2 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (a) said cycloalkyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, (b) said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (c) said cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents; or

(ii) R^2 and R^6 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (a) said cycloalkyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, (b) said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (c) said cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents; or

(iii)

(a) R^1 and R^2 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (1) said cycloalkyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (2) said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and

(b) R^2 and R^6 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (1) said cycloalkyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (2) said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents; and

(c) said R^2 and R^6 cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents; or

(iv) R^6 and either R^3 or R^4 of the -C(R^3)(R^4)- G moiety, are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (a) said cycloalkyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, (b) said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (c) said cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents; or

(v) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (a) said cycloalkyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, (b) said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (c) said cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from

the fusion is optionally substituted with 1-5 independently selected R^{21} substituents; and

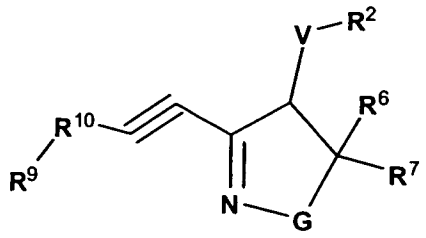
W is selected from the group consisting of a bond, -O-, -C(O)-, -S-, -S(O)-, -S(O_2)-, and -C(R^{11})(R^{12})-;

G is selected from the group consisting of -C(R^3)(R^4)-, -C(O)-, -S-, -S(O)-, -S(O_2)-, -C(O)-O-, and -N(R^{13})- ;

V is selected from the group consisting of a bond, -O-, -C(O)- and -N(R^{14})-;

R^1 (when R^1 is not joined to R^2), R^2 (when R^2 is not joined to R^1 or R^6), R^5, R^6 (when R^6 is not joined to R^2), and R^7can be the same or different, each being independently selected from the group consisting of H, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

or, alternatively, R^1 (when R^1 is not joined to R^2) and R^8 are taken together to form a bond (i.e., there is a triple bond between the carbon atom to which R^1 was bonded to and the carbon to which R^8 was bonded to, i.e., the compound of formula I is a compound of formula IIA:



formula IIA

and R^2, R^5, R^6, and R^7 are as defined above, and R^3, R^4, R^{11} and R^{12} are as defined below);

R^3 is selected from the group consisting of H, halo (and in one example, F), $-OR^{15}$ (and in one example R^{15} is H), -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-C(O)R^{15}$, $-C(O)OR^{15}$,$-C(=NOR^{15})R^{16}$, $-C(O)N(R^{15})(R^{16})$, $-S(O)N(R^{15})(R^{16})$, $S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, $-N_3$, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; or

R^3 and R^6 taken together form a bond (i.e., R^3 and R^6 form a bond between G and the carbon to which R^6 is bound), provided that when R^3 and R^6 form a bond: (1) W is not a bond, (2) R^2 and R^6 are not joined together to form a cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety (as described in (ii) and (iii) above) (3) R^6 and either R^3 or R^4 of the $-C(R^3)(R^4)-$ G moiety are not joined together to form a cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety (as described in (iv) above), and (4) R^6 and R^{13} of the $-N(R^{13})-$ G moiety are not joined together to form a heterocyclyl or heterocyclenyl moiety (as described in (v) above);

R^4, R^{11} and R^{12} can be the same or different, each being independently selected from the group consisting of H, halo (and in one example, F), $-OR^{15}$ (and in one example R^{15} is H), -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-C(O)R^{15}$, $-C(O)OR^{15}$,$-C(=NOR^{15})R^{16}$, $-C(O)N(R^{15})(R^{16})$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, $-N_3$, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-,

heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below,

provided that when one of R^3 or R^4 is selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$, then the other is not selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, and $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$ (i.e., if one of R^3 or R^4 is $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$, then the other one is not $-OR^{15}$, -CN, $-SR^{15}$, and $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$);

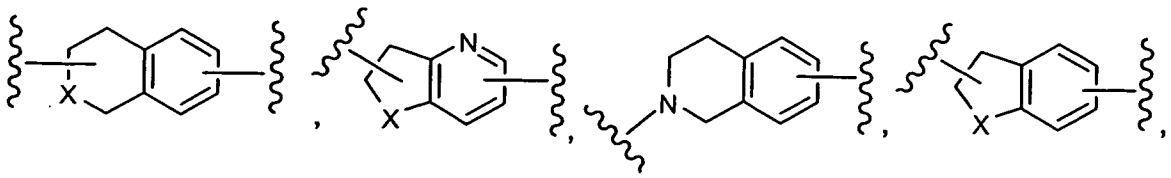
provided that when one of R^{11} or R^{12} is selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$, then the other is not selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$,

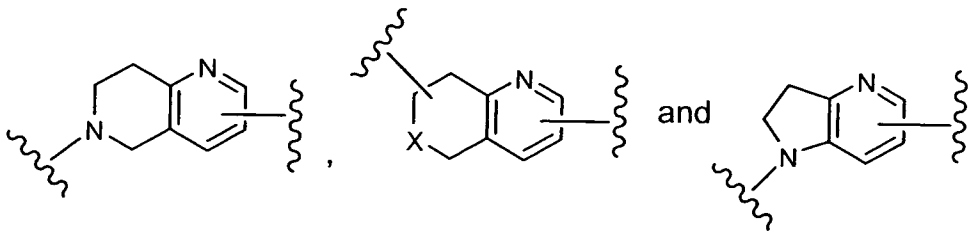
$-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$ (i.e., if one of R^{11} or R^{12} is $-OR^{15}$, $-CN$, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$, then the other is not $-OR^{15}$, $-CN$, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$);

R^8 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, with each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- being optionally substituted with 1-3 independently selected R^{21} substituents;

R^9 is selected from the group consisting of alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, -, wherein each R^9 group is optionally substituted with 1-3 independently selected R^{21} substituents;

R^{10} is selected from the group consisting of a bond, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl-, heterocyclylalkyl- and the moieties:





where X is O, N(R^{14}) or S;

wherein each R^{10} group (except for the bond) is optionally substituted with 1-3 independently selected R^{21} substituents;

R^{13} is independently selected from the group consisting of H, alkyl, arylalkyl-, heteroarylalkyl-, cycloalkylalkyl-, heterocycloalkylalkyl-, arylcycloalkylalkyl-, heteroarylcycloalkylalkyl-, arylheterocycloalkylalkyl-, heteroarylheterocycloalkylalkyl-, cycloalkyl, arylcycloalkyl-, heteroarylcycloalkyl-, heterocycloalkyl-, arylheterocycloalkyl-, heteroarylheterocycloalkyl-, alkenyl, arylalkenyl-, cycloalkenyl, arylcycloalkenyl-, heteroarylcycloalkenyl-, heterocycloalkenyl-, arylheterocycloalkenyl-, heteroarylheterocycloalkenyl-, alkynyl, arylalkynyl-, aryl, cycloalkylaryl-, heterocycloalkylaryl-, heterocycloalkenylaryl-, heteroaryl, cycloalkylheteroaryl-, heterocycloalkylheteroaryl-, cycloalkenylaryl-, heterocycloalkenylaryl-, $-OR^{15}$, -CN, $-C(O)R^{8}$, $-C(O)OR^{9}$, $-S(O)R^{10}$, $-S(O)_2R^{10}$, $-C(O)N(R^{11})(R^{12})$, $-S(O)N(R^{11})(R^{12})$, $-S(O)_2N(R^{11})(R^{12})$, $-NO_2$, $-N=C(R^{8})_2$ and $-N(R^{8})_2$; and wherein said R^{13} alkyl, arylalkyl-, heteroarylalkyl-, cycloalkylalkyl-, heterocycloalkylalkyl-, arylcycloalkylalkyl-, heteroarylcycloalkylalkyl-, arylheterocycloalkylalkyl-, heteroarylheterocycloalkylalkyl-, cycloalkyl, arylcycloalkyl-, heteroarylcycloalkyl-, heterocycloalkyl, arylheterocycloalkyl-, heteroarylheterocycloalkyl-, alkenyl, arylalkenyl-, cycloalkenyl, arylcycloalkenyl-, heteroarylcycloalkenyl-, heterocycloalkenyl-, arylheterocycloalkenyl-, heteroarylheterocycloalkenyl-, alkynyl, arylalkynyl-, aryl, cycloalkylaryl-, heterocycloalkylaryl-, heterocycloalkenylaryl-, heteroaryl, cycloalkylheteroaryl-, heterocycloalkylheteroaryl-, cycloalkenylaryl-, and heterocycloalkenylaryl- groups are optionally substituted with 1 to 5 groups independently selected from the group consisting of: alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-,

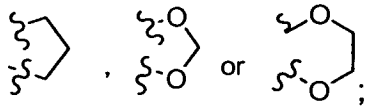
cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, halo, -CN, -OR^{15}, -$C(O)R^{15}$, -$C(O)OR^{15}$, -$C(O)N(R^{15})(R^{16})$, -SR^{15}, -$S(O)N(R^{15})(R^{16})$, -$CH(R^{15})(R^{16})$, -$S(O)_2N(R^{15})(R^{16})$,–$C(=NOR^{15})R^{16}$, -$P(O)(OR^{15})(OR^{16})$, -$N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, -$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$R^{15}$; -$CH_2N(R^{15})(R^{16})$, -$N(R^{15})S(O)R^{16}$, -$N(R^{15})S(O)_2R^{16}$, -$CH_2$-$N(R^{15})S(O)_2R^{16}$, -$N(R^{15})S(O)_2N(R^{16})(R^{17})$, -$N(R^{15})S(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)OR^{16}$, -$CH_2$-$N(R^{15})C(O)OR^{16}$, -$S(O)R^{15}$, =$NOR^{15}$, -$N_3$, -$NO_2$ and -$S(O)_2R^{15}$;

R^{14} is selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, -CN, -$C(O)R^{15}$, -$C(O)OR^{15}$, -$C(O)N(R^{15})(R^{16})$, -$S(O)N(R^{15})(R^{16})$, -$S(O)_2N(R^{15})(R^{16})$, –$C(=NOR^{15})R^{16}$, and -$P(O)(OR^{15})(OR^{16})$, wherein each of said alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, and heteroarylalkyl- is optionally substituted with 1-5 independently selected R^{21} substitutents;

R^{15}, R^{16} and R^{17} are independently selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl, heteroaryl, heteroarylalkyl-, arylcycloalkyl-, arylheterocyclyl-, $R^{18})_r$-alkyl, $R^{18})_r$-cycloalkyl, $R^{18})_r$-cycloalkylalkyl-, $R^{18})_r$-heterocyclyl, $R^{18})_r$-heterocyclylalkyl-, $R^{18})_r$-aryl, $R^{18})_r$-arylalkyl, $R^{18})_r$-heteroaryl and $R^{18})_r$-heteroarylalkyl-, wherein r is 1-5;

Each R^{18} is independently selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, arylalkyl-, arylalkenyl-, arylalkynyl-, -NO_2, halo, heteroaryl, HO-alkyoxyalkyl, -CF_3, -CN, alkyl-CN, -$C(O)R^{19}$, -C(O)OH, -$C(O)OR^{19}$, -$C(O)NHR^{20}$, -$C(O)NH_2$, -$C(O)NH_2$-$C(O)N(alkyl)_2$, -C(O)N(alkyl)(aryl), -C(O)N(alkyl)(heteroaryl), -SR^{19}, -$S(O)_2R^{20}$, -$S(O)NH_2$, -S(O)NH(alkyl), -S(O)N(alkyl)(alkyl), -S(O)NH(aryl), -$S(O)_2NH_2$, -$S(O)_2NHR^{19}$, -$S(O)_2NH$(heterocyclyl), -$S(O)_2N(alkyl)_2$, -$S(O)_2N$(alkyl)(aryl), -OCF_3, -OH, -OR^{20},

-O-heterocyclyl, -O-cycloalkylalkyl, -O-heterocyclylalkyl, $-NH_2$, $-NHR^{20}$, $-N(alkyl)_2$, $-N(arylalkyl)_2$, -N(arylalkyl)-(heteroarylalkyl), $-NHC(O)R^{20}$, $-NHC(O)NH_2$, -NHC(O)NH(alkyl), -NHC(O)N(alkyl)(alkyl), -N(alkyl)C(O)NH(alkyl), -N(alkyl)C(O)N(alkyl)(alkyl), $-NHS(O)_2R^{20}$, $-NHS(O)_2NH(alkyl)$, $-NHS(O)_2N(alkyl)(alkyl)$, $-N(alkyl)S(O)_2NH(alkyl)$ and $-N(alkyl)S(O)_2N(alkyl)(alkyl)$;

or, alternately, two R^{18} moieties on adjacent carbons can be linked together to form: ;

R^{19} is selected from the group consisting of alkyl, cycloalkyl, aryl, arylalkyl- and heteroarylalkyl-;

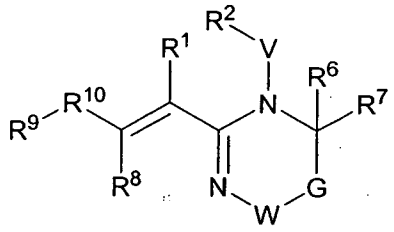
R^{20} is selected from the group consisting of alkyl, cycloalkyl, aryl, halo substituted aryl, arylalkyl-, heteroaryl or heteroarylalkyl-;

Each R^{21} group is independently selected from the group consisting of alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, halo, -CN, $-OR^{15}$, $-C(O)R^{15}$, $-C(O)OR^{15}$, $-C(O)N(R^{15})(R^{16})$, $-SR^{15}$, $-S(O)N(R^{15})(R^{16})$, $-CH(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-C(=NOR^{15})R^{16}$, $-P(O)(OR^{15})(OR^{16})$, $-N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, $-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-R^{15}$; $-CH_2N(R^{15})(R^{16})$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-CH_2-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-CH_2-N(R^{15})C(O)OR^{16}$, $-S(O)R^{15}$, $=NOR^{15}$, $-N_3$, $-NO_2$ and $-S(O)_2R^{15}$; and wherein each of the R^{21} alkyl, cycloalkenyl, cycloalkyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, alkenyl and alkynyl groups is optionally substituted with 1 to 5 independently selected R^{22} groups; and

Each R^{22} is independently selected from the group consisting of alkyl, cycloalkyl, cycloalkenyl, heterocyclyl, aryl, heteroaryl, halo, $-CF_3$, -CN, $-OR^{15}$, $-C(O)R^{15}$, $-C(O)OR^{15}$, -alkyl-$C(O)OR^{15}$, $C(O)N(R^{15})(R^{16})$, $-SR^{15}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-C(=NOR^{15})R^{16}$, $-P(O)(OR^{15})(OR^{16})$, $-N(R^{15})(R^{16})$,

-alkyl-$N(R^{15})(R^{16})$, $-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-CH_2-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-CH_2-N(R^{15})C(O)OR^{16}$, $-N_3$, $=NOR^{15}$, $-NO_2$, $-S(O)R^{15}$ and $-S(O)_2R^{15}$.

In another embodiment, this invention discloses a compound of formual I, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure of formula IC:



Formula IC

wherein:

either (i) R^1 and R^2 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; or (ii) R^2 and R^6 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; or (iii) R^1 and R^2 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety

being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; and R^2 and R^6 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

and

W is selected from the group consisting of a bond, -O-, -C(O)-, -S-, -S(O)-, $-S(O_2)-$, and $-C(R^{11})(R^{12})-$;

G is selected from the group consisting of $-C(R^3)(R^4)-$, -C(O)-, -S-, -S(O)-, $-S(O_2)-$, -C(O)-O-, and $-N(R^{13})-$;

V is selected from the group consisting of a bond, -O-, and $-N(R^{14})-$;

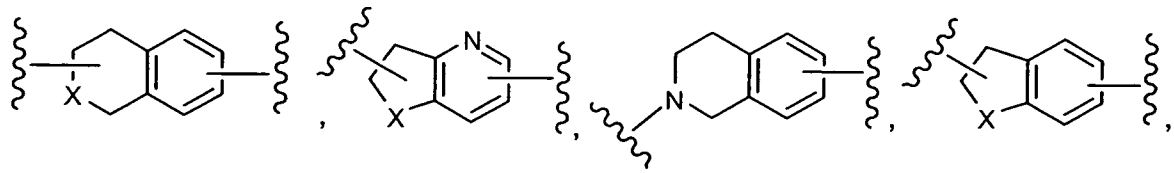
R^1 (when R^1 is not joined to R^2), R^2 (when R^2 is not joined to R^1 or R^6), R^3, R^4, R^5, R^6 (when R^6 is not joined to R^2), R^7, R^{11} and R^{12} can be the same or different, each being independently selected from the group consisting of H, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

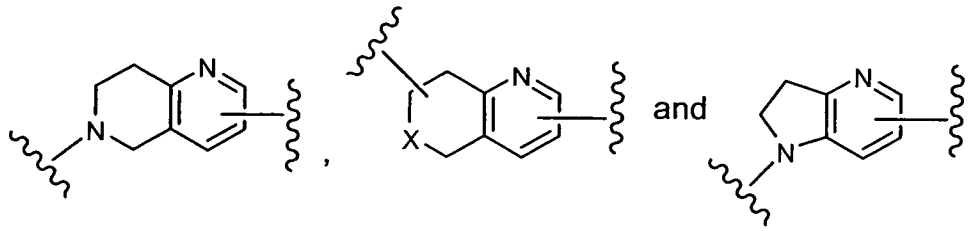
R^{14} is selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl, cycloalkenyl, heterocyclyl, heterocyclylalkyl, aryl,

arylalkyl, heteroaryl, heteroarylalkyl, -CN, -C(O)R^{15}, -C(O)OR^{15}, -C(O)$N(R^{15})(R^{16})$, -S(O)$N(R^{15})(R^{16})$, -$S(O)_2N(R^{15})(R^{16})$, –C(=NOR^{15})R^{16}, and -P(O)$(OR^{15})(OR^{16})$;

R^8 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, with each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- being unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

R^{10} is selected from the group consisting of a bond, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl-, heterocyclylalkyl- and the moieties:





where X is O, $N(R^{14})$ or S;

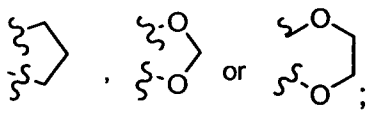
wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl-heterocyclylalkyl- for R^{10} as well as the above-noted moieties for R^{10} can be unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of the moieties shown below; and

R^9 is selected from the group consisting of alkyl-, alkenyl- and alkynyl-,

aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-can be unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below,

R^{15}, R^{16} and R^{17} are independently selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, arylcycloalkyl-, arylheterocyclyl-, R^{18}-alkyl, R^{18}-cycloalkyl, R^{18}-cycloalkylalkyl, R^{18}-heterocyclyl, R^{18}-heterocyclylalkyl, R^{18}-aryl, R^{18}-arylalkyl, R^{18}-heteroaryl and R^{18}-heteroarylalkyl;

R^{18} is 1-5 substituents independently selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, arylalkyl-, arylalkenyl-, arylalkynyl-, $-NO_2$, halo, heteroaryl, HO-alkyoxyalkyl, $-CF_3$, -CN, alkyl-CN, $-C(O)R^{19}$, -C(O)OH, $-C(O)OR^{19}$, $-C(O)NHR^{20}$, $-C(O)NH_2$, $-C(O)NH_2$-$C(O)N(alkyl)_2$, -C(O)N(alkyl)(aryl), -C(O)N(alkyl)(heteroaryl), $-SR^{19}$, $-S(O)_2R^{20}$, $-S(O)NH_2$, -S(O)NH(alkyl), -S(O)N(alkyl)(alkyl), -S(O)NH(aryl), $-S(O)_2NH_2$, $-S(O)_2NHR^{19}$, $-S(O)_2NH$(heterocyclyl), $-S(O)_2N(alkyl)_2$, $-S(O)_2N$(alkyl)(aryl), $-OCF_3$, -OH, $-OR^{20}$, -O-heterocyclyl, -O-cycloalkylalkyl, -O-heterocyclylalkyl, $-NH_2$, $-NHR^{20}$, $-N(alkyl)_2$, $-N(arylalkyl)_2$, -N(arylalkyl)-(heteroarylalkyl), $-NHC(O)R^{20}$, $-NHC(O)NH_2$, -NHC(O)NH(alkyl), -NHC(O)N(alkyl)(alkyl), -N(alkyl)C(O)NH(alkyl), -N(alkyl)C(O)N(alkyl)(alkyl), $-NHS(O)_2R^{20}$, $-NHS(O)_2NH$(alkyl), $-NHS(O)_2N$(alkyl)(alkyl), -N(alkyl)$S(O)_2NH$(alkyl) and –N(alkyl)$S(O)_2N$(alkyl)(alkyl);

or, alternately, two R^{18} moieties on adjacent carbons can be linked together to form:  ;

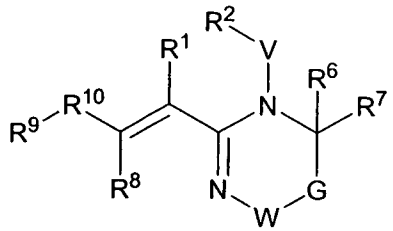
R^{19} is alkyl, cycloalkyl, aryl, arylalkyl or heteroarylalkyl;

R^{20} is alkyl, cycloalkyl, aryl, halo substituted aryl, arylalkyl, heteroaryl or heteroarylalkyl;

wherein each of the alkyl, cycloalkyl, cycloalkenyl, cycloalkylalkyl, heterocyclyl, heterocyclylalkyl, aryl, arylalkyl, alkylaryl-, heteroaryl, heteroarylalkyl, alkenyl and alkynyl groups in R^1, R^2, R^1-R^2, R^2-R^6, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12} and R^{14} is independently unsubstituted or optionally substituted by 1 to 5 R^{21} groups independently selected from the group consisting of alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalky-l, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, halo, -CN, -OR^{15}, -$C(O)R^{15}$, -$C(O)OR^{15}$, -$C(O)N(R^{15})(R^{16})$, -SR^{15}, -$S(O)N(R^{15})(R^{16})$, -$CH(R^{15})(R^{16})$, -$S(O)_2N(R^{15})(R^{16})$, –$C(=NOR^{15})R^{16}$, -$P(O)(OR^{15})(OR^{16})$, -$N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, -$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$R^{15}$, -$CH_2N(R^{15})(R^{16})$, -$N(R^{15})S(O)R^{16}$, -$N(R^{15})S(O)_2R^{16}$, -$CH_2$-$N(R^{15})S(O)_2R^{16}$, -$N(R^{15})S(O)_2N(R^{16})(R^{17})$, -$N(R^{15})S(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)OR^{16}$, -$CH_2$-$N(R^{15})C(O)OR^{16}$, -$S(O)R^{15}$, =$NOR^{15}$, -$N_3$, -$NO_2$ and -$S(O)_2R^{15}$;

wherein each of the alkyl, cycloalkenyl, cycloalkyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, alkenyl and alkynyl groups in R^{21} is independently unsubstituted or substituted by 1 to 5 R^{22} groups independently selected from the group consisting of alkyl, cycloalkyl, cycloalkenyl, heterocyclyl, aryl, heteroaryl, halo, -CF_3, -CN, -OR^{15}, -$C(O)R^{15}$, -$C(O)OR^{15}$, -alkyl-$C(O)OR^{15}$, $C(O)N(R^{15})(R^{16})$, -SR^{15}, -$S(O)N(R^{15})(R^{16})$, -$S(O)_2N(R^{15})(R^{16})$, –$C(=NOR^{15})R^{16}$, -$P(O)(OR^{15})(OR^{16})$, -$N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, -$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)R^{16}$, -$N(R^{15})S(O)R^{16}$, -$N(R^{15})S(O)_2R^{16}$, -CH_2-$N(R^{15})S(O)_2R^{16}$, -$N(R^{15})S(O)_2N(R^{16})(R^{17})$, -$N(R^{15})S(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)OR^{16}$, -$CH_2$-$N(R^{15})C(O)OR^{16}$, -$N_3$, =$NOR^{15}$, -$NO_2$, -$S(O)R^{15}$ and -$S(O)_2R^{15}$.

In another embodiment, this invention discloses a compound of formula I, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure of formula IC:



Formula IC

wherein:

either

(i) R^1 and R^2 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (a) said cycloalkyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, (b) said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (c) said cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents; or

(ii) R^2 and R^6 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (a) said cycloalkyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, (b) said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (c) said cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents; or

(iii)

(a) R^1 and R^2 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (1) said cycloalkyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (2) said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and

(b) R^2 and R^6 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (1) said cycloalkyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (2) said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents; and

(c) said R^2 and R^6 cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents; or

(iv) R^6 and either R^3 or R^4 of the -C(R^3)(R^4)- G moiety, are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (a) said cycloalkyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, (b) said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (c) said cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents; or

(v) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (a) said cycloalkyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, (b) said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (c) said cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents; and

W is selected from the group consisting of a bond, -O-, -C(O)-, -S-, -S(O)-, -S(O_2)-, and -C(R^{11})(R^{12})-;

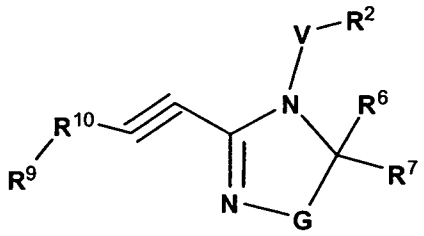
G is selected from the group consisting of -C(R^3)(R^4)-, -C(O)-, -S-, -S(O)-,

-$S(O_2)$-, -C(O)-O-, and -$N(R^{13})$- ;

V is selected from the group consisting of a bond, -O-, -C(O)- and -$N(R^{14})$-;

R^1 (when R^1 is not joined to R^2), R^2 (when R^2 is not joined to R^1 or R^6), R^5, R^6 (when R^6 is not joined to R^2), and R^7can be the same or different, each being independently selected from the group consisting of H, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

or, alternatively, R^1 (when R^1 is not joined to R^2) and R^8 are taken together to form a bond (i.e., there is a triple bond between the carbon atom to which R^1 was bonded to and the carbon to which R^8 was bonded to, i.e., the compound of formula I is a compound of formula II:



formula IIB

and R^2, R^5, R^6, and R^7 are as defined above, and R^3, R^4, R^{11} and R^{12} are as defined below);

R^3 is selected from the group consisting of H, halo (and in one example, F), -OR^{15} (and in one example R^{15} is H), -CN, -SR^{15}, -$NR^{15}R^{16}$, -$N(R^{15})C(O)R^{16}$, -$N(R^{15})S(O)R^{16}$, -$N(R^{15})S(O)_2R^{16}$, -$N(R^{15})S(O)_2N(R^{16})(R^{17})$, -$N(R^{15})S(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)OR^{16}$, -$C(O)R^{15}$, -$C(O)OR^{15}$,–$C(=NOR^{15})R^{16}$, -$C(O)N(R^{15})(R^{16})$, -$S(O)N(R^{15})(R^{16})$, $S(O)_2N(R^{15})(R^{16})$, -$S(O)R^{15}$, -$S(O)_2R^{15}$, -$P(O)(OR^{15})(OR^{16})$, =NOR^{15}, -N_3, alkyl-,

alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; or

R^3 and R^6 taken together form a bond (i.e., R^3 and R^6 form a bond between G and the carbon to which R^6 is bound), provided that when R^3 and R^6 form a bond: (1) W is not a bond, (2) R^2 and R^6 are not joined together to form a cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety (as described in (ii) and (iii) above) (3) R^6 and either R^3 or R^4 of the $-C(R^3)(R^4)-$ G moiety are not joined together to form a cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety (as described in (iv) above), and (4) R^6 and R^{13} of the $-N(R^{13})-$ G moiety are not joined together to form a heterocyclyl or heterocyclenyl moiety (as described in (v) above);

R^4, R^{11} and R^{12} can be the same or different, each being independently selected from the group consisting of H, halo (and in one example, F), $-OR^{15}$ (and in one example R^{15} is H), -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-C(O)R^{15}$, $-C(O)OR^{15}$,$-C(=NOR^{15})R^{16}$, $-C(O)N(R^{15})(R^{16})$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, $-N_3$, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below,

provided that when one of R^3 or R^4 is selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$, then the other is not selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, and $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$ (i.e., if one of R^3 or R^4 is $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$, then the other one is not $-OR^{15}$, -CN, $-SR^{15}$, and $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$);

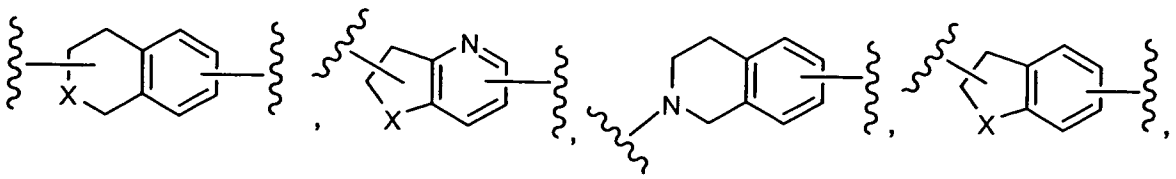
provided that when one of R^{11} or R^{12} is selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$, then the other is not selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$ (i.e., if one of R^{11} or R^{12} is $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$,

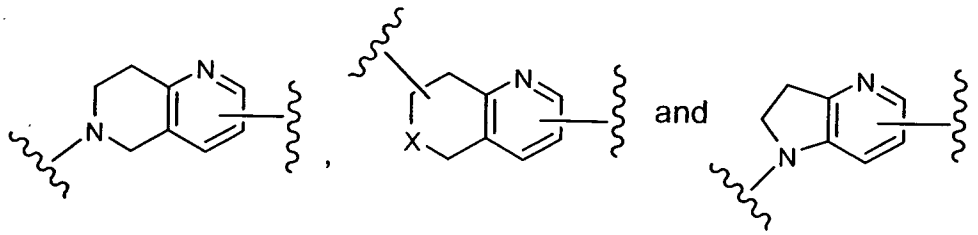
$-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$, then the other is not $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, or $-N_3$);

R^8 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, with each of said alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- being optionally substituted with 1-3 independently selected R^{21} substituents;

R^9 is selected from the group consisting of alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- is optionally substituted with 1-3 independently selected R^{21} substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below,

R^{10} is selected from the group consisting of a bond, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl-, heterocyclylalkyl- and the moieties:





where X is O, N(R^{14}) or S;

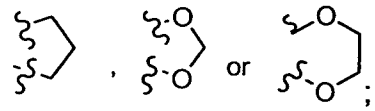
wherein each of said R^{10} moieties (except the the bond) is optionally substituted with 1-3 independently selected R^{21} substituents which can be the same or different, each being independently selected from the group consisting of the moieties shown below; and

R^{14} is selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl, cycloalkenyl, heterocyclyl, heterocyclylalkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl, -CN, -C(O)R^{15}, -C(O)OR^{15}, -C(O)N(R^{15})(R^{16}), -S(O)N(R^{15})(R^{16}), -$S(O)_2$N(R^{15})(R^{16}), –C(=NOR^{15})R^{16}, and -P(O)(OR^{15})(OR^{16}), wherein each of said alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl, cycloalkenyl, heterocyclyl, heterocyclylalkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl is optionally substituted with 1-5 independently selected R^{21} substitutents;

R^{15}, R^{16} and R^{17} are independently selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, arylcycloalkyl-, arylheterocyclyl-, $(R^{18})_r$-alkyl, $(R^{18})_r$-cycloalkyl, $(R^{18})_r$-cycloalkylalkyl, $(R^{18})_r$-heterocyclyl, $(R^{18})_r$-heterocyclylalkyl, $(R^{18})_r$-aryl, $(R^{18})_r$-arylalkyl, $(R^{18})_r$-heteroaryl and $(R^{18})_r$–heteroarylalkyl, wherein r is 1-5;

Each R^{18} is independently selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, arylalkyl-, arylalkenyl-, arylalkynyl-, -NO_2, halo, heteroaryl, HO-alkyoxyalkyl, -CF_3, -CN, alkyl-CN, -C(O)R^{19}, -C(O)OH, -C(O)OR^{19}, -C(O)NHR^{20}, -C(O)NH_2, -C(O)NH_2-C(O)N(alkyl)$_2$, -C(O)N(alkyl)(aryl), -C(O)N(alkyl)(heteroaryl), -SR^{19}, -$S(O)_2R^{20}$, -S(O)NH_2, -S(O)NH(alkyl), -S(O)N(alkyl)(alkyl), -S(O)NH(aryl), -$S(O)_2NH_2$, -$S(O)_2$NHR^{19}, -$S(O)_2$NH(heterocyclyl), -$S(O)_2$N(alkyl)$_2$, -$S(O)_2$N(alkyl)(aryl), -OCF_3, -OH, -OR^{20},

-O-heterocyclyl, -O-cycloalkylalkyl, -O-heterocyclylalkyl, $-NH_2$, $-NHR^{20}$, $-N(alkyl)_2$, $-N(arylalkyl)_2$, -N(arylalkyl)-(heteroarylalkyl), $-NHC(O)R^{20}$, $-NHC(O)NH_2$, -NHC(O)NH(alkyl), -NHC(O)N(alkyl)(alkyl), -N(alkyl)C(O)NH(alkyl), -N(alkyl)C(O)N(alkyl)(alkyl), $-NHS(O)_2R^{20}$, $-NHS(O)_2NH(alkyl)$, $-NHS(O)_2N(alkyl)(alkyl)$, $-N(alkyl)S(O)_2NH(alkyl)$ and $-N(alkyl)S(O)_2N(alkyl)(alkyl)$;

or, alternately, two R^{18} moieties on adjacent carbons can be linked together to form: ;

R^{19} is selected from the group consisting of alkyl, cycloalkyl, aryl, arylalkyl- and heteroarylalkyl-;

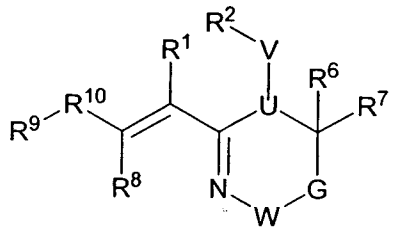
R^{20} is selected from the group consisting of alkyl, cycloalkyl, aryl, halo substituted aryl, arylalkyl-, heteroaryl and heteroarylalkyl-;

Each R^{21} group independently selected from the group consisting of alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalky-l, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, halo, -CN, $-OR^{15}$, $-C(O)R^{15}$, $-C(O)OR^{15}$, $-C(O)N(R^{15})(R^{16})$, $-SR^{15}$, $-S(O)N(R^{15})(R^{16})$, $-CH(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-C(=NOR^{15})R^{16}$, $-P(O)(OR^{15})(OR^{16})$, $-N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, $-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-R^{15}$, $-CH_2N(R^{15})(R^{16})$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-CH_2-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-CH_2-N(R^{15})C(O)OR^{16}$, $-S(O)R^{15}$, $=NOR^{15}$, $-N_3$, $-NO_2$ and $-S(O)_2R^{15}$; and wherein each of the R^{21} alkyl, cycloalkenyl, cycloalkyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, alkenyl and alkynyl groups is optionally substituted with 1 to 5 independently selected R^{22} groups; and

Each R^{22} is independently selected from the group consisting of alkyl, cycloalkyl, cycloalkenyl, heterocyclyl, aryl, heteroaryl, halo, $-CF_3$, -CN, $-OR^{15}$, $-C(O)R^{15}$, $-C(O)OR^{15}$, -alkyl-$C(O)OR^{15}$, $C(O)N(R^{15})(R^{16})$, $-SR^{15}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-C(=NOR^{15})R^{16}$, $-P(O)(OR^{15})(OR^{16})$, $-N(R^{15})(R^{16})$,

-alkyl-$N(R^{15})(R^{16})$, $-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-CH_2-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-CH_2-N(R^{15})C(O)OR^{16}$, $-N_3$, $=NOR^{15}$, $-NO_2$, $-S(O)R^{15}$ and $-S(O)_2R^{15}$.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is $C(R^5)$;

R^1 is H;

R^2 and R^6 are connected to form a 4-7 membered cycloalkyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

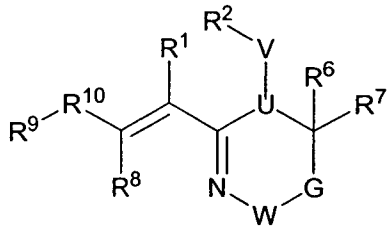
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

R^{10} is phenyl; and

R^9 is imidazol-1-yl, and the other moieties are as defined earlier.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is $C(R^5)$;

R^6 is H;

R^1 and R^2 are connected to form a 4-7 membered cycloalkyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

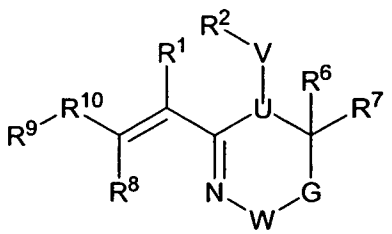
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

R^{10} is phenyl; and

R^9 is imidazol-1-yl, and the other moieties are as defined earlier.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is C(R^5) or N;

R^1 is H;

R^2 and R^6 are connected to form a 5-8 membered heterocyclyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

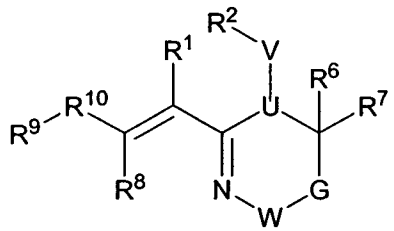
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

R^{10} is phenyl; and

R^9 is imidazol-1-yl, and the other moieties are as defined earlier.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is C(R^5);

R^6 is H;

R^1 and R^2 are connected to form a 5-8 membered heterocyclyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

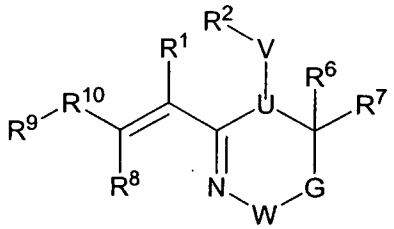
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

R^{10} is phenyl; and

R^9 is imidazol-1-yl, and the other moieties are as defined earlier.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is $C(R^5)$ or N;

R^1 and R^2 are connected to form a 5-8 membered heterocyclyl ring;

R^2 and R^6 are connected to form a 5-8 membered heterocyclyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

R^8 is H;

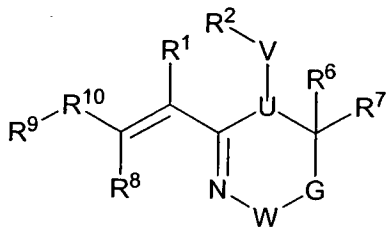
R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same

or different, each substituent being independently selected from the group consisting of moieties described earlier;

R^{10} is phenyl; and

R^9 is imidazol-1-yl, and the other moieties are as defined earlier.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is $C(R^5)$;

R^2 and R^6 are connected to form a 4-7 membered cycloalkyl ring;

R^1 and R^2 are connected to form a 4-7 membered cycloalkyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

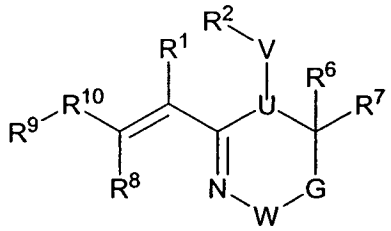
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

R^{10} is phenyl; and

R^9 is imidazol-1-yl, and the other moieties are as defined earlier.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is C(R^5) or N;

R^1 and R^2 are connected to form a piperidinyl ring;

R^2 and R^6 are connected to form a piperidinyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

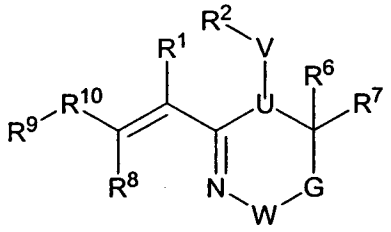
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

R^{10} is phenyl; and

R^9 is imidazol-1-yl, and the other moieties are as defined earlier.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is N;

R^1 and R^2 are connected to form a piperazinyl ring;

R^2 and R^6 are connected to form a piperazinyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

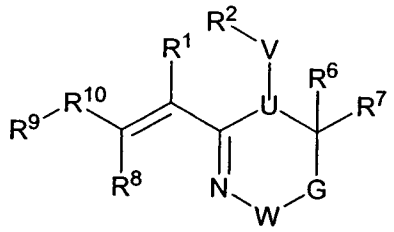
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

R^{10} is phenyl; and

R^9 is imidazol-1-yl, and the other moieties are as defined earlier.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is $C(R^5)$ or N;

R^1 and R^2 are connected to form a piperidinyl ring;

R^2 and R^6 are connected to form a piperazinyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

R^8 is H;

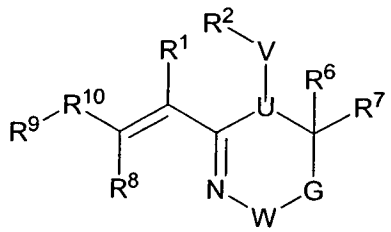
R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-,

heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

R^{10} is phenyl; and

R^9 is imidazol-1-yl, and the other moieties are as defined earlier.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is $C(R^5)$ or N;

R^1 and R^2 are connected to form a piperazinyl ring;

R^2 and R^6 are connected to form a piperidnyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

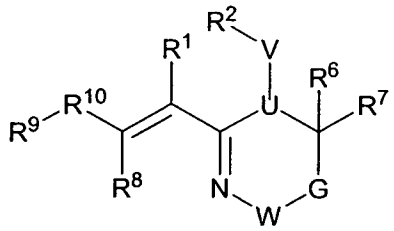
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

R^{10} is phenyl; and

R^9 is imidazol-1-yl, and the other moieties are as defined earlier.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is $C(R^5)$;

R^1 and R^2 are connected to form a cyclohexyl ring;

R^2 and R^6 are connected to form a piperidinyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

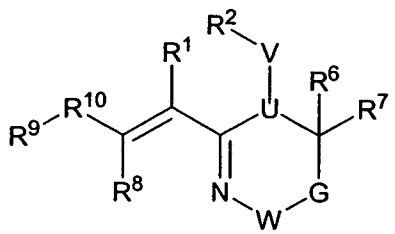
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

R^{10} is phenyl; and

R^9 is imidazol-1-yl, and the other moieties are as defined earlier.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is $C(R^5)$;

R^1 and R^2 are connected to form a cyclohexyl ring;

R^2 and R^6 are connected to form a piperazinyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

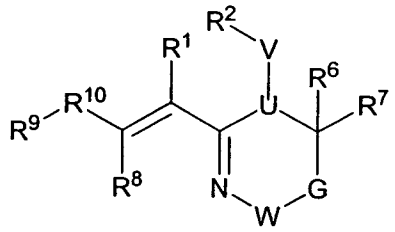
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

R^{10} is phenyl; and

R^9 is imidazol-1-yl, and the other moieties are as defined earlier.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is $C(R^5)$;

R^1 and R^2 are connected to form a piperidinyl ring;

R^2 and R^6 are connected to form a cyclohexyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

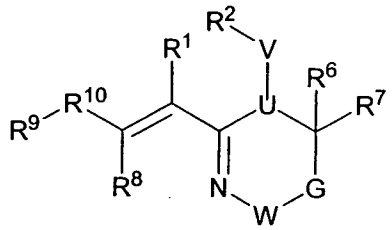
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

R^{10} is phenyl; and

R^9 is imidazol-1-yl, and the other moieties are as defined earlier.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is $C(R^5)$;

R^1 and R^2 are connected to form a piperazinyl ring;

R^2 and R^6 are connected to form a cyclohexyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

R^8 is H;

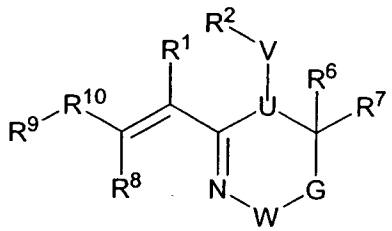
R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same

or different, each substituent being independently selected from the group consisting of moieties described earlier;

R^{10} is phenyl; and

R^9 is imidazol-1-yl, and the other moieties are as defined earlier.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is $C(R^5)$ or N;

R^6 is H;

R^1 and R^2 are connected to form a piperidinyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

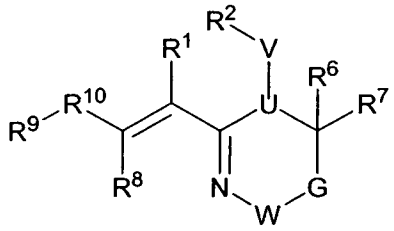
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

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R^6 is H;

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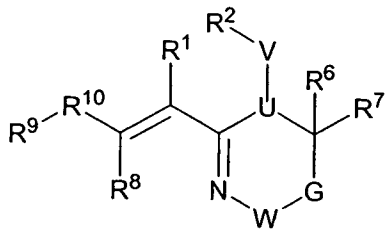
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

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R^1 is H;

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R^7 is 3-(1,1'-biphenyl)-yl;

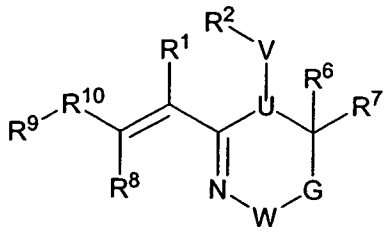
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

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R^9 is imidazol-1-yl, and the other moieties are as defined earlier.

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R^1 is H;

R^6 and R^2 are connected to form a piperazinyl ring;

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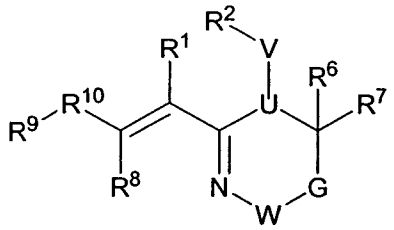
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

R^{10} is phenyl; and

R^9 is imidazol-1-yl, and the other moieties are as defined earlier.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is $C(R^5)$;

R^1 is H;

R^2 and R^6 are connected to form a 4-7 membered cycloalkyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

R^8 is H;

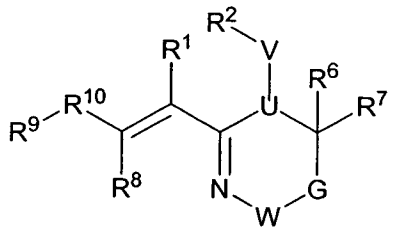
R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-,

heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

R^{10} is selected from the group consisting of: 3-methoxy-phenyl and 3-F-phenyl (and in one example R^{10} is 3-methoxy-phenyl, and in another example R^{10} is 3-F-phenyl);

R^9 is 4-methyl-imidazolyl-1-yl.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is $C(R^5)$;

R^6 is H;

R^1 and R^2 are connected to form a 4-7 membered cycloalkyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

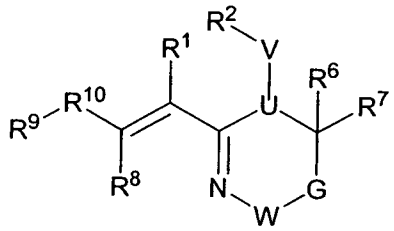
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

R^{10} is selected from the group consisting of: 3-methoxy-phenyl and 3-F-phenyl (and in one example R^{10} is 3-methoxy-phenyl, and in another example R^{10} is 3-F-phenyl);

R^9 is 4-methyl-imidazolyl-1-yl.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is $C(R^5)$ or N;

R^1 is H;

R^2 and R^6 are connected to form a 5-8 membered heterocyclyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

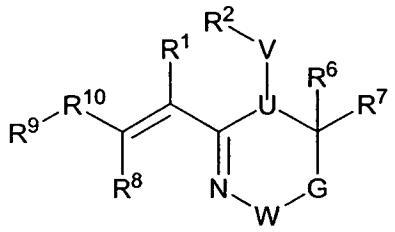
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

R^{10} is selected from the group consisting of: 3-methoxy-phenyl and 3-F-phenyl (and in one example R^{10} is 3-methoxy-phenyl, and in another example R^{10} is 3-F-phenyl);

R^9 is 4-methyl-imidazolyl-1-yl.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is $C(R^5)$;

R^6 is H;

R^1 and R^2 are connected to form a 5-8 membered heterocyclyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

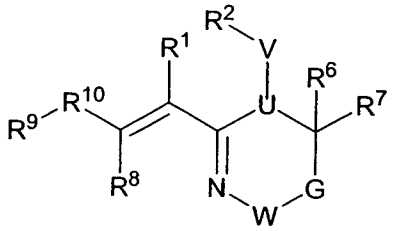
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

R^{10} is selected from the group consisting of: 3-methoxy-phenyl and 3-F-phenyl (and in one example R^{10} is 3-methoxy-phenyl, and in another example R^{10} is 3-F-phenyl);

R^9 is 4-methyl-imidazolyl-1-yl.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is $C(R^5)$ or N;

R^1 and R^2 are connected to form a 5-8 membered heterocyclyl ring;

R^2 and R^6 are connected to form a 5-8 membered heterocyclyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

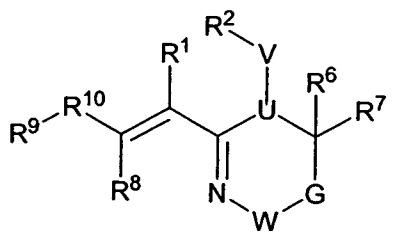
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

R^{10} is selected from the group consisting of: 3-methoxy-phenyl and 3-F-phenyl (and in one example R^{10} is 3-methoxy-phenyl, and in another example R^{10} is 3-F-phenyl);

R^9 is 4-methyl-imidazolyl-1-yl.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is $C(R^5)$;

R^2 and R^6 are connected to form a 4-7 membered cycloalkyl ring;

R^1 and R^2 are connected to form a 4-7 membered cycloalkyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

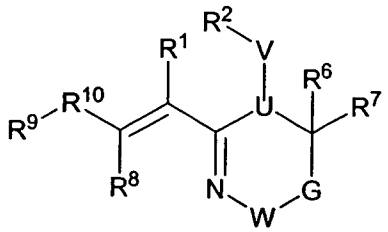
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

R^{10} is selected from the group consisting of: 3-methoxy-phenyl and 3-F-phenyl (and in one example R^{10} is 3-methoxy-phenyl, and in another example R^{10} is 3-F-phenyl);

R^9 is 4-methyl-imidazolyl-1-yl.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is $C(R^5)$ or N;

R^1 and R^2 are connected to form a piperidinyl ring;

R^2 and R^6 are connected to form a piperidinyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

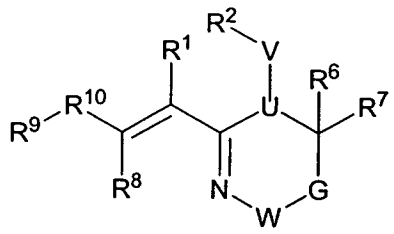
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

R^{10} is selected from the group consisting of: 3-methoxy-phenyl and 3-F-phenyl (and in one example R^{10} is 3-methoxy-phenyl, and in another example R^{10} is 3-F-phenyl);

R^9 is 4-methyl-imidazolyl-1-yl.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is N;

R^1 and R^2 are connected to form a piperazinyl ring;

R^2 and R^6 are connected to form a piperazinyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

R^8 is H;

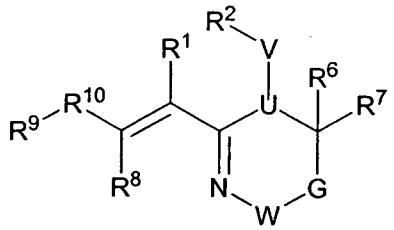
R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-,

heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

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In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

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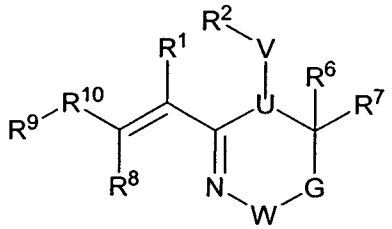
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Formula I

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R^2 and R^6 are connected to form a piperidnyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

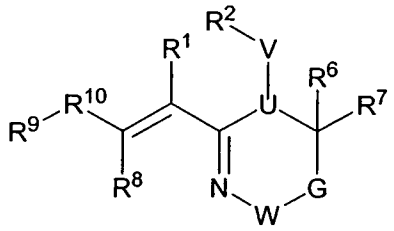
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

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R^9 is 4-methyl-imidazolyl-1-yl.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is $C(R^5)$;

R^1 and R^2 are connected to form a cyclohexyl ring;

R^2 and R^6 are connected to form a piperidinyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

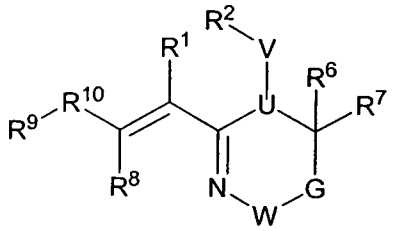
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

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In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

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R^7 is 3-(1,1'-biphenyl)-yl;

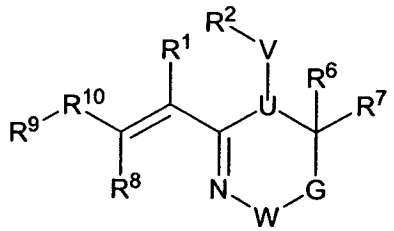
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

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In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is C(R^5);

R^1 and R^2 are connected to form a piperidinyl ring;

R^2 and R^6 are connected to form a cyclohexyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

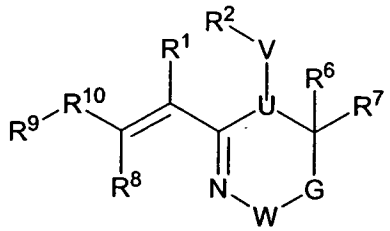
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

R^{10} is selected from the group consisting of: 3-methoxy-phenyl and 3-F-phenyl (and in one example R^{10} is 3-methoxy-phenyl, and in another example R^{10} is 3-F-phenyl);

R^9 is 4-methyl-imidazolyl-1-yl.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is C(R^5);

R^1 and R^2 are connected to form a piperazinyl ring;

R^2 and R^6 are connected to form a cyclohexyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

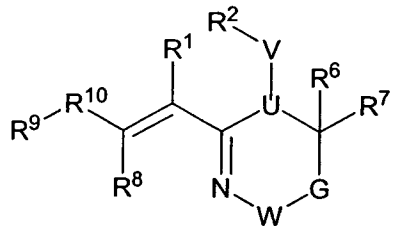
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

R^{10} is selected from the group consisting of: 3-methoxy-phenyl and 3-F-phenyl (and in one example R^{10} is 3-methoxy-phenyl, and in another example R^{10} is 3-F-phenyl);

R^9 is 4-methyl-imidazolyl-1-yl.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is $C(R^5)$ or N;

R^6 is H;

R^1 and R^2 are connected to form a piperidinyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

R^8 is H;

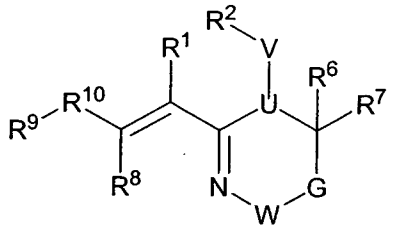
R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or

optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

R^{10} is selected from the group consisting of: 3-methoxy-phenyl and 3-F-phenyl (and in one example R^{10} is 3-methoxy-phenyl, and in another example R^{10} is 3-F-phenyl);

R^9 is 4-methyl-imidazolyl-1-yl.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is $C(R^5)$ or N;

R^6 is H;

R^1 and R^2 are connected to form a piperazinyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

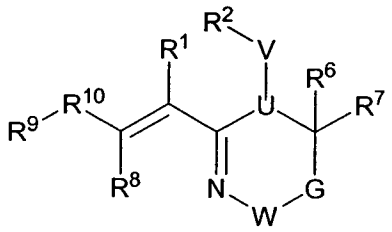
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

R^{10} is selected from the group consisting of: 3-methoxy-phenyl and 3-F-phenyl (and in one example R^{10} is 3-methoxy-phenyl, and in another example R^{10} is 3-F-phenyl);

R^9 is 4-methyl-imidazolyl-1-yl.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is $C(R^5)$ or N;

R^1 is H;

R^6 and R^2 are connected to form a piperidinyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

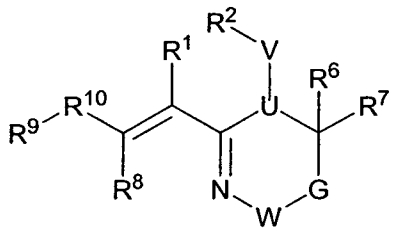
R^8 is H;

R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

R^{10} is selected from the group consisting of: 3-methoxy-phenyl and 3-F-phenyl (and in one example R^{10} is 3-methoxy-phenyl, and in another example R^{10} is 3-F-phenyl);

R^9 is 4-methyl-imidazolyl-1-yl.

In another embodiment, this invention discloses a compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula I:



Formula I

wherein U is C(R^5) or N;

R^1 is H;

R^6 and R^2 are connected to form a piperazinyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

R^8 is H;

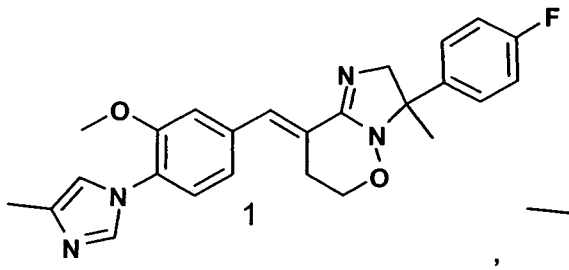
R^5 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of moieties described earlier;

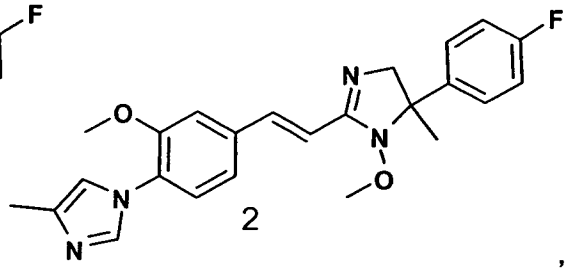
R^{10} is selected from the group consisting of: 3-methoxy-phenyl and 3-F-phenyl (and in one example R^{10} is 3-methoxy-phenyl, and in another example R^{10} is 3-F-phenyl);

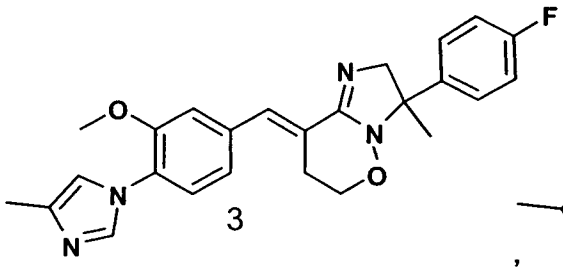
R^9 is 4-methyl-imidazolyl-1-yl.

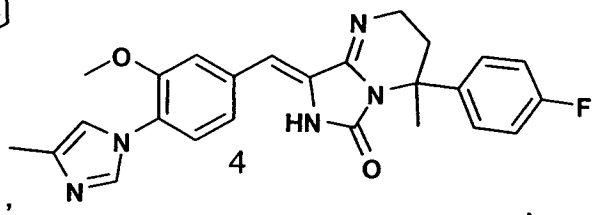
An illustrative group of compounds of the invention are shown in **Table 1**.

Table 1

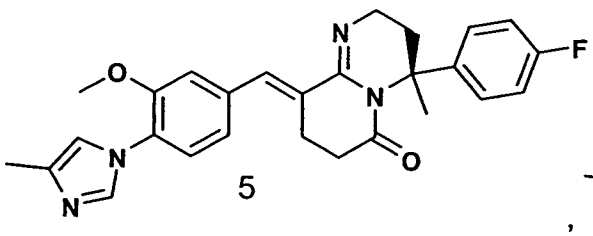

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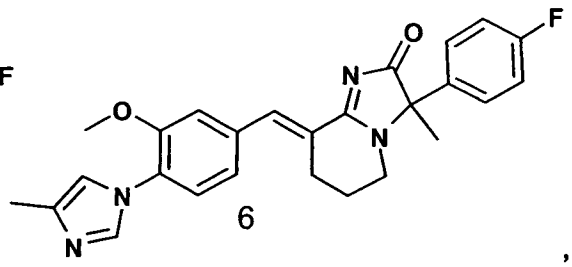

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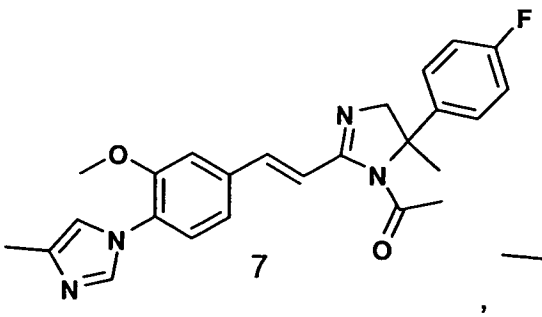

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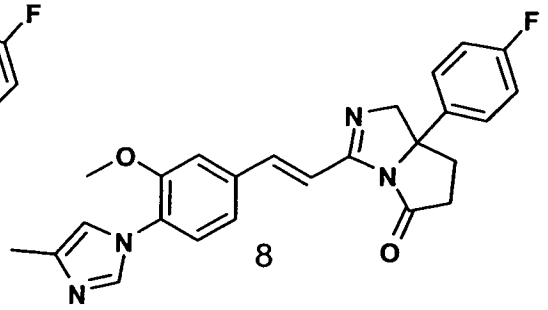

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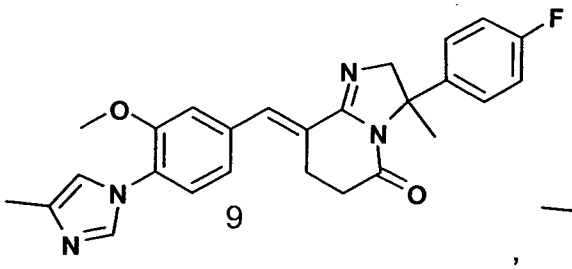
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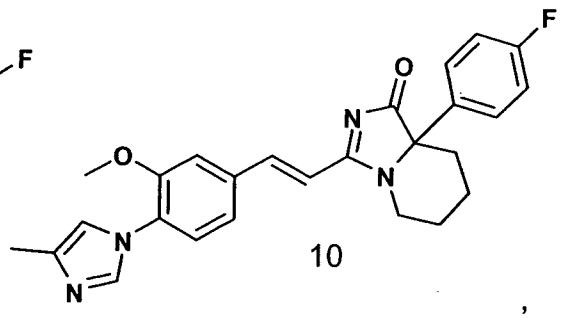

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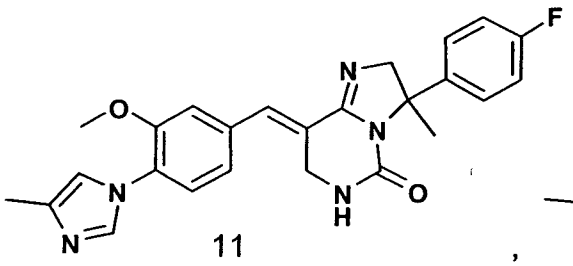

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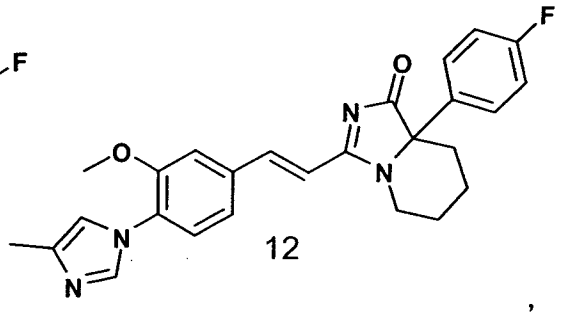
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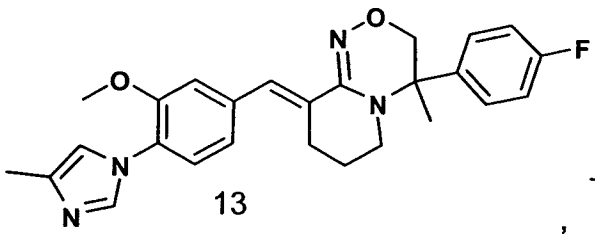
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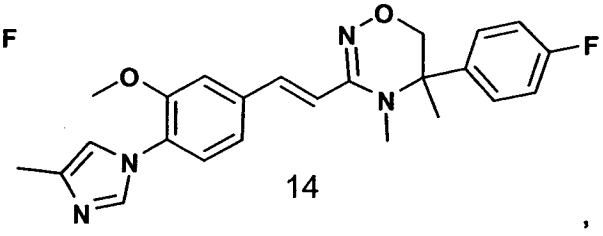
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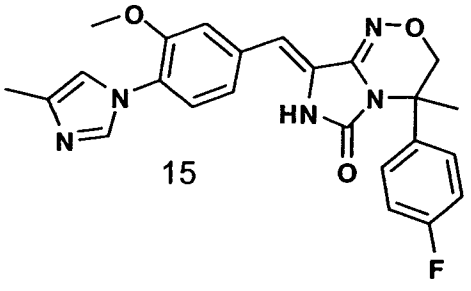
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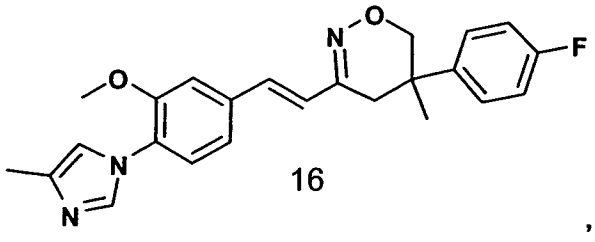
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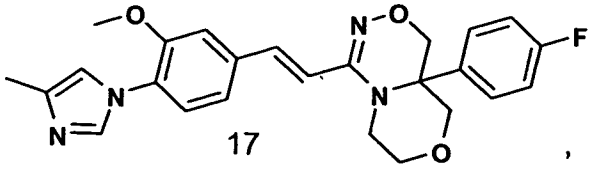
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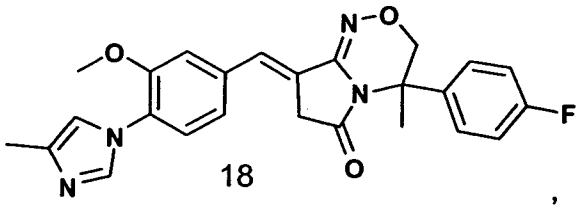
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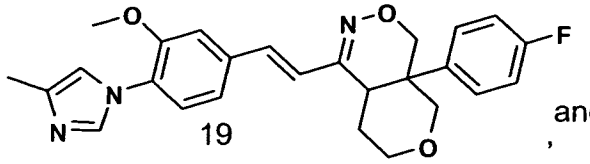
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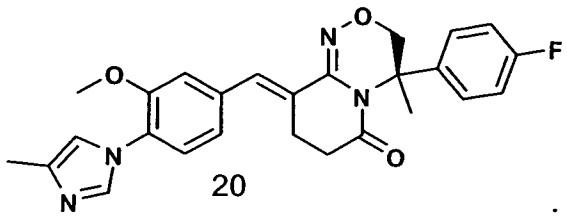


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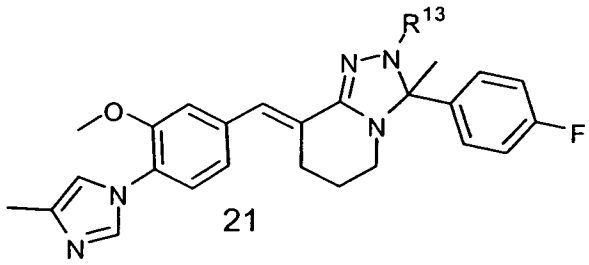
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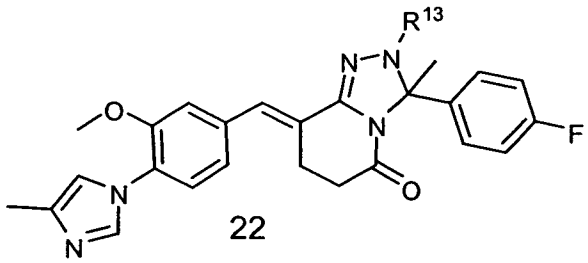
.

Representative compounds of this invention also include:



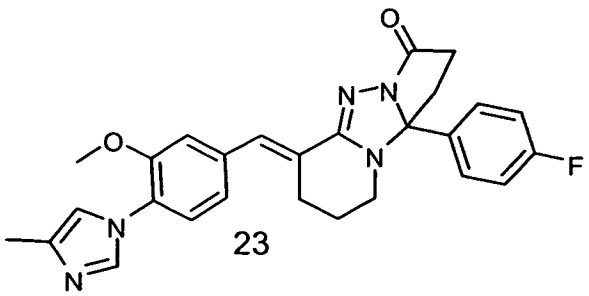
21

wherein R^{13} in compound 21 is as defined for formula I (and in one example R^{13} is H),



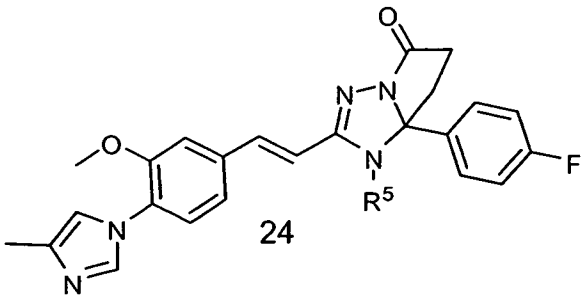
22

wherein R^{13} in compound 22 is as defined for formula I (and in one example R^{13} is H),



23

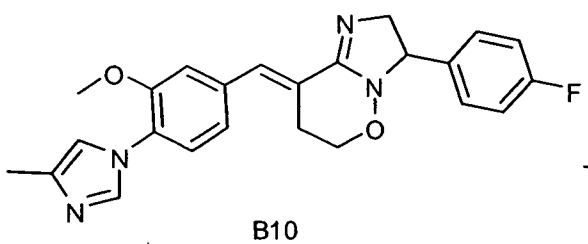
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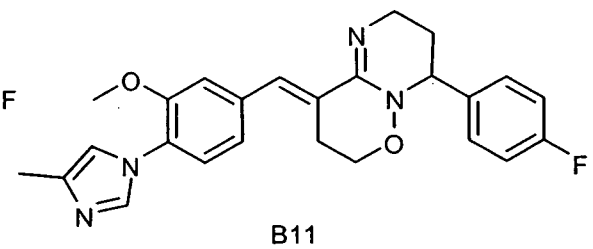
24

wherein R^5 in compound 22 is as defined for formula I (and in one example R^5 is H).

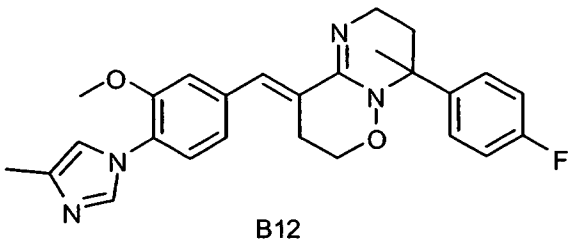
Representative compounds of this invention also include:



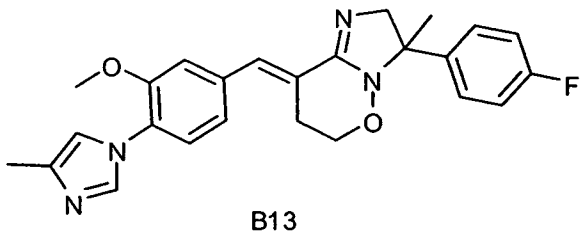
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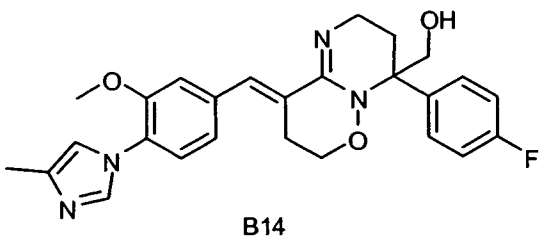
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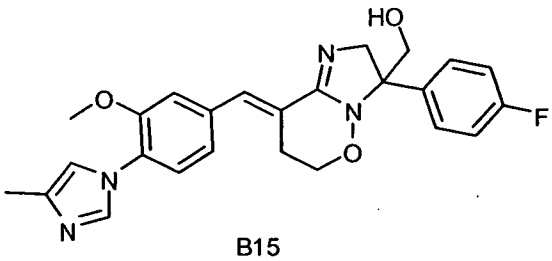
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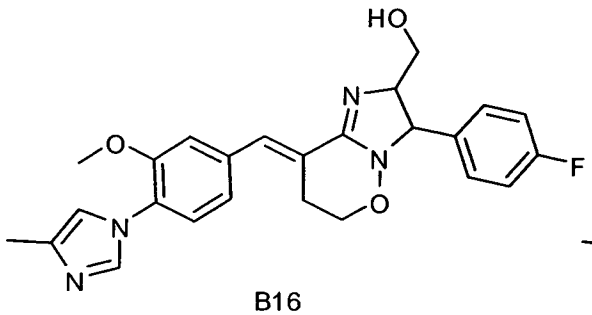
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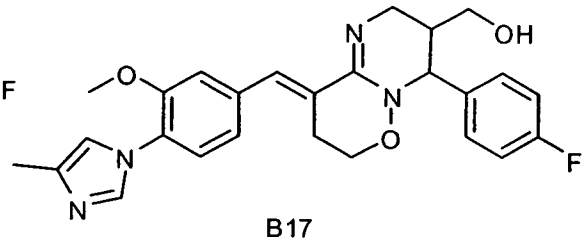
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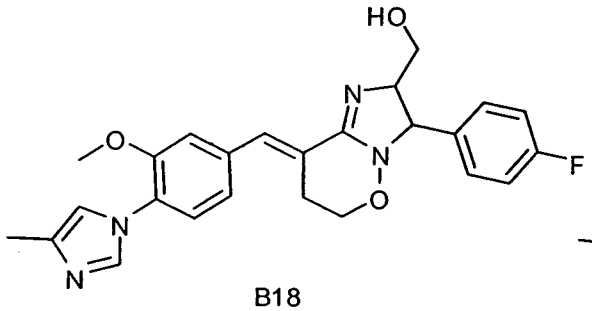
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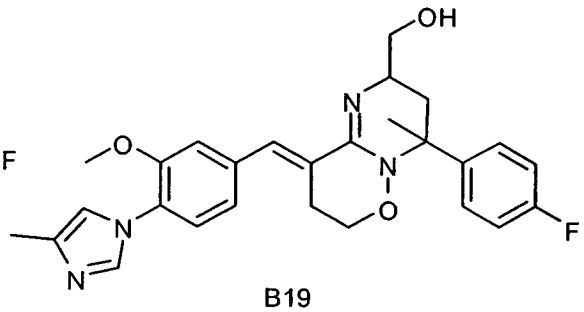
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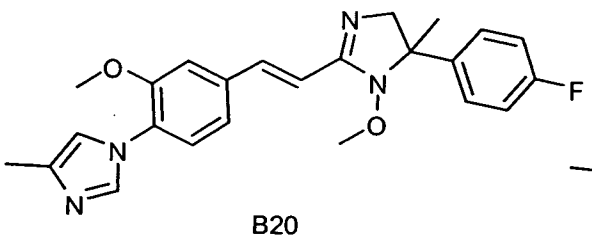
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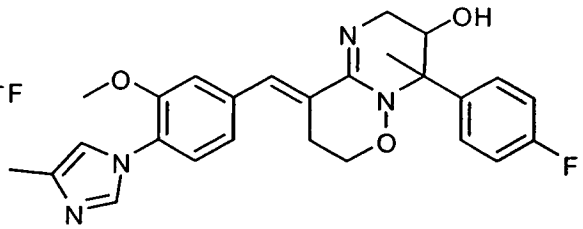
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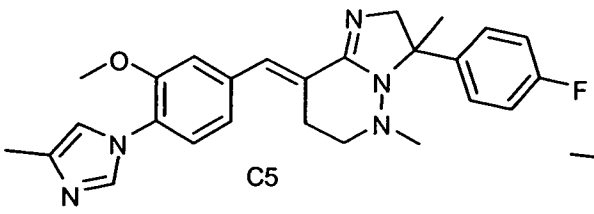
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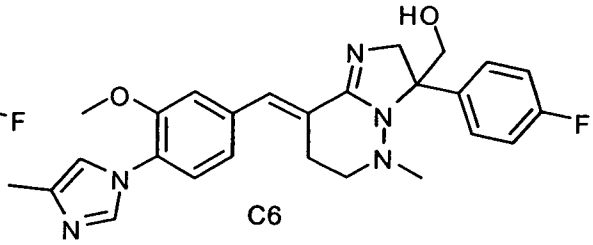
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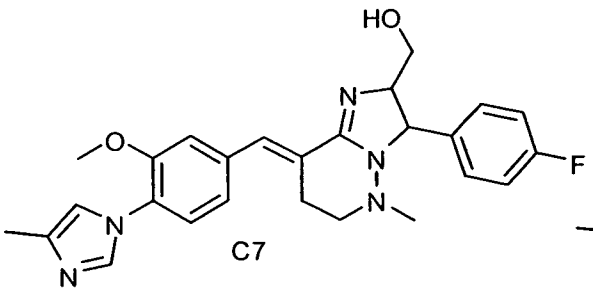
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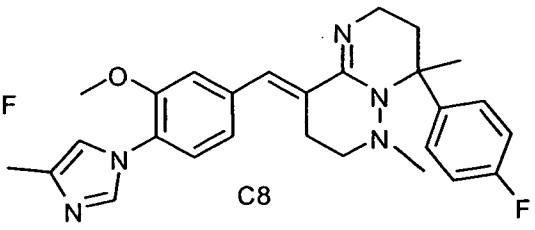
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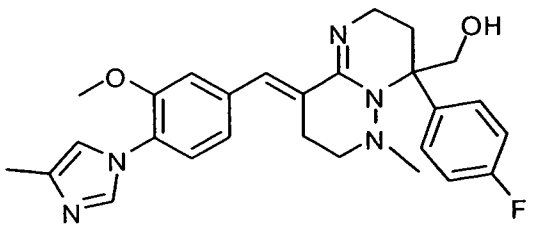
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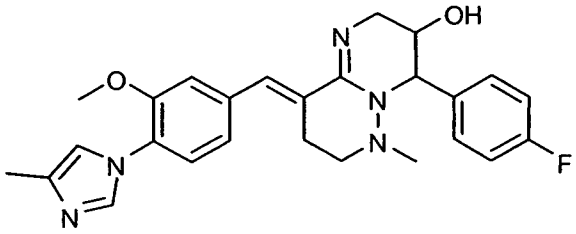
C7



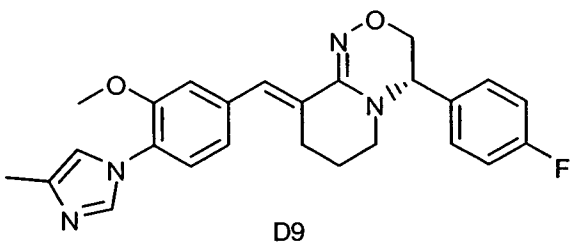
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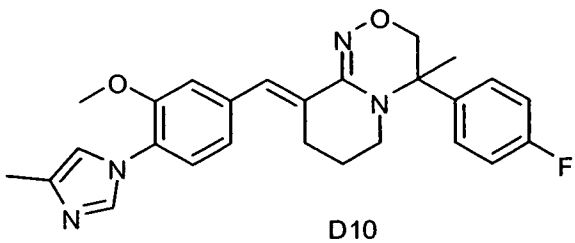
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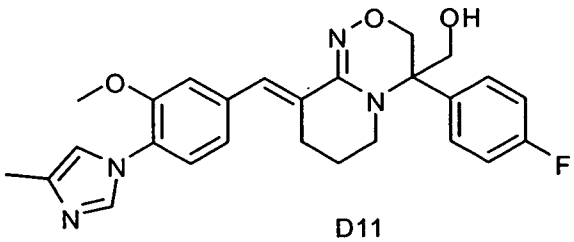
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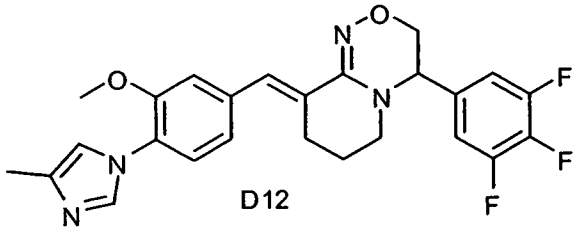
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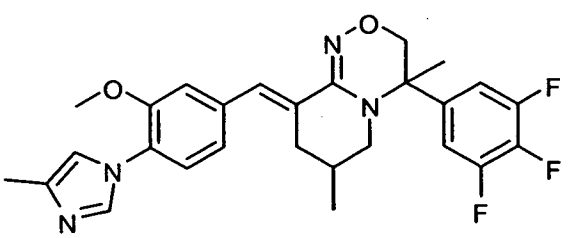
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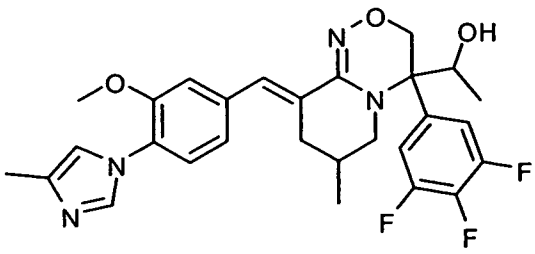
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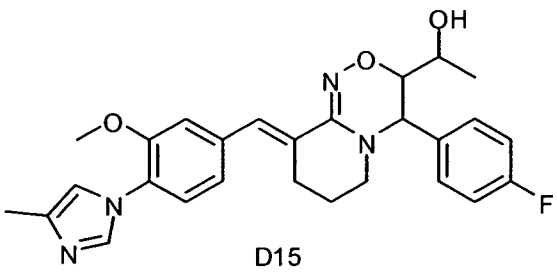
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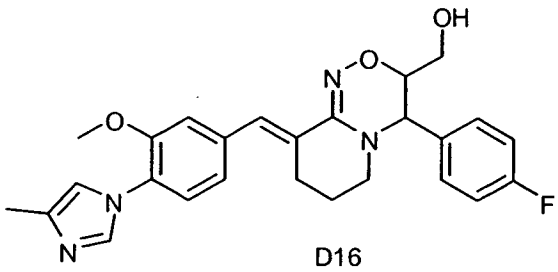


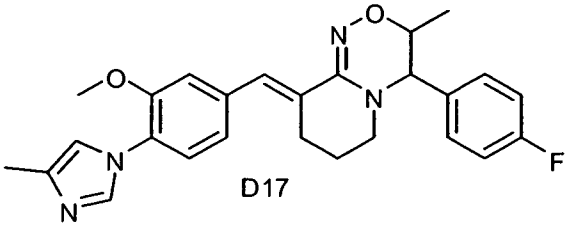
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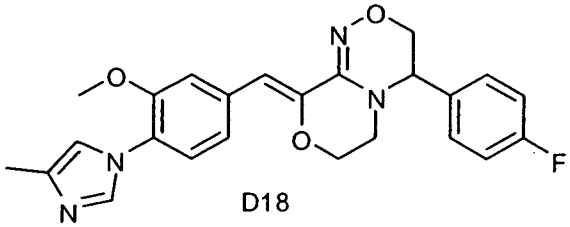


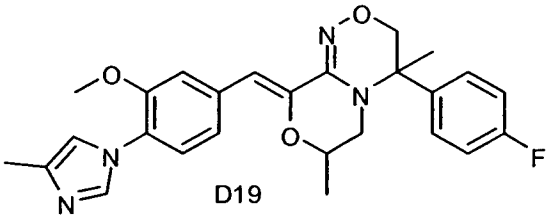
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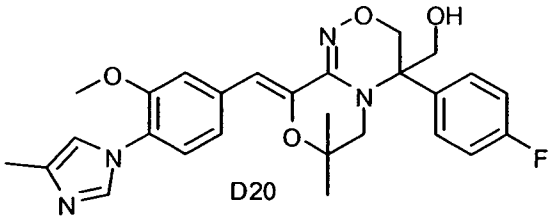

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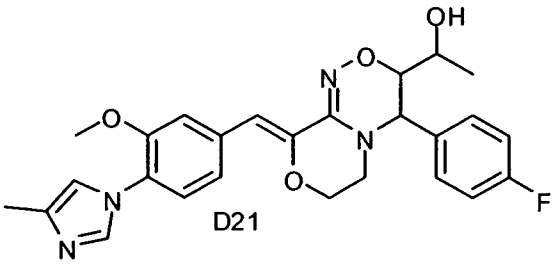

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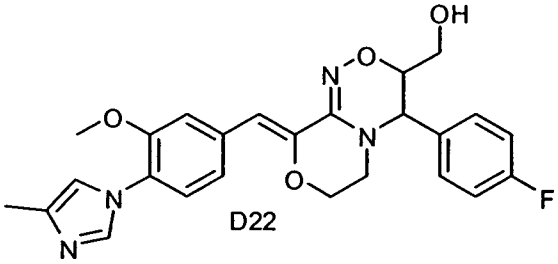

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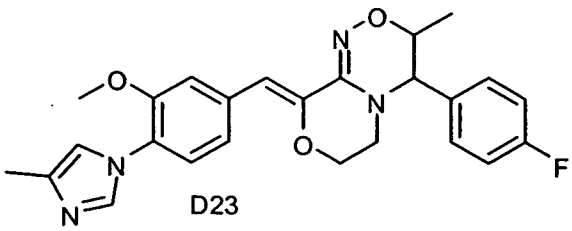

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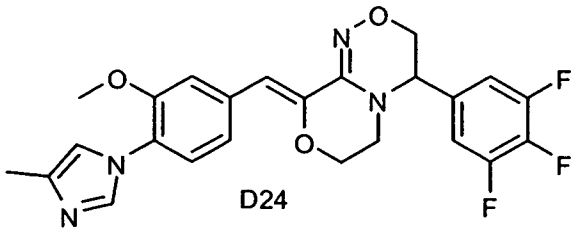

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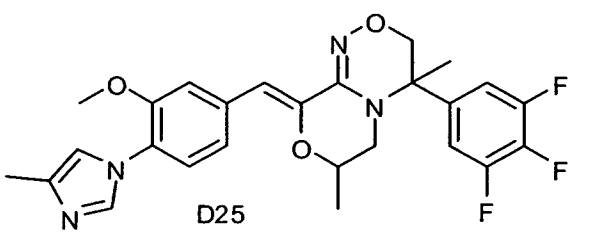

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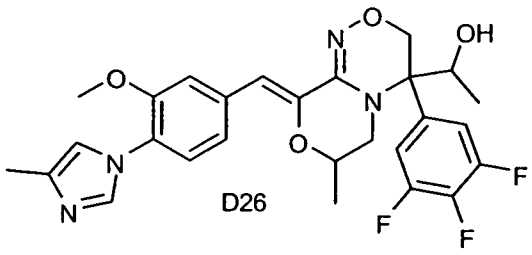

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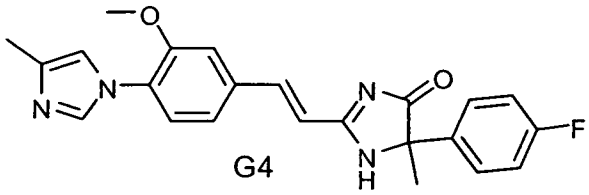

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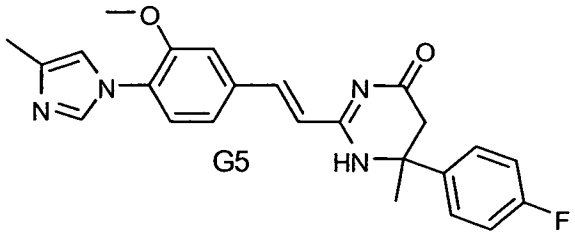
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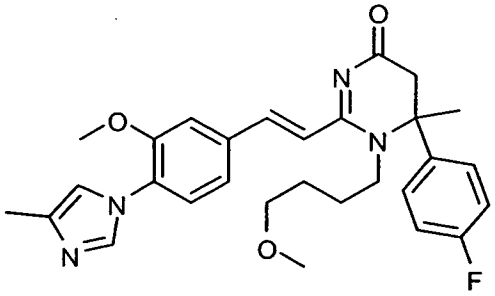
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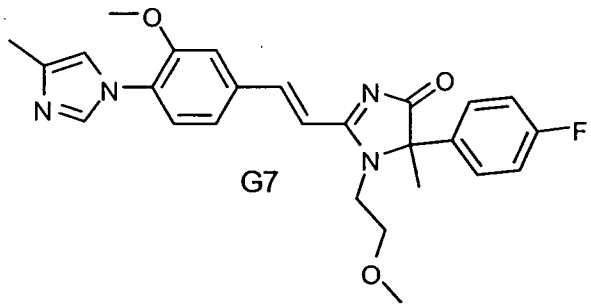
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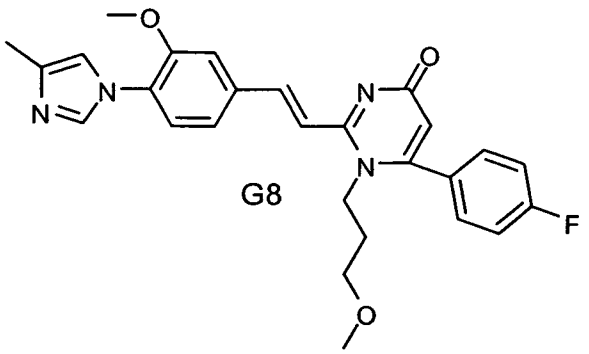
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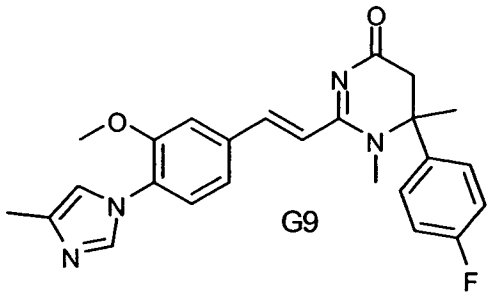
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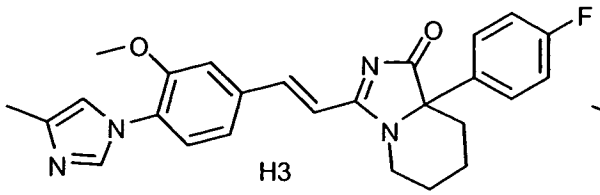
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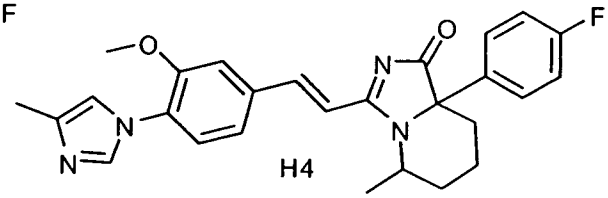
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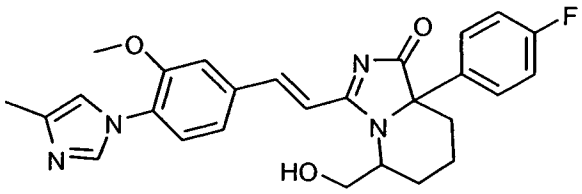
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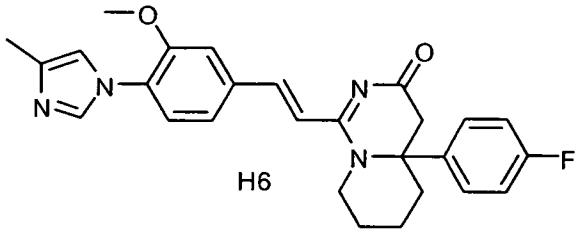
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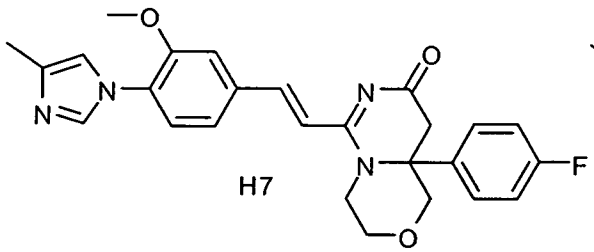
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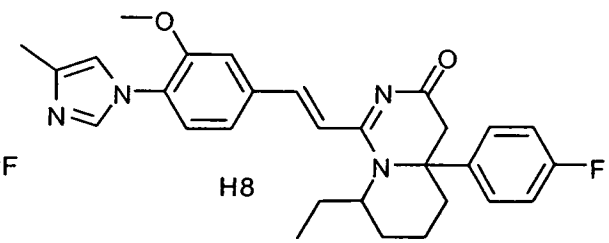
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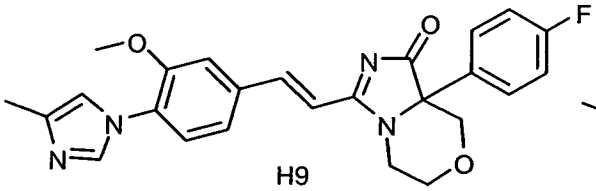
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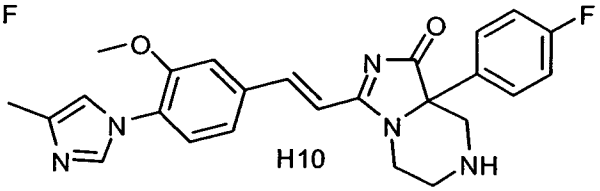
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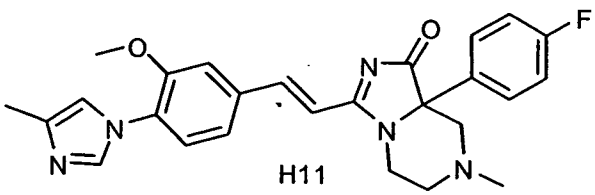
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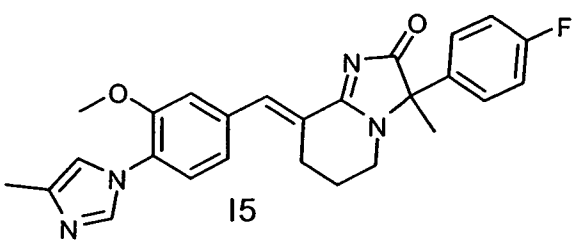
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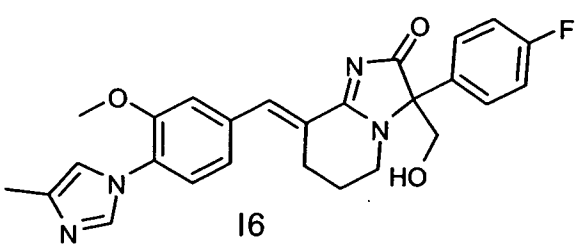
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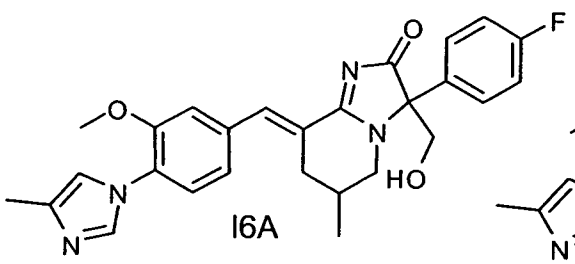
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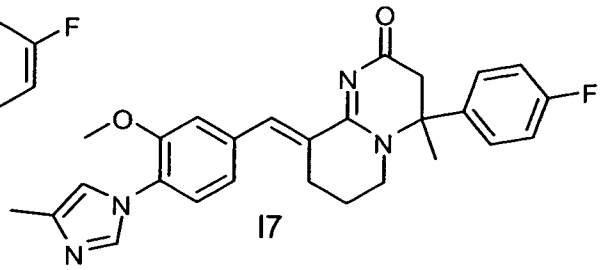
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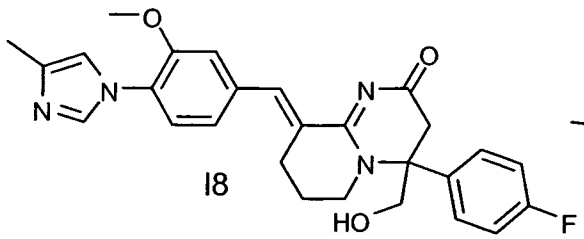
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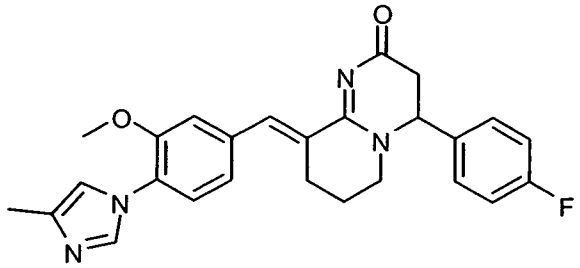
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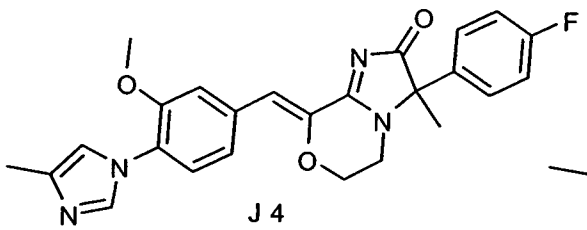


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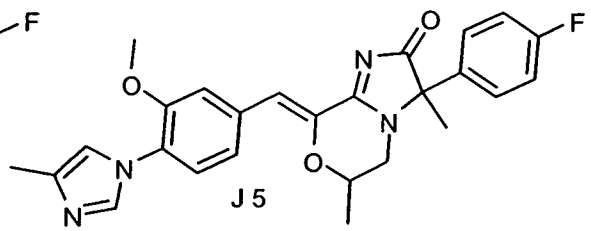


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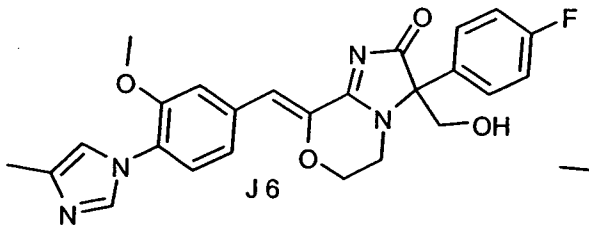
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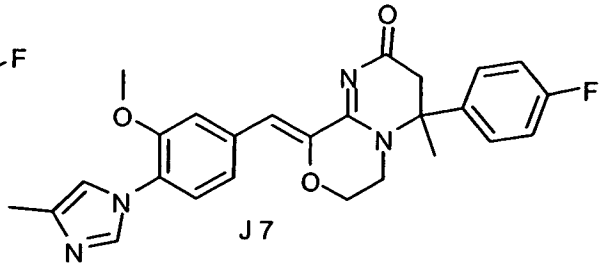
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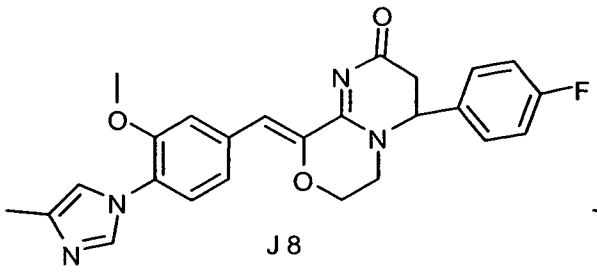
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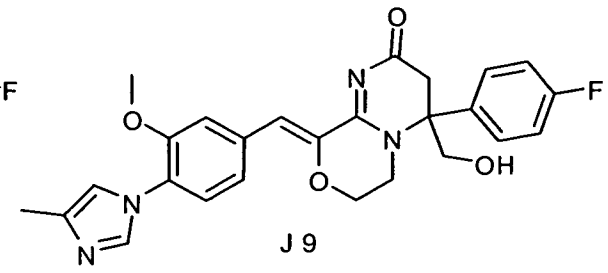
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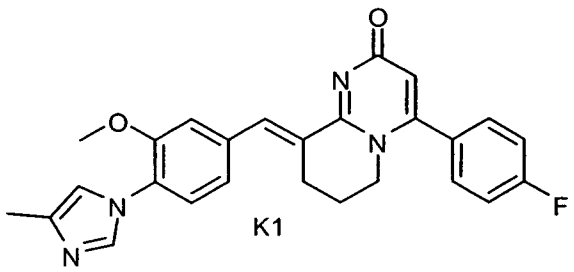
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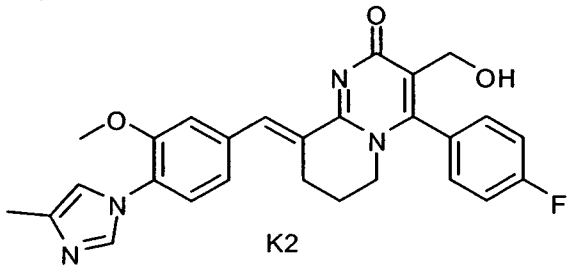
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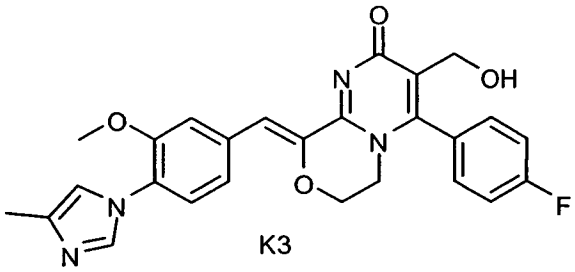
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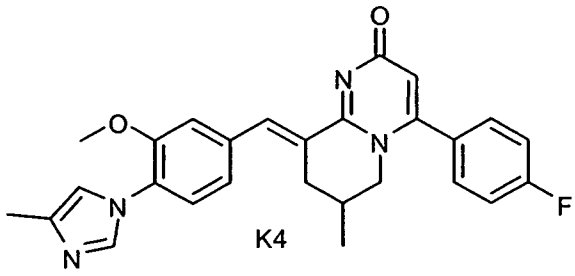
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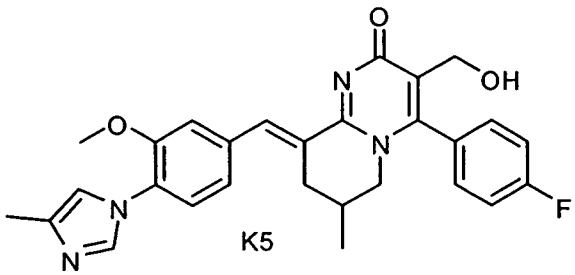
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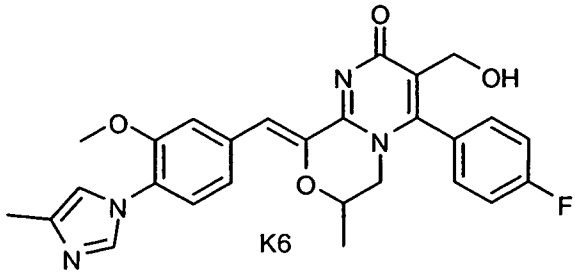
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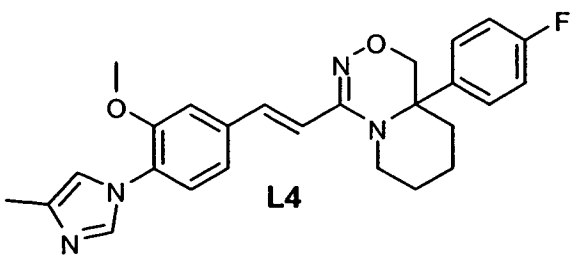
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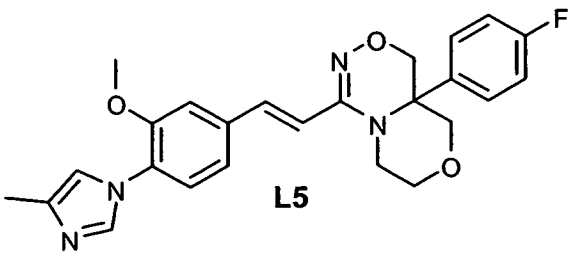
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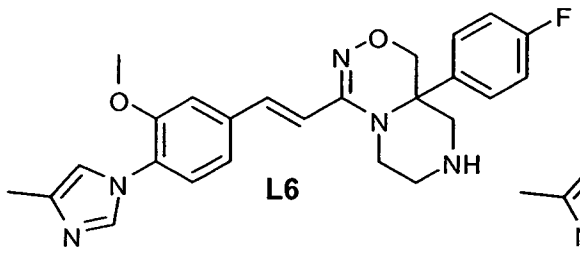
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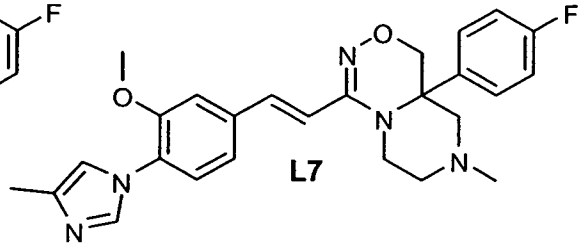
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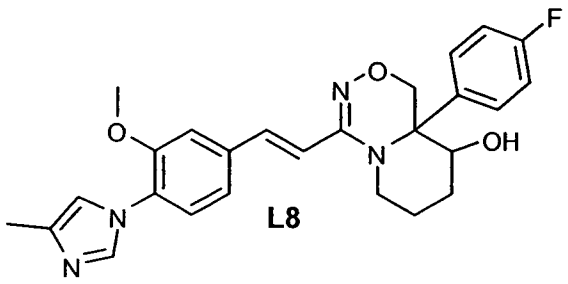
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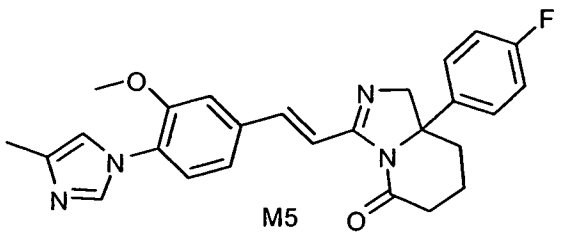
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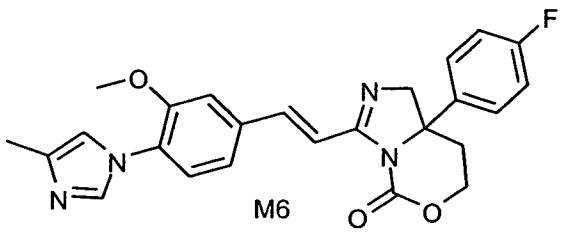
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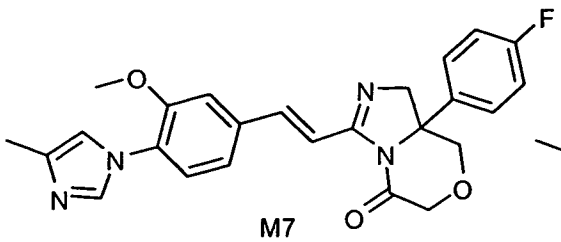
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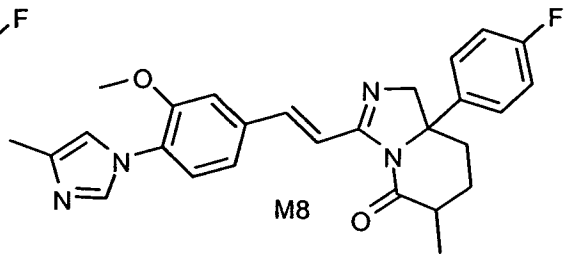
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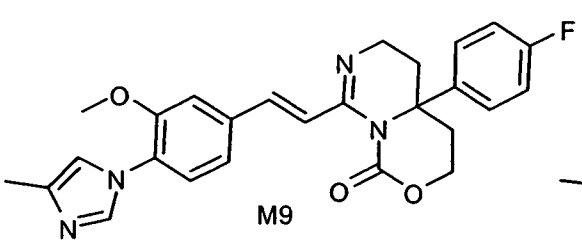
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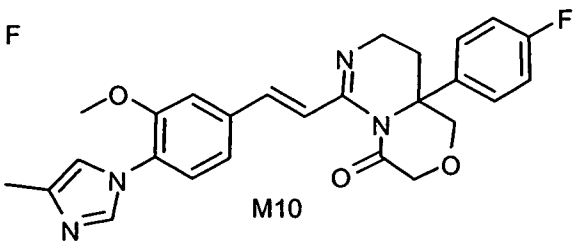
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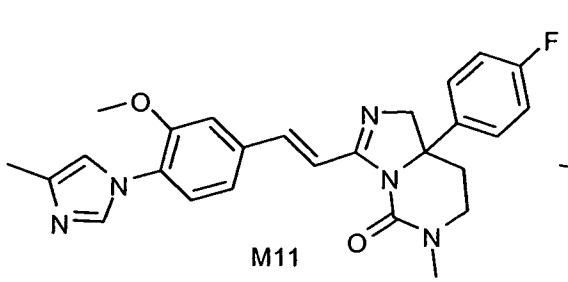
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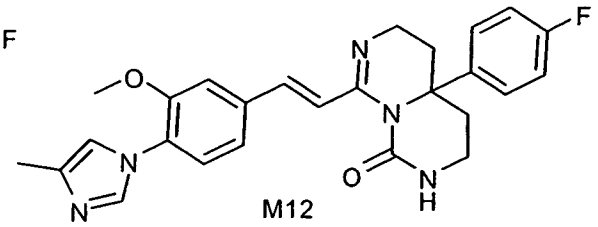
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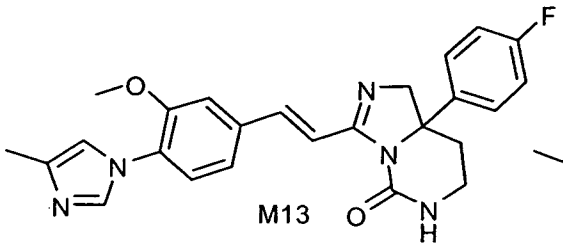
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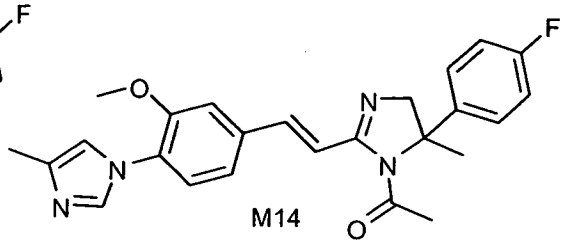
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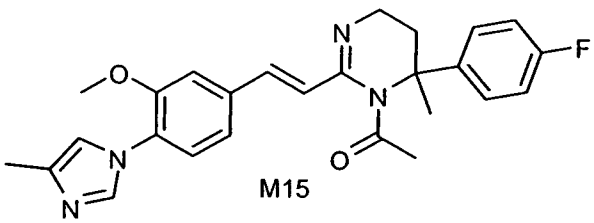
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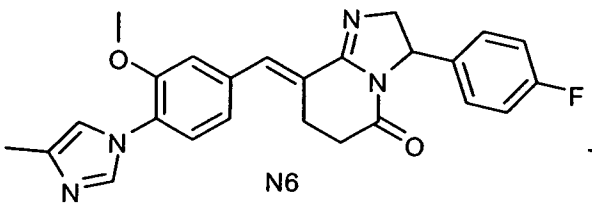
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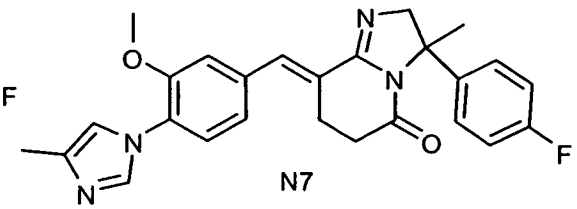
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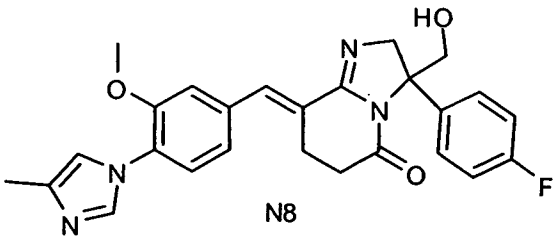
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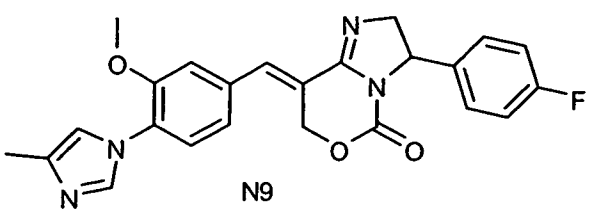
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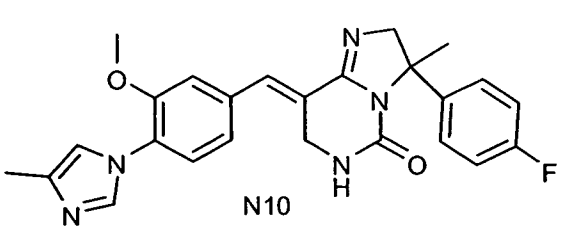
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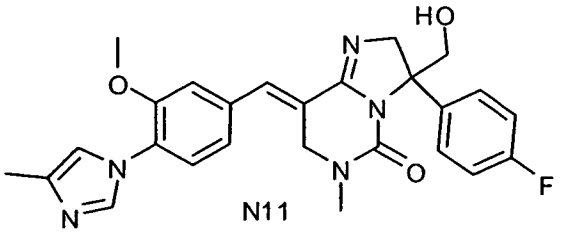
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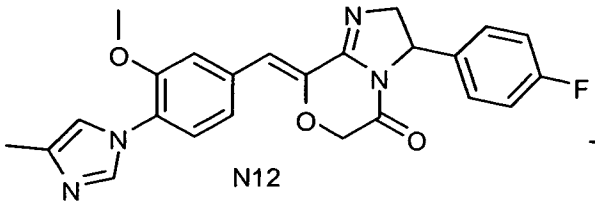
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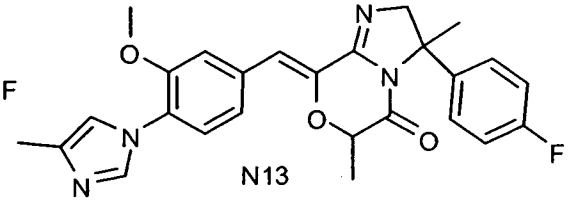
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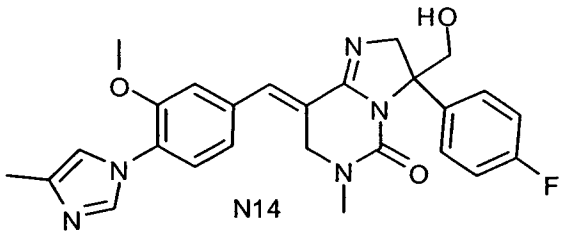
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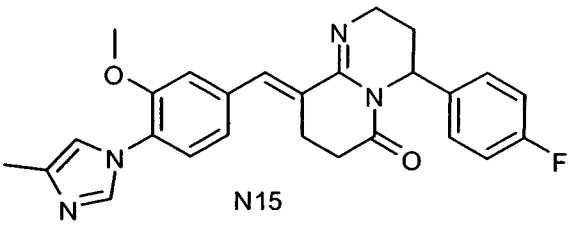
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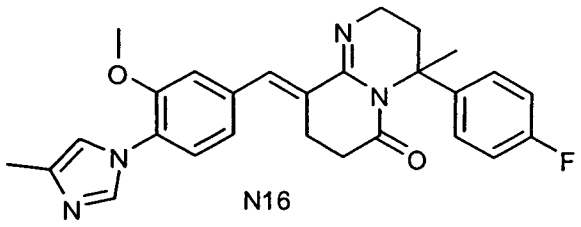
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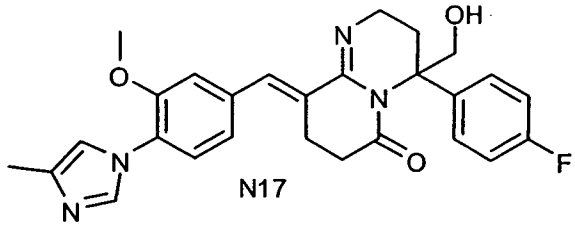
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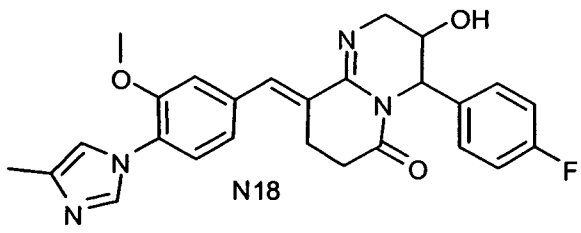
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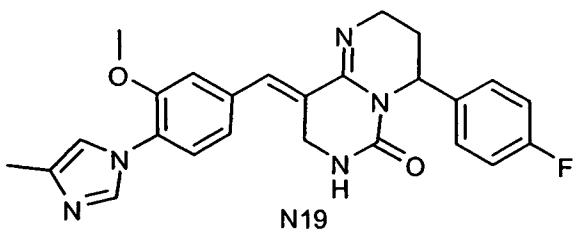
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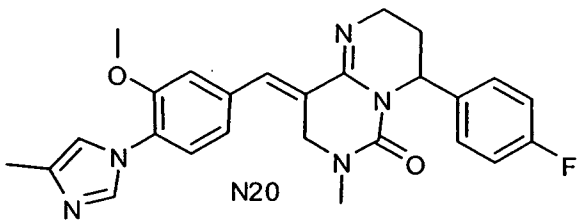
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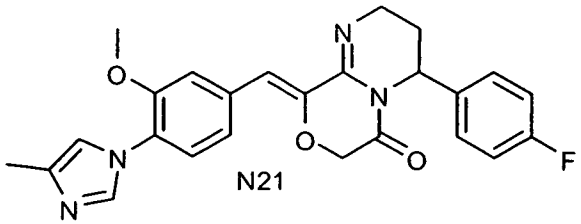
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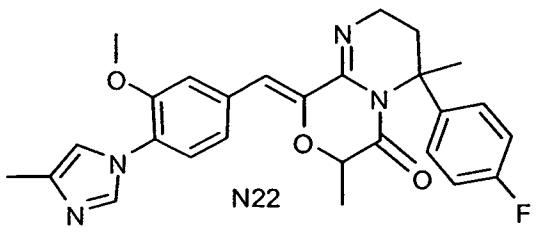
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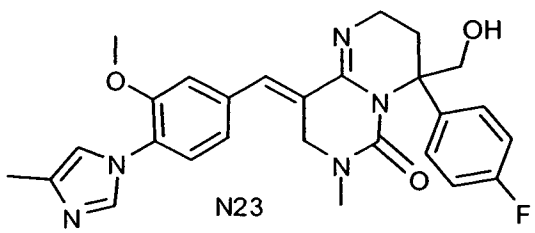
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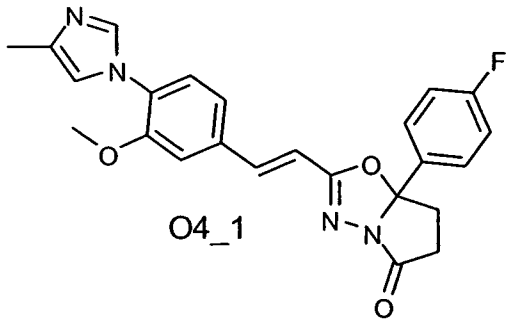
N21



N22

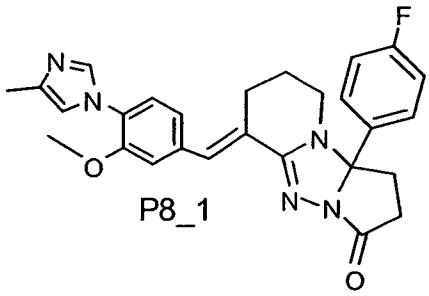


N23



O4_1

and



P8_1

.

One embodiment of this invention is directed to compound 1.

Another embodiment of this invention is directed to compound 2.

Another embodiment of this invention is directed to compound 3.

Another embodiment of this invention is directed to compound 4.

Another embodiment of this invention is directed to compound 5.

Another embodiment of this invention is directed to compound 6.

Another embodiment of this invention is directed to compound 7.

Another embodiment of this invention is directed to compound 8.

Another embodiment of this invention is directed to compound 9.

Another embodiment of this invention is directed to compound 10.

Another embodiment of this invention is directed to compound 11.

Another embodiment of this invention is directed to compound 12.

Another embodiment of this invention is directed to compound 13.

Another embodiment of this invention is directed to compound 14.
Another embodiment of this invention is directed to compound 15.
Another embodiment of this invention is directed to compound 16.
Another embodiment of this invention is directed to compound 17.
Another embodiment of this invention is directed to compound 18.
Another embodiment of this invention is directed to compound 19.
Another embodiment of this invention is directed to compound 20.
Another embodiment of this invention is directed to compound 21.
Another embodiment of this invention is directed to compound 22.
Another embodiment of this invention is directed to compound 23.
Another embodiment of this invention is directed to compound 24.
Another embodiment of this invention is directed to compound B10.
Another embodiment of this invention is directed to compound B11.
Another embodiment of this invention is directed to compound B12.
Another embodiment of this invention is directed to compound B13.
Another embodiment of this invention is directed to compound B14.
Another embodiment of this invention is directed to compound B15.
Another embodiment of this invention is directed to compound B16.
Another embodiment of this invention is directed to compound B17.
Another embodiment of this invention is directed to compound B18.
Another embodiment of this invention is directed to compound B19.
Another embodiment of this invention is directed to compound B20.
Another embodiment of this invention is directed to compound B21.
Another embodiment of this invention is directed to compound C5.
Another embodiment of this invention is directed to compound C6.
Another embodiment of this invention is directed to compound C7.
Another embodiment of this invention is directed to compound C8.
Another embodiment of this invention is directed to compound C9.
Another embodiment of this invention is directed to compound C10.
Another embodiment of this invention is directed to compound D9.

Another embodiment of this invention is directed to compound D10.
Another embodiment of this invention is directed to compound D11.
Another embodiment of this invention is directed to compound D12.
Another embodiment of this invention is directed to compound D13.
Another embodiment of this invention is directed to compound D14.
Another embodiment of this invention is directed to compound D15.
Another embodiment of this invention is directed to compound D16.
Another embodiment of this invention is directed to compound D17.
Another embodiment of this invention is directed to compound D18.
Another embodiment of this invention is directed to compound D19.
Another embodiment of this invention is directed to compound D20.
Another embodiment of this invention is directed to compound D21.
Another embodiment of this invention is directed to compound D22.
Another embodiment of this invention is directed to compound D23.
Another embodiment of this invention is directed to compound D24.
Another embodiment of this invention is directed to compound D25.
Another embodiment of this invention is directed to compound D26.
Another embodiment of this invention is directed to compound G4.
Another embodiment of this invention is directed to compound G5.
Another embodiment of this invention is directed to compound G6.
Another embodiment of this invention is directed to compound G7.
Another embodiment of this invention is directed to compound G8.
Another embodiment of this invention is directed to compound G9.
Another embodiment of this invention is directed to compound H3.
Another embodiment of this invention is directed to compound H4.
Another embodiment of this invention is directed to compound H5.
Another embodiment of this invention is directed to compound H6.
Another embodiment of this invention is directed to compound H7.
Another embodiment of this invention is directed to compound H8.
Another embodiment of this invention is directed to compound H9.

Another embodiment of this invention is directed to compound H10.

Another embodiment of this invention is directed to compound H11.

Another embodiment of this invention is directed to compound I5.

Another embodiment of this invention is directed to compound I6.

Another embodiment of this invention is directed to compound I6A.

Another embodiment of this invention is directed to compound I7.

Another embodiment of this invention is directed to compound I8.

Another embodiment of this invention is directed to compound I8A.

Another embodiment of this invention is directed to compound J4.

Another embodiment of this invention is directed to compound J5.

Another embodiment of this invention is directed to compound J6.

Another embodiment of this invention is directed to compound J7.

Another embodiment of this invention is directed to compound J8.

Another embodiment of this invention is directed to compound J9.

Another embodiment of this invention is directed to compound K1.

Another embodiment of this invention is directed to compound K2.

Another embodiment of this invention is directed to compound K3.

Another embodiment of this invention is directed to compound K4.

Another embodiment of this invention is directed to compound K5.

Another embodiment of this invention is directed to compound K6.

Another embodiment of this invention is directed to compound L4.

Another embodiment of this invention is directed to compound L5.

Another embodiment of this invention is directed to compound L6.

Another embodiment of this invention is directed to compound L7.

Another embodiment of this invention is directed to compound L8.

Another embodiment of this invention is directed to compound M5.

Another embodiment of this invention is directed to compound M6.

Another embodiment of this invention is directed to compound M7.

Another embodiment of this invention is directed to compound M8.

Another embodiment of this invention is directed to compound M9.

Another embodiment of this invention is directed to compound M10.
Another embodiment of this invention is directed to compound M11.
Another embodiment of this invention is directed to compound M12.
Another embodiment of this invention is directed to compound M13.
Another embodiment of this invention is directed to compound M14.
Another embodiment of this invention is directed to compound M15.
Another embodiment of this invention is directed to compound N6.
Another embodiment of this invention is directed to compound N7.
Another embodiment of this invention is directed to compound N8.
Another embodiment of this invention is directed to compound N9.
Another embodiment of this invention is directed to compound N10.
Another embodiment of this invention is directed to compound N11.
Another embodiment of this invention is directed to compound N12.
Another embodiment of this invention is directed to compound N13.
Another embodiment of this invention is directed to compound N14.
Another embodiment of this invention is directed to compound N15.
Another embodiment of this invention is directed to compound N16.
Another embodiment of this invention is directed to compound N17.
Another embodiment of this invention is directed to compound N18.
Another embodiment of this invention is directed to compound N19.
Another embodiment of this invention is directed to compound N20.
Another embodiment of this invention is directed to compound N21.
Another embodiment of this invention is directed to compound N22.
Another embodiment of this invention is directed to compound N23.
Another embodiment of this invention is directed to compound O4_1.
Another embodiment of this invention is directed to compound P8_1.

As used above, and throughout this disclosure, the following terms, unless otherwise indicated, shall be understood to have the following meanings:

"ADDP" means 1,1'-(azodicarbonyl)dipiperidine.

"AIBN" means 2,2'-azobis(2-methylpropionitrile).

"CAN" means ammonium cerium (IV) nitrate.

"DCC" means N, N'-dicyclohexylcarbodiimide.

"DCM" means dichloromethane.

"DMF" means dimethylformamide.

"HOBT" means 1-hydroxylbenzotriazole.

"LDA" means lithium diisopropylamide.

"TBAF" means tetra-N-butylammonium fluoride.

"TBSO" means tert-butyldimethylsilyloxy.

"TfO" means trifluoromethylsulfonyloxy.

"At least one" means one or more than one, for example, 1, 2 or 3, or inanother example, 1 or 2, or in another example 1.

"One or more" with reference to the use of the compounds of this invention means that one or more than one compound is used, for example, 1, 2 or 3, or in another example, 1 or 2, or in another example 1.

"Patient" includes both human and animals.

"Mammal" means humans and other mammalian animals.

It is noted that the carbons of formula I and other formulas herein may be replaced with 1 to 3 silicon atoms so long as all valency requirements are satisfied.

"Alkyl" means an aliphatic hydrocarbon group which may be straight or branched and comprising about 1 to about 20 carbon atoms in the chain. Preferred alkyl groups contain about 1 to about 12 carbon atoms in the chain. More preferred alkyl groups contain about 1 to about 6 carbon atoms in the chain. Branched means that one or more lower alkyl groups such as methyl, ethyl or propyl, are attached to a linear alkyl chain. "Lower alkyl" means a group having about 1 to about 6 carbon atoms in the chain which may be straight or branched. "Alkyl" may be unsubstituted or optionally substituted by one or more substituents which may be the same or different, each substituent being independently

selected from the group consisting of halo, alkyl, aryl, cycloalkyl, cyano, hydroxy, alkoxy, alkylthio, amino, oxime (e.g., =N-OH), -NH(alkyl), -NH(cycloalkyl), -N(alkyl)$_2$, -O-C(O)-alkyl, -O-C(O)-aryl, -O-C(O)-cycloalkyl, carboxy and –C(O)O-alkyl. Non-limiting examples of suitable alkyl groups include methyl, ethyl, n-propyl, isopropyl and t-butyl.

"Alkenyl" means an aliphatic hydrocarbon group containing at least one carbon-carbon double bond and which may be straight or branched and comprising about 2 to about 15 carbon atoms in the chain. Preferred alkenyl groups have about 2 to about 12 carbon atoms in the chain; and more preferably about 2 to about 6 carbon atoms in the chain. Branched means that one or more lower alkyl groups such as methyl, ethyl or propyl, are attached to a linear alkenyl chain. "Lower alkenyl" means about 2 to about 6 carbon atoms in the chain which may be straight or branched. "Alkenyl" may be unsubstituted or optionally substituted by one or more substituents which may be the same or different, each substituent being independently selected from the group consisting of halo, alkyl. aryl, cycloalkyl, cyano, alkoxy and –S(alkyl). Non-limiting examples of suitable alkenyl groups include ethenyl, propenyl, n-butenyl, 3-methylbut-2-enyl, n-pentenyl, octenyl and decenyl.

"Alkylene" means a difunctional group obtained by removal of a hydrogen atom from an alkyl group that is defined above. Non-limiting examples of alkylene include methylene, ethylene and propylene.

"Alkynyl" means an aliphatic hydrocarbon group containing at least one carbon-carbon triple bond and which may be straight or branched and comprising about 2 to about 15 carbon atoms in the chain. Preferred alkynyl groups have about 2 to about 12 carbon atoms in the chain; and more preferably about 2 to about 4 carbon atoms in the chain. Branched means that one or more lower alkyl groups such as methyl, ethyl or propyl, are attached to a linear alkynyl chain. "Lower alkynyl" means about 2 to about 6 carbon atoms in the chain which may be straight or branched. Non-limiting examples of suitable alkynyl groups include ethynyl, propynyl, 2-butynyl and 3-methylbutynyl. "Alkynyl" may be unsubstituted

or optionally substituted by one or more substituents which may be the same or different, each substituent being independently selected from the group consisting of alkyl, aryl and cycloalkyl.

"Aryl" means an aromatic monocyclic or multicyclic ring system comprising about 6 to about 14 carbon atoms, preferably about 6 to about 10 carbon atoms. The aryl group can be optionally substituted with one or more "ring system substituents" which may be the same or different, and are as defined herein. Non-limiting examples of suitable aryl groups include phenyl and naphthyl.

"Heteroaryl" means an aromatic monocyclic or multicyclic ring system comprising about 5 to about 14 ring atoms, preferably about 5 to about 10 ring atoms, in which one or more of the ring atoms is an element other than carbon, for example nitrogen, oxygen or sulfur, alone or in combination. Preferred heteroaryls contain about 5 to about 6 ring atoms. The "heteroaryl" can be optionally substituted by one or more "ring system substituents" which may be the same or different, and are as defined herein. The prefix aza, oxa or thia before the heteroaryl root name means that at least a nitrogen, oxygen or sulfur atom respectively, is present as a ring atom. A nitrogen atom of a heteroaryl can be optionally oxidized to the corresponding N-oxide. "Heteroaryl" may also include a heteroaryl as defined above fused to an aryl as defined above. Non-limiting examples of suitable heteroaryls include pyridyl, pyrazinyl, furanyl, thienyl, pyrimidinyl, pyridone (including N-substituted pyridones), isoxazolyl, isothiazolyl, oxazolyl, thiazolyl, pyrazolyl, furazanyl, pyrrolyl, pyrazolyl, triazolyl, 1,2,4-thiadiazolyl, pyrazinyl, pyridazinyl, quinoxalinyl, phthalazinyl, oxindolyl, imidazo[1,2-a]pyridinyl, imidazo[2,1-b]thiazolyl, benzofurazanyl, indolyl, azaindolyl, benzimidazolyl, benzothienyl, quinolinyl, imidazolyl, thienopyridyl, quinazolinyl, thienopyrimidyl, pyrrolopyridyl, imidazopyridyl, isoquinolinyl, benzoazaindolyl, 1,2,4-triazinyl, benzothiazolyl and the like. The term "heteroaryl" also refers to partially saturated heteroaryl moieties such as, for example, tetrahydroisoquinolyl, tetrahydroquinolyl and the like.

"Aralkyl" or "arylalkyl" means an aryl-alkyl- group in which the aryl and alkyl are as previously described. Preferred aralkyls comprise a lower alkyl group. Non-limiting examples of suitable aralkyl groups include benzyl, 2-phenethyl and naphthalenylmethyl. The bond to the parent moiety is through the alkyl.

"Alkylaryl" means an alkyl-aryl- group in which the alkyl and aryl are as previously described. Preferred alkylaryls comprise a lower alkyl group. Non-limiting example of a suitable alkylaryl group is tolyl. The bond to the parent moiety is through the aryl.

"Cycloalkyl" means a non-aromatic mono- or multicyclic ring system comprising about 3 to about 10 carbon atoms, preferably about 5 to about 10 carbon atoms. Preferred cycloalkyl rings contain about 5 to about 7 ring atoms. The cycloalkyl can be optionally substituted with one or more "ring system substituents" which may be the same or different, and are as defined above. Non-limiting examples of suitable monocyclic cycloalkyls include cyclopropyl, cyclopentyl, cyclohexyl, cycloheptyl and the like. Non-limiting examples of suitable multicyclic cycloalkyls include 1-decalinyl, norbornyl, adamantyl and the like.

"Cycloalkylalkyl" means a cycloalkyl moiety as defined above linked via an alkyl moiety (defined above) to a parent core. Non-limiting examples of suitable cycloalkylalkyls include cyclohexylmethyl, adamantylmethyl and the like.

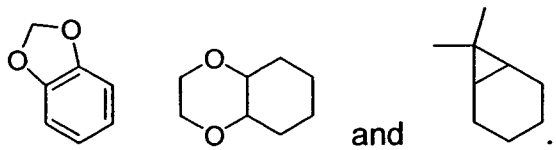
"Cycloalkenyl" means a non-aromatic mono or multicyclic ring system comprising about 3 to about 10 carbon atoms, preferably about 5 to about 10 carbon atoms which contains at least one carbon-carbon double bond. Preferred cycloalkenyl rings contain about 5 to about 7 ring atoms. The cycloalkenyl can be optionally substituted with one or more "ring system substituents" which may be the same or different, and are as defined above. Non-limiting examples of suitable monocyclic cycloalkenyls include cyclopentenyl, cyclohexenyl, cyclohepta-1,3-dienyl, and the like. Non-limiting example of a suitable multicyclic cycloalkenyl is norbornylenyl.

"Cycloalkenylalkyl" means a cycloalkenyl moiety as defined above linked via an alkyl moiety (defined above) to a parent core. Non-limiting examples of

suitable cycloalkenylalkyls include cyclopentenylmethyl, cyclohexenylmethyl and the like.

"Halogen" means fluorine, chlorine, bromine, or iodine. Preferred are fluorine, chlorine and bromine. "Halo" refers to fluoro, chloro, bromo or iodo.

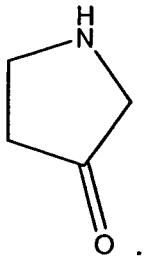
"Ring system substituent" means a substituent attached to an aromatic or non-aromatic ring system which, for example, replaces an available hydrogen on the ring system. Ring system substituents may be the same or different, each being independently selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, heteroaryl, aralkyl, alkylaryl, heteroaralkyl, heteroarylalkenyl, heteroarylalkynyl, alkylheteroaryl, hydroxy, hydroxyalkyl, alkoxy, aryloxy, aralkoxy, acyl, aroyl, halo, nitro, cyano, carboxy, alkoxycarbonyl, aryloxycarbonyl, aralkoxycarbonyl, alkylsulfonyl, arylsulfonyl, heteroarylsulfonyl, alkylthio, arylthio, heteroarylthio, aralkylthio, heteroaralkylthio, cycloalkyl, heterocyclyl, -O-C(O)-alkyl, -O-C(O)-aryl, -O-C(O)-cycloalkyl, -C(=N-CN)-NH_2, -C(=NH)-NH_2, -C(=NH)-NH(alkyl), oxime (e.g., =N-OH), Y_1Y_2N-, Y_1Y_2N-alkyl-, $Y_1Y_2NC(O)$-, $Y_1Y_2NSO_2$- and -$SO_2NY_1Y_2$, wherein Y_1 and Y_2 can be the same or different and are independently selected from the group consisting of hydrogen, alkyl, aryl, cycloalkyl, and aralkyl. "Ring system substituent" may also mean a single moiety which simultaneously replaces two available hydrogens on two adjacent carbon atoms (one H on each carbon) on a ring system. Examples of such moiety are methylene dioxy, ethylenedioxy, -$C(CH_3)_2$- and the like which form moieties such as, for example:



"Heteroarylalkyl" means a heteroaryl moiety as defined above linked via an alkyl moiety (defined above) to a parent core. Non-limiting examples of suitable heteroaryls include 2-pyridinylmethyl, quinolinylmethyl and the like.

"Heterocyclyl" means a non-aromatic saturated monocyclic or multicyclic ring system comprising about 3 to about 10 ring atoms, preferably about 5 to

about 10 ring atoms, in which one or more of the atoms in the ring system is an element other than carbon, for example nitrogen, oxygen or sulfur, alone or in combination. There are no adjacent oxygen and/or sulfur atoms present in the ring system. Preferred heterocyclyls contain about 5 to about 6 ring atoms. The prefix aza, oxa or thia before the heterocyclyl root name means that at least a nitrogen, oxygen or sulfur atom respectively is present as a ring atom. Any –NH in a heterocyclyl ring may exist protected such as, for example, as an -N(Boc), -N(CBz), -N(Tos) group and the like; such protections are also considered part of this invention. The heterocyclyl can be optionally substituted by one or more "ring system substituents" which may be the same or different, and are as defined herein. The nitrogen or sulfur atom of the heterocyclyl can be optionally oxidized to the corresponding N-oxide, S-oxide or S,S-dioxide. Non-limiting examples of suitable monocyclic heterocyclyl rings include piperidyl, pyrrolidinyl, piperazinyl, morpholinyl, thiomorpholinyl, thiazolidinyl, 1,4-dioxanyl, tetrahydrofuranyl, tetrahydrothiophenyl, lactam, lactone, and the like. "Heterocyclyl" may also mean a heterocyclyl ring wherein a single moiety (e.g =O) simultaneously replaces two available hydrogens on the same carbon atom on a ring system. An example of such moiety is pyrrolidone:

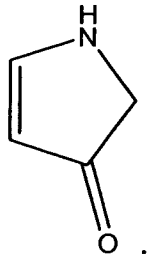


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"Heterocyclylalkyl" means a heterocyclyl moiety as defined above linked via an alkyl moiety (defined above) to a parent core. Non-limiting examples of suitable heterocyclylalkyls include piperidinylmethyl, piperazinylmethyl and the like.

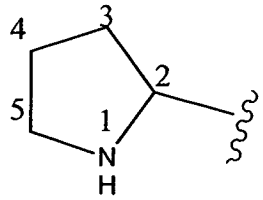
"Heterocyclenyl" means a non-aromatic monocyclic or multicyclic ring system comprising about 3 to about 10 ring atoms, preferably about 5 to about 10 ring atoms, in which one or more of the atoms in the ring system is an element other than carbon, for example nitrogen, oxygen or sulfur atom, alone or in

combination, and which contains at least one carbon-carbon double bond or carbon-nitrogen double bond. There are no adjacent oxygen and/or sulfur atoms present in the ring system. Preferred heterocyclenyl rings contain about 5 to about 6 ring atoms. The prefix aza, oxa or thia before the heterocyclenyl root name means that at least a nitrogen, oxygen or sulfur atom respectively is present as a ring atom. The heterocyclenyl can be optionally substituted by one or more ring system substituents, wherein "ring system substituent" is as defined above. The nitrogen or sulfur atom of the heterocyclenyl can be optionally oxidized to the corresponding N-oxide, S-oxide or S,S-dioxide. Non-limiting examples of suitable heterocyclenyl groups include 1,2,3,4- tetrahydropyridinyl, 1,2-dihydropyridinyl, 1,4-dihydropyridinyl, 1,2,3,6-tetrahydropyridinyl, 1,4,5,6-tetrahydropyrimidinyl, 2-pyrrolinyl, 3-pyrrolinyl, 2-imidazolinyl, 2-pyrazolinyl, dihydroimidazolyl, dihydrooxazolyl, dihydrooxadiazolyl, dihydrothiazolyl, 3,4-dihydro-2H-pyranyl, dihydrofuranyl, fluorodihydrofuranyl, 7-oxabicyclo[2.2.1]heptenyl, dihydrothiophenyl, dihydrothiopyranyl, and the like. "Heterocyclenyl" may also mean a single moiety (e.g., carbonyl) which simultaneously replaces two available hydrogens on the same carbon atom on a ring system. Example of such moiety is pyrrolidinone:



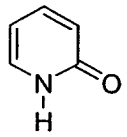
"Heterocyclenylalkyl" means a heterocyclenyl moiety as defined above linked via an alkyl moiety (defined above) to a parent core.

It should be noted that in hetero-atom containing ring systems of this invention, there are no hydroxyl groups on carbon atoms adjacent to a N, O or S, as well as there are no N or S groups on carbon adjacent to another heteroatom. Thus, for example, in the ring:

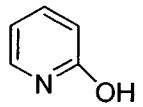


there is no -OH attached directly to carbons marked 2 and 5.

It should also be noted that tautomeric forms such as, for example, the moieties:



and



are considered equivalent in certain embodiments of this invention.

"Alkynylalkyl" means an alkynyl-alkyl- group in which the alkynyl and alkyl are as previously described. Preferred alkynylalkyls contain a lower alkynyl and a lower alkyl group. The bond to the parent moiety is through the alkyl. Non-limiting examples of suitable alkynylalkyl groups include propargylmethyl.

"Heteroaralkyl" means a heteroaryl-alkyl- group in which the heteroaryl and alkyl are as previously described. Preferred heteroaralkyls contain a lower alkyl group. Non-limiting examples of suitable aralkyl groups include pyridylmethyl, and quinolin-3-ylmethyl. The bond to the parent moiety is through the alkyl.

"Hydroxyalkyl" means a HO-alkyl- group in which alkyl is as previously defined. Preferred hydroxyalkyls contain lower alkyl. Non-limiting examples of suitable hydroxyalkyl groups include hydroxymethyl and 2-hydroxyethyl.

"Acyl" means an H-C(O)-, alkyl-C(O)- or cycloalkyl-C(O)-, group in which the various groups are as previously described. The bond to the parent moiety is through the carbonyl. Preferred acyls contain a lower alkyl. Non-limiting examples of suitable acyl groups include formyl, acetyl and propanoyl.

"Aroyl" means an aryl-C(O)- group in which the aryl group is as previously described. The bond to the parent moiety is through the carbonyl. Non-limiting examples of suitable groups include benzoyl and 1- naphthoyl.

"Alkoxy" means an alkyl-O- group in which the alkyl group is as previously described. Non-limiting examples of suitable alkoxy groups include methoxy,

ethoxy, n-propoxy, isopropoxy and n-butoxy. The bond to the parent moiety is through the ether oxygen.

"Aryloxy" means an aryl-O- group in which the aryl group is as previously described. Non-limiting examples of suitable aryloxy groups include phenoxy and naphthoxy. The bond to the parent moiety is through the ether oxygen.

"Aralkyloxy" means an aralkyl-O- group in which the aralkyl group is as previously described. Non-limiting examples of suitable aralkyloxy groups include benzyloxy and 1- or 2-naphthalenemethoxy. The bond to the parent moiety is through the ether oxygen.

"Alkylthio" means an alkyl-S- group in which the alkyl group is as previously described. Non-limiting examples of suitable alkylthio groups include methylthio and ethylthio. The bond to the parent moiety is through the sulfur.

"Arylthio" means an aryl-S- group in which the aryl group is as previously described. Non-limiting examples of suitable arylthio groups include phenylthio and naphthylthio. The bond to the parent moiety is through the sulfur.

"Aralkylthio" means an aralkyl-S- group in which the aralkyl group is as previously described. Non-limiting example of a suitable aralkylthio group is benzylthio. The bond to the parent moiety is through the sulfur.

"Alkoxycarbonyl" means an alkyl-O-CO- group. Non-limiting examples of suitable alkoxycarbonyl groups include methoxycarbonyl and ethoxycarbonyl. The bond to the parent moiety is through the carbonyl.

"Aryloxycarbonyl" means an aryl-O-C(O)- group. Non-limiting examples of suitable aryloxycarbonyl groups include phenoxycarbonyl and naphthoxycarbonyl. The bond to the parent moiety is through the carbonyl.

"Aralkoxycarbonyl" means an aralkyl-O-C(O)- group. Non-limiting example of a suitable aralkoxycarbonyl group is benzyloxycarbonyl. The bond to the parent moiety is through the carbonyl.

"Alkylsulfonyl" means an alkyl-S(O_2)- group. Preferred groups are those in which the alkyl group is lower alkyl. The bond to the parent moiety is through the sulfonyl.

"Arylsulfonyl" means an aryl-$S(O_2)$- group. The bond to the parent moiety is through the sulfonyl.

The term "substituted" means that one or more hydrogens on the designated atom is replaced with a selection from the indicated group, provided that the designated atom's normal valency under the existing circumstances is not exceeded, and that the substitution results in a stable compound. Combinations of substituents and/or variables are permissible only if such combinations result in stable compounds. By "stable compound' or "stable structure" is meant a compound that is sufficiently robust to survive isolation to a useful degree of purity from a reaction mixture, and formulation into an efficacious therapeutic agent.

The term "optionally substituted" means optional substitution with the specified groups, radicals or moieties.

The term "purified", "in purified form" or "in isolated and purified form" for a compound refers to the physical state of said compound after being isolated from a synthetic process (e.g. from a reaction mixture), or natural source or combination thereof. Thus, the term "purified", "in purified form" or "in isolated and purified form" for a compound refers to the physical state of said compound after being obtained from a purification process or processes described herein or well known to the skilled artisan (e.g., chromatography, recrystallization and the like) , in sufficient purity to be characterizable by standard analytical techniques described herein or well known to the skilled artisan.

It should also be noted that any carbon as well as heteroatom with unsatisfied valences in the text, schemes, examples and Tables herein is assumed to have the sufficient number of hydrogen atom(s) to satisfy the valences.

When a functional group in a compound is termed "protected", this means that the group is in modified form to preclude undesired side reactions at the protected site when the compound is subjected to a reaction. Suitable protecting groups will be recognized by those with ordinary skill in the art as well as by

reference to standard textbooks such as, for example, T. W. Greene *et al*, *Protective Groups in organic Synthesis* (1991), Wiley, New York.

When any variable (e.g., aryl, heterocycle, R^2, etc.) occurs more than one time in any constituent or in Formula I, its definition on each occurrence is independent of its definition at every other occurrence.

As used herein, the term "composition" is intended to encompass a product comprising the specified ingredients in the specified amounts, as well as any product which results, directly or indirectly, from combination of the specified ingredients in the specified amounts.

Prodrugs and solvates of the compounds of the invention are also contemplated herein. A discussion of prodrugs is provided in T. Higuchi and V. Stella, *Pro-drugs as Novel Delivery Systems* (1987) 14 of the A.C.S. Symposium Series, and in *Bioreversible Carriers in Drug Design,* (1987) Edward B. Roche, ed., American Pharmaceutical Association and Pergamon Press. The term "prodrug" means a compound (e.g., a drug precursor) that is transformed *in vivo* to yield a compound of Formula (I) or a pharmaceutically acceptable salt, hydrate or solvate of the compound. The transformation may occur by various mechanisms (e.g., by metabolic or chemical processes), such as, for example, through hydrolysis in blood. A discussion of the use of prodrugs is provided by T. Higuchi and W. Stella, "Pro-drugs as Novel Delivery Systems," Vol. 14 of the A.C.S. Symposium Series, and in Bioreversible Carriers in Drug Design, ed. Edward B. Roche, American Pharmaceutical Association and Pergamon Press, 1987.

For example, if a compound of Formula (I) or a pharmaceutically acceptable salt, hydrate or solvate of the compound contains a carboxylic acid functional group, a prodrug can comprise an ester formed by the replacement of the hydrogen atom of the acid group with a group such as, for example, (C_1–C_8)alkyl, (C_2-C_{12})alkanoyloxymethyl, 1-(alkanoyloxy)ethyl having from 4 to 9 carbon atoms, 1-methyl-1-(alkanoyloxy)-ethyl having from 5 to 10 carbon atoms, alkoxycarbonyloxymethyl having from 3 to 6 carbon atoms, 1-

(alkoxycarbonyloxy)ethyl having from 4 to 7 carbon atoms, 1-methyl-1-(alkoxycarbonyloxy)ethyl having from 5 to 8 carbon atoms, N-(alkoxycarbonyl)aminomethyl having from 3 to 9 carbon atoms, 1-(N-(alkoxycarbonyl)amino)ethyl having from 4 to 10 carbon atoms, 3-phthalidyl, 4-crotonolactonyl, gamma-butyrolacton-4-yl, di-N,N-(C_1-C_2)alkylamino(C_2-C_3)alkyl (such as β-dimethylaminoethyl), carbamoyl-(C_1-C_2)alkyl, N,N-di (C_1-C_2)alkylcarbamoyl-(C1-C2)alkyl and piperidino-, pyrrolidino- or morpholino(C_2-C_3)alkyl, and the like.

Similarly, if a compound of Formula (I) contains an alcohol functional group, a prodrug can be formed by the replacement of the hydrogen atom of the alcohol group with a group such as, for example, (C_1-C_6)alkanoyloxymethyl, 1-((C_1-C_6)alkanoyloxy)ethyl, 1-methyl-1-((C_1-C_6)alkanoyloxy)ethyl, (C_1-C_6)alkoxycarbonyloxymethyl, N-(C_1-C_6)alkoxycarbonylaminomethyl, succinoyl, (C_1-C_6)alkanoyl, α-amino(C_1-C_4)alkanyl, arylacyl and α-aminoacyl, or α-aminoacyl-α-aminoacyl, where each α-aminoacyl group is independently selected from the naturally occurring L-amino acids, $P(O)(OH)_2$, $-P(O)(O(C_1\text{-}C_6)alkyl)_2$ or glycosyl (the radical resulting from the removal of a hydroxyl group of the hemiacetal form of a carbohydrate), and the like.

If a compound of Formula (I) incorporates an amine functional group, a prodrug can be formed by the replacement of a hydrogen atom in the amine group with a group such as, for example, R-carbonyl, RO-carbonyl, NRR'-carbonyl where R and R' are each independently (C_1-C_{10})alkyl, (C_3-C_7) cycloalkyl, benzyl, or R-carbonyl is a natural α-aminoacyl or natural α-aminoacyl, —C(OH)C(O)OY^1 wherein Y^1 is H, (C_1-C_6)alkyl or benzyl, —$C(OY^2)Y^3$ wherein Y^2 is (C_1-C_4) alkyl and Y^3 is (C_1-C_6)alkyl, carboxy (C_1-C_6)alkyl, amino(C_1-C_4)alkyl or mono-N—or di-N,N-(C_1-C_6)alkylaminoalkyl, —$C(Y^4)Y^5$ wherein Y^4 is H or methyl and Y^5 is mono-N— or di-N,N-(C_1-C_6)alkylamino morpholino, piperidin-1-yl or pyrrolidin-1-yl, and the like.

One or more compounds of the invention may exist in unsolvated as well as solvated forms with pharmaceutically acceptable solvents such as water,

ethanol, and the like, and it is intended that the invention embrace both solvated and unsolvated forms. "Solvate" means a physical association of a compound of this invention with one or more solvent molecules. This physical association involves varying degrees of ionic and covalent bonding, including hydrogen bonding. In certain instances the solvate will be capable of isolation, for example when one or more solvent molecules are incorporated in the crystal lattice of the crystalline solid. "Solvate" encompasses both solution-phase and isolatable solvates. Non-limiting examples of suitable solvates include ethanolates, methanolates, and the like. "Hydrate" is a solvate wherein the solvent molecule is H_2O.

One or more compounds of the invention may optionally be converted to a solvate. Preparation of solvates is generally known. Thus, for example, M. Caira *et al*, *J. Pharmaceutical Sci.*, 93(3), 601-611 (2004) describe the preparation of the solvates of the antifungal fluconazole in ethyl acetate as well as from water. Similar preparations of solvates, hemisolvate, hydrates and the like are described by E. C. van Tonder *et al*, *AAPS PharmSciTech.*, 5(1), article 12 (2004); and A. L. Bingham *et al*, *Chem. Commun.*, 603-604 (2001). A typical, non-limiting, process involves dissolving the inventive compound in desired amounts of the desired solvent (organic or water or mixtures thereof) at a higher than ambient temperature, and cooling the solution at a rate sufficient to form crystals which are then isolated by standard methods. Analytical techniques such as, for example I. R. spectroscopy, show the presence of the solvent (or water) in the crystals as a solvate (or hydrate).

"Effective amount" or "therapeutically effective amount" is meant to describe an amount of compound or a composition of the present invention effective in inhibiting the above-noted diseases and thus producing the desired therapeutic, ameliorative, inhibitory or preventative effect.

The compounds of Formula I can form salts which are also within the scope of this invention. Reference to a compound of Formula I herein is understood to include reference to salts thereof, unless otherwise indicated. The term "salt(s)",

as employed herein, denotes acidic salts formed with inorganic and/or organic acids, as well as basic salts formed with inorganic and/or organic bases. In addition, when a compound of Formula I contains both a basic moiety, such as, but not limited to a pyridine or imidazole, and an acidic moiety, such as, but not limited to a carboxylic acid, zwitterions ("inner salts") may be formed and are included within the term "salt(s)" as used herein. Pharmaceutically acceptable (i.e., non-toxic, physiologically acceptable) salts are preferred, although other salts are also useful. Salts of the compounds of the Formula I may be formed, for example, by reacting a compound of Formula I with an amount of acid or base, such as an equivalent amount, in a medium such as one in which the salt precipitates or in an aqueous medium followed by lyophilization.

Exemplary acid addition salts include acetates, ascorbates, benzoates, benzenesulfonates, bisulfates, borates, butyrates, citrates, camphorates, camphorsulfonates, fumarates, hydrochlorides, hydrobromides, hydroiodides, lactates, maleates, methanesulfonates, naphthalenesulfonates, nitrates, oxalates, phosphates, propionates, salicylates, succinates, sulfates, tartarates, thiocyanates, toluenesulfonates (also known as tosylates,) and the like. Additionally, acids which are generally considered suitable for the formation of pharmaceutically useful salts from basic pharmaceutical compounds are discussed, for example, by P. Stahl *et al*, Camille G. (eds.) *Handbook of Pharmaceutical Salts. Properties, Selection and Use.* (2002) Zurich: Wiley-VCH; S. Berge *et al*, *Journal of Pharmaceutical Sciences* (1977) 66(1) 1-19; P. Gould, *International J. of Pharmaceutics* (1986) 33 201-217; Anderson *et al*, *The Practice of Medicinal Chemistry* (1996), Academic Press, New York; and in *The Orange Book* (Food & Drug Administration, Washington, D.C. on their website). These disclosures are incorporated herein by reference thereto.

Exemplary basic salts include ammonium salts, alkali metal salts such as sodium, lithium, and potassium salts, alkaline earth metal salts such as calcium and magnesium salts, salts with organic bases (for example, organic amines) such as dicyclohexylamines, t-butyl amines, and salts with amino acids such as

arginine, lysine and the like. Basic nitrogen-containing groups may be quarternized with agents such as lower alkyl halides (e.g. methyl, ethyl, and butyl chlorides, bromides and iodides), dialkyl sulfates (e.g. dimethyl, diethyl, and dibutyl sulfates), long chain halides (e.g. decyl, lauryl, and stearyl chlorides, bromides and iodides), aralkyl halides (e.g. benzyl and phenethyl bromides), and others.

All such acid salts and base salts are intended to be pharmaceutically acceptable salts within the scope of the invention and all acid and base salts are considered equivalent to the free forms of the corresponding compounds for purposes of the invention.

Pharmaceutically acceptable esters of the present compounds include the following groups: (1) carboxylic acid esters obtained by esterification of the hydroxy groups, in which the non-carbonyl moiety of the carboxylic acid portion of the ester grouping is selected from straight or branched chain alkyl (for example, acetyl, n-propyl, t-butyl, or n-butyl), alkoxyalkyl (for example, methoxymethyl), aralkyl (for example, benzyl), aryloxyalkyl (for example, phenoxymethyl), aryl (for example, phenyl optionally substituted with, for example, halogen, C_{1-4}alkyl, or C_{1-4}alkoxy or amino); (2) sulfonate esters, such as alkyl- or aralkylsulfonyl (for example, methanesulfonyl); (3) amino acid esters (for example, L-valyl or L-isoleucyl); (4) phosphonate esters and (5) mono-, di- or triphosphate esters. The phosphate esters may be further esterified by, for example, a C_{1-20} alcohol or reactive derivative thereof, or by a 2,3-di (C_{6-24})acyl glycerol.

Compounds of Formula I, and salts, solvates, esters and prodrugs thereof, may exist in their tautomeric form (for example, as an amide, enol, keto or imino ether). All such tautomeric forms are contemplated herein as part of the present invention.

The compounds of Formula (I) may contain asymmetric or chiral centers, and, therefore, exist in different stereoisomeric forms. It is intended that all stereoisomeric forms of the compounds of Formula (I) as well as mixtures thereof, including racemic mixtures, form part of the present invention. In addition, the

present invention embraces all geometric and positional isomers. For example, if a compound of Formula (I) incorporates a double bond or a fused ring, both the cis- and trans-forms, as well as mixtures, are embraced within the scope of the invention.

Diastereomeric mixtures can be separated into their individual diastereomers on the basis of their physical chemical differences by methods well known to those skilled in the art, such as, for example, by chromatography and/or fractional crystallization. Enantiomers can be separated by converting the enantiomeric mixture into a diastereomeric mixture by reaction with an appropriate optically active compound (e.g., chiral auxiliary such as a chiral alcohol or Mosher's acid chloride), separating the diastereomers and converting (e.g., hydrolyzing) the individual diastereomers to the corresponding pure enantiomers. Also, some of the compounds of Formula (I) may be atropisomers (e.g., substituted biaryls) and are considered as part of this invention. Enantiomers can also be separated by use of chiral HPLC column.

It is also possible that the compounds of Formula (I) may exist in different tautomeric forms, and all such forms are embraced within the scope of the invention. Also, for example, all keto-enol and imine-enamine forms of the compounds are included in the invention.

All stereoisomers (for example, geometric isomers, optical isomers and the like) of the present compounds (including those of the salts, solvates, esters and prodrugs of the compounds as well as the salts, solvates and esters of the prodrugs), such as those which may exist due to asymmetric carbons on various substituents, including enantiomeric forms (which may exist even in the absence of asymmetric carbons), rotameric forms, atropisomers, and diastereomeric forms, are contemplated within the scope of this invention, as are positional isomers (such as, for example, 4-pyridyl and 3-pyridyl). (For example, if a compound of Formula (I) incorporates a double bond or a fused ring, both the cis- and trans-forms, as well as mixtures, are embraced within the scope of the invention. Also, for example, all keto-enol and imine-enamine forms of the compounds are

included in the invention.) Individual stereoisomers of the compounds of the invention may, for example, be substantially free of other isomers, or may be admixed, for example, as racemates or with all other, or other selected, stereoisomers. The chiral centers of the present invention can have the S or R configuration as defined by the *IUPAC* 1974 Recommendations. The use of the terms "salt", "solvate", "ester", "prodrug" and the like, is intended to equally apply to the salt, solvate, ester and prodrug of enantiomers, stereoisomers, rotamers, tautomers, positional isomers, racemates or prodrugs of the inventive compounds.

The present invention also embraces isotopically-labelled compounds of the present invention which are identical to those recited herein, but for the fact that one or more atoms are replaced by an atom having an atomic mass or mass number different from the atomic mass or mass number usually found in nature. Examples of isotopes that can be incorporated into compounds of the invention include isotopes of hydrogen, carbon, nitrogen, oxygen, phosphorus, fluorine and chlorine, such as ^{2}H, ^{3}H, ^{13}C, ^{14}C, ^{15}N, ^{18}O, ^{17}O, ^{31}P, ^{32}P, ^{35}S, ^{18}F, and ^{36}Cl, respectively.

Certain isotopically-labelled compounds of Formula (I) (e.g., those labeled with ^{3}H and ^{14}C) are useful in compound and/or substrate tissue distribution assays. Tritiated (i.e., ^{3}H) and carbon-14 (i.e., ^{14}C) isotopes are particularly preferred for their ease of preparation and detectability. Further, substitution with heavier isotopes such as deuterium (i.e., ^{2}H) may afford certain therapeutic advantages resulting from greater metabolic stability (e.g., increased in vivo half-life or reduced dosage requirements) and hence may be preferred in some circumstances. Isotopically labelled compounds of Formula (I) can generally be prepared by following procedures analogous to those disclosed in the Schemes and/or in the Examples hereinbelow, by substituting an appropriate isotopically labelled reagent for a non-isotopically labelled reagent.

Polymorphic forms of the compounds of Formula I, and of the salts, solvates, esters and prodrugs of the compounds of Formula I, are intended to be included in the present invention.

The compounds according to the invention can have pharmacological properties; in particular, the compounds of Formula I can be modulators of gamma secretase (including inhibitors, antagonists and the like).

More specifically, the compounds of Formula I can be useful in the treatment of a variety of disorders of the central nervous system including, for example, including, but not limited to, Alzheimer's disease, AIDS-related dementia, Parkinson's disease, amyotrophic lateral sclerosis, retinitis pigmentosa, spinal muscular atrophy and cerebellar degeneration and the like.

Another aspect of this invention is a method of treating a mammal (*e.g.*, human) having a disease or condition of the central nervous system by administering a therapeutically effective amount of at least one compound of Formula I, or a pharmaceutically acceptable salt, solvate, ester or prodrug of said compound to the mammal.

A preferred dosage is about 0.001 to 500 mg/kg of body weight/day of the compound of Formula I. An especially preferred dosage is about 0.01 to 25 mg/kg of body weight/day of a compound of Formula I, or a pharmaceutically acceptable salt or solvate of said compound.

The compounds of this invention may also be useful in combination (administered together or sequentially) with one or more additional agents listed above.

The compounds of this invention may also be useful in combination (administered together or sequentially) with one or more compounds selected from the group consisting of Aβ antibody inhibitors, gamma secretase inhibitors and beta secretase inhibitors.

If formulated as a fixed dose, such combination products employ the compounds of this invention within the dosage range described herein and the other pharmaceutically active agent or treatment within its dosage range.

Accordingly, in an aspect, this invention includes combinations comprising an amount of at least one compound of Formula I, or a pharmaceutically acceptable salt, solvate, ester or prodrug thereof, and an amount of one or more

additional agents listed above wherein the amounts of the compounds/ treatments result in desired therapeutic effect.

The pharmacological properties of the compounds of this invention may be confirmed by a number of pharmacological assays. Certain assays are exemplified later in this document.

This invention is also directed to pharmaceutical compositions which comprise at least one compound of Formula I, or a pharmaceutically acceptable salt, solvate, ester or prodrug of said compound and at least one pharmaceutically acceptable carrier.

Other embodiments of this invention are directed to pharmaceutically acceptable salts of any one of the embodiments above directed to any one of compounds 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

Other embodiments of this invention are directed to pharmaceutically acceptable esters of any one of the embodiments above directed to any one of compounds 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

Other embodiments of this invention are directed to solvates of any one of the embodiments above directed to any one of compounds 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

One embodiment of this invention is directed to a compound of formula I.

Another embodiment of this invention is directed to a pharmaceutically acceptable salt of a compound of formula I.

Another embodiment of this invention is directed to a pharmaceutically acceptable ester of a compound of formula I.

Another embodiment of this invention is directed to a solvate of a compound of formula I.

Another embodiment of this invention is directed to a compound of formula I in isolated form.

Another embodment of this invention is directed to a compound of formula I in pure form.

Another embodiment of this invention is directed to a compound of formula I in pure and isolated form.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds of formula I and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of a pharmaceutically acceptable salt of one or more (e.g., one) compounds of formula I and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of a pharmaceutically acceptable ester of one or more (e.g., one) compounds of formula I and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of a solvate of one or more (e.g., one) compounds of formula I and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds of formula I, and an effective amount of one or more (e.g., one) other pharmaceutically active ingredients (e.g.,) drugs, and a pharmaceutically acceptable carrier. Examples of the other pharmaceutically active ingredients include, but are not limited to drugs selected form the group consisting of: (a) drugs useful for the treatment of Alzheimer's disease, (b) drugs useful for inhibiting the deposition of amyloid protein (e.g., amyloid beta protein) in, on or around neurological tissue (e.g., the brain), (c) drugs useful for treating neurodegenerative diseases, and (d) drugs useful for inhibiting gamma-secretase.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one)

compounds of formula I, and effective amount of one or more BACE inhibitors, and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds of formula I, and effective amount of one or more cholinesterase inhibitors (e.g., acetyl- and/or butyrylchlolinesterase inhibitors), and a pharmaceutically acceptable carrier.

The compounds of formula I can be useful as gamma secretase modulators and can be useful in the treatment and prevention of diseases such as, for example, central nervous system disorders such as Alzheimers disease and Downs Syndrome.

Thus, another embodiment of this invention is directed to a method for modulating (including inhibiting, antagonizing and the like) gamma-secretase comprising administering an effective amount of one or more (e.g., one) compounds of formula I to a patient in need of such treatment.

Another embodiment of this invention is directed to a method for modulating (including inhibiting, antagonizing and the like) gamma-secretase, comprising administering an effective amount of a compound of formula I to a patient in need of treatment.

Another embodiment of this invention is directed to a method of treating one or more neurodegenerative diseases, comprising administering an effective amount of one or more (e.g., one) compounds of formula I to a patient in need of treatment.

Another embodiment of this invention is directed to a method of treating one or more neurodegenerative diseases, comprising administering an effective amount of a compound of formula I to a patient in need of treatment.

Another embodiment of this invention is directed to a method of inhibiting the deposition of amyloid protein (e.g., amyloid beta protein) in, on or around neurological tissue (e.g., the brain), comprising administering an effective amount

of one or more (e.g., one) compounds of formula I to a patient in need of treatment.

Another embodiment of this invention is directed to a method of inhibiting the deposition of amyloid protein (e.g., amyloid beta protein) in, on or around neurological tissue (e.g., the brain), comprising administering an effective amount of a compound of formula I to a patient in need of treatment.

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective amount of one or more (e.g., one) compounds of formula I to a patient in need of treatment.

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective amount of a compound of formula I to a patient in need of treatment.

This invention also provides combination therapies for (1) modulating gamma-secretase, or (2) treating one or more neurodegenerative diseases, or (3) inhibiting the deposition of amyloid protein (e.g., amyloid beta protein) in, on or around neurological tissue (e.g., the brain), or (4) treating Alzheimer's disease. The combination therapies are directed to methods comprising the administration of an effective amount of one or more (e.g. one) compounds of formula I and the administration of an effective amount of one or more (e.g., one) other pharmaceutical active ingredients (e.g., drugs). The compounds of formula I and the other drugs can be administered separately (i.e., each is in its own separate dosage form), or the compounds of formula I can be combined with the other drugs in the same dosage form.

Thus, other embodiments of this invention are directed to any one of the methods of treatment, or methods of inhibiting, described herein, wherein an effective amount of the compound of formula I is used in combination with an effective amount of one or more other pharmaceutically active ingredients selected from the group consisting of: BACE inhibitors (beta secretase inhibitors), muscarinic antagonists (e.g., m_1 agonists or m_2 antagonists), cholinesterase inhibitors (e.g., acetyl- and/or butyrylchlolinesterase inhibitors); gamma secretase

inhibitors; gamma secretase modulators; HMG-CoA reductase inhibitors; non-steroidal anti-inflammatory agents; N-methyl-D-aspartate receptor antagonists; anti-amyloid antibodies; vitamin E; nicotinic acetylcholine receptor agonists; CB1 receptor inverse agonists or CB1 receptor antagonists; an antibiotic; growth hormone secretagogues; histamine H3 antagonists; AMPA agonists; PDE4 inhibitors; $GABA_A$ inverse agonists; inhibitors of amyloid aggregation; glycogen synthase kinase beta inhibitors; promoters of alpha secretase activity; PDE-10 inhibitors and cholesterol absorption inhibitors (e.g., ezetimibe).

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective amount of one or more (e.g., one) compounds of formula I, in combination with an effective (i.e., therapeutically effective) amount of one or more cholinesterase inhibitors (such as, for example, (±)-2,3-dihydro-5,6-dimethoxy-2-[[1-(phenylmethyl)-4-piperidinyl]methyl]-1 *H* -inden-1-one hydrochloride, i.e., donepezil hydrochloride, available as the Aricept® brand of donepezil hydrochloride), to a patient in need of treatment.

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective amount of a compound of formula I, in combination with an effective amount of one or more (e.g., one) cholinesterase inhibitors (such as, for example, (±)-2,3-dihydro-5,6-dimethoxy-2-[[1-(phenylmethyl)-4-piperidinyl]methyl]-1 *H* -inden-1-one hydrochloride, i.e., donepezil hydrochloride, available as the Aricept® brand of donepezil hydrochloride), to a patient in need of treatment.

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective amount of one or more (e.g., one) compounds of formula I, in combination with an effective amount of one or more compounds selected from the group consisting of Aβ antibody inhibitors, gamma secretase inhibitors and beta secretase inhibitors.

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective amount of one or more

(e.g., one) compounds of formula I, in combination with an effective amount of one or more BACE inhibitors.

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of formula I, in combination with an effective amount of Exelon (rivastigmine).

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of formula I, in combination with an effective amount of Cognex (tacrine).

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of formula I, in combination with an effective amount of a Tau kinase inhibitor.

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of formula I, in combination with an effective amount of one or more Tau kinase inhibitor (e.g., GSK3beta inhibitor, cdk5 inhibitor, ERK inhibitor).

This invention also provides a method of treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of formula I, in combination with an effective amount of one anti-Abeta vaccination (active immunization).

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of formula I, in combination with an effective amount of one or more APP ligands.

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of formula I, in combination with an effective amount of one or more agents that upregulate insulin degrading enzyme and/or neprilysin.

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of formula I, in combination with an effective amount of one or more cholesterol lowering agents (for example, statins such as Atorvastatin, Fluvastatin, Lovastatin, Mevastatin, Pitavastatin, Pravastatin, Rosuvastatin, Simvastatin, and cholesterol absorption inhibitor such as Ezetimibe).

This invention also provides a method of treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of formula I, in combination with an effective amount of one or more fibrates (for example, clofibrate, Clofibride, Etofibrate, Aluminium Clofibrate).

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of formula I, in combination with an effective amount of one or more LXR agonists.

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of formula I, in combination with an effective amount of one or more LRP mimics.

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of formula I, in combination with an effective amount of one or more 5-HT6 receptor antagonists.

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of formula I, in combination with an effective amount of one or more nicotinic receptor agonists.

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of formula I, in combination with an effective amount of one or more H3 receptor antagonists.

This invention also provides a method of treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of formula I, in combination with an effective amount of one or more histone deacetylase inhibitors.

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of formula I, in combination with an effective amount of one or more hsp90 inhibitors.

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of formula I, in combination with an effective amount of one or more m1 muscarinic receptor agonists.

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of formula I, in combination with an effective amount of one or more 5-HT6 receptor antagonists mGluR1 or mGluR5 positive allosteric modulators or agonists

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of formula I, in combination with an effective amount of one or more mGluR2/3 antagonists.

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of formula I, in combination with an effective amount of one or more anti-inflammatory agents that can reduce neuroinflammation.

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of formula I, in combination with an effective amount of one or more Prostaglandin EP2 receptor antagonists.

This invention also provides a method of treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of formula I, in combination with an effective amount of one or more PAI-1 inhibitors.

This invention also provides a method of treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of formula I, in combination with an effective amount of one or more agents that can induce Abeta efflux such as gelsolin.

This invention also provides a method of treating Downs syndrome, comprising administering an effective amount of one or more (e.g., one) compounds of formula I to a patient in need of treatment.

This invention also provides a method of treating Downs syndrome, comprising administering an effective amount of a compound of formula I to a patient in need of treatment.

This invention also provides a method of treating Downs syndrome, comprising administering an effective amount of one or more (e.g., one) compounds of formula I, in combination with an effective amount of one or more cholinesterase inhibitors (such as, for example, (±)-2,3-dihydro-5,6-dimethoxy-2-[[1-(phenylmethyl)-4-piperidinyl]methyl]-1 *H* -inden-1-one hydrochloride, i.e., donepezil hydrochloride, available as the Aricept® brand of donepezil hydrochloride), to a patient in need of treatment.

This invention also provides a method of treating Downs syndrome, comprising administering an effective amount of a compound of formula I, in combination with an effective amount of one or more (e.g., one) cholinesterase inhibitors (such as, for example, (±)-2,3-dihydro-5,6-dimethoxy-2-[[1-(phenylmethyl)-4-piperidinyl]methyl]-1 *H* -inden-1-one hydrochloride, i.e., donepezil hydrochloride, available as the Aricept® brand of donepezil hydrochloride), to a patient in need of treatment.

This invention also provides a method of treating mild cognitive impairment, comprising administering an effective amount of one or more (e.g., one) compounds of formula I to a patient in need of treatment.

This invention also provides a method of treating glaucoma, comprising administering an effective amount of one or more (e.g., one) compounds of formula I to a patient in need of treatment.

This invention also provides a method of treating cerebral amyloid angiopathy, comprising administering an effective amount of one or more (e.g., one) compounds of formula I to a patient in need of treatment.

This invention also provides a method of treating stroke, comprising administering an effective amount of one or more (e.g., one) compounds of formula I to a patient in need of treatment.

This invention also provides a method of treating dementia, comprising administering an effective amount of one or more (e.g., one) compounds of formula I to a patient in need of treatment.

This invention also provides a method of treating microgliosis, comprising administering an effective amount of one or more (e.g., one) compounds of formula I to a patient in need of treatment.

This invention also provides a method of treating brain inflammation, comprising administering an effective amount of one or more (e.g., one) compounds of formula I to a patient in need of treatment.

This invention also provides a method of treating olfactory function loss, comprising administering an effective amount of one or more (e.g., one) compounds of formula I to a patient in need of treatment.

This invention also provides combinations (i.e., pharmaceutical compositions) comprising an effective amount of one or more (e.g., one) compounds of formula I, in combination with an effective amount of one or more compounds selected from the group consisting of cholinesterase inhibitors (such as, for example, (±)-2,3-dihydro-5,6-dimethoxy-2-[[1-(phenylmethyl)-4-piperidinyl]methyl]-1 *H* -inden-1-one hydrochloride, i.e., donepezil hydrochloride, available as the Aricept® brand of donepezil hydrochloride), Aβ antibody inhibitors, gamma secretase inhibitors and beta secretase inhibitors. The pharmaceutical compositions also comprise a pharmaceutically acceptable carrier.

This invention also provides a kit comprising, in separate containers, in a single package, pharmaceutical compositions for use in combination, wherein one container comprises an effective amount of a compound of formula I in a pharmaceutically acceptable carrier, and another container (i.e., a second container) comprises an effective amount of another pharmaceutically active ingredient (as described above), the combined quantities of the compound of formula I and the other pharmaceutically active ingredient being effective to: (a) treat Alzheimer's disease, or (b) inhibit the deposition of amyloid protein (e.g., amyloid beta protein) in, on or around neurological tissue (e.g., the brain), or (c) treat neurodegenerative diseases, or (d) modulate the activity of gamma-secretase.

Another embodiment of this invention is directed to a pharmaceutically acceptable salt of a compound of formula (I), said compound of formula (I) being selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

Another embodiment of this invention is directed to a pharmaceutically acceptable ester of a compound of formula (I), said compound of formula (I) being selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

Another embodiment of this invention is directed to a solvate of a compound of formula (I), said compound of formula (I) being selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

Another embodiment of this invention is directed to a compound of formula (I) in isolated form, said compound of formula (I) being selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

Another embodment of this invention is directed to a compound of formula (I) in pure form, said compound of formula (I) being selected from the group consisting of: said compound of formula (I) being selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

Another embodiment of this invention is directed to a compound of formula (I) in pure and isolated form, said compound of formula (I) being selected from the group consisting of: said compound of formula (I) being selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

Another embodiment is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds of formula (I) and a pharmaceutically acceptable carrier, said compound of formula (I) being selected from the group consisting of: said compound of formula (I) being selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

Another embodiment is directed to a pharmaceutical composition comprising an effective amount of a pharmaceutically acceptable salt of one or more (e.g., one) compounds of formula (I) and a pharmaceutically acceptable carrier, said compound of formula (I) being selected from the group consisting of: said compound of formula (I) being selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

Another embodiment is directed to a pharmaceutical composition comprising an effective amount of a pharmaceutically acceptable ester of one or more (e.g., one) compounds of formula (I) and a pharmaceutically acceptable carrier, said compound of formula (I) being selected from the group consisting of: said compound of formula (I) being selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

Another embodiment is directed to a pharmaceutical composition comprising an effective amount of a solvate of one or more (e.g., one) compounds of formula (I) and a pharmaceutically acceptable carrier, said compound of formula (I) being selected from the group consisting of: said compound of formula (I) being selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds of formula (I), and an effective amount of one or more (e.g., one) other pharmaceutically active ingredients (e.g., drugs), and a pharmaceutically acceptable carrier. Examples of the other pharmaceutically active ingredients include, but are not limited to drugs selected form the group consisting of: (a) drugs useful for the treatment of Alzheimer's disease, (b) drugs useful for inhibiting the deposition of amyloid protein (e.g., amyloid beta protein) in, on or around neurological tissue (e.g., the brain), (c) drugs useful for treating neurodegenerative diseases, and (d) drugs useful for inhibiting gamma-secretase, said compound of formula (I) being selected from the group consisting of: said compound of formula (I) being selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds of formula (I), and effective amount of one or more BACE inhibitors, and a pharmaceutically acceptable carrier, said compound of formula (I) being selected from the group consisting of: said compound of formula (I) being selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one)

compounds selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, and an effective amount of one or more cholinesterase inhibitors (e.g., acetyl- and/or butyrylchlolinesterase inhibitors), and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, and effective amount of one or more muscarinic antagonists (e.g., m_1 agonists or m_2 antagonists), and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, and effective amount of Exelon (rivastigmine), and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, and effective amount of Cognex (tacrine), and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, and effective amount of a Tau kinase inhibitor, and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, and effective amount of one or more Tau kinase inhibitor (e.g., GSK3beta inhibitor, cdk5 inhibitor, ERK inhibitor), and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, and effective amount of one anti-Abeta vaccine (active immunization), and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, and effective amount of one or more APP ligands, and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds selected from the group consisting of: consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, and effective amount of one or more agents that upregulate insulin degrading enzyme and/or neprilysin, and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-

N23, O4_1, and P8_1, and effective amount of one or more cholesterol lowering agents (for example, statins such as Atorvastatin, Fluvastatin, Lovastatin, Mevastatin, Pitavastatin, Pravastatin, Rosuvastatin, Simvastatin, and cholesterol absorption inhibitor such as Ezetimibe), and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds selected from the group consisting of: consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, and effective amount of one or more fibrates (for example, clofibrate, Clofibride, Etofibrate, Aluminium Clofibrate), and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds selected from the group consisting of: consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, and effective amount of one or more LXR agonists, and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, and effective amount of one or more LRP mimics, and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, and effective amount of one or more 5-HT6 receptor antagonists, and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds selected from the group consisting of: consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, and effective amount of one or more nicotinic receptor agonists, and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, and effective amount of one or more H3 receptor antagonists, and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, and effective amount of one or more histone deacetylase inhibitors, and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, and effective amount of one or more hsp90 inhibitors, and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, and effective amount of one or more m1 muscarinic receptor agonists, and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, and effective amount of one or more 5-HT6 receptor antagonists mGluR1 or mGluR5 positive allosteric modulators or agonists, and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, and effective amount of one or more one mGluR2/3 antagonists, and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, and effective amount of one or more anti-inflammatory agents that can reduce neuroinflammation, and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, and effective amount of one or more Prostaglandin EP2 receptor antagonists, and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-

N23, O4_1, and P8_1, and effective amount of one or more PAI-1 inhibitors, and a pharmaceutically acceptable carrier.

Another embodiment of this invention is directed to a pharmaceutical composition comprising an effective amount of one or more (e.g., one) compounds selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, and effective amount of one or more agents that can induce Abeta efflux such as gelsolin, and a pharmaceutically acceptable carrier.

The compounds of formula I selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1 can be useful as gamma secretase modulators and can be useful in the treatment and prevention of diseases such as, for example, central nervous system disorders (such as Alzheimers disease and Downs Syndrome), and treating mild cognitive impairment, glaucoma, cerebral amyloid angiopathy, stroke, dementia, microgliosis, brain inflammation, and olfactory function loss.

Thus, another embodiment of this invention is directed to a method for modulating (including inhibiting, antagonizing and the like) gamma-secretase comprising administering an effective (i.e., therapeutically effective) amount of one or more (e.g., one) compounds of formula (I) to a patient in need of such treatment, said compound of formula (I) being selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

Another embodiment of this invention is directed to a method for modulating (including inhibiting, antagonizing and the like) gamma-secretase, comprising administering an effective (i.e., therapeutically effective) amount of a compound of formula (I) to a patient in need of treatment, said compound of formula (I) being selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

Another embodiment of this invention is directed to a method of treating one or more neurodegenerative diseases, comprising administering an effective (i.e., therapeutically effective) amount of one or more (e.g., one) compounds of formula (I) to a patient in need of treatment, said compound of formula (I) being selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

Another embodiment of this invention is directed to a method of treating one or more neurodegenerative diseases, comprising administering an effective (i.e., therapeutically effective) amount of a compound of formula (I) to a patient in need of treatment, said compound of formula (I) being selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

Another embodiment of this invention is directed to a method of inhibiting the deposition of amyloid protein (e.g., amyloid beta protein) in, on or around neurological tissue (e.g., the brain), comprising administering an effective (i.e., therapeutically effective) amount of one or more (e.g., one) compounds of formula (I) to a patient in need of treatment, said compound of formula (I) being selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

Another embodiment of this invention is directed to a method of inhibiting the deposition of amyloid protein (e.g., amyloid beta protein) in, on or around neurological tissue (e.g., the brain), comprising administering an effective (i.e., therapeutically effective) amount of a compound of formula (I) to a patient in need of treatment, said compound of formula (I) being selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective (i.e., therapeutically effective) amount of one or more (e.g., one) compounds of formula (I) to a patient

in need of treatment, said compound of formula (I) being selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective (i.e., therapeutically effective) amount of a compound of formula (I) to a patient in need of treatment, said compound of formula (I) being selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

Another embodiment of this invention is directed to a method of treating mild cognitive impairment, glaucoma, cerebral amyloid angiopathy, stroke, dementia, microgliosis, brain inflammation, or olfactory function loss, comprising administering an effective (i.e., therapeutically effective) amount of one or more (e.g., one) compounds of formula (I) to a patient in need of treatment, said compound of formula (I) being selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

Another embodiment of this invention is directed to a method of treating mild cognitive impairment, glaucoma, cerebral amyloid angiopathy, stroke, dementia, microgliosis, brain inflammation, or olfactory function loss, comprising administering an effective (i.e., therapeutically effective) amount of a compound of formula (I) to a patient in need of treatment, said compound of formula (I) being selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

This invention also provides combination therapies for (1) modulating gamma-secretase, or (2) treating one or more neurodegenerative diseases, or (3) inhibiting the deposition of amyloid protein (e.g., amyloid beta protein) in, on or around neurological tissue (e.g., the brain), or (4) treating Alzheimer's disease. The combination therapies are directed to methods comprising the administration

of one or more (e.g. one) compounds of formula (I), and the administration of one or more (e.g., one) other pharmaceutical active ingredients (e.g., drugs). The compounds of formula (I), and the other drugs can be administered separately (i.e., each is in its own separate dosage form), or the compounds of formula (I) can be combined with the other drugs in the same dosage form.

Thus, other embodiments of this invention are directed to any one of the methods of treatment, or methods of inhibiting, described herein, wherein the compounds of formula (I) are used in combination with an effective amount of one or more other pharmaceutically active ingredients selected from the group consisting of: BACE inhibitors (beta secretase inhibitors); muscarinic antagonists (e.g., m_1 agonists or m_2 antagonists); cholinesterase inhibitors (e.g., acetyl- and/or butyrylchlolinesterase inhibitors); gamma secretase inhibitors; gamma secretase modulators; HMG-CoA reductase inhibitors; non-steroidal anti-inflammatory agents; N-methyl-D-aspartate receptor antagonists; anti-amyloid antibodies; vitamin E; nicotinic acetylcholine receptor agonists; CB1 receptor inverse agonists or CB1 receptor antagonists; an antibiotic; growth hormone secretagogues; histamine H3 antagonists; AMPA agonists; PDE4 inhibitors; $GABA_A$ inverse agonists; inhibitors of amyloid aggregation; glycogen synthase kinase beta inhibitors; promoters of alpha secretase activity; PDE-10 inhibitors; Exelon (rivastigmine); Cognex (tacrine); Tau kinase inhibitors (e.g., GSK3beta inhibitors, cdk5 inhibitors, or ERK inhibitors); anti-Abeta vaccine; APP ligands; agents that upregulate insulin cholesterol lowering agents (for example, statins such as Atorvastatin, Fluvastatin, Lovastatin, Mevastatin, Pitavastatin, Pravastatin, Rosuvastatin, Simvastatin); cholesterol absorption inhibitors (such as Ezetimibe); fibrates (such as, for example, for example, clofibrate, Clofibride, Etofibrate, and Aluminium Clofibrate); LXR agonists; LRP mimics; nicotinic receptor agonists; H3 receptor antagonists; histone deacetylase inhibitors; hsp90 inhibitors; m1 muscarinic receptor agonists; 5-HT6 receptor antagonists; mGluR1; mGluR5; positive allosteric modulators or agonists; mGluR2/3 antagonists; anti-inflammatory agents that can reduce neuroinflammation; Prostaglandin EP2

receptor antagonists; PAI-1 inhibitors; and agents that can induce Abeta efflux such as gelsolin.

This invention also provides combination therapies for (1) modulating gamma-secretase, or (2) treating one or more neurodegenerative diseases, or (3) inhibiting the deposition of amyloid protein (e.g., amyloid beta protein) in, on or around neurological tissue (e.g., the brain), or (4) treating Alzheimer's disease. The combination therapies are directed to methods comprising the administration of one or more (e.g. one) compounds of formula (I) selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, and the administration of one or more (e.g., one) other pharmaceutical active ingredients (e.g., drugs). The compounds of formula 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, and the other drugs can be administered separately (i.e., each is in its own separate dosage form), or the compounds of formula 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1 can be combined with the other drugs in the same dosage form.

Thus, other embodiments of this invention are directed to any one of the methods of treatment, or methods of inhibiting, described herein, wherein the compounds of formula (I), selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1are used in combination with an effective amount of one or more other pharmaceutically active ingredients selected from the group consisting of: BACE inhibitors (beta secretase inhibitors), muscarinic antagonists (e.g., m_1 agonists or m_2 antagonists), cholinesterase inhibitors (e.g., acetyl- and/or butyrylchlolinesterase inhibitors); gamma secretase inhibitors; gamma secretase modulators; HMG-CoA reductase inhibitors; non-steroidal anti-inflammatory agents; N-methyl-D-aspartate receptor antagonists; anti-amyloid antibodies; vitamin E; nicotinic acetylcholine receptor agonists; CB1 receptor inverse agonists

or CB1 receptor antagonists; an antibiotic; growth hormone secretagogues; histamine H3 antagonists; AMPA agonists; PDE4 inhibitors; $GABA_A$ inverse agonists; inhibitors of amyloid aggregation; glycogen synthase kinase beta inhibitors; promoters of alpha secretase activity; PDE-10 inhibitors; Exelon (rivastigmine); Cognex (tacrine); Tau kinase inhibitors (e.g., GSK3beta inhibitors, cdk5 inhibitors, or ERK inhibitors); anti-Abeta vaccine; APP ligands; agents that upregulate insulin cholesterol lowering agents (for example, statins such as Atorvastatin, Fluvastatin, Lovastatin, Mevastatin, Pitavastatin, Pravastatin, Rosuvastatin, Simvastatin); cholesterol absorption inhibitors (such as Ezetimibe); fibrates (such as, for example, for example, clofibrate, Clofibride, Etofibrate, and Aluminium Clofibrate); LXR agonists; LRP mimics; nicotinic receptor agonists; H3 receptor antagonists; histone deacetylase inhibitors; hsp90 inhibitors; m1 muscarinic receptor agonists; 5-HT6 receptor antagonists; mGluR1; mGluR5; positive allosteric modulators or agonists; mGluR2/3 antagonists; anti-inflammatory agents that can reduce neuroinflammation; Prostaglandin EP2 receptor antagonists; PAI-1 inhibitors; and agents that can induce Abeta efflux such as gelsolin.

Other embodiments of this invention are directed to any one of the methods of treatment, or methods of inhibiting, described herein, wherein the compounds of formula (I), selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1 are used in combination with an effective amount of one or more other pharmaceutically active ingredients selected from the group consisting of: BACE inhibitors (beta secretase inhibitors), muscarinic antagonists (e.g., m_1 agonists or m_2 antagonists), cholinesterase inhibitors (e.g., acetyl- and/or butyrylchlolinesterase inhibitors); gamma secretase inhibitors; gamma secretase modulators; HMG-CoA reductase inhibitors; non-steroidal anti-inflammatory agents; N-methyl-D-aspartate receptor antagonists; anti-amyloid antibodies; vitamin E; nicotinic acetylcholine receptor agonists; CB1 receptor inverse agonists or CB1 receptor antagonists; an antibiotic; growth hormone secretagogues;

histamine H3 antagonists; AMPA agonists; PDE4 inhibitors; $GABA_A$ inverse agonists; inhibitors of amyloid aggregation; glycogen synthase kinase beta inhibitors; promoters of alpha secretase activity; PDE-10 inhibitors; and cholesterol absorption inhibitors (e.g., ezetimibe).

Other embodiments of this invention are directed to any one of the methods of treatment, or methods of inhibiting, described herein, wherein the compounds of formula (I), selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1 are used in combination with an effective amount of one or more other pharmaceutically active ingredients selected from the group consisting of: Exelon (rivastigmine); Cognex (tacrine); Tau kinase inhibitors (e.g., GSK3beta inhibitors, cdk5 inhibitors, or ERK inhibitors); anti-Abeta vaccine; APP ligands; agents that upregulate insulin cholesterol lowering agents (for example, statins such as Atorvastatin, Fluvastatin, Lovastatin, Mevastatin, Pitavastatin, Pravastatin, Rosuvastatin, Simvastatin);cholesterol absorption inhibitors (such as Ezetimibe); fibrates (such as, for example, for example, clofibrate, Clofibride, Etofibrate, and Aluminium Clofibrate); LXR agonists; LRP mimics; nicotinic receptor agonists; H3 receptor antagonists; histone deacetylase inhibitors; hsp90 inhibitors; m1 muscarinic receptor agonists; 5-HT6 receptor antagonists; mGluR1; mGluR5; positive allosteric modulators or agonists; mGluR2/3 antagonists; anti-inflammatory agents that can reduce neuroinflammation; Prostaglandin EP2 receptor antagonists; PAI-1 inhibitors; and agents that can induce Abeta efflux such as gelsolin.

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective (i.e., therapeutically effective) amount of one or more (e.g., one) compounds of formula (I) selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, in combination with an effective (i.e., therapeutically effective) amount of one or more cholinesterase inhibitors (such as, for example, (±)-2,3-dihydro-5,6-

dimethoxy-2-[[1-(phenylmethyl)-4-piperidinyl]methyl]-1 *H* -inden-1-one hydrochloride, i.e., donepezil hydrochloride, available as the Aricept® brand of donepezil hydrochloride), to a patient in need of treatment.

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective (i.e., therapeutically effective) amount of a compound of formula (I) selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, in combination with an effective (i.e., therapeutically effective) amount of one or more (e.g., one) cholinesterase inhibitors (such as, for example, (±)-2,3-dihydro-5,6-dimethoxy-2-[[1-(phenylmethyl)-4-piperidinyl]methyl]-1 *H* -inden-1-one hydrochloride, i.e., donepezil hydrochloride, available as the Aricept® brand of donepezil hydrochloride), to a patient in need of treatment.

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective (i.e., therapeutically effective) amount of one or more (e.g., one) compounds of formula (I) selected from the group consisting of: in combination with an effective (i.e., therapeutically effective) amount of one or more compounds selected from the group consisting of Aβ antibody inhibitors, gamma secretase inhibitors and beta secretase inhibitors.

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective (i.e., therapeutically effective) amount of one or more (e.g., one) compounds of formula (I) selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, in combination with an effective (i.e., therapeutically effective) amount of one or more BACE inhibitors.

Another embodiment of this invention is directed to a method of treating Alzheimer's disease, comprising administering an effective (i.e., therapeutically effective) amount of a compound of formula (I) selected from the group consisting

of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, in combination with an effective (i.e., therapeutically effective) amount of one or more BACE inhibitors.

Another embodiment of this invention is directed to a method of treating Downs syndrome, comprising administering an effective (i.e., therapeutically effective) amount of one or more (e.g., one) compounds of formula (I) selected fromt the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1 to a patient in need of treatment.

Another embodiment of this invention is directed to a method of treating Downs syndrome, comprising administering an effective (i.e., therapeutically effective) amount of a compound of formula (I) selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, to a patient in need of treatment.

Another embodiment of this invention is directed to a method of treating Downs syndrome, comprising administering an effective (i.e., therapeutically effective) amount of one or more (e.g., one) compounds of formula (I) selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, in combination with an effective (i.e., therapeutically effective) amount of one or more cholinesterase inhibitors (such as, for example, (±)-2,3-dihydro-5,6-dimethoxy-2-[[1-(phenylmethyl)-4-piperidinyl]methyl]-1 *H* -inden-1-one hydrochloride, i.e., donepezil hydrochloride, available as the Aricept® brand of donepezil hydrochloride), to a patient in need of treatment.

Another embodiment of this invention is directed to a method of treating Downs syndrome, comprising administering an effective (i.e., therapeutically effective) amount of a compound of formula (I) selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1, in combination with an

effective (i.e., therapeutically effective) amount of one or more (e.g., one) cholinesterase inhibitors (such as, for example, (±)-2,3-dihydro-5,6-dimethoxy-2-[[1-(phenylmethyl)-4-piperidinyl]methyl]-1 *H* -inden-1-one hydrochloride, i.e., donepezil hydrochloride, available as the Aricept® brand of donepezil hydrochloride), to a patient in need of treatment.

Another embodiment of this invention is directed to combinations (i.e., pharmaceutical compositions) comprising an effective (i.e., therapeutically effective) amount of one or more (e.g., one) compounds of formula (I) selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1 in combination with an effective (i.e., therapeutically effective) amount of one or more compounds selected from the group consisting of cholinesterase inhibitors (such as, for example, (±)-2,3-dihydro-5,6-dimethoxy-2-[[1-(phenylmethyl)-4-piperidinyl]methyl]-1 *H* -inden-1-one hydrochloride, i.e., donepezil hydrochloride, available as the Aricept® brand of donepezil hydrochloride), Aβ antibody inhibitors, gamma secretase inhibitors and beta secretase inhibitors. The pharmaceutical compositions also comprise a pharmaceutically acceptable carrier.

This invention also provides a kit comprising, in separate containers, in a single package, pharmaceutical compositions for use in combination, wherein one container comprises an effective amount of one or more (e.g., one) compounds of formula (I) (e.g., compounds selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1 in a pharmaceutically acceptable carrier, and another container (i.e., a second container) comprises an effective amount of another pharmaceutically active ingredient (as described above), the combined quantities of the compounds of formula (I) and the other pharmaceutically active ingredient being effective to: (a) treat Alzheimer's disease, or (b) inhibit the deposition of amyloid protein (e.g., amyloid beta protein) in, on or around neurological tissue (e.g., the brain), or (c) treat neurodegenerative diseases, or (d) modulate the activity of gamma-secretase.

This invention also provides a kit comprising, in separate containers, in a single package, pharmaceutical compositions for use in combination, wherein one container comprises an effective amount of a compound selected from the group consisting of the compounds of formulas (I) (e.g. the compounds selected from the group consisting of: 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1) in a pharmaceutically acceptable carrier, and another container (i.e., a second container) comprises an effective amount of another pharmaceutically active ingredient (as described above), the combined quantities of the compound of formulas (I) and the other pharmaceutically active ingredient being effective to: (a) treat Alzheimer's disease, or (b) inhibit the deposition of amyloid protein (e.g., amyloid beta protein) in, on or around neurological tissue (e.g., the brain), or (c) treat neurodegenerative diseases, or (d) modulate the activity of gamma-secretase.

Other embodiments of this invention are directed to any one of the above methods of treatment, pharmaceutical compositions, or kits wherein the compound of formula I is any one of the compounds 1 to 24, B10-B21, C5-C10, D9-D26, G4-G9, H3-H11, I5, I6, I6A, I7, I8, I8A, J4-J9, K1-K6, L4-L8, M5-M15, N6-N23, O4_1, and P8_1.

Examples of cholinesterase inhibitors are tacrine, donepezil, rivastigmine, galantamine, pyridostigmine and neostigmine, with tacrine, donepezil, rivastigmine and galantamine being preferred.

Examples of m_1 agonists are known in the art. Examples of m_2 antagonists are also known in the art; in particular, m_2 antagonists are disclosed in US patents 5,883,096; 6,037,352; 5,889,006; 6,043,255; 5,952,349; 5,935,958; 6,066,636; 5,977,138; 6,294,554; 6,043,255; and 6,458,812; and in WO 03/031412, all of which are incorporated herein by reference.

Examples of BACE inhibitors include those described in: US2005/0119227 published 06/02/2005 (see also WO2005/016876 published 02/24/2005), US2005/0043290 published 02/24/2005 (see also WO2005/014540 published

02/17/2005), WO2005/058311 published 06/30/2005 (see also US2007/0072852 published 03/29/2007), US2006/0111370 published 05/25/2006 (see also WO2006/065277 published 06/22/2006), US Application Serial No. 11/710582 filed 02/23/2007, US2006/0040994 published 02/23/2006 (see also WO2006/014762 published 02/09/2006), WO2006/014944 published 02/09/2006 (see also US2006/0040948 published 02/23/2006), WO2006/138266 published 12/28/2006 (see also US2007/0010667 published 01/11/2007), WO2006/138265 published 12/28/2006, WO2006/138230 published 12/28/2006, WO2006/138195 published 12/28/2006 (see also US2006/0281729 published 12/14/2006), WO2006/138264 published 12/28/2006 (see also US2007/0060575 published 03/15/2007), WO2006/138192 published 12/28/2006 (see also US2006/0281730 published 12/14/2006), WO2006/138217 published 12/28/2006 (see also US2006/0287294 published 12/21/2006), US2007/0099898 published 05/03/200 (see also WO2007/050721 published 05/03/2007), WO2007/053506 published 05/10/2007 (see also US2007/099875 published 05/03/2007), U.S. Application Serial No. 11/759336 filed 06/07/2007, U.S. Application Serial No. 60/874362 filed 12/12/2006, and U.S. Application Serial No. 60/874419 filed 12/12/2006, the disclosures of each being incorporated incorporated herein by reference thereto.

For preparing pharmaceutical compositions from the compounds described by this invention, inert, pharmaceutically acceptable carriers can be either solid or liquid. Solid form preparations include powders, tablets, dispersible granules, capsules, cachets and suppositories. The powders and tablets may be comprised of from about 5 to about 95 percent active ingredient. Suitable solid carriers are known in the art, e.g., magnesium carbonate, magnesium stearate, talc, sugar or lactose. Tablets, powders, cachets and capsules can be used as solid dosage forms suitable for oral administration. Examples of pharmaceutically acceptable carriers and methods of manufacture for various compositions may be found in A. Gennaro (ed.), *Remington's Pharmaceutical Sciences,* 18th Edition, (1990), Mack Publishing Co., Easton, Pennsylvania.

Liquid form preparations include solutions, suspensions and emulsions. As an example may be mentioned water or water-propylene glycol solutions for parenteral injection or addition of sweeteners and opacifiers for oral solutions, suspensions and emulsions. Liquid form preparations may also include solutions for intranasal administration.

Aerosol preparations suitable for inhalation may include solutions and solids in powder form, which may be in combination with a pharmaceutically acceptable carrier, such as an inert compressed gas, e.g. nitrogen.

Also included are solid form preparations that are intended to be converted, shortly before use, to liquid form preparations for either oral or parenteral administration. Such liquid forms include solutions, suspensions and emulsions.

The compounds of the invention may also be deliverable transdermally. The transdermal compositions can take the form of creams, lotions, aerosols and/or emulsions and can be included in a transdermal patch of the matrix or reservoir type as are conventional in the art for this purpose.

The compounds of this invention may also be delivered subcutaneously.

Preferably the compound is administered orally.

Preferably, the pharmaceutical preparation is in a unit dosage form. In such form, the preparation is subdivided into suitably sized unit doses containing appropriate quantities of the active component, e.g., an effective amount to achieve the desired purpose.

The quantity of active compound in a unit dose of preparation may be varied or adjusted from about 1 mg to about 100 mg, preferably from about 1 mg to about 50 mg, more preferably from about 1 mg to about 25 mg, according to the particular application.

The actual dosage employed may be varied depending upon the requirements of the patient and the severity of the condition being treated. Determination of the proper dosage regimen for a particular situation is within the skill of the art. For convenience, the total daily dosage may be divided and administered in portions during the day as required.

The amount and frequency of administration of the compounds of the invention and/or the pharmaceutically acceptable salts thereof will be regulated according to the judgment of the attending clinician considering such factors as age, condition and size of the patient as well as severity of the symptoms being treated. A typical recommended daily dosage regimen for oral administration can range from about 1 mg/day to about 500 mg/day, preferably 1 mg/day to 200 mg/day, in two to four divided doses.

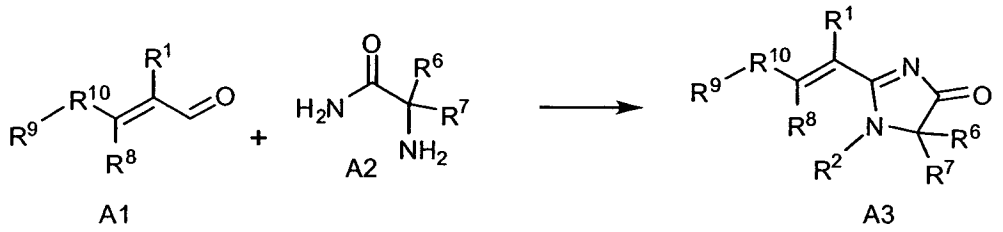
Another aspect of this invention is a kit comprising a therapeutically effective amount of at least one compound of Formula I, or a pharmaceutically acceptable salt, solvate, ester or prodrug of said compound and a pharmaceutically acceptable carrier, vehicle or diluent.

Yet another aspect of this invention is a kit comprising an amount of at least one compound of Formula I, or a pharmaceutically acceptable salt, solvate, ester or prodrug of said compound and an amount of at least one additional agent listed above, wherein the amounts of the two or more ingredients result in desired therapeutic effect.

The invention disclosed herein is exemplified by the following illustrative example which should not be construed to limit the scope of the disclosure. Alternative mechanistic pathways and analogous structures will be apparent to those skilled in the art.

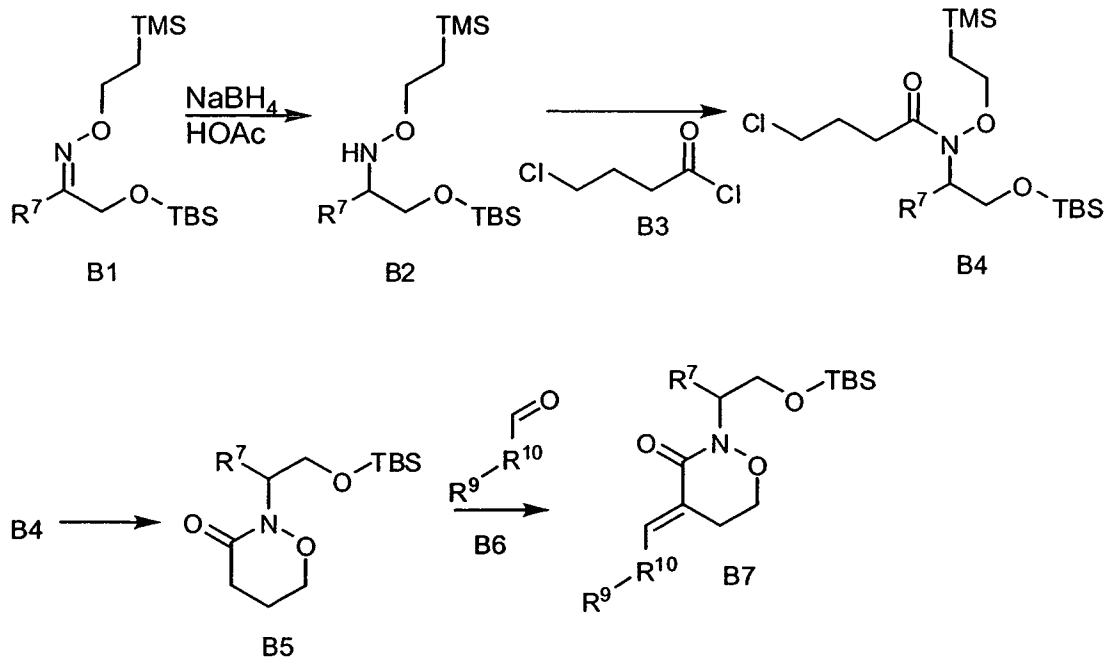
Where NMR data are presented, ^1H spectra were obtained on either a Varian VXR-200 (200 MHz, ^1H), Varian Gemini-300 (300 MHz) or XL-400 (400 MHz) and are reported as ppm down field from Me_4Si with number of protons, multiplicities, and coupling constants in Hertz indicated parenthetically. Where LC/MS data are presented, analyses was performed using an Applied Biosystems API-100 mass spectrometer and Shimadzu SCL-10A LC column: Altech platinum C18, 3 micron, 33mm x 7mm ID; gradient flow: 0 min – 10% CH_3CN, 5 min – 95% CH_3CN, 7 min – 95% CH_3CN, 7.5 min – 10% CH_3CN, 9 min – stop. The observed parent ion is given.

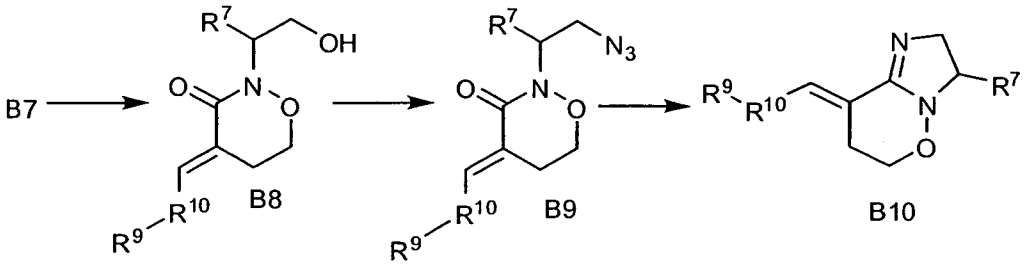
Method A



To a dichloromethane solution of **A1** (R^1 = H, R^8 = H, R^{10} = 3-(methoxy)phenyl, R^9 = 4-(4-Me-imidazol-yl) and **A2** (R^6 = Me, R^7 = 4-fluorophenyl) is added N-chlorosuccinimide and the reaction mixture is stirred overnight and then is worked up to give compound **A3** (R^2 = H, R^8 = H, R^{10} = 3-(methoxy)phenyl, R^9 = 4-(4-Me-imidazol-yl), R^6 = Me, R^7 = 4-fluorophenyl).

Method B





Method B, Step 1;

Compound **B1** (R^7 = p-F-Ph), which is obtained from the corresponding ketone and oxime, is reduced to hydroxylamine using $NaBH_4$ and HOAc as the solvent to give compound **B2** (R^7 = p-F-Ph).

Method B, Step 2;

Compound **B2** (R^7 = p-F-Ph) is converted to **B4** (R^7 = p-F-Ph) using standard amide formation conditions.

Method B, Step 3;

Compound **B4** (R^7 = p-F-Ph) is treated with 1.5 eq. of TBAF to generate compound **B5** (R^7 = p-F-Ph) through selective deprotection of trimethylsilylethyl group which is followed by cyclization.

Method B, Step 4

Compound **B5** (R^7 = p-F-Ph) is treated with LDA followed by compound **B6** (R^9 = 4-(4'-methylimidazol-1-yl) and R^{10} = 3-MeOPhenyl) to give compound **B7** (R^7 = p-F-Ph, R^9 = 4-(4-methylimidazol-1-yl) and R^{10} = 3-MeOPhenyl).

Method B, Step 5

Compound **B7** (R^7 = p-F-Ph, R^9 = 4-(4-methylimidazol-1-yl) and R^{10} = 3-MeOPhenyl) is treated with TFA to give compound **B8** (R^7 = p-F-Ph, R^9 = 4-(4-methylimidazol-1-yl) and R^{10} = 3-MeOPhenyl).

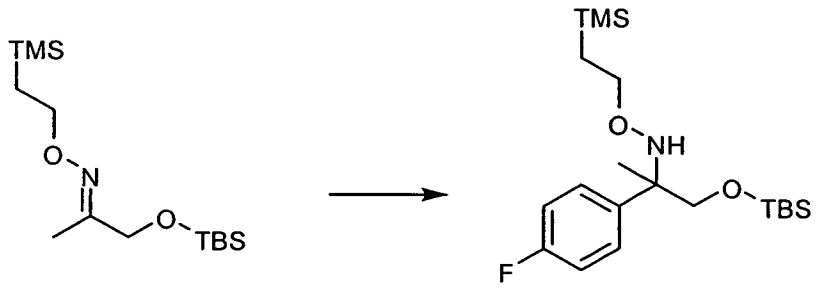
Method B, Step 6

Compound **B8** (R^7 = p-F-Ph, 4-(4-methylimidazol-1-yl) and R^{10} = 3-MeOPhenyl) is treated with DPPA to give compound **B9** (R^7 = p-F-Ph, R^9 = 4-(4'-methylimidazol-1-yl) and R^{10} = 3-MeOPhenyl)

Method B, Step 7

Compound **B9** (R^7 = p-F-Ph, R^9 = 4-(4'-methylimidazol-1-yl) and R^{10} = 3-MeOPhenyl) is treated with tributylphosphine in reflux toluene to give compound **B10A** (R^7 = p-F-Ph, R^9 = 4-(4'-methylimidazol-1-yl) and R^{10} = 3-MeOPhenyl).

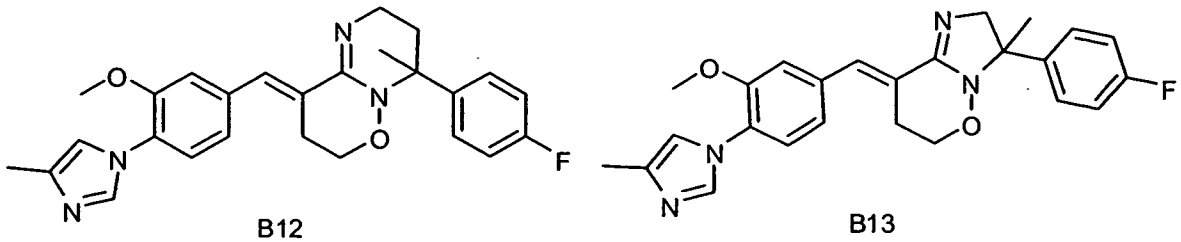
Alternatively, Analogs of **B2** can be generated using a method similar to the following: *Diastereoselective additions of organolithium reagents to the C=N bond of protected erythrulose oxime ethers. Synthesis of enantiopure α,α-disubstituted .α-amino acids* Marco, J. Alberto; Carda, Miguel; Murga, Juan; Gonzalez, Florenci; Falomir, Eva. *Tetrahedron Letters* (1997), **38**(10), 1841-1844.



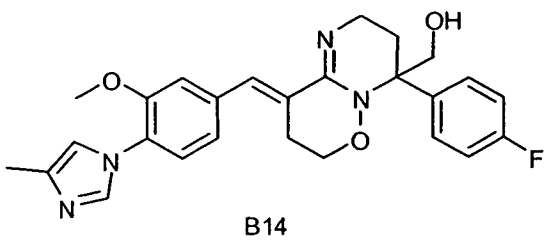
B1a B2a

To an ether solution of **B1a** is added phenyl lithium to give compound **B2a** which is applied to the rest of the synthetic route in Method B.

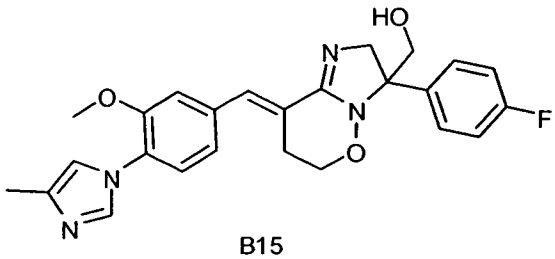
The following compounds are synthesized using method similar to Method B.



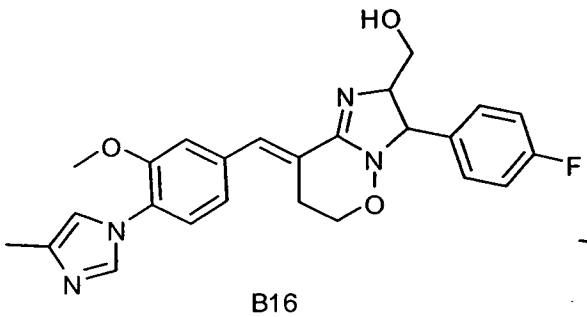
B12 B13



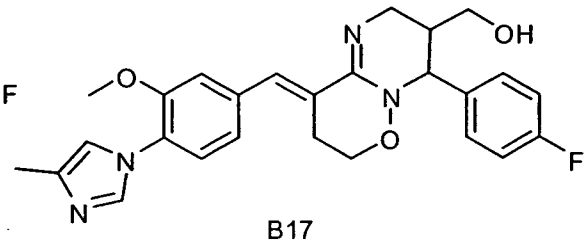
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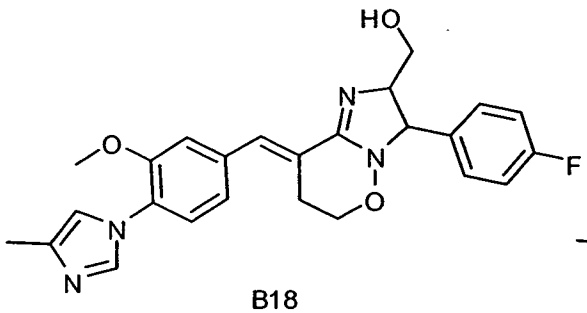
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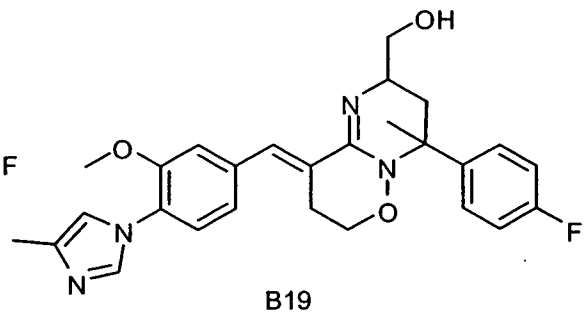
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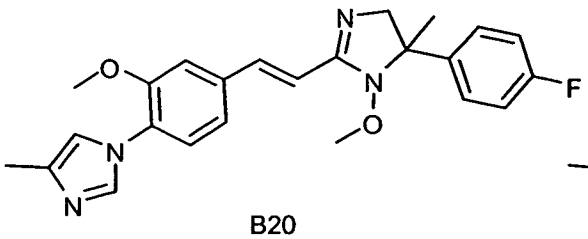
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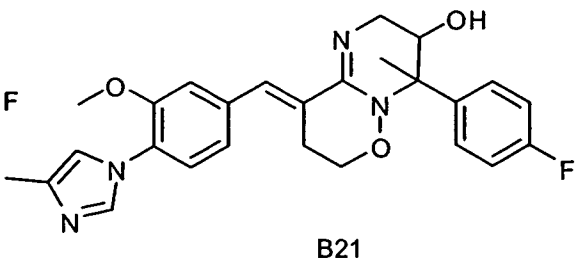
B18



B19

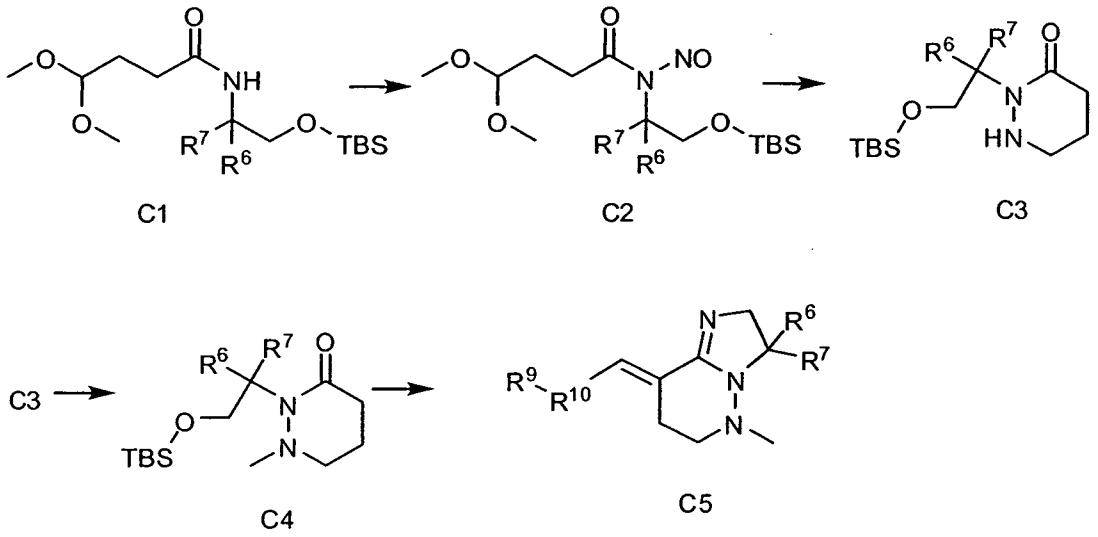


B20



B21

Method C



Method C, Step 1

Compound **C1** (R^6=Me, R^7 = p-F-phenyl), which is obtained using corresponding acid and amine through amide coupling chemistry, is converted to N-nitroso product **C2** (R^6=Me, R^7 = p-F-phenyl) using conditions similar to the following literature: *Enantioselective syntheses of carbocyclic ribavirin and its analogs: linear versus convergent approaches.* Kuang, R.; Ganguly, A. K.; Chan, T.-M.; Pramanik, B. N.; Blythin, D. J.; McPhail, A. T.; Saksena, A. K. *Tetrahedron Letters* (2000), **41**(49), 9575-9579.

Method C, Step 2

C2 (R^6=Me, R^7=p-F-phenyl) is treated with Zn/HOAc/H_2O to give compound **C3** (R^6=Me, R^7=p-F-phenyl).

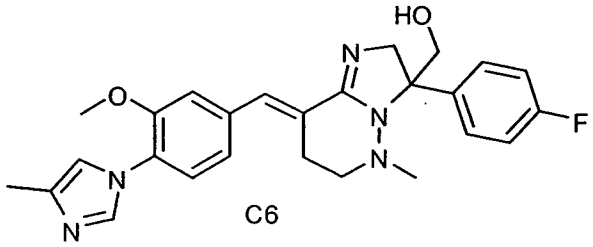
Method C, Step 3

Compound **C3** (R^6=Me, R^7=p-F-phenyl) is treated with NaH which is followed by MeI to give compound **C4** (R^6=Me, R^7 = p-F-phenyl).

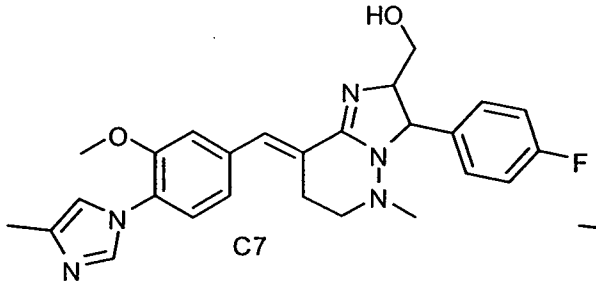
Method C, Step 4

Compound **C4** (R^6=Me, R^7 = p-F-phenyl) is converted to compound **C5** (R^6=Me, R^7 = p-F-phenyl, R^9=4-(4-methylimidazol-1-yl), R^{10} = 3-MeOphenyl) using a procedure similar to Method B Steps 4, 5, 6 and 7.

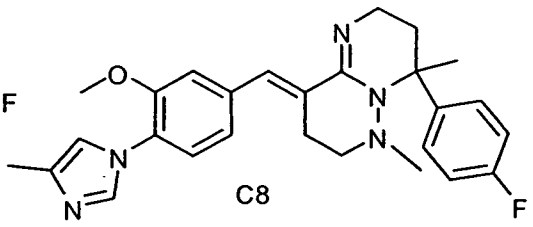
The following compounds are obtained using methods similar to Method C:



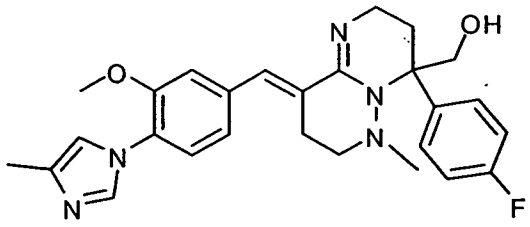
C6



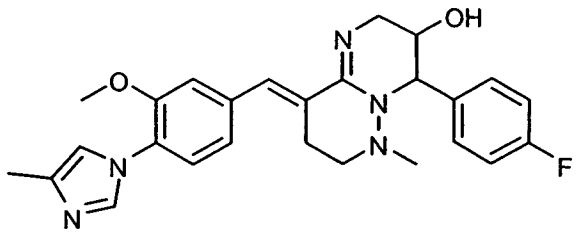
C7



C8

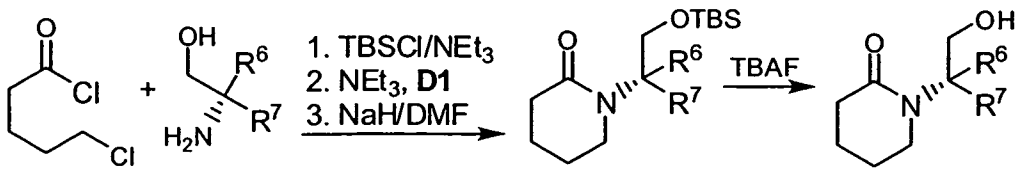


C9

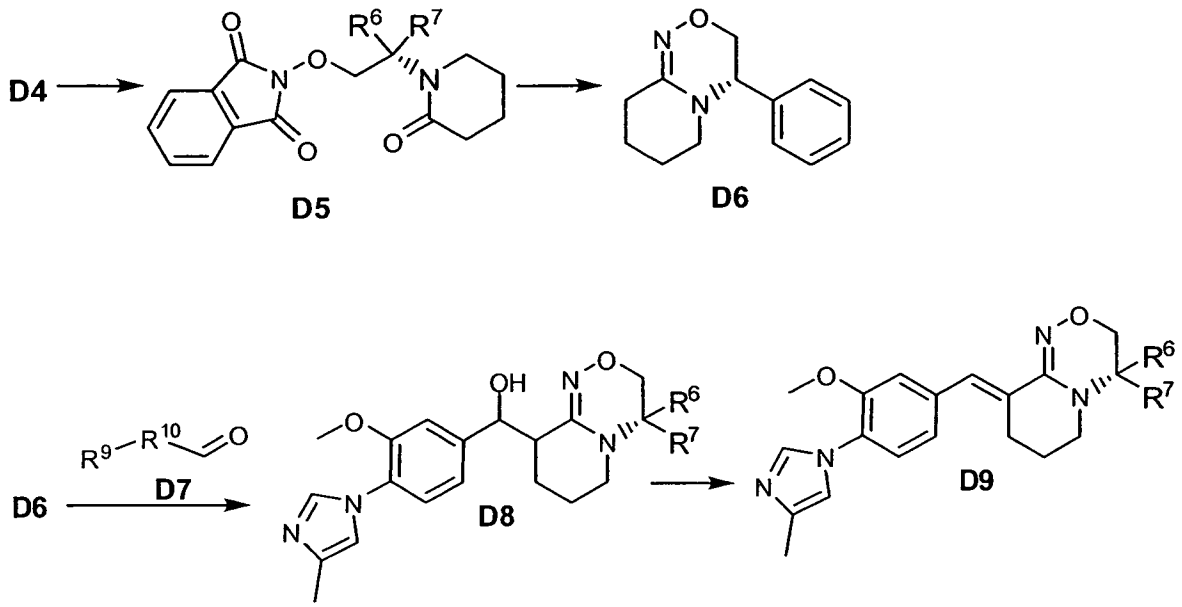


C10

Method D



D1 **D2** **D3** **D4**



Method D, STEP 1:

TBSCl (5.6 g, 37.2 mmol) in CH_2Cl_2 (10 mL) was added dropwise to a solution of **D2** ((S), R^6 = H, R^7 = Ph) (5.1 g, 37.2 mmol), NEt_3 (10.4 mL, 74.4 mmol) and DMAP (20 mg) in CH_2Cl_2 (20) at room temperature. The mixture was then stirred over night. The mixture was diluted with CH_2Cl_2 (200 mL) and NH_4Cl solution (30 mL). The organic layer was washed with water, brine, dried over $MgSO_4$, and concentrated to give the crude product (6.0 g) which was taken up in CH_2Cl_2 (50 mL) and treated with NEt_3 (3.8 mL, 27.45 mmol). Compound **D1** was added dropwise to the mixture at 0°C. The resulting reaction mixture was stirred at room temperature over night. The mixture was diluted with EtOAc (200 mL) and $NaHCO_3$ solution (40 mL). The organic layer was washed with water, brine, dried over $MgSO_4$, and concentrated to give the crude product. The crude residue was dissolved in DMF (50 mL) and treated with NaH (1.25 g, 28.6 mmol, 60% in paraffin) at room temperature. The resulting mixture was then heated at 60°C over night. The mixture was diluted with EtOAc (200 mL) and aq. NH_4Cl solution (40 mL). The organic layer was washed with water (3x), brine, dried over $MgSO_4$, and concentrated to give the crude product which was purified by column

chromatography eluting with EtOAc/hexanes to yield compound **D3** ((S), R^6 = H, R^7= Ph; 5.0 g).

Method D, STEP 2:

TBAF (3.15 mL, 3.15 mmol, 1.0 M in THF) was added dropwise to a solution of compound **D3** ((S), R^6 = H, R^7 = Ph; 0.7 g, 2.1 mmol) in THF (10 mL). The mixture was stirred for 2 hours before it was diluted with EtOAc (100 mL) and HCl solution (20 mL, 0.5 M). The organic layer was washed with water, brine, dried over $MgSO_4$, and concentrated to give the crude product which was purified by column chromatography eluting with EtOAc/hexanes to yield hydroxyl compound **D4** ((S), R^6 = H, R^7 = Ph; 0.44 g).

Method D, STEP 3:

PBu_3 (0.2 mL, 0.82 mmol) was added to a solution of compound **D4** ((S), R^6 = H, R^7 = Ph; 0.1 g, 0.457 mmol), ADDP (0.2 g, 0.82 mmol) and phthalimide (0.12 g, 0.685 mmol) in THF (5 mL) at room temperature. The resulting mixture was then heated at 80°C for 2 hours. The mixture was diluted with EtOAc (100 mL) and $NaHCO_3$ solution (20 mL). The organic layer was washed with $NaHCO_3$ solution, brine, dried over $MgSO_4$, and concentrated to give the crude product which was purified by column chromatography eluting with EtOAc/hexanes to yield compound **D5** ((S), R^6 = H, R^7 = Ph; 0.1 g, 0.457 mmol, 0.14 g).

Method D, STEP 4,

$NH_2NH_2.xH_2O$ (54.4 uL, 1.12 mmol) was added to a solution of compound **D5** ((S), R^6 = H, R^7 = Ph; 0.14 g, 0.373 mmol) in MeOH (2.0 mL) and CH_2Cl_2 (2.0 mL) at room temperature. The resulting mixture was stirred for 2 hours before it was diluted with EtOAc (50 mL) and $NaHCO_3$ solution (10 mL). The organic layer was washed with water, brine, dried over $MgSO_4$, and concentrated to give the crude product which was dissolved in EtOH (3.0 mL) and treated with P_2O_5 (0.53 g, 3.72 mmol). The resulting mixture was heated at 80 °C over night. The mixture

was cooled and diluted with EtOAc (50 mL) and $NaHCO_3$ solution (20 mL). The organic layer was washed with $NaHCO_3$ solution, brine, dried over $MgSO_4$, and concentrated to give the crude product which was purified by column chromatography eluting with EtOAc/hexanes to yield compound **D6** ((S), R^6 = H, R^7 = Ph; 46 mg).

^1H NMR ($CDCl_3$) δ: 7.43-7.32 (m, 5 H); 4.30 (dd, J = 5.0, 4.0 Hz, 1 H); 4.16 (AB quart, J = 11.5, 4.0 Hz, 1 H); 3.96 (AB quart, J = 11.5, 5.0 Hz, 1 H); 3.07 (m, 1 H); 2.89 (m, 1 H); 2.50 (m, 2 H); 1.84 (m, 2 H); 1.76 (m, 2 H). Electrospray LCMS: Obs. Mass: 217.2.

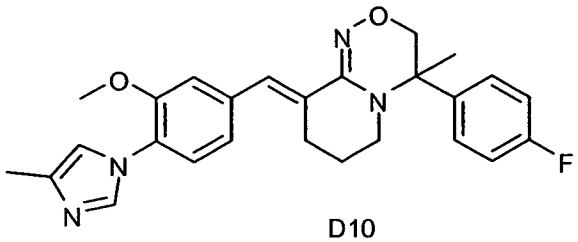
Method D, STEP 5,

t-BuLi (0.188 mL, 0.32 mmol, 1.7 M) was added dropwise to a solution of compound **D6** ((S), R^6 = H, R^7 = Ph; 46 mg, 0.21 mmol) in THF (1.5 mL) at -78 °C. The mixture was stirred for 45 minutes before compound **D7** (R^{10} = 3-MeO-Phenyl, R^9 = 4-(4-methylimidazol-1-yl)) was added in THF (1.0 mL) in fast drops. The resulting mixture was stirred for 2 hours before it was diluted with EtOAc (50 mL) and NH_4Cl solution (10 mL). The organic layer was washed with brine, dried over $MgSO_4$, and concentrated to give the crude product which was purified by column chromatography eluting with EtOAc/hexanes to yield compound **D8** ((S), R^6 = H, R^7 = Ph; R^{10} = 3-MeO-Phenyl, R^9 = 4-(4-methylimidazol-1-yl)).

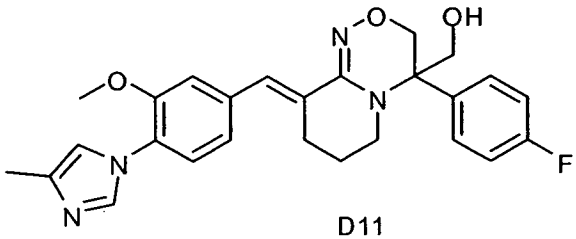
Method D, STEP 7,

Compound **D8** ((S), R^6 = H, R^7 = Ph; R^{10} = 3-MeO-Phenyl, R^9 = 4-(4-methylimidazol-1-yl)) will be dissolved in toluene and treated with p-TSA (10 mol%). The mixture will be heated at reflux condition with a Dean-Stark apparatus over night. The solvent will be removed and crude residue will be purified with column chromatography to give compound **D9** ((S), R^6 = H, R^7 = Ph; R^{10} = 3-MeO-Phenyl, R^9 = 4-(4-methylimidazol-1-yl)).

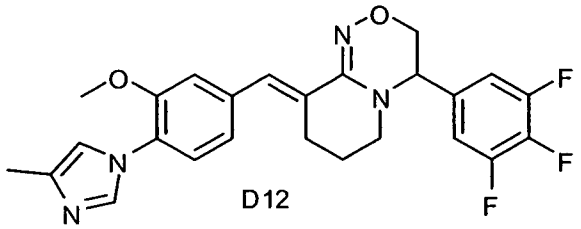
The following compounds are synthesized using methods similar to method D:



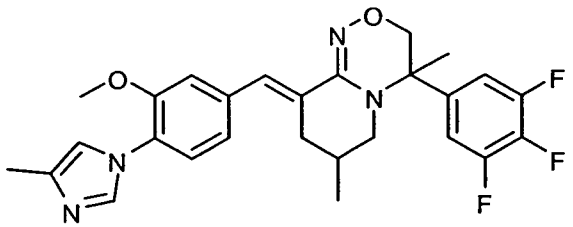
D10



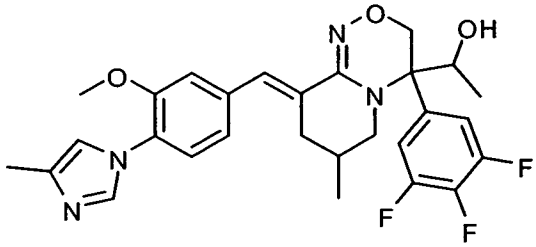
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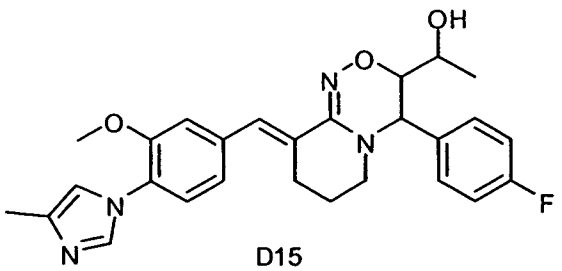
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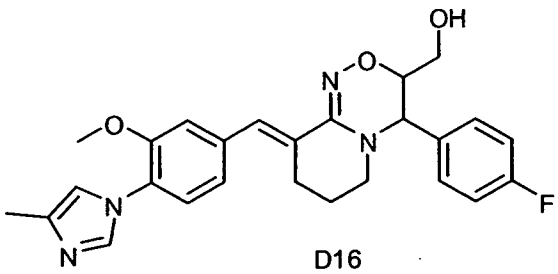
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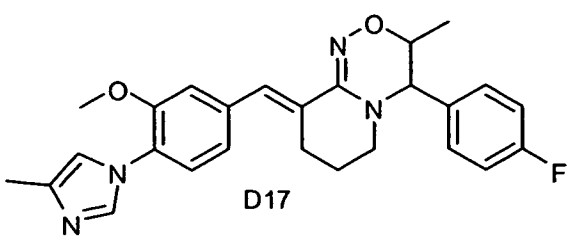
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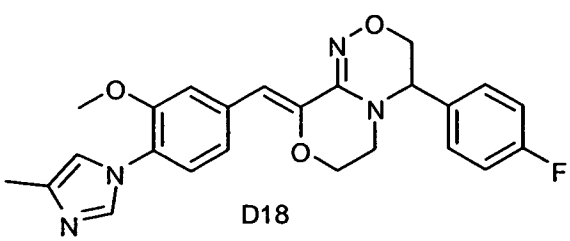
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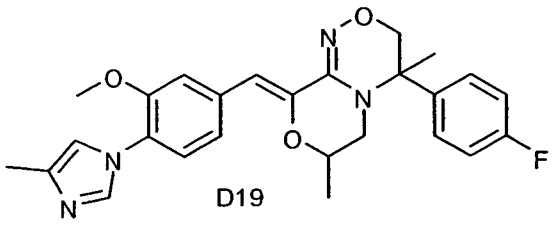
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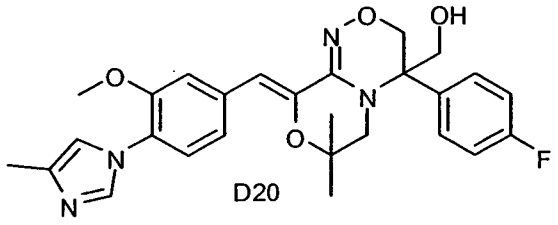
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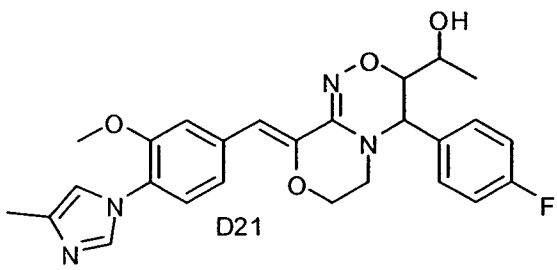
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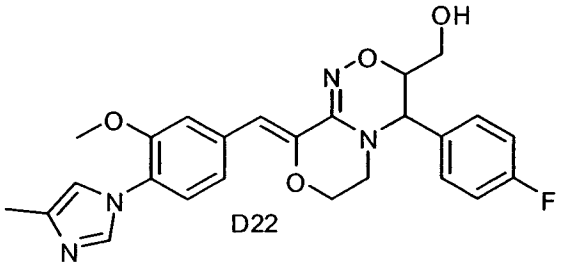
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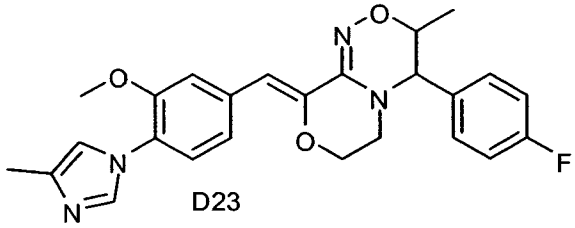
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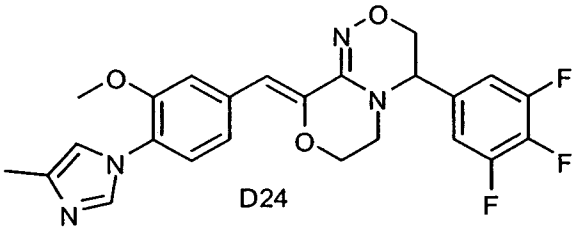
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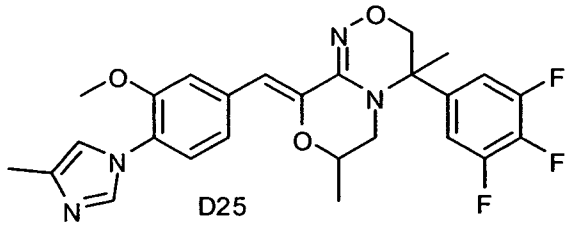
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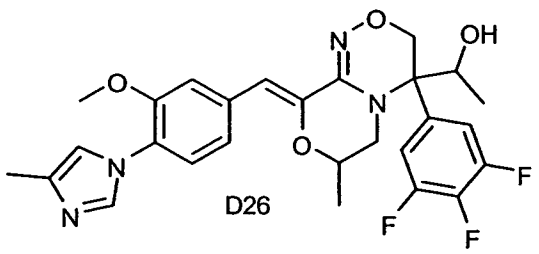
D23



D24

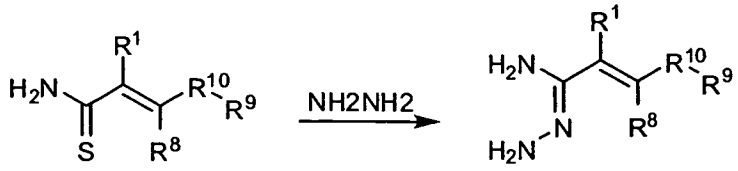


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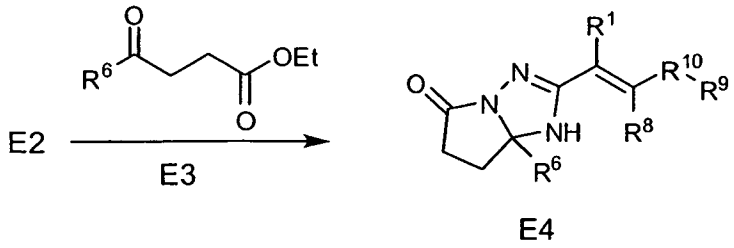


D26

Method E



E1 E2



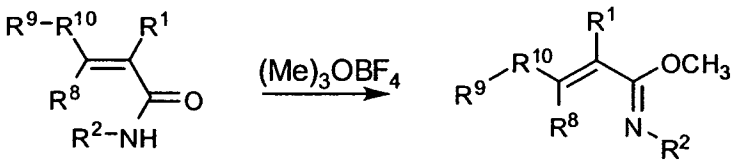
Method E, Step 1.

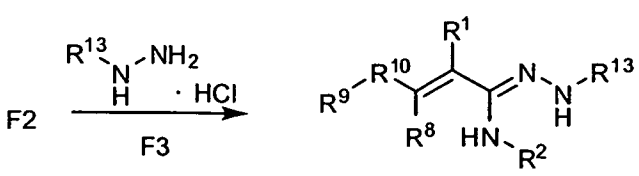
Compounds of **E1** (R^1 = R^8 = H, R^{10} = 3-MeOPhenyl, R^9 = 4-(4-Me-imidazol-1-yl)) are prepared from the corresponding thioamides or nitriles by treatment with hydrazine with a catalytic amount of acid in a solvent such as ethanol with heating.

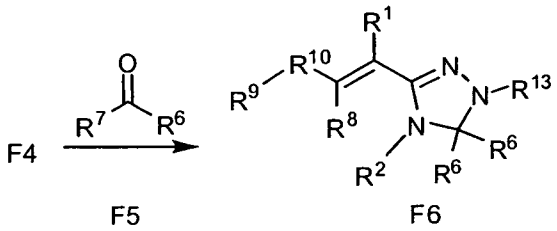
Method E, Step 2.

E1 (R^1 = R^8 = H, R^{10} = 3-MeOPhenyl, R^9 = 4-(4-Me-imidazol-1-yl)) is reacted with keto esters of **E3** (R^6 = p-F-phenyl) under dehydrating conditions such as treatment with a catyltic amount of acid (e.g. TsOH, or AcOH) in solvents such as Toluene or DCM. In some cases heating in toluene to remove water through azeotropic distillation will facilitate the reaction.to produce compounds **E4** (R^1 = R8 = H, R^{10} = 3-MeOPhenyl, R^9 = 4-(4-Me-imidazol-1-yl), R^6 = p-F-phenyl).

Method F.







Method F, Step1,

To a dichloromethane solution of **F1** (R^1 = H, R^2=H, R^8 = H, R^{10} = 3-(methoxy)phenyl, R^9 = 4-(4-Me-imidazol-1-yl) is added trimethyloxonium tetrafluoroborate, and the reaction mixture is strirred at toom temperature overnight. The solvent is evaporated to yield the crude iminoether B2 as its tetrafluoroborate salt. Optionally, the crude tetrafluoroborate salt is triturated with ether and the resulting precipitated tetrafluoroborate salt of **F2** (R^1 = H, R^2=H, R^8 = H, R^{10} = 3-(methoxy)phenyl, R^9 = 4-(4-Me-imidazol-1-yl) is filtered and is dried. This is converted to the free base by partionining between dichloromethane and excess 1M NaOH. The methylene chloride layer is dried over K_2CO_3 and is evaporated to give the free base of **F2** (R^1 = H, R^2=H, R^8 = H, R^{10} = 3-(methoxy)phenyl, R^9 = 4-(4-Me-imidazol-1-yl)), which is used immediately.

Method F, Step 2:

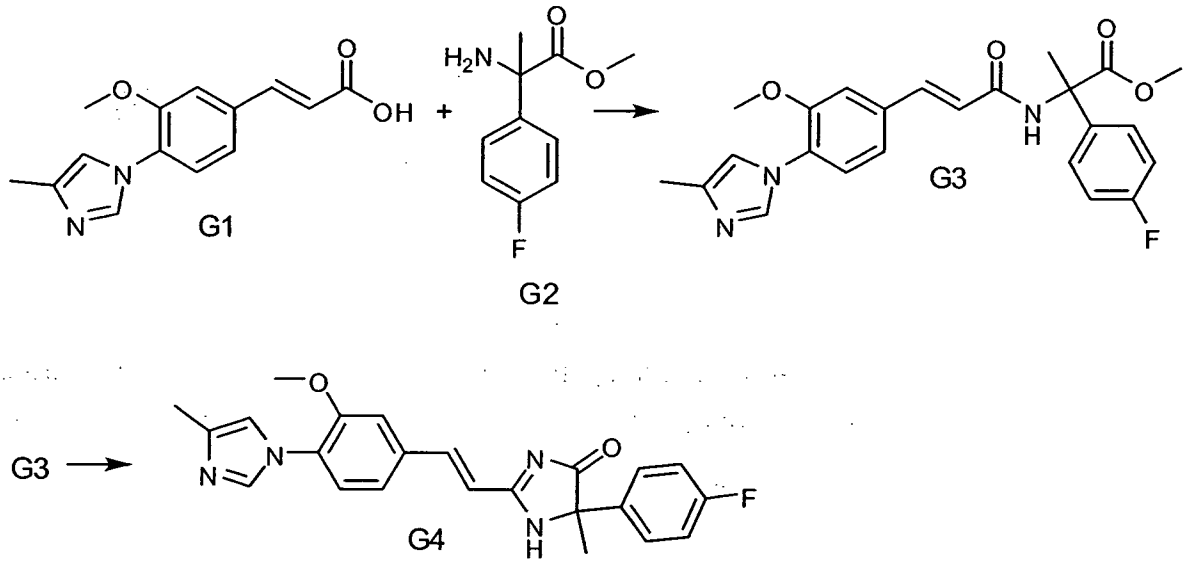
F2 (R^1 = H, R^2=H, R^8 = H, R^{10} = 3-(methoxy)phenyl, R^9 = 4-(4-Me-imidazol-1-yl)) is treated with hydrazine **F3** (R^{13}=H) optionally as the hydrochloride or hydrate in refluxing methanol overnight. The reaction mixture is neutralized with sodium bicarbonate, filtered and evaporated to give the crude amidohyrazide **F4** (R^1 = H, R^2=H, R^{13}=H, R^8 = H, R^{10} = 3-(methoxy)phenyl, R^9 = 4-(4-Me-imidazol-1-yl)).

Method F, Step 3:

F4 (R^1 = H, R^2=H, R^{13}=H, R^8 = H, R^{10} = 3-(methoxy)phenyl, R^9 = 4-(4-Me-imidazol-1-yl)) is treated with ketone **F5** (R^6 = Me, R^7 = 4-fluorophenyl) and p-

toluenesulfonic acid in refluxing ethanol overnight to give, after neutralization and evaporation, compound **F6** (R^1 = H, R^2=H, R^{13}=H, R^8 = H, R^{10} = 3-(methoxy)phenyl, R^9 = 4-(4-Me-imidazol-1-yl), R^6 = Me, R^7 = 4-fluorophenyl).

Method G



Method G, Step 1

Compound **G1** (200 mg), generated from the corresponding aldehyde and carbomethoxymethyl diethylphosphonate, followed by LiOH hydrolysis, was reacted with compound **G2** (230 mg) with HOBT (135 mg) and EDCI (197 mg) in 10 mL DMF to give compound **G3** after routine work-up and purification in 66% yield.

^{1}H NMR of G3 ($CDCl_3$, ppm); δ 7.35 s, 1H; 7.55 d, 1H; 7.45 m, 2H; 7.25, d, 1H; 7.15, m, 3H; 7.10, m, 1H; 6.95, s, 1H; 6.5, s, 1H; 3.9 s, 3H; 3.75 s, 3H; 2.3 s, 3H; 2.15 s, 3H.

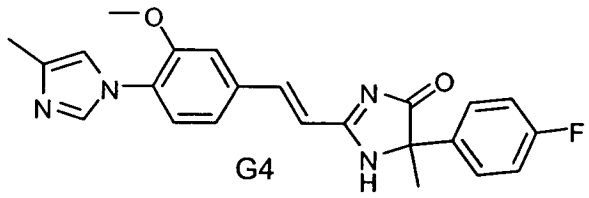
Method G, Step 2

A solution of ammonia in THF was treated with Me_3Al in hexane before compound **G3** was added slowly. The final mixture was refluxed overnight before

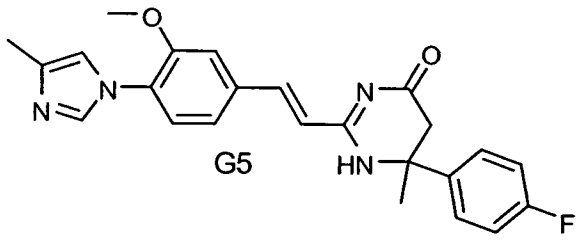
it was quenched with sat. aqueous ammonium chloride and extracted with EtOAc. The organic layer was washed with brine, dried over and solvent evaporated. The residue was chromatographed to give the corresponding amide. The product amide was dissolved in 1mL EtOH and 2mL of 1N NaOH. After the starting material disappeared, the reaction mixture was partitioned in DCM/sat. aq ammonim chloride. The organic layer was dried and solvent evaporated. The residue was chromatographed to give compound **G4.**

^{1}H NMR of G4 ($CDCl_3$, ppm); δ 10.5 br. 1H; 7.9, s, 1H, 7.6 m, 2H, 7.4, m, 1H; 7.3, m 2H; 7.2, m, 1H; 7.05, m, 2H; 7.0 s, 1H; 6.9 m 1H; 3.9 s, 3H; 2.3 s, 3H.

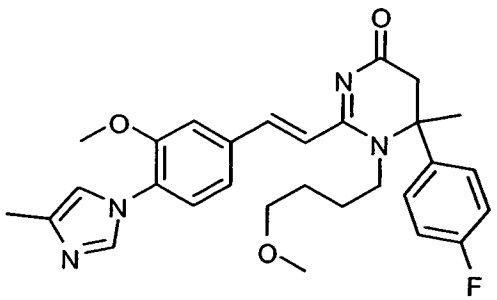
The following compounds are obtained using methods similar to method G:



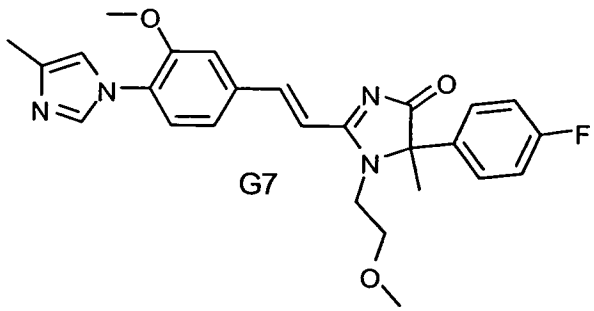
G4



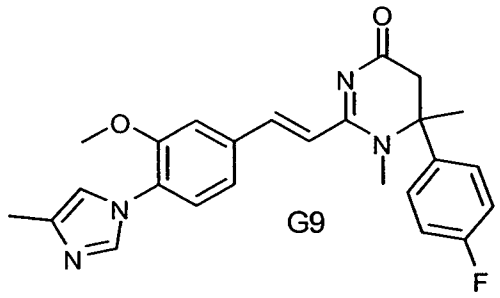
G5



G6

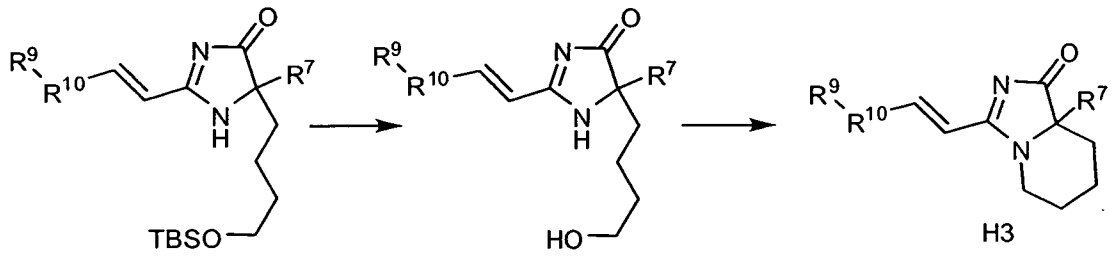


G7



G9

Method H



H1 H2 H3

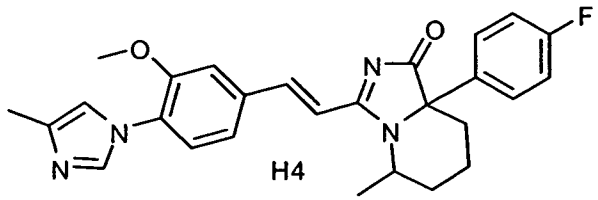
Method H, Step 1

Compound **H1** (R^7 = p-F-phenyl, R^{10} = 3-MeO-Phenyl, R^9 = 4-(4-methyl-imidazol-1-yl), is prepared using methods similar to method G, is treated with TBAF to give compound **H2** (R^7 = p-F-phenyl, R^{10} = 3-MeO-Phenyl, R^9 = 4-(4-methyl-imidazol-1-yl) after purification.

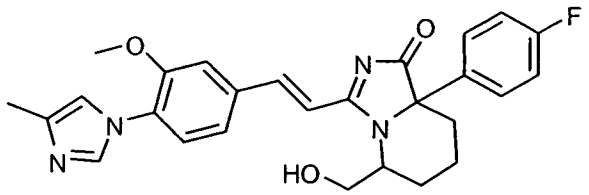
Method H, Step 2

Compound **H2** (R^7 = p-F-phenyl, R^{10} = 3-MeO-Phenyl, R^9 = 4-(4-methyl-imidazol-1-yl) is converted to the triflate. The product triflate is treated with NaH in DMF to give compound **H3** (R^7 = p-F-phenyl, R^{10} = 3-MeO-Phenyl, R^9 = 4-(4-methyl-imidazol-1-yl) after routing work up and purification.

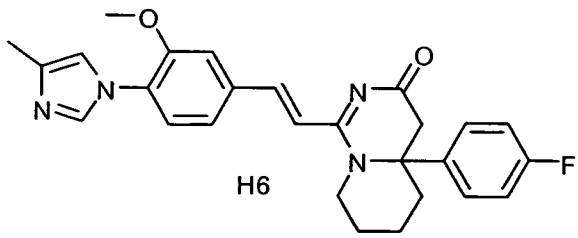
The following compounds are obtained using methods similar to method H:



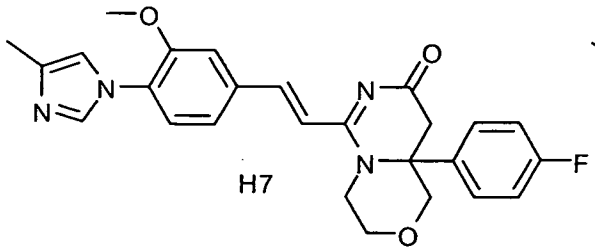
H4



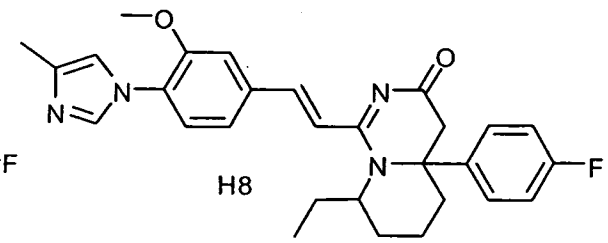
H5



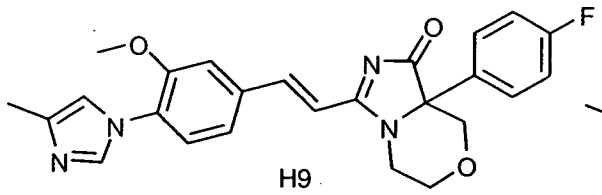
H6



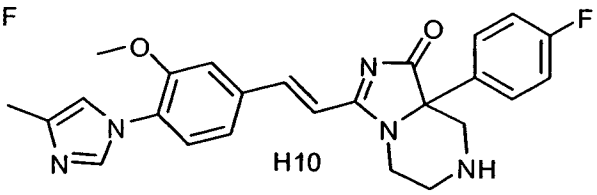
H7



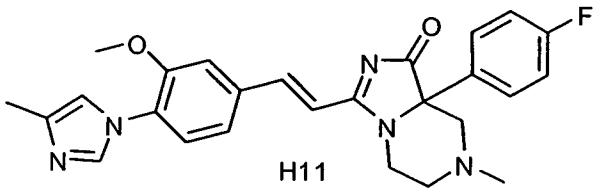
H8



H9

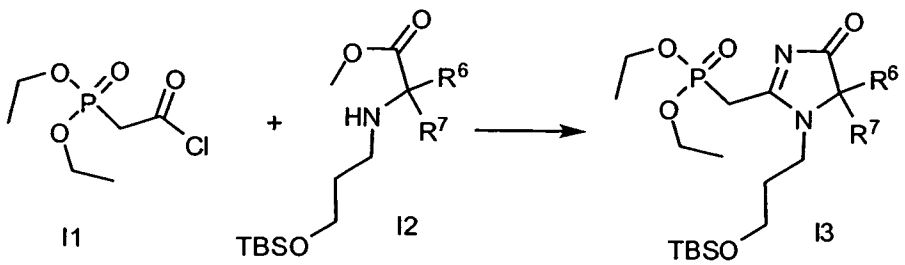


H10

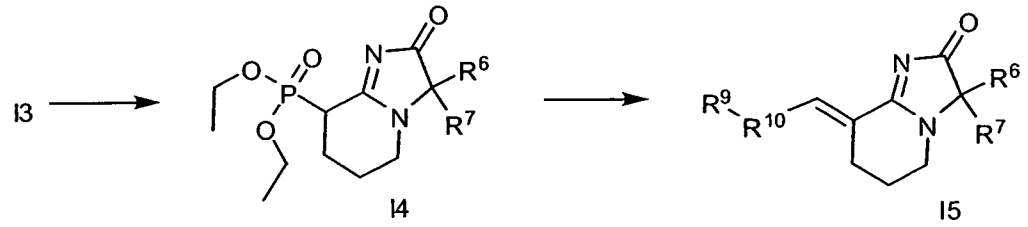


H11

Method I



I1 I2 I3



Method I, Step 1

Compound **I3** (R^6 = p-F-Phenyl, R^7 = Me) is obtained using methods similar to method G using starting material **I1** and **I2** (R^6 = p-F-Phenyl, R^7 = Me).

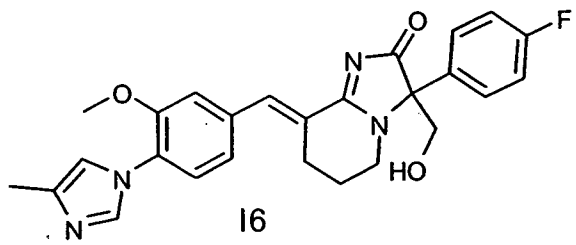
Method I, Step 2

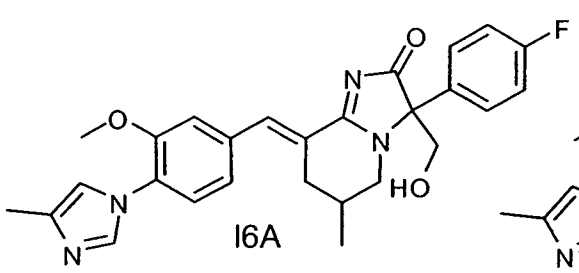
Compound **I3** (R^6 = p-F-Phenyl, R^7 = Me) is treated with TBAF which is followed by purification to give the corresponding alcohol which is transformed into triflate. The triflate is treated with NaH in DMF to give compound **I4** (R^6 = p-F-Phenyl, R^7 = Me).

Method I, Step 3

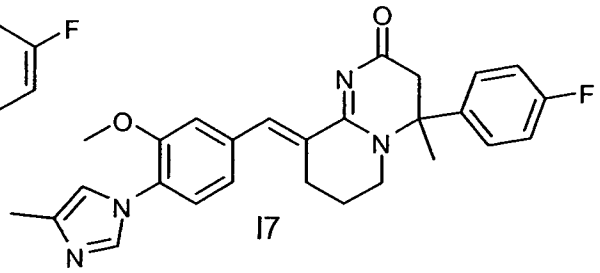
Compound **I5** (R^6 = p-F-Phenyl, R^7 = Me, R^{10} = 3-MeOphenyl, R^9 = 4-(4-methylimidazol-1-yl)) is obtained using compound **I4** (R^6 = p-F-Phenyl, R^7 = Me) reacting with **D7** (R^{10} = 3-MeOphenyl, R^9 = 4-(4-methylimidazol-1-yl)) and a base after purification.

The following compounds are obtained using method similar to method I.

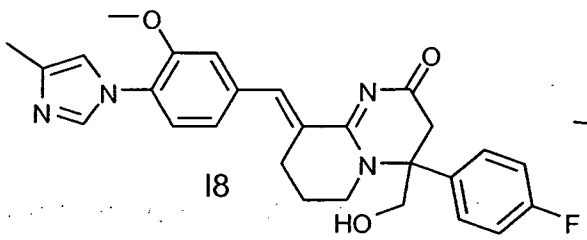




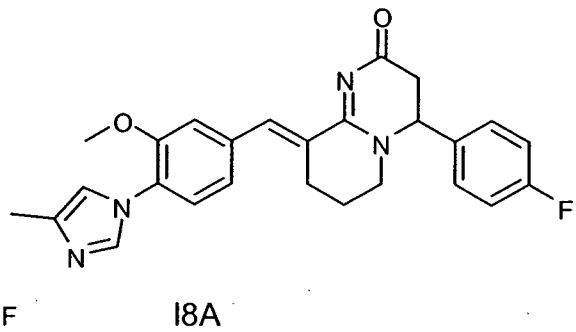
I6A



I7

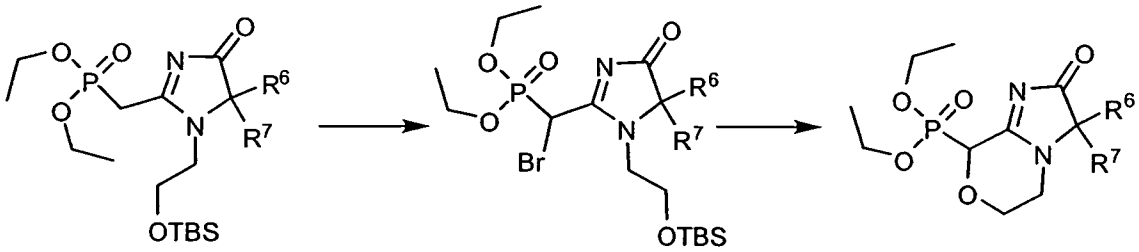


I8

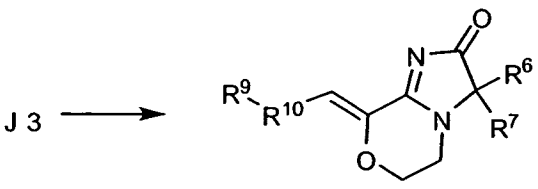


I8A

Method J



J 1 J 2 J 3



J 4

Method J, Step 1

Compound **J1** (R^6 = p- F-Ph and R^7 = methyl), which is obtained using a method similar to Method I, Step 1, is treated with NBS in Benzene with a radical

initiator (such as AIBN) under relux to give compound **J2** (R^6 = p- F-Ph and R^7 = methyl).

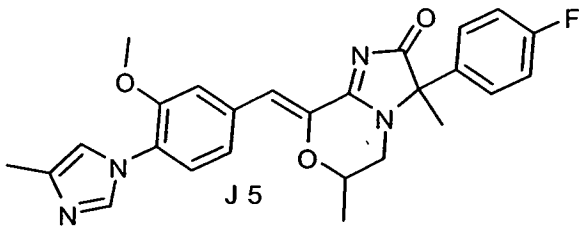
Method J, step 2

Compound **J2** (R^6 = p- F-Ph and R^7 = methyl) is treated with TBAF in DMF to give compound **J3** (R^6 = p- F-Ph and R^7 = methyl) after purification.

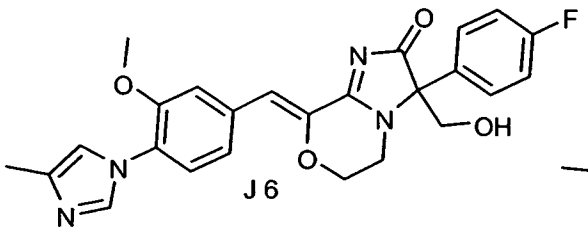
Method J Step3

Compound **J4** (R^6 = p- F-Ph and R^7 = methyl, R^{10} = 3-MeOphenyl, R^9 = 4-(4-methylimidazol-1-yl)) is obtained using method similar to method Method I step 3.

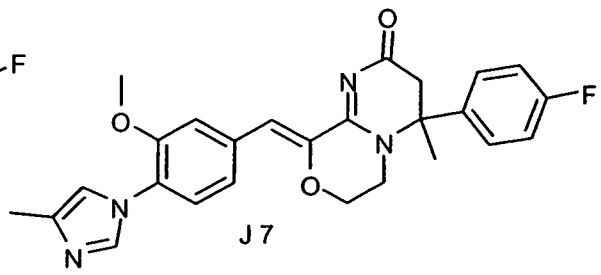
The following compounds are obtained using methods similar to Method J:



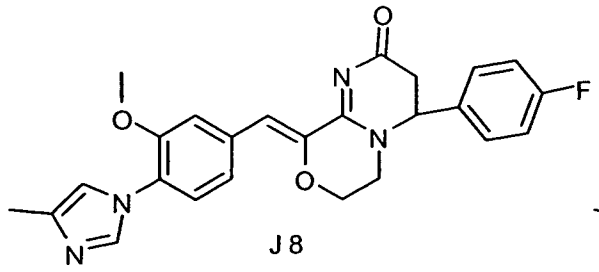
J 5



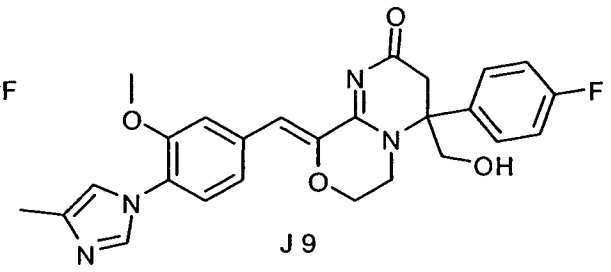
J 6



J 7

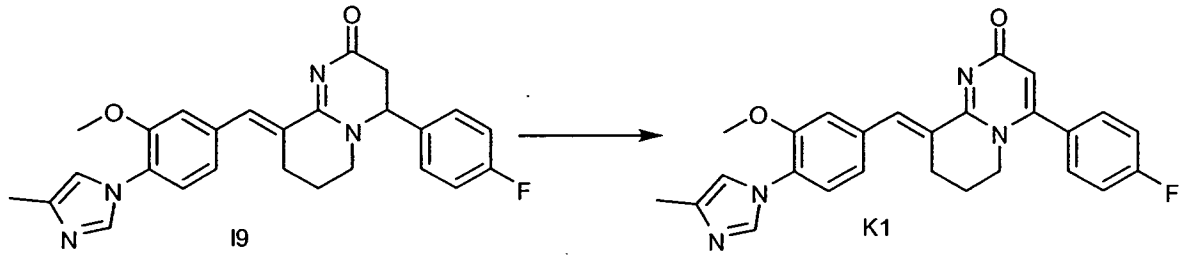


J 8



J 9

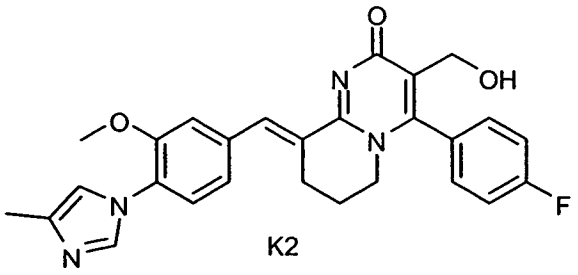
Method K



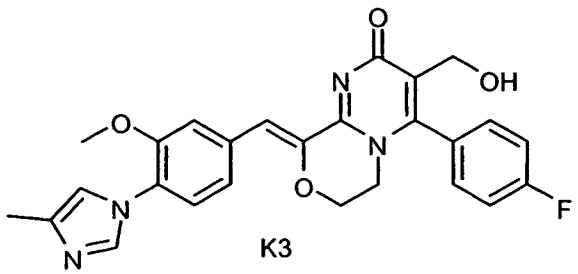
I9 K1

Compound **I9** is treated with 1.2 eq of LDA at -78 C before it is reacted with phenylselenium bromide. After the reaction is warmed to r.t. it is treated with H_2O_2 and is worked up, and is purified to give compound **K1**.

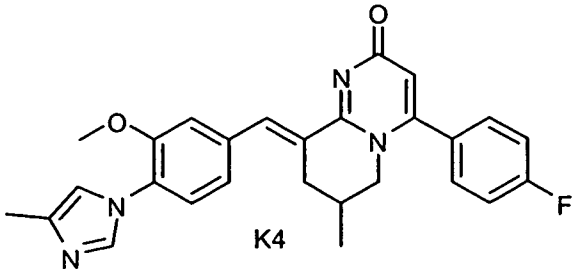
The following compounds are obtained using methods similar to Method K:



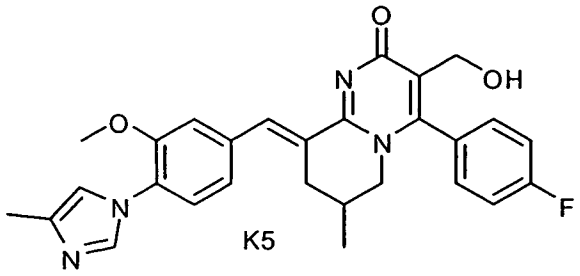
K2



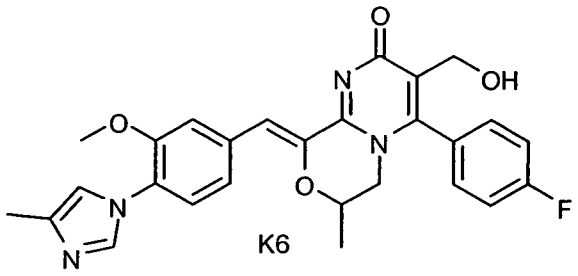
K3



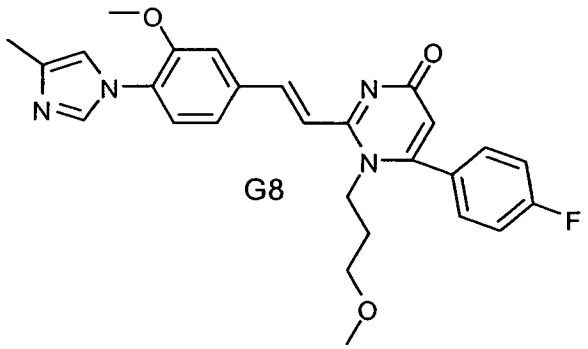
K4



K5

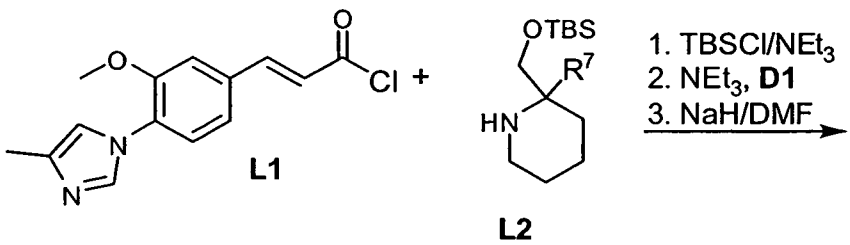


K6

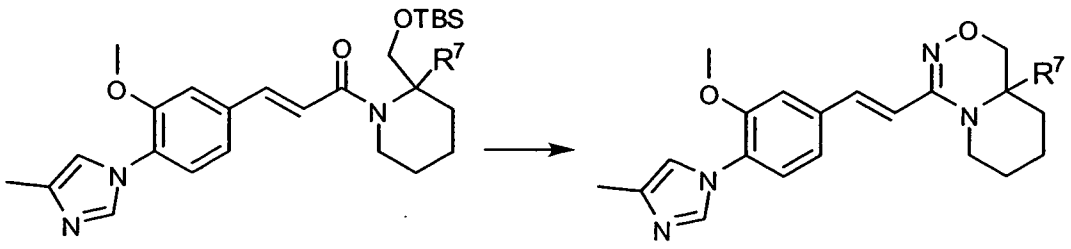


G8

Method L



L1 **L2**



L3 **L4**

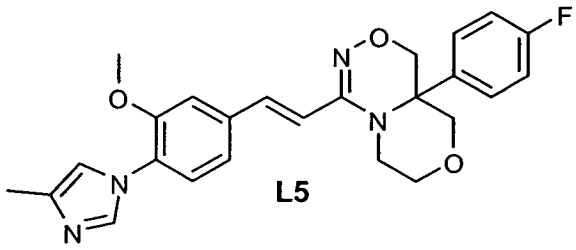
Method L, Step 1

Compound **L3** (R^7 = p-F-Phenyl) is obtained using amide coupling chemistry from **L1** and **L2**

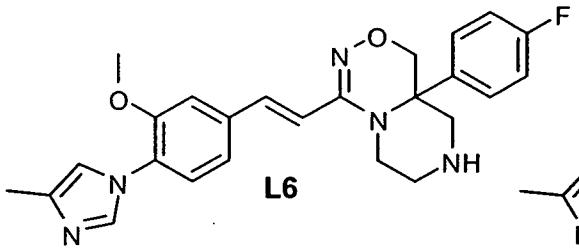
Method L, Step 2

Compound **L4** (R^7 = p-F-Phenyl) is obtained using methods similar to method D, Steps 2 to 5.

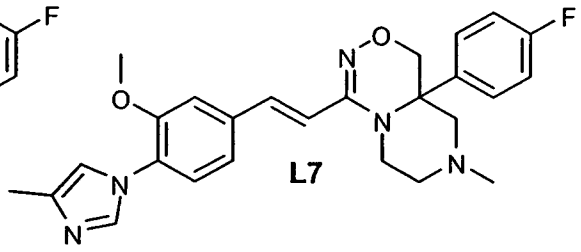
The following compounds are obtained using methods similar to method L:



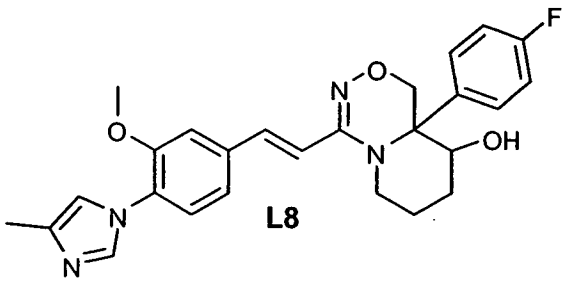
L5



L6

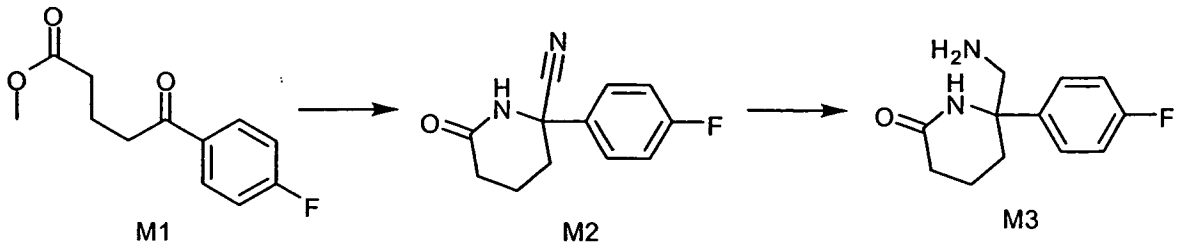


L7

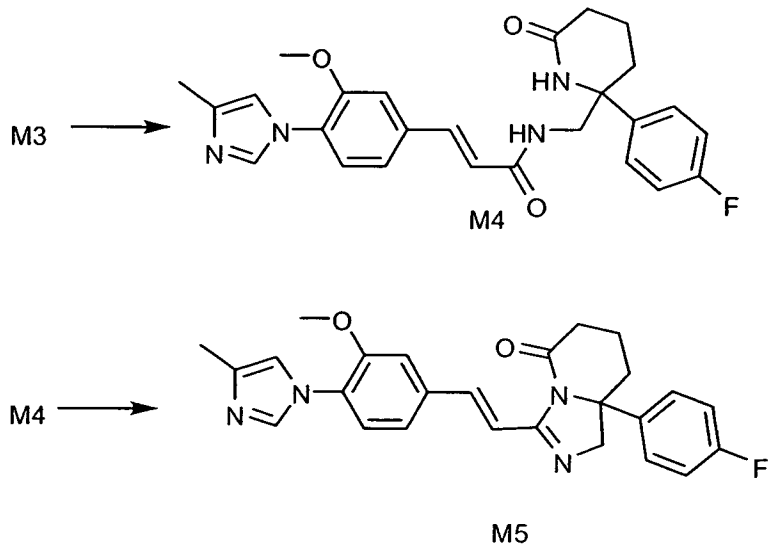


L8

Method M



M1 M2 M3



Method M, step 1

Compound **M1** is converted to **M2** through Strecker amine synthesis by reacting **M1** with Ammonium Cyanide in alcohol.

Method M, Step 2

Compound **M3** is obtained using a Ni mediated hydrogenation of **M2.**

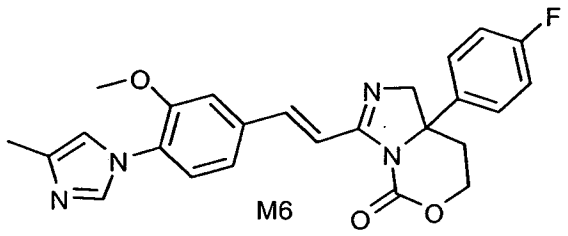
Method M, Step 3

Compound **M4** is obtained using a normal amide coupling conditions.

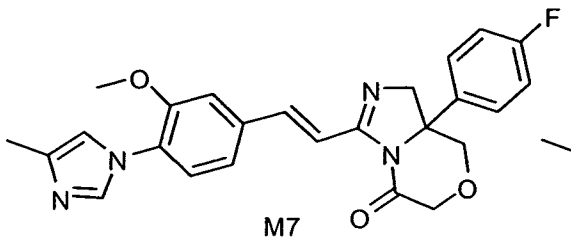
Method M, Step 4

Compound **M5** is obtained through treatment of **M4** with $POCl_3$ in reflux toluene.

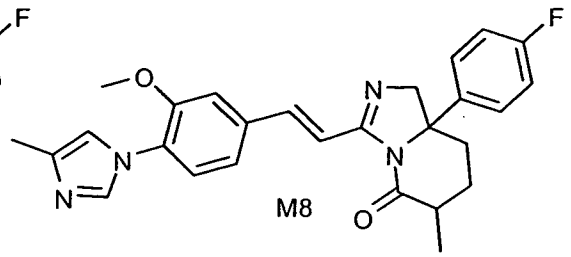
The following compounds will be obtained using method similar to method M.



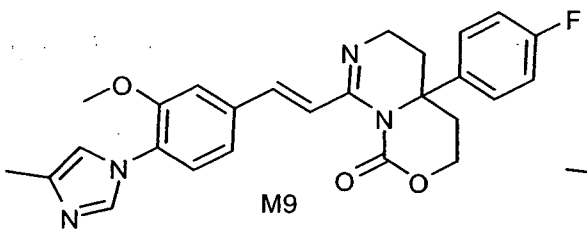
M6



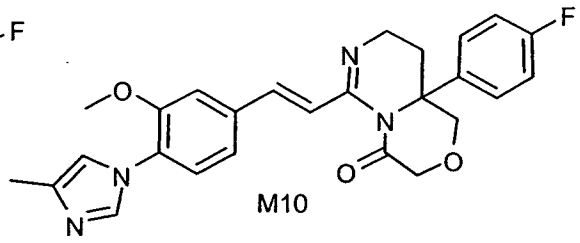
M7



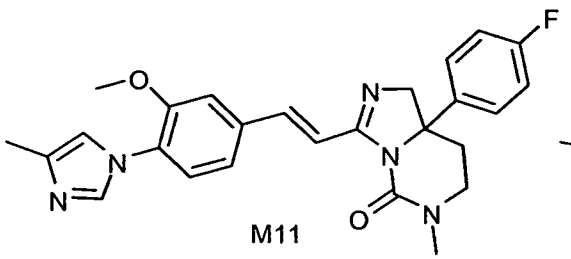
M8



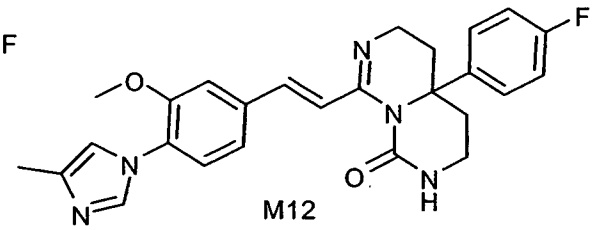
M9



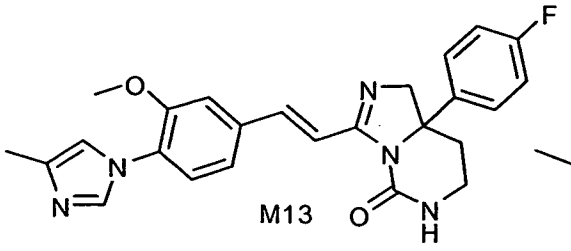
M10



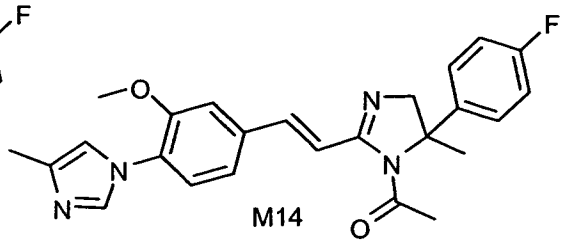
M11



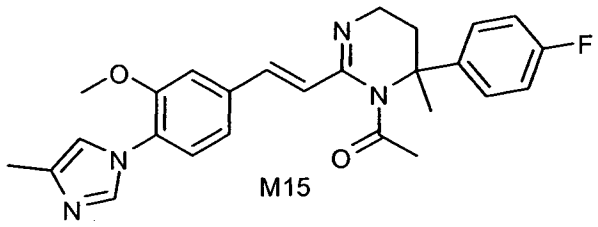
M12



M13

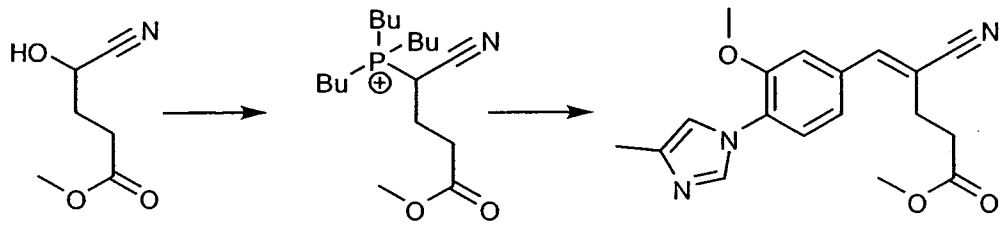


M14

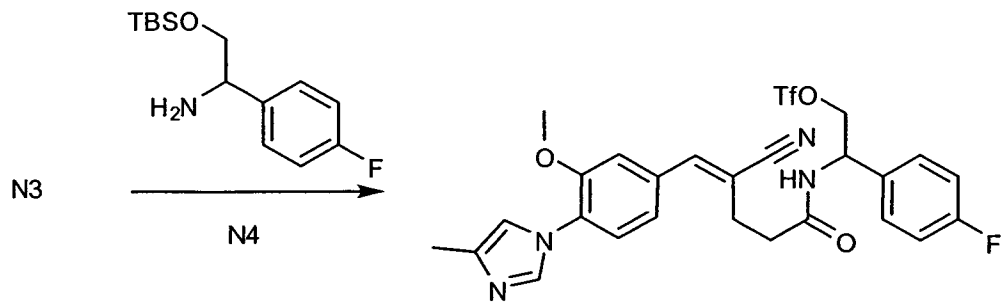


M15

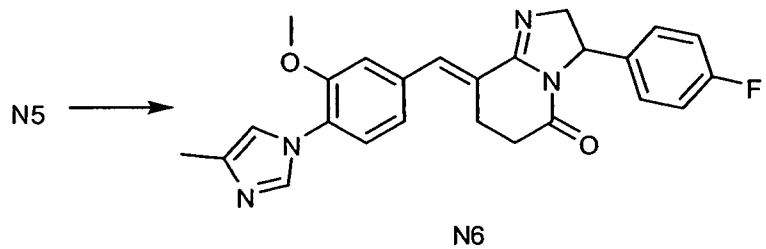
Method N



N1 N2 N3



N5



N6

Method N, Step 1

N2 is obtained from **N1** after the triflate ester generation which is followed by tributylphosphine treatment.

Method N, Step 2

Compound **N3** is obtained through Wittig reaction with appropriate aldehyde with **N2**

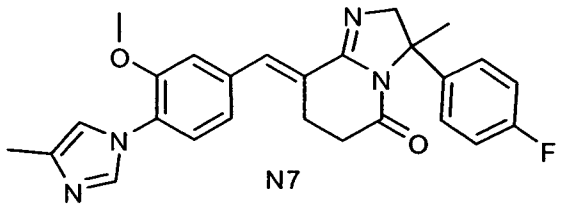
Method N, Step 3

Compound **N5** is obtained through hydrolysis of **N3** to its corresponding acid which is followed by standard amide coupling with compound **N4** which is followed by TBS deprotection and triflate generation.

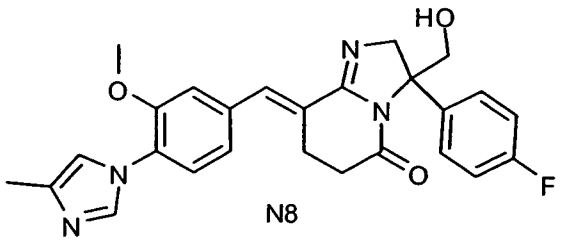
Method N, Step 4

Compound **N6** is obtained using compound N5 following treatment of NaH in DMF.

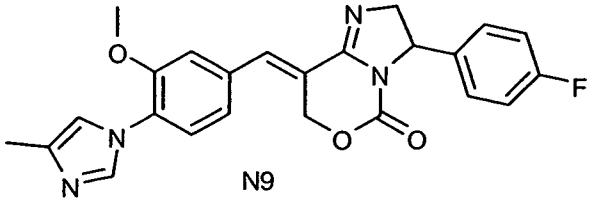
The following compounds are obtained using methods similar to method N:



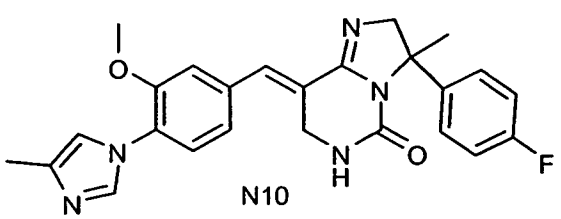
N7



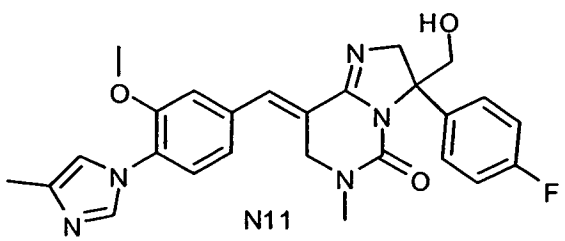
N8



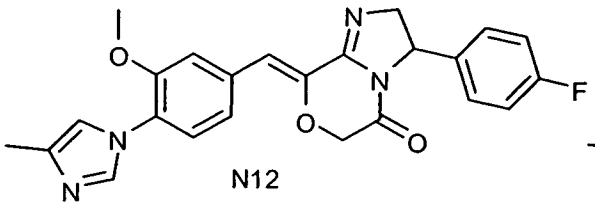
N9



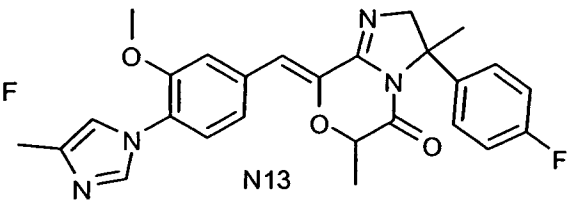
N10



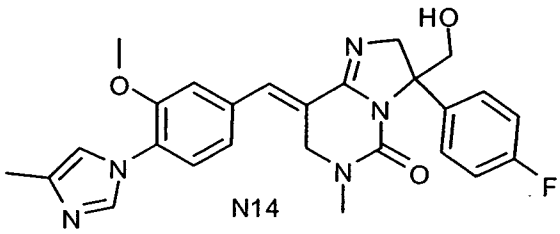
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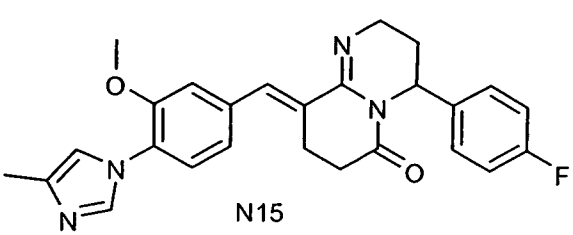
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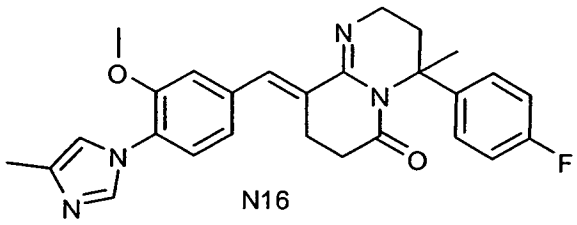
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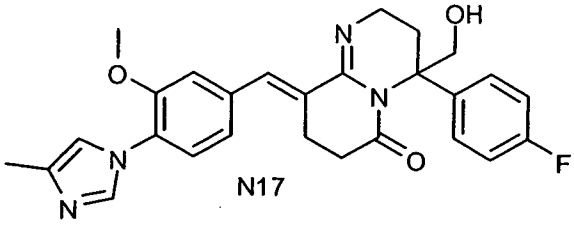
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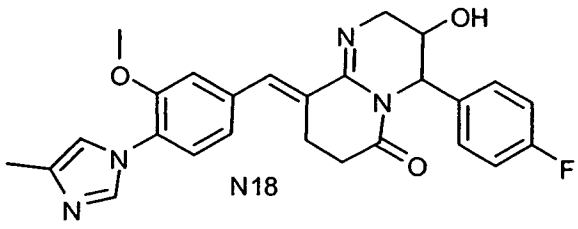
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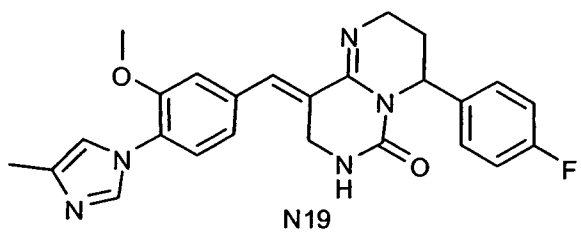
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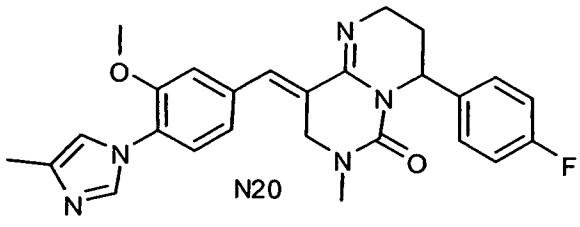
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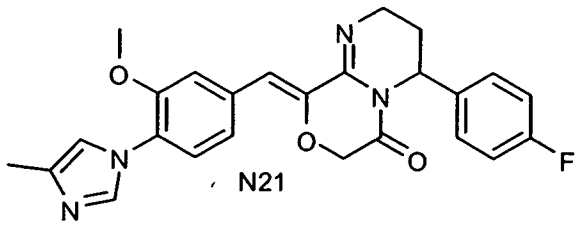
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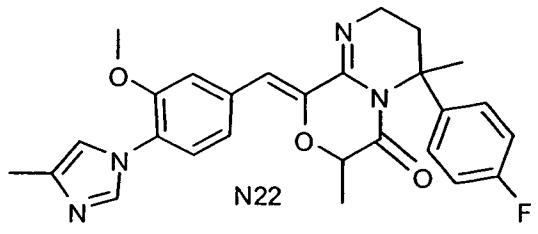
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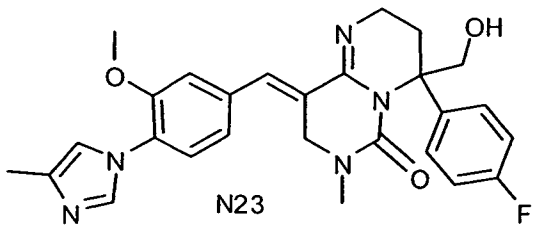


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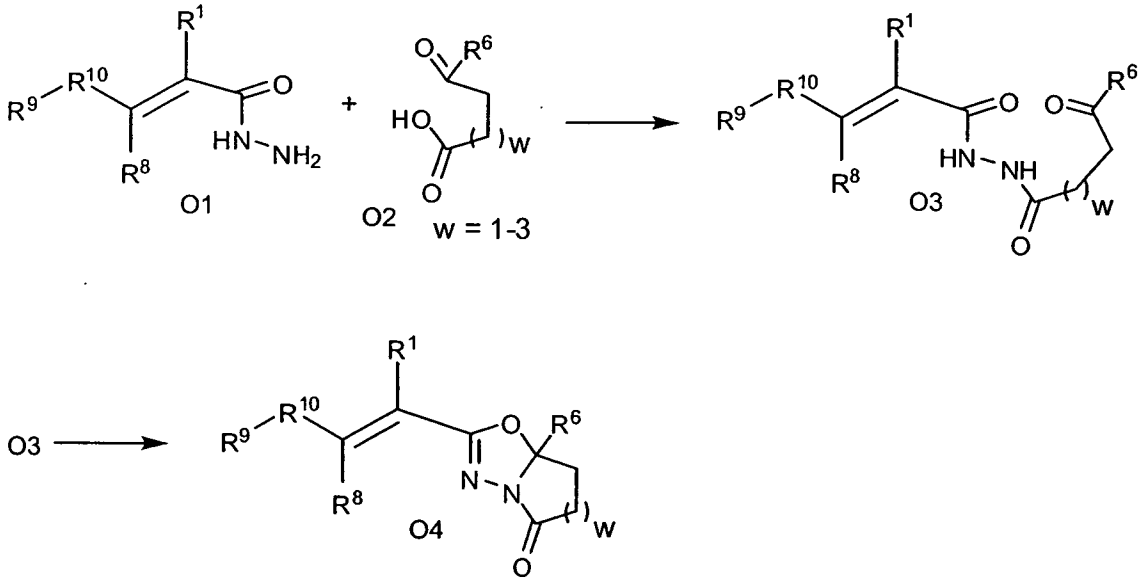


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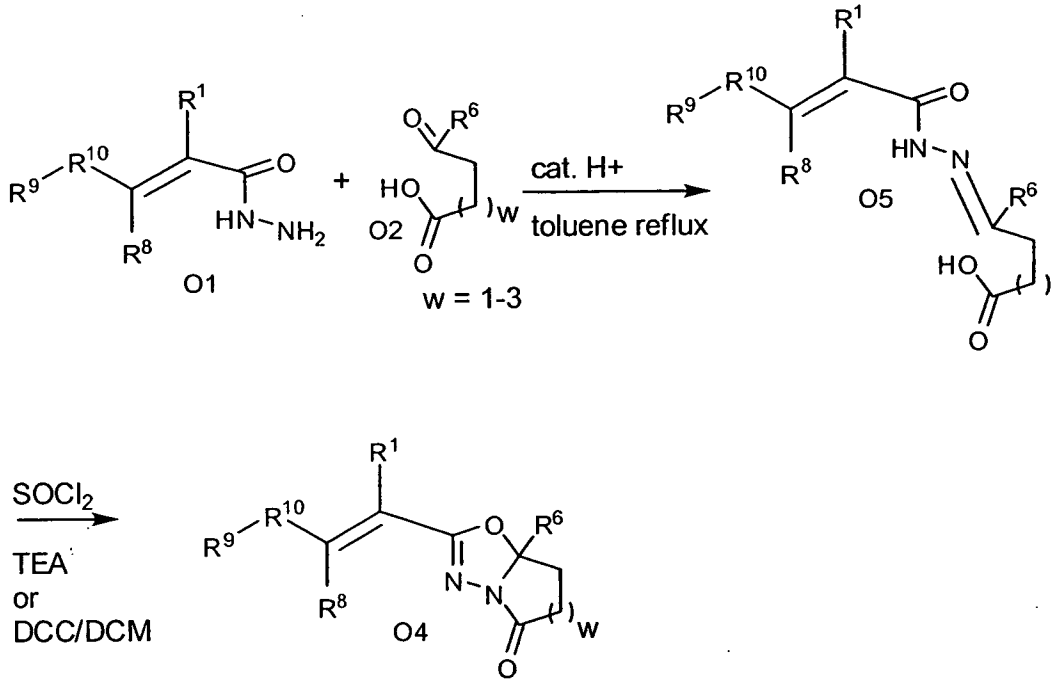
Method O



The reaction of acylhydrazines **O1** (which are prepared by coupling the corresponding acid with hydrazine under peptide coupling conditions, or by reaction of hydrazine with the appropriate methyl ester) with keto acids (**O2**) is performed using standard carbodiimide conditions or other copupling procedures widely used to make an amide bond in peptide chemistry. The subsequent dehydration of compound **O3** is accomplished by treatment with a catyltic amount of acid such as TsOH, or AcOH in solvents such as Toluene or DCM. In some cases heating in toluene to azeotrope off the H_2O will facilitate the reaction.to produce compounds of Formula **O4.**

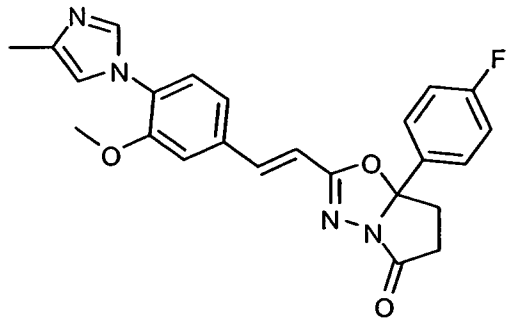
Alternatively, a modified scheme can be used wherein the ketone **O2** is first condensed with the amine **O1** to give the imine **O5.** Subsequent treatment of

O5 with a dehydrating agent such as $SOCl_2$, Ac_2O, or a cardodiimide will provide compounds of formula **O4**



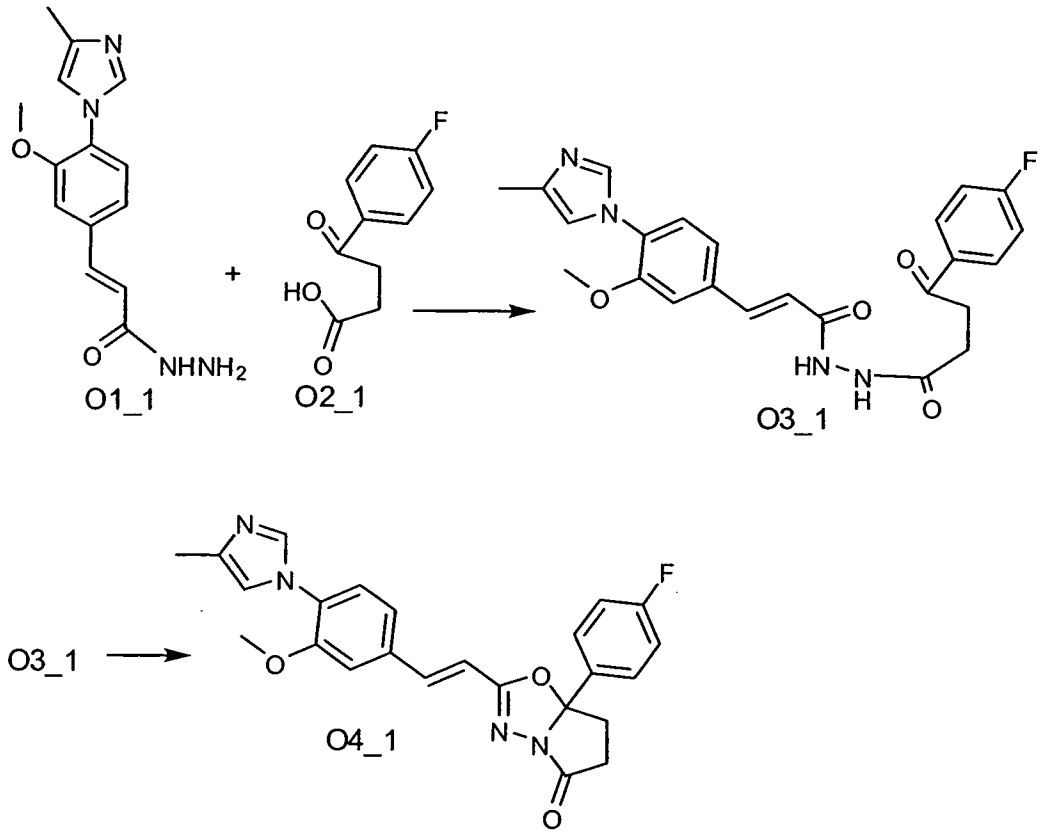
Example Method O

(E)-7a-(4-fluorophenyl)-2-(3-methoxy-4-(4-methyl-1H-imidazol-1-yl)styryl)-7,7a-dihydropyrrolo[2,1-b][1,3,4]oxadiazol-5(6H)-one



O4_1

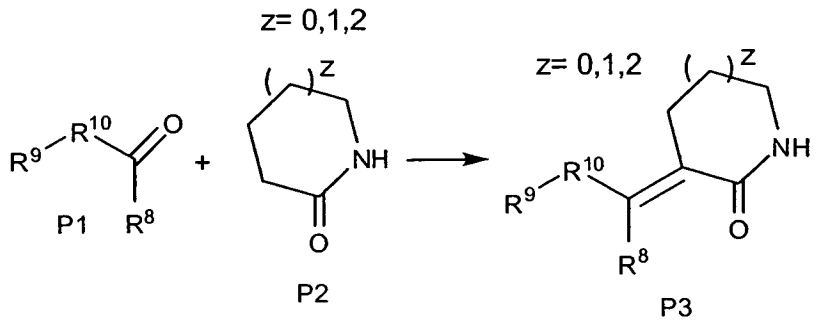
Step 1: Reaction Scheme

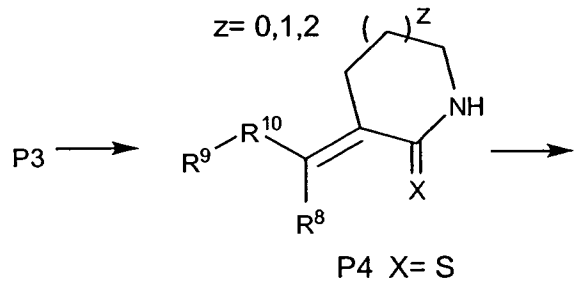


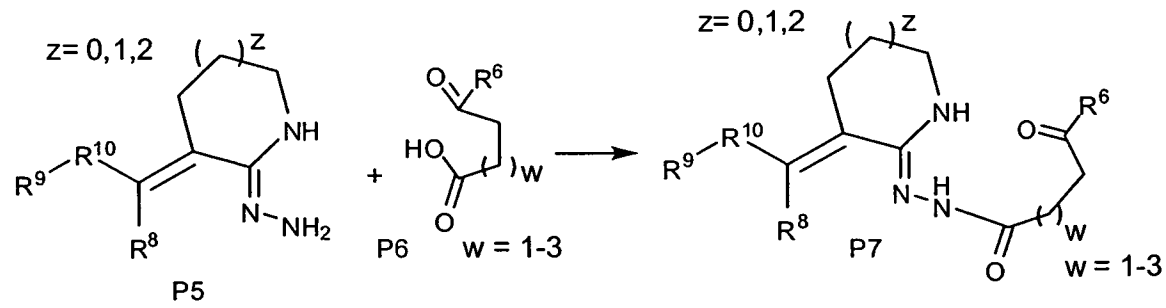
Step 1

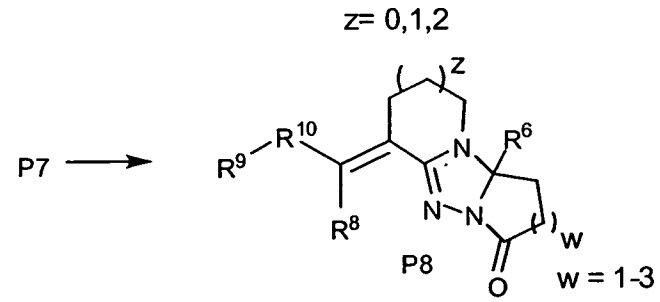
Compound **O3_1** is prepared by treating a solution of 1 gram of compound **O1_1** in DCM (100 ml) , and 1 equivalent of DCC with 1 equivalent of known compound **O2_1**. After stirring for 12 hrs, add brine (100 ml) and separate the organic layer. Evaporate this to dryness and purify the residue by flash chromatography to obtain **O3_1**. Treat compound **O3_1** in toluene with TsOH (0.1 equivalents) and heat to reflux under a Dean Stark trap overnight. After cooling to room temperature add dilute $NaHCO_3$ solution and brine and separate the organic layer. Evaporate this to dryness and purify the residue by flash chromatography to obtain the compound **O4_1.**

METHOD P





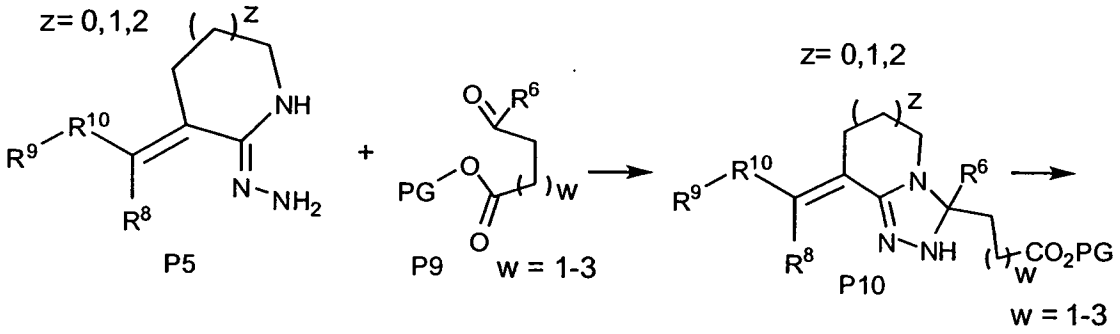


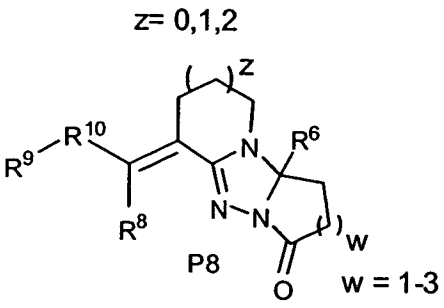


The condensation of a carbonyl containing compound such as **P1** with the lactams **P2** under basic conditions (using for example NaH and LDA to form the dianion of **P2**, and then treatment with **P1)** will provide compounds **P3**. Reaction

of **P3** with Lawesson's reagent provides the thioamides P4. These can be converted into the compounds of type **P5**, by direct treatment with hydrazine in a solvent such as isopropanol or toluene. Alternatively, in some cases the reaction may be facilitated by first reacting **P4** with MeI to prepare the thiomethyl ether as an intermediate which is then treated with hydrazine to provide compounds of type **P5**. Reaction of **P5** with a keto acid **P6** and a dehydrating agent such as DCC in DCM will provide an intermediate **P7** which can be converted into compounds of formula **P8** upon further heating or use of an acid catalyst such as TsOH in refluxing toluene.

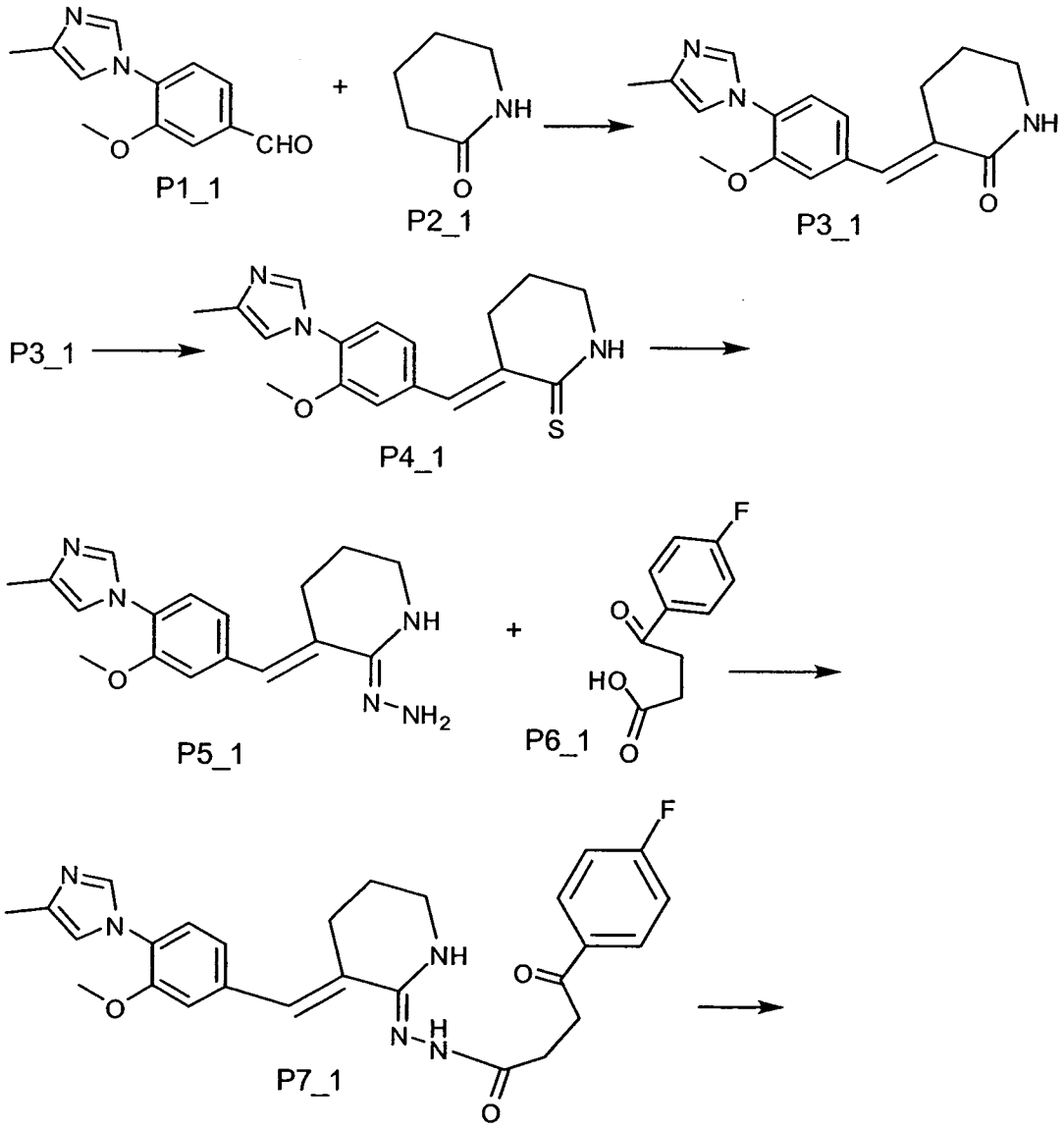
Alternatively, a modified reaction scheme will provide compounds of formula **P8.** For example, the amine **P5** can be reacted with the ketone **P9** (where PG is a protecting group such as a tBu, Et, $TMSCH_2CH_2$) under dehydrating conditions to provide the triazine **P10**. After removing the PG, the acid is converted in compounds of formula **P8** by treatment with DCC in DCM or other dehydrating reaction conditions.

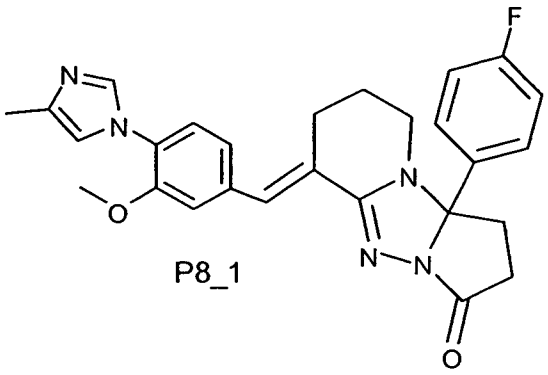




In some cases it will be beneficial to protect the NH of the starting lactams **P2** with a protecting group such as a p-methoxy phenyl, or trityl. In these cases the p-methoxy phenyl, or trityl protecting group can be removed (by treatment with CAN or Acid respectively) from the intermediates **P5**, **P3** or **P4** and the sequence completed as above.

METHOD P EXAMPLES





P8_1

Step 1

Add a solution of the lactam **P2_1** (1 gram) in THF (100 mls) to a suspension of NaH (1.5 equivalents) in THF at RT under an inert atmosphere. After stirring for 15 minutes, cool the reaction mixture to -78 C and then add to this 1 equivalent of LDA in THF via syringe. Allow this to warm to 0 C for 1 hr then recool this to -78 C and add a THF solution of .the aldehyde **P1_1** via syringe. Allow the reaction mixture to warm to room temperature followed by addition of a saturated solution of NH_4Cl. Partition the mixture with EtOAc, separate the organic layer, evaporate to dryness and purify by flash chromatography to provide compound **P3_1**.

Step 2

Treat 1 gram of compound **P3_1** with 1 equivalent of Lawesson's reagent in toluene (100 ml) at between 50 and 100 C overnight. After cooling to room temperature partition with brine and separate the organic layer. Evaporate this to dryness and purify the residue by flash chromatography to obtain the intermediate **P4_1.**

Step 3:

Treat 1 gram of compound **P4_1** in DCM (100 ml) with 1 equivalent of MeI and 1 equivalent of triethylamine. After 3 hrs at RT, concentrate to dryness, and redissolve the residue in dioxane and add an excess of hydrazine. After heating for 6 hrs at 50 C cool to room temperature, evaporate to dryness and partition the

residue between DCM and brine. Separate the organic layer, evaporate this to dryness and purify the residue by flash chromatography to obtain the intermediate **P5_1**.

Step 4

Compound **P8_1** can be prepared by treating a solution of 1 gram of compound **P5_1** in DCM (100 ml), and 1 equivalent of DCC with 1 equivalent of known acid **P6_1**. After stirring for 12 hrs, add brine (100 ml) and separate the organic layer. Evaporate this to dryness and purify the residue by flash chromatography to obtain the intermediate **P7_1**. Treat compound **P7_1** in toluene (100 mls) with TsOH (0.1 equivalents) and heat to reflux under a Dean Stark trap overnight. After cooling to room temperature, add dilute $NaHCO_3$ solution and brine and separate the organic layer. Evaporate this to dryness and purify the residue by flash chromatography to obtain the desired compound **P8_1**.

Assay:

Secretase Reaction and Aβ Analysis in Whole Cells: HEK293 cells overexpressing APP with Swedish and London mutations were treated with the specified compounds for 5 hour at 37 °C in 100 ml of DMEM medium containing 10% fetal bovine serum. At the end of the incubation, total Aβ, Aβ40 and Aβ42 were measured using electrochemiluminescence (ECL) based sandwich immunoassays. Total Aβ was determined using a pair of antibodies TAG-W02 and biotin-4G8, Aβ40 was identified with antibody pairs TAG-G2-10 and biotin- 4G8, while Aβ42 was identified with TAG-G2-11 and biotin-4G8. The ECL signal was measured using Sector Imager 2400 (Meso Scale Discovery).

MS Analysis of Aβ Profile: Aβ profile in conditioned media was determined using surface enhanced laser desorption/ionization (SELDI) mass spectrometry. Conditioned media was incubated with antibody W02 coated PS20 ProteinChip array. Mass spectra of Aβ captured on the array were read on SELDI ProteinChip Reader (Bio-Rad) according to manufacture's instructions.

CSF Aβ Analysis: Aβ in rat CSF was determined using MSD technology as described above. Aβ40 was measured using antibody pair Tag-G2-10 and biotin-4G8, while Aβ42 was measured using Tag-anti Aβ42 (Meso Scale Discovery) and biotin-4G8. The ECL signal was measured using Sector Imager 2400 (Meso Scale Discovery).

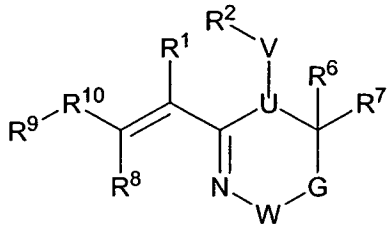
Matrix-assisted laser desorption/ionization mass spectrometric (MALDI MS) analysis of Aβ is performed on a Voyager-DE STR mass spectrometer (ABI, Framingham, MA). The instrument is equipped with a pulsed nitrogen laser (337 nm). Mass spectra are acquired in the linear mode with an acceleration voltage of 20 kV. Each spectrum presented in this work represents an average of 256 laser shots. To prepare the sample-matrix solution, 1 μL of immunoprecipitated Aβ sample is mixed with 3 μL of saturated α-cyano-4-hydroxycinnamic acid solution in 0.1% TFA/acetonitrile. The sample-matrix solution is then applied to the sample plate and dried at ambient temperature prior to mass spectrometric analysis. All the spectra are externally calibrated with a mixture of bovine insulin and ACTH (18-39 clip).

Compound G4 had an Ab42 IC50 of 1114 nM with an Abtotal/Ab42 selectivity of 11 fold.

While the present invention has been described with in conjunction with the specific embodiments set forth above, many alternatives, modifications and other variations thereof will be apparent to those of ordinary skill in the art. All such alternatives, modifications and variations are intended to fall within the spirit and scope of the present invention.

WHAT IS CLAIMED IS:

1. A compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula:



Formula I

wherein:

either (i) R^1 and R^2 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; or (ii) R^2 and R^6 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; or (iii) R^1 and R^2 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; and R^2 and R^6 are joined together to form a C4-C8 cycloalkyl, C4-

C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; or (iv) R^6 and either R^3 or R^4 of the -C(R^3)(R^4)- G moiety, are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; or (v) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with said heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; and

U is —C(R^5) or N;

W is selected from the group consisting of a bond, -O-, -C(O)-, -S-, -S(O)-, -S(O_2)-, and -C(R^{11})(R^{12})-;

G is selected from the group consisting of -C(R^3)(R^4)-, -C(O)- and -N(R^{13})-, with the proviso that when W is -O- or -S-, G is not -N(R^{13})- or -C(O)-;

V is selected from the group consisting of a bond, -O-, -C(O)- and -N(R^{14})-;

R^1 (when R^1 is not joined to R^2), R^2 (when R^2 is not joined to R^1 or R^6), R^5, R^6 (when R^6 is not joined to R^2), and R^7can be the same or different, each being independently selected from the group consisting of H, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-,

heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

or, alternatively, R^1 (when R^1 is not joined to R^2) and R^8 are taken together to form a bond;

R^3 is selected from the group consisting of H, halo, $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-C(O)R^{15}$, $-C(O)OR^{15}$,$-C(=NOR^{15})R^{16}$, $-C(O)N(R^{15})(R^{16})$, $-S(O)N(R^{15})(R^{16})$, $S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, $-N_3$, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; or

R^3 and R^6 taken together form a bond, provided that when R^3 and R^6 form a bond: (1) W is not a bond, (2) R^2 and R^6 are not joined together to form a cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety (as described in (ii) and (iii) above) (3) R^6 and either R^3 or R^4 of the $-C(R^3)(R^4)-$ G moiety are not joined together to form a cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety (as described in (iv) above), and (4) R^6 and R^{13} of the $-N(R^{13})-$ G moiety are not joined together to form a heterocyclyl or heterocyclenyl moiety (as described in (v) above);

R^4, R^{11} and R^{12} can be the same or different, each being independently selected from the group consisting of H, halo, $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-C(O)R^{15}$,

$-C(O)OR^{15}$,$-C(=NOR^{15})R^{16}$, $-C(O)N(R^{15})(R^{16})$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, $-N_3$, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below,

provided that when one of R^3 or R^4 is selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$, then the other is not selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, and $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$;

provided that when one of R^{11} or R^{12} is selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$, then the other is not selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$;

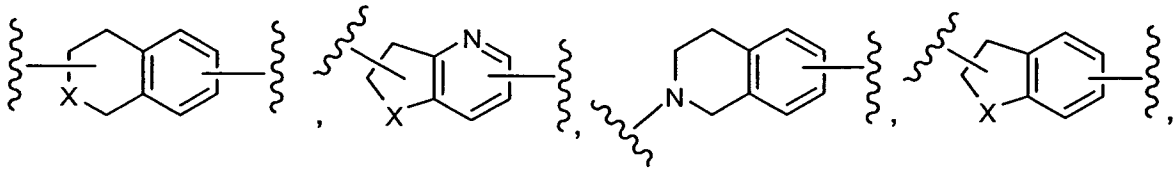
R^{13} is independently selected from the group consisting of H, alkyl, arylalkyl-, heteroarylalkyl-, cycloalkylalkyl-, heterocycloalkylalkyl-, arylcycloalkylalkyl-, heteroarylcycloalkylalkyl-, arylheterocycloalkylalkyl-, heteroarylheterocycloalkylalkyl-, cycloalkyl, arylcycloalkyl-, heteroarylcycloalkyl-, heterocycloalkyl-, arylheterocycloalkyl-, heteroarylheterocycloalkyl-, alkenyl, arylalkenyl-, cycloalkenyl, arylcycloalkenyl-, heteroarylcycloalkenyl-, heterocycloalkenyl-, arylheterocycloalkenyl-, heteroarylheterocycloalkenyl-, alkynyl, arylalkynyl-, aryl, cycloalkylaryl-, heterocycloalkylaryl-, heterocycloalkenylaryl-, heteroaryl, cycloalkylheteroaryl-, heterocycloalkylheteroaryl-, cycloalkenylaryl-, heterocycloalkenylaryl-, $-OR^{15}$, -CN, $-C(O)R^8$, $-C(O)OR^9$, $-S(O)R^{10}$, $-S(O)_2R^{10}$, $-C(O)N(R^{11})(R^{12})$, $-S(O)N(R^{11})(R^{12})$, $-S(O)_2N(R^{11})(R^{12})$, $-NO_2$, $-N=C(R^8)_2$ and $-N(R^8)_2$; and wherein said R^{13} alkyl, arylalkyl-, heteroarylalkyl-, cycloalkylalkyl-, heterocycloalkylalkyl-, arylcycloalkylalkyl-, heteroarylcycloalkylalkyl-, arylheterocycloalkylalkyl-, heteroarylheterocycloalkylalkyl-, cycloalkyl, arylcycloalkyl-, heteroarylcycloalkyl-, heterocycloalkyl, arylheterocycloalkyl-, heteroarylheterocycloalkyl-, alkenyl, arylalkenyl-, cycloalkenyl, arylcycloalkenyl-, heteroarylcycloalkenyl-, heterocycloalkenyl-, arylheterocycloalkenyl-, heteroarylheterocycloalkenyl-, alkynyl, arylalkynyl-, aryl, cycloalkylaryl-, heterocycloalkylaryl-, heterocycloalkenylaryl-, heteroaryl, cycloalkylheteroaryl-, heterocycloalkylheteroaryl-, cycloalkenylaryl-, and heterocycloalkenylaryl- groups are optionally substituted with 1 to 5 groups independently selected from the group consisting of: alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, halo, -CN, $-OR^{15}$, $-C(O)R^{15}$, $-C(O)OR^{15}$, $-C(O)N(R^{15})(R^{16})$, $-SR^{15}$, $-S(O)N(R^{15})(R^{16})$, $-CH(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$,$-C(=NOR^{15})R^{16}$, $-P(O)(OR^{15})(OR^{16})$, $-N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, $-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-R^{15}$; $-CH_2N(R^{15})(R^{16})$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-CH_2-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$,

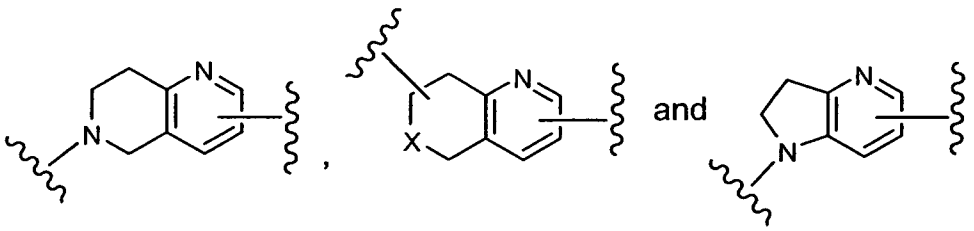
$-N(R^{15})C(O)OR^{16}$, $-CH_2-N(R^{15})C(O)OR^{16}$, $-S(O)R^{15}$, $=NOR^{15}$, $-N_3$, $-NO_2$ and $-S(O)_2R^{15}$;

R^{14} is selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, -CN, $-C(O)R^{15}$, $-C(O)OR^{15}$, $-C(O)N(R^{15})(R^{16})$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-C(=NOR^{15})R^{16}$, and $-P(O)(OR^{15})(OR^{16})$;

R^8 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, with each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- being unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

R^{10} is selected from the group consisting of a bond, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl-, heterocyclylalkyl- and the moieties:





where X is O, $N(R^{14})$ or S;

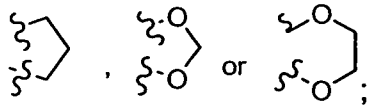
wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl-

heterocyclylalkyl- for R^{10} as well as the above-noted moieties for R^{10} can be unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of the moieties shown below; and

R^9 is selected from the group consisting of alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-can be unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below,

R^{15}, R^{16} and R^{17} are independently selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, arylcycloalkyl-, arylheterocyclyl-, R^{18}-alkyl, R^{18}-cycloalkyl, R^{18}-cycloalkylalkyl-, R^{18}-heterocyclyl, R^{18}-heterocyclylalkyl-, R^{18}-aryl, R^{18}-arylalkyl-, R^{18}-heteroaryl and R^{18}-heteroarylalkyl-;

R^{18} is 1-5 substituents independently selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, arylalkyl-, arylalkenyl-, arylalkynyl-, $-NO_2$, halo, heteroaryl, HO-alkyoxyalkyl-, $-CF_3$, -CN, alkyl-CN, $-C(O)R^{19}$, -C(O)OH, $-C(O)OR^{19}$, $-C(O)NHR^{20}$, $-C(O)NH_2$, $-C(O)NH_2$-$C(O)N(alkyl)_2$, -C(O)N(alkyl)(aryl), -C(O)N(alkyl)(heteroaryl), $-SR^{19}$, $-S(O)_2R^{20}$, $-S(O)NH_2$, -S(O)NH(alkyl), -S(O)N(alkyl)(alkyl), -S(O)NH(aryl), $-S(O)_2NH_2$, $-S(O)_2NHR^{19}$, $-S(O)_2NH$(heterocyclyl), $-S(O)_2N(alkyl)_2$, $-S(O)_2N$(alkyl)(aryl), $-OCF_3$, -OH, $-OR^{20}$, -O-heterocyclyl, -O-cycloalkylalkyl, -O-heterocyclylalkyl, $-NH_2$, $-NHR^{20}$, $-N(alkyl)_2$, $-N(arylalkyl)_2$, -N(arylalkyl)-(heteroarylalkyl), $-NHC(O)R^{20}$, $-NHC(O)NH_2$, -NHC(O)NH(alkyl), -NHC(O)N(alkyl)(alkyl), -N(alkyl)C(O)NH(alkyl), -N(alkyl)C(O)N(alkyl)(alkyl), $-NHS(O)_2R^{20}$, $-NHS(O)_2NH$(alkyl), $-NHS(O)_2N$(alkyl)(alkyl), -N(alkyl)$S(O)_2NH$(alkyl) and –N(alkyl)$S(O)_2N$(alkyl)(alkyl);

or, alternately, two R^{18} moieties on adjacent carbons can be linked together to form: ;

R^{19} is alkyl, cycloalkyl, aryl, arylalkyl- or heteroarylalkyl-;

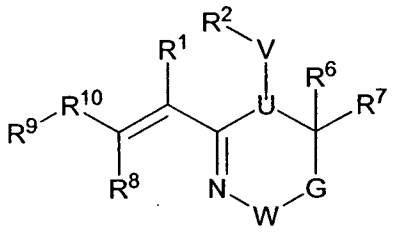
R^{20} is alkyl, cycloalkyl, aryl, halo substituted aryl, arylalkyl-, heteroaryl or heteroarylalkyl-;

wherein each of the alkyl, cycloalkyl, cycloalkenyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, alkylaryl-, heteroaryl, heteroarylalkyl-, alkenyl and alkynyl groups in R^1, R^2, R^1-R^2, R^2-R^6, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12} and R^{14} is independently unsubstituted or optionally substituted by 1 to 5 R^{21} groups independently selected from the group consisting of alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, halo, -CN, -OR^{15}, -$C(O)R^{15}$, -$C(O)OR^{15}$, -$C(O)N(R^{15})(R^{16})$, -SR^{15}, -$S(O)N(R^{15})(R^{16})$, -$CH(R^{15})(R^{16})$, -$S(O)_2N(R^{15})(R^{16})$, –$C(=NOR^{15})R^{16}$, -$P(O)(OR^{15})(OR^{16})$, -$N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, -$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$R^{15}$; -$CH_2N(R^{15})(R^{16})$, -$N(R^{15})S(O)R^{16}$, -$N(R^{15})S(O)_2R^{16}$, -$CH_2$-$N(R^{15})S(O)_2R^{16}$, -$N(R^{15})S(O)_2N(R^{16})(R^{17})$, -$N(R^{15})S(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)OR^{16}$, -$CH_2$-$N(R^{15})C(O)OR^{16}$, -$S(O)R^{15}$, =$NOR^{15}$, -$N_3$, -$NO_2$ and -$S(O)_2R^{15}$;

wherein each of the alkyl, cycloalkenyl, cycloalkyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, alkenyl and alkynyl groups in R^{21} is independently unsubstituted or substituted by 1 to 5 R^{22} groups independently selected from the group consisting of alkyl, cycloalkyl, cycloalkenyl, heterocyclyl, aryl, heteroaryl, halo, -CF_3, -CN, -OR^{15}, -$C(O)R^{15}$, -$C(O)OR^{15}$, -alkyl-$C(O)OR^{15}$, $C(O)N(R^{15})(R^{16})$, -SR^{15}, -$S(O)N(R^{15})(R^{16})$, -$S(O)_2N(R^{15})(R^{16})$, –$C(=NOR^{15})R^{16}$, -$P(O)(OR^{15})(OR^{16})$, -$N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, -$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)R^{16}$, -$N(R^{15})S(O)R^{16}$,

$-N(R^{15})S(O)_2R^{16}$, $-CH_2-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-CH_2-N(R^{15})C(O)OR^{16}$, $-N_3$, $=NOR^{15}$, $-NO_2$, $-S(O)R^{15}$ and $-S(O)_2R^{15}$.

2. A compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula:



wherein:

R^1 and R^2 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

U is $\overset{\curvearrowleft}{\curvearrowright}C(R^5)$ or N;

W is selected from the group consisting of a bond, -O-, -C(O)-, -S-; -S(O)-, $-S(O_2)-$, and $-C(R^{11})(R^{12})-$;

G is $-C(R^3)(R^4)-$; -C(O)- and $-N(R^{13})-$; with the proviso that when W is -O- or -S-, G is not $-N(R^{13})-$ or -C(O)- ;

V is selected from the group consisting of a bond, -O-, -C(O)- and $-N(R^{14})-$;

R^5, R^6, and R^7 can be the same or different, each being independently selected from the group consisting of H, alkyl-, alkenyl-,

alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

R^3 is selected from the group consisting of H, halo, $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-C(O)R^{15}$, $-C(O)OR^{15}$,$-C(=NOR^{15})R^{16}$, $-C(O)N(R^{15})(R^{16})$, $-S(O)N(R^{15})(R^{16})$, $S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, $-N_3$, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; or

R^3 and R^6 taken together form a bond, provided that when R^3 and R^6 form a bond W is not a bond;

R^4, R^{11} and R^{12} can be the same or different, each being independently selected from the group consisting of H, halo, $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-C(O)R^{15}$, $-C(O)OR^{15}$,$-C(=NOR^{15})R^{16}$, $-C(O)N(R^{15})(R^{16})$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, $-N_3$, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-,

cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below,

provided that when one of R^3 or R^4 is selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$, then the other is not selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, and $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$;

provided that when one of R^{11} or R^{12} is selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$, then the other is not selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$;

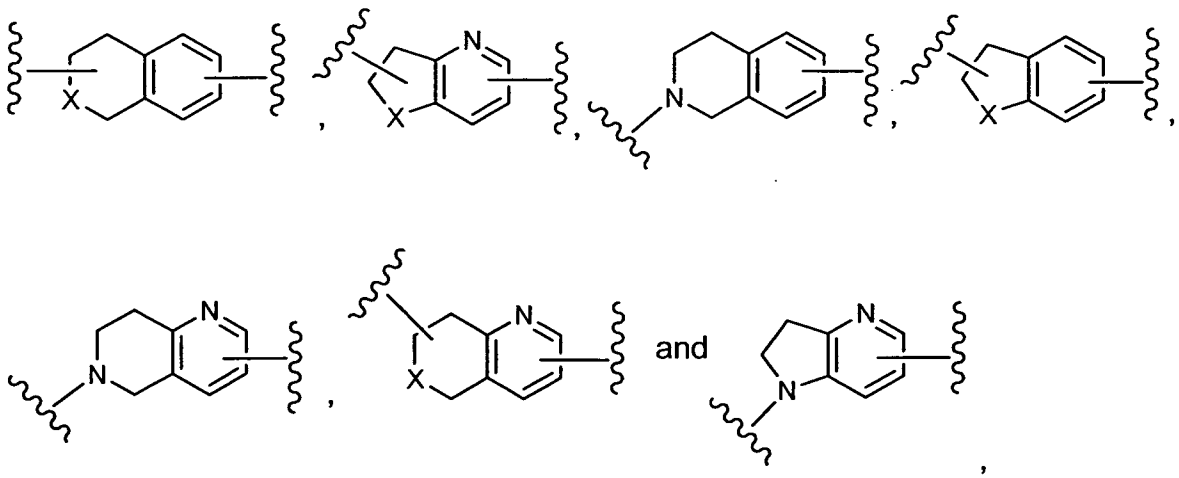
R^{13} is independently selected from the group consisting of H, alkyl, arylalkyl-, heteroarylalkyl-, cycloalkylalkyl-, heterocycloalkylalkyl-, arylcycloalkylalkyl-, heteroarylcycloalkylalkyl-, arylheterocycloalkylalkyl-, heteroarylheterocycloalkylalkyl-, cycloalkyl, arylcycloalkyl-, heteroarylcycloalkyl-, heterocycloalkyl, arylheterocycloalkyl-, heteroarylheterocycloalkyl-, alkenyl, arylalkenyl, cycloalkenyl, arylcycloalkenyl-, heteroarylcycloalkenyl-,

heterocycloalkenyl, arylheterocycloalkenyl-, heteroarylheterocycloalkenyl-, alkynyl, arylalkynyl-, aryl, cycloalkylaryl-, heterocycloalkylaryl-, heterocycloalkenylaryl-, heteroaryl, cycloalkylheteroaryl-, heterocycloalkylheteroaryl-, cycloalkenylaryl-, heterocycloalkenylaryl-, $-OR^{15}$, -CN, $-C(O)R^{8}$, $-C(O)OR^{9}$, $-S(O)R^{10}$, $-S(O)_2R^{10}$, $-C(O)N(R^{11})(R^{12})$, $-S(O)N(R^{11})(R^{12})$, $-S(O)_2N(R^{11})(R^{12})$, $-NO_2$, $-N=C(R^{8})_2$ and $-N(R^{8})_2$; and wherein said R^{13} alkyl, arylalkyl-, heteroarylalkyl-, cycloalkylalkyl-, heterocycloalkylalkyl-, arylcycloalkylalkyl-, heteroarylcycloalkylalkyl-, arylheterocycloalkylalkyl-, heteroarylheterocycloalkylalkyl-, cycloalkyl, arylcycloalkyl-, heteroarylcycloalkyl-, heterocycloalkyl, arylheterocycloalkyl-, heteroarylheterocycloalkyl-, alkenyl, arylalkenyl-, cycloalkenyl, arylcycloalkenyl-, heteroarylcycloalkenyl-, heterocycloalkenyl, arylheterocycloalkenyl-, heteroarylheterocycloalkenyl-, alkynyl, arylalkynyl-, aryl, cycloalkylaryl-, heterocycloalkylaryl-, heterocycloalkenylaryl-, heteroaryl, cycloalkylheteroaryl-, heterocycloalkylheteroaryl-, cycloalkenylaryl-, and heterocycloalkenylaryl- groups are optionally substituted with 1 to 5 groups independently selected from the group consisting of: alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, halo, -CN, $-OR^{15}$, $-C(O)R^{15}$, $-C(O)OR^{15}$, $-C(O)N(R^{15})(R^{16})$, $-SR^{15}$, $-S(O)N(R^{15})(R^{16})$, $-CH(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$,$-C(=NOR^{15})R^{16}$, $-P(O)(OR^{15})(OR^{16})$, $-N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, $-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-R^{15}$; $-CH_2N(R^{15})(R^{16})$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-CH_2-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-CH_2-N(R^{15})C(O)OR^{16}$, $-S(O)R^{15}$, $=NOR^{15}$, $-N_3$, $-NO_2$ and $-S(O)_2R^{15}$;

R^{14} is selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, -CN, $-C(O)R^{15}$, $-C(O)OR^{15}$, $-C(O)N(R^{15})(R^{16})$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-C(=NOR^{15})R^{16}$, and $-P(O)(OR^{15})(OR^{16})$;

R^8 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, with each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- being unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

R^{10} is selected from the group consisting of a bond, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl-, heterocyclylalkyl- and the moieties:



where X is O, N(R^{14}) or S;

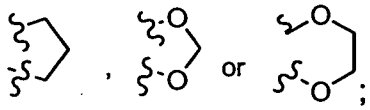
wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- heterocyclylalkyl- for R^{10} as well as the above-noted moieties for R^{10} can be unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of the moieties shown below; and

R^9 is selected from the group consisting of alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-,

heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below,

R^{15}, R^{16} and R^{17} are independently selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, arylcycloalkyl-, arylheterocyclyl-, R^{18}-alkyl, R^{18}-cycloalkyl, R^{18}-cycloalkylalkyl-, R^{18}-heterocyclyl, R^{18}-heterocyclylalkyl-, R^{18}-aryl, R^{18}-arylalkyl, R^{18}-heteroaryl and R^{18}-heteroarylalkyl-;

R^{18} is 1-5 substituents independently selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, arylalkyl-, arylalkenyl-, arylalkynyl-, $-NO_2$, halo, heteroaryl, HO-alkyoxyalkyl-, $-CF_3$, -CN, alkyl-CN, $-C(O)R^{19}$, -C(O)OH, $-C(O)OR^{19}$, $-C(O)NHR^{20}$, $-C(O)NH_2$, $-C(O)NH_2$-$C(O)N(alkyl)_2$, -C(O)N(alkyl)(aryl), -C(O)N(alkyl)(heteroaryl), $-SR^{19}$, $-S(O)_2R^{20}$, $-S(O)NH_2$, -S(O)NH(alkyl), -S(O)N(alkyl)(alkyl), -S(O)NH(aryl), $-S(O)_2NH_2$, $-S(O)_2NHR^{19}$, $-S(O)_2NH$(heterocyclyl), $-S(O)_2N(alkyl)_2$, $-S(O)_2N$(alkyl)(aryl), $-OCF_3$, -OH, $-OR^{20}$, -O-heterocyclyl, -O-cycloalkylalkyl, -O-heterocyclylalkyl, $-NH_2$, $-NHR^{20}$, $-N(alkyl)_2$, $-N(arylalkyl)_2$, -N(arylalkyl)-(heteroarylalkyl), $-NHC(O)R^{20}$, $-NHC(O)NH_2$, -NHC(O)NH(alkyl), -NHC(O)N(alkyl)(alkyl), -N(alkyl)C(O)NH(alkyl), -N(alkyl)C(O)N(alkyl)(alkyl), $-NHS(O)_2R^{20}$, $-NHS(O)_2NH$(alkyl), $-NHS(O)_2N$(alkyl)(alkyl), -N(alkyl)$S(O)_2NH$(alkyl) and –N(alkyl)$S(O)_2N$(alkyl)(alkyl);

or, alternately, two R^{18} moieties on adjacent carbons can be linked together to form:  ;

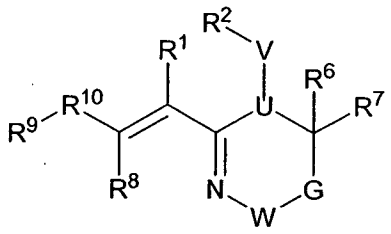
R^{19} is alkyl, cycloalkyl, aryl, arylalkyl or heteroarylalkyl;

R^{20} is alkyl, cycloalkyl, aryl, halo substituted aryl, arylalkyl, heteroaryl or heteroarylalkyl;

wherein each of the alkyl, cycloalkyl, cycloalkenyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, alkylaryl-, heteroaryl, heteroarylalkyl-, alkenyl and alkynyl groups in R^1-R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12} and R^{14} is independently unsubstituted or optionally substituted by 1 to 5 R^{21} groups independently selected from the group consisting of alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, halo, -CN, -OR^{15}, -$C(O)R^{15}$, -$C(O)OR^{15}$, -$C(O)N(R^{15})(R^{16})$, -SR^{15}, -$S(O)N(R^{15})(R^{16})$, -$CH(R^{15})(R^{16})$, -$S(O)_2N(R^{15})(R^{16})$, –$C(=NOR^{15})R^{16}$, -$P(O)(OR^{15})(OR^{16})$, -$N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, -$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$R^{15}$; -$CH_2N(R^{15})(R^{16})$, -$N(R^{15})S(O)R^{16}$, -$N(R^{15})S(O)_2R^{16}$, -$CH_2$-$N(R^{15})S(O)_2R^{16}$, -$N(R^{15})S(O)_2N(R^{16})(R^{17})$, -$N(R^{15})S(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)OR^{16}$, -$CH_2$-$N(R^{15})C(O)OR^{16}$, -$S(O)R^{15}$, =$NOR^{15}$, -$N_3$, -$NO_2$ and -$S(O)_2R^{15}$;

wherein each of the alkyl, cycloalkenyl, cycloalkyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, alkenyl and alkynyl groups in R^{21} is independently unsubstituted or substituted by 1 to 5 R^{22} groups independently selected from the group consisting of alkyl, cycloalkyl, cycloalkenyl, heterocyclyl, aryl, heteroaryl, halo, -CF_3, -CN, -OR^{15}, -$C(O)R^{15}$, -$C(O)OR^{15}$, -alkyl-$C(O)OR^{15}$, $C(O)N(R^{15})(R^{16})$, -SR^{15}, -$S(O)N(R^{15})(R^{16})$, -$S(O)_2N(R^{15})(R^{16})$, –$C(=NOR^{15})R^{16}$, -$P(O)(OR^{15})(OR^{16})$, -$N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, -$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)R^{16}$, -$N(R^{15})S(O)R^{16}$, -$N(R^{15})S(O)_2R^{16}$, -CH_2-$N(R^{15})S(O)_2R^{16}$, -$N(R^{15})S(O)_2N(R^{16})(R^{17})$, -$N(R^{15})S(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)OR^{16}$, -$CH_2$-$N(R^{15})C(O)OR^{16}$, -$N_3$, =$NOR^{15}$, -$NO_2$, -$S(O)R^{15}$ and -$S(O)_2R^{15}$.

3. A compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula:



wherein:

R^2 and R^6 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

U is $\}$—$C(R^5)$ or N;

W is selected from the group consisting of a bond, -O-, -C(O)-, -S-, -S(O)-, $-S(O_2)-$ and $-C(R^{11})(R^{12})-$;

G is $-C(R^3)(R^4)-$; -C(O)- and $-N(R^{13})-$; with the proviso that when W is -O- or -S-, G is not $-N(R^{13})-$ or -C(O)- ;

V is selected from the group consisting of a bond, -O-, -C(O)- and $-N(R^{14})-$;

R^1 (when R^1 is not joined to R^2), R^5, R^6 (when R^6 is not joined to R^2), and R^7can be the same or different, each being independently selected from the group consisting of H, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

or, alternatively, R^1 (when R^1 is not joined to R^2) and R^8 are taken together to form a bond;

R^3 is selected from the group consisting of H, halo, $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-C(O)R^{15}$, $-C(O)OR^{15}$,$-C(=NOR^{15})R^{16}$, $-C(O)N(R^{15})(R^{16})$, $-S(O)N(R^{15})(R^{16})$, $S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, $-N_3$, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

R^4, R^{11} and R^{12} can be the same or different, each being independently selected from the group consisting of H, halo, $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-C(O)R^{15}$, $-C(O)OR^{15}$,$-C(=NOR^{15})R^{16}$, $-C(O)N(R^{15})(R^{16})$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, $-N_3$, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below,

provided that when one of R^3 or R^4 is selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$,

$-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$, then the other is not selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, and $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$;

provided that when one of R^{11} or R^{12} is selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$, then the other is not selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$;

R^{13} is independently selected from the group consisting of H, alkyl, arylalkyl, heteroarylalkyl-, cycloalkylalkyl-, heterocycloalkylalkyl-, arylcycloalkylalkyl-, heteroarylcycloalkylalkyl-, arylheterocycloalkylalkyl-, heteroarylheterocycloalkylalkyl-, cycloalkyl, arylcycloalkyl-, heteroarylcycloalkyl-, heterocycloalkyl, arylheterocycloalkyl-, heteroarylheterocycloalkyl-, alkenyl, arylalkenyl-, cycloalkenyl, arylcycloalkenyl-, heteroarylcycloalkenyl-, heterocycloalkenyl, arylheterocycloalkenyl-, heteroarylheterocycloalkenyl-, alkynyl, arylalkynyl-, aryl, cycloalkylaryl-, heterocycloalkylaryl-, heterocycloalkenylaryl-, heteroaryl, cycloalkylheteroaryl-, heterocycloalkylheteroaryl-, cycloalkenylaryl, heterocycloalkenylaryl-, $-OR^{15}$, -CN, $-C(O)R^{8}$, $-C(O)OR^{9}$, $-S(O)R^{10}$, $-S(O)_2R^{10}$, $-C(O)N(R^{11})(R^{12})$, $-S(O)N(R^{11})(R^{12})$, $-S(O)_2N(R^{11})(R^{12})$, $-NO_2$, $-N=C(R^{8})_2$ and $-N(R^{8})_2$; and wherein said R^{13} alkyl, arylalkyl-, heteroarylalkyl-, cycloalkylalkyl-, heterocycloalkylalkyl-, arylcycloalkylalkyl-, heteroarylcycloalkylalkyl-,

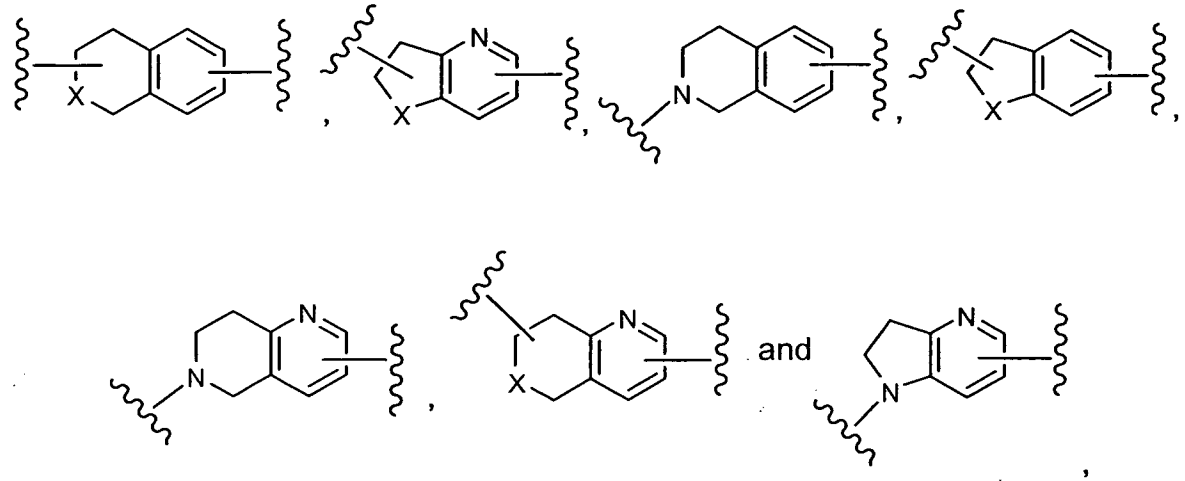
arylheterocycloalkylalkyl-, heteroarylheterocycloalkylalkyl-, cycloalkyl, arylcycloalkyl-, heteroarylcycloalkyl-, heterocycloalkyl, arylheterocycloalkyl-, heteroarylheterocycloalkyl-, alkenyl, arylalkenyl-, cycloalkenyl, arylcycloalkenyl-, heteroarylcycloalkenyl-, heterocycloalkenyl, arylheterocycloalkenyl-, heteroarylheterocycloalkenyl-, alkynyl, arylalkynyl, aryl, cycloalkylaryl-, heterocycloalkylaryl-, heterocycloalkenylaryl-, heteroaryl, cycloalkylheteroaryl-, heterocycloalkylheteroaryl-, cycloalkenylaryl-, and heterocycloalkenylaryl- groups are optionally substituted with 1 to 5 groups independently selected from the group consisting of: alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl, halo, -CN, $-OR^{15}$, $-C(O)R^{15}$, $-C(O)OR^{15}$, $-C(O)N(R^{15})(R^{16})$, $-SR^{15}$, $-S(O)N(R^{15})(R^{16})$, $-CH(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$,$-C(=NOR^{15})R^{16}$, $-P(O)(OR^{15})(OR^{16})$, $-N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, $-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-R^{15}$; $-CH_2N(R^{15})(R^{16})$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-CH_2-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-CH_2-N(R^{15})C(O)OR^{16}$, $-S(O)R^{15}$, $=NOR^{15}$, $-N_3$, $-NO_2$ and $-S(O)_2R^{15}$;

R^{14} is selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, -CN, $-C(O)R^{15}$, $-C(O)OR^{15}$, $-C(O)N(R^{15})(R^{16})$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-C(=NOR^{15})R^{16}$, and $-P(O)(OR^{15})(OR^{16})$;

R^8 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, with each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- being unsubstituted or optionally independently substituted with 1-3 substituents which

can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

R^{10} is selected from the group consisting of a bond, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl-, heterocyclylalkyl- and the moieties:



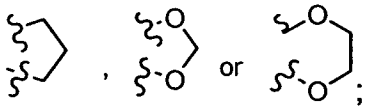
where X is O, $N(R^{14})$ or S;

wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- heterocyclylalkyl- for R^{10} as well as the above-noted moieties for R^{10} can be unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of the moieties shown below; and

R^9 is selected from the group consisting of alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-can be unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below,

R^{15}, R^{16} and R^{17} are independently selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, arylcycloalkyl, arylheterocyclyl-, R^{18}-alkyl-, R^{18}-cycloalkyl-, R^{18}-cycloalkylalkyl-, R^{18}-heterocyclyl-, R^{18}-heterocyclylalkyl-, R^{18}-aryl-, R^{18}-arylalkyl-, R^{18}-heteroaryl- and R^{18}-heteroarylalkyl-;

R^{18} is 1-5 substituents independently selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, arylalkyl, arylalkenyl, arylalkynyl, $-NO_2$, halo, heteroaryl, HO-alkyoxyalkyl, $-CF_3$, -CN, alkyl-CN, $-C(O)R^{19}$, -C(O)OH, $-C(O)OR^{19}$, $-C(O)NHR^{20}$, $-C(O)NH_2$, $-C(O)NH_2$-C(O)N(alkyl)$_2$, -C(O)N(alkyl)(aryl), -C(O)N(alkyl)(heteroaryl), $-SR^{19}$, $-S(O)_2R^{20}$, $-S(O)NH_2$, -S(O)NH(alkyl), -S(O)N(alkyl)(alkyl), -S(O)NH(aryl), $-S(O)_2NH_2$, $-S(O)_2NHR^{19}$, $-S(O)_2$NH(heterocyclyl), $-S(O)_2$N(alkyl)$_2$, $-S(O)_2$N(alkyl)(aryl), $-OCF_3$, -OH, $-OR^{20}$, -O-heterocyclyl, -O-cycloalkylalkyl, -O-heterocyclylalkyl, $-NH_2$, $-NHR^{20}$, -N(alkyl)$_2$, -N(arylalkyl)$_2$, -N(arylalkyl)-(heteroarylalkyl), $-NHC(O)R^{20}$, $-NHC(O)NH_2$, -NHC(O)NH(alkyl), -NHC(O)N(alkyl)(alkyl), -N(alkyl)C(O)NH(alkyl), -N(alkyl)C(O)N(alkyl)(alkyl), $-NHS(O)_2R^{20}$, $-NHS(O)_2$NH(alkyl), $-NHS(O)_2$N(alkyl)(alkyl), -N(alkyl)$S(O)_2$NH(alkyl) and –N(alkyl)$S(O)_2$N(alkyl)(alkyl);

or, alternately, two R^{18} moieties on adjacent carbons can be linked together to form: ;

R^{19} is alkyl, cycloalkyl, aryl, arylalkyl or heteroarylalkyl;

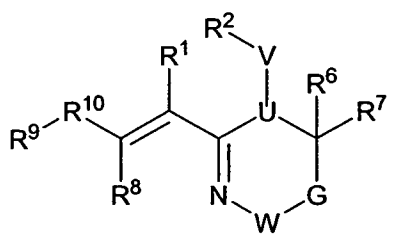
R^{20} is alkyl, cycloalkyl, aryl, halo substituted aryl, arylalkyl, heteroaryl or heteroarylalkyl;

wherein each of the alkyl, cycloalkyl, cycloalkenyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, alkylaryl-, heteroaryl, heteroarylalkyl-, alkenyl and alkynyl groups in R^1, R^2-R^6, R^3, R^4, R^5, R^7, R^8, R^9, R^{10}, R^{11}, R^{12} and R^{14} is independently unsubstituted or optionally substituted by 1 to 5 R^{21} groups independently selected from the group consisting of alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-,

aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, halo, -CN, -OR^{15}, -$C(O)R^{15}$, -$C(O)OR^{15}$, -$C(O)N(R^{15})(R^{16})$, -SR^{15}, -$S(O)N(R^{15})(R^{16})$, -$CH(R^{15})(R^{16})$, -$S(O)_2N(R^{15})(R^{16})$, –$C(=NOR^{15})R^{16}$, -$P(O)(OR^{15})(OR^{16})$, -$N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, -$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$R^{15}$; -$CH_2N(R^{15})(R^{16})$, -$N(R^{15})S(O)R^{16}$, -$N(R^{15})S(O)_2R^{16}$, -$CH_2$-$N(R^{15})S(O)_2R^{16}$, -$N(R^{15})S(O)_2N(R^{16})(R^{17})$, -$N(R^{15})S(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)OR^{16}$, -$CH_2$-$N(R^{15})C(O)OR^{16}$, -$S(O)R^{15}$, =$NOR^{15}$, -$N_3$, -$NO_2$ and -$S(O)_2R^{15}$;

wherein each of the alkyl, cycloalkenyl, cycloalkyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, alkenyl and alkynyl groups in R^{21} is independently unsubstituted or substituted by 1 to 5 R^{22} groups independently selected from the group consisting of alkyl, cycloalkyl, cycloalkenyl, heterocyclyl, aryl, heteroaryl, halo, -CF_3, -CN, -OR^{15}, -$C(O)R^{15}$, -$C(O)OR^{15}$, -alkyl-$C(O)OR^{15}$, $C(O)N(R^{15})(R^{16})$, -SR^{15}, -$S(O)N(R^{15})(R^{16})$, -$S(O)_2N(R^{15})(R^{16})$, –$C(=NOR^{15})R^{16}$, -$P(O)(OR^{15})(OR^{16})$, -$N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, -$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)R^{16}$, -$N(R^{15})S(O)R^{16}$, -$N(R^{15})S(O)_2R^{16}$, -CH_2-$N(R^{15})S(O)_2R^{16}$, -$N(R^{15})S(O)_2N(R^{16})(R^{17})$, -$N(R^{15})S(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)OR^{16}$, -$CH_2$-$N(R^{15})C(O)OR^{16}$, -$N_3$, =$NOR^{15}$, -$NO_2$, -$S(O)R^{15}$ and -$S(O)_2R^{15}$.

4. A compound, or pharmaceutically acceptable salts, solvates, esters or prodrugs of said compound, said compound having the general structure shown in the formula:



wherein:

R^1 and R^2 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below; and R^2 and R^6 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, with each of said cycloalkyl or heterocyclyl moiety being unsubstituted or optionally independently being substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

U is $\overset{\S}{\underset{\S}{}}$—C($R^5$) or N;

W is selected from the group consisting of a bond, -O-, -C(O)-, -S-, -S(O)-, -S(O_2)-, and -C(R^{11})(R^{12})-;

G is -C(R^3)(R^4)-; -C(O)- and -N(R^{13})-; with the proviso that when W is -O- or -S-, G is not -N(R^{13})- or -C(O)- ;

V is selected from the group consisting of a bond, -O-, -C(O)- and -N(R^{14})-;

R^5, R^6, and R^7can be the same or different, each being independently selected from the group consisting of H, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

R^3 is selected from the group consisting of H, halo, $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-C(O)R^{15}$, $-C(O)OR^{15}$,$-C(=NOR^{15})R^{16}$, $-C(O)N(R^{15})(R^{16})$, $-S(O)N(R^{15})(R^{16})$, $S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, $-N_3$, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

R^4, R^{11} and R^{12} can be the same or different, each being independently selected from the group consisting of H, halo, $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-C(O)R^{15}$, $-C(O)OR^{15}$,$-C(=NOR^{15})R^{16}$, $-C(O)N(R^{15})(R^{16})$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, $-N_3$, alkyl-, alkenyl-, alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- can be unsubstituted or optionally independently substituted with 1-5 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below,

provided that when one of R^3 or R^4 is selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$, then the other is not selected from the

group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, and $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$;

provided that when one of R^{11} or R^{12} is selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$, then the other is not selected from the group consisting of: $-OR^{15}$, -CN, $-SR^{15}$, $-NR^{15}R^{16}$, $-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-S(O)R^{15}$, $-S(O)_2R^{15}$, $-P(O)(OR^{15})(OR^{16})$, $=NOR^{15}$, and $-N_3$;

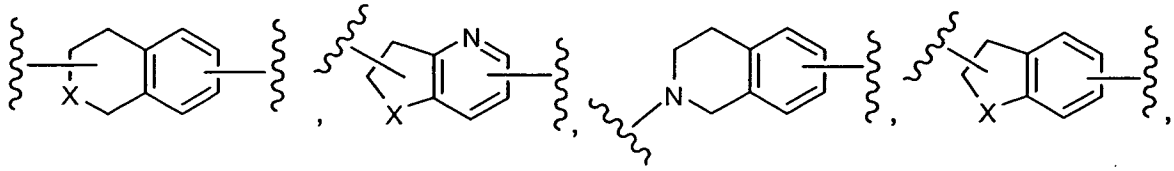
R^{13} is independently selected from the group consisting of H, alkyl, arylalkyl, heteroarylalkyl-, cycloalkylalkyl-, heterocycloalkylalkyl-, arylcycloalkylalkyl-, heteroarylcycloalkylalkyl-, arylheterocycloalkylalkyl-, heteroarylheterocycloalkylalkyl-, cycloalkyl, arylcycloalkyl-, heteroarylcycloalkyl-, heterocycloalkyl, arylheterocycloalkyl-, heteroarylheterocycloalkyl-, alkenyl, arylalkenyl-, cycloalkenyl, arylcycloalkenyl-, heteroarylcycloalkenyl-, heterocycloalkenyl, arylheterocycloalkenyl-, heteroarylheterocycloalkenyl-, alkynyl, arylalkynyl-, aryl, cycloalkylaryl-, heterocycloalkylaryl-, heterocycloalkenylaryl-, heteroaryl, cycloalkylheteroaryl-, heterocycloalkylheteroaryl-, cycloalkenylaryl-, heterocycloalkenylaryl-, $-OR^{15}$, -CN, $-C(O)R^{8}$, $-C(O)OR^{9}$, $-S(O)R^{10}$, $-S(O)_2R^{10}$, $-C(O)N(R^{11})(R^{12})$, $-S(O)N(R^{11})(R^{12})$, $-S(O)_2N(R^{11})(R^{12})$, $-NO_2$, $-N=C(R^{8})_2$ and $-N(R^{8})_2$; and wherein said R^{13} alkyl, arylalkyl-, heteroarylalkyl-, cycloalkylalkyl-, heterocycloalkylalkyl-, arylcycloalkylalkyl-, heteroarylcycloalkylalkyl-, arylheterocycloalkylalkyl-, heteroarylheterocycloalkylalkyl-, cycloalkyl, arylcycloalkyl-, heteroarylcycloalkyl-, heterocycloalkyl, arylheterocycloalkyl-,

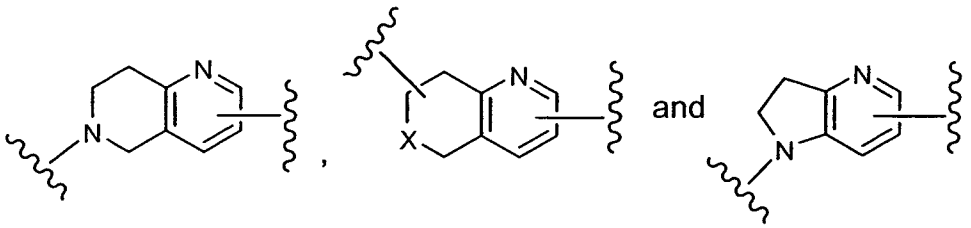
heteroarylheterocycloalkyl-, alkenyl, arylalkenyl-, cycloalkenyl, arylcycloalkenyl-, heteroarylcycloalkenyl-, heterocycloalkenyl-, arylheterocycloalkenyl-, heteroarylheterocycloalkenyl-, alkynyl, arylalkynyl-, aryl, cycloalkylaryl-, heterocycloalkylaryl-, heterocycloalkenylaryl-, heteroaryl, cycloalkylheteroaryl-, heterocycloalkylheteroaryl-, cycloalkenylaryl-, and heterocycloalkenylaryl- groups are optionally substituted with 1 to 5 groups independently selected from the group consisting of: alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, halo, -CN, -OR^{15}, -$C(O)R^{15}$, -$C(O)OR^{15}$, -$C(O)N(R^{15})(R^{16})$, -SR^{15}, -$S(O)N(R^{15})(R^{16})$, -$CH(R^{15})(R^{16})$, -$S(O)_2N(R^{15})(R^{16})$,–$C(=NOR^{15})R^{16}$, -$P(O)(OR^{15})(OR^{16})$, -$N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, -$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)R^{16}$, -CH_2-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$R^{15}$; -$CH_2N(R^{15})(R^{16})$, -$N(R^{15})S(O)R^{16}$, -$N(R^{15})S(O)_2R^{16}$, -$CH_2$-$N(R^{15})S(O)_2R^{16}$, -$N(R^{15})S(O)_2N(R^{16})(R^{17})$, -$N(R^{15})S(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)N(R^{16})(R^{17})$, -$CH_2$-$N(R^{15})C(O)N(R^{16})(R^{17})$, -$N(R^{15})C(O)OR^{16}$, -$CH_2$-$N(R^{15})C(O)OR^{16}$, -$S(O)R^{15}$, =$NOR^{15}$, -$N_3$, -$NO_2$ and -$S(O)_2R^{15}$;

R^{14} is selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, -CN, -$C(O)R^{15}$, -$C(O)OR^{15}$, -$C(O)N(R^{15})(R^{16})$, -$S(O)N(R^{15})(R^{16})$, -$S(O)_2N(R^{15})(R^{16})$, –$C(=NOR^{15})R^{16}$, and -$P(O)(OR^{15})(OR^{16})$;

R^8 is selected from the group consisting of H, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, with each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl- being unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below;

R^{10} is selected from the group consisting of a bond, alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl-, heterocyclylalkyl- and the moieties:





where X is O, N(R^{14}) or S;

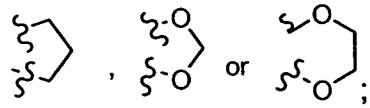
wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl-heterocyclylalkyl- for R^{10} as well as the above-noted moieties for R^{10} can be unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of the moieties shown below; and

R^9 is selected from the group consisting of alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-, wherein each of said alkyl-, alkenyl- and alkynyl-, aryl-, arylalkyl-, alkylaryl-, cycloalkyl-, cycloalkylalkyl-, heteroaryl-, heteroarylalkyl-, heterocyclyl- and heterocyclylalkyl-can be unsubstituted or optionally independently substituted with 1-3 substituents which can be the same or different, each substituent being independently selected from the group consisting of the moieties shown below,

R^{15}, R^{16} and R^{17} are independently selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, arylcycloalkyl-, arylheterocyclyl-, R^{18}-

alkyl-, R^{18}-cycloalkyl-, R^{18}-cycloalkylalkyl-, R^{18}-heterocyclyl-, R^{18}-heterocyclylalkyl-, R^{18}-aryl-, R^{18}-arylalkyl-, R^{18}-heteroaryl- and R^{18}-heteroarylalkyl

R^{18} is 1-5 substituents independently selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, arylalkyl-, arylalkenyl-, arylalkynyl-, $-NO_2$, halo, heteroaryl, HO-alkyoxyalkyl-, $-CF_3$, -CN, alkyl-CN, $-C(O)R^{19}$, -C(O)OH, $-C(O)OR^{19}$, $-C(O)NHR^{20}$, $-C(O)NH_2$, $-C(O)NH_2$-$C(O)N(alkyl)_2$, -C(O)N(alkyl)(aryl), -C(O)N(alkyl)(heteroaryl), $-SR^{19}$, $-S(O)_2R^{20}$, $-S(O)NH_2$, -S(O)NH(alkyl), -S(O)N(alkyl)(alkyl), -S(O)NH(aryl), $-S(O)_2NH_2$, $-S(O)_2NHR^{19}$, $-S(O)_2NH$(heterocyclyl), $-S(O)_2N(alkyl)_2$, $-S(O)_2N$(alkyl)(aryl), $-OCF_3$, -OH, $-OR^{20}$, -O-heterocyclyl, -O-cycloalkylalkyl, -O-heterocyclylalkyl, $-NH_2$, $-NHR^{20}$, $-N(alkyl)_2$, $-N(arylalkyl)_2$, -N(arylalkyl)-(heteroarylalkyl), $-NHC(O)R^{20}$, $-NHC(O)NH_2$, -NHC(O)NH(alkyl), -NHC(O)N(alkyl)(alkyl), -N(alkyl)C(O)NH(alkyl), -N(alkyl)C(O)N(alkyl)(alkyl), $-NHS(O)_2R^{20}$, $-NHS(O)_2NH$(alkyl), $-NHS(O)_2N$(alkyl)(alkyl), -N(alkyl)$S(O)_2NH$(alkyl) and –N(alkyl)$S(O)_2N$(alkyl)(alkyl);

or, alternately, two R^{18} moieties on adjacent carbons can be linked together to form: ;

R^{19} is alkyl, cycloalkyl, aryl, arylalkyl- or heteroarylalkyl-;

R^{20} is alkyl, cycloalkyl, aryl, halo substituted aryl, arylalkyl-, heteroaryl or heteroarylalkyl-;

wherein each of the alkyl, cycloalkyl, cycloalkenyl, cycloalkylalkyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, alkyaryl-, heteroaryl, heteroarylalkyl-, alkenyl and alkynyl groups in R^1-R^2, R^2-R^6, R^3, R^4, R^5, R^7, R^8, R^9, R^{10}, R^{11}, R^{12} and R^{14} is independently unsubstituted or optionally substituted by 1 to 5 R^{21} groups independently selected from the group consisting of alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl-, cycloalkenyl, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, halo, -CN, $-OR^{15}$, $-C(O)R^{15}$, $-C(O)OR^{15}$, $-C(O)N(R^{15})(R^{16})$, $-SR^{15}$, $-S(O)N(R^{15})(R^{16})$, $-CH(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $–C(=NOR^{15})R^{16}$, $-P(O)(OR^{15})(OR^{16})$, $-N(R^{15})(R^{16})$,

-alkyl-$N(R^{15})(R^{16})$, $-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-R^{15}$; $-CH_2N(R^{15})(R^{16})$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-CH_2-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-CH_2-N(R^{15})C(O)OR^{16}$, $-S(O)R^{15}$, $=NOR^{15}$, $-N_3$, $-NO_2$ and $-S(O)_2R^{15}$;

wherein each of the alkyl, cycloalkenyl, cycloalkyl, cycloalkylalkyl-, heterocyclyl, heterocyclylalkyl-, aryl, arylalkyl-, heteroaryl, heteroarylalkyl-, alkenyl and alkynyl groups in R^{21} is independently unsubstituted or substituted by 1 to 5 R^{22} groups independently selected from the group consisting of alkyl, cycloalkyl, cycloalkenyl, heterocyclyl, aryl, heteroaryl, halo, $-CF_3$, -CN, $-OR^{15}$, $-C(O)R^{15}$, $-C(O)OR^{15}$, -alkyl-$C(O)OR^{15}$, $C(O)N(R^{15})(R^{16})$, $-SR^{15}$, $-S(O)N(R^{15})(R^{16})$, $-S(O)_2N(R^{15})(R^{16})$, $-C(=NOR^{15})R^{16}$, $-P(O)(OR^{15})(OR^{16})$, $-N(R^{15})(R^{16})$, -alkyl-$N(R^{15})(R^{16})$, $-N(R^{15})C(O)R^{16}$, $-CH_2-N(R^{15})C(O)R^{16}$, $-N(R^{15})S(O)R^{16}$, $-N(R^{15})S(O)_2R^{16}$, $-CH_2-N(R^{15})S(O)_2R^{16}$, $-N(R^{15})S(O)_2N(R^{16})(R^{17})$, $-N(R^{15})S(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)N(R^{16})(R^{17})$, $-CH_2-N(R^{15})C(O)N(R^{16})(R^{17})$, $-N(R^{15})C(O)OR^{16}$, $-CH_2-N(R^{15})C(O)OR^{16}$, $-N_3$, $=NOR^{15}$, $-NO_2$, $-S(O)R^{15}$ and $-S(O)_2R^{15}$.

5. The compound of claim 1, wherein R^1 is H.

6. The compound of claim 1, wherein R^1 is alkyl.

7. The compound of claim 1, wherein R^1 is methyl.

8. The compound of claim 1, wherein U is $C(R^5)$.

9. The compound of claim 1, wherein U is N.

10. The compound of claim 1, wherein W is a bond.

11. The compound of claim 1, wherein W is –O-.

12. The compound of claim 1, wherein R^2 and R^6 are joined together to form a cyclohexyl ring.

13. The compound of claim 1, wherein W is –C(O)-.

14. The compound of claim 1, wherein =N-W-G- is =N-C($R^{11}R^{12}$)-C(O)-.

15. The compound of claim 1, wherein W is –C(R^{11})(R^{12})-.

16. The compound of claim 1, wherein:

(a) U is N, and R^2 and R^6 are joined together to form a pyrrolidinyl ring including the N of U as the nitrogen of said pyrrolidinyl ring, which is unsubstituted; or

(b) U is N, and R^2 and R^6 are joined together to form a pyrrolidinyl ring including the N of U as the nitrogen of said pyrrolidinyl ring, wherein said pyrrolidinyl ring is substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl), $-N(alkyl)_2$, hydroxy and alkoxy groups; or

(c) U is N, and R^2 and R^6 are joined together to form a piperazinyl ring including the N of U as a nitrogen of said piperazinyl ring, which is unsubstituted; or

(d) U is N, and R^2 and R^6 are joined together to form a piperazinyl ring including the N of U as a nitrogen of said piperazinyl ring, wherein said piperazinyl ring is substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl), $-N(alkyl)_2$, hydroxy and alkoxy groups; or

(e) R^2 and R^6 are joined together to form a morpholinyl ring which is unsubstituted; or

(f) R^2 and R^6 are joined together to form a morpholinyl ring, which is substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl),$-N(alkyl)_2$, hydroxy and alkoxy groups; or

(g) R^2 and R^6 are joined together to form a pyranyl ring which is unsubstituted; or

(h) R^2 and R^6 are joined together to form a pyranyl ring, which is substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl),$-N(alkyl)_2$, hydroxy and alkoxy groups; or

(i) R^2 and R^6 are joined together to form a pyrrolidinyl ring which is unsubstituted; or

(j) R^2 and R^6 are joined together to form a pyrrolidinyl ring, which is substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl),$-N(alkyl)_2$, hydroxy and alkoxy groups.

17. The compound of claim 1, wherein:

(a) U is N and R^1 and R^2 are joined together to form a pyrrolidinyl ring, which is substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl),$-N(alkyl)_2$, hydroxy and alkoxy groups; or

(b) U is N and R^1 and R^2 are joined together to form a piperidinyl ring, which is substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl),$-N(alkyl)_2$, hydroxy and alkoxy groups; or

(c) U is N and R^1 and R^2 are joined together to form a piperazinyl ring, which is substituted with 1-3 substituents which can be the same or different,

each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl),$-N(alkyl)_2$, hydroxy and alkoxy groups.

18. The compound of claim 1, wherein R^7 is 4-fluorophenyl.

19. The compound of claim 1, wherein:

(a) U is N, R^1 and R^2 are joined together to form a pyrrolidinyl ring, which ring is unsubstituted or optionally substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl),$-N(alkyl)_2$, hydroxy and alkoxy groups, and R^2 and R^6 are joined together to form a pyrrolidinyl ring, which ring is unsubstituted or optionally substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl),$-N(alkyl)_2$, hydroxy and alkoxy groups; or

(b) U is N, R^1 and R^2 are joined together to form a piperidinyl ring, which ring is unsubstituted or optionally substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl),$-N(alkyl)_2$, hydroxy and alkoxy groups, and R^2 and R^6 are joined together to form a piperidinyl ring, which ring is unsubstituted or optionally substituted with 1-3 substituents which can be the same or different, each being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl),$-N(alkyl)_2$, hydroxy and alkoxy groups.

20. The compound of claim 1, wherein:

(a) R^7 is unsubstituted biphenyl; or

(b) R^7 is biphenyl which is substituted with 1-4 substituents which can be the same or different, each substituent being independently selected from the group consisting of halo, alkyl, -CN, $-NH_2$, -NH(alkyl), $-N(alkyl)_2$, hydroxy and alkoxy groups;

(c) R^7 is 3-(1,1'-biphenyl)-yl; or

(d) R^7 is 4-(1,1'-biphenyl)-yl.

21. The compound of claim 1, wherein R^8 is H.

22. The compound of claim 1, wherein R^8 is alkyl.

23. The compound of claim 1, wherein R^8 is methyl.

24. The compound of claim 1, wherein R^{10} is aryl.

25. The compound of claim 1, wherein R^{10} is phenyl.

26. The compound of claim 1, wherein R^{10} is heteroaryl.

27. The compound of claim 1, wherein R^9 is unsubstituted heteroaryl.

28. The compound of claim 1, wherein R^9 is heteroaryl which is substituted with 1-3 substituents which can be the same or different, each substituent being independently selected from the group consisting of halo, alkyl, CN, NH_2, NH(alkyl), $N(alkyl)_2$, hydroxy and alkoxy groups.

29. The compound of claim 1, wherein R^9 is imidazol-1-yl.

30. The compound of claim 1, wherein R^9 is 4-methyl-imidazol-1-yl.

31. The compound of claim 1, wherein R^9 is 5-chloro-4-methyl-imidazol-1-yl.

32. The compound of claim 1 wherein:

(a)

U is C(R^5);

R^1 is H;

R^2 and R^6 are connected to form a 4-7 membered cycloalkyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

R^8 is H;

R^{10} is selected from the group consisting of: 3-methoxy-phenyl and 3-F-phenyl; and

R^9 is 4-methyl-imidazolyl-1-yl; or

(b)

U is C(R^5) or N;

R^1 is H;

R^2 and R^6 are connected to form a 5-8 membered heterocyclyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

R^8 is H;

R^{10} is selected from the group consisting of: 3-methoxy-phenyl and 3-F-phenyl; and

R^9 is 4-methyl-imidazolyl-1-yl; or

(c)

U is C(R^5) or N;

R^1 and R^2 are connected to form a 5-8 membered heterocyclyl ring;

R^2 and R^6 are connected to form a 5-8 membered heterocyclyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

R^8 is H;

R^{10} is selected from the group consisting of: 3-methoxy-phenyl and 3-F-phenyl; and

R^9 is 4-methyl-imidazolyl-1-yl; or

(d)

U is C(R^5);

R^2 and R^6 are connected to form a 4-7 membered cycloalkyl ring;

R^1 andR^7 is 3-(1,1'-biphenyl)-yl;

R^8 is H;

R^{10} is selected from the group consisting of: 3-methoxy-phenyl and 3-F-phenyl; and

R^9 is 4-methyl-imidazolyl-1-yl; or

(e)

U is $C(R^5)$ or N;

R^1 and R^2 are connected to form a piperidinyl ring;

R^2 and R^6 are connected to form a piperidinyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

R^8 is H;

R^{10} is selected from the group consisting of: 3-methoxy-phenyl and 3-F-phenyl; and

R^9 is 4-methyl-imidazolyl-1-yl; or

(f)

U is $C(R^5)$ or N;

R^1 and R^2 are connected to form a piperazinyl ring;

R^2 and R^6 are connected to form a piperazinyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

R^8 is H;

R^{10} is selected from the group consisting of: 3-methoxy-phenyl and 3-F-phenyl; and

R^9 is 4-methyl-imidazolyl-1-yl; or

(g)

U is $C(R^5)$ or N;

R^1 and R^2 are connected to form a piperidinyl ring;

R^2 and R^6 are connected to form a piperazinyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

R^8 is H;

R^{10} is selected from the group consisting of: 3-methoxy-phenyl and 3-F-phenyl; and

R^9 is 4-methyl-imidazolyl-1-yl; or

(h)

U is N;

R^1 and R^2 are connected to form a piperazinyl ring;

R^2 and R^6 are connected to form a piperidnyl ring;

R^7 is 3-(1,1'-biphenyl)-yl;

R^8 is H;

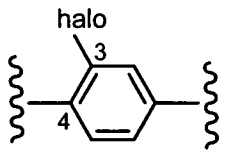
R^{10} is selected from the group consisting of: 3-methoxy-phenyl and 3-F-phenyl; and

R^9 is 4-methyl-imidazolyl-1-yl.

33. The compound of claim 1 wherein R^{10} is phenyl substituted with 1 halo.

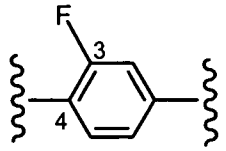
34. The compound of claim 1 wherein R^{10} is phenyl substituted with 1 halo, and said halo is F.

35. The compound of claim 1 wherein R^{10} is:



(wherein the bond from the carbon labeled as 4 is to the R^9 group).

36. The compound of claim 1 wherein R^{10} is:

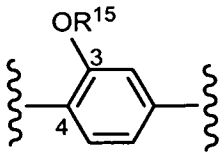


(wherein the bond from the carbon labeled as 4 is to the R^9 group).

37. The compound of claim 1 wherein R^{10} is phenyl substituted with one $-OR^{15}$ group.

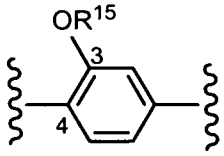
38. The compound of claim 1 wherein R^{10} is phenyl substituted with one $-OR^{15}$ group, and said R^{15} is alkyl.

39. The compound of claim 1 wherein R^{10} is:



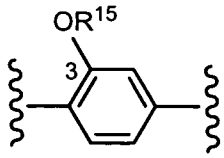
(wherein the bond from the carbon labeled as 4 is to the R^9 group).

40. The compound of claim 1 wherein R^{10} is:



wherein R^{15} is alkyl (wherein the bond from the carbon labeled as 4 is to the R^9 group).

41. The compound of claim 1 wherein R^{10} is:



wherein R^{15} is methyl (i.e., R^{10} is 3-methoxy-phenyl).

42. The compound of claim 1 wherein R^9 is heteroaryl substituted with 1 to 3 independently selected alkyl groups.

43. The compound of claim 1 wherein R^9 is heteroaryl substituted with one is alkyl group.

44. The compound of claim 1 wherein:

(a) R^1 and R^2 are joined together to form a ring optionally substituted with 1 to 5 independently selected R^{21} substitutents, and said ring is fused with an aryl or heteroaryl ring, and said resulting fused ring is optionally substituted with 1 to 5 independently selected R^{21} substitutents; or

(b) R^1 and R^2 are joined together to form a ring substituted with 1 to 5 independently selected R^{21} substitutents, and said ring is fused with an aryl or heteroaryl ring, and said resulting fused ring is optionally substituted with 1 to 5 independently selected R^{21} substitutents; or

(c) R^1 and R^2 are joined together to form a ring optionally substituted with 1 to 5 independently selected R^{21} substitutents; or

(d) R^1 and R^2 are joined together to form a ring; or

(e) R^1 and R^2 are joined together to form a ring, and said ring is fused with an aryl or heteroaryl ring, and said resulting fused ring is optionally substituted with 1 to 5 independently selected R^{21} substitutents.

45. The compound of claim 1 wherein:

(a) R^1 and R^2 are joined together to form a heterocyclyl ring optionally substituted with 1 to 5 independently selected R^{21} substitutents; or

(b) R^1 and R^2 are joined together to form a heterocyclyl ring substituted with 1 to 5 independently selected R^{21} substitutents; or

(c) U is N, and R^1 and R^2 are joined together to form a heterocyclyl ring optionally substituted with 1 to 5 independently selected R^{21} substitutents; or

(d) U is N, and R^1 and R^2 are joined together to form a heterocyclyl ring substituted with 1 to 5 independently selected R^{21} substitutents; or

(e R^1 and R^2 are joined together to form a heterocyclyl ring; or

(f) U is N, and R^1 and R^2 are joined together to form a heterocyclyl ring.

46. The compound of claim 1 wherein:

(a) R^1 and R^2 are joined together to form a piperidinyl ring optionally substituted with 1 to 5 independently selected R^{21} substitutents; or

(b) R^1 and R^2 are joined together to form a piperidinyl ring substituted with 1 to 5 independently selected R^{21} substitutents; or

(c) R^1 and R^2 are joined together to form a piperidinyl ring optionally substituted with 1 to 5 independently selected R^{21} substitutents; or

(d) U is N, and R^1 and R^2 are joined together to form a piperidinyl ring substituted with 1 to 5 independently selected R^{21} substitutents; or

(e) R^1 and R^2 are joined together to form a piperidinyl ring optionally substituted with a =O moiety; or

(f) U is N, and R^1 and R^2 are joined together to form a piperidinyl ring optionally substituted with a =O moiety; or

(g) R^1 and R^2 are joined together to form a piperidinyl; or

(h) U is N, and R^1 and R^2 are joined together to form a piperidinyl ring; or

(i) R^1 and R^2 are joined together to form a piperidinyl ring substituted with a =O moiety; or

(j) U is N, and R^1 and R^2 are joined together to form a piperidinyl ring substituted with a =O moiety.

47. The compound of claim 1 wherein R^2 and R^6 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (a) said cycloalkyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, (b) said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (c) said cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents.

48. The compound of claim 1 wherein:

(a) R^1 and R^2 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (1) said cycloalkyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (2) said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and

(b) R^2 and R^6 are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (1) said cycloalkyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (2) said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents; and

(c) said R^2 and R^6 cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents.

49. The compound of claim 1 wherein R^6 and either R^3 or R^4 of the $-C(R^3)(R^4)-$ G moiety, are joined together to form a C4-C8 cycloalkyl, C4-C8 cycloalkenyl, 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (a) said cycloalkyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, (b) said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (c) said cycloalkyl, cycloalkenyl, heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents.

50. The compound of claim 1 wherein:

(a) R^6 and R^{13} of the $-N(R^{13})-$ G moiety, are joined together to form a 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (1)

said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents, and (2) said heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents; or

(b) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents; or

(c) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein said heterocyclyl moiety is substituted with 1-5 independently selected R^{21} substituents; or

(d) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety; or

(e) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (1) said heterocyclyl moiety is optionally substituted with a =O, and (2) said heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents; or

(f) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein said heterocyclyl moiety is optionally substituted with a =O; or

(g) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein said heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents; or

(h) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety;

(i) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein: (1) said heterocyclyl moiety is substituted with a =O, and (2) said heterocyclyl or heterocyclenyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents;

(j) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5-8 membered heterocyclyl or 5-8 membered heterocyclenyl moiety, wherein said heterocyclyl moiety is substituted with a =O.

51. The compound of claim 1 wherein:

(a) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5 membered heterocyclyl moiety, wherein: (1) said heterocyclyl moiety is optionally substituted with with 1-5 independently selected R^{21} substituents, and (2) said heterocyclyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents; or

(b) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5 membered heterocyclyl moiety, wherein said heterocyclyl moiety is optionally substituted with 1-5 independently selected R^{21} substituents; or

(c) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5 membered heterocyclyl moiety, wherein: (1) said heterocyclyl moiety is optionally substituted with a =O, and (2) said heterocyclyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents; or

(d) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5 membered heterocyclyl moiety, wherein said heterocyclyl moiety is optionally substituted with a =O; or

(e) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5 membered heterocyclyl moiety, wherein said heterocyclyl moiety is optionally

fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents; or

(f) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5 membered heterocyclyl moiety; or

(g) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5 membered heterocyclyl moiety, wherein: (1) said heterocyclyl moiety is substituted with a =O, and (2) said heterocyclyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents; or

(h) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5 membered heterocyclyl moiety, wherein said heterocyclyl moiety is substituted with a =O; or

(i) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5 membered heterocyclyl moiety, wherein: (1) said heterocyclyl moiety is substituted with with 1-5 independently selected R^{21} substituents, and (2) said heterocyclyl moiety is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents; or

(j) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5 membered heterocyclyl moiety, wherein said heterocyclyl moiety is substituted with 1-5 independently selected R^{21} substituents.

52. The compound of claim 1 wherein:

(a) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a pyrrolidinyl ring, wherein: (1) said pyrrolidinyl ring is optionally substituted with 1-5 independently selected R^{21} substituents, and (2) said pyrrolidinyl ring is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents; or

(b) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5 pyrrolidinyl ring, wherein said pyrrolidinyl ring is optionally substituted with 1-5 independently selected R^{21} substituents; or

(c) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a pyrrolidinyl ring, wherein: (1) said pyrrolidinyl ring is optionally substituted with a =O, and (2) said pyrrolidinyl ring is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents; or

(d) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a pyrrolidinyl ring, wherein said pyrrolidinyl ring is optionally substituted with a =O; or

(e) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a pyrrolidinyl ring, wherein said pyrrolidinyl ring is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents; or

(f) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a pyrrolidinyl ring; or

(g) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a pyrrolidinyl ring, wherein: (1) said pyrrolidinyl ring is substituted with a =O, and (2) said pyrrolidinyl ring is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents;or

(h) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a pyrrolidinyl ring, wherein said pyrrolidinyl ring is substituted with a =O; or

(i) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a pyrrolidinyl ring, wherein: (1) said pyrrolidinyl ring is substituted with 1-5 independently selected R^{21} substituents, and (2) said pyrrolidinyl ring is optionally fused with an aryl or heteroaryl ring, and the ring moiety resulting from the fusion is optionally substituted with 1-5 independently selected R^{21} substituents; or

(j) R^6 and R^{13} of the -N(R^{13})- G moiety, are joined together to form a 5 pyrrolidinyl ring, wherein said pyrrolidinyl ring is substituted with 1-5 independently selected R^{21} substituents.

53. The compound of claim 1 wherein:

(a) R^{10} is selected from the group consisting of aryl and aryl substituted with one or more R^{21} groups, and R^9 is selected from the group consisting of heteroaryl and heteroaryl substituted with one or more R^{21} groups, and wherein each R^{21} is independently selected; or

(b) R^{10} is selected from the group consisting of phenyl and phenyl substituted with 1-3 independently selected R^{21} groups, and R^9 is selected from the group consisting of imidazolyl and imidazolyl substituted with 1-3 independently selected R^{21} groups; or

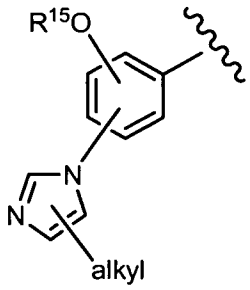
(c) R^{10} is phenyl substituted with 1-3 independently selected R^{21} groups, and R^9 is selected from the group consisting of imidazolyl and imidazolyl substituted with 1-3 independently selected R^{21} groups; or

(d) R^{10} is selected from the group consisting of heteroaryl and heteroaryl substituted with 1-3 R^{21} groups, and the R^9 group is selected from the group consisting of heteroaryl and heteroaryl substituted with 1-3 R^{21} groups, and wherein each R^{21} is independently selected; or

(e) R^{10} is selected from the group consisting of pyridyl and pyridyl substituted with 1-3 R^{21} groups, and the R^9 group is selected from the group consisting of imidazolyl and imidazolyl substituted with 1-3 R^{21} groups, and wherein each R^{21} is independently selected; or

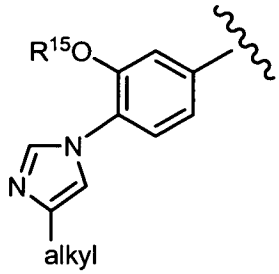
(f) R^{10} is pyridyl, and the R^9 group is imidazolyl substituted with 1-3 R^{21} groups, and wherein each R^{21} is independently selected; or

(g) the R^9-R^{10}- moiety is:



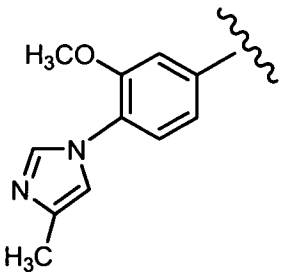
; or

(h) R^9-R^{10}- moiety is:



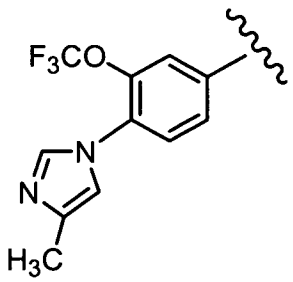
; or

(i) the R^9-R^{10}- moiety is:



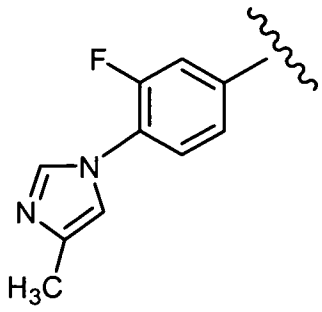
; or

(j) the R^9-R^{10}- moiety is:



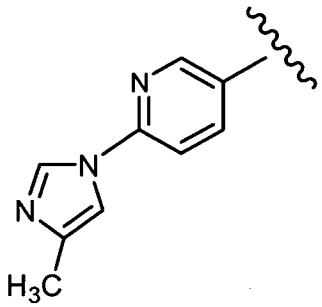
; or

(k) the R^9-R^{10}- moiety is:



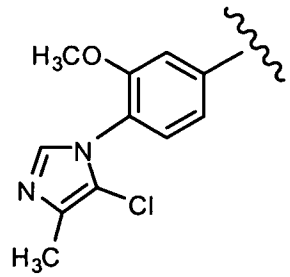
; or

(l) R^9-R^{10}- moiety is:



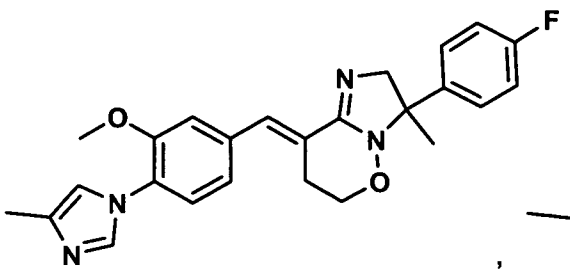
; or

(m) the R^9-R^{10}- moiety is:

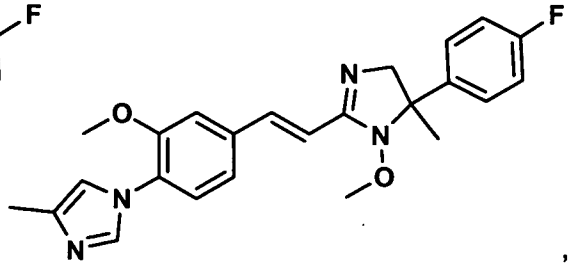


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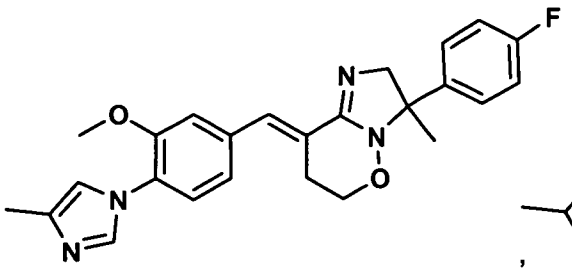
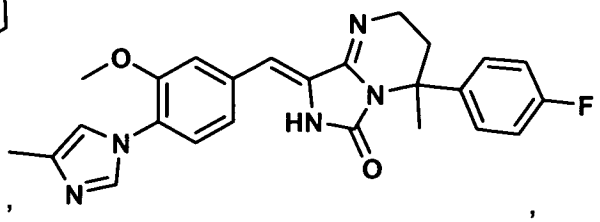
54. A compound of the formula:

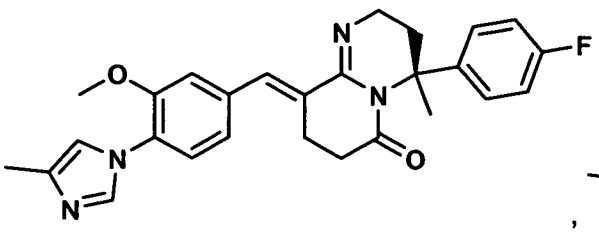
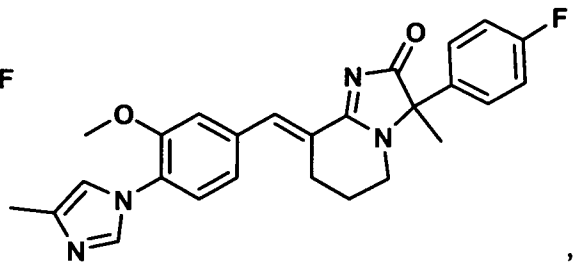


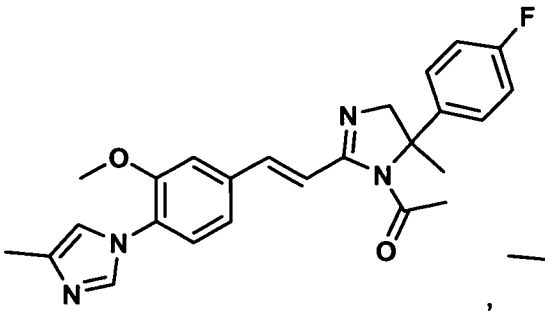
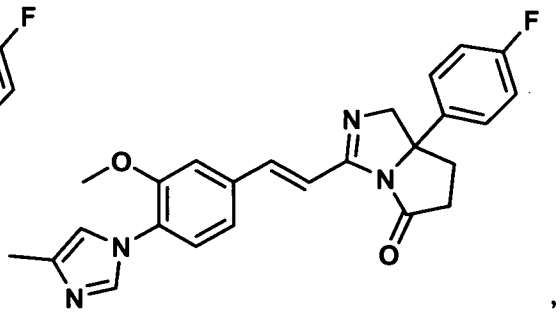
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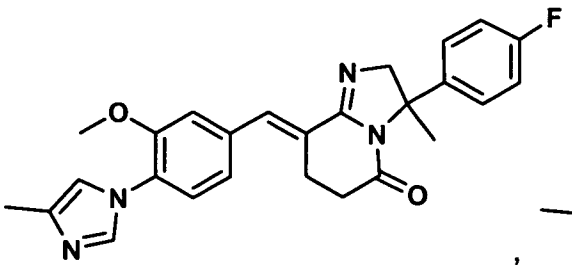
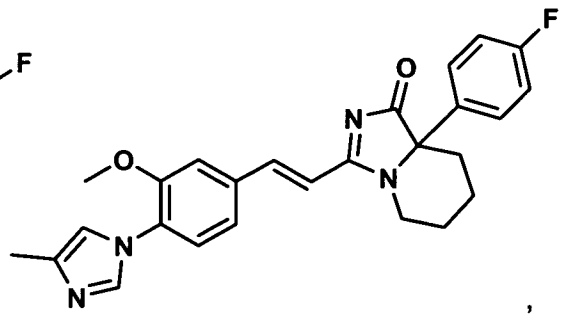


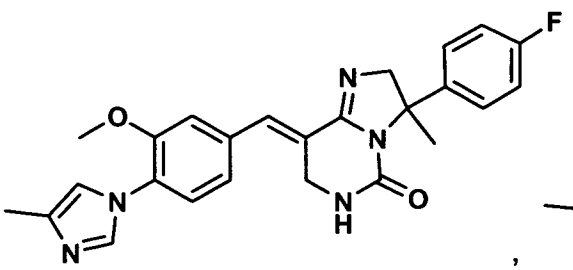
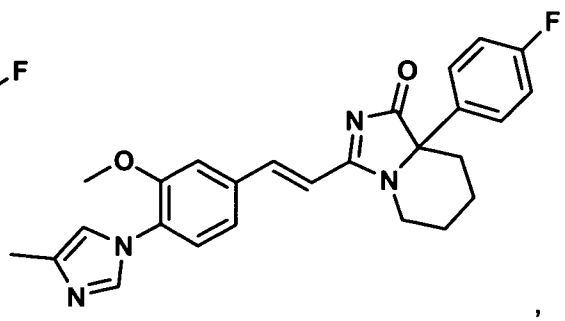
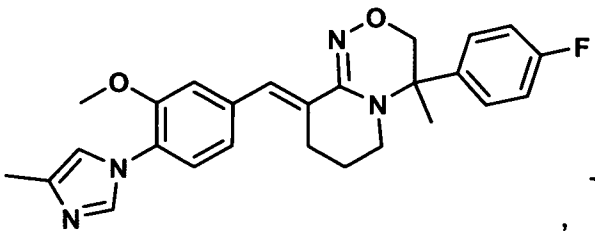
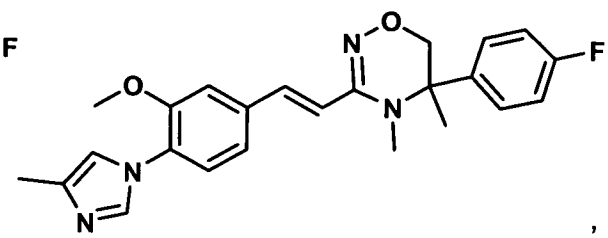
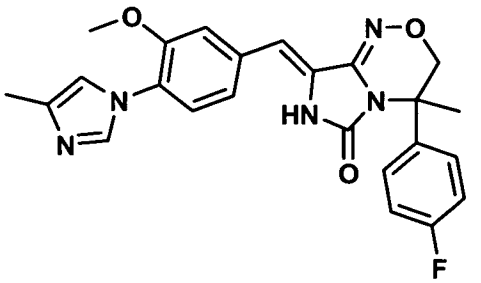
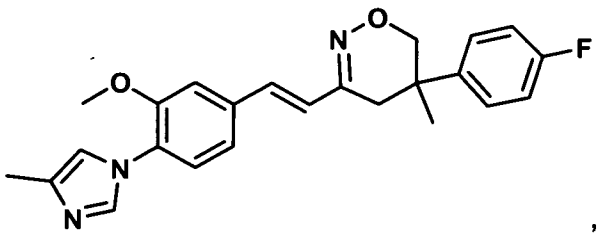
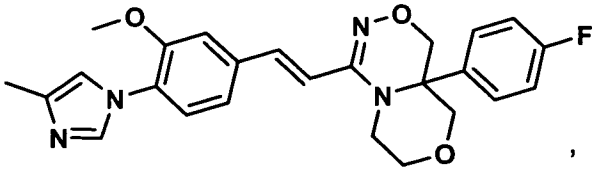
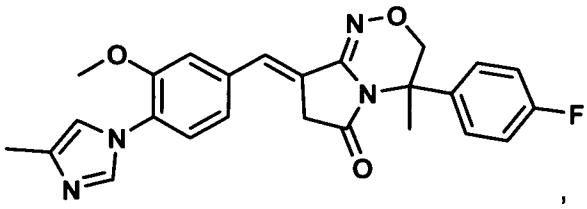
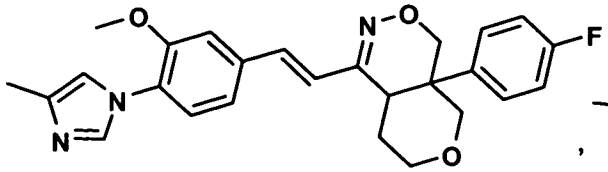
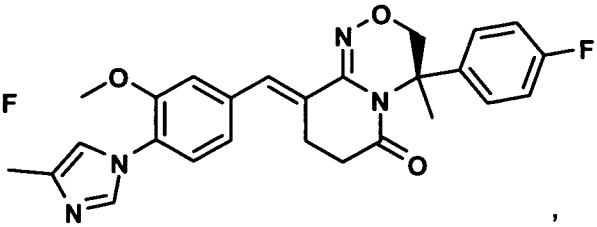
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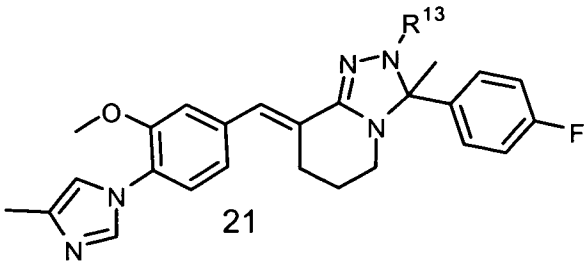

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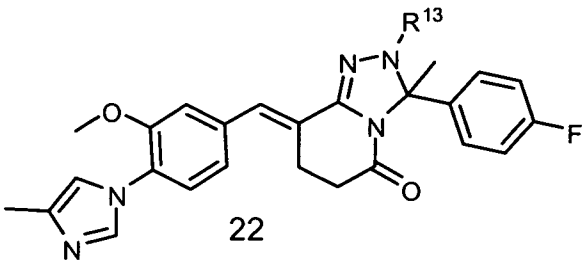

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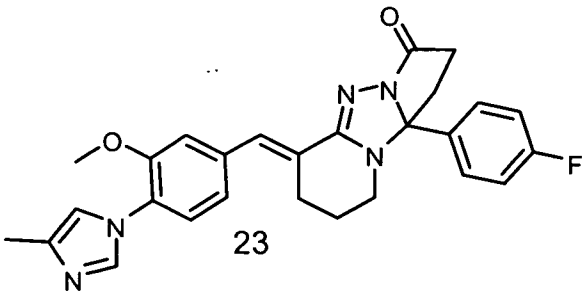
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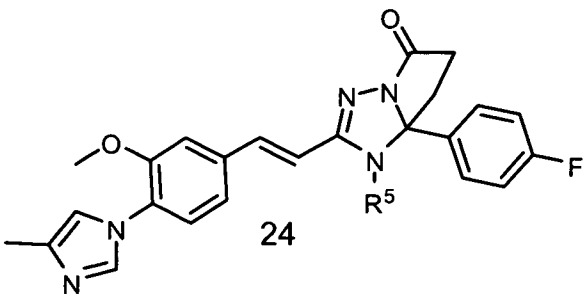
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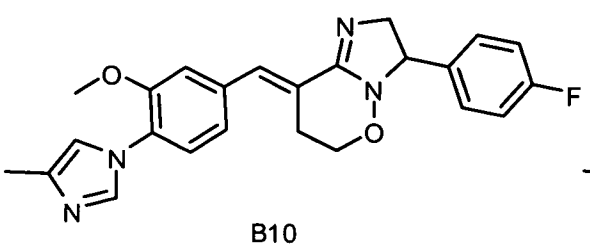
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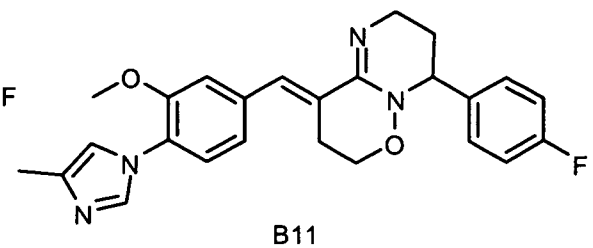
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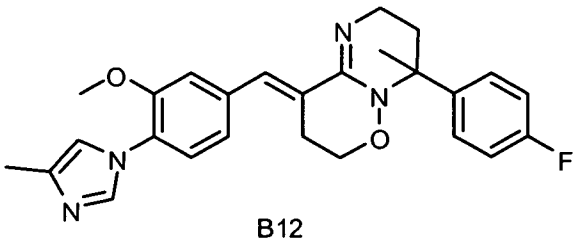
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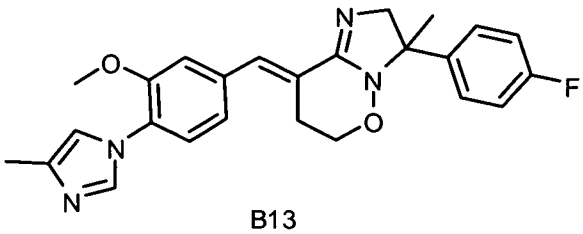
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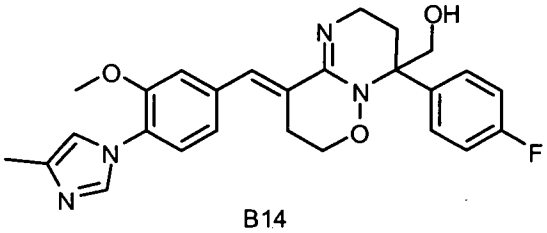
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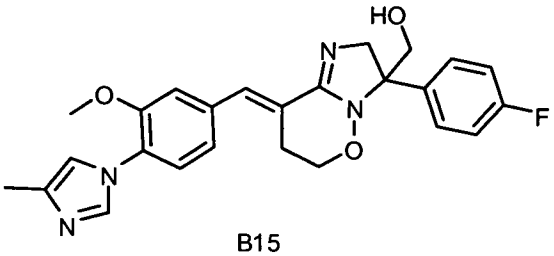
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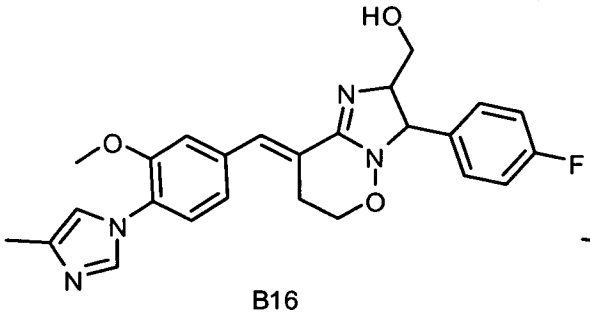
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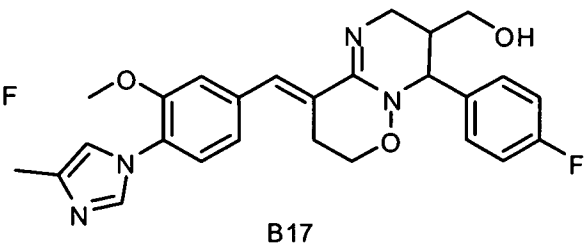
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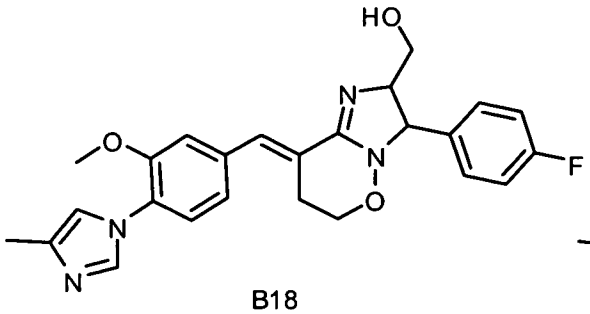
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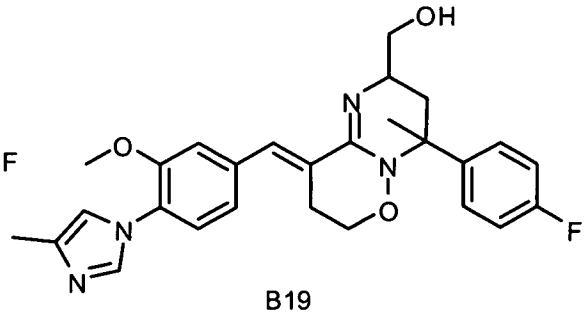
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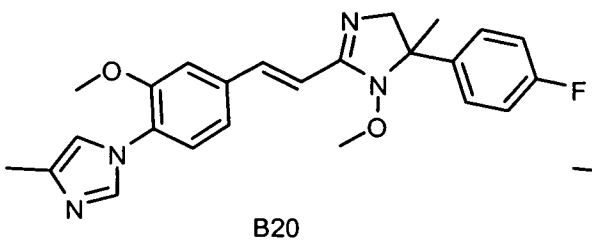
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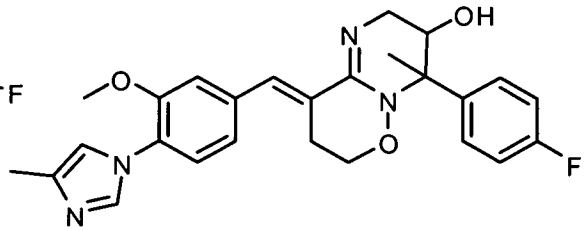
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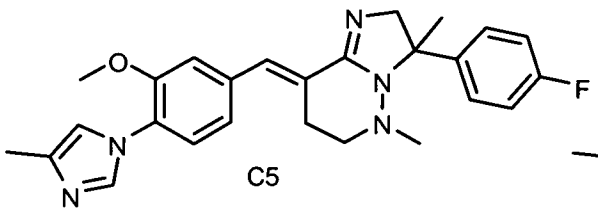
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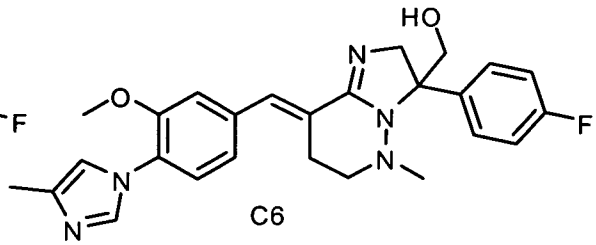
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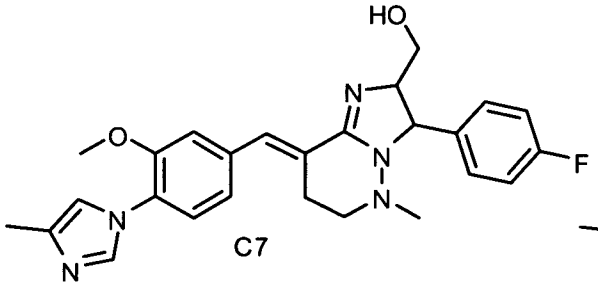
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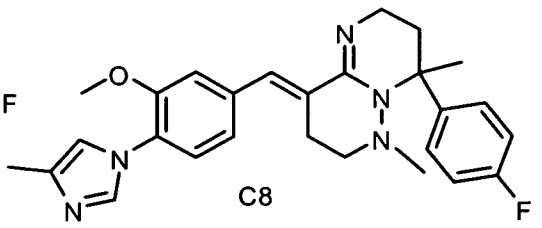
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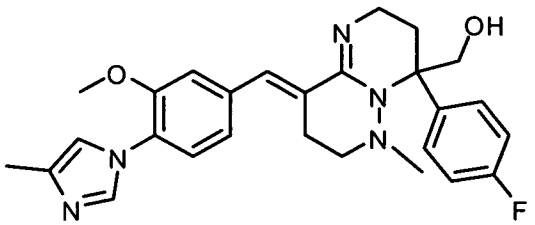
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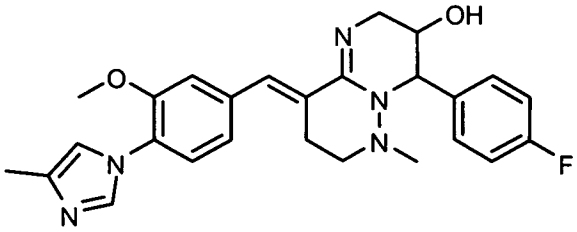
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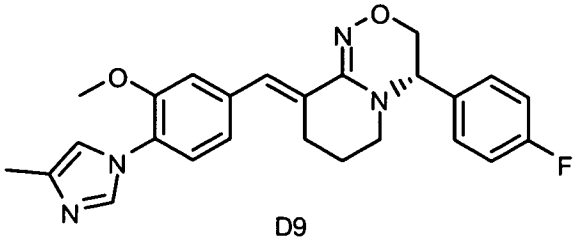
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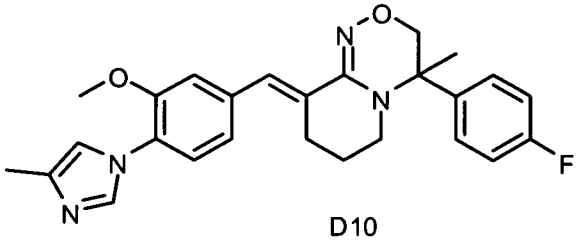
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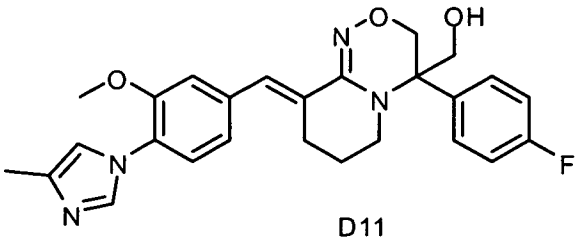
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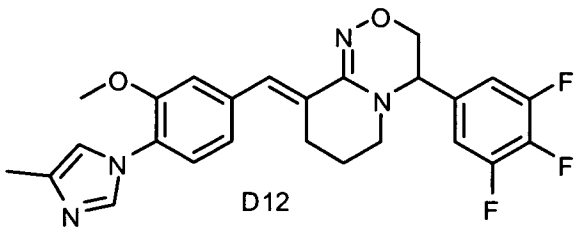
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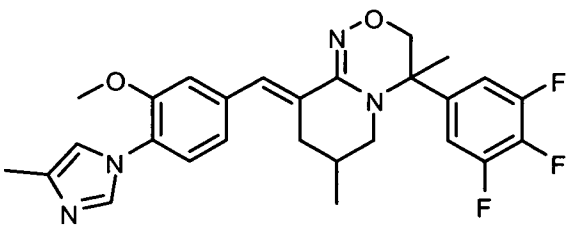
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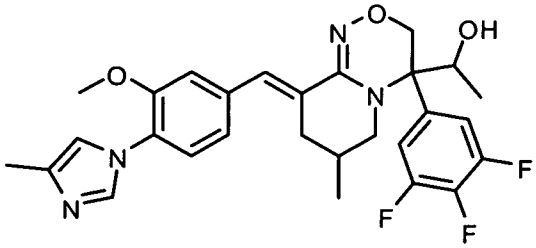
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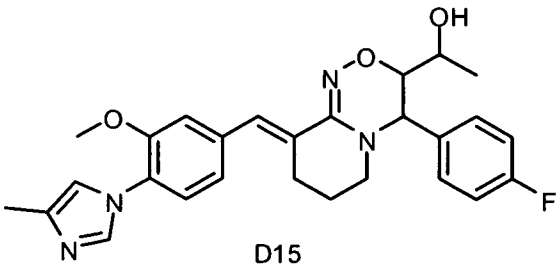
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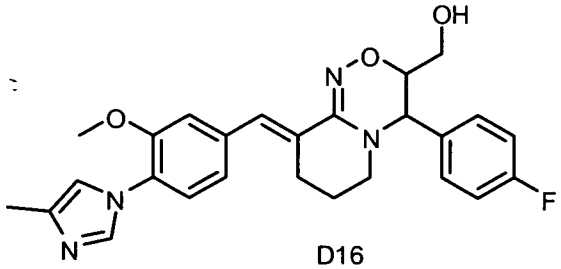
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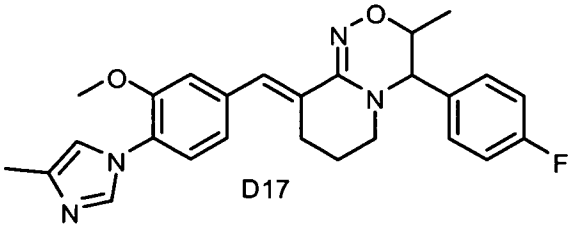
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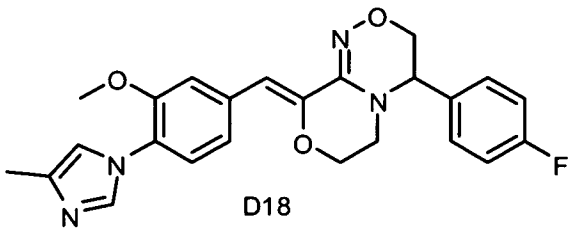
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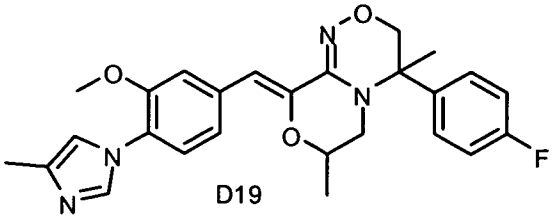
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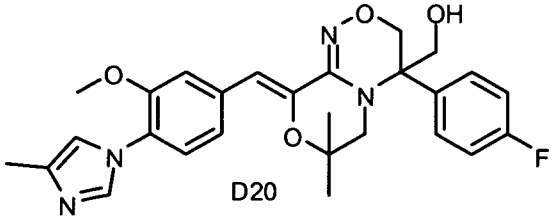
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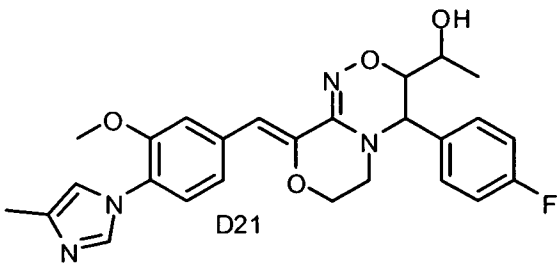
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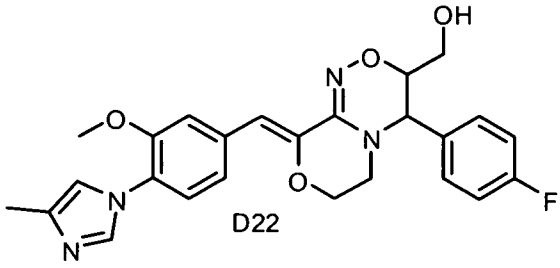
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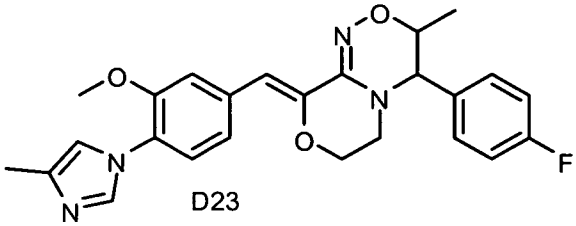
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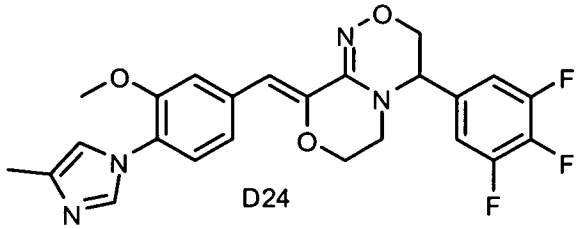
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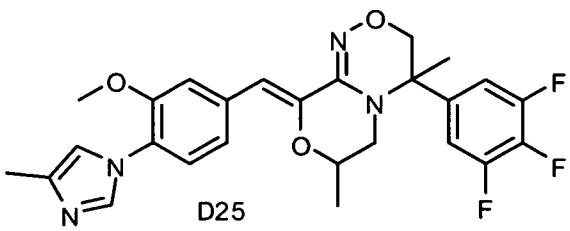
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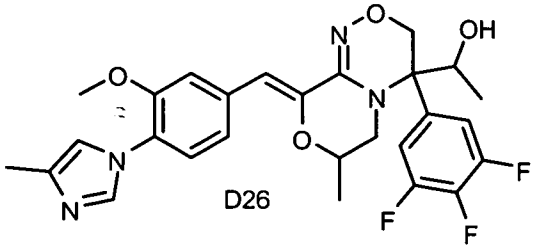
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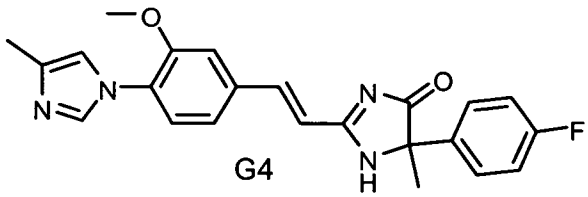
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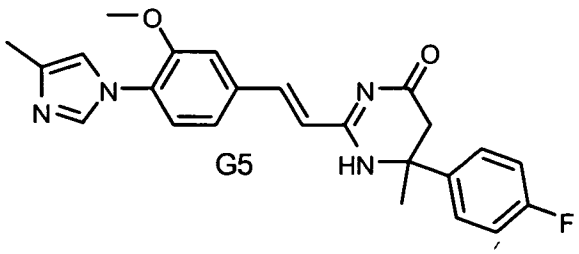
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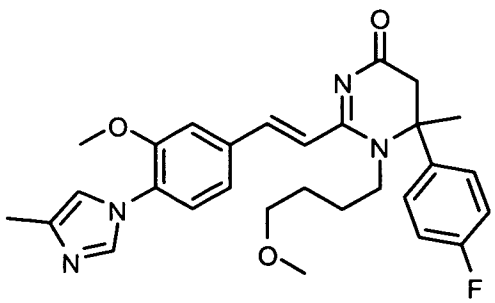
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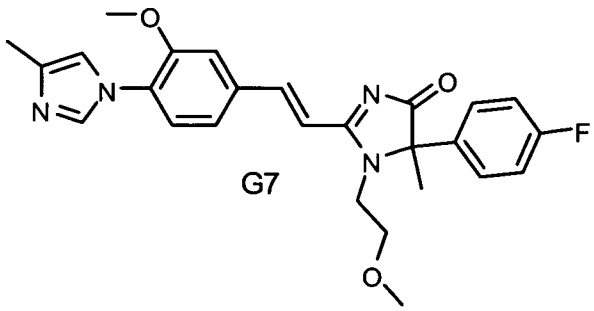
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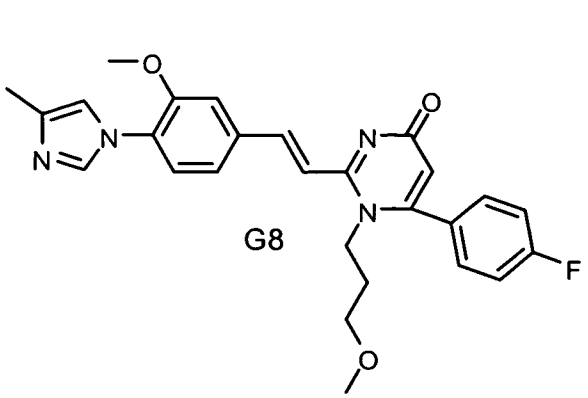
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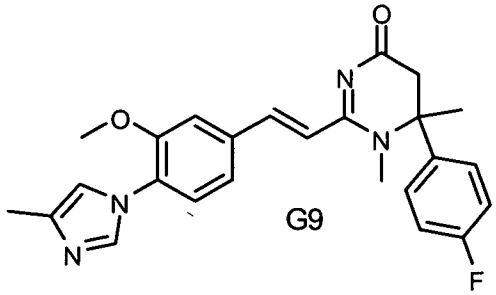
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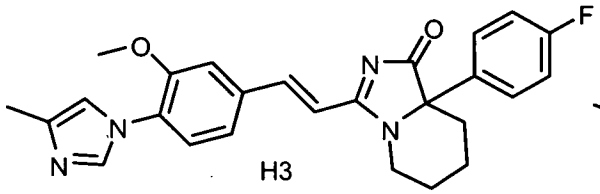
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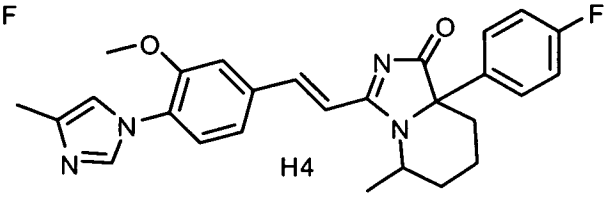
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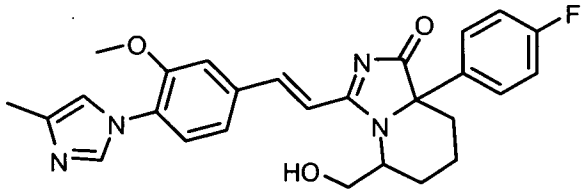
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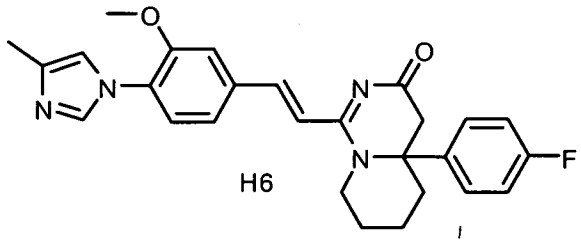
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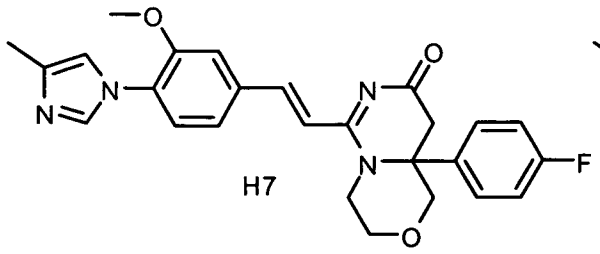
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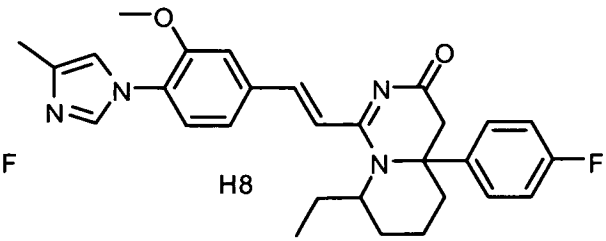
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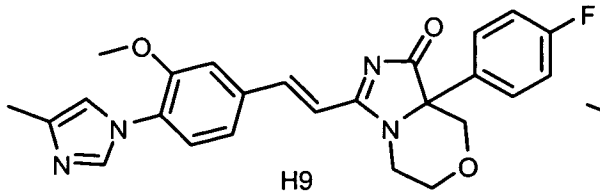
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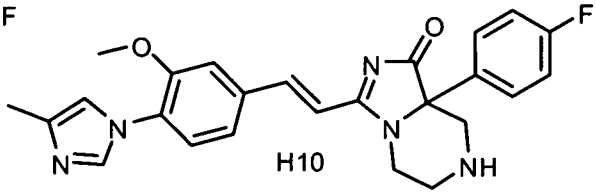
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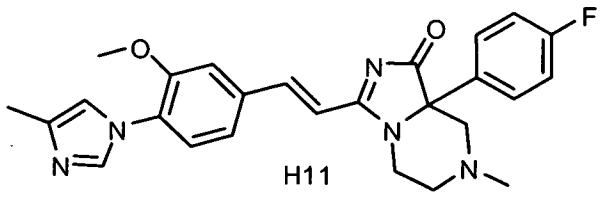
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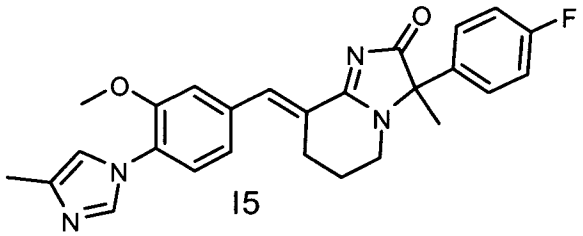
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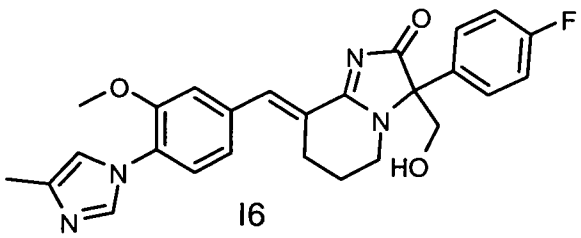
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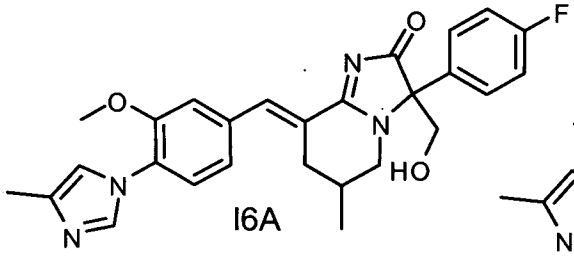
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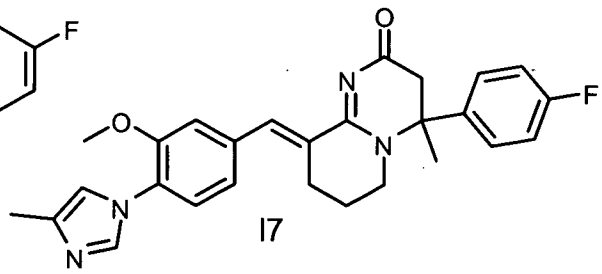
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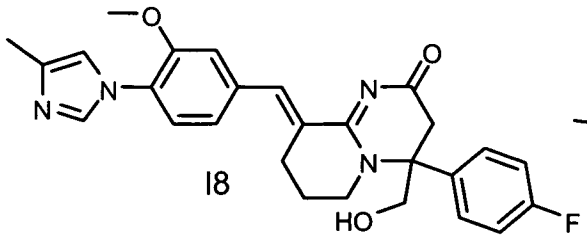
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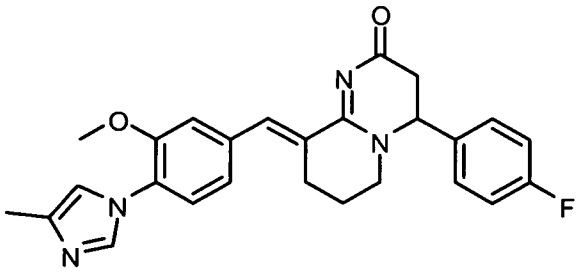
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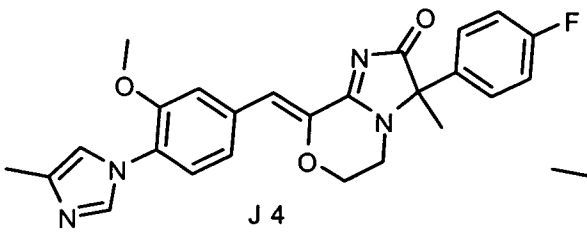
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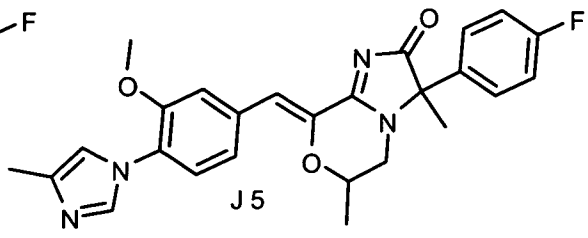
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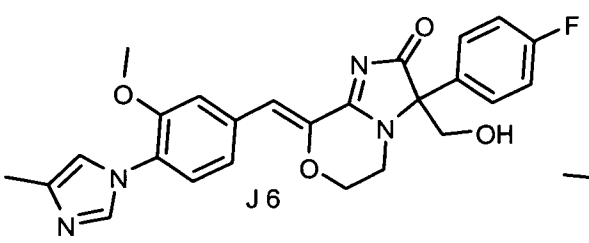
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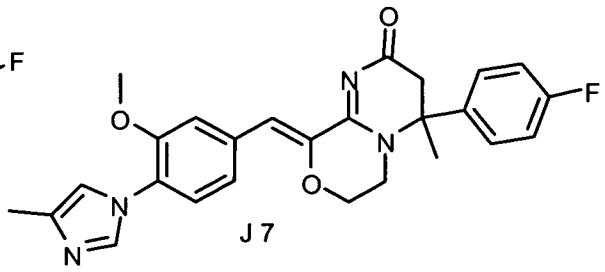
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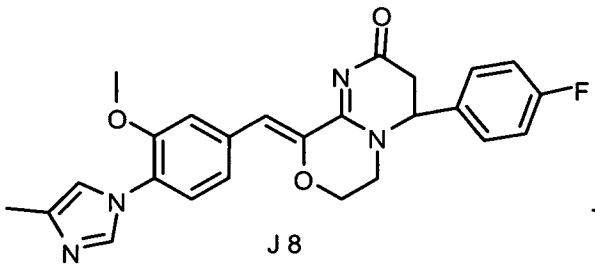
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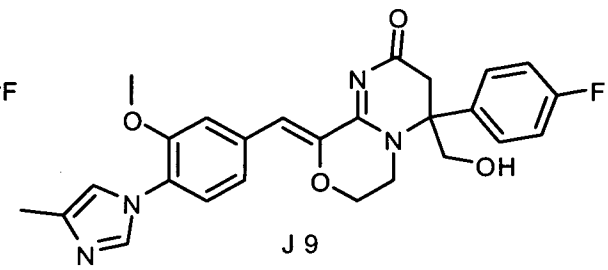
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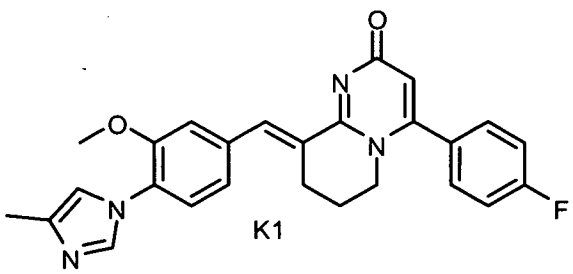
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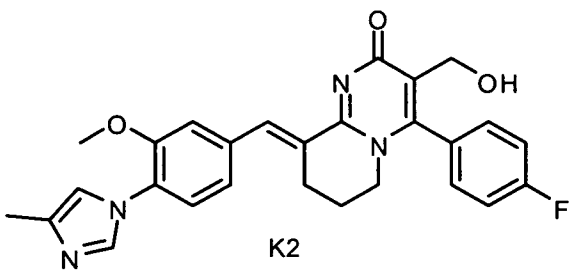
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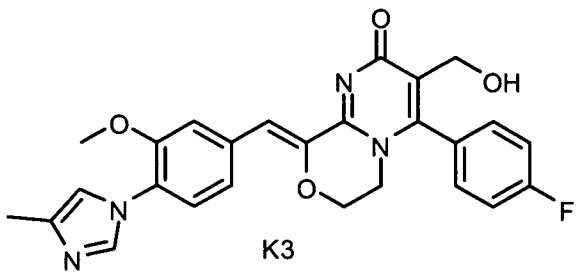
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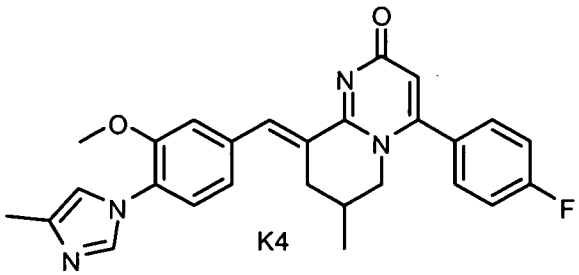
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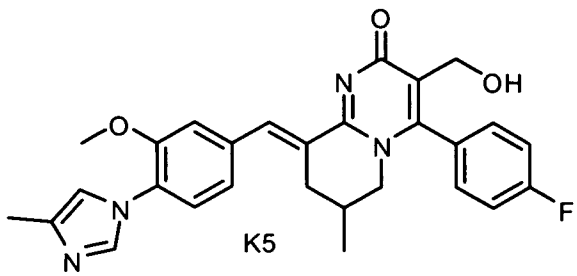
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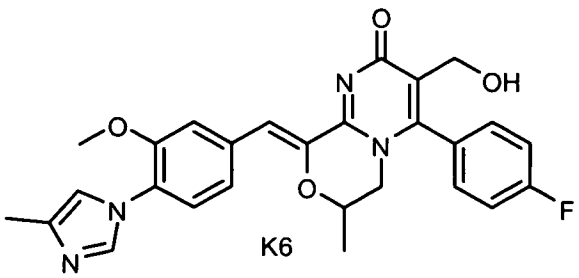
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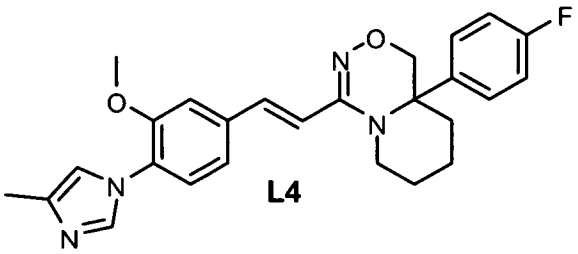
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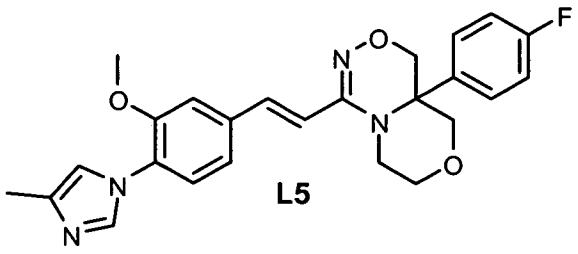
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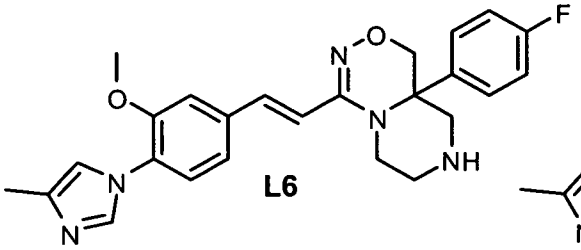
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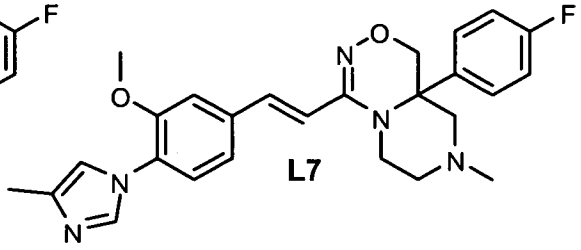
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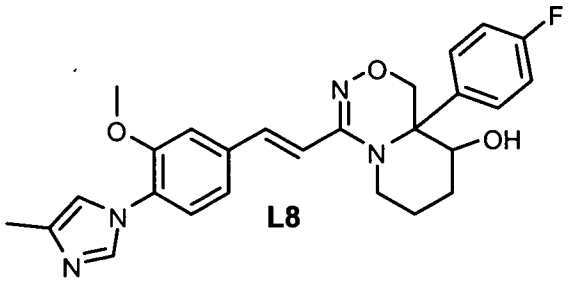
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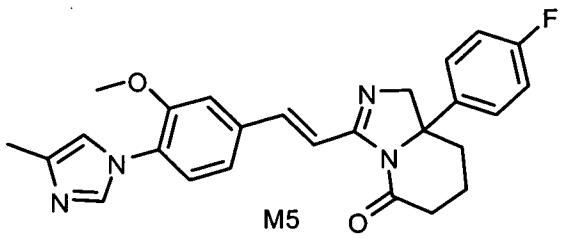
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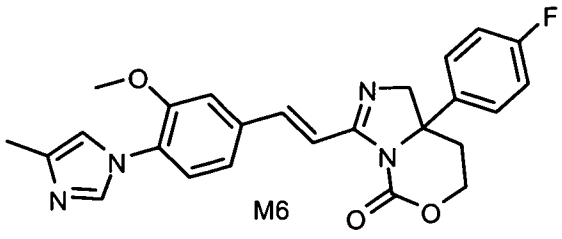
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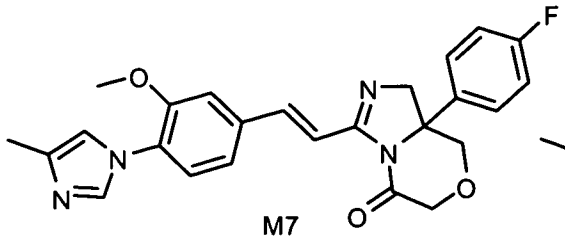
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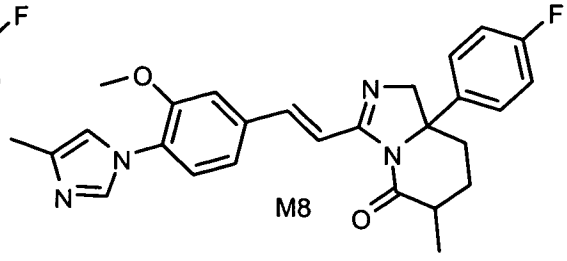
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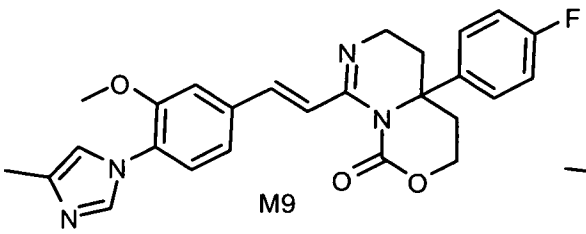
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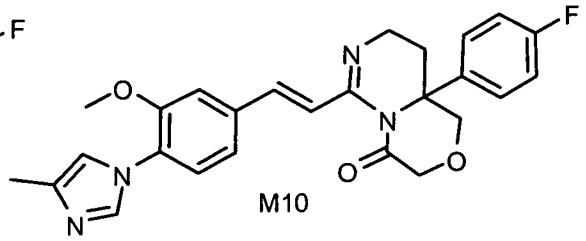
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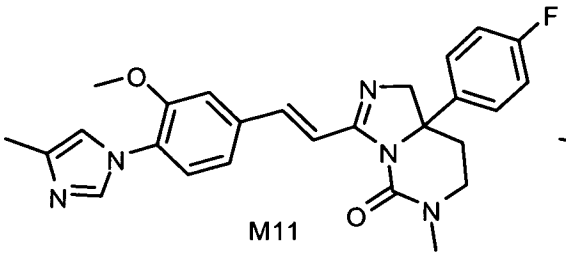
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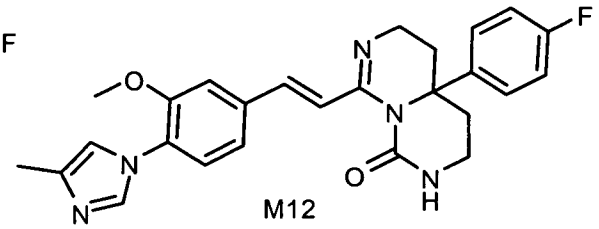
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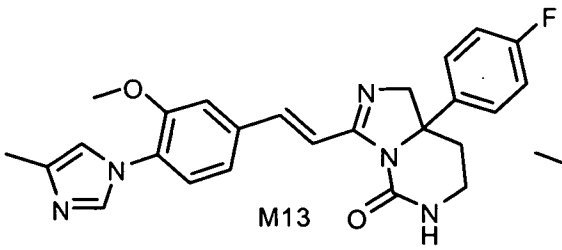
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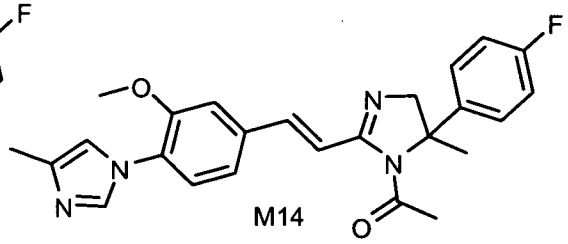
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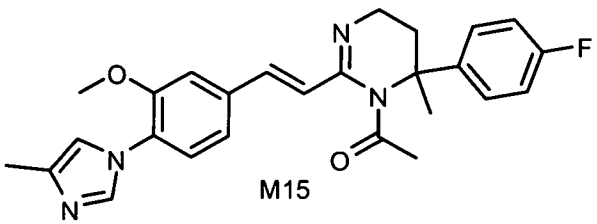
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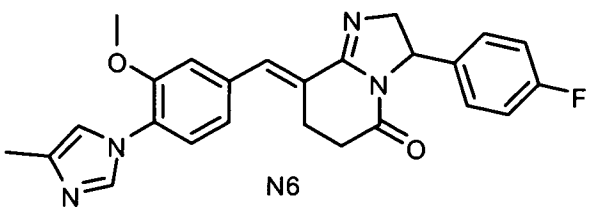
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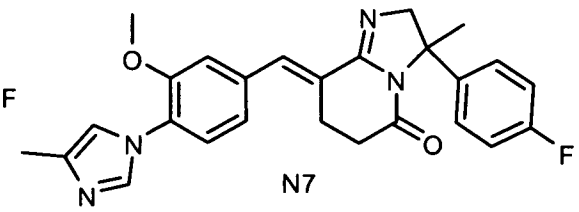
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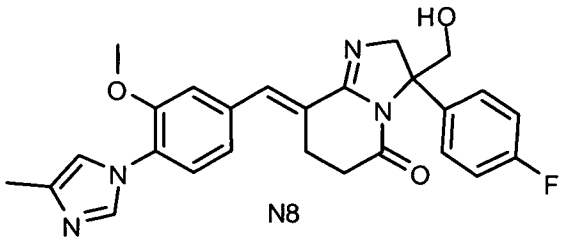
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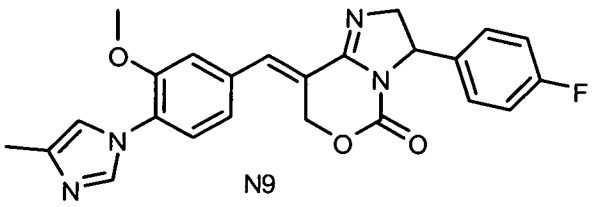
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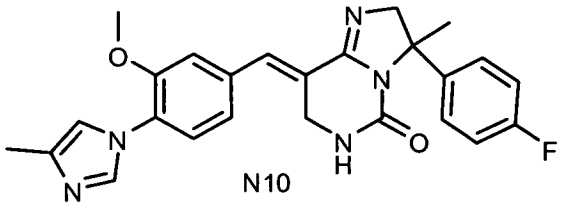
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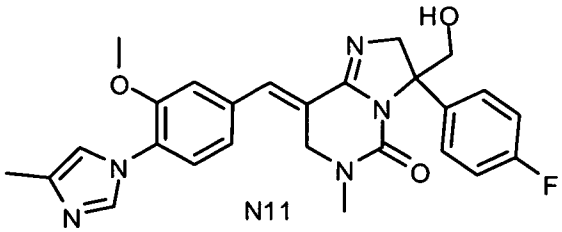
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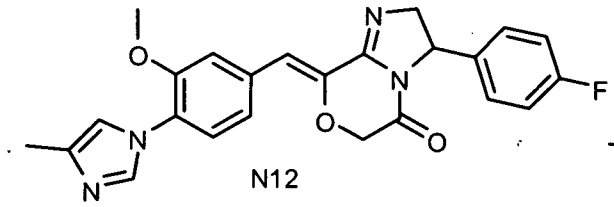
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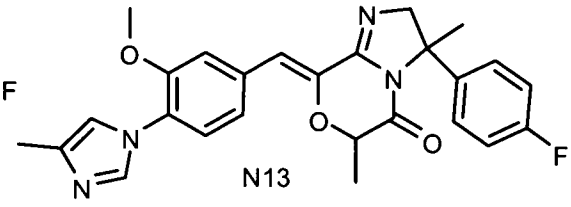
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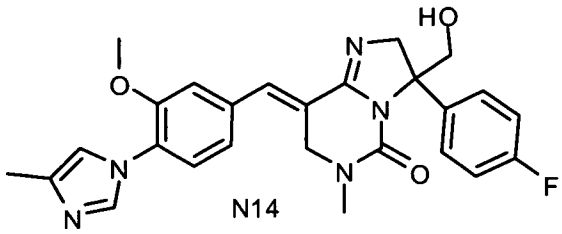
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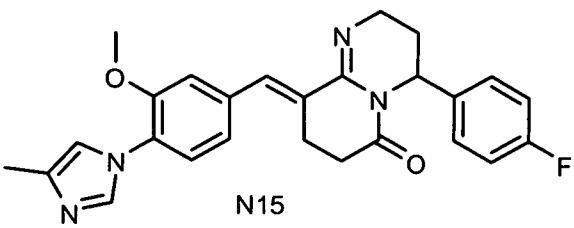
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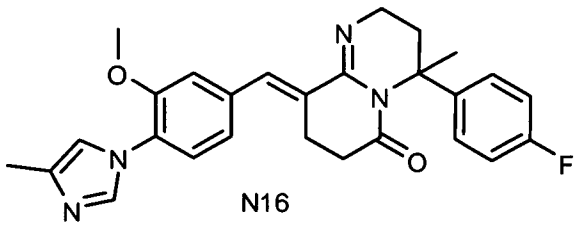
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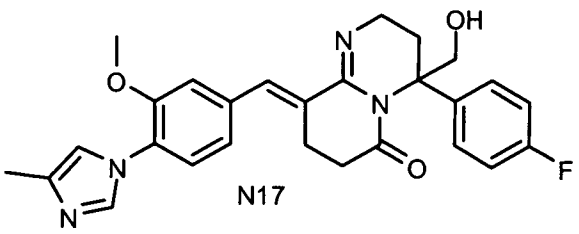
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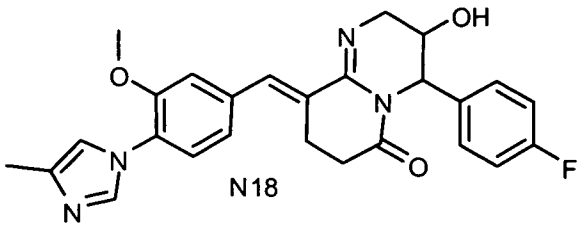
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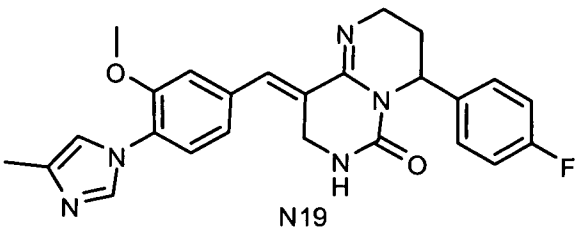
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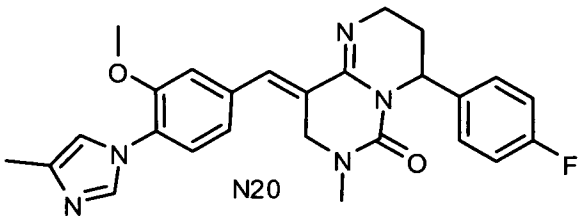
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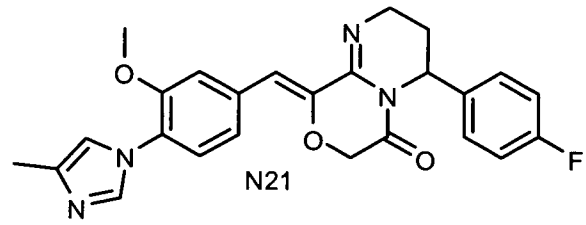
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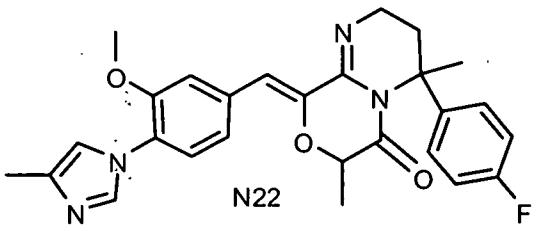
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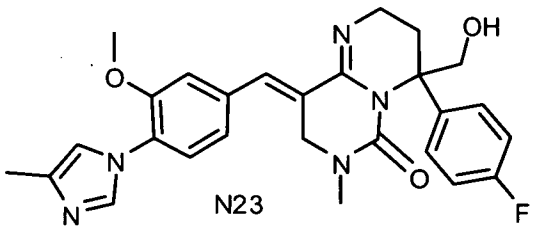
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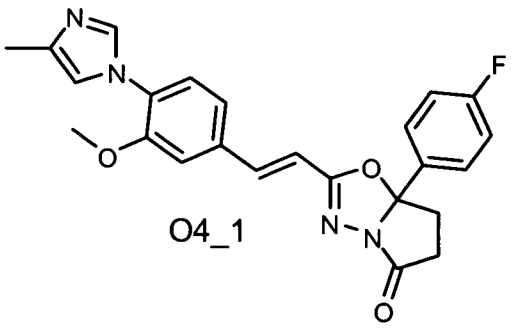
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N22

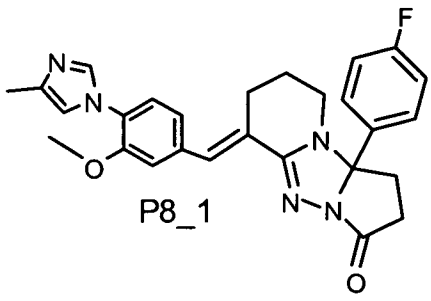


N23



O4_1

and



P8_1 ,

or a pharmaceutically acceptable salt, solvate, ester or prodrug thereof.

55. The compound of claim 54 wherein said compound is a pharmaceutically acceptable salt of a compound of claim 54.

56. The compound of claim 54 wherein said compound is a solvate of a compound of claim 54.

57. The compound of claim 54 wherein said compound is an ester of a compound of claim 54.

58. A pharmaceutical composition comprising a therapeutically effective amount of a compound of claim 1, and a pharmaceutically acceptable carrier.

59. A pharmaceutical composition comprising a therapeutically effective amount of a compound of claim 54, and a pharmaceutically acceptable carrier.

60. A pharmaceutical composition comprising a therapeutically effective amount of a compound of claim 1, and a pharmaceutically acceptable carrier, and and an effective amount of one or more other pharmaceutically active drugs selected form the group consisting of: (a) drugs useful for the treatment of Alzheimer's disease, (b) drugs useful for inhibiting the deposition of amyloid protein (e.g., amyloid beta protein) in, on or around neurological tissue, (c) drugs useful for treating neurodegenerative diseases, and (d) drugs useful for inhibiting gamma-secretase.

61. A pharmaceutical composition comprising a therapeutically effective amount of a compound of claim 54, and a pharmaceutically acceptable carrier, and and an effective amount of one or more other pharmaceutically active drugs selected form the group consisting of: (a) drugs useful for the treatment of Alzheimer's disease, (b) drugs useful for inhibiting the deposition of amyloid protein (e.g., amyloid beta protein) in, on or around neurological tissue, (c) drugs useful for treating neurodegenerative diseases, and (d) drugs useful for inhibiting gamma-secretase.

62. A pharmaceutical composition comprising a therapeutically effective amount of a compound of claim 1, and a pharmaceutically acceptable carrier, and an effective amount of one or more BACE inhibitors.

63. A pharmaceutical composition comprising a therapeutically effective amount of a compound of claim 54, and a pharmaceutically acceptable carrier, and an effective amount of one or more BACE inhibitors.

64. A pharmaceutical composition:

(1) comprising a therapeutically effective amount of at least one compound of claim 1, or a pharmaceutically acceptable salt, solvate, or ester thereof, and at least one pharmaceutically acceptable carrier, or

(2) comprising a therapeutically effective amount of at least one compound of claim 1, or a pharmaceutically acceptable salt, solvate, or ester thereof, and at least one pharmaceutically acceptable carrier, and an effective amount of one or more other pharmaceutically active drugs selected form the group consisting of: (a) drugs useful for the treatment of Alzheimer's disease, (b) drugs useful for inhibiting the deposition of amyloid protein (e.g., amyloid beta protein) in, on or around neurological tissue, (c) drugs useful for treating neurodegenerative diseases, and (d) drugs useful for inhibiting gamma-secretase, or

(3) comprising a therapeutically effective amount of at least one compound of claim 1, or a pharmaceutically acceptable salt, solvate, or ester thereof, and at least one pharmaceutically acceptable carrier, and an effective amount of one or more BACE inhibitors,

(4) comprising a therapeutically effective amount of at least one compound of claim 1, or a pharmaceutically acceptable salt, solvate, or ester thereof, and at least one pharmaceutically acceptable carrier, and effective amount of one or more cholinesterase inhibitors, or

(5) comprising a therapeutically effective amount of at least one compound of claim 1, and at least one pharmaceutically acceptable carrier, and effective amount of one or more cholinesterase inhibitors, or

(6) comprising a therapeutically effective amount of at least one compound of claim 1, or a pharmaceutically acceptable salt, solvate, or ester thereof, and at least one pharmaceutically acceptable carrier, and effective amount of one or more BACE inhibitors, muscarinic antagonists, cholinesterase inhibitors; gamma secretase inhibitors; gamma secretase modulators; HMG-CoA reductase inhibitors; non-steroidal anti-inflammatory agents; N-methyl-D-aspartate receptor antagonists; anti-amyloid antibodies; vitamin E; nicotinic acetylcholine receptor agonists; CB1 receptor inverse agonists or CB1 receptor antagonists; an antibiotic; growth hormone secretagogues; histamine H3 antagonists; AMPA agonists; PDE4 inhibitors; $GABA_A$ inverse agonists; inhibitors of amyloid aggregation; glycogen synthase kinase beta inhibitors; promoters of alpha secretase activity; PDE-10 inhibitors and cholesterol absorption inhibitors, or

(7) comprising a therapeutically effective amount of at least one compound of claim 1, and at least one pharmaceutically acceptable carrier, and effective amount of one or more BACE inhibitors, muscarinic antagonists, cholinesterase inhibitors; gamma secretase inhibitors; gamma secretase modulators; HMG-CoA reductase inhibitors; non-steroidal anti-inflammatory agents; N-methyl-D-aspartate receptor antagonists; anti-amyloid antibodies; vitamin E; nicotinic acetylcholine receptor agonists; CB1 receptor inverse agonists or CB1 receptor antagonists; an antibiotic; growth hormone secretagogues; histamine H3 antagonists; AMPA agonists; PDE4 inhibitors; $GABA_A$ inverse agonists; inhibitors of amyloid aggregation; glycogen synthase kinase beta inhibitors; promoters of alpha secretase activity; PDE-10 inhibitors and cholesterol absorption inhibitors, or

(8) comprising a therapeutically effective amount of at least one compound of claim 1, or a pharmaceutically acceptable salt, solvate, or ester

thereof, and at least one pharmaceutically acceptable carrier, and an effective amount of donepezil hydrochloride, or

(9) comprising a therapeutically effective amount of at least one compound of claim 1, and at least one pharmaceutically acceptable carrier, and an effective amount of donepezil hydrochloride.

65. A method of modulating gamma-secretase comprising administering an effective amount of one or more compounds of claim 1 to a patient in need of such treatment.

66. A method of treating one or more neurodegenerative diseases, comprising administering an effective amount of one or more compounds of claim 1 to a patient in need of treatment.

67. A method of inhibiting the deposition of amyloid protein in, on or around neurological tissue, comprising administering an effective amount of one or more compounds of claim 1 to a patient in need of treatment.

68. A method of treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1 to a patient in need of treatment.

69. A method of treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 54 to a patient in need of treatment.

70. A method of treating Alzheimer's disease, comprising administering an effective amount of a compound of claim 1 to a patient in need of treatment.

71. A method of treating Alzheimer's disease, comprising administering an effective amount of a compound of claim 54 to a patient in need of treatment.

72. A method of (a) modulating gamma-secretase, (b) treating one or more neurodegenerative diseases, (c) inhibiting the deposition of amyloid protein in, on or around neurological tissue, or (d) treating Alzheimer's disease, comprising administering administering:

(1) an effective amount of a compound of claim 1, and

(2) an effective amount of one or more other pharmaceutically active ingredients selected from the group consisting of: BACE inhibitors, muscarinic antagonists, cholinesterase inhibitors; gamma secretase inhibitors; gamma secretase modulators; HMG-CoA reductase inhibitors; non-steroidal anti-inflammatory agents; N-methyl-D-aspartate receptor antagonists; anti-amyloid antibodies; vitamin E; nicotinic acetylcholine receptor agonists; CB1 receptor inverse agonists or CB1 receptor antagonists; an antibiotic; growth hormone secretagogues; histamine H3 antagonists; AMPA agonists; PDE4 inhibitors; $GABA_A$ inverse agonists; inhibitors of amyloid aggregation; glycogen synthase kinase beta inhibitors; promoters of alpha secretase activity; PDE-10 inhibitors and cholesterol absorption inhibitors,

to a patient in need of such treatment.

73. A method of treating Alzheimer's disease, comprising administering an effective amount of a compound of claim 1, and an effective amount of one or more compounds selected from the group consisting of Aβ antibody inhibitors, gamma secretase inhibitors and beta secretase inhibitors, to a patient in need of such treatment.

74. A method of treating Alzheimer's disease, comprising administering an effective amount of a compound of claim 1, and an effective amount of one or more BACE inhibitors, to a patient in need of such treatment.

75. A method of:

(1) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1, in combination with an effective amount of one or more cholinesterase, to a patient in need of treatment, or

(2) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1, in combination with an effective amount of donepezil hydrochloride, to a patient in need of treatment, or

(3) treating Alzheimer's disease, comprising administering an effective amount of a compound claim 1, in combination with an effective amount of one or more cholinesterase, to a patient in need of treatment, or

(4) treating Alzheimer's disease, comprising administering an effective amount of a compound of claim 1, in combination with an effective amount of donepezil hydrochloride, to a patient in need of treatment, or

(5) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1, in combination with an effective amount of (rivastigmine, to a patient in need of such treatment, or

(6) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1, in combination with an effective amount of tacrine, to a patient in need of such treatment, or

(7) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1, in combination with an effective amount of a Tau kinase inhibitor, to a patient in need of such treatment, or

(8) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1, in combination with an

effective amount of one or more Tau kinase inhibitors selected from the group consisting of: GSK3beta inhibitors, cdk5 inhibitors, ERK inhibitors, to a patient in need of such treatment, or

(9) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1, in combination with an effective amount of one anti-Abeta vaccination, to a patient in need of such treatment, or

(10) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1, in combination with an effective amount of one or more APP ligands, to a patient in need of such treatment, or

(11) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1, in combination with an effective amount of one or more agents that upregulate insulin degrading enzyme and/or neprilysin, to a patient in need of such treatment, or

(12) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1, in combination with an effective amount of one or more cholesterol lowering agents, to a patient in need of such treatment, or

(13) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1, in combination with an effective amount of one or more cholesterol lowering agents selected from the group consisting of: Atorvastatin, Fluvastatin, Lovastatin, Mevastatin, Pitavastatin, Pravastatin, Rosuvastatin, Simvastatin, and Ezetimibe, to a patient in need of such treatment, or

(14) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1, in combination with an effective amount of one or more fibrates, to a patient in need of such treatment, or

(15) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1, in combination with an

effective amount of one or more fibrates selected from the group consisting of, clofibrate, Clofibride, Etofibrate, Aluminium Clofibrate, to a patient in need of such treatment, or

(16) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1, in combination with an effective amount of one or more LXR agonists, to a patient in need of such treatment, or

(17) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1, in combination with an effective amount of one or more LRP mimics, to a patient in need of such treatment, or

(18) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1, in combination with an effective amount of one or more 5-HT6 receptor antagonists, to a patient in need of such treatment, or

(19) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1, in combination with an effective amount of one or more nicotinic receptor agonists, to a patient in need of such treatment, or

(20) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1, in combination with an effective amount of one or more H3 receptor antagonists, to a patient in need of such treatment, or

(21) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1, in combination with an effective amount of one or more histone deacetylase inhibitors, to a patient in need of such treatment, or

(22) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1, in combination with an

effective amount of one or more hsp90 inhibitors, to a patient in need of such treatment, or

(23) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1, in combination with an effective amount of one or more m1 muscarinic receptor agonists, to a patient in need of such treatment, or

(24) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1, in combination with an effective amount of one or more 5-HT6 receptor antagonists mGluR1 or mGluR5 positive allosteric modulators or agonists, to a patient in need of such treatment, or

(25) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1, in combination with an effective amount of one or more mGluR2/3 antagonists, to a patient in need of such treatment, or

(26) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of formula I, in combination with an effective amount of one or more anti-inflammatory agents that can reduce neuroinflammation, to a patient in need of such treatment, or

(27) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1, in combination with an effective amount of one or more Prostaglandin EP2 receptor antagonists, to a patient in need of such treatment, or

(28) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1, in combination with an effective amount of one or more PAI-1 inhibitors, to a patient in need of such treatment, or

(29) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1, in combination with an

effective amount of one or more agents that can induce Abeta efflux, to a patient in need of such treatment, or

(30) treating Alzheimer's disease, comprising administering an effective amount of one or more compounds of claim 1, in combination with an effective amount of gelsolin, to a patient in need of such treatment,or

(31) treating Downs syndrome, comprising administering an effective amount of one or more compounds of claim 1 to a patient in need of treatment, or

(32) treating Downs syndrome, comprising administering an effective amount of a compound of claim 1 to a patient in need of treatment, or

(33) treating Downs syndrome, comprising administering an effective amount of one or more compounds of claim 1, in combination with an effective amount of one or more cholinesterase inhibitors, to a patient in need of treatment.

(34) treating Downs syndrome, comprising administering an effective amount of one or more compounds of claim 1, in combination with an effective amount of donepezil hydrochloride, to a patient in need of treatment, or

(35) treating Downs syndrome, comprising administering an effective amount of acompound of claim 1, in combination with an effective amount of one or more cholinesterase inhibitors, to a patient in need of treatment.

(37) treating Downs syndrome, comprising administering an effective amount of a compound of claim 1, in combination with an effective amount of donepezil hydrochloride, to a patient in need of treatment, or

(38) treating mild cognitive impairment, comprising administering an effective amount of one or more compounds of claim 1 to a patient in need of treatment, or

(39) treating glaucoma, comprising administering an effective amount of one or more compounds of claim 1 to a patient in need of treatment, or

(40) treating cerebral amyloid angiopathy, comprising administering an effective amount of one or more compounds of claim 1 to a patient in need of treatment, or

(41) treating stroke, comprising administering an effective amount of one or more compounds of claim 1 to a patient in need of treatment, or

(42) This invention also provides a method of treating dementia, comprising administering an effective amount of one or more compounds of claim 1 to a patient in need of treatment, or

(43) treating microgliosis, comprising administering an effective amount of one or more compounds of claim 1 to a patient in need of treatment, or

(44) treating brain inflammation, comprising administering an effective amount of one or more compounds of claim 1 to a patient in need of treatment, or

(45) treating olfactory function loss, comprising administering an effective amount of one or more compounds of claim 1 to a patient in need of treatment.

76. A kit comprising, in separate containers, in a single package, pharmaceutical compositions for use in combination, wherein one container comprises an effective amount of a compound of claim 1 in a pharmaceutically acceptable carrier, and another container comprises an effective amount of another pharmaceutically active ingredient, the combined quantities of the compound of claim 1 and the other pharmaceutically active ingredient being effective to: (a) treat Alzheimer's disease, or (b) inhibit the deposition of amyloid protein in, on or around neurological tissue, or (c) treat neurodegenerative diseases, or (d) modulate the activity of gamma-secretase.