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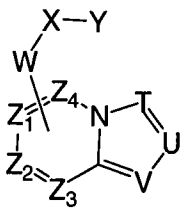
(54) Title: HETEROARYL AMIDE DERIVATIVES



(57) Abstract: Heteroaryl amide derivatives are provided, of the Formula: wherein variables are as described herein. Such compounds are ligands that may be used to modulate specific receptor activity in vivo or in vitro, and are particularly useful in the treatment of conditions associated with pathological receptor activation in humans, domesticated companion animals and livestock animals. Pharmaceutical compositions and methods for using such compounds to treat such disorders are provided, as are methods for using such ligands for receptor localization studies.

HETEROARYL AMIDE DERIVATIVES

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims priority to U.S. Provisional Application 60/867,248, filed November 27, 2006, which is hereby incorporated by reference in its entirety.

FIELD OF THE INVENTION

This invention relates generally to heteroaryl amide derivatives that have useful pharmacological properties. The invention further relates to the use of such compounds for treating conditions related to $P2X_7$ receptor activation, for identifying other agents that bind to $P2X_7$ receptor, and as probes for the detection and localization of $P2X_7$ receptors.

BACKGROUND OF THE INVENTION

Pain perception, or nociception, is mediated by the peripheral terminals of a group of specialized sensory neurons, termed "nociceptors." A wide variety of physical and chemical stimuli induce activation of such neurons in mammals, leading to recognition of a potentially harmful stimulus. Inappropriate or excessive activation of nociceptors, however, can result in debilitating acute or chronic pain.

Neuropathic pain, which typically results from damage to the nervous system, involves pain signal transmission in the absence of stimulus, pain from a normally innocuous stimulus (allodynia) and increased pain from a normally painful stimulus (hyperalgesia). In most instances, neuropathic pain is thought to occur because of sensitization in the peripheral and central nervous systems following initial damage to the peripheral system (*e.g.*, via direct injury or systemic disease). Neuropathic pain is typically burning, shooting and unrelenting in its intensity and can sometimes be more debilitating than the initial injury or disease process that induced it.

Existing treatments for neuropathic pain are generally suboptimal. Opiates, such as morphine, are potent analgesics, but their usefulness is limited because of adverse side effects, such as physical addictiveness and withdrawal properties, as well as respiratory depression, mood changes, and decreased intestinal motility with concomitant constipation, nausea, vomiting, and alterations in the endocrine and autonomic nervous systems. In addition, neuropathic pain is frequently non-responsive or only partially responsive to conventional opioid analgesic regimens, or to treatment with other drugs, such as gabapentin. Treatments employing the N-methyl-D-aspartate antagonist ketamine or the alpha(2)-adrenergic agonist clonidine can reduce acute or chronic pain, and permit a reduction in opioid consumption, but these agents are often poorly tolerated due to side effects.

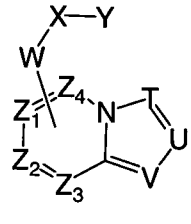
Another common condition for which existing therapies are insufficient or problematic is inflammation. Transient inflammation is a beneficial mechanism that protects mammals from invading pathogens. Uncontrolled inflammation, however, causes tissue damage and pain and is the underlying cause of many illnesses, including asthma, as well as other allergic, infectious, autoimmune, degenerative, and idiopathic diseases. Existing treatments often exhibit low, delayed or only temporary efficacy, undesirable side-effects and/or a lack of selectivity. There is a continuing need for new drugs that overcome one or more of the shortcomings of drugs currently used for immunosuppression or in the treatment or prevention of inflammatory disorders, including allergic disorders, autoimmune disorders, fibrogenic disorders, and neurodegenerative diseases, such as amyotrophic lateral sclerosis, Alzheimer's disease, and Huntington's disease.

The $P2X_7$ receptor is a ligand-gated ion channel that is activated by ATP and is present on a variety of cell types, including microglia in the central nervous system and cells involved in inflammation and immune system function, such as immune cells. In particular, $P2X_7$ is involved in activation of lymphocytes and monocyte/macrophages leading to the increased release of pro-inflammatory cytokines (*e.g.*, TNFalpha and IL-1beta) from these cells. Recent studies indicate that inhibiting $P2X_7$ receptor activation in situations of inflammation (*e.g.*, rheumatoid arthritis and other autoimmune diseases, osteoarthritis, uveitis, asthma, chronic obstructive pulmonary disease and inflammatory bowel disease) or interstitial fibrosis results in a therapeutic effect. These and other studies indicate that $P2X_7$ receptor antagonists may find use in the treatment and prophylaxis of pain, including acute, chronic and neuropathic pain, as well as a variety of other conditions including osteoarthritis, rheumatoid arthritis, arthrosclerosis, inflammatory bowel disease, Alzheimer's disease, traumatic brain injury, asthma, chronic obstructive pulmonary disease, and fibrosis of internal organs (*e.g.*, interstitial fibrosis).

Small molecule $P2X_7$ receptor antagonists are desirable for such therapies. The present invention fulfills this need, and provides further related advantages.

SUMMARY OF THE INVENTION

The present invention provides heteroaryl amide derivatives of Formula A:



Formula A

as well as pharmaceutically acceptable salts, solvates (*e.g.*, hydrates), amides and esters of such compounds.

Within Formula A:

T, U and V are independently chosen from CR_3, CR_A and N; in certain embodiments, exactly one of T, U and V is CR_A;

W is $-C(=O)NR_4-$, $-NR_4C(=O)-$ or $-NR_4-NR_4-C(=O)-$; and is attached via a carbon atom at Z_1, Z_2 or Z_4;

X is absent or C_1-C_6alkylene that is substituted with from 0 to 4 substituents independently chosen from: (i) C_1-C_4alkyl, (C_3-C_8cycloalkyl)C_0-C_2alkyl, (4- to 10-membered heterocycle)C_0-C_4alkyl and phenylC_0-C_2alkyl; (ii) substituents that taken together with the atom to which they are attached or with the atoms through which they are connected form a 3- to 8-membered cycloalkyl or heterocycloalkyl ring; ; and (iii) a substituent that taken together with R_4 and the atoms through which they are connected forms a 4- to 7-membered heterocycloalkyl

Y is C_1-C_8alkyl, C_3-C_{16}cycloalkyl, 4- to 16-membered heterocycloalkyl, 6- to 16-membered aryl or (5- to 16-membered heteroaryl, each of which is optionally substituted and each of which is preferably substituted with from 0 to 6 substituents independently chosen from hydroxy, halogen, cyano, amino, nitro, oxo, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6aminoalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_2-C_6alkyl ether, C_1-C_6alkanoyl, C_1-C_6alkylsulfonyl, (C_3-C_7cycloalkyl)C_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)aminocarbonyl, mono- or di-(C_1-C_6alkyl)aminosulfonyl and (C_1-C_6alkyl)sulfonylamino; or Y is substituted by at least two substituents taken together with the atoms through which they are connected form a bridge the Formula $-(CH_2)_q-P-(CH_2)_r-$, wherein q and r are independently 0 or 1 and P is CH_2, O, NH or S, the bridge optionally substituted with from 0 to 2 substituents independently chosen from C_1-C_4alkyl; or

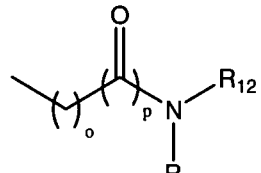
Y is substituted by at least two substituents taken together with the atom to which they are attached form a spiro 3- to 7-membered carbocyclic or heterocycloalkyl ring;

Z_1, Z_3 and Z_4 are independently N, CH or a substituted carbon (*e.g.*, CR_2);

Z_2 is N, CH or a substituted carbon (*e.g.*, CR_A or CR_2);

Each R_2 and each R_3 is independently chosen from hydrogen, halogen, cyano, amino, nitro, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6aminoalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_1-C_6alkanoyl, C_2-C_6alkyl ether, (C_3-C_7cycloalkyl)C_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkylsulfonyl, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)aminocarbonyl, mono- or di-(C_1-C_6alkyl)aminosulfonyl and (C_1-C_6alkyl)sulfonylamino;

Each R_4 is independently hydrogen, C_1-C_6alkyl, or (C_3-C_8cycloalkyl)C_0-C_2alkyl; or R_4 taken together with a substituent of X and the atoms through which they are connected forms a 4- to 7-membered heterocycloalkyl;



R_A is a group of the formula -L-A, , or a group chosen from M, such that R_A is not absent, wherein:

L is absent or C_1-C_6alkylene that is optionally modified by the replacement of a carbon-carbon single bond with a double or triple carbon-carbon bond, which alkylene is optionally substituted with oxo; and

A is absent or CO, O, NR_6, S, SO, SO_2, $CONR_6$, NR_6CO, (C_4-C_{12}cycloalkyl), (4- to 7-membered heterocycle), phenyl-E-, or (5- or 6-membered heterocycle)-E-; wherein R_6 is hydrogen or C_1-C_6alkyl and E is O, S, SO_2 or NH;

such that each –L-A is substituted with from 0 to 6, or from 1 to 6, groups independently chosen from M; and

each M is:

(i) C_1-C_6haloalkyl, C_1-C_6alkoxy, C_1-C_6alkylthio, (3- to 12-membered carbocycle)C_0-C_4alkyl, (4- to 10-membered heterocycle)C_0-C_4alkyl, C_2-C_6alkyl ether, C_1-C_6alkanoyl, C_1-C_6alkanoyloxy, C_1-C_6alkanoylamino, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylC_0-C_4alkyl, C_1-C_6alkylsulfonylamino, C_1-C_6alkylsulfonylaminoC_0-C_4alkyl, C_1-C_6alkylsulfonyloxy, mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminosulfonyl, mono- or di-(C_1-C_6alkyl)aminocarbonylC_0-C_4alkyl or C_1-C_6alkylsilyloxy; each of which is substituted with from 0 to 6 substituents independently chosen from oxo, amino, halogen, hydroxy, cyano, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl optionally substituted with COOH, amino, cyano, C_1-C_6alkoxycarbonyl or C_1-C_6alkoxy, C_1-C_6hydroxyalkyl, C_1-C_6haloalkyl, imino, hydroxyimino, C_1-C_6alkoxy that is optionally substituted with C_1-C_6alkanoyloxy, C_1-C_6haloalkoxy, C_1-C_6alkoxy, C_2-C_6alkyl ether, C_1-C_6alkanoyl, C_1-C_6alkanoyloxy, C_1-C_6alkoxycarbonyl, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, mono- or di-(C_1-C_6alkyl)aminosulfonyl, mono- or di-(C_1-C_6alkylamino)carbonyl, phenyl optionally substituted with halogen or C_1-C_6haloalkyl, cycloalkyl, and 4- to 7-membered heterocycle; or

(iii) two M taken together with the atoms through which they are connected form a bridge of the Formula -$(CH_2)_q$-P-$(CH_2)_r$-, wherein q and r are independently 0 or 1 and P is CH_2, O, NH or S, the bridge optionally substituted with from 0 to 2 substituents independently chosen from oxo and C_1-C_4alkyl; or

(iv) when –L-A- is substituted by at least two M at the same atom of –L-A-, two M taken together with the atom to which they are attached form a spiro 3- to 7-membered

carbocyclic or heterocycloalkyl ring that is substituted with from 0 to 2 substituents independently chosen from oxo and C_1-C_4alkyl;

o is an integer ranging from 0 to 4;

p is 0 or 1; and

R_{11} and R_{12} are:

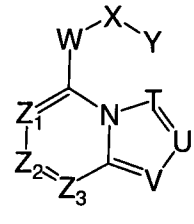
(i) independently chosen from:

(a) hydrogen,

(b) C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_2-C_6alkyl ether, (C_3-C_7cycloalkyl)C_0-C_4alkyl, and phenylC_0-C_2alkyl, each of which is substituted with from 0 to 4 substituents independently chosen from hydroxy, halogen, cyano, amino, aminocarbonyl, aminosulfonyl, COOH, oxo, C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, C_2-C_6alkyl ether, mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminocarbonyl, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, 4- to 7-membered heterocycloalkyl that is optionally substituted with one or two methyl groups, and 5- or 6-membered heteroaryl; or

(ii) taken together to form a 5- to 7-membered heterocycloalkyl that is substituted with from 0 to 4 substituents independently chosen from halogen, hydroxy, cyano, amino, aminocarbonyl, aminosulfonyl, COOH, oxo, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_2-C_6alkyl ether, (C_3-C_7cycloalkyl)C_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminocarbonyl, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, 4- to 7-membered heterocycloalkyl that is optionally substituted with one or two methyl groups, and 5- or 6-membered heteroaryl.

Within certain aspects, the present invention provides heteroaryl amide derivatives of Formula I:



Formula I

as well as pharmaceutically acceptable salts, solvates (*e.g.,* hydrates), amides and esters of such compounds.

Within Formula I:

T, U and V are independently chosen from CR_3, CR_A and N, such that exactly one of T, U and V is CR_A;

W, X and Y are as described for Formula A; in certain embodiments, Y is C_3-C_{16}cycloalkyl, 4- to 16-membered heterocycloalkyl, 6- to 16-membered aryl or (5- to 16-membered heteroaryl, each of which is substituted with from 0 to 6 substituents independently chosen from hydroxy, halogen, cyano, amino, nitro, oxo, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6aminoalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_2-C_6alkyl ether, C_1-C_6alkanoyl, C_1-C_6alkylsulfonyl, (C_3-C_7cycloalkyl)C_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)aminocarbonyl, mono- or di-(C_1-C_6alkyl)aminosulfonyl and (C_1-C_6alkyl)sulfonylamino;

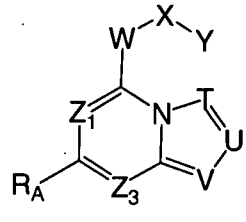
Z_1 and Z_3 are independently N or CR_2;

Z_2 is N, CR_2 or CR_A; in certain embodiments, Z_2 is N or CR_2;

Each R_2, R_3 and R_4 is as described above for Formula A; and

R_A is as described above for Formula A; in certain embodiments: (i) R_A is not C_1-C_6alkoxy; (ii) R_A is a group of the formula –L-A and L is not absent if a group represented by M is aromatic and Y is aromatic or a 6-membered heterocycloalkyl; and (iii) if Y is optionally substituted phenyl, then R_A is not C_1-C_4alkoxycarbonyl.

Within certain aspects, the present invention provides heteroaryl amide derivatives of Formula II:



Formula II

as well as pharmaceutically acceptable salts, solvates (*e.g.,* hydrates), amides and esters of such compounds.

Within Formula II:

T, U and V are independently chosen from CR_3 and N;

W and X are as described for Formula A;

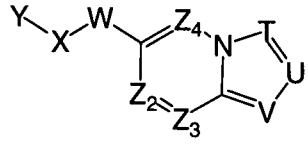
Y is C_3-C_{16}cycloalkyl or 4- to 16-membered heterocycloalkyl, each of which is substituted with from 0 to 6 substituents independently chosen from hydroxy, halogen, cyano, amino, nitro, oxo, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6aminoalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_2-C_6alkyl ether, C_1-C_6alkanoyl, C_1-C_6alkylsulfonyl, (C_3-C_7cycloalkyl)C_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)aminocarbonyl, mono- or di-(C_1-C_6alkyl)aminosulfonyl and (C_1-C_6alkyl)sulfonylamino;

Z_1 and Z_3 are independently N or CR_2;

Each R_2, R_3 and R_4 is as described above for Formula A; and

R_A is as described above for Formula A.

Within further aspects, the present invention provides heteroaryl amide derivatives of Formula III:



Formula III

as well as pharmaceutically acceptable salts, solvates (*e.g.*, hydrates), amides and esters of such compounds.

Within Formula III:

T, U and V are independently chosen from CR_3, CR_A and N, such that exactly one of T, U and V is CR_A;

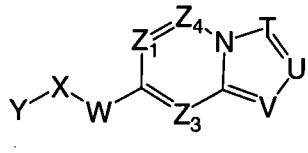
W, X and Y are as described for Formula A; in certain embodiments, Y is C_3-C_{16}cycloalkyl, 4- to 16-membered heterocycloalkyl, 6- to 16-membered aryl or (5- to 16-membered heteroaryl, each of which is substituted with from 0 to 6 substituents independently chosen from hydroxy, halogen, cyano, amino, nitro, oxo, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6aminoalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_2-C_6alkyl ether, C_1-C_6alkanoyl, C_1-C_6alkylsulfonyl, (C_3-C_7cycloalkyl)C_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)aminocarbonyl, mono- or di-(C_1-C_6alkyl)aminosulfonyl and (C_1-C_6alkyl)sulfonylamino;

Z_2, Z_3 and Z_4 are independently N or CR_2;

Each R_2, R_3 and R_4 is as described above for Formula A; and

R_A is as described above for Formula A.

Within further aspects, the present invention provides heteroaryl amide derivatives of Formula IV:



Formula IV

as well as pharmaceutically acceptable salts, solvates (*e.g.*, hydrates), amides and esters of such compounds.

Within Formula IV:

T, U and V are independently chosen from CR_3, CR_A and N, such that exactly one of T, U and V is CR_A;

W, X and Y are as described for Formula A; in certain embodiments, Y is C_3-C_{16}cycloalkyl, 4- to 16-membered heterocycloalkyl, 6- to 16-membered aryl or (5- to 16-membered heteroaryl, each of which is substituted with from 0 to 6 substituents independently chosen from hydroxy, halogen, cyano, amino, nitro, oxo, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6aminoalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_2-C_6alkyl ether, C_1-C_6alkanoyl, C_1-C_6alkylsulfonyl, (C_3-C_7cycloalkyl)C_0-C_4alkyl, mono- or di-

(C_1-C_6alkyl)amino, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)aminocarbonyl, mono- or di-(C_1-C_6alkyl)aminosulfonyl and (C_1-C_6alkyl)sulfonylamino;

Z_1, Z_3 and Z_4 are independently N or CR_2;

Each R_2, R_3 and R_4 is as described above for Formula A; and

R_A is as described above for Formula A.

Within certain aspects, heteroaryl amide derivatives of Formula A, I, II, III or IV are $P2X_7$ receptor antagonists and exhibit a an IC_{50} value of no greater than 20 micromolar, 10 micromolar, 5 micromolar, 1 micromolar, 500 nanomolar, or 100 nanomolar in an *in vitro* assay for determination of $P2X_7$ receptor antagonist activity. In certain embodiments, such $P2X_7$ receptor antagonists exhibit no detectable agonist activity in an *in vitro* assay of $P2X_7$ receptor activity (*i.e.*, within an assay provided in Example 4, herein) at a concentration equal to the IC_{50}, 10 times the IC_{50} or 100 times the IC_{50} and/or at a concentration of 2,500 nM.

Within certain aspects, heteroaryl amide derivatives provided herein are labeled with a detectable marker (*e.g.*, radiolabeled or fluorescein conjugated).

The present invention further provides, within other aspects, pharmaceutical compositions comprising at least one heteroaryl amide derivative provided herein in combination with a physiologically acceptable carrier or excipient.

Within further aspects, methods are provided for modulating (*e.g.*, reducing) cellular $P2X_7$ receptor activation or activity, comprising contacting a cell (*e.g.*, microglia, astrocyte or peripheral macrophage or monocyte) that expresses a $P2X_7$ receptor with at least one $P2X_7$ receptor modulator as described herein. Such contact may occur *in vivo* or *in vitro* and is generally performed using a concentration of $P2X_7$ receptor modulator that is sufficient to detectably alter $P2X_7$ receptor activity *in vitro* (as determined using an assay provided in Example 4).

The present invention further provides methods for treating a condition responsive to $P2X_7$ receptor modulation in a patient, comprising administering to the patient a therapeutically effective amount of at least one $P2X_7$ receptor antagonist as described herein.

Within other aspects, methods are provided for treating pain in a patient, comprising administering to a patient suffering from (or at risk for) pain a therapeutically effective amount of at least one $P2X_7$ receptor antagonist as described herein.

Within other aspects, methods are provided for treating inflammation in a patient, comprising administering to a patient suffering from (or at risk for) inflammation a therapeutically effective amount of at least one $P2X_7$ receptor antagonist as described herein.

Methods are further provided for treating osteoarthritis, rheumatoid arthritis, lupus erythematosus, multiple sclerosis, arthrosclerosis, inflammatory bowel disease, Alzheimer's disease, traumatic brain injury, asthma, chronic obstructive pulmonary disease, ocular conditions (*e.g.*, glaucoma) or fibrosis of internal organs (*e.g.*, interstitial fibrosis) in a patient, comprising

administering to a patient suffering from (or at risk for) one or more of the foregoing conditions a therapeutically effective amount of at least one $P2X_7$ receptor antagonist as described herein.

Methods are further provided for identifying an agent that binds to $P2X_7$ receptor, comprising: (a) contacting $P2X_7$ receptor with a labeled compound that is a heteroaryl amide derivative as described herein under conditions that permit binding of the compound to $P2X_7$ receptor, thereby generating bound, labeled compound; (b) detecting a signal that corresponds to the amount of bound, labeled compound in the absence of test agent; (c) contacting the bound, labeled compound with a test agent; (d) detecting a signal that corresponds to the amount of bound labeled compound in the presence of test agent; and (e) detecting a decrease in signal detected in step (d), as compared to the signal detected in step (b).

Within further aspects, the present invention provides methods for determining the presence or absence of $P2X_7$ receptor in a sample, comprising: (a) contacting a sample with a compound as described herein under conditions that permit modulation by the compound of $P2X_7$ receptor activity; and (b) detecting a signal indicative of a level of the compound modulating $P2X_7$ receptor activity.

The present invention also provides packaged pharmaceutical preparations, comprising: (a) a pharmaceutical composition as described herein in a container; and (b) instructions for using the composition to treat one or more conditions responsive to $P2X_7$ receptor modulation, such as pain, osteoarthritis, rheumatoid arthritis, lupus erythematosus, multiple sclerosis, arthrosclerosis, inflammatory bowel disease, Alzheimer's disease, traumatic brain injury, asthma, chronic obstructive pulmonary disease, and/or fibrosis of internal organs (*e.g.*, interstitial fibrosis).

In yet another aspect, the present invention provides methods for preparing the compounds disclosed herein, including the intermediates.

Also provided herein are methods for treating or preventing cirrhosis in a patient, comprising administering to the patient a therapeutically effective amount of a $P2X_7$ antagonist.

These and other aspects of the invention will become apparent upon reference to the following detailed description.

DETAILED DESCRIPTION

As noted above, the present invention provides heteroaryl amide derivatives. Such compounds may be used *in vitro* or *in vivo*, to modulate $P2X_7$ receptor activity in a variety of contexts.

TERMINOLOGY

Compounds are generally described herein using standard nomenclature. For compounds having asymmetric centers, it should be understood that (unless otherwise specified) all of the optical isomers and mixtures thereof are encompassed. In addition, compounds with carbon-carbon double bonds may occur in Z- and E- forms, with all isomeric forms of the compounds being included in the

present invention unless otherwise specified. Where a compound exists in various tautomeric forms, a recited compound is not limited to any one specific tautomer, but rather is intended to encompass all tautomeric forms. Certain compounds are described herein using a general formula that includes variables (*e.g.*, R_1, A, X). Unless otherwise specified, each variable within such a formula is defined independently of any other variable, and any variable that occurs more than one time in a formula is defined independently at each occurrence.

The phrase "heteroaryl amide derivative," as used herein, encompasses all compounds of Formula A, as well as compounds of Formula I, II, III or IV, including compounds of other Formulas provided herein (and including any enantiomers, racemates and stereoisomers, and including the various crystal forms and polymorphs) and pharmaceutically acceptable salts, solvates (*e.g.*, hydrates, including hydrates of salts), amides and esters of such compounds.

A "pharmaceutically acceptable salt" of a compound recited herein is an acid or base salt that is suitable for use in contact with the tissues of human beings or animals without excessive toxicity or carcinogenicity, and preferably without irritation, allergic response, or other problem or complication. Such salts include mineral and organic acid salts of basic residues such as amines, as well as alkali or organic salts of acidic residues such as carboxylic acids. Specific pharmaceutically acceptable anions for use in salt formation include, but are not limited to, acetate, 2-acetoxybenzoate, ascorbate, benzoate, bicarbonate, bromide, calcium edetate, carbonate, chloride, citrate, dihydrochloride, diphosphate, ditartrate, edetate, estolate (ethylsuccinate), formate, fumarate, gluceptate, gluconate, glutamate, glycolate, glycollylarsanilate, hexylresorcinate, hydrabamine, hydrobromide, hydrochloride, hydroiodide, hydroxymaleate, hydroxynaphthoate, iodide, isethionate, lactate, lactobionate, malate, maleate, mandelate, methylbromide, methylnitrate, methylsulfate, mucate, napsylate, nitrate, pamoate, pantothenate, phenylacetate, phosphate, polygalacturonate, propionate, salicylate, stearate, subacetate, succinate, sulfamate, sulfanilate, sulfate, sulfonates including besylate (benzenesulfonate), camsylate (camphorsulfonate), edisylate (ethane-1,2-disulfonate), esylate (ethanesulfonate) 2-hydroxyethylsulfonate, mesylate (methanesulfonate), triflate (trifluoromethanesulfonate) and tosylate (*p*-toluenesulfonate), tannate, tartrate, teoclate and triethiodide. Similarly, pharmaceutically acceptable cations for use in salt formation include, but are not limited to ammonium, benzathine, chloroprocaine, choline, diethanolamine, ethylenediamine, meglumine, procaine, and metals such as aluminum, calcium, lithium, magnesium, potassium, sodium and zinc. Those of ordinary skill in the art will recognize further pharmaceutically acceptable salts for the compounds provided herein. In general, a pharmaceutically acceptable acid or base salt can be synthesized from a parent compound that contains a basic or acidic moiety by any conventional chemical method. Briefly, such salts can be prepared by reacting the free acid or base forms of these compounds with a stoichiometric amount of the appropriate base or acid in water or in an organic solvent, or in a mixture of the two; generally, the use of nonaqueous media, such as ether, ethyl acetate, ethanol, methanol, isopropanol or acetonitrile, is preferred.

It will be apparent that each compound provided herein may, but need not, be formulated as a solvate (*e.g.*, hydrate) or non-covalent complex. In addition, the various crystal forms and polymorphs are within the scope of the present invention. Also provided herein are prodrugs of the compounds of the recited Formulas. A "prodrug" is a compound that may not fully satisfy the structural requirements of the compounds provided herein, but is modified *in vivo*, following administration to a patient, to produce a compound a formula provided herein. For example, a prodrug may be an acylated derivative of a compound as provided herein. Prodrugs include compounds wherein hydroxy, amine or sulfhydryl groups are bonded to any group that, when administered to a mammalian subject, cleaves to form a free hydroxy, amino, or sulfhydryl group, respectively. Examples of prodrugs include, but are not limited to, acetate, formate, benzoate and peptide derivatives of alcohol and amine functional groups within the compounds provided herein. Prodrugs of the compounds provided herein may be prepared by modifying functional groups present in the compounds in such a way that the modifications are cleaved *in vivo* to yield the parent compounds.

As used herein, the term "alkyl" refers to a straight or branched chain saturated aliphatic hydrocarbon. Alkyl groups include groups having from 1 to 8 carbon atoms (C_1-C_8alkyl), from 1 to 6 carbon atoms (C_1-C_6alkyl) and from 1 to 4 carbon atoms (C_1-C_4alkyl), such as methyl, ethyl, propyl, isopropyl, n-butyl, *sec*-butyl, *tert*-butyl, pentyl, 2-pentyl, isopentyl, neopentyl, hexyl, 2-hexyl, 3-hexyl and 3-methylpentyl. "C_0-$C_n$alkyl" refers to a single covalent bond (C_0) or an alkyl group having from 1 to n carbon atoms; for example "C_0-C_4alkyl" refers to a single covalent bond or a C_1-C_4alkyl group. In some instances, a substituent of an alkyl group is specifically indicated. For example, "hydroxyalkyl" refers to an alkyl group substituted with at least one -OH; "aminoalkyl" refers to an alkyl group substituted with at least one $-NH_2$.

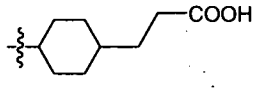
"Alkenyl" refers to straight or branched chain alkene groups, which comprise at least one unsaturated carbon-carbon double bond. Alkenyl groups include C_2-C_8alkenyl, C_2-C_6alkenyl and C_2-C_4alkenyl groups, which have from 2 to 8, 2 to 6 or 2 to 4 carbon atoms, respectively, such as ethenyl, allyl or isopropenyl. "Alkynyl" refers to straight or branched chain alkyne groups, which have one or more unsaturated carbon-carbon bonds, at least one of which is a triple bond. Alkynyl groups include C_2-C_8alkynyl, C_2-C_6alkynyl and C_2-C_4alkynyl groups, which have from 2 to 8, 2 to 6 or 2 to 4 carbon atoms, respectively.

"Alkylene" refers to a divalent alkyl group, as defined above. C_1-C_2alkylene is methylene or ethylene; C_0-C_4alkylene is a single covalent bond or an alkylene group having 1, 2, 3 or carbon atoms; C_0-C_2alkylene is a single covalent bond, methylene or ethylene.

A "C_1-C_6alkylene that is optionally modified by the replacement of a carbon-carbon single bond with a double or triple carbon-carbon bond" is a C_1-C_6alkylene group as described above, or a divalent C_2-C_6alkene or C_2-C_6alkyne.

A "cycloalkyl" is a group that comprises one or more saturated and/or partially saturated rings in which all ring members are carbon, such as cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cycloheptyl, cyclooctyl, adamantyl, and partially saturated variants of the foregoing, such as cyclohexenyl. Cycloalkyl groups do not comprise an aromatic ring or a heterocyclic ring. Certain cycloalkyl groups are C_3-C_7cycloalkyl, in which the cycloalkyl group contains a single ring having from 3 to 7 ring members, all of which are carbon. A "(C_3-C_7cycloalkyl)C_0-C_4alkyl" is a C_3-C_7cycloalkyl group linked via a single covalent bond or a C_1-C_4alkylene group.

A "(C_4-C_7cycloalkyl)C_0-C_4alkylene" is a divalent (C_3-C_7cycloalkyl)C_0-C_4alkyl group that is linked via two single covalent bonds to two specified moieties. In general, one such single covalent bond is located on the cyclic portion and the other is located on the alkylene portion, if present; alternatively, if no alkylene group is present, both such single covalent bonds are located on different ring members. For example, with respect to the group R_A, if A is a (C_6cycloalkyl)C_2alkylene, and M is COOH, one R_A moiety so formed is:



By "alkoxy," as used herein, is meant an alkyl group as described above attached via an oxygen bridge. Alkoxy groups include C_1-C_6alkoxy and C_1-C_4alkoxy groups, which have from 1 to 6 or from 1 to 4 carbon atoms, respectively. Methoxy, ethoxy, propoxy, isopropoxy, n-butoxy, *sec*-butoxy, *tert*-butoxy, n-pentoxy, 2-pentoxy, 3-pentoxy, isopentoxy, neopentoxy, hexoxy, 2-hexoxy, 3-hexoxy, and 3-methylpentoxy are representative alkoxy groups. Similarly, an "alkylthio" group is an alkyl group attached via a sulfur bridge.

The term "oxo" is used herein to refer to an oxygen substituent of a carbon atom that results in the formation of a carbonyl group (C=O). An oxo group that is a substituent of a nonaromatic carbon atom results in a conversion of $-CH_2-$ to $-C(=O)-$. An oxo group that is a substituent of an aromatic carbon atom results in a conversion of –CH– to $-C(=O)-$ and may result in a loss of aromaticity.

The term "imino" refers to a substituent of a carbon atom that results in the formation of an imino (C=NH) group. "Hydroxyimino" groups are carbon atom substituents that result in the formation of a C=N-OH group.

The term "alkanoyl" refers to an acyl group (*e.g.*, –(C=O)–alkyl), in which carbon atoms are in a linear or branched alkyl arrangement and where attachment is through the carbon of the keto group. Alkanoyl groups have the indicated number of carbon atoms, with the carbon of the keto group being included in the numbered carbon atoms. For example a C_2alkanoyl group is an acetyl group having the formula $-(C=O)CH_3$. Alkanoyl groups include, for example, C_2-C_8alkanoyl, C_2-C_6alkanoyl and C_2-C_4alkanoyl groups, which have from 2 to 8, from 2 to 6 or from 2 to 4 carbon atoms, respectively. "C_1alkanoyl" refers to –(C=O)H, which (along with C_2-C_8alkanoyl) is encompassed by the term "C_1-C_8alkanoyl."

"Alkyl ether" refers to a linear or branched ether substituent (*i.e.*, an alkyl group that is substituted with an alkoxy group). Alkyl ether groups include C_2-C_8alkyl ether, C_2-C_6alkyl ether and C_2-C_4alkyl ether groups, which have 2 to 8, 6 or 4 carbon atoms, respectively. A C_2 alkyl ether has the structure $-CH_2-O-CH_3$.

"Alkyl thioether" refers to a linear or branched alkyl group that is substituted with an alkylthio group. Alkyl thioether groups include C_2-C_8alkyl thioether, C_2-C_6alkyl thioether and C_2-C_4alkyl thioether groups, which have 2 to 8, 6 or 4 carbon atoms, respectively. A C_2 alkyl thioether has the structure $-CH_2-S-CH_3$.

The term "alkoxycarbonyl" refers to an alkoxy group attached through a keto (-(C=O)-) bridge (*i.e.*, a group having the general structure –C(=O)–O–alkyl). Alkoxycarbonyl groups include C_1-C_8, C_1-C_6 and C_1-C_4alkoxycarbonyl groups, which have from 1 to 8, 6 or 4 carbon atoms, respectively, in the alkyl portion of the group (*i.e.*, the carbon of the keto bridge is not included in the indicated number of carbon atoms). "C_1alkoxycarbonyl" refers to $-C(=O)-O-CH_3$; C_3alkoxycarbonyl indicates $-C(=O)-O-(CH_2)_2CH_3$ or $-C(=O)-O-(CH)(CH_3)_2$.

"Alkanoyloxy," as used herein, refers to an alkanoyl group linked via an oxygen bridge (*i.e.*, a group having the general structure –O-C(=O)-alkyl). Alkanoyloxy groups include C_1-C_8, C_1-C_6 and C_1-C_4alkanoyloxy groups, which have from 1 to 8, 6 or 4 carbon atoms, respectively, in the alkyl portion of the group. For example, "C_1alkanoyloxy" refers to $-O-C(=O)-CH_3$.

An "alkylsilyloxy" group has the general structure –O-Si-alkyl. Alkylsilyloxy groups include C_1-C_8, C_1-C_6 and C_1-C_4alkylsilyloxy groups, which have from 1 to 8, 6 or 4 carbon atoms, respectively, in the alkyl portion of the group.

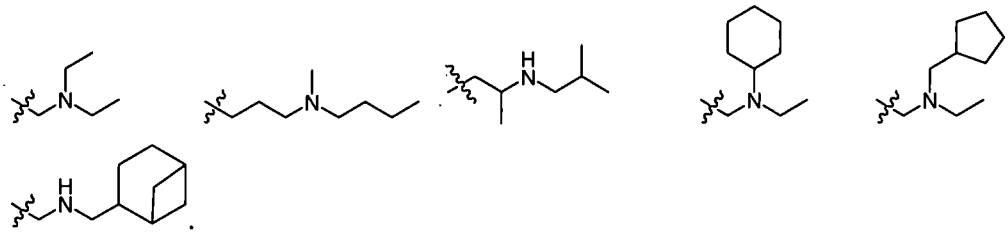
Similarly, "alkanoylamino," as used herein, refers to an alkanoyl group linked via a nitrogen bridge (*i.e.*, a group having the general structure –N(R)-C(=O)-alkyl), in which R is hydrogen or C_1-C_6alkyl. Alkanoylamino groups include C_1-C_8, C_1-C_6 and C_1-C_4alkanoylamino groups, which have from 1 to 8, 6 or 4 carbon atoms within the alkanoyl group, respectively, in the alkyl portion of the group.

"Alkylsulfonyl" refers to groups of the formula $-(SO_2)$-alkyl, in which the sulfur atom is the point of attachment. Alkylsulfonyl groups include C_1-C_6alkylsulfonyl and C_1-C_4alkylsulfonyl groups, which have from 1 to 6 or from 1 to 4 carbon atoms, respectively. Methylsulfonyl is one representative alkylsulfonyl group. "C_1-C_4haloalkylsulfonyl" is an alkylsulfonyl group that has from 1 to 4 carbon atoms and is substituted with at least one halogen (*e.g.*, trifluoromethylsulfonyl).

"Alkylsulfonylamino" refers to groups of the formula $-N(R)-(SO_2)$-alkyl, in which R is hydrogen or C_1-C_6alkyl and the nitrogen atom is the point of attachment. Alkylsulfonylamino groups include C_1-C_6alkylsulfonylamino and C_1-C_4alkylsulfonylamino groups, which have from 1 to 6 or 1 to 4 carbon atoms, respectively. Methylsulfonylamino is a representative alkylsulfonylamino group. "C_1-C_6haloalkylsulfonylamino" is an alkylsulfonylamino group that has from 1 to 6 carbon atoms and is substituted with at least one halogen (*e.g.*, trifluoromethylsulfonylamino).

"Aminosulfonyl" refers to groups of the formula $-(SO_2)-NH_2$, in which the sulfur atom is the point of attachment. The term "mono- or di-(C_1-C_6alkyl)aminosulfonyl" refers to groups that satisfy the formula $-(SO_2)-NR_2$, in which the sulfur atom is the point of attachment, and in which one R is C_1-C_6alkyl and the other R is hydrogen or an independently chosen C_1-C_6alkyl.

"Alkylaminoalkyl" refers to an alkylamino group linked via an alkylene group (*i.e.*, a group having the general structure –alkylene–NH–alkyl or –alkylene–N(alkyl)(alkyl)) in which each alkyl is selected independently from alkyl, cycloalkyl and (cycloalkyl)alkyl groups. Alkylaminoalkyl groups include, for example, mono- and di-(C_1-C_8alkyl)aminoC_1-C_8alkyl, mono- and di-(C_1-C_6alkyl)aminoC_1-C_6alkyl and mono- and di-(C_1-C_6alkyl)aminoC_1-C_4alkyl. "Mono- or di-(C_1-C_8alkyl)aminoC_0-C_6alkyl" refers to a mono- or di-(C_1-C_8alkyl)amino group linked via a single covalent bond or a C_1-C_6alkylene group. The following are representative alkylaminoalkyl groups:



It will be apparent that the definition of "alkyl" as used in the terms "alkylamino" and "alkylaminoalkyl" differs from the definition of "alkyl" used for other alkyl-containing groups, in the inclusion of cycloalkyl and (cycloalkyl)alkyl groups (*e.g.*, (C_3-C_7cycloalkyl)C_0-C_4alkyl).

The term "aminocarbonyl" refers to an amide group (*i.e.*, $-(C=O)NH_2$). "Mono- or di-(C_1-C_6alkyl)aminocarbonyl" refers to groups of the formula $-(C=O)-N(R)_2$, in which the carbonyl is the point of attachment, one R is C_1-C_6alkyl and the other R is hydrogen or an independently chosen C_1-C_6alkyl.

"Mono- or di-(C_1-C_8alkyl)aminocarbonylC_0-C_4alkyl" is an aminocarbonyl group in which one or both of the hydrogen atoms is replaced with C_1-C_8alkyl, C_3-C_8cycloalkyl or 4- to 8-carbon (cycloalkyl)alkyl group, and which is linked via a single covalent bond (*i.e.*, mono- or di-(C_1-C_8alkyl)aminocarbonyl) or a C_1-C_4alkylene group (*i.e.*, -(C_0-C_4alkyl)-(C=O)N(C_1-C_6alkyl)$_2$). If both hydrogen atoms are so replaced, the C_1-C_8alkyl groups may be the same or different. As with the alkylamino groups discussed above, it will be apparent that the definition of "alkyl" as used in this term differs from the definition of "alkyl" used for other alkyl-containing groups, in the inclusion of cycloalkyl and (cycloalkyl)alkyl groups.

The term "aminosulfonyl" refers to a sulfonamide group (*i.e.*, $-(SO_2)NH_2$). "Mono- or di-(C_1-C_8alkyl)aminosulfonyl" refers to groups of the formula $-(SO_2)-N(R)_2$, in which the sulfur atom is the point of attachment, one R is C_1-C_8alkyl and the other R is hydrogen or an independently chosen C_1-C_8alkyl.

The term "aromatic" refers to any group that comprises at least one aromatic ring, regardless of the point of attachment. Additional rings, which may be aromatic or non-aromatic, may (but need

nto) also be present. For example, when used in the context of "a group represented by M is aromatic", M may be any group that contains an aromatic ring anywhere within M without regard to its point of attachment to the group "-L-A". Non-limiting examples wherein the group represented by M is aromatic include when M is phenyl, 1,2,3,4-tetrahydronaphthyl, benzyl, 4,5,6,7-Tetrahydro-1H-indole, and the like.

"Mono- or di-(C_1-C_6alkyl)aminosulfonylC_0-C_4alkyl" is an aminosulfonyl group in which one or both of the hydrogen atoms is replaced with C_1-C_6alkyl, and which is linked via a single covalent bond (*i.e.*, mono- or di-(C_1-C_6alkyl)aminosulfonyl) or a C_1-C_4alkylene group (*i.e.*, -(C_1-C_4alkyl)-(SO_2)N(C_1-C_6alkyl)$_2$). If both hydrogen atoms are so replaced, the C_1-C_6alkyl groups may be the same or different.

The term "halogen" refers to fluorine, chlorine, bromine or iodine.

A "haloalkyl" is an alkyl group that is substituted with 1 or more independently chosen halogens (*e.g.*, "C_1-C_6haloalkyl" groups have from 1 to 6 carbon atoms). Examples of haloalkyl groups include, but are not limited to, mono-, di- or tri-fluoromethyl; mono-, di- or tri-chloromethyl; mono-, di-, tri-, tetra- or penta-fluoroethyl; mono-, di-, tri-, tetra- or penta-chloroethyl; and 1,2,2,2-tetrafluoro-1-trifluoromethyl-ethyl. Typical haloalkyl groups are trifluoromethyl and difluoromethyl. The term "haloalkoxy" refers to a haloalkyl group as defined above that is linked via an oxygen bridge.

A dash ("-") that is not between two letters or symbols is used to indicate a point of attachment for a substituent. For example, -$CONH_2$ is attached through the carbon atom.

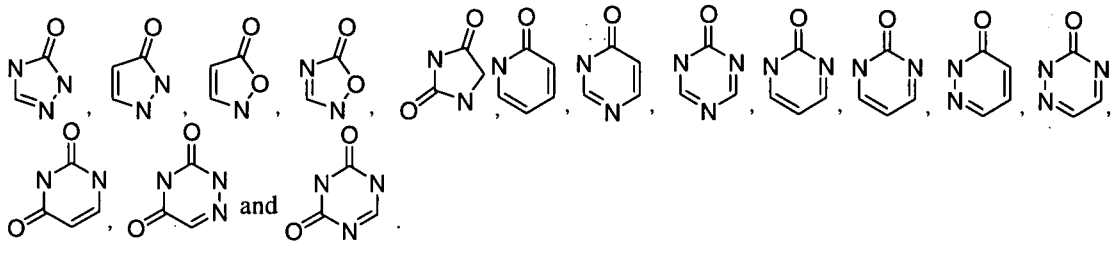
A "carbocycle" or "carbocyclic group" comprises at least one ring formed entirely by carbon-carbon bonds (referred to herein as a carbocyclic ring), and does not contain a heterocycle. Unless otherwise specified, each ring within a carbocycle may be independently saturated, partially saturated or aromatic, and is optionally substituted as indicated. A carbocycle generally has from 1 to 3 fused, pendant or spiro rings and optionally further contains one or more alkylene bridges; carbocycles within certain embodiments have one ring or two fused rings. Typically, each ring contains from 3 to 8 ring members (*i.e.*, C_3-C_8); C_5-C_7 rings are recited in certain embodiments. Carbocycles comprising fused, pendant or spiro rings typically contain from 9 to 16 ring members. Certain representative carbocycles are cycloalkyl as described above (*e.g.*, cyclohexyl, cycloheptyl or adamantly). Other carbocycles are aryl (*i.e.*, contain at least one aromatic carbocyclic ring, with or without one or more additional aromatic and/or cycloalkyl rings). Such aryl carbocycles include, for example, phenyl, naphthyl (*e.g.*, 1-naphthyl and 2-naphthyl), fluorenyl, indanyl and 1,2,3,4-tetrahydronaphthyl.

Certain carbocycles recited herein are C_6-C_{10}arylC_0-C_8alkyl groups (*i.e.*, groups in which a 6- to 10-membered carbocyclic group comprising at least one aromatic ring is linked via a single covalent bond or a C_1-C_8alkylene group). Phenyl groups linked via a single covalent bond or C_1-C_2alkylene group are designated phenylC_0-C_2alkyl (*e.g.*, benzyl, 1-phenyl-ethyl and 2-phenyl-ethyl).

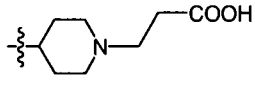
A "heterocycle" or "heterocyclic group" has from 1 to 3 fused, pendant or spiro rings, at least one of which is a heterocyclic ring (*i.e.,* one or more ring atoms is a heteroatom independently chosen from O, S and N, with the remaining ring atoms being carbon). Additional rings, if present, may be heterocyclic or carbocyclic. Typically, a heterocyclic ring comprises 1, 2, 3 or 4 heteroatoms; within certain embodiments each heterocyclic ring has 1 or 2 heteroatoms per ring. Each heterocyclic ring generally contains from 3 to 8 ring members (rings having from 4 or 5 to 7 ring members are recited in certain embodiments) and heterocycles comprising fused, pendant or spiro rings typically contain from 9 to 14 ring members. Certain heterocycles comprise a sulfur atom as a ring member; in certain embodiments, the sulfur atom is oxidized to SO or SO_2. Unless otherwise specified, a heterocycle may be a heterocycloalkyl group (*i.e.,* each ring is saturated or partially saturated), such as a 4- to 7-membered heterocycloalkyl, which generally comprises 1, 2, 3 or 4 ring atoms that are independently chosen from C, O, N and S; or a heteroaryl group (*i.e.*, at least one ring within the group is aromatic), such as a 5- to 10-membered heteroaryl (which may be monocyclic or bicyclic) or a 6-membered heteroaryl (*e.g.,* pyridyl or pyrimidyl). N-linked heterocyclic groups are linked via a component nitrogen atom.

A "heterocycleC_0-C_4alkyl" is a heterocyclic group linked via a single covalent bond or C_1-C_4alkylene group. A "(4- to 7-membered heterocycloalkyl)C_1-C_4alkyl" is a heterocycloalkyl ring with from 4 to 7 ring members that is linked via a C_1-C_4alkylene group.

The term "heteroaryl that is substituted with 1 or 2 oxo" refers to any heterocyclic ring having one or two amide functional groups within the ring, wherein the tautomeric form or forms of the amide(s) give rise to a structural representation wherein the ring may be classified as aromatic by one of ordinary skill in the art. Non-limiting examples of heteroaryl that is substituted with 1 or 2 oxo include:



A "(4- to 7-membered heterocycloalkyl)C_0-C_4alkylene" is a divalent (4- to 7-membered heterocycloalkyl)C_0-C_4alkyl group that is linked via two single covalent bonds to two specified moieties. In general, one such single covalent bond is located on the cyclic portion and the other is located on the alkylene portion, if present; alternatively, if no alkylene group is present, both such single covalent bonds are located on different ring members. For example, with respect to the group R_A, if A is a (piperidinyl)C_2alkylene, and M is COOH, one R_A moiety so formed is:



A "substituent," as used herein, refers to a molecular moiety that is covalently bonded to an atom within a molecule of interest. For example, a ring substituent may be a moiety such as a halogen, alkyl group, haloalkyl group or other group that is covalently bonded to an atom (preferably a carbon or nitrogen atom) that is a ring member. Substituents of aromatic groups are generally covalently bonded to a ring carbon atom. The term "substitution" refers to replacing a hydrogen atom in a molecular structure with a substituent, such that the valence on the designated atom is not exceeded, and such that a chemically stable compound (*i.e.,* a compound that can be isolated, characterized, and tested for biological activity) results from the substitution.

Groups that are "optionally substituted" are unsubstituted or are substituted by other than hydrogen at one or more available positions, typically 1, 2, 3, 4 or 5 positions, by one or more suitable groups (which may be the same or different). Optional substitution is also indicated by the phrase "substituted with from 0 to X substituents," where X is the maximum number of possible substituents. Certain optionally substituted groups are substituted with from 0 to 2, 3 or 4 independently selected substituents (*i.e.,* are unsubstituted or substituted with up to the recited maximum number of substituents). Other optionally substituted groups are substituted with at least one substituent (*e.g.,* substituted with from 1 to 2, 3 or 4 independently selected substituents).

The term "$P2X_7$ receptor" refers to any P2X7 receptor, preferably a mammalian receptor such as the human or rat P2X7 receptor disclosed in US Patent No. 6,133,434, as well as homologues thereof found in other species.

A "$P2X_7$ receptor modulator," also referred to herein as a "modulator," is a compound that modulates $P2X_7$ receptor activation and/or $P2X_7$ receptor-mediated activity (*e.g.,* signal transduction). $P2X_7$ receptor modulators specifically provided herein are compounds of Formula I and pharmaceutically acceptable salts, hydrates and esters thereof. A modulator may be a $P2X_7$ receptor agonist or antagonist.

A modulator is considered an "antagonist" if it detectably inhibits $P2X_7$ receptor-mediated signal transduction (using, for example, a representative assay provided in Example 4); in general, such an antagonist inhibits $P2X_7$ receptor activation with a IC_{50} value of less than 20 micromolar, preferably less than 10 micromolar, more preferably less than 5 micromolar, more preferably less than 1 micromolar, still more preferably less than 500 nanomolar, and most preferably less than 100 nanomolar within an assay provided in Example 4. $P2X_7$ receptor antagonists include neutral antagonists and inverse agonists.

An "inverse agonist" of $P2X_7$ receptor is a compound that reduces the activity of $P2X_7$ receptor below its basal activity level in the absence of added ligand. Inverse agonists of $P2X_7$ receptor may also inhibit the activity of ligand at $P2X_7$ receptor and/or binding of ligand to $P2X_7$ receptor. The basal activity of $P2X_7$ receptor, as well as a reduction in $P2X_7$ receptor activity due to the presence of $P2X_7$ receptor antagonist, may be determined from a calcium mobilization assay (*e.g.,* the assay of Example 4).

A "neutral antagonist" of $P2X_7$ receptor is a compound that inhibits the activity of ligand at $P2X_7$ receptor, but does not significantly change the basal activity of the receptor (*i.e.,* within a calcium mobilization assay as described in Example 4 performed in the absence of ligand, $P2X_7$ receptor activity is reduced by no more than 10%, preferably by no more than 5%, and more preferably by no more than 2%; most preferably, there is no detectable reduction in activity). Neutral antagonists of $P2X_7$ receptor may inhibit the binding of ligand to $P2X_7$ receptor.

As used herein a "$P2X_7$ receptor agonist" is a compound that elevates the activity of the $P2X_7$ receptor above the basal activity level of the receptor (*i.e.,* enhances $P2X_7$ receptor activation and/or $P2X_7$ receptor-mediated activity, such as signal transduction). $P2X_7$ receptor agonist activity may be detected using the representative assay provided in Example 4. $P2X_7$ receptor agonists include ATP and 2'(3')-O-(4-benzoyl-benzoyl)adenosine 5'-triphosephate (BzATP).

A "therapeutically effective amount" (or dose) is an amount that, upon administration to a patient, results in a discernible patient benefit (*e.g.,* provides detectable relief from at least one condition being treated). Such relief may be detected using any appropriate criteria, including alleviation of one or more symptoms such as pain. A therapeutically effective amount or dose generally results in a concentration of compound in a body fluid (such as blood, plasma, serum, CSF, synovial fluid, lymph, cellular interstitial fluid, tears or urine) that is sufficient to alter $P2X_7$ receptor-mediated signal transduction (using an assay provided in Example 4). It will be apparent that the discernible patient benefit may be apparent after administration of a single dose, or may become apparent following repeated administration of the therapeutically effective dose according to a predetermined regimen, depending upon the indication for which the compound is administered.

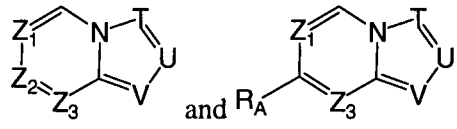
By "statistically significant," as used herein, is meant results varying from control at the $p<0.1$ level of significance as measured using a standard parametric assay of statistical significance such as a student's T test.

A "patient" is any individual treated with a compound provided herein. Patients include humans, as well as other animals such as companion animals (*e.g.,* dogs and cats) and livestock. Patients may be experiencing one or more symptoms of a condition responsive to $P2X_7$ receptor modulation or may be free of such symptom(s) (*i.e.,* treatment may be prophylactic in a patient considered at risk for the development of such symptoms).

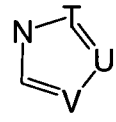
HETEROARYL AMIDE DERIVATIVES

As noted above, the present invention provides heteroaryl amide derivatives of Formula A and Formula I. Within certain aspects, such compounds are modulators that may be used in a variety of contexts, including in the treatment of conditions responsive to $P2X_7$ receptor modulation, such as pain. Such modulators are also useful as probes for detection and localization of $P2X_7$ receptor and as standards in $P2X_7$ receptor-mediated signal transduction assays.

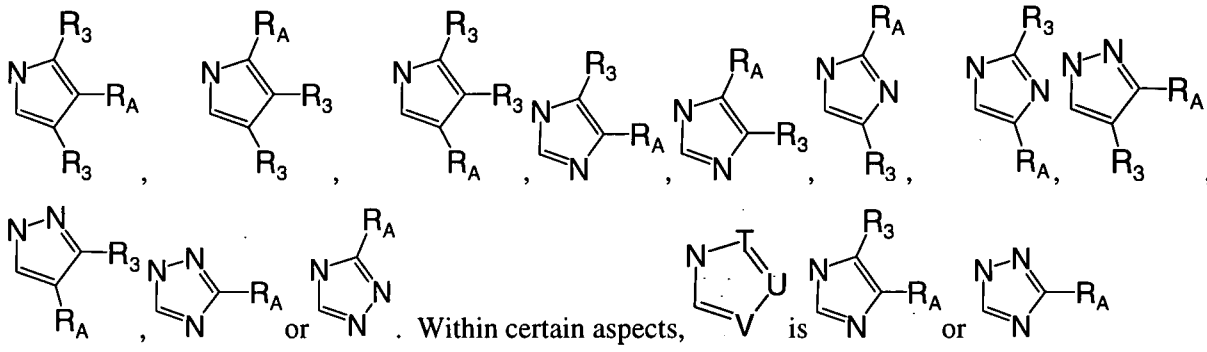
Within Formulas A, I or II, the heteroaryl cores:



comprise at least one nitrogen atom, as indicated, and optionally comprise additional nitrogen atom(s) at one or more of T, U, V, Z_1, Z_2 and/or Z_3. The 5-membered ring portion of the core:



is, within certain embodiments,



Where present, each R_3 is generally as described above; in certain compounds each R_3 is independently hydrogen or C_1-C_4alkyl.

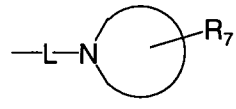
The variable R_A is a ring substituent as described above. In certain compounds (Formula II), R_A is located at the Z_2 position (*i.e.*, Z_2 is CR_A). In other compounds (Formula I), exactly one of T, U and V is CR_A (*i.e.*, one and only one of T, U and V is a carbon atom that is substituted with R_A). In certain embodiments, R_A is a group of the formula –L-A-M, with variables as described above (*i.e.*, a single M substituent is located on the "A" portion of –L-A).

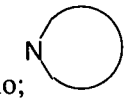
Representative R_A groups include, for example, hydroxy, halogen, C_1-C_6hydroxyalkyl, C_1-C_6aminoalkyl, C_1-C_6cyanoalkyl, C_2-C_8alkyl ether, C_2-C_8alkyl thioether, (C_3-C_{12}cycloalkyl)C_0-C_4alkyl, phenyl, phenylC_1-C_4alkyl, (4- to 10-membered heterocycle)C_0-C_4alkyl, phenyl-E-C_0-C_4alkyl, (5- or 6-membered heterocycle)-E-C_0-C_4alkyl, C_1-C_6alkylsulfonylC_0-C_4alkyl, (C_1-C_8alkylsulfonylamino)C_0-C_4alkyl, (C_1-C_8alkanoyloxy)C_0-C_4alkyl, (C_1-C_8alkylsulfonyloxy)C_0-C_4alkyl, (mono- or di-C_1-C_8alkylamino)C_0-C_4alkyl, and (mono- or di-C_1-C_8alkylaminocarbonyl)C_0-C_4alkyl, wherein E is O, S, SO_2 or NH; each of which is substituted with from 0 to 6 substituents independently chosen from: (i) oxo, amino, cyano, hydroxy, imino, hydroxyimino, aminocarbonyl, aminosulfonyl and COOH; and (ii) C_1-C_6alkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, C_2-C_6alkyl ether, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, mono- or di-C_1-C_6alkylaminocarbonyl, mono- or di-C_1-C_6alkylaminosulfonyl, C_1-C_6alkylsilyloxy, (C_3-C_{12}cycloalkyl)C_0-C_4alkyl, phenylC_0-C_4alkyl and (4- to 7-membered heterocycle)C_0-C_4alkyl; each of which (ii) is substituted with from 0 to 4 substituents independently chosen from halogen, hydroxy, amino, oxo, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy that is optionally substituted with C_1-C_6alkanoyloxy, C_2-C_6alkyl ether, C_1-

C_6alkanoyloxy, C_1-C_6alkoxycarbonyl, mono- or di-(C_1-C_6alkyl)amino and 5- or 6-membered heterocycle. In general, as noted above, in compounds of Formula I R_A is not C_1-C_4alkoxycarbonyl if Y is optionally substituted phenyl.

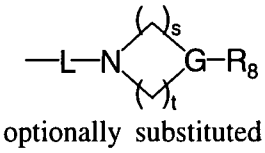
Within certain embodiments, R_A is C_1-C_6hydroxyalkyl, C_1-C_6cyanoalkyl, C_2-C_6alkyl ether, C_2-C_6alkyl thioether, mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, mono- or di-(C_1-C_8alkyl)aminocarbonylC_0-C_4alkyl, C_1-C_6alkylsulfonylC_0-C_4alkyl, (4- to 7-membered heterocycloalkyl)C_1-C_4alkyl, (5-membered heteroaryl)C_0-C_4alkyl, or phenyl; each of which is substituted with from 0 to 4 substituents independently chosen from amino, hydroxy, halogen, cyano, oxo, aminocarbonyl, COOH, aminosulfonyl, C_1-C_6alkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, C_2-C_6alkyl ether, mono- or di-(C_1-C_6alkyl)amino, mono- or di-(C_1-C_6alkyl)aminocarbonyl, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, 4- to 7-membered heterocycloalkyl that is optionally substituted with one or two methyl groups, and 5- or 6-membered heteroaryl.

In certain embodiments, R_A is not C_1-C_6alkoxy.Within further embodiments, the "M" portion of R_A is a N-linked heterocycloalkyl. Certain such R_A groups satisfy the Formula:



wherein: L is absent or C_1-C_6alkylene that is optionally substituted with oxo;  represents a 4- to 7-membered heterocycloalkyl ; and R_7 represents from 0 to 4 substituents independently chosen from: (i) halogen, hydroxy, amino, oxo, aminocarbonyl, aminosulfonyl and COOH; (ii) C_1-C_6alkyl, C_1-C_6alkoxy, C_1-C_6haloalkyl, mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, C_1-C_6alkylsulfonylC_0-C_4alkyl, C_1-C_6alkylsulfonylaminoC_0-C_4alkyl, and 4- to 7-membered heterocycle; each of which is substituted with from 0 to 4 substituents independently chosen from halogen, hydroxy, amino, oxo, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl, C_1-C_6alkoxy, mono- or di-(C_1-C_6alkyl)amino, and C_1-C_6alkylsulfonylamino; (iii) two R_7 taken together with the atoms through which they are connected form a bridge of the Formula -$(CH_2)_q$-P-$(CH_2)_r$-, wherein q and r are independently 0 or 1 and P is CH_2, O, NH or S; and (iv) two R_7 taken together with the atom to which they are attached form a spiro 4- to 7-membered heterocycloalkyl ring that is substituted with from 0 to 2 substituents independently chosen from oxo and C_1-C_4alkyl.

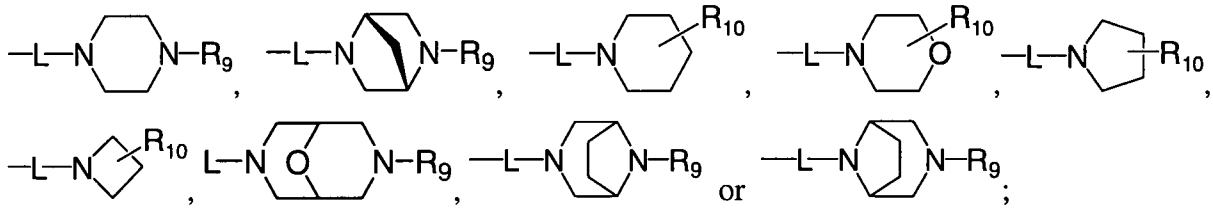
Certain such R_A moieties further satisfy the Formula:



wherein: L is C_1-C_2alkylene that is optionally substituted with oxo; G is CH or N; s and t are independently 0, 1, 2, 3 or 4, such that the sum of s and t ranges from 2 to 5; and R_8 is: (i) hydrogen, aminocarbonyl, aminosulfonyl or COOH; or (ii) C_1-C_6alkyl, mono- or di-(C_1-C_6alkyl)aminoC_0-

C_4alkyl, C_1-C_6alkylsulfonylC_0-C_4alkyl, C_1-C_6alkylsulfonylaminoC_0-C_4alkyl, or 4- to 7-membered heterocycle; each of which is substituted with from 0 to 4 substituents independently chosen from halogen, hydroxy, amino, oxo, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl, C_1-C_6alkoxy, mono- or di-(C_1-C_6alkyl)amino, and C_1-C_6alkylsulfonylamino.

Other such R_A moieties further satisfy one of the following Formulas:

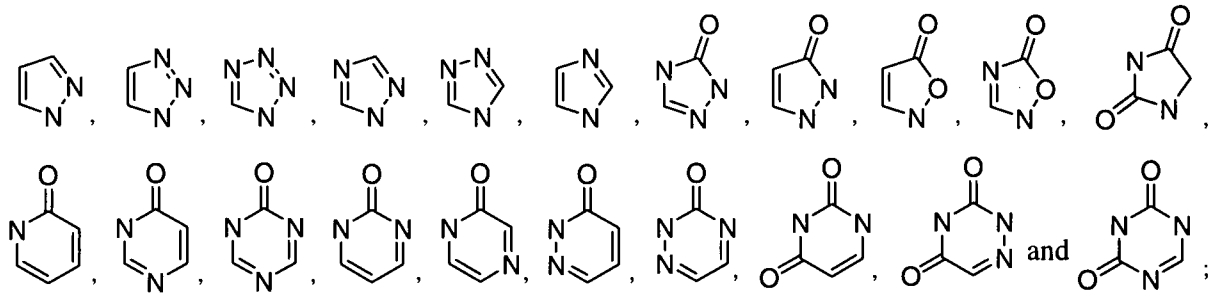


wherein: R_9 is: (i) C_1-C_6alkyl that is optionally substituted with COOH; or (ii) a 5- or 6-membered heteroaryl that is unsubstituted or substituted with 1 or 2 oxo; and R_{10} represents zero, one or two substituents chosen from: (i) amino, COOH or aminocarbonyl; (ii) C_1-C_6alkyl that is optionally substituted with COOH or C_1-C_6alkoxy; (iii) C_1-C_6alkoxy, C_1-C_6haloalkyl, mono- or di-(C_1-C_6alkyl)aminoC_0-C_2alkyl, C_1-C_6alkylsulfonyl and C_1-C_6alkylsulfonylamino; each of which is substituted with from 0 to 3 substituents independently chosen from hydroxy, oxo and COOH; and (iv) C_1-C_6haloalkylsulfonylamino.

Within other embodiments, R_A is C_1-C_6alkyl, C_2-C_6alkyl ether, or mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, each of which is substituted with from 1 to 4 substituents independently chosen from halogen, hydroxy, amino, oxo, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkoxy, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkanoylamino, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonyloxy, C_1-C_6alkylsulfonylamino, and 4- to 7-membered heterocycle. Representative such R_A groups include, for example, (i) C_1-C_6alkyl that is substituted with COOH; and (ii) mono-(C_1-C_6alkyl)aminoC_0-C_2alkyl that is substituted with from 0 to 2 substituents independently chosen from hydroxy, oxo, COOH and C_1-C_4alkylsulfonylamino.

Within still further embodiments, R_A is a group of the Formula L-A, as described above, wherein L is not absent if Y is phenyl or 6-membered heteroaryl; A is absent; and M is phenyl or a 5- or 6-membered heteroaryl, each of which is substituted with from 0 to 4 substituents independently chosen from oxo, amino, halogen, hydroxy, cyano, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl that is optionally substituted with COOH or C_1-C_6alkoxy, C_1-C_6hydroxyalkyl, C_1-C_6haloalkyl, imino, hydroxyimino, C_1-C_6alkoxy that is optionally substituted with C_1-C_6alkanoyloxy, C_1-C_6haloalkoxy, C_1-C_6alkoxy, C_2-C_6alkyl ether, C_1-C_6alkanoyloxy, C_1-C_6alkoxycarbonyl, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, mono- or di-(C_1-C_6alkyl)aminosulfonyl, mono- or di-(C_1-C_6alkylamino)carbonyl, phenyl, cycloalkyl, and 4- to 7-membered heterocycle. Within certain such compounds, M is phenyl or a 5- or 6-membered heteroaryl such as pyridyl or pyrimidinyl, each of which is substituted with from 0 to 4 substituents independently chosen from oxo, amino, halogen, hydroxy, cyano, aminocarbonyl, aminosulfonyl,

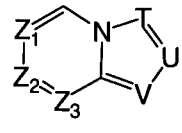
COOH, C_1-C_6alkyl, C_1-C_6hydroxyalkyl, C_1-C_6haloalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_2-C_6alkyl ether, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, mono- or di-(C_1-C_6alkyl)aminosulfonyl, mono- or di-(C_1-C_6alkylamino)carbonyl, and 4- to 7-membered heterocycle. Certain such 5- or 6-membered heteroaryl moieties include, for example, groups chosen from:



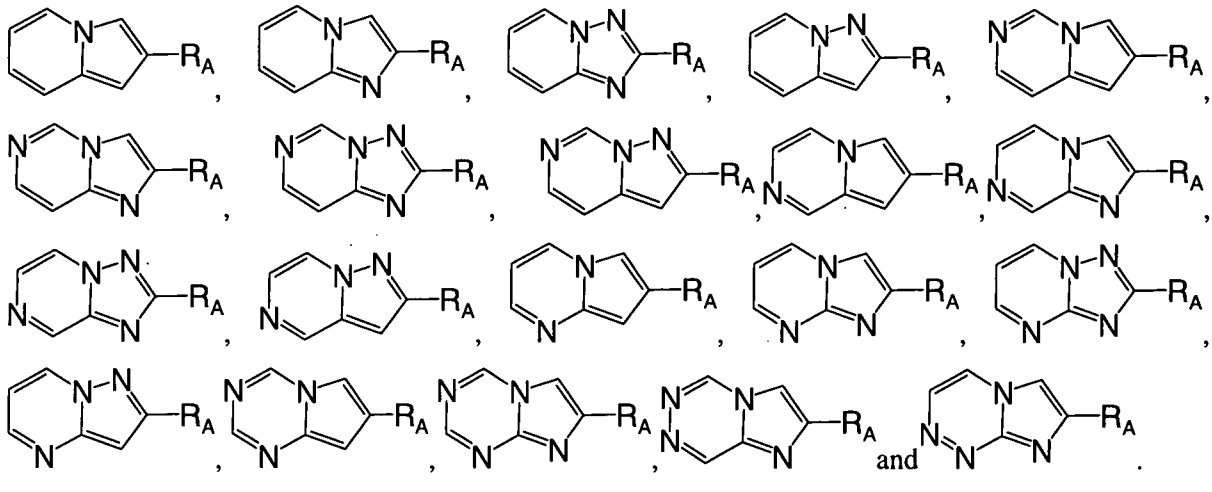
each of which is substituted with from 0 to 2 substituents independently chosen from amino, halogen, hydroxy, cyano, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl, C_1-C_6hydroxyalkyl, C_1-C_6haloalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_2-C_6alkyl ether, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, mono- or di-(C_1-C_6alkyl)aminosulfonyl, mono- or di-(C_1-C_6alkylamino)carbonyl, and 4- to 7-membered heterocycle.

As noted above, each of the variables Z_1, Z_2 and Z_3 in Formula A or Formula I is generally N, CH or substituted carbon. Within certain embodiments, Z_1, Z_2 and Z_3 are each CR_2; Z_1 is N and Z_2 and Z_3 are each CR_2; Z_2 is N and Z_1 and Z_3 are each CR_2; Z_3 is N and Z_1 and Z_2 are each CR_2; or Z_1 and Z_3 are N and Z_2 is CR_2. Each R_2, within certain such compounds, is hydrogen or C_1-C_6alkyl.

Certain representative heteroaryl cores of Formula I:



include, for example:



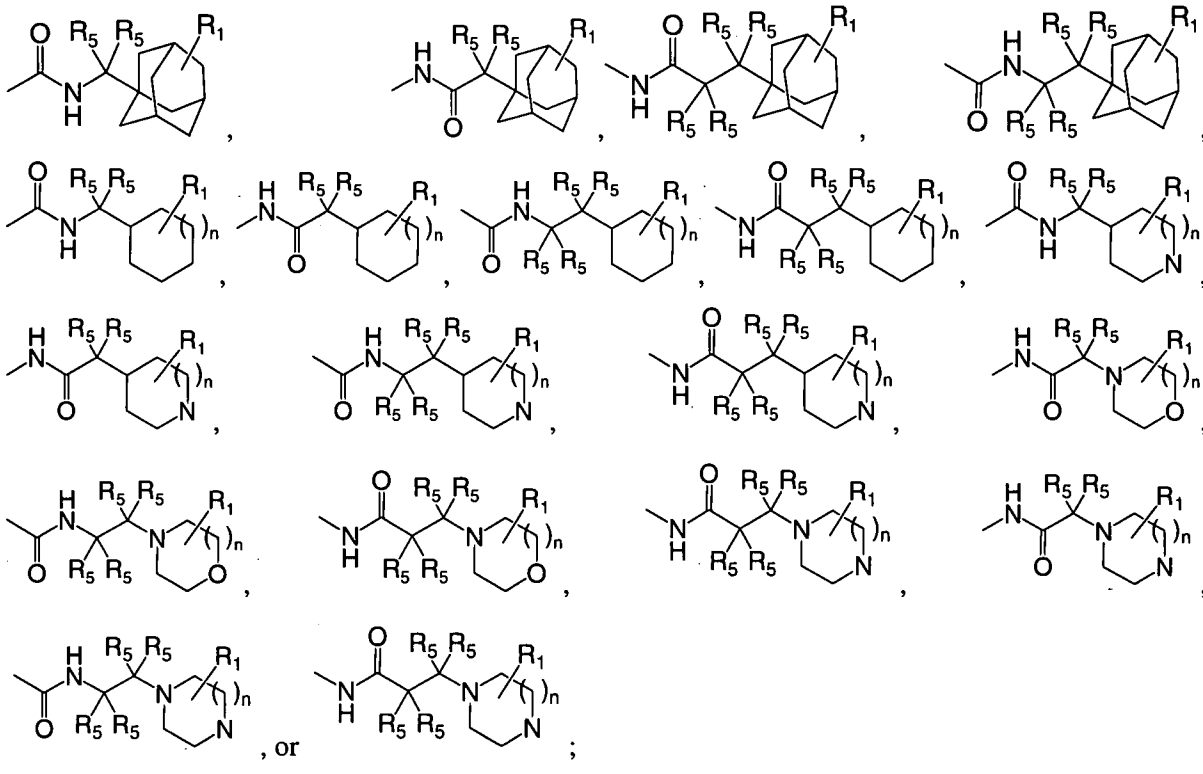
The variable "W," as noted above is generally W is $-C(=O)NR_4-$, $-NR_4C(=O)-$ or $-NR_4-NR_4-C(=O)-$. If will be apparent that the orientation of these groups is intended to be retained; for example, in a compound in which W is $-C(=O)NR_4-$, the carbonyl of W is directly linked to the 6-

membered ring of the bicyclic core and the nitrogen of W is directly linked to X. R_4 is generally as described above; in certain embodiments, R_4 is hydrogen or methyl.

The variable "X" is generally as described above; in certain embodiments, X is C_1-C_4alkylene (*e.g.*, methylene or ethylene), each of which is substituted with from 0 to 4 substituents independently chosen from C_1-C_4alkyl, (C_3-C_8cycloalkyl)C_0-C_2alkyl, phenyl and substituents that are taken together to form a 3- to 7-membered cycloalkyl or heterocycloalkyl ring.

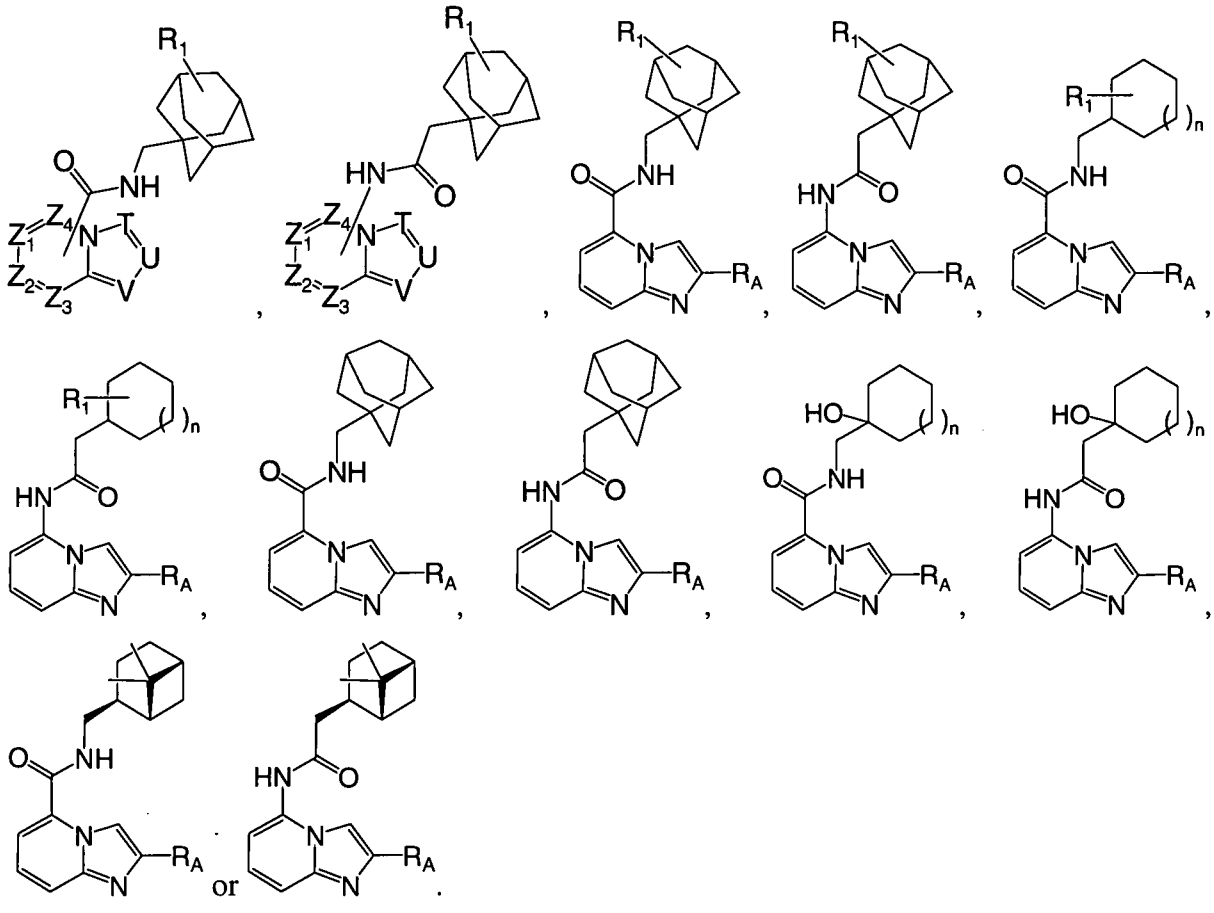
Within Formulas I and II, the variable "Y" is generally a cyclic moiety, optionally substituted. In certain compounds, Y is a cycloalkyl or heterocycloalkyl group, such as cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cycloheptyl, piperidinyl, piperazinyl, morpholinyl, 6,6-dimethyl-bicyclo[3.1.1]heptane-2-yl, or adamantyl, each of which is optionally substituted as described above; in certain such compounds, each Y moiety is substituted with from 0 to 4 substituents independently chosen from halogen, hydroxy, cyano, amino, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, and mono- or di-(C_1-C_6alkyl)amino.

Within certain heteroaryl amide derivatives provided herein, –W-X-Y is:

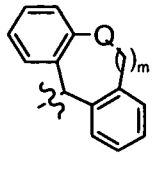


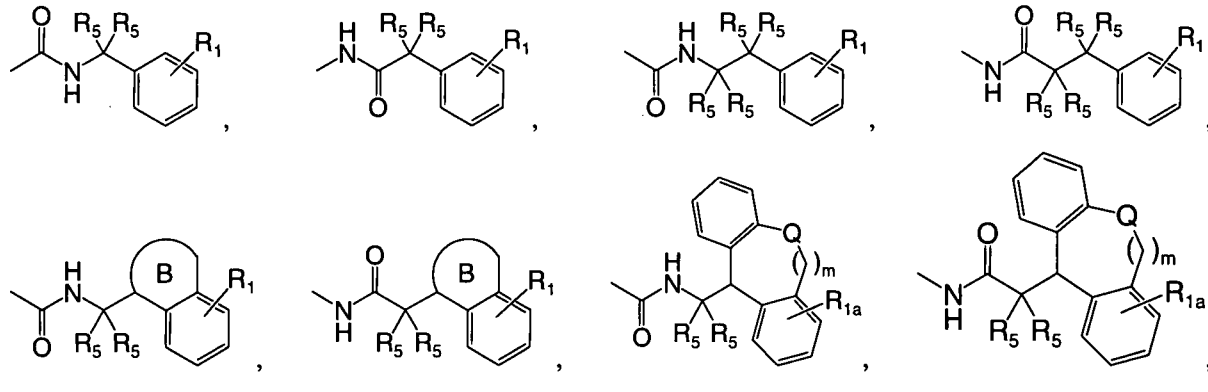
wherein: n is 0, 1 or 2; R_1 represents from 0 to 2 substituents independently chosen from halogen, hydroxy, cyano, amino, nitro, aminocarbonyl, aminosulfonyl, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, (C_3-C_7cycloalkyl)C_0-C_4alkyl, and mono- or di-(C_1-C_6alkyl)amino; or two substituents represented by R_1 are taken together to form (a) a C_1-C_3alkylene bridge that is optionally substituted with one or two C_1-C_4alkyl moieties or (b) with the atom to which they are attached or with the atoms through which they are connected, a fused or spiro 3- to 7-membered carbocyclic or heterocyclic ring; and each R_5 is independently hydrogen, C_1-C_4alkyl, (C_3-C_7cycloalkyl)C_0-C_2alkyl or phenylC_0-C_2alkyl; or two R_5 taken together with the atom to

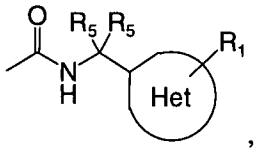
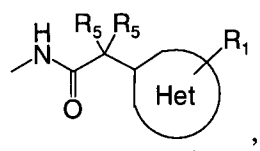
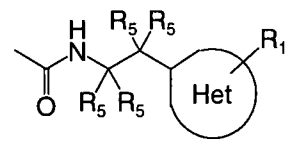
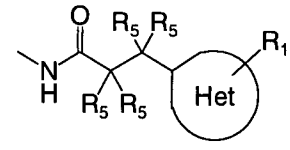
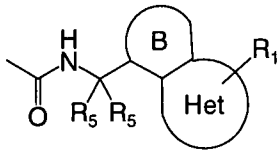
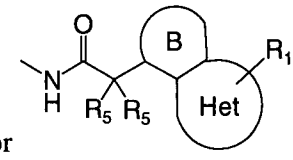
which they are attached form a C_3-C_8cycloalkyl or a 4- to 7-membered heterocycloalkyl Certain such compounds further satisfy the formula:

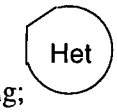


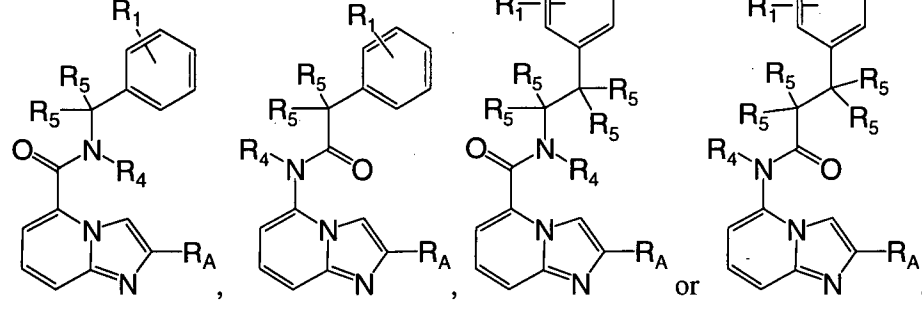
Within other compounds, Y is an aromatic moiety, such as: phenyl or a 5- or 6-membered heteroaryl, each of which is optionally fused to a 5- to 7-membered carbocyclic or heterocyclic ring;

or (ii)  ; each of which Y is substituted with from 0 to 4 substituents independently chosen from halogen, hydroxy, cyano, amino, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, and mono- or di-(C_1-C_6alkyl)amino. Within certain compounds, –W-X-Y is:

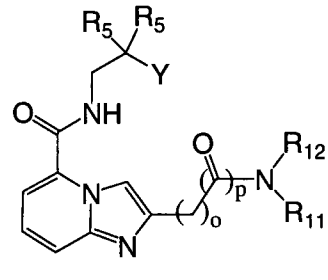


wherein:  is a 5- to 7-membered carbocyclic or heterocyclic ring;  is a 5- or 6-membered heteroaryl; R_1 represents from 0 to 2 substituents independently chosen from halogen, hydroxy, cyano, amino, nitro, aminocarbonyl, aminosulfonyl, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, (C_3-C_7cycloalkyl)C_0-C_4alkyl, and mono- or di-(C_1-C_6alkyl)amino; or two substituents represented by R_1 taken together with the atoms through which they are connected form a fused 3- to 7-membered carbocyclic or heterocyclic ring; R_{1a} represents from 0 to 2 substituents independently chosen from halogen, hydroxy, cyano, amino, nitro, aminocarbonyl, aminosulfonyl, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, (C_3-C_7cycloalkyl)C_0-C_4alkyl, and mono- or di-(C_1-C_6alkyl)amino; each R_5 is independently hydrogen, C_1-C_6alkyl, C_3-C_7cycloalkyl or phenyl; or two R_5 are taken together with the atom to which they are attached form a C_3-C_8cycloalkyl; Q is CH_2, CO, O, NH, S, SO or SO_2; and m is 0 or 1. Certain such compounds further satisfy the formula:



Certain heteroaryl amide derivatives of Formula I further satisfy the Formula:



wherein o is an integer ranging from 0 to 4; p is 0 or 1; each R_5 and Y carry any of the definitions recited above; and R_{11} and R_{12} are (i) independently chosen from (a) hydrogen, and (b) C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_2-C_6alkyl ether, (C_3-C_7cycloalkyl)C_0-C_4alkyl, and phenylC_0-C_2alkyl, each of which is substituted with from 0 to 4 substituents independently chosen

from hydroxy, halogen, cyano, amino, aminocarbonyl, aminosulfonyl, COOH, oxo, C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, C_2-C_6alkyl ether, mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminocarbonyl, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, 4- to 7-membered heterocycloalkyl that is optionally substituted with one or two methyl groups, and 5- or 6-membered heteroaryl; or (ii) R_{11} and R_{12} are taken together to form a 5- to 7-membered heterocycloalkyl that is substituted with from 0 to 4 substituents independently chosen from halogen, hydroxy, cyano, amino, aminocarbonyl, aminosulfonyl, COOH, oxo, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_2-C_6alkyl ether, (C_3-C_7cycloalkyl)C_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminocarbonyl, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, 4- to 7-membered heterocycloalkyl that is optionally substituted with one or two methyl groups, and 5- or 6-membered heteroaryl. Within certain such compounds, each R_5 is independently hydrogen, C_1-C_6alkyl, (C_3-C_7cycloalkyl)C_0-C_2alkyl or phenylC_0-C_2alkyl; or two R_5 taken together with the atom to which they are attached form a C_3-C_8cycloalkyl or a 4- to 7-membered heterocycloalkyl; and Y is cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cycloheptyl, piperidinyl, piperazinyl, morpholinyl, 6,6-dimethyl-bicyclo[3.1.1]heptane-2-yl, adamantyl, phenyl or a 5- or 6-membered heteroaryl; each of which is substituted with from 0 to 4 substituents independently chosen from halogen, hydroxy, cyano, amino, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, and mono- or di-(C_1-C_6alkyl)amino; and

Representative heteroaryl amide derivatives provided herein include, but are not limited to, those specifically described in Examples 1-3. It will be apparent that the specific compounds recited herein are representative only, and are not intended to limit the scope of the present invention. Further, as noted above, all compounds of the present invention may be present as a free acid or base, or as a pharmaceutically acceptable salt. In addition, other forms such as hydrates and prodrugs of such compounds are specifically contemplated by the present invention.

Within certain aspects of the present invention, heteroaryl amide derivatives provided herein detectably alter (modulate) $P2X_7$ receptor activity, as determined using an assay such as an assay recited in Example 4, herein. Additional assays that may be used for this purpose include assays that measure IL-1β release; assays that measure uptake of a membrane-impermeant fluorescent dye such as YO-PRO1; assays that measure lucifer yellow uptake; assays that measure ethidium bromide uptake; and assays that use calcium imaging to detect $P2X_7$ activity; all of which assays are well known in the art. Certain modulators provided herein detectably modulate $P2X_7$ receptor activity at micromolar concentrations, at nanomolar concentrations, or at subnanomolar concentrations.

As noted above, compounds that are $P2X_7$ receptor antagonists are preferred within certain embodiments. IC_{50} values for such compounds may be determined using a standard *in vitro* $P2X_7$ receptor-mediated calcium mobilization assay, as provided in Example 4. Briefly, cells expressing $P2X_7$ receptor are contacted with a compound of interest and with an indicator of intracellular calcium

concentration (*e.g.*, a membrane permeable calcium sensitivity dye such as Fluo-3, Fluo-4 or Fura-2 (Invitrogen, Carlsbad, CA), each of which produce a fluorescent signal when bound to Ca^{++}). Such contact is preferably carried out by one or more incubations of the cells in buffer or culture medium comprising either or both of the compound and the indicator in solution. Contact is maintained for an amount of time sufficient to allow the dye to enter the cells (*e.g.*, 1-2 hours). Cells are washed or filtered to remove excess dye and are then contacted with a $P2X_7$ receptor agonist (*e.g.*, ATP or 2'(3')-O-(4-benzoyl-benzoyl)adenosine 5'-triphosephate at, for example, a concentration equal to the EC_{50} concentration), and a fluorescence response is measured. When agonist-contacted cells are contacted with a compound that is a $P2X_7$ receptor antagonist, the fluorescence response is generally reduced by at least 20%, preferably at least 50% and more preferably at least 80%, as compared to cells that are contacted with the agonist in the absence of test compound. In certain embodiments, $P2X_7$ receptor antagonists provided herein exhibit no detectable agonist activity an *in vitro* assay of $P2X_7$ receptor agonism at a concentration of compound equal to the IC_{50}. Certain such antagonists exhibit no detectable agonist activity an *in vitro* assay of $P2X_7$ receptor agonism at a concentration of compound that is 100-fold higher than the IC_{50}.

$P2X_7$ receptor modulating activity may also, or alternatively, be assessed using an *in vivo* pain relief assay as provided in Example 5. Modulators provided herein preferably have a statistically significant specific effect on $P2X_7$ receptor activity within such a functional assay.

In certain embodiments, preferred modulators are non-sedating. In other words, a dose of modulator that is twice the minimum dose sufficient to provide analgesia in an animal model for determining pain relief (such as a model provided in Example 5, herein) causes only transient (*i.e.*, lasting for no more than ½ the time that pain relief lasts) or preferably no statistically significant sedation in an animal model assay of sedation (using the method described by Fitzgerald et al. (1988) *Toxicology* 49(2-3):433-9). Preferably, a dose that is five times the minimum dose sufficient to provide analgesia does not produce statistically significant sedation. More preferably, a modulator provided herein does not produce sedation at intravenous doses of less than 25 mg/kg (preferably less than 10 mg/kg) or at oral doses of less than 140 mg/kg (preferably less than 50 mg/kg, more preferably less than 30 mg/kg).

If desired, compounds provided herein may be evaluated for certain pharmacological properties including, but not limited to, oral bioavailability (preferred compounds are orally bioavailable to an extent allowing for therapeutically effective concentrations of the compound to be achieved at oral doses of less than 140 mg/kg, preferably less than 50 mg/kg, more preferably less than 30 mg/kg, even more preferably less than 10 mg/kg, still more preferably less than 1 mg/kg and most preferably less than 0.1 mg/kg), toxicity (a preferred compound is nontoxic when a therapeutically effective amount is administered to a subject), side effects (a preferred compound produces side effects comparable to placebo when a therapeutically effective amount of the compound is administered to a subject), serum protein binding and *in vitro* and *in vivo* half-life (a preferred

compound exhibits an *in vivo* half-life allowing for Q.I.D. dosing, preferably T.I.D. dosing, more preferably B.I.D. dosing, and most preferably once-a-day dosing). In addition, differential penetration of the blood brain barrier may be desirable for modulators used to treat pain or neurodegenerative disease by modulating CNS $P2X_7$ receptor activity such that total daily oral doses as described above provide such modulation to a therapeutically effective extent, while low brain levels of modulators used to treat peripheral nerve mediated pain or certain inflammatory diseases (e.g. rheumatoid arthritis) may be preferred (*i.e.,* such doses do not provide brain (*e.g.,* CSF) levels of the compound sufficient to significantly modulate $P2X_7$ receptor activity). Routine assays that are well known in the art may be used to assess these properties, and identify superior compounds for a particular use. For example, assays used to predict bioavailability include transport across human intestinal cell monolayers, including Caco-2 cell monolayers. Penetration of the blood brain barrier of a compound in humans may be predicted from the brain levels of the compound in laboratory animals given the compound (*e.g.,* intravenously). Serum protein binding may be predicted from albumin binding assays. Compound half-life is inversely proportional to the frequency of dosage of a compound. *In vitro* half-lives of compounds may be predicted from assays of microsomal half-life as described, for example, within Example 7 of U.S. Patent Application Publication Number 2005/0070547.

As noted above, preferred compounds provided herein are nontoxic. In general, the term "nontoxic" shall be understood in a relative sense and is intended to refer to any substance that has been approved by the United States Food and Drug Administration ("FDA") for administration to mammals (preferably humans) or, in keeping with established criteria, is susceptible to approval by the FDA for administration to mammals (preferably humans). In addition, a highly preferred nontoxic compound generally satisfies one or more of the following criteria: (1) does not substantially inhibit cellular ATP production; (2) does not significantly prolong heart QT intervals; (3) does not cause substantial liver enlargement, or (4) does not cause substantial release of liver enzymes.

As used herein, a compound that does not substantially inhibit cellular ATP production is a compound that satisfies the criteria set forth in Example 8 of U.S. Patent Application Publication Number 2005/0070547. In other words, cells treated as described therein with 100 μM of such a compound exhibit ATP levels that are at least 50% of the ATP levels detected in untreated cells. In more highly preferred embodiments, such cells exhibit ATP levels that are at least 80% of the ATP levels detected in untreated cells.

A compound that does not significantly prolong heart QT intervals is a compound that does not result in a statistically significant prolongation of heart QT intervals (as determined by electrocardiography) in guinea pigs, minipigs or dogs upon administration of a dose that yields a serum concentration equal to the EC_{50} or IC_{50} for the compound. In certain preferred embodiments, a dose of 0.01, 0.05, 0.1, 0.5, 1, 5, 10, 40 or 50 mg/kg administered parenterally or orally does not result in a statistically significant prolongation of heart QT intervals.

A compound does not cause substantial liver enlargement if daily treatment of laboratory rodents (*e.g.,* mice or rats) for 5-10 days with a dose that yields a serum concentration equal to the EC_{50} or IC_{50} for the compound results in an increase in liver to body weight ratio that is no more than 100% over matched controls. In more highly preferred embodiments, such doses do not cause liver enlargement of more than 75% or 50% over matched controls. If non-rodent mammals (*e.g.,* dogs) are used, such doses should not result in an increase of liver to body weight ratio of more than 50%, preferably not more than 25%, and more preferably not more than 10% over matched untreated controls. Preferred doses within such assays include 0.01, 0.05. 0.1, 0.5, 1, 5, 10, 40 or 50 mg/kg administered parenterally or orally.

Similarly, a compound does not promote substantial release of liver enzymes if administration of twice the minimum dose that yields a serum concentration equal to the EC_{50} or IC_{50} at $P2X_7$ receptor for the compound does not elevate serum levels of ALT, LDH or AST in laboratory animals (*e.g.,* rodents) by more than 100% over matched mock-treated controls. In more highly preferred embodiments, such doses do not elevate such serum levels by more than 75% or 50% over matched controls. Alternatively, a compound does not promote substantial release of liver enzymes if, in an *in vitro* hepatocyte assay, concentrations (in culture media or other such solutions that are contacted and incubated with hepatocytes *in vitro*) that are equal to the EC_{50} or IC_{50} for the compound do not cause detectable release of any of such liver enzymes into culture medium above baseline levels seen in media from matched mock-treated control cells. In more highly preferred embodiments, there is no detectable release of any of such liver enzymes into culture medium above baseline levels when such compound concentrations are five-fold, and preferably ten-fold the EC_{50} or IC_{50} for the compound.

In other embodiments, certain preferred compounds do not inhibit or induce microsomal cytochrome P450 enzyme activities, such as CYP1A2 activity, CYP2A6 activity, CYP2C9 activity, CYP2C19 activity, CYP2D6 activity, CYP2E1 activity or CYP3A4 activity at a concentration equal to the EC_{50} or IC_{50} at $P2X_7$ receptor for the compound.

Certain preferred compounds are not clastogenic (*e.g.,* as determined using a mouse erythrocyte precursor cell micronucleus assay, an Ames micronucleus assay, a spiral micronucleus assay or the like) at a concentration equal the EC_{50} or IC_{50} for the compound. In other embodiments, certain preferred compounds do not induce sister chromatid exchange (*e.g.,* in Chinese hamster ovary cells) at such concentrations.

For detection purposes, as discussed in more detail below, modulators provided herein may be isotopically-labeled or radiolabeled. For example, compounds may have one or more atoms replaced by an atom of the same element 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 present in the compounds provided herein include isotopes of hydrogen, carbon, nitrogen, oxygen, phosphorous, fluorine and chlorine, such as ^{2}H, ^{3}H, ^{11}C, ^{13}C, ^{14}C, ^{15}N, ^{18}O, ^{17}O, ^{31}P, ^{32}P, ^{35}S, ^{18}F and ^{36}Cl. In

addition, substitution with heavy isotopes such as deuterium (*i.e.*, ^{2}H) can afford certain therapeutic advantages resulting from greater metabolic stability, for example increased in vivo half-life or reduced dosage requirements and, hence, may be preferred in some circumstances.

PREPARATION OF HETEROARYL AMIDE DERIVATIVES

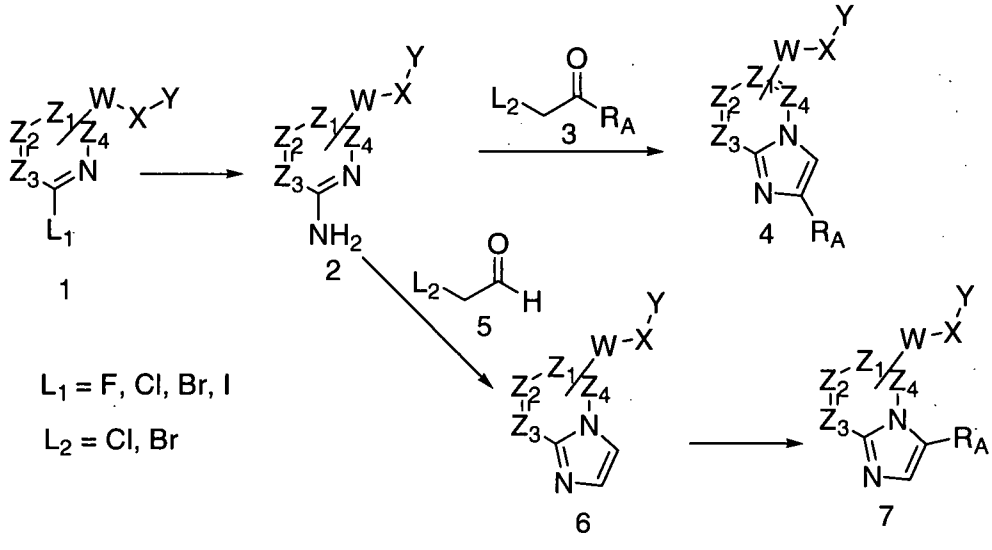
Heteroaryl amide derivatives may generally be prepared using standard synthetic methods. Starting materials are commercially available from suppliers such as Sigma-Aldrich Corp. (St. Louis, MO), or may be synthesized from commercially available precursors using established protocols. By way of example, a synthetic route similar to that shown in any of the following Schemes may be used, together with synthetic methods known in the art of synthetic organic chemistry. In some cases, protecting groups may be required during preparation. Such protecting groups can be removed by methods well known to those of ordinary skill in the art, such as methods described in Greene and Wuts, "Protective Groups in Organic Synthesis" (2nd Edition, John Wiley & Sons, 1991). In some cases, further organic transformations may be performed using methods well known to those of ordinary skill in the art, such as methods described in Richard C. Larock, "Comprehensive Organic Transformation," (VCH Publisher, Inc. 1989). Each variable in the following Schemes refers to any group consistent with the description of the compounds provided herein.

Certain abbreviations used in the following Schemes and elsewhere herein include:

ACN	acetonitrile
BOP	benzotriazol-1-yloxytris(dimethylamino)phosphonium hexafluorophosphate
Bu	butyl
δ	chemical shift
DCM	dichloromethane
DIAD	diisopropyl azodicarboxylate
DIEA	diisopropylethylamine
DMC	2-chloro-1,3-dimethyl-4,5-dihydro-3H-imidazolium chloride
DMF	dimethylformamide
DMSO	dimethylsulfoxide
DPPF	1,1'-bis(diphenylphosphino)ferrocene
Et	ethyl
EtOAc	ethyl acetate
EtOH	ethanol
h	hour(s)
^{1}H NMR	proton nuclear magnetic resonance
Hz	hertz
i-Pr	isopropyl
MeOH	methanol

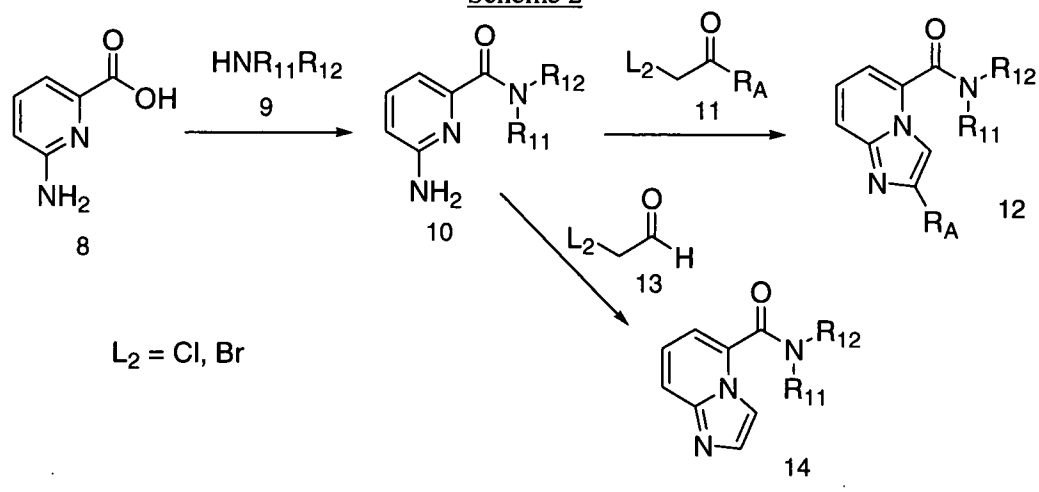
min	minute(s)
(M+1)	mass + 1
$Pd_2(dba)_3$	tris[dibenzylidineacetone]di-palladium
PPh_3	triphenylphosphine
PTLC	preparative thin layer chromatography
PyBOP	benzotriazole-1-yloxytris(pyrrolidino)phosphonium hexafluorophosphate
RT	room temperature
TBS	*tert*-butyl-dimethyl-silanyloxy
TEA	triethylamine
TFA	trifluoroacetic acid
THF	tetrahydrofuran

Scheme 1



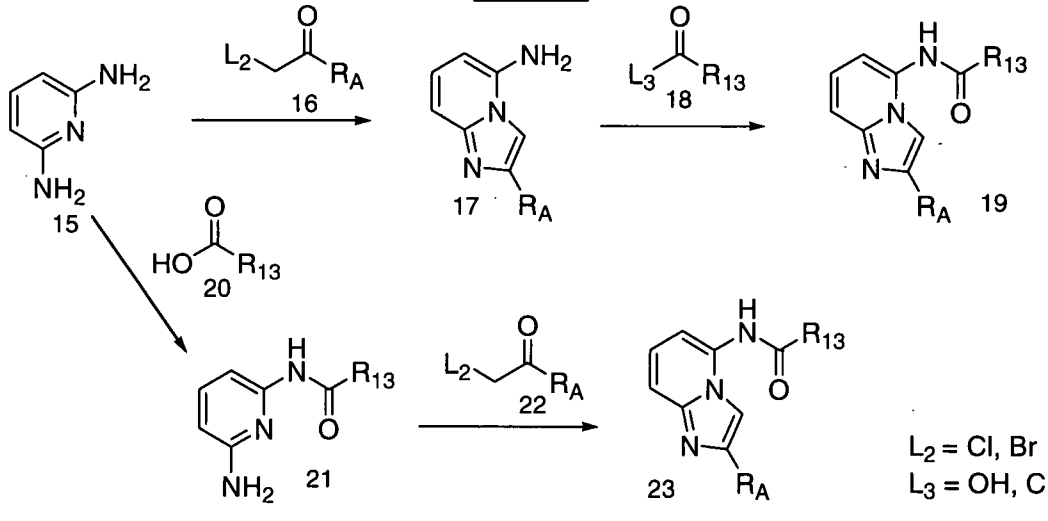
In Scheme 1, a nitrogen-containing heterocyclic halide 1 is converted to the aminoheterocycle 2 using any suitable method, such as ammonia in EtOH at RT or elevated temperature. Amino heterocycle 2 is reacted with an alpha halocarbonyl compound to give the substituted imidazoheterocycle 4. The alpha haloaldehyde 5 is reacted with aminoheterocycle 2 to give the unsubstituted imidazo heterocycle 6, which can be subsequently converted to substituted imidazoheterocycle 7 through electrophilic substitution of the imidazo functionality (*e.g.*, via bromination to give the bromide), which can be converted to the desired imidazoheterocycle 7.

Scheme 2



In Scheme 2, 2-amino-6-pyridine carboxylic acid 8 is reacted with an amine 9 using a coupling agent such as, but not limited to, BOP or DMC in an organic solvent such as DCM or DMF in the presence of an organic base such as Hunig's base. The resulting amide 10 is reacted with alpha halocarbonyl 11 to give the imidazo[1,2-a]pyridine 12. Alternatively 10 can be reacted with the alpha haloaldehyde 13 to give the imidazo[1,2-a]pyridine 14.

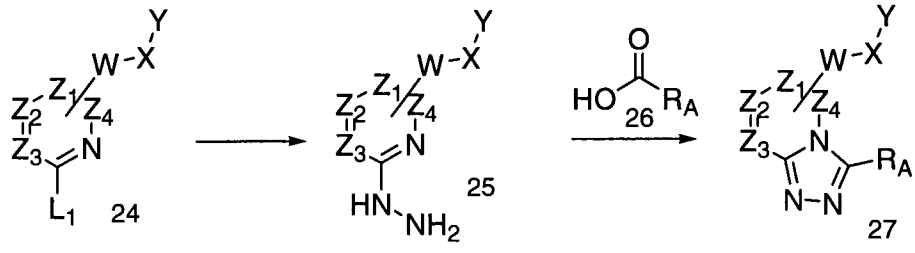
Scheme 3



In Scheme 3, 2,6-diaminopyridine 15 is reacted with an alpha halocarbonyl 16 to give the imidazo[1,2-a]pyridine 17. The resulting amino group can be reacted with a carboxylic acid 18 using a coupling reagent such as chloro-1,3 dimethyl-4,5-dihydro-3H imidazolium chloride in the presence of a base such as TEA in a solvent such as ACN or alternatively by reacting amine 17 with an acid chloride 18 at elevated temperature in a solvent such as dichloroethane to give compound 19. Alternatively, the 2,6-diaminopyridine 15 is reacted with acid 20 using a coupling agent such as, but not limited to, BOP or DMC in an organic solvent such as DCM or DMF in the presence of an organic

base such as Hunig's base. The resulting amide 21 is reacted with alpha halocarbonyl 22 to give the imidazo[1,2-a]pyridine 23.

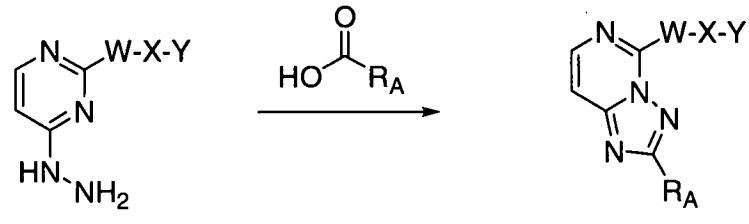
Scheme 4



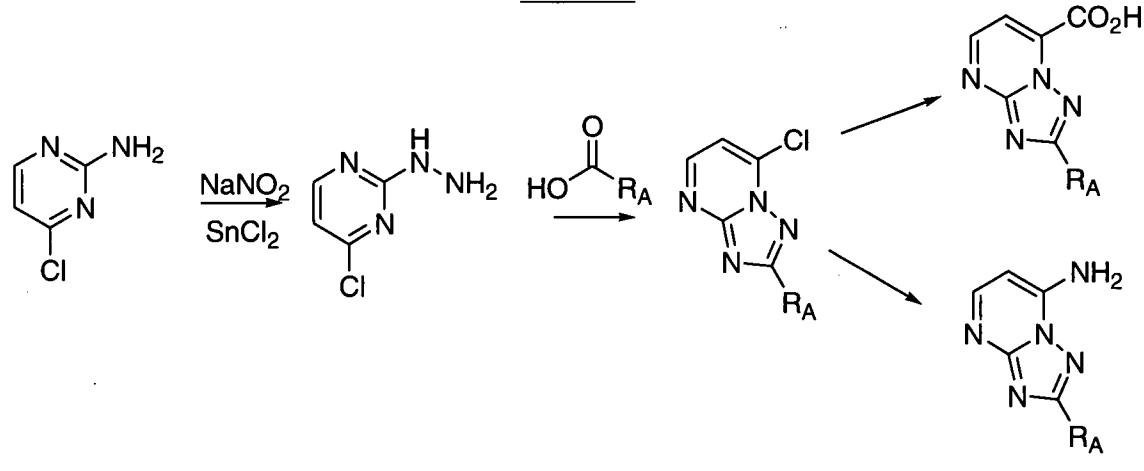
L_1 = F, Cl, Br, I

In Scheme 4, a nitrogen-containing heterocyclic halide 24 is converted to the hydrazinoheterocycle 25 using any suitable method, such as, for example, reacting hydrazine in EtOH at RT or elevated temperature. Intermediate 25 is converted to triazoloheterocycle 27 by reacting with acid 26 without solvent or with solvent at RT or elevated temperature. Specific hydrazinoheterocycles 25 as shown in Schemes 5-7 can undergo Dimroth rearrangement when heating at high temperature during the reaction with acid 26.

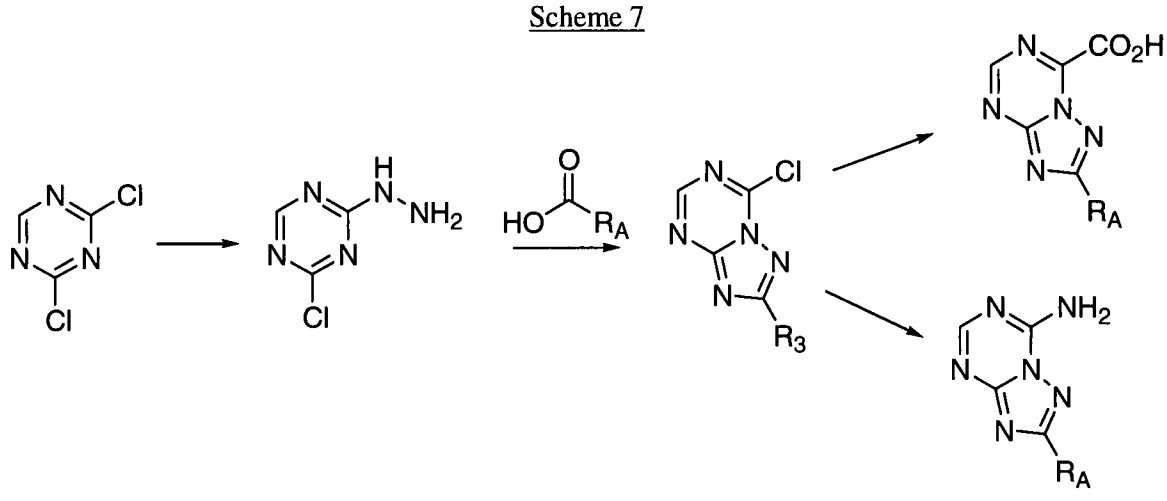
Scheme 5



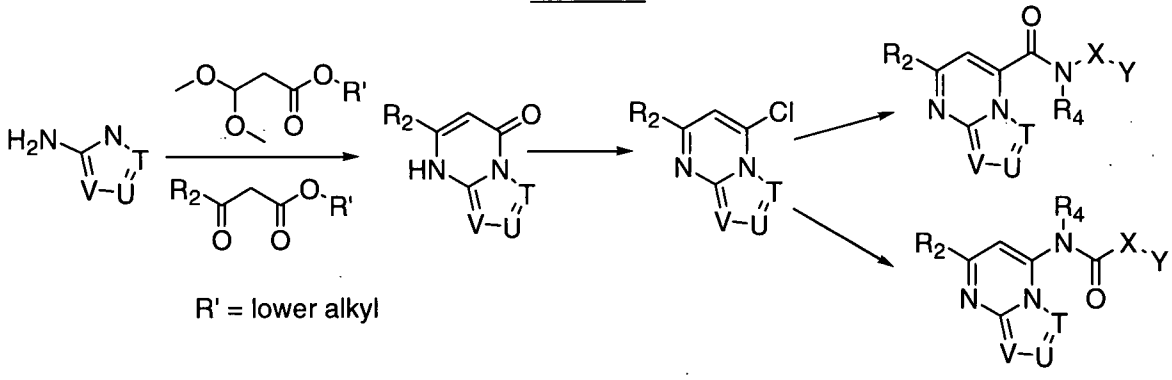
Scheme 6



Scheme 7

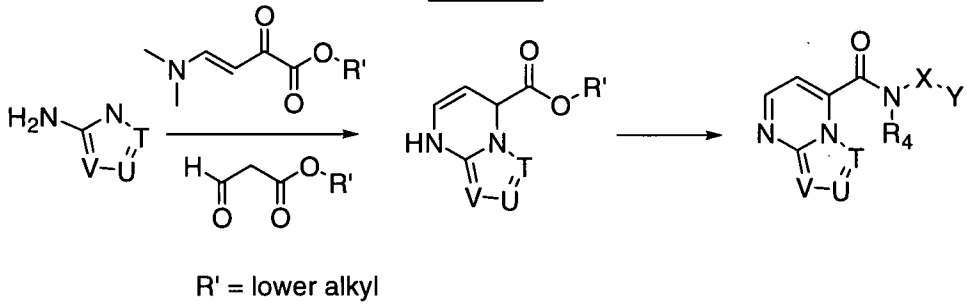


Scheme 8



In Scheme 8, a mixture of the amino heterocycle and 3,3-dimethoxy-proprionate or β-ketoester are heated together in refluxing solvent such as ethanol to give the pyrimidinone intermediate after purification. The pyrimidinone is heated in the presence of $POCl_3$ to give the pyrimidinyl chloride. This product can be reacted sequentially with ammonia and then an acid chloride to give a compound of Formula I wherein W is $-NR_4(C=O)-$. The pyrimidinyl chloride can alternatively be reacted with zincdicyanide in the presence of a palladium catalyst such as $Pd_2(dba)_3$ and DPPF to give the carboxylic acid which is reacted under standard conditions with an amine to give a compound of Formula A or Formula I wherein W is $-(C=O)-NR_4-$.

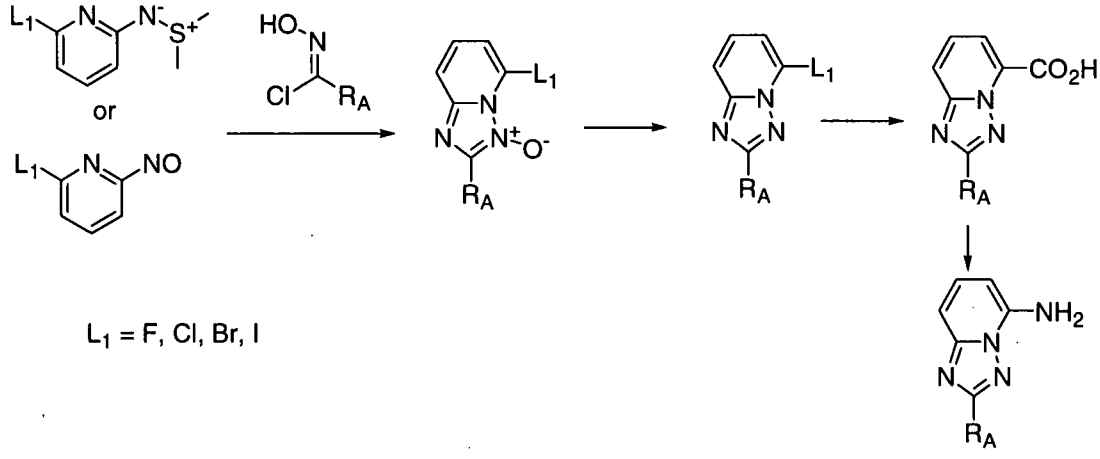
Scheme 9



In Scheme 9, a β-ketopyruvate ester or 4-dimethyl amino-2-oxo-3-butenoic ester is reacted with an aminoheterocycle with heating in a solvent such as ethanol to give the pyrimidinyl ester

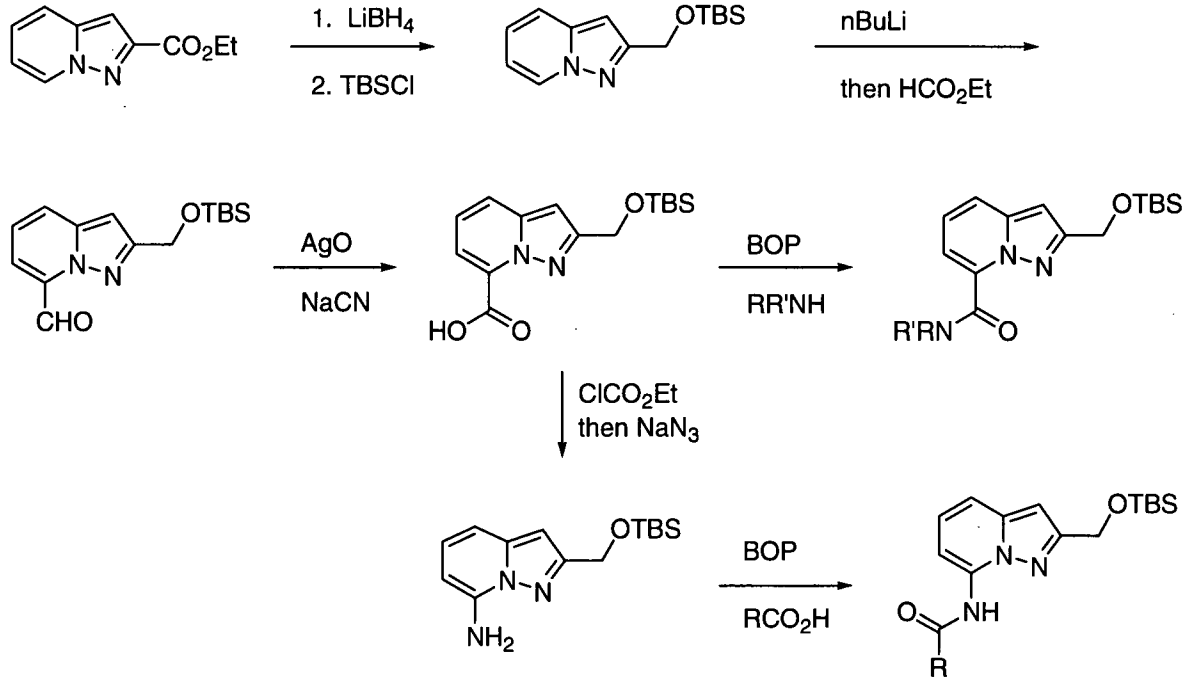
which is converted to the acid via saponification in an aqueous base such as NaOH. The carboxylic acid is reacted under standard conditions with an amine to give a product of Formula A or Formula I wherein W is -(C=O)-NR_4-.

Scheme 10



In Scheme 10, sulfimide or nitrosopyridine is reacted with ethyl chlorooximidoacetate to give the N-oxide. Deoxygenation with phosphorus trichloride provides the triazole. Substitution of the halide with cyanide followed by acidic hydrolysis yields the acid intermediate. Amidation leads to compounds of Formula A, I and/or II. Alternatively, a Curtius rearrangement followed by amidation affords compounds of Formula A, I and/or II.

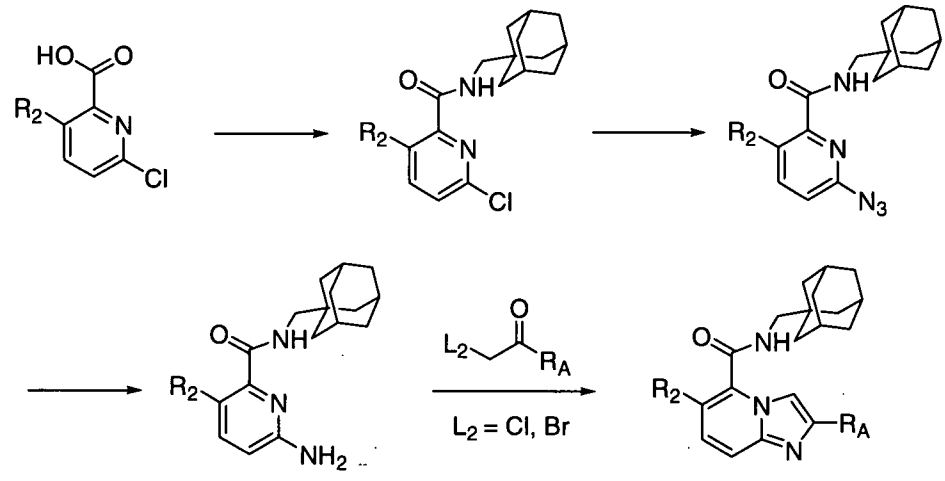
Scheme 11



In Scheme 11, the starting ester is reduced and then protected to afford the silyl ether. Deprotonation followed by trapping with ethyl formate provides the aldehyde which is oxidized to the

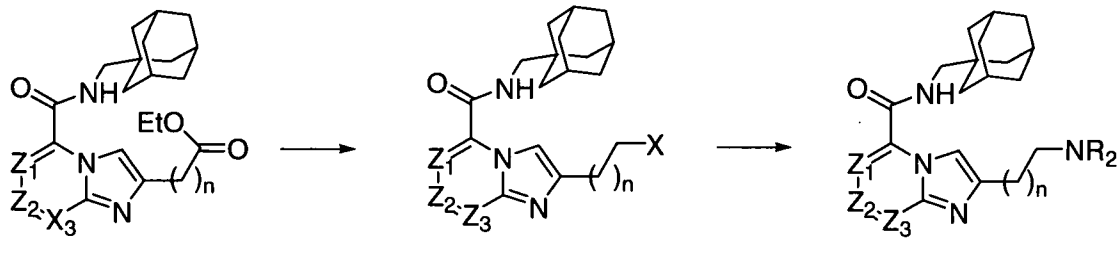
acid. Amidation leads to compounds of Formula A or Formula I in which W is $-C(=O)-NR_4-$. Alternatively, a Curtius rearrangement followed by amidation affords compounds of Formula I in which W is $-NR_4-C(=O)-$.

Scheme 12



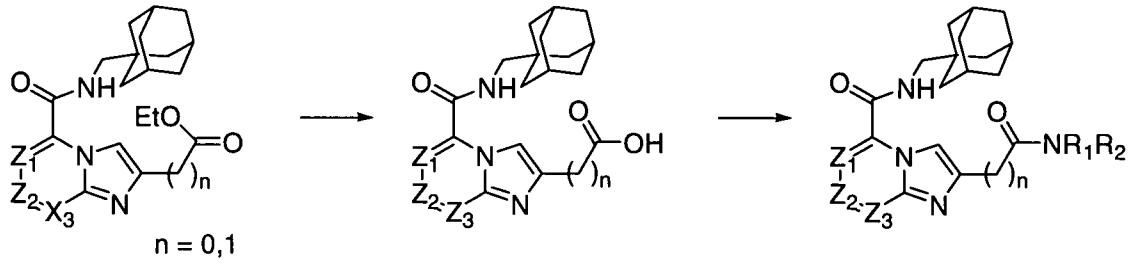
In Scheme 12, 5-substituted 2-chloro-6-pyridine-carboxylic acid is coupled with 1-admantylmethylamine with a coupling reagent such as 2-chloro-1,3-dimethyl-4,5-dihydro-3H-imidazolium chloride in the presence of a base such as TEA in an inert solvent such as DCM to give the carboxamide intermediate, which is converted to the azido carboxamide by reacting with sodium azide in a solvent such as DMF at elevated temperature. Reduction of azido compound affords the amino intermediate, which then is cyclized with alpha halocarbonyl agent to give the 6-subsituted imidazo[1,2-a]pyridine-5-carboxamide.

Scheme 13



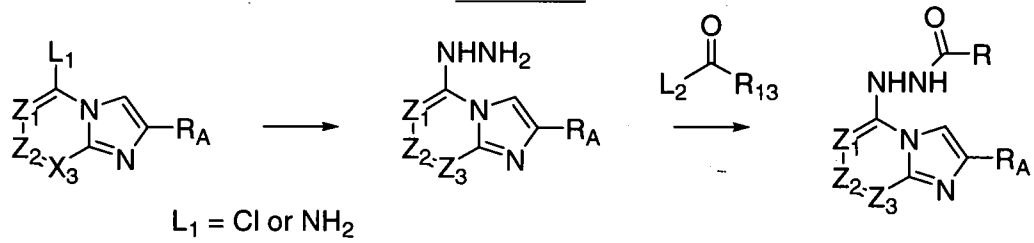
In Scheme 13, an ester is converted to an alcohol by reaction with a reducing agent such as lithium borohydride in a solvent such as THF. After appropriate workup the resulting alcohol is further reacted with thionyl chloride or mesyl chloride without solvent or in a solvent such as DCM in the presence of or without a base such as TEA. The resulting chloride or mesylate is reacted with a primary or secondary amine in the presence of a base such as sodium carbonate in a solvent such as DMF at RT or elevated temperature to give the desired secondary or tertiary amine.

Scheme 14



In Scheme 14, an ester is converted to an acid by hydrolysis, for example, by reacting with sodium hydroxide in water and MeOH at RT or elevated temperature and by acidifying with an acid such as hydrochloric acid. The acid is coupled with a primary or secondary amine with a coupling agent such as BOP or DMC in an inert solvent such as DCM or DMF in the presence of an organic base such as Hunig's base and TEA.

Scheme 15



In Scheme 15, the hydrazine is made either by reacting a chloride starting material with hydrazine in a solvent such as ethanol at RT or elevated temperature, or by treating amine starting material with sodium nitrite in presence of an acid such as hydrochloric acid at below or about RT, and then reacting with tin (II) chloride. The hydrazine is converted to the acylhydrazide by reacting with an acid chloride or an acid by standard methods.

In certain embodiments, a compound provided herein may contain one or more asymmetric carbon atoms, so that the compound can exist in different stereoisomeric forms. Such forms can be, for example, racemates or optically active forms. As noted above, all stereoisomers are encompassed by the present invention. Nonetheless, it may be desirable to obtain single enantiomers (*i.e.*, optically active forms). Standard methods for preparing single enantiomers include asymmetric synthesis and resolution of the racemates. Resolution of the racemates can be accomplished, for example, by conventional methods such as crystallization in the presence of a resolving agent, or chromatography using, for example a chiral HPLC column.

Compounds may be radiolabeled by carrying out their synthesis using precursors comprising at least one atom that is a radioisotope. Each radioisotope is preferably carbon (*e.g.*, ^{14}C), hydrogen (*e.g.*, ^{3}H), sulfur (*e.g.*, ^{35}S), or iodine (*e.g.*, ^{125}I). Tritium labeled compounds may also be prepared catalytically via platinum-catalyzed exchange in tritiated acetic acid, acid-catalyzed exchange in tritiated trifluoroacetic acid, or heterogeneous-catalyzed exchange with tritium gas using the

compound as substrate. In addition, certain precursors may be subjected to tritium-halogen exchange with tritium gas, tritium gas reduction of unsaturated bonds, or reduction using sodium borotritide, as appropriate. Preparation of radiolabeled compounds may be conveniently performed by a radioisotope supplier specializing in custom synthesis of radiolabeled probe compounds.

PHARMACEUTICAL COMPOSITIONS

The present invention also provides pharmaceutical compositions comprising one or more compounds provided herein, together with at least one physiologically acceptable carrier or excipient. Pharmaceutical compositions may comprise, for example, one or more of water, buffers (*e.g.*, sodium bicarbonate, neutral buffered saline or phosphate buffered saline), ethanol, mineral oil, vegetable oil, dimethylsulfoxide, carbohydrates (*e.g.*, glucose, mannose, sucrose, starch, mannitol or dextrans), proteins, adjuvants, polypeptides or amino acids such as glycine, antioxidants, chelating agents such as EDTA or glutathione and/or preservatives. In addition, other active ingredients may (but need not) be included in the pharmaceutical compositions provided herein.

Pharmaceutical compositions may be formulated for any appropriate manner of administration, including, for example, topical, oral, nasal, rectal or parenteral administration. The term parenteral as used herein includes subcutaneous, intradermal, intravascular (*e.g.*, intravenous), intramuscular, spinal, intracranial, intrathecal and intraperitoneal injection, as well as any similar injection or infusion technique. In certain embodiments, compositions suitable for oral use are preferred. Such compositions include, for example, tablets, troches, lozenges, aqueous or oily suspensions, dispersible powders or granules, emulsion, hard or soft capsules, or syrups or elixirs. Within yet other embodiments, pharmaceutical compositions may be formulated as a lyophilizate. Formulation for topical administration may be preferred for certain conditions (*e.g.*, in the treatment of skin conditions such as burns or itch). Formulation for direct administration into the bladder (intravesicular administration) may be preferred for treatment of urinary incontinence and overactive bladder.

Compositions intended for oral use may further comprise one or more components such as sweetening agents, flavoring agents, coloring agents and/or preserving agents in order to provide appealing and palatable preparations. Tablets contain the active ingredient in admixture with physiologically acceptable excipients that are suitable for the manufacture of tablets. Such excipients include, for example, inert diluents (*e.g.*, calcium carbonate, sodium carbonate, lactose, calcium phosphate or sodium phosphate), granulating and disintegrating agents (*e.g.*, corn starch or alginic acid), binding agents (*e.g.*, starch, gelatin or acacia) and lubricating agents (*e.g.*, magnesium stearate, stearic acid or talc). Tablets may be formed using standard techniques, including dry granulation, direct compression and wet granulation. The tablets may be uncoated or they may be coated by known techniques.

Formulations for oral use may also be presented as hard gelatin capsules wherein the active ingredient is mixed with an inert solid diluent (*e.g.*, calcium carbonate, calcium phosphate or kaolin), or as soft gelatin capsules wherein the active ingredient is mixed with water or an oil medium (*e.g.*, peanut oil, liquid paraffin or olive oil).

Aqueous suspensions contain the active material(s) in admixture with suitable excipients, such as suspending agents (*e.g.*, sodium carboxymethylcellulose, methylcellulose, hydropropylmethylcellulose, sodium alginate, polyvinylpyrrolidone, gum tragacanth and gum acacia); and dispersing or wetting agents (*e.g.*, naturally-occurring phosphatides such as lecithin, condensation products of an alkylene oxide with fatty acids such as polyoxyethylene stearate, condensation products of ethylene oxide with long chain aliphatic alcohols such as heptadecaethyleneoxycetanol, condensation products of ethylene oxide with partial esters derived from fatty acids and a hexitol such as polyoxyethylene sorbitol monooleate, or condensation products of ethylene oxide with partial esters derived from fatty acids and hexitol anhydrides such as polyethylene sorbitan monooleate). Aqueous suspensions may also comprise one or more preservatives, such as ethyl or n-propyl p-hydroxybenzoate, one or more coloring agents, one or more flavoring agents, and/or one or more sweetening agents, such as sucrose or saccharin.

Oily suspensions may be formulated by suspending the active ingredient(s) in a vegetable oil (*e.g.*, arachis oil, olive oil, sesame oil or coconut oil) or in a mineral oil such as liquid paraffin. The oily suspensions may contain a thickening agent such as beeswax, hard paraffin or cetyl alcohol. Sweetening agents such as those set forth above, and/or flavoring agents may be added to provide palatable oral preparations. Such suspensions may be preserved by the addition of an anti-oxidant such as ascorbic acid.

Dispersible powders and granules suitable for preparation of an aqueous suspension by the addition of water provide the active ingredient in admixture with a dispersing or wetting agent, a suspending agent and one or more preservatives. Suitable dispersing or wetting agents and suspending agents are exemplified by those already mentioned above. Additional excipients, such as sweetening, flavoring and coloring agents, may also be present.

Pharmaceutical compositions may also be formulated as oil-in-water emulsions. The oily phase may be a vegetable oil (*e.g.*, olive oil or arachis oil), a mineral oil (*e.g.*, liquid paraffin) or a mixture thereof. Suitable emulsifying agents include naturally-occurring gums (*e.g.*, gum acacia or gum tragacanth), naturally-occurring phosphatides (*e.g.*, soy bean lecithin, and esters or partial esters derived from fatty acids and hexitol), anhydrides (*e.g.*, sorbitan monoleate) and condensation products of partial esters derived from fatty acids and hexitol with ethylene oxide (*e.g.*, polyoxyethylene sorbitan monoleate). An emulsion may also comprise one or more sweetening and/or flavoring agents.

Syrups and elixirs may be formulated with sweetening agents, such as glycerol, propylene glycol, sorbitol or sucrose. Such formulations may also comprise one or more demulcents, preservatives, flavoring agents and/or coloring agents.

Formulations for topical administration typically comprise a topical vehicle combined with active agent(s), with or without additional optional components. Suitable topical vehicles and additional components are well known in the art, and it will be apparent that the choice of a vehicle will depend on the particular physical form and mode of delivery. Topical vehicles include water; organic solvents such as alcohols (*e.g.,* ethanol or isopropyl alcohol) or glycerin; glycols (*e.g.,* butylene, isoprene or propylene glycol); aliphatic alcohols (*e.g.,* lanolin); mixtures of water and organic solvents and mixtures of organic solvents such as alcohol and glycerin; lipid-based materials such as fatty acids, acylglycerols (including oils, such as mineral oil, and fats of natural or synthetic origin), phosphoglycerides, sphingolipids and waxes; protein-based materials such as collagen and gelatin; silicone-based materials (both non-volatile and volatile); and hydrocarbon-based materials such as microsponges and polymer matrices. A composition may further include one or more components adapted to improve the stability or effectiveness of the applied formulation, such as stabilizing agents, suspending agents, emulsifying agents, viscosity adjusters, gelling agents, preservatives, antioxidants, skin penetration enhancers, moisturizers and sustained release materials. Examples of such components are described in Martindale--The Extra Pharmacopoeia (Pharmaceutical Press, London 1993) and *Remington: The Science and Practice of Pharmacy,* 21st ed., Lippincott Williams & Wilkins, Philadelphia, PA (2005). Formulations may comprise microcapsules, such as hydroxymethylcellulose or gelatin-microcapsules, liposomes, albumin microspheres, microemulsions, nanoparticles or nanocapsules.

A topical formulation may be prepared in any of a variety of physical forms including, for example, solids, pastes, creams, foams, lotions, gels, powders, aqueous liquids and emulsions. The physical appearance and viscosity of such pharmaceutically acceptable forms can be governed by the presence and amount of emulsifier(s) and viscosity adjuster(s) present in the formulation. Solids are generally firm and non-pourable and commonly are formulated as bars or sticks, or in particulate form; solids can be opaque or transparent, and optionally can contain solvents, emulsifiers, moisturizers, emollients, fragrances, dyes/colorants, preservatives and other active ingredients that increase or enhance the efficacy of the final product. Creams and lotions are often similar to one another, differing mainly in their viscosity; both lotions and creams may be opaque, translucent or clear and often contain emulsifiers, solvents, and viscosity adjusting agents, as well as moisturizers, emollients, fragrances, dyes/colorants, preservatives and other active ingredients that increase or enhance the efficacy of the final product. Gels can be prepared with a range of viscosities, from thick or high viscosity to thin or low viscosity. These formulations, like those of lotions and creams, may also contain solvents, emulsifiers, moisturizers, emollients, fragrances, dyes/colorants, preservatives and other active ingredients that increase or enhance the efficacy of the final product. Liquids are

thinner than creams, lotions, or gels and often do not contain emulsifiers. Liquid topical products often contain solvents, emulsifiers, moisturizers, emollients, fragrances, dyes/colorants, preservatives and other active ingredients that increase or enhance the efficacy of the final product.

Suitable emulsifiers for use in topical formulations include, but are not limited to, ionic emulsifiers, cetearyl alcohol, non-ionic emulsifiers like polyoxyethylene oleyl ether, PEG-40 stearate, ceteareth-12, ceteareth-20, ceteareth-30, ceteareth alcohol, PEG-100 stearate and glyceryl stearate. Suitable viscosity adjusting agents include, but are not limited to, protective colloids or non-ionic gums such as hydroxyethylcellulose, xanthan gum, magnesium aluminum silicate, silica, microcrystalline wax, beeswax, paraffin, and cetyl palmitate. A gel composition may be formed by the addition of a gelling agent such as chitosan, methyl cellulose, ethyl cellulose, polyvinyl alcohol, polyquaterniums, hydroxyethylcellulose, hydroxypropylcellulose, hydroxypropylmethylcellulose, carbomer or ammoniated glycyrrhizinate. Suitable surfactants include, but are not limited to, nonionic, amphoteric, ionic and anionic surfactants. For example, one or more of dimethicone copolyol, polysorbate 20, polysorbate 40, polysorbate 60, polysorbate 80, lauramide DEA, cocamide DEA, and cocamide MEA, oleyl betaine, cocamidopropyl phosphatidyl PG-dimonium chloride, and ammonium laureth sulfate may be used within topical formulations. Suitable preservatives include, but are not limited to, antimicrobials such as methylparaben, propylparaben, sorbic acid, benzoic acid, and formaldehyde, as well as physical stabilizers and antioxidants such as vitamin E, sodium ascorbate/ascorbic acid and propyl gallate. Suitable moisturizers include, but are not limited to, lactic acid and other hydroxy acids and their salts, glycerin, propylene glycol, and butylene glycol. Suitable emollients include lanolin alcohol, lanolin, lanolin derivatives, cholesterol, petrolatum, isostearyl neopentanoate and mineral oils. Suitable fragrances and colors include, but are not limited to, FD&C Red No. 40 and FD&C Yellow No. 5. Other suitable additional ingredients that may be included a topical formulation include, but are not limited to, abrasives, absorbents, anti-caking agents, anti-foaming agents, anti-static agents, astringents (*e.g.*, witch hazel, alcohol and herbal extracts such as chamomile extract), binders/excipients, buffering agents, chelating agents, film forming agents, conditioning agents, propellants, opacifying agents, pH adjusters and protectants.

An example of a suitable topical vehicle for formulation of a gel is: hydroxypropylcellulose (2.1%); 70/30 isopropyl alcohol/water (90.9%); propylene glycol (5.1%); and Polysorbate 80 (1.9%). An example of a suitable topical vehicle for formulation as a foam is: cetyl alcohol (1.1%); stearyl alcohol (0.5%; Quaternium 52 (1.0%); propylene glycol (2.0%); Ethanol 95 PGF3 (61.05%); deionized water (30.05%); P75 hydrocarbon propellant (4.30%). All percents are by weight.

Typical modes of delivery for topical compositions include application using the fingers; application using a physical applicator such as a cloth, tissue, swab, stick or brush; spraying (including mist, aerosol or foam spraying); dropper application; sprinkling; soaking; and rinsing.

A pharmaceutical composition may be prepared as a sterile injectible aqueous or oleaginous suspension. The compound(s) provided herein, depending on the vehicle and concentration used, can

either be suspended or dissolved in the vehicle. Such a composition may be formulated according to the known art using suitable dispersing, wetting agents and/or suspending agents such as those mentioned above. Among the acceptable vehicles and solvents that may be employed are water, 1,3-butanediol, Ringer's solution and isotonic sodium chloride solution. In addition, sterile, fixed oils may be employed as a solvent or suspending medium. For this purpose any bland fixed oil may be employed, including synthetic mono- or diglycerides. In addition, fatty acids such as oleic acid find use in the preparation of injectible compositions, and adjuvants such as local anesthetics, preservatives and/or buffering agents can be dissolved in the vehicle.

Pharmaceutical compositions may also be formulated as suppositories (*e.g.,* for rectal administration). Such compositions can be prepared by mixing the drug with a suitable non-irritating excipient that is solid at ordinary temperatures but liquid at the rectal temperature and will therefore melt in the rectum to release the drug. Suitable excipients include, for example, cocoa butter and polyethylene glycols.

Compositions for inhalation typically can be provided in the form of a solution, suspension or emulsion that can be administered as a dry powder or in the form of an aerosol using a conventional propellant (*e.g.,* dichlorodifluoromethane or trichlorofluoromethane).

Pharmaceutical compositions may be formulated for release at a pre-determined rate. Instantaneous release may be achieved, for example, via sublingual administration (*i.e.,* administration by mouth in such a way that the active ingredient(s) are rapidly absorbed via the blood vessels under the tongue rather than via the digestive tract). Controlled release formulations (*i.e.,* formulations such as a capsule, tablet or coated tablet that slows and/or delays release of active ingredient(s) following administration) may be administered by, for example, oral, rectal or subcutaneous implantation, or by implantation at a target site. In general, a controlled release formulation comprises a matrix and/or coating that delays disintegration and absorption in the gastrointestinal tract (or implantation site) and thereby provides a delayed action or a sustained action over a longer period. One type of controlled-release formulation is a sustained-release formulation, in which at least one active ingredient is continuously released over a period of time at a constant rate. Preferably, the therapeutic agent is released at such a rate that blood (*e.g.,* plasma) concentrations are maintained within the therapeutic range, but below toxic levels, over a period of time that is at least 4 hours, preferably at least 8 hours, and more preferably at least 12 hours. Such formulations may generally be prepared using well known technology and administered by, for example, oral, rectal or subcutaneous implantation, or by implantation at the desired target site. Carriers for use within such formulations are biocompatible, and may also be biodegradable; preferably the formulation provides a relatively constant level of modulator release. The amount of modulator contained within a sustained release formulation depends upon, for example, the site of implantation, the rate and expected duration of release and the nature of the condition to be treated or prevented.

Controlled release may be achieved by combining the active ingredient(s) with a matrix material that itself alters release rate and/or through the use of a controlled-release coating. The release rate can be varied using methods well known in the art, including (a) varying the thickness or composition of coating, (b) altering the amount or manner of addition of plasticizer in a coating, (c) including additional ingredients, such as release-modifying agents, (d) altering the composition, particle size or particle shape of the matrix, and (e) providing one or more passageways through the coating. The amount of modulator contained within a sustained release formulation depends upon, for example, the method of administration (*e.g.,* the site of implantation), the rate and expected duration of release and the nature of the condition to be treated or prevented.

The matrix material, which itself may or may not serve a controlled-release function, is generally any material that supports the active ingredient(s). For example, a time delay material such as glyceryl monosterate or glyceryl distearate may be employed. Active ingredient(s) may be combined with matrix material prior to formation of the dosage form (*e.g.,* a tablet). Alternatively, or in addition, active ingredient(s) may be coated on the surface of a particle, granule, sphere, microsphere, bead or pellet that comprises the matrix material. Such coating may be achieved by conventional means, such as by dissolving the active ingredient(s) in water or other suitable solvent and spraying. Optionally, additional ingredients are added prior to coating (*e.g.,* to assist binding of the active ingredient(s) to the matrix material or to color the solution). The matrix may then be coated with a barrier agent prior to application of controlled-release coating. Multiple coated matrix units may, if desired, be encapsulated to generate the final dosage form.

In certain embodiments, a controlled release is achieved through the use of a controlled release coating (*i.e.,* a coating that permits release of active ingredient(s) at a controlled rate in aqueous medium). The controlled release coating should be a strong, continuous film that is smooth, capable of supporting pigments and other additives, non-toxic, inert and tack-free. Coatings that regulate release of the modulator include pH-independent coatings, pH-dependent coatings (which may be used to release modulator in the stomach) and enteric coatings (which allow the formulation to pass intact through the stomach and into the small intestine, where the coating dissolves and the contents are absorbed by the body). It will be apparent that multiple coatings may be employed (*e.g.,* to allow release of a portion of the dose in the stomach and a portion further along the gastrointestinal tract). For example, a portion of active ingredient(s) may be coated over an enteric coating, and thereby released in the stomach, while the remainder of active ingredient(s) in the matrix core is protected by the enteric coating and released further down the GI tract. pH dependent coatings include, for example, shellac, cellulose acetate phthalate, polyvinyl acetate phthalate, hydroxypropylmethylcellulose phthalate, methacrylic acid ester copolymers and zein.

In certain embodiments, the coating is a hydrophobic material, preferably used in an amount effective to slow the hydration of the gelling agent following administration. Suitable hydrophobic materials include alkyl celluloses (*e.g.,* ethylcellulose or carboxymethylcellulose), cellulose ethers,

cellulose esters, acrylic polymers (*e.g.*, poly(acrylic acid), poly(methacrylic acid), acrylic acid and methacrylic acid copolymers, methyl methacrylate copolymers, ethoxy ethyl methacrylates, cyanoethyl methacrylate, methacrylic acid alkamide copolymer, poly(methyl methacrylate), polyacrylamide, ammonio methacrylate copolymers, aminoalkyl methacrylate copolymer, poly(methacrylic acid anhydride) and glycidyl methacrylate copolymers) and mixtures of the foregoing. Representative aqueous dispersions of ethylcellulose include, for example, AQUACOAT® (FMC Corp., Philadelphia, PA) and SURELEASE® (Colorcon, Inc., West Point, PA), both of which can be applied to the substrate according to the manufacturer's instructions. Representative acrylic polymers include, for example, the various EUDRAGIT® (Rohm America, Piscataway, NJ) polymers, which may be used singly or in combination depending on the desired release profile, according to the manufacturer's instructions.

The physical properties of coatings that comprise an aqueous dispersion of a hydrophobic material may be improved by the addition or one or more plasticizers. Suitable plasticizers for alkyl celluloses include, for example, dibutyl sebacate, diethyl phthalate, triethyl citrate, tributyl citrate and triacetin. Suitable plasticizers for acrylic polymers include, for example, citric acid esters such as triethyl citrate and tributyl citrate, dibutyl phthalate, polyethylene glycols, propylene glycol, diethyl phthalate, castor oil and triacetin.

Controlled-release coatings are generally applied using conventional techniques, such as by spraying in the form of an aqueous dispersion. If desired, the coating may comprise pores or channels or to facilitate release of active ingredient. Pores and channels may be generated by well known methods, including the addition of organic or inorganic material that is dissolved, extracted or leached from the coating in the environment of use. Certain such pore-forming materials include hydrophilic polymers, such as hydroxyalkylcelluloses (*e.g.*, hydroxypropylmethylcellulose), cellulose ethers, synthetic water-soluble polymers (*e.g.*, polyvinylpyrrolidone, cross-linked polyvinylpyrrolidone and polyethylene oxide), water-soluble polydextrose, saccharides and polysaccharides and alkali metal salts. Alternatively, or in addition, a controlled release coating may include one or more orifices, which may be formed my methods such as those described in US Patent Nos. 3,845,770; 4,034,758; 4,077,407; 4,088,864; 4,783,337 and 5,071,607. Controlled-release may also be achieved through the use of transdermal patches, using conventional technology (*see, e.g.,* US Patent No. 4,668,232).

Further examples of controlled release formulations, and components thereof, may be found, for example, in US Patent Nos. 4,572,833; 4,587,117; 4,606,909; 4,610,870; 4,684,516; 4,777,049; 4,994,276; 4,996,058; 5,128,143; 5,202,128; 5,376,384; 5,384,133; 5,445,829; 5,510,119; 5,618,560; 5,643,604; 5,891,474; 5,958,456; 6,039,980; 6,143,353; 6,126,969; 6,156,342; 6,197,347; 6,387,394; 6,399,096; 6,437,000; 6,447,796; 6,475,493; 6,491,950; 6,524,615; 6,838,094; 6,905,709; 6,923,984; 6,923,988; and 6,911,217; each of which is hereby incorporated by reference for its teaching of the preparation of controlled release dosage forms.

In addition to or together with the above modes of administration, a compound provided

herein may be conveniently added to food or drinking water (*e.g.*, for administration to non-human animals including companion animals (such as dogs and cats) and livestock). Animal feed and drinking water compositions may be formulated so that the animal takes in an appropriate quantity of the composition along with its diet. It may also be convenient to present the composition as a premix for addition to feed or drinking water.

Compounds are generally administered in a therapeutically effective amount. Preferred systemic doses are no higher than 50 mg per kilogram of body weight per day (*e.g.*, ranging from about 0.001 mg to about 50 mg per kilogram of body weight per day), with oral doses generally being about 5-20 fold higher than intravenous doses (*e.g.*, ranging from 0.01 to 40 mg per kilogram of body weight per day).

The amount of active ingredient that may be combined with the carrier materials to produce a single dosage unit will vary depending, for example, upon the patient being treated, the particular mode of administration and any other co-administered drugs. Dosage units generally contain between from about 10 μg to about 500 mg of active ingredient. Optimal dosages may be established using routine testing, and procedures that are well known in the art.

Pharmaceutical compositions may be packaged for treating conditions responsive to $P2X_7$ receptor modulation (*e.g.*, pain, inflammation, neurodegeneration or other condition described herein). Packaged pharmaceutical compositions generally include (i) a container holding a pharmaceutical composition that comprises at least one modulator as described herein and (ii) instructions (*e.g.*, labeling or a package insert) indicating that the contained composition is to be used for treating a condition responsive to $P2X_7$ receptor modulation in the patient.

METHODS OF USE

$P2X_7$ receptor modulators provided herein may be used to alter activity and/or activation of $P2X_7$ receptors in a variety of contexts, both *in vitro* and *in vivo*. Within certain aspects, $P2X_7$ receptor antagonists may be used to inhibit the binding of ligand agonist to $P2X_7$ receptor *in vitro* or *in vivo*. In general, such methods comprise the step of contacting a $P2X_7$ receptor with one or more $P2X_7$ receptor modulators provided herein, in the presence of ligand in aqueous solution and under conditions otherwise suitable for binding of the ligand to $P2X_7$ receptor. The modulator(s) are generally present at a concentration that is sufficient to alter $P2X_7$ receptor-mediated signal transduction (using an assay provided in Example 4). The $P2X_7$ receptor may be present in solution or suspension (*e.g.*, in an isolated membrane or cell preparation), or in a cultured or isolated cell. Within certain embodiments, the $P2X_7$ receptor is expressed by a cell that is present in a patient, and the aqueous solution is a body fluid. Preferably, one or more modulators are administered to an animal in an amount such that the modulator is present in at least one body fluid of the animal at a therapeutically effective concentration that is 5 micromolar or less; preferably 1 micromolar or less.

For example, such compounds may be administered at a therapeutically effective dose that is less than 20 mg/kg body weight, preferably less than 5 mg/kg and, in some instances, less than 1 mg/kg.

Also provided herein are methods for modulating, preferably reducing, cellular $P2X_7$ receptor activation and/or activity, such as signal-transducing activity (*e.g.,* calcium conductance). Such modulation may be achieved by contacting a $P2X_7$ receptor (either *in vitro* or *in vivo*) with one or more modulators provided herein under conditions suitable for binding of the modulator(s) to the receptor. The modulator(s) are generally present at a concentration that is sufficient to alter $P2X_7$ receptor-mediated signal transduction as described herein. The receptor may be present in solution or suspension, in a cultured or isolated cell preparation or in a cell within a patient. For example, the cell may be contacted *in vivo* in an animal. Modulation of signal tranducing activity may be assessed by detecting an effect on calcium ion conductance (also referred to as calcium mobilization or flux). Modulation of signal transducing activity may alternatively be assessed by detecting an alteration of a symptom (*e.g.,* pain or inflammation) of a patient being treated with one or more modulators provided herein.

$P2X_7$ receptor modulator(s) provided herein are preferably administered to a patient (*e.g.,* a human) orally or topically, and are present within at least one body fluid of the animal while modulating $P2X_7$ receptor signal-transducing activity.

The present invention further provides methods for treating conditions responsive to $P2X_7$ receptor modulation. Within the context of the present invention, the term "treatment" encompasses both disease-modifying treatment and symptomatic treatment, either of which may be prophylactic (*i.e.,* before the onset of symptoms, in order to prevent, delay or reduce the severity of symptoms) or therapeutic (*i.e.,* after the onset of symptoms, in order to reduce the severity and/or duration of symptoms). A condition is "responsive to $P2X_7$ receptor modulation" if it is characterized by inappropriate activity of a $P2X_7$ receptor, regardless of the amount of $P2X_7$ agonist present locally, and/or if modulation of $P2X_7$ receptor activity results in alleviation of the condition or a symptom thereof. Such conditions include, for example, pain, inflammation, cardiovascular disorders, ocular disorders, neurodegenerative disorders and respiratory disorders (such as cough, asthma, chronic obstructive pulmonary disease, chronic bronchitis, cystic fibrosis and rhinitis, including allergic rhinitis, such as seasonal an perennial rhinitis, and non-allergic rhinitis), fibrosis as well as other conditions described in more detail below. Such conditions may be diagnosed and monitored using criteria that have been established in the art. Patients may include humans, domesticated companion animals and livestock, with dosages as described above.

Treatment regimens may vary depending on the compound used and the particular condition to be treated; however, for treatment of most disorders, a frequency of administration of 4 times daily or less is preferred. In general, a dosage regimen of 2 times daily is more preferred, with once a day dosing particularly preferred. For the treatment of acute pain, a single dose that rapidly reaches effective concentrations is desirable. It will be understood, however, that the specific dose level and

treatment regimen for any particular patient will depend upon a variety of factors including the activity of the specific compound employed, the age, body weight, general health, sex, diet, time of administration, route of administration, and rate of excretion, drug combination and the severity of the particular disease undergoing therapy. In general, the use of the minimum dose sufficient to provide effective therapy is preferred. Patients may generally be monitored for therapeutic effectiveness using medical or veterinary criteria suitable for the condition being treated or prevented.

Pain that may be treated using the modulators provided herein includes, for example, acute, chronic, inflammatory, and neuropathic pain. Specific pain indications that may be treated as described herein include, but are not limited to, pain associated with osteoarthritis or rheumatoid arthritis; various neuropathic pain syndromes (such as post-herpetic neuralgia, trigeminal neuralgia, reflex sympathetic dystrophy, diabetic neuropathy, Guillian Barre syndrome, fibromyalgia, oral neuropathic pain, phantom limb pain, post-mastectomy pain, peripheral neuropathy, myofascial pain syndromes, MS-related neuropathy, HIV or AIDS-related neuropathy, and chemotherapy-induced and other iatrogenic neuropathies); visceral pain, (such as that associated with gastroesophageal reflux disease (GERD), irritable bowel syndrome, inflammatory bowel disease, pancreatitis, intestinal gas, gynecological disorders (*e.g.*, menstrual pain, dysmenorrhoea, pain associated with cystitis, labor pain, chronic pelvic pain, chronic prostitis, endometriosis, heart pain and abdominal pain), and urological disorders); dental pain (*e.g.*, toothache, denture pain, nerve root pain, pain resulting from periodontal disease, and pain due to dental surgery including operative and post-operative pain); headache (*e.g.*, headaches involving peripheral nerve activity, sinus headache, cluster headache (*i.e.*, migranous neuralgia) tension headache, migraine, temporomandibular pain and maxillary sinus pain); stump pain; meralgia paresthetica; burning-mouth syndrome; pain associated with nerve and root damage, including as pain associated with peripheral nerve disorders (*e.g.*, nerve entrapment and brachial plexus avulsions, amputation, peripheral neuropathies including bilateral peripheral neuropathy, tic douloureux, atypical facial pain, nerve root damage, and arachnoiditis), causalgia, neuritis (including, for example, sciatic neuritis, peripheral neuritis, polyneuritis, optic neuritis, postfebrile neuritis, migrating neuritis, segmental neuritis and Gombault's neuritis), neuronitis, neuralgias (*e.g.*, those mentioned above, cervicobrachial neuralgia, cranial neuralgia, geniculate neuralgia, glossopharyngial neuralgia, migranous neuralgia, idiopathic neuralgia, intercostals neuralgia, mammary neuralgia, mandibular joint neuralgia, Morton's neuralgia, nasociliary neuralgia, occipital neuralgia, red neuralgia, Sluder's neuralgia, splenopalatine neuralgia, supraorbital neuralgia and vidian neuralgia); surgery-related pain; musculoskeletal pain; central nervous system pain (*e.g.*, pain due to brain stem damage, sciatica, and ankylosing spondylitis); and spinal pain, including spinal cord injury-related pain.

Further pain conditions that can be treated as described herein include Charcot's pains, ear pain, muscle pain, eye pain, orofacial pain (*e.g.*, odontalgia), carpel tunnel syndrome, acute and chronic back pain (*e.g.*, lower back pain), gout, scar pain, hemorrhoidal pain, dyspeptic pains, angina,

nerve root pain, "non-painful" neuropathies, complex regional pain syndrome, homotopic pain and heterotopic pain – including pain associated with carcinoma, often referred to as cancer-associated pain (*e.g.*, in patients with bone cancer), pain (and inflammation) associated with venom exposure (*e.g.*, due to snake bite, spider bite, or insect sting) and trauma-associated pain (*e.g.*, post-surgical pain, episiotomy pain, pain from cuts, musculoskeletal pain, bruises and broken bones, and burn pain, especially primary hyperalgesia associated therewith). Additional pain conditions that may be treated as described herein include pain associated with autoimmune diseases or immunodeficiency disorders, hot flashes, burns, sunburn, and pain that results from exposure to heat, cold or external chemical stimuli.

Conditions associated with inflammation and/or immune system disorders that may be treated using the modulators provided herein include, but are not limited to, arthritis (including osteoarthritis, rheumatoid arthritis, psoriatic arthritis, Reiter's syndrome, gout, traumatic arthritis, rubella arthritis, rheumatoid spondylitis, gouty arthritis and juvenile arthritis); cystic fibrosis; uveitis; systemic lupus erythematosus (and associated glomerulonephritis); spondyloarthropathies; psoriasis; scleritis; allergic conditions (including allergic reactions, allergic rhinitis, allergic contact hypersensitivity, allergic dermatitis, eczema and contact dermatitis), reperfusion injury (*e.g.*, cardiac and renal reperfusion injury), respiratory system disorders (including hyper-responsiveness of the airway, cough, asthma (*e.g.*, to prevent or decrease the severity of both acute early phase asthma attack and the late phase reactions that follow such an asthma attack; including bronchial, allergic, intrinsic, extrinsic, exercise-induced, drug-induced (*e.g.*, aspirin or NSAID-induced) and dust-induced asthma), reactive airway disease, emphysema, acute (adult) respiratory distress syndrome (ARDS), bronchitis (*e.g.*, infectious and eosinophilic bronchitis), bronchiectasis, chronic pulmonary obstructive disorder (COPD), chronic pulmonary inflammatory disease, silicosis, pulmonary sarcoidosis, farmer's lung, hypersensitivity pneumonitis and lung fibrosis), viral infection, fungal infection, bacterial infection, Crohn's disease, glomerulornephritis, HIV infection and AIDS, irritable bowel syndrome, inflammatory bowel disease, dermatomyositis, multiple sclerosis, pemphigus, pemphigoid, scleroderma, myasthenia gravis, autoimmune hemolytic and thrombocytopenic states, Goodpasture's syndrome (and associated glomerulonephritis and pulmonary hemorrhage), tissue graft rejection, hyperacute rejection of transplanted organs, allograft rejection, organ transplant toxicity, neutropenia, sepsis, septic shock, endotoxic shock, conjunctivitis shock, toxic shock syndrome, Alzheimer's disease, inflammation associated with severe burns, lung injury, systemic inflammatory response syndrome (SIRS), neonatal-onset multisystem inflammatory disease (NOMID), Hashimoto's thyroiditis, Grave's disease, Addison's disease, idiopathic thrombocytopaenic purprua, eosinophilic fascitis, hyper-IgE syndrome, antiphospholipid syndrome, leprosy, Sezary syndrome, paraneoplastic syndromes, Muckle-Wells syndrome, lichen planus, familial cold autoinflammatory syndrome (FCAS), colitis, ruptured abdominal aortic aneurysm and multiple organ dysfunction syndrome (MODS). Also included are pathologic sequellae associated with insulin-dependent diabetes mellitus (including diabetic

retinopathy), lupus nephropathy, Heyman nephritis, membranous nephritis and other forms of glomerulonephritis, macular degeneration, contact sensitivity responses, and inflammation resulting from contact of blood with artificial surfaces as occurs, for example, during extracorporeal circulation of blood (*e.g.,* during hemodialysis or via a heart-lung machine, for example, in association with vascular surgery such as coronary artery bypass grafting or heart valve replacement) such as extracorporeal post-dialysis syndrome, or in association with contact with other artificial vessel or container surfaces (*e.g.,* ventricular assist devices, artificial heart machines, transfusion tubing, blood storage bags, plasmapheresis, plateletpheresis, and the like).

Still further conditions that may be treated using the modulators provided herein include:

Cardiovascular disorders, such as cardiovascular disease, stroke, cerebral ischemia, myocardial infarction, atherosclerosis, ischemic heart disease, ischemia-reperfusion injury, aortic aneurysm, and congestive heart failure;

Ocular disorders such as glaucoma;

Neurological disorders (*e.g.,* neurodegeneration), such as neurodegenerative conditions associated with progressive CNS disorders, including, but not limited to, Alzheimer's disease, Parkinson's disease, amyotrophic lateral sclerosis, Huntington's disease, Creutzfeldt-Jakob disease, dementia with Lewy bodies, traumatic brain injury, spinal cord injury, neurotrauma, cerebral amyloid angiopathy, and encephalitis; epilepsy and seizure disorders; multiple sclerosis and other demyelinating syndromes; cerebral atherosclerosis; vasculitis; temporal arteritis; myasthenia gravis; neurosarcoidosis; and central and peripheral nervous system complications of malignant, infectious or autoimmune processes; the modulators provided herein may also be used to promote neuroregeneration;

Centrally-mediated neuropsychiatric disorders, such as depression, depression mania, bipolar disease, anxiety, schizophrenia, eating disorders, sleep disorders and cognition disorders; and

Other disorders, such as multiple sclerosis, cirrhosis, interstitial fibrosis, prostate, bladder and bowel dysfunction (*e.g.,* urinary incontinence, urinary hesitancy, rectal hypersensitivity, fecal incontinence and benign prostatic hypertrophy); itch/pruritus; obesity; lipid disorders; cancer; hypertension; renal disorders; abnormal wound healing; myoblastic leukemia; diabetes; meningitis; varicose veins; muscle degeneration; cachexia; restenosis; thrombosis; cerebral malaria; disorders of bones and joints (*e.g.,* osteoporosis, bone resorption disease, loosening of artificial joint implants, and others listed above); epidermolysis bullosa; ocular angiogenesis; corneal injury; corneal scarring; and tissue ulceration.

Modulators provided herein may also be used for neuroprotection of the optic nerve (*e.g.,* toinhibit the death of retinal ganglion cells in a patient).

Also provided herein are methods for treating or preventing cirrhosis in a patient, comprising administering to the patient a therapeutically effective amount of a $P2X_7$ antagonist. In certain embodiments, the $P2X_7$ antagonist exhibits an IC_{50} that is 20 micromolar or less in an *in vitro* assay

for $P2X_7$ receptor antagonist activity. In further embodiments, the $P2X_7$ antagonist exhibits an IC_{50} that is 10 micromolar or less, 5 micromolar or less, or 1 micromolar or less in an *in vitro* assay for $P2X_7$ receptor antagonist activity. Certain such $P2X_7$ antagonists exhibit no detectable agonist activity in an *in vitro* assay for $P2X_7$ receptor agonist activity. Within certain embodiments, the $P2X_7$ antagonist is a compound of Formula A or other formula provided herein. Other suitable $P2X_7$ antagonists include those described, for example, in US Patent Numbers 6,201,024, 6,242,470, 6,258,838, 6,303,659 and 6,720,452, and in PCT International Publication Numbers WO 06/110516, WO 06/102588, WO 06/102610 and WO 05/014529.

Within other aspects, modulators provided herein may be used within combination therapy for the treatment of conditions responsive to $P2X_7$ receptor modulation (*e.g.*, conditions involving pain and/or inflammatory components). Such conditions include, for example, autoimmune disorders and pathologic autoimmune responses known to have an inflammatory component including, but not limited to, arthritis (especially rheumatoid arthritis), psoriasis, Crohn's disease, lupus erythematosus, multiple sclerosis, irritable bowel syndrome, tissue graft rejection, and hyperacute rejection of transplanted organs. Other such conditions include trauma (*e.g.*, injury to the head or spinal cord), cardio- and cerebro-vascular disease and certain infectious diseases.

Within such combination therapy, a modulator is administered to a patient along with a second therapeutic agent (*e.g.*, an analgesic and/or anti-inflammatory agent). The modulator and second therapeutic agent may be present in the same pharmaceutical composition, or may be administered separately in either order. Anti-inflammatory agents include, for example, non-steroidal anti-inflammatory drugs (NSAIDs), non-specific and cyclooxygenase-2 (COX-2) specific cyclooxgenase enzyme inhibitors, gold compounds, corticosteroids, methotrexate, leflunomide, cyclosporine A, IM gold, minocycline, azathioprine, tumor necrosis factor (TNF) receptor antagonists, soluble TNF alpha receptor (etanercept), anti-TNF alpha antibodies (*e.g.*, infliximab and adalimumab), anti-C5 antibodies, interleukin-1 (IL-1) receptor antagonists (*e.g.*, anakinra or IL-1 trap), IL-18 binding protein, CTLA4-Ig (*e.g.*, abatacept), anti-human IL-6 receptor monoclonal antibody (*e.g.*, tocilizumab), LFA-3-Ig fusion proteins (*e.g.*, alefacept), LFA-1 antagonists, anti-VLA4 monoantibody (*e.g.*, natalizumab), anti-CD11a monoclonal antibody, anti-CD20 monoclonal antibody (*e.g.*, rituximab), anti-IL-12 monoclonal antibody, anti-IL-15 monoclonal antibody, CDP 484, CDP 870, chemokine receptor antagonists, selective iNOS inhibitors, p38 kinase inhibitors, integrin antagonists, angiogenesis inhibitors, and TMI-1 dual inhibitors. Further anti-inflammatory agents include meloxicam, rofecoxib, celecoxib, etoricoxib, parecoxib, valdecoxib and tilicoxib.

NSAIDs include, but are not limited to, ibuprofen, flurbiprofen, naproxen or naproxen sodium, diclofenac, combinations of diclofenac sodium and misoprostol, sulindac, oxaprozin, diflunisal, piroxicam, indomethacin, etodolac, fenoprofen calcium, ketoprofen, sodium nabumetone, sulfasalazine, tolmetin sodium, and hydroxychloroquine. One class of NSAIDs consists of compounds that inhibit cyclooxygenase (COX) enzymes; such compounds include celecoxib and

rofecoxib. NSAIDs further include salicylates such as acetylsalicylic acid or aspirin, sodium salicylate, choline and magnesium salicylates, and salsalate, as well as corticosteroids such as cortisone, dexamethasone, methylprednisolone, prednisolone, prednisolone sodium phosphate, and prednisone.

Suitable dosages for $P2X_7$ receptor modulator within such combination therapy are generally as described above. Dosages and methods of administration of anti-inflammatory agents can be found, for example, in the manufacturer's instructions in the *Physician's Desk Reference.* In certain embodiments, the combination administration of a modulator with an anti-inflammatory agent results in a reduction of the dosage of the anti-inflammatory agent required to produce a therapeutic effect (*i.e.,* a decrease in the minimum therapeutically effective amount). Thus, preferably, the dosage of anti-inflammatory agent in a combination or combination treatment method is less than the maximum dose advised by the manufacturer for administration of the anti-inflammatory agent without combination administration of a modulator. More preferably this dosage is less than ¾, even more preferably less than ½, and highly preferably, less than ¼ of the maximum dose, while most preferably the dose is less than 10% of the maximum dose advised by the manufacturer for administration of the anti-inflammatory agent(s) when administered without combination administration of a modulator. It will be apparent that the dosage amount of modulator component of the combination needed to achieve the desired effect may similarly be reduced by the co-administraction of the anti-inflammatory agent.

In certain preferred embodiments, the combination administration of a modulator with an anti-inflammatory agent is accomplished by packaging one or more modulators and one or more anti-inflammatory agents in the same package, either in separate containers within the package or in the same contained as a mixture of one or more modulators and one or more anti-inflammatory agents. Preferred mixtures are formulated for oral administration (*e.g.,* as pills, capsules, tablets or the like). In certain embodiments, the package comprises a label bearing indicia indicating that the one or more modulators and one or more anti-inflammatory agents are to be taken together for the treatment of an inflammatory pain condition.

Within further aspects, modulators provided herein may be used in combination with one or more additional pain relief medications. Certain such medications are also anti-inflammatory agents, and are listed above. Other such medications are analgesic agents, including narcotic agents which typically act at one or more opioid receptor subtypes (*e.g.,* μ, κ and/or δ), preferably as agonists or partial agonists. Such agents include opiates, opiate derivatives and opioids, as well as pharmaceutically acceptable salts and hydrates thereof. Specific examples of narcotic analgesics include, within preferred embodiments, alfentanil, alphaprodine, anileridine, bezitramide, buprenorphine, butorphanol, codeine, diacetyldihydromorphine, diacetylmorphine, dihydrocodeine, diphenoxylate, ethylmorphine, fentanyl, heroin, hydrocodone, hydromorphone, isomethadone, levomethorphan, levorphane, levorphanol, meperidine, metazocine, methadone, methorphan,

metopon, morphine, nalbuphine, opium extracts, opium fluid extracts, powdered opium, granulated opium, raw opium, tincture of opium, oxycodone, oxymorphone, paregoric, pentazocine, pethidine, phenazocine, piminodine, propoxyphene, racemethorphan, racemorphan, sulfentanyl, thebaine and pharmaceutically acceptable salts and hydrates of the foregoing agents.

Other examples of narcotic analgesic agents include acetorphine, acetyldihydrocodeine, acetylmethadol, allylprodine, alphracetylmethadol, alphameprodine, alphamethadol, benzethidine, benzylmorphine, betacetylmethadol, betameprodine, betamethadol, betaprodine, clonitazene, codeine methylbromide, codeine-N-oxide, cyprenorphine, desomorphine, dextromoramide, diampromide, diethylthiambutene, dihydromorphine, dimenoxadol, dimepheptanol, dimethylthiamubutene, dioxaphetyl butyrate, dipipanone, drotebanol, ethanol, ethylmethylthiambutene, etonitazene, etorphine, etoxeridine, furethidine, hydromorphinol, hydroxypethidine, ketobemidone, levomoramide, levophenacylmorphan, methyldesorphine, methyldihydromorphine, morpheridine, morphine, methylpromide, morphine methylsulfonate, morphine-N-oxide, myrophin, naloxone, naltyhexone, nicocodeine, nicomorphine, noracymethadol, norlevorphanol, normethadone, normorphine, norpipanone, pentazocaine, phenadoxone, phenampromide, phenomorphan, phenoperidine, piritramide, pholcodine, proheptazoine, properidine, propiran, racemoramide, thebacon, trimeperidine and the pharmaceutically acceptable salts and hydrates thereof.

Further specific representative analgesic agents include, for example acetaminophen (paracetamol); aspirin and other NSAIDs described above; NR2B antagonists; bradykinin antagonists; anti-migraine agents; anticonvulsants such as oxcarbazepine and carbamazepine; antidepressants (such as TCAs, SSRIs, SNRIs, substance P antagonists, etc.); spinal blocks; pentazocine/naloxone; meperidine; levorphanol; buprenorphine; hydromorphone; fentanyl; sufentanyl; oxycodone; oxycodone/acetaminophen, nalbuphine and oxymorphone. Still further analgesic agents include CB2-receptor agonists, such as AM1241, capsaicin receptor antagonists and compounds that bind to the $\alpha 2\delta$ subunit of voltage-gated calcium channels, such as gabapentin and pregabalin.

Representative anti-migraine agents for use in combination with a modulator provided herein include CGRP antagonists, capsaicin receptor antagonists, ergotamines and 5-HT_1 agonists, such as sumatripan, naratriptan, zolmatriptan and rizatriptan.

Within still further aspects, modulators provided herein may be used, for example, in the treatment of pulmonary disorders such as asthma, in combination with one or more beta(2)-adrenergic receptor agonists or leukotriene receptor antagonists (*e.g.*, agents that inhibits the cysteinyl leukotriene $CysLT_1$ receptor). $CysLT_1$ antagonists include montelukast, zafirlukast, and pranlukast.

For retinal neuroprotection and treatment of ocular disorders, $P2X_7$ receptor modulators may be administered to the eye in combination with, for example, one or more of an agent that inhibits ATP release, an agent that enhances conversion of ATP to adenosine and/or an agent that inhibits Ca^{+2} influx into retinal ganglion cells. Such agents include, for example, adenosine A_3 receptor agonists,

adenosine A_1 receptor agonists, ectonucleotidase agonists, Ca^{+2} chelating agents and NMDA receoptor antagonists.

Suitable dosages for $P2X_7$ receptor modulator within such combination therapy are generally as described above. Dosages and methods of administration of other pain relief medications can be found, for example, in the manufacturer's instructions in the *Physician's Desk Reference.* In certain embodiments, the combination administration of a modulator with one or more additional pain medications results in a reduction of the dosage of each therapeutic agent required to produce a therapeutic effect (*e.g.,* the dosage or one or both agent may less than ¾, less than ½, less than ¼ or less than 10% of the maximum dose listed above or advised by the manufacturer).

For use in combination therapy, pharmaceutical compositions as described above may further comprise one or more additional medications as described above. In certain such compositions, the additional medication is an analgesic. Also provided herein are packaged pharmaceutical preparations comprising one or more modulators and one or more additional medications (*e.g.,* analgesics) in the same package. Such packaged pharmaceutical preparations generally include (i) a container holding a pharmaceutical composition that comprises at least one modulator as described herein; (ii) a container holding a pharmaceutical composition that comprises at least one additional medication (such as a pain relief and/or anti-inflammatory medication) as described above and (iii) instructions (*e.g.,* labeling or a package insert) indicating that the compositions are to be used simultaneously, separately or sequentially for treating or preventing a condition responsive to $P2X_7$ receptor modulation in the patient (such as a condition in which pain and/or inflammation predominates).

Within separate aspects, the present invention provides a variety of non-pharmaceutical *in vitro* and *in vivo* uses for the modulator compounds provided herein. For example, such compounds may be labeled and used as probes for the detection and localization of $P2X_7$ receptor (in samples such as cell preparations or tissue sections, preparations or fractions thereof). In addition, modulators provided herein that comprise a suitable reactive group (such as an aryl carbonyl, nitro or azide group) may be used in photoaffinity labeling studies of receptor binding sites. In addition, modulators provided herein may be used as positive controls in assays for receptor activity or as radiotracers (*e.g.,* in receptor mapping procedures). For example, a modulator compound may be labeled using any of a variety of well known techniques (*e.g.,* radiolabeled with a radionuclide such as tritium, as described herein), and used as a probe for receptor autoradiography (receptor mapping) of $P2X_7$ receptor in cultured cells or tissue samples, which may be performed as described by Kuhar in sections 8.1.1 to 8.1.9 of Current Protocols in Pharmacology (1998) John Wiley & Sons, New York, which sections are incorporated herein by reference. Such receptor mapping procedures also include methods that can be used to characterize $P2X_7$ receptor in living subjects, such as positron emission tomography (PET) imaging or single photon emission computerized tomography (SPECT).

The following Examples are offered by way of illustration and not by way of limitation. Unless otherwise specified all reagents and solvent are of standard commercial grade and are used

without further purification. Using routine modifications, the starting materials may be varied and additional steps employed to produce other compounds provided herein.

EXAMPLES

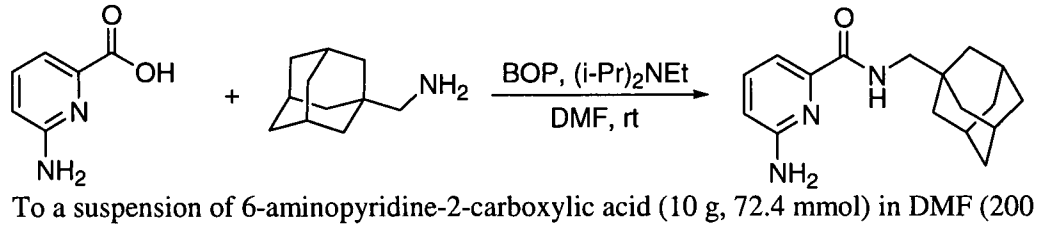
EXAMPLE 1

Preparation of Representative Heteroaryl Amide Derivatives

This Example illustrates the preparation of representative heteroaryl amide derivatives of Formula I, as well as certain intermediates useful in the preparation of such compounds. Mass spectroscopy characterization data for the following heteroaryl amide derivatives is included in Table I, in Example 3.

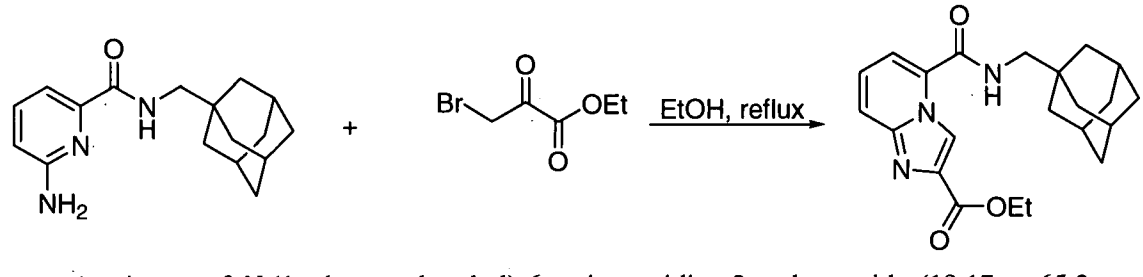
A. ETHYL 5-[(ADAMANTAN-1-YLMETHYL)CARBAMOYL]IMIDAZO[1,2-A]PYRIDINE-2-CARBOXYLATE

Step 1. N-(1-Adamantylmethyl)-6-aminopyridine-2-carboxamide



To a suspension of 6-aminopyridine-2-carboxylic acid (10 g, 72.4 mmol) in DMF (200 mL) at RT, is sequentially added 25.2 mL of DIEA (144.8 mmol), 12 g of 1-admantylmethylamine (72.4 mmol) and 38.4 g of BOP (86.88 mmol). The resulting mixture is stirred at RT for 16 h. The reaction mixture is added to 400 mL of ice/water. Filtration affords the title compound which is used in subsequent reactions without further purification.

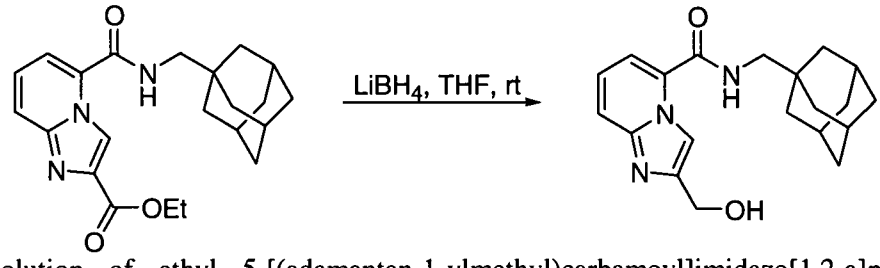
Step 2. Ethyl 5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridine-2-carboxylate



A mixture of *N*-(1-adamantylmethyl)-6-aminopyridine-2-carboxamide (19.17 g, 65.2 mmol) and ethyl bromopyruvate (9.1 mL, 65.2 mmol) in EtOH (160 mL) is heated under reflux for 20 h. After cooling to RT, the solvent is removed *in vacuo*. The residue is partitioned between EtOAc and saturated aqueous sodium carbonate. The organic layer is separated, and the aqueous layer is back extracted with EtOAc. The combined organic layers are washed with water and brine, dried over sodium sulfate, and concentrated. The brown residue is purified by re-crystallization from EtOAc and hexanes to give the title compound. ^{1}H-NMR (δ, ppm, $CDCl_3$ as internal standard): 9.03 (s, 1H), 7.82

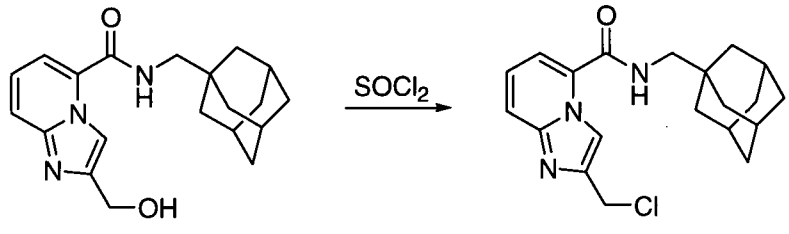
(d, J = 9.0 Hz, 1H), 7.26 (dd, J = 6.9 and 9.0 Hz,1H), 7.17 (d, J = 6.9 Hz,1H), 6.26 (m, 1H), 4.45 (q, J = 6.9 Hz, 2H), 3.22 (d, J = 6.6 Hz, 2H), 2.04 (m, 3H), 1.78–1.58 (m, 12H), 1.43 (t, J = 7.0 Hz, 3H).

B. *N*-(ADAMANTAN-1-YLMETHYL)-2-(HYDROXYMETHYL)IMIDAZO[1,2-A]PYRIDINE-5-CARBOXAMIDE



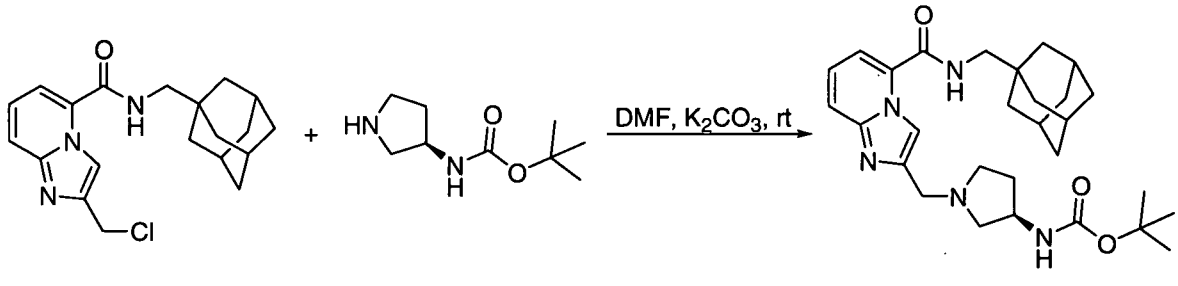
To a solution of ethyl 5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridine-2-carboxylate (7.0 g, 18.35 mmol) in THF (100 mL) at RT, is added portion-wise $LiBH_4$ (799 mg, 36.7 mmol). The resulting mixture is stirred at RT for 16 h. The reaction is quenched by the slow addition of water, followed by the addition of EtOAc. The organic layer is separated, and the aqueous layer is back extracted with EtOAc. The combined organic layers are washed with water and brine, dried over sodium sulfate, and concentrated. The yellow solid is purified by re-crystallization from DCM to give the title compound.

C. *N*-(ADAMANTANYLMETHYL)-2-(CHLOROMETHYL)IMIDAZO[1,2-A]PYRIDINE-5-CARBOXAMIDE



N-(Adamantan-1-ylmethyl)-2-(hydroxymethyl)imidazo[1,2-a]pyridine-5-carboxamide (4.4 g, 12.96 mmol) is treated with 10 mL of thionyl chloride at RT for 1 h. The excess thionyl chloride is removed *in vacuo* to give the title compound as its HCl salt.

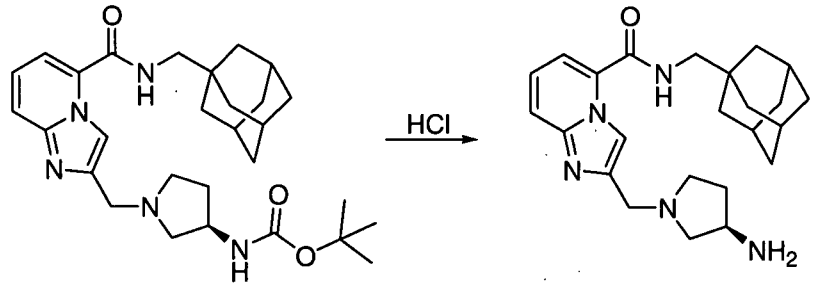
D. *TERT*-BUTYL [(3R)-1-({5-[(ADAMANTAN-1-YLMETHYL)CARBAMOYL]IMIDAZO[1,2-A]PYRIDIN-2-YL}METHYL)PYRROLIDIN-3-YL]CARBAMATE



A mixture of *N*-(adamantanylmethyl)-2-(chloromethyl)imidazo[1,2-a]pyridine-5-carboxamide (HCl salt, 700 mg, 1.78 mmol), *tert*-butyl (3R)-pyrrolidin-3-ylcarbamate (496 mmol, 2.66 mmol) and potassium carbonate (615 mg, 4.45 mmol) in DMF (25mL) is stirred at RT for 20 h. The reaction mixture is diluted with EtOAc and water. The organic layer is separated, and the aqueous layer is

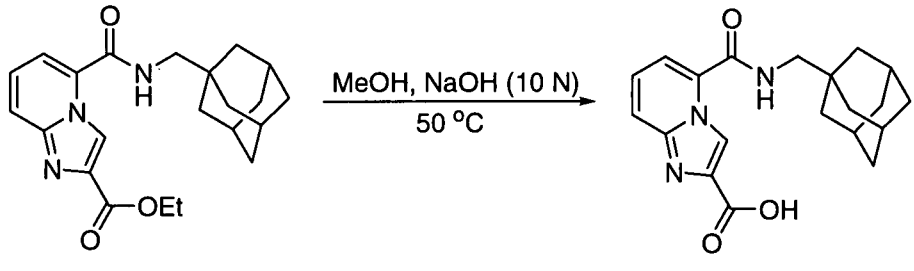
back extracted with EtOAc. The combined organic layers are washed with water and brine, dried over sodium sulfate, and concentrated. Purification of the residue by silica gel chromatography (10% MeOH, 1% NH_4OH in DCM) affords the title compound. ^{1}H-NMR (δ, ppm, $CDCl_3$ as internal standard): 8.35 (s, 1H), 7.69 (d, *J* = 8.7 Hz, 1H), 7.15 (dd, *J* = 7.2 and 9.0 Hz,1H), 7.08 (d, *J* = 6.9 Hz,1H), 6.33 (t, *J* = 5.7 Hz, 1H), 4.16 (m, 1H), 3.85 (d, *J* = 13.5 Hz, 1H), 3.78 (d, *J* = 13.2 Hz, 1H), 3.2 (d, *J* = 6.6 Hz, 2H), 2.91–2.64 (m, 2H), 2.44–2.21 (m, 2H), 2.02 (m, 3H), 1.77 –1.58 (m, 15H), 1.41 (s, 9H).

E. *N*-(ADAMANTAN-1-YLMETHYL)-2-{[(3R)-3-AMINOPYRROLIDIN-1-YL]METHYL}IMIDAZO[1,2-A]PYRIDINE-5-CARBOXAMIDE



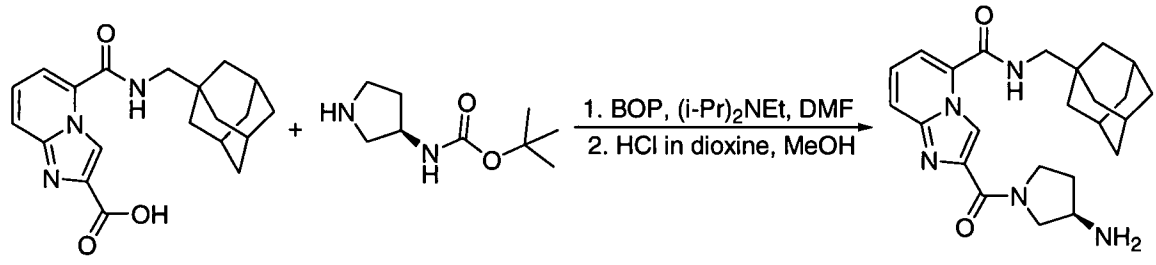
A solution of *tert*-butyl [(3R)-1-({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)pyrrolidin-3-yl]carbamate (411 mg, 0.81 mmol) in MeOH (4 mL) is treated with 2 mL of HCl solution in 1,4-dioxine (4.0 M, 8 mmol) for 16 h at RT. The solvent is removed *in vacuo* to give the title compound as its HCl salt.

F. 5-{[(1-ADAMANTYLMETHYL)AMINO]CARBONYL}IMIDAZO[1,2-A]PYRIDINE-2-CARBOXYLIC ACID



To a solution of ethyl 5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridine-2-carboxylate (852 mg, 2.3 mmol) in MeOH (10 mL), is added 1 mL of 10 N NaOH aqueous solution. The reaction mixture is heated at 50 °C for 4 h. After cooling to RT, the solvent is removed *in vacuo*. The residue is diluted with water, and acidified with 2 N HCl aqueous solution until pH = 3. Filtration affords the title compound.

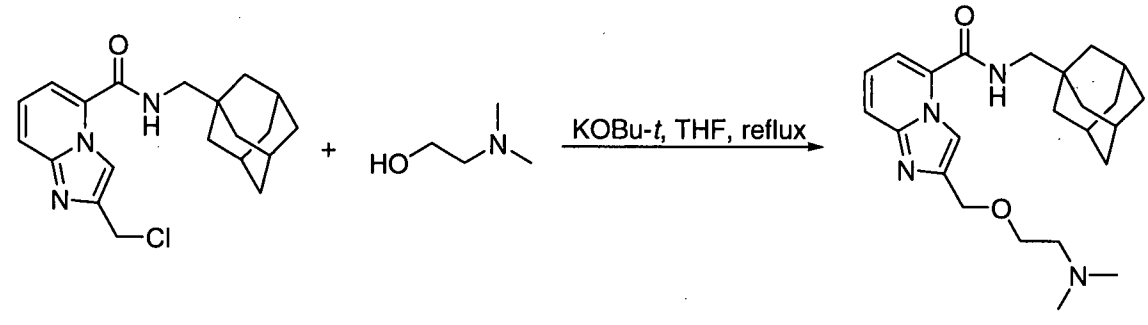
G. *N*-(ADAMANTAN-1-YLMETHYL)-2-{[(3R)-3-AMINOPYRROLIDIN-1-YL]CARBONYL}IMIDAZO[1,2-A]PYRIDINE-5-CARBOXAMIDE



To a solution of 5-{[(1-adamantylmethyl)amino]carbonyl}imidazo[1,2-a]pyridine-2-carboxylic acid (25 mg, 0.071 mmol) in DMF (2 mL) is sequentially added 0.05 mL of DIEA, 15.8 mg of *tert*-butyl (3R)-pyrrolidin-3-ylcarbamate (0.085 mmol) and 37.6 mg of BOP (0.085 mmol). After stirring for 2 h at RT, the reaction mixture is diluted with EtOAc and water. The organic layer is separated, and the aqueous layer is back extracted with EtOAc. The combined organic layers are washed with water and brine, dried over sodium sulfate, and concentrated. Purification of the residue by PTLC (8% MeOH, 1% NH_4OH in DCM) affords the title compound.

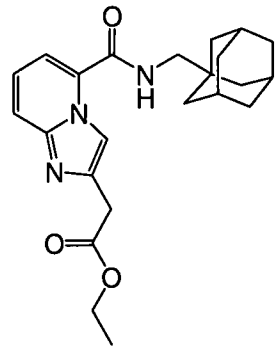
A solution of the product obtained from the above reaction (31.1 mg, 0.06 mmol) in MeOH (0.5 mL) is treated with 0.2 mL of HCl solution in 1,4-dioxine (4.0 M, 0.8 mmol) for 16 h at RT. The solvent is removed *in vacuo* to give the title compound as its HCl salt.

H. *N*-(ADAMANTAN-1-YLMETHYL)-2-{[2-(DIMETHYLAMINO)ETHOXY]METHYL}IMIDAZO[1,2-A]PYRIDINE-5-CARBOXAMIDE



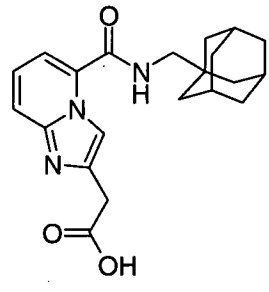
To a solution of *N,N*-dimethylethyanolamine (12.5 mg, 0.14 mmol) in THF (2 mL), is added 0.14 mL of potassium *tert*-butoxide solution in *tert*-butanol (1.0 M, 0.14 mmol), followed by 25 mg of *N*-(adamantanylmethyl)-2-(chloromethyl)imidazo[1,2-a]pyridine-5-carboxamide (0.07 mmol). The reaction mixture is heated under reflux for 2 h. After cooling to RT, the reaction is diluted with water and EtOAc. The organic layer is separated, and the aqueous layer is back extracted with EtOAc. The combined organic layers are washed with water and brine, dried over sodium sulfate, and concentrated. The residue is purified by PTLC to give the title compound. ^{1}H-NMR (δ, ppm, $CDCl_3$ as internal standard): 8.40 (s, 1H), 7.68 (d, J = 8.4 Hz, 1H), 7.17 (dd, J = 6.8 and 8.7 Hz,1H), 7.10 (d, J = 7.0 Hz,1H), 6.48 (m, 1H), 4.16 (m, 1H), 4.71 (s, 2H), 3.81 (t, J = 5.4 Hz, 2H), 3.20 (d, J = 6.3 Hz, 1H), 2.85 (d, J = 4.8 Hz, 2H), 2.50 (s, 6H), 2.02 (m, 3H), 1.76 –1.58 (m, 12H), 1.41 (s, 9H).

I. {5-[(ADAMANTAN-1-YLMETHYL)-CARBAMOYL]-IMIDAZO[1,2-A]PYRIDIN-2-YL}-ACETIC ACID ETHYL ESTER



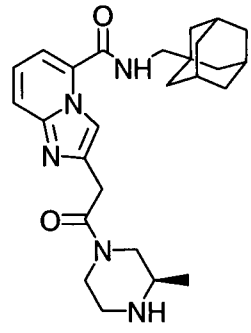
A mixture of *N*-(1-adamantylmethyl)-6-aminopyridine-2-carboxamide (1.4 g, 4.9 mmol) and 4-chloro-3-oxo-butyric acid ethyl ester (808 mg, 4.9 mmol) in EtOH (20 mL) is heated under reflux for 20 h. After cooling to RT, the solvent is removed *in vacuo*. The residue is partitioned between EtOAc and saturated aqueous sodium carbonate. The organic layer is separated, and the aqueous layer is back extracted with EtOAc. The combined organic layers are washed with water and brine, dried over sodium sulfate, and concentrated. The brown residue is purified by re-crystallization from 2% MeOH in CH_2Cl_2 to give the title compound. ^{1}H-NMR (δ, ppm, $CDCl_3$ as internal standard): 8.39 (s, 1H), 7.71 (d, 1H), 7.16 (t,1H), 7.06 (d, 1H), 6.22 (m, 1H), 4.20 (q, 2H), 3.87 (s, 2H), 3.20 (d, 2H), 2.02 (m, 3H), 1.78–1.58 (m, 12H), 1.28 (t, 3H).

J. {5-[(ADAMANTAN-1-YLMETHYL)-CARBAMOYL]-IMIDAZO[1,2-A]PYRIDIN-2-YL}-ACETIC ACID



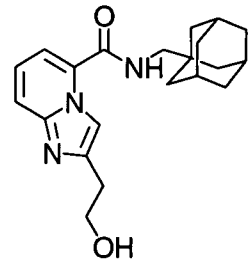
A mixture of {5-[(adamantan-1-ylmethyl)-carbamoyl]-imidazo[1,2-a]pyridin-2-yl}-acetic acid ethyl ester (850 mg, 2.15 mmol) and NaOH (50 mg, 12.8 mmol), in MeOH (10 mL) and water (2 mL), is heated at 50 °C for 1 h. After cooling to RT, the solvent is removed *in vacuo*. The residue is diluted with water, and acidified with 2 N HCl aqueous solution until pH = 3. Filtration affords the title compound.

K. 2-[2-((R)-3-METHYL-PIPERAZIN-1-YL)-2-OXO-ETHYL]-IMIDAZO[1,2-A]PYRIDINE-5-CARBOXYLIC ACID (ADAMANTAN-1-YLMETHYL)-AMIDE



To a solution of {5-[(adamantan-1-ylmethyl)-carbamoyl]-imidazo[1,2-a]pyridin-2-yl}-acetic acid (40 mg, 0.1 mmol) in DMF (1 mL) is sequentially added (R)-2-methyl-piperazine (43 mg, 0.44 mmol) and 96 mg of BOP (0.2 mmol). After stirring for 2 h at RT, the reaction mixture is diluted with EtOAc and water. The organic layer is separated, and the aqueous layer is back extracted with EtOAc. The combined organic layers are washed with water and brine, dried over sodium sulfate, and concentrated. Purification of the residue by PTLC (10% MeOH, 1% NH_4OH in DCM) affords the title compound.

L. 2-(2-HYDROXY-ETHYL)-IMIDAZO[1,2-A]PYRIDINE-5-CARBOXYLIC ACID (ADAMANTAN-1-YLMETHYL)-AMIDE



To a solution of {5-[(adamantan-1-ylmethyl)-carbamoyl]-imidazo[1,2-a]pyridin-2-yl}-acetic acid ethyl ester (65 mg, 0.16 mmol) in THF (5 mL) at RT, is added portion-wise $LiBH_4$ (10 mg, 0.46 mmol). The resulting mixture is stirred at RT for 16 h. The reaction is quenched by the slow addition of water, followed by the addition of EtOAc. The organic layer is separated, and the aqueous layer is back extracted with EtOAc. The combined organic layers are washed with water and brine, dried over sodium sulfate, and concentrated. Purification of the residue by PTLC (10% MeOH in DCM) the title compound.

M. 5-[(ADAMANTAN-1-YLMETHYL)-CARBAMOYL]-6-CHLORO-IMIDAZO[1,2-*A*]PYRIDINE-2-CARBOXYLIC ACID ETHYL ESTER

Step 1. 3,6-Dichloro-pyridine-2-carboxylic acid (adamantan-1-ylmethyl)-amide

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A mixture of 3,6-dichloro-pyridine-2-carboxylic acid (1.92 g, 0.01 mol), 1-admantylmethylamine (1.65 g, 0.01 mol), TEA (2.02 g, 0.02 mol) and DMC (2.03 g, 0.012 mol) in DCM (20 mL) is stirred at RT for 2 h. The reaction is quenched with $NaHCO_3$. The organic layer is separated and dried over Na_2SO_4. Silica gel chromatography (hexanes/EtOAc 3:1) gives the title compound.

Step 2. 6-Azido-3-chloro-pyridine-2-carboxylic acid (adamantan-1-ylmethyl)-amide

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A mixture of 3,6-dichloro-pyridine-2-carboxylic acid (adamantan-1-ylmethyl)-amide (1.0 g, 2.95 mmol) and NaN_3 (0.23 g, 3.54 mmol) in DMF (10 mL) is heated to 100 °C overnight, and then cooled to RT. Water (20 mL) is added. The aqueous phase is extracted with EtOAc/hexanes (1:1, 3 × 30 mL). The combined organic layers are washed with brine, and dried over anhydrous Na_2SO_4. Silica gel chromatography (hexanes/EtOAc 2:1) gives the title compound and recovers some starting material.

Step 3. 6-Amino-3-chloro-pyridine-2-carboxylic acid (adamantan-1-ylmethyl)-amide

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To a solution of 6-azido-3-chloro-pyridine-2-carboxylic acid (adamantan-1-ylmethyl)-amide (0.34 g, 0.98 mmol) in THF (10 mL) is added PPh_3 (0.31 g, 1.18 mmol). The solution is stirred at RT for 4 h. The solvent is removed. 90 % AcOH (10 mL) is added, and the resulting solution is heated 100 °C overnight. Removal of the solvents gives a residue. Silica gel chromatography (hexanes/EtOAc 2:1) gives the title compound.

Step 4. 5-[(Adamantan-1-ylmethyl)-carbamoyl]-6-chloro-imidazo[1,2-*a*]pyridine-2-carboxylic acid ethyl ester

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A solution of 6-amino-3-chloro-pyridine-2-carboxylic acid (adamantan-1-ylmethyl)-amide and 3-bromo-2-oxo-propionic acid ethyl ester in EtOH (1 mL) is heated to reflux for 2 h, at which time the reaction is completed. PTLC (EtOAc/hexanes 1:1) gives the title compound.

N. 5-(4-METHYL-2-PHENYL-PENTYLCARBAMOYL)-IMIDAZO[1,2-*A*]PYRIDINE-2-CARBOXYLIC ACID ETHYL ESTER

Step 1. 6-Amino-pyridine-2-carboxylic acid (4-methyl-2-phenyl-pentyl)-amide

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To a suspension of 6-amino-pyridine-2-carboxylic acid (3.69 g, 0.0267 mol), 4-methyl-2-phenyl-pentylamine HCl salt (5.72 g, 0.0267 mol) and TEA (6.75 g, 0.0668 mol) in DMF (30 mL) is added PyBop (16.7 g, 0.0534 mol). The resulting mixture is stirred at RT overnight, quenched with $NaHCO_3$, extracted with EtOAc (2 × 50 mL). The combined organic solution is washed with water

(50 mL), and dried over Na_2SO_4. Silica gel chromatography (TEA/EtOAc 2:100) gives the title compound.

Step 2. 5-(4-methyl-2-phenyl-pentylcarbamoyl)-imidazo[1,2-*a*]pyridine-2-carboxylic acid ethyl ester

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This compound is prepared from 6-amino-pyridine-2-carboxylic acid (4-methyl-2-phenyl-pentyl)-amide essentially as described in Example 1M, step 4.

O. 2-CHLOROMETHYL-IMIDAZO[1,2-*A*]PYRIDINE-5-CARBOXYLIC ACID (4-METHYL-2-PHENYL-PENTYL)-AMIDE

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This compound is prepared by reaction of 6-amino-pyridine-2-carboxylic acid (4-methyl-2-phenyl-pentyl)-amide with 1,3-dichloroacetone essentially as described in Example 1M, step 4.

P. [5-(4-METHYL-2-PHENYL-PENTYLCARBAMOYL)-IMIDAZO[1,2-*A*]PYRIDIN-2-YL]-ACETIC ACID ETHYL ESTER

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This compound is prepared by reaction of 6-amino-pyridine-2-carboxylic acid (4-methyl-2-phenyl-pentyl)-amide with 4-chloro-3-oxo-butyric acid ethyl ester essentially as described in Example 1M, step 4.

Q. METHANESULFONIC ACID 2-{5-[(ADAMANTAN-1-YLMETHYL)-CARBAMOYL]-IMIDAZO[1,2-*A*]PYRIDIN-2-YL}-ETHYL ESTER

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A solution of 2-(2-hydroxy-ethyl)-imidazo[1,2-*a*]pyridine-5-carboxylic acid (adamantan-1-ylmethyl)-amide (177 mg, 0.5 mmol), methanesulfonyl chloride (63 mg, 0.55 mmol) and TEA (101 mg, 1.0 mmol) in DCM (5 mL) is stirred at RT for 2 h. The reaction is quenched with $NaHCO_3$. The two layers are separated. The aqueous layer is extracted with DCM (2 × 3 mL). The combined organic solution is washed with water (5 mL), and dried over Na_2SO_4. Silica gel chromatography (MeOH/EtOAc 5:100) gives the title compound.

R. 2-[2-((R)-3-AMINO-PYRROLIDIN-1-YL)-ETHYL]-IMIDAZO[1,2-*A*]PYRIDINE-5-CARBOXYLIC ACID (ADAMANTAN-1-YLMETHYL)-AMIDE

Error! Objects cannot be created from editing field codes.

A mixture of methanesulfonic acid 2-{5-[(adamantan-1-ylmethyl)-carbamoyl]-imidazo[1,2-*a*]pyridin-2-yl}-ethyl ester (43 mg, 0.1 mmol), (R)-pyrrolidin-3-yl-carbamic acid *tert*-butyl ester (19 mg, 0.1 mmol) and Cs_2CO_3 (49 mg, 0.2 mmol) in ACN is stirred under reflux overnight. PTLC (EtOAc/TEA 100/2) gives the BOC -protected product, which is dissolved in EtOAc (2 mL). 4 N

HCl in dioxane (0.15 mL, 0.6 mmol) is added to the solution. The resulting mixture is stirred at RT for 4 h. Removal of solvent gives the title compound.

S. 2-[2-(4-AMINO-PIPERIDIN-1-YL)-ETHYL]-IMIDAZO[1,2-*A*]PYRIDINE-5-CARBOXYLIC ACID (ADAMANTAN-1-YLMETHYL)-AMIDE

Error! Objects cannot be created from editing field codes.

This compound is prepared essentially as described in Example 1R.

T. 2-[2-(3-AMINO-PIPERIDIN-1-YL)-ETHYL]-IMIDAZO[1,2-*A*]PYRIDINE-5-CARBOXYLIC ACID (ADAMANTAN-1-YLMETHYL)-AMIDE

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This compound is prepared essentially as described in Example 1R.

U. 2-[2-(PIPERIDIN-4-YLAMINO)-ETHYL]-IMIDAZO[1,2-*A*]PYRIDINE-5-CARBOXYLIC ACID (ADAMANTAN-1-YLMETHYL)-AMIDE

Error! Objects cannot be created from editing field codes.

This compound is prepared essentially as described in Example 1R.

V. 2-[2-(4-HYDROXY-PIPERIDIN-1-YL)-ETHYL]-IMIDAZO[1,2-*A*]PYRIDINE-5-CARBOXYLIC ACID (ADAMANTAN-1-YLMETHYL)-AMIDE

Error! Objects cannot be created from editing field codes.

A mixture of methanesulfonic acid 2-{5-[(adamantan-1-ylmethyl)-carbamoyl]-imidazo[1,2-*a*]pyridin-2-yl}-ethyl ester (43 mg, 0.1 mmol), 4-hydroxy-piperidine (11 mg, 0.1 mmol) and Cs_2CO_3 (49 mg, 0.2 mmol) in ACN is stirred under reflux overnight. PTLC (EtOAc/TEA 100/2) gives the title compound.

W. 2-[2-(1,3-DIOXO-1,3-DIHYDRO-ISOINDOL-2-YL)-ETHYL]-IMIDAZO[1,2-*A*]PYRIDINE-5-CARBOXYLIC ACID (ADAMANTAN-1-YLMETHYL)-AMIDE

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A solution of 2-(2-hydroxy-ethyl)-imidazo[1,2-*a*]pyridine-5-carboxylic acid (adamantan-1-ylmethyl)-amide (150 mg, 0.42 mmol), phthalimide (62 mg, 0.42 mmol), PPh_3 (132 mg, 0.5 mmol) and DIAD (101 mg, 0.5 mmol) in THF (10 mL) is stirred at RT for 4 h. The reaction mixture is concentrated. The residue is purified by silica gel chromatography (hexanes/EtOAc 1:1) to give the title compound.

X. 2-(2-AMINO-ETHYL)-IMIDAZO[1,2-*A*]PYRIDINE-5-CARBOXYLIC ACID (ADAMANTAN-1-YLMETHYL)-AMIDE

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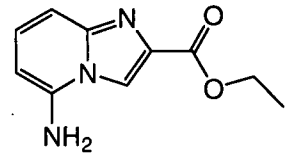
A solution of 2-[2-(1,3-dioxo-1,3-dihydro-isoindol-2-yl)-ethyl]-imidazo[1,2-*a*]pyridine-5-carboxylic acid (adamantan-1-ylmethyl)-amide (100 mg, 0.21 mmol) and NH_2NH_2 (14 mg, 0.42 mmol) in EtOH is stirred under reflux for 4 h. PTLC (EtOAc/MeOH/TEA 100/20/5) gives the title compound.

EXAMPLE 2

Synthesis of Additional Representative Heteroaryl Amide Derivatives

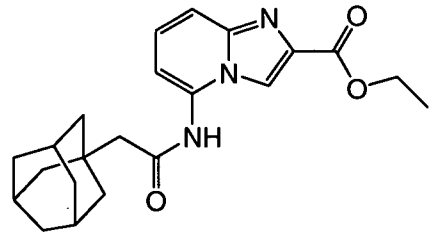
This Example illustrates the synthesis of additional representative heteroaryl amide derivatives of Formula I, as well as certain intermediates useful in the preparation of such compounds.

A. ETHYL 5-AMINO IMIDAZO[1,2-A]PYRIDINE-2-CARBOXYLATE



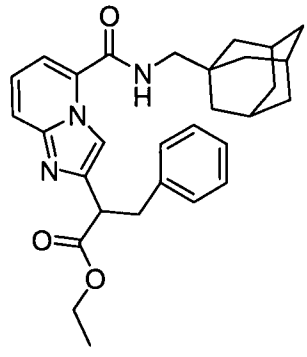
A mixture of 2.2 g of 2,6-diaminopyridine in 50 mL of EtOH is treated with 4.2 g of ethyl 3-bromopyruvate at RT. The resulting mixture is refluxed with stirring for 2 h. After removal of the solvent *in vacuo*, the residue is treated with saturated sodium bicarbonate solution and extracted with EtOAc. After drying over magnesium sulfate the solvent is removed *in vacuo*. The residue is chromatagraphed on silica gel with EtOAc as the eluent to afford the title compound after trituration with EtOAc.

B. ETHYL 5-[(ADAMANTAN-1-YLACETYL)AMINO] IMIDAZO[1,2-A]PYRIDINE-2-CARBOXYLATE



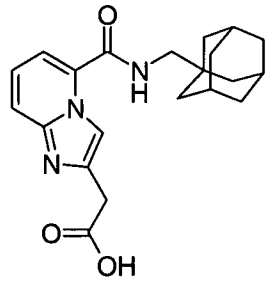
A mixture of 50 mg of ethyl (5-amino) imidazo[1,2-a]pyridine-2-carboxylate and 1 mL of a 0.3M solution of 1-adamantylacetyl chloride in dichloroethane is heated at 80 °C for 16 h. The mixture is poured into saturated sodium bicarbonate solution and the product is extracted with EtOAc. After drying over magnesium sulfate the solvent is removed *in vacuo*. The residue is chromatagraphed on silica gel to afford the title compound.

C. ETHYL 2-(5-((ADAMANTAN-1-YLMETHYL)CARBAMOYL)H-IMIDAZO[1,2-A]PYRIDIN-2-YL)-3-PHENYLPROPANOATE



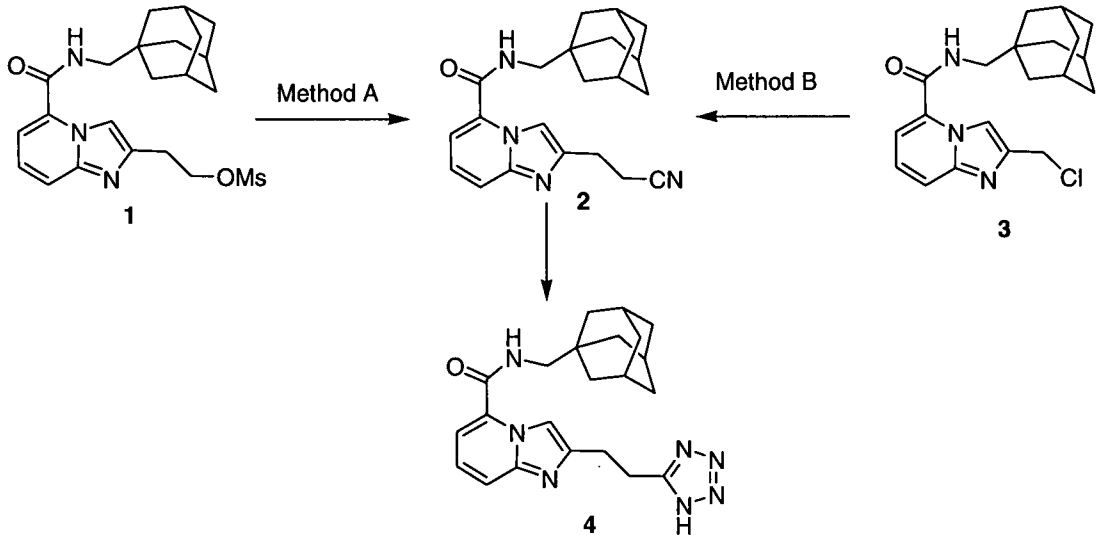
A mixture of {5-[(adamantan-1-ylmethyl)-carbamoyl]-imidazo[1,2-a]pyridin-2-yl}-acetic acid ethyl ester (442 mg, 1 mmol) and benzyl bromide (171 mg, 1 mmol) in anhydrous THF (10 mL) under nitrogen is cooled to -78 °C. A solution of potassium *tert*-butoxide (1 mL, 1M in THF) added and the mixture is stirred at RT over night. The reaction is quenched by addition of saturated ammonium chloride, and the product is extracted with EtOAc. The extracts are washed with brine, dried over anhydrous magnesium sulfate, filtered and concentrated. The residue is purified by silica column chromatography to yield the title compound.

D. 2-(5-((ADAMANTAN-1-YLMETHYL CYCLOHEXYLMETHYL)CARBAMOYL)H-IMIDAZO[1,2-A]PYRIDIN-2-YL)-3-PHENYLPROPANOIC ACID

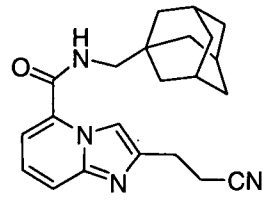


The title compound is prepared from ethyl 2-(5-((adamantan-1-ylmethyl)H-imidazo[1,2-a]pyridin-2-yl)-3-phenylpropanoate essentially as described in preparation J of Example 1.

E. 2-[2-(1*H*-TETRAZOL-5-YL)-ETHYL]-IMIDAZO[1,2-*A*]PYRIDINE-5-CARBOXYLIC ACID (ADAMANTAN-1-YLMETHYL)-AMIDE



STEP 1. 2-(2-Cyano-ethyl)-imidazo[1,2-*a*]pyridine-5-carboxylic acid (adamantan-1-ylmethyl)-amide (2)



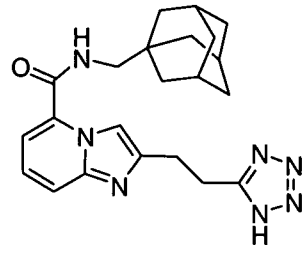
Method A:

A mixture of methanesulfonic acid 2-{5-[(adamantan-1-ylmethyl)-carbamoyl]-imidazo[1,2-*a*]pyridin-2-yl}-ethyl ester (**1**) (2.74 g, 6.35 mmol) and sodium cyanide (0.373 g, 7.62 mmol) in DMSO (30 mL) is stirred at 90 °C for 3 h, then cooled to RT. The mixture is poured into water (90 mL). The aqueous phase is extracted DCM (3 x 30 mL). The combined organic phase is washed with 1 N NaOH and brine, and dried over Na_2SO_4. Removal of solvent gives the title compound.

Method B:

To a solution of acetonitrile (1.64 g, 40 mmol) in THF (80 mL) is added n-BuLi (16 mL, 40 mmol, 2.5 M) in hexanes at – 78 to - 70 °C over 20 min. The mixture is stirred at – 78 °C for 30 min. A solution of 2-chloromethyl-imidazo[1,2-*a*]pyridine-5-carboxylic acid (adamantan-1-ylmethyl)-amide (**3**) (3.58 g, 10 mmol) in THF (20 mL) is added below -70 °C. The mixture is stirred at – 78 °C for 1.5 h, and quenched with NH_4Cl (20 mL) at – 78 °C. The temperature is raised to RT, and the two layers are separated. The aqueous phase is extracted with EtOAc (30 mL). The combined organic phase is washed with brine, and dried over Na_2SO_4. Removal of solvent gives a residue which is purified by column chromatography (gradient from hexanes/EtOAc/TEA 50/50/1 to EtOAc/TEA 100/1) to afford the title compound.

Step 2. 2-[2-(1*H*-Tetrazol-5-yl)-ethyl]-imidazo[1,2-*a*]pyridine-5-carboxylic acid (adamantan-1-ylmethyl)-amide (**4**)



To a solution of 2 M trimethylaluminum (4.14 mL, 8.28 mMol) in toluene is added azidotrimethylsilane (0.95 g, 8.28 mmol) at 0 °C, and the resulting mixture is stirred for 5 min. A solution of 2-(2-cyano-ethyl)-imidazo[1,2-*a*]pyridine-5-carboxylic acid (adamantan-1-ylmethyl)-amide (**2**) (1 g, 2.76 mmol) in toluene (20 mL) is added to the flask over 20 min at the same temperature. The mixture is warmed to RT, then heated to 80 °C overnight. The reaction is cooled to 0 °C, and quenched with 6 N HCl. The aqueous phase is adjusted to pH 4-5. The two layers are separated, and the aqueous phase is extracted with EtOAc (12 x 50 mL). The combined organic phase is dried over Na_2SO_4. Removal of solvent gives the title compound.

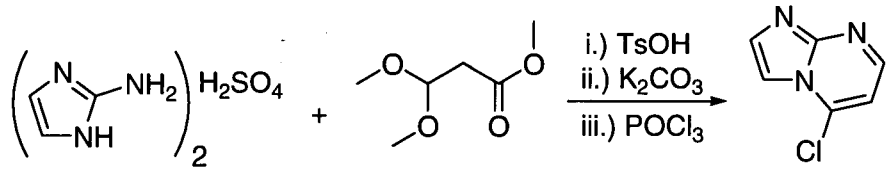
EXAMPLE 3

Synthesis of Additional Representative Heteroaryl Amide Derivatives

This Example illustrates the synthesis of additional representative heteroaryl amide derivatives of Formula I, as well as certain intermediates useful in the preparation of such compounds.

A. IMIDAZO[1,2-A]PYRIMIDINE-5-CARBOXYLIC ACID (ADAMANTAN-1-YLMETHYL)-AMIDE

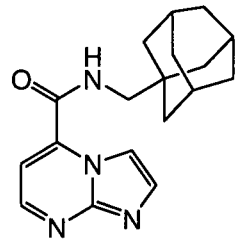
Step 1. 5-Chloro-imidazo[1,2-a]pyrimidine



In a round bottom flask, 2-aminoimidazole sulfate (0.264g, 1.0 mmol) is added to ethyl 3,3-dimethoxypropionate (0.296 g, 2.0 mmol). Piperidine (5 μL) and EtOH (5 mL) are then added and the flask is heated to reflux overnight. At RT, *p*-toluenesulfonic acid monohydrate (15 mg) is added and the reaction is returned to reflux for 6 h. At RT, freshly powdered K_2CO_3 (0.415g, 3.0 mmol) is added and the reaction is heated to reflux overnight. The reaction is then concentrated to dryness and the residue is triturated with $CHCl_3$ (10 mL) and again concentrated to dryness. The residue is treated with $POCl_3$ (2.0 mL, 21.5 mmol) and heated to 90 °C for 1.5 h, and then to 115 °C for 1 h. At RT, the

reaction is concentrated to dryness, and then dissolved in CH_2Cl_2 and washed with $NaHCO_3$ (sat.) followed by brine. The organic solution is dried over Na_2SO_4, filtered and concentrated to dryness. The residue is purified via silica gel chromatography using EtOAc to afford the title compound. ^1H NMR (400 MHz, $CDCl_3$ with 5% CD_3OD (v/v)) δ 8.44 (dd, J = 6.8, 0.8, 1 H), 7.70 (d, J = 0.8, 1 H), 7.57 (bs, 1 H), 6.92 (dd, J = 6.8, 0.8, 1H).

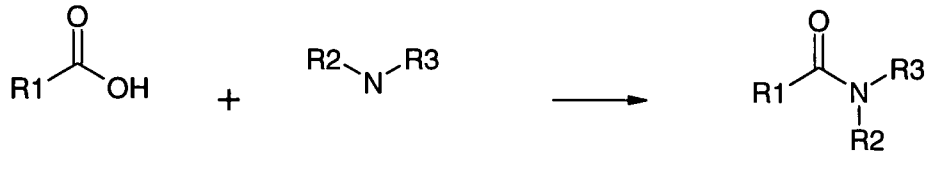
Step 2. Imidazo[1,2-a]pyrimidine-5-carboxylic acid (adamantan-1-ylmethyl)-amide



In a ½ dram vial, 5-chloro-imidazo[1,2-a]pyrimidine (20.2 mg, 0.13 mmol), $Zn(CN)_2$ (9.3 mg, 0.079 mmol), $Pd_2(dba)_3$ (3.0 mg, 0.003 mmol) and DPPF (3.6mg, 0.006 mmol) are treated with DMF (300 μL) and H_2O (3 μL). The vial is flushed and then sealed under argon and heated to 120 °C overnight. At RT, the vial is treated with NaOH (1M, 0.5 mL) and *i*-PrOAc (0.5 mL), and the upper organic layer is purified via strong cation exchange chromatography. The base-eluted solution is concentrated to dryness and treated with HCl (conc., 0.1 mL) and shaken at RT for 1 h and then at 100 °C for an additional 1 h. The reaction is concentrated to dryness under a stream of nitrogen and treated with adamantan-1-yl-methylamine hydrochloride (8.1 mg, 0.040 mmol), TEA (10% (v/v) ACN, 200 μL), and 2-chloro-1,3-dimethyl-4,5-dihydro-3H-imidazolium chloride (0.2 M ACN, 200 μL, 0.040 mmol). The reaction is sealed under nitrogen and shaken at RT for 1 h. NaOH (1M, 0.5 mL) and *i*-PrOAc (0.5 mL) are added, and the upper organic layer is removed and concentrated to dryness. The residue is purified via silica gel chromatography using EtOAc followed by TEA / MeOH / EtOAc (2.5:2.5:95 % v/v/v) to afford the title compound. ^1H NMR (400 MHz, $CDCl_3$) δ 1.59 (m, 6 H), 1.64 (m, 3 H), 1.72 (m, 3 H), 1.99 (m, 3 H), 3.18 (d, J = 6.4, 2 H), 7.68 (d, J = 1.2, 1 H), 7.83 (d, J = 6.8, 1 H), 7.99 (d, J = 1.6, 1 H), 8.12 (bs, 1 H), 8.58 (d, J = 6.8, 1 H).

B. Additional Representative Heteroaryl Amide Derivatives

Using routine modifications, the starting materials may be varied and additional steps employed to produce other compounds provided herein. Compounds listed in Table I are prepared using certain such methods. Briefly, the compounds in Table I are synthesized by DMC (2 eq) coupling of carboxylic acid (1.2 eq) and amine (1.0 eq):



The amine (0.2 M in toluene; 0.10 mL) and acid (0.2 M in DMA; 0.12 mL) are added to a vial along with DMC 3 (0.2 M in ACN, freshly prepared; 0.2 mL) and TEA (0.3 M in toluene; 0.10 mL) are added to a vial and incubated at RT for 16 h. The reaction mixture is then extracted with 1 N NaOH (0.5 mL) and EtOAc (0.5 mL). The upper organic layer is removed and concentrated to dryness. The residue is purified via solid phase extraction chromatography eluting with 25%MeOH/EtOAc (4.0 mL) to afford the title compound.

In the column of Table I labeled "IC_{50}," a "*" indicates that the IC_{50} determined as described in Example 4A is 2 micromolar or less (*i.e.*, the concentration of such compounds that is required to provide a 50% decrease in the fluorescence response of cells exposed to 80 μM of (2'(3')-O-(4-benzoyl-benzoyl)adenosine 5'-triphosephate is 2 micromolar or less).

Mass spectroscopy data in Table I is Electrospray MS, obtained in positive ion mode using a Micromass Time-of-Flight LCT (Waters Corp.; Milford, MA), equipped with a Waters 600 pump (Waters Corp.; Milford, MA), Waters 996 photodiode array detector (Waters Corp.; Milford, MA), and a Gilson 215 autosampler (Gilson, Inc.; Middleton, WI). MassLynx™ (Waters Corp.; Milford, MA) version 4.0 software with OpenLynx Global Server™, OpenLynx™ and AutoLynx™ processing is used for data collection and analysis. MS conditions are as follows: capillary voltage = 3.5 kV; cone voltage = 30 V, desolvation and source temperature = 350°C and 120°C, respectively; mass range = 181-750 with a scan time of 0.22 seconds and an interscan delay of 0.05 seconds.

Sample volume of 1 microliter is injected onto a 50x4.6mm Chromolith SpeedROD RP-18e column (Merck KGaA, Darmstadt, Germany), and eluted using a 2-phase linear gradient at a flow rate of 6 ml/min. Sample is detected using total absorbance count over the 220-340nm UV range. The elution conditions are: Mobile Phase A - 95% water, 5% MeOH with 0.05% TFA; Mobile Phase B - 5% water, 95% MeOH with 0.025% TFA. The following gradient is used: 0-0.5 min 10-100%B, hold at 100%B to 1.2 min, return to 10%B at 1.21 min. Inject to inject cycle is 2.15 min.

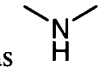
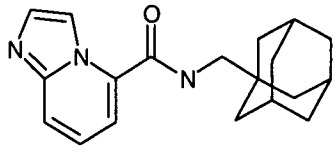
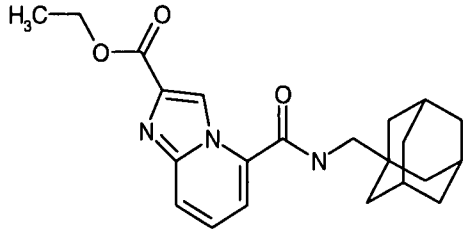
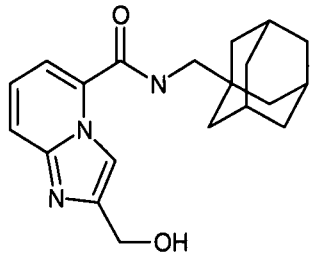
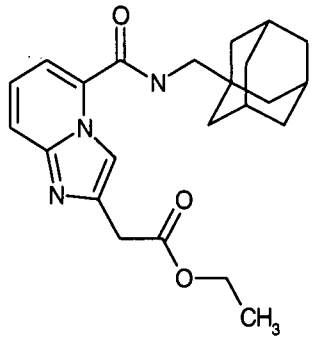
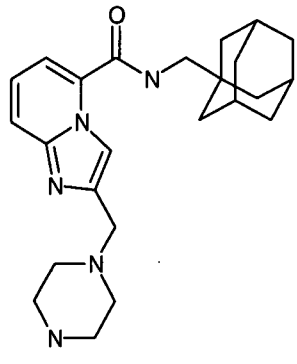
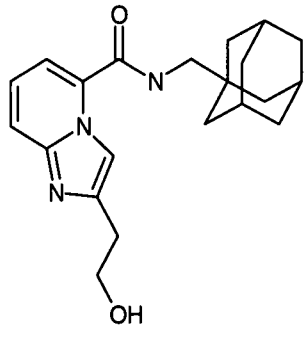
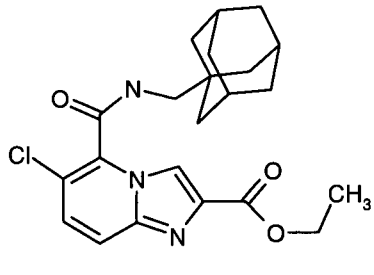
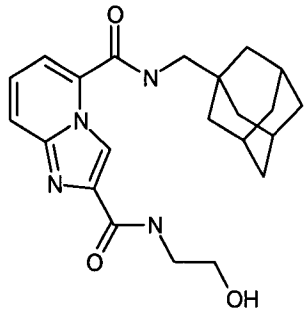
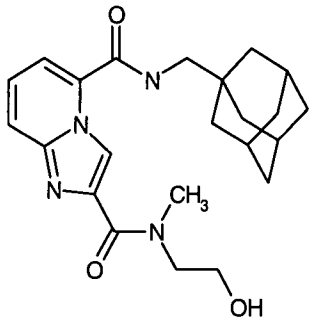
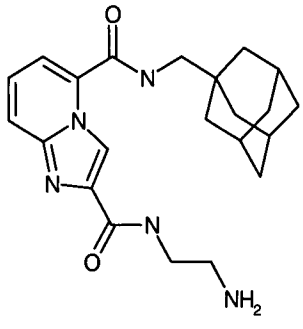
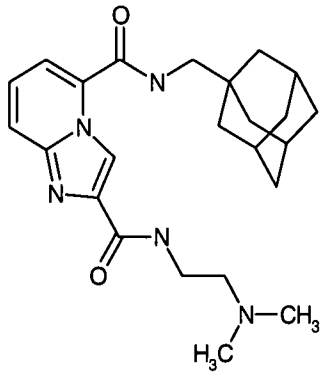
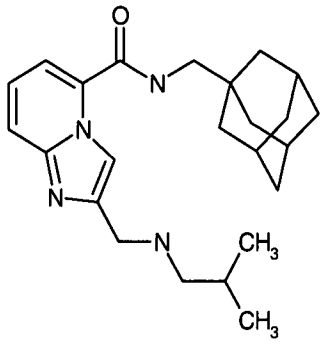
Mass spectroscopy data is provided as (M+1) in the column headed "MS." The retention time, in minutes, is provided in the column headed R_T. It will be apparent that, both within Table I and elsewhere herein, an amine designated  is the same as  .

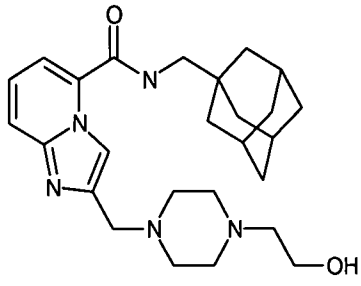
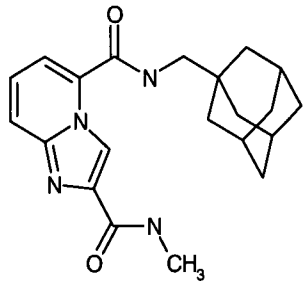
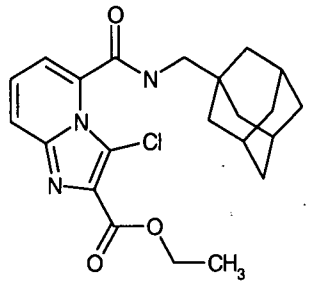
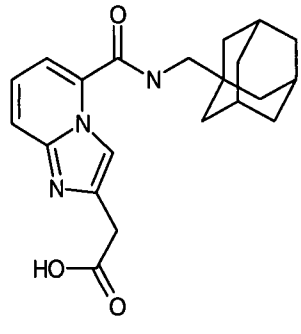
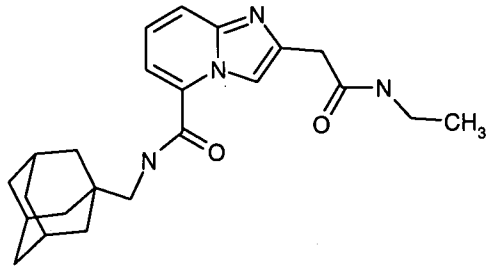
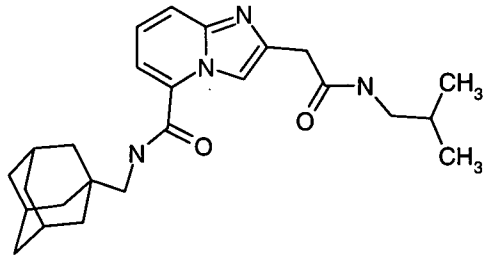
Table I

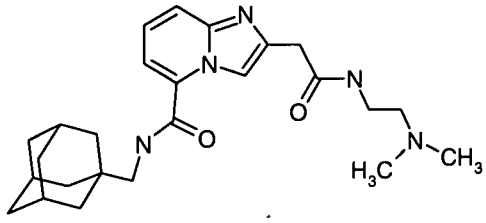
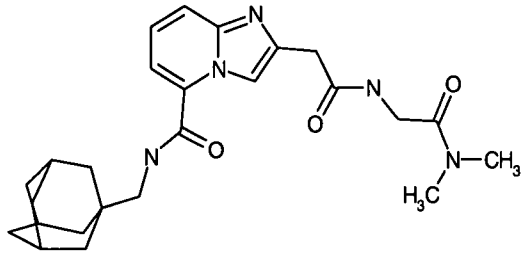
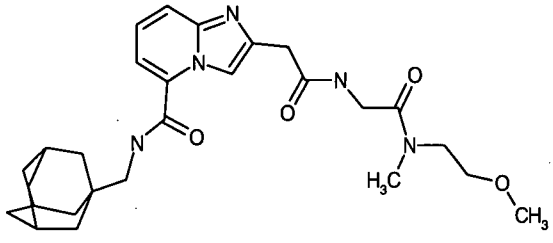
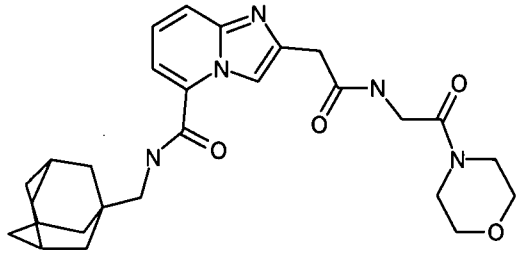
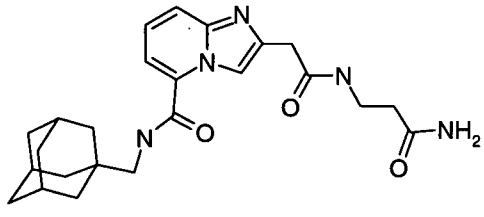
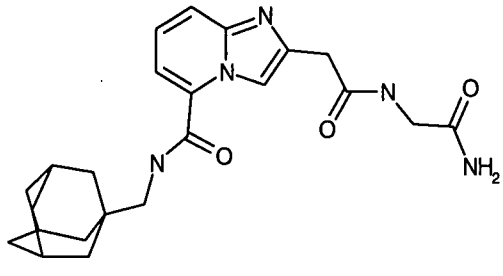
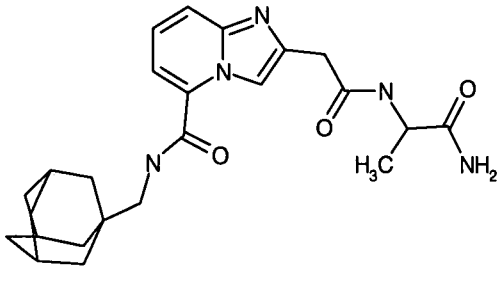
Representative Heteroaryl Amides

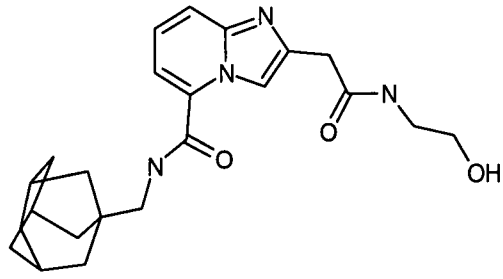
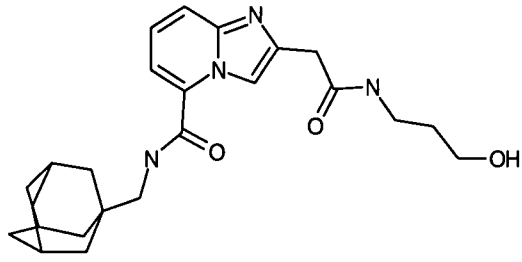
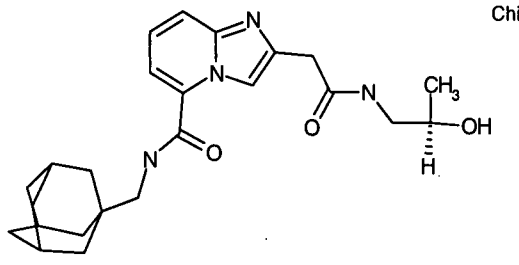
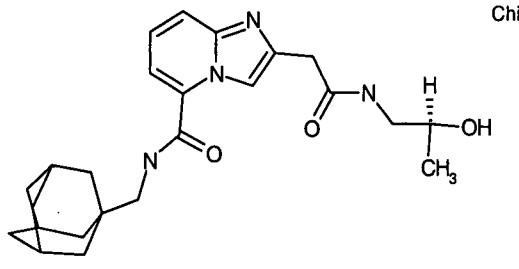
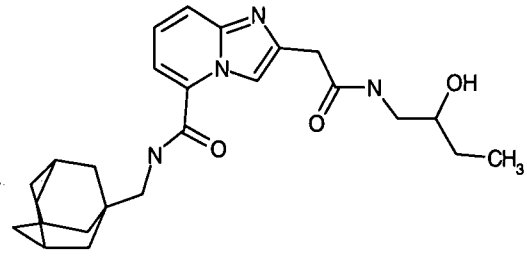
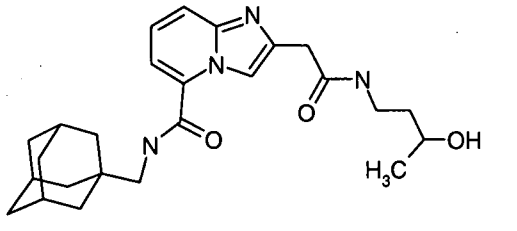
Compound	Name	MS	R_T	IC_{50}
1 	N-(adamantan-1-ylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	310.20	1.22	*

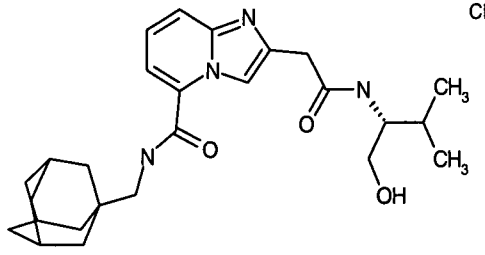
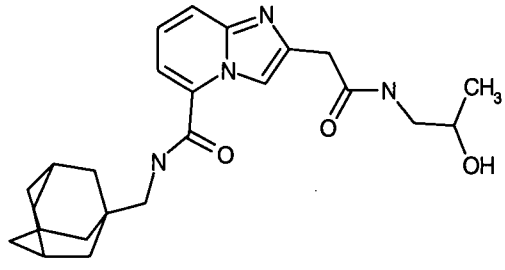
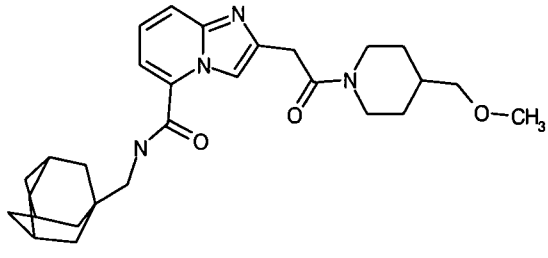
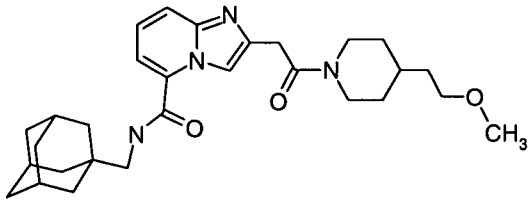
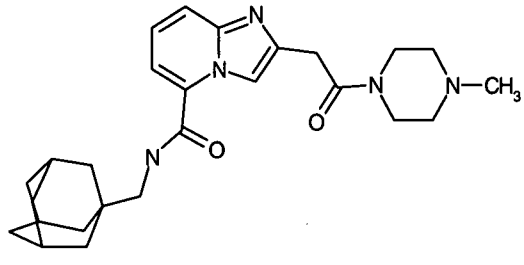
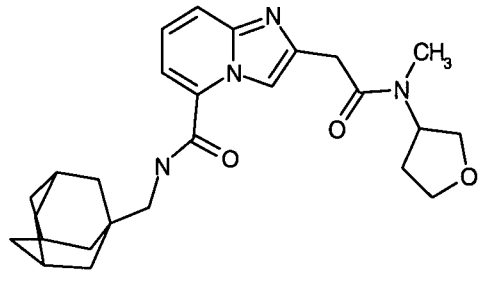
	Compound	Name	MS	R_T	IC_{50}
2		ethyl 5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridine-2-carboxylate	382.18	1.36	*
3		N-(adamantan-1-ylmethyl)-2-(hydroxymethyl)imidazo[1,2-a]pyridine-5-carboxamide	340.19	1.22	*
4		ethyl {5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}acetate	396.20	1.26	*
5		N-(adamantan-1-ylmethyl)-2-(piperazin-1-ylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	408.24	1.17	*
6		N-(adamantan-1-ylmethyl)-2-(2-hydroxyethyl)imidazo[1,2-a]pyridine-5-carboxamide	354.21	1.22	*
7		5-[(adamantan-1-ylmethyl)-carbamoyl]-6-chloro-imidazo[1,2-a]pyridine-2-carboxylic acid ethyl ester	416.14	1.37	*

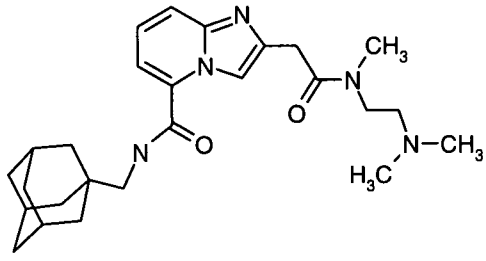
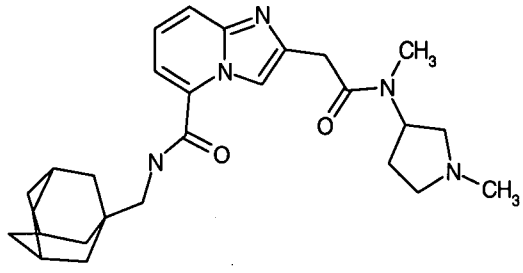
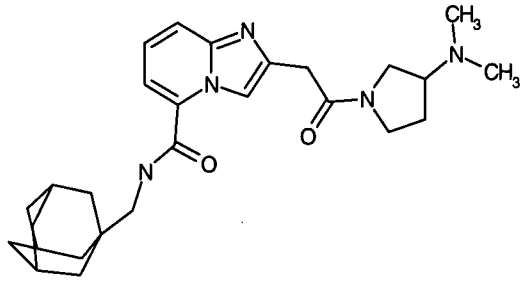
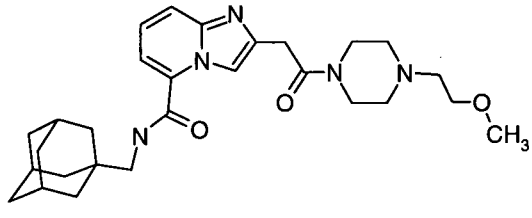
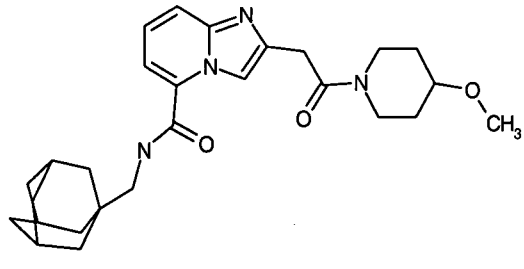
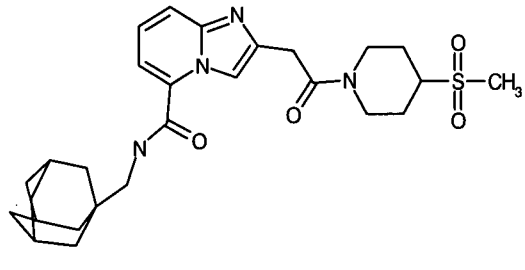
	Compound	Name	MS	R_T	IC_{50}
8		5-N-(adamantan-1-ylmethyl)--(2-hydroxyethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	397.20	1.27	*
9		5-N-(adamantan-1-ylmethyl)--(2-hydroxyethyl)--methylimidazo[1,2-a]pyridine-2,5-dicarboxamide	411.21	1.26	*
10		5-N-(adamantan-1-ylmethyl)--(2-aminoethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	396.22	1.22	*
11		5-N-(adamantan-1-ylmethyl)--[2-(dimethylamino)ethyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	424.25	1.22	*
12		N-(adamantan-1-ylmethyl)-2-[(isobutylamino)methyl]imidazo[1,2-a]pyridine-5-carboxamide	395.27	1.25	*

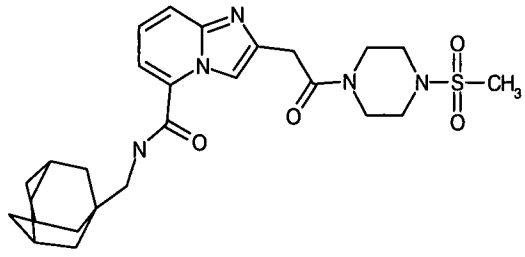
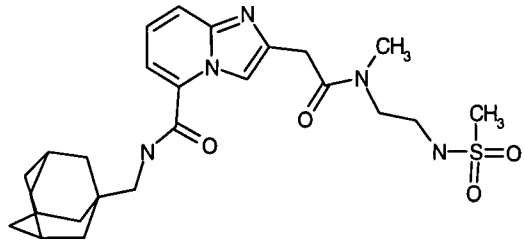
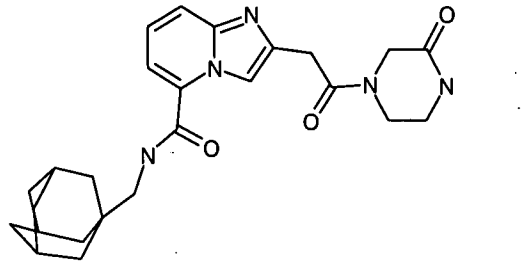
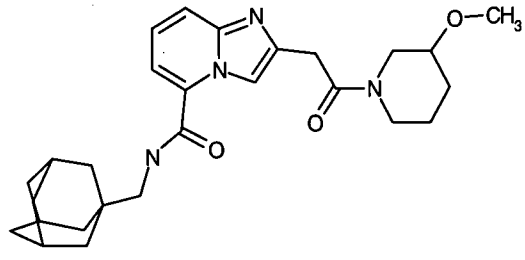
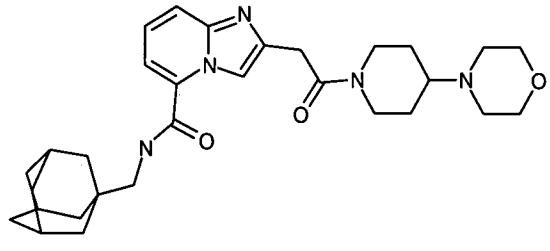
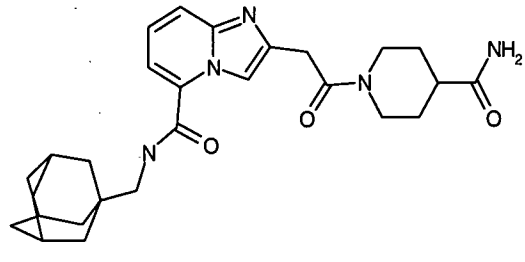
	Compound	Name	MS	R_T	IC_{50}
13		N-(adamantan-1-ylmethyl)-2-{[4-(2-hydroxyethyl)piperazin-1-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	452.26	1.17	*
14		5-N-(adamantan-1-ylmethyl)--methylimidazo[1,2-a]pyridine-2,5-dicarboxamide	367.20	1.29	*
15		ethyl 5-[(adamantan-1-ylmethyl)carbamoyl]-3-chloroimidazo[1,2-a]pyridine-2-carboxylate	416.14	1.34	*
16		{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}acetic acid	368.16	1.23	*
17		N-(adamantan-1-ylmethyl)-2-[2-(ethylamino)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	395.22	1.2	*
18		N-(adamantan-1-ylmethyl)-2-[2-(isobutylamino)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	423.24	1.28	*

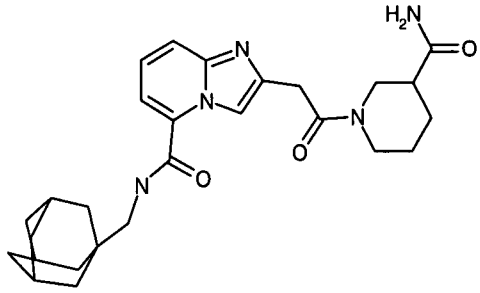
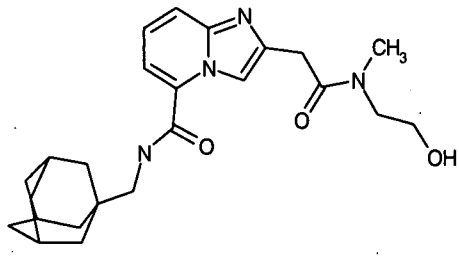
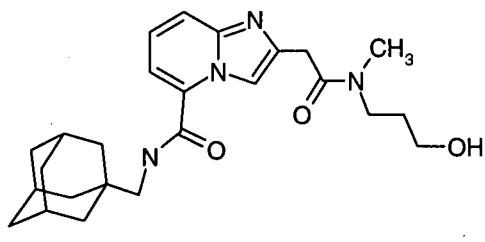
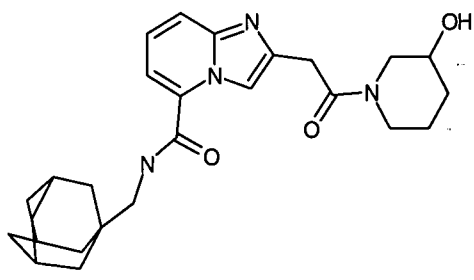
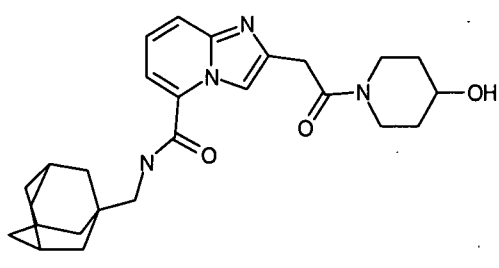
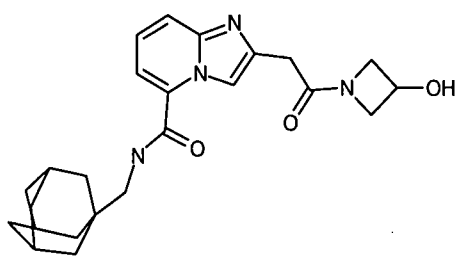
	Compound	Name	MS	R_T	IC_{50}
19		N-(adamantan-1-ylmethyl)-2-(2-{[2-(dimethylamino)ethyl]amino}-2-oxoethyl)imidazo[1,2-a]pyridine-5-carboxamide			
20		N-(adamantan-1-ylmethyl)-2-(2-{[2-(dimethylamino)-2-oxoethyl]amino}-2-oxoethyl)imidazo[1,2-a]pyridine-5-carboxamide	452.22	1.22	*
21		N-(adamantan-1-ylmethyl)-2-[2-({2-[(2-methoxyethyl)(methyl)amino]-2-oxoethyl}amino)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	496.21	1.21	
22		N-(adamantan-1-ylmethyl)-2-{2-[(2-morpholin-4-yl-2-oxoethyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide			
23		N-(adamantan-1-ylmethyl)-2-{2-[(3-amino-3-oxopropyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide			
24		N-(adamantan-1-ylmethyl)-2-{2-[(2-amino-2-oxoethyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	423.23	1.26	*
25		N-(adamantan-1-ylmethyl)-2-{2-[(2-amino-1-methyl-2-oxoethyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	438.20	1.2	*

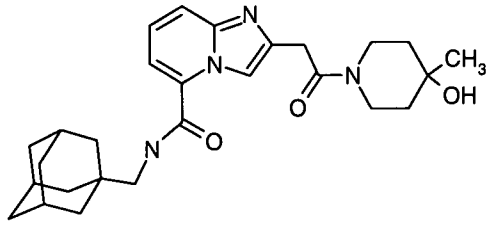
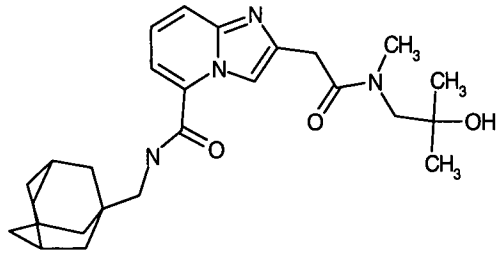
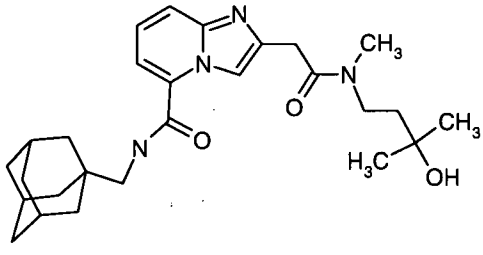
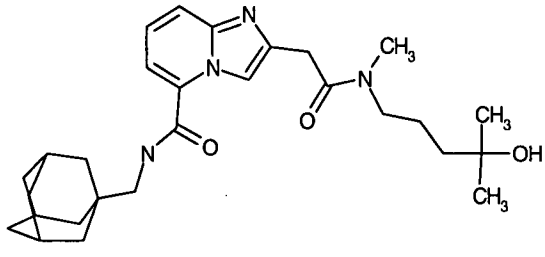
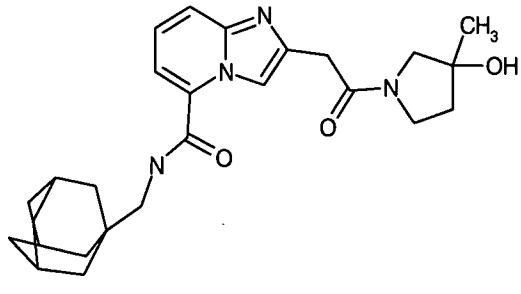
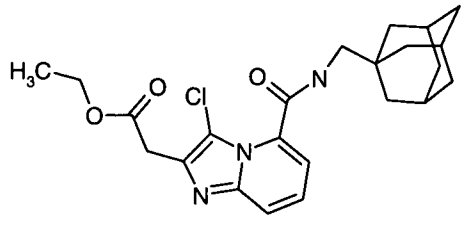
	Compound	Name	MS	R_T	IC_{50}
26		N-(adamantan-1-ylmethyl)-2-{2-[(2-hydroxyethyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	411.21	1.21	*
27		N-(adamantan-1-ylmethyl)-2-{2-[(3-hydroxypropyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	425.22	1.21	*
28	Chiral 	N-(adamantan-1-ylmethyl)-2-(2-{[(2R)-2-hydroxypropyl]amino}-2-oxoethyl)imidazo[1,2-a]pyridine-5-carboxamide	425.23	1.22	*
29	Chiral 	N-(adamantan-1-ylmethyl)-2-(2-{[(2S)-2-hydroxypropyl]amino}-2-oxoethyl)imidazo[1,2-a]pyridine-5-carboxamide	425.22	1.21	*
30		N-(adamantan-1-ylmethyl)-2-{2-[(2-hydroxybutyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	439.22	1.24	*
31		N-(adamantan-1-ylmethyl)-2-{2-[(3-hydroxybutyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	395.22	1.22	*

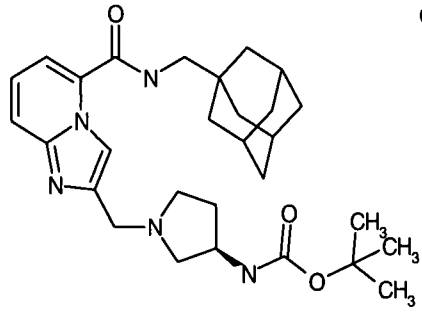
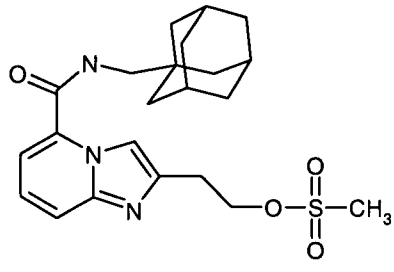
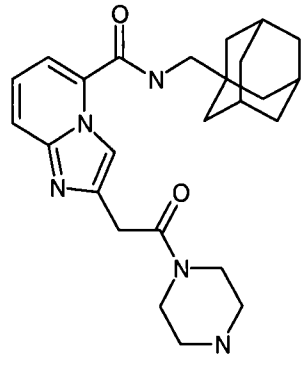
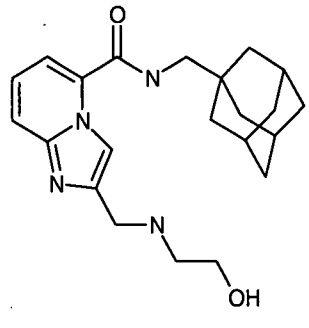
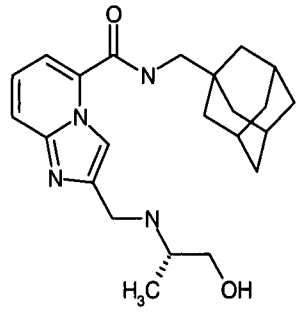
	Compound	Name	MS	R_T	IC_{50}
32	 Chiral	N-(adamantan-1-ylmethyl)-2-(2-{[(1R)-1-(hydroxymethyl)-2-methylpropyl]amino}-2-oxoethyl)imidazo[1,2-a]pyridine-5-carboxamide	453.24	1.25	*
33		N-(adamantan-1-ylmethyl)-2-{2-[(2-hydroxypropyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	425.22	1.22	*
34		N-(adamantan-1-ylmethyl)-2-{2-[4-(methoxymethyl)piperidin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	479.24	1.26	*
35		N-(adamantan-1-ylmethyl)-2-{2-[4-(2-methoxyethyl)piperidin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	493.25	1.27	*
36		N-(adamantan-1-ylmethyl)-2-[2-(4-methylpiperazin-1-yl)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide			
37		N-(adamantan-1-ylmethyl)-2-{2-[methyl(tetrahydrofuran-3-yl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	451.22	1.23	*

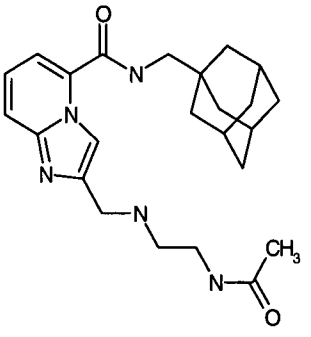
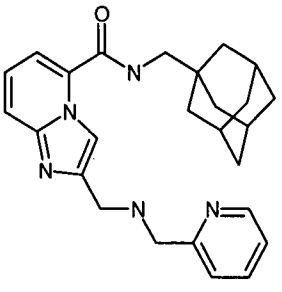
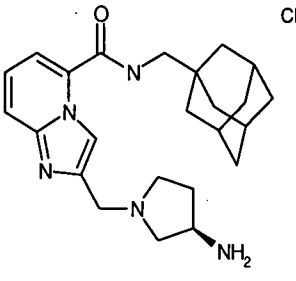
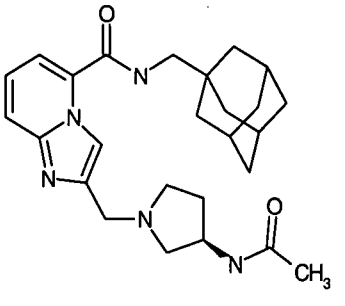
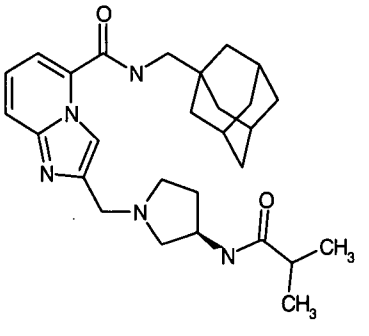
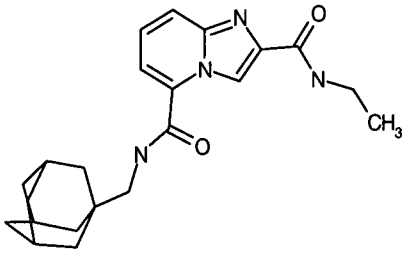
	Compound	Name	MS	R_T	IC_{50}
38		N-(adamantan-1-ylmethyl)-2-(2-{[2-(dimethylamino)ethyl](methyl)amino}-2-oxoethyl)imidazo[1,2-a]pyridine-5-carboxamide			
39		N-(adamantan-1-ylmethyl)-2-{2-[methyl(1-methylpyrrolidin-3-yl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	560.73	1.4	*
40		N-(adamantan-1-ylmethyl)-2-{2-[3-(dimethylamino)pyrrolidin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide			
41		N-(adamantan-1-ylmethyl)-2-{2-[4-(2-methoxyethyl)piperazin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	494.24	1.17	
42		N-(adamantan-1-ylmethyl)-2-[2-(4-methoxypiperidin-1-yl)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	465.23	1.24	*
43		N-(adamantan-1-ylmethyl)-2-{2-[4-(methylsulfonyl)piperidin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	513.17	1.21	*

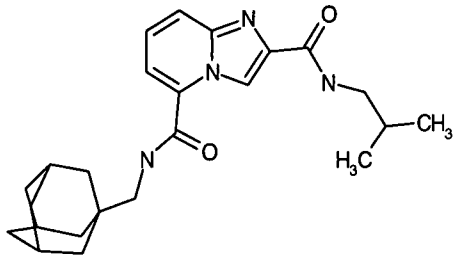
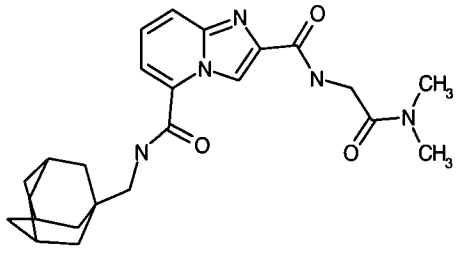
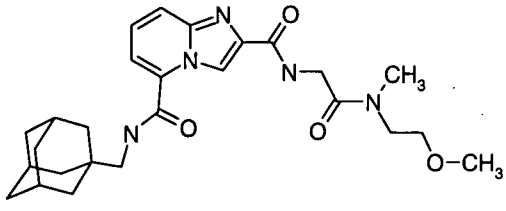
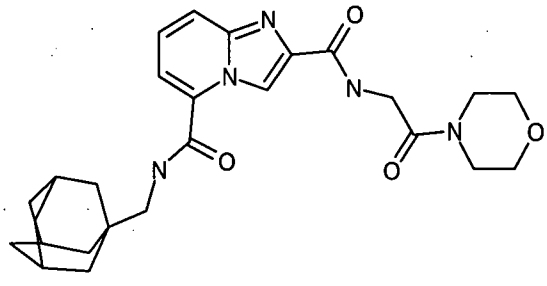
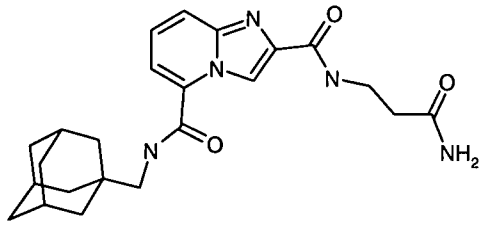
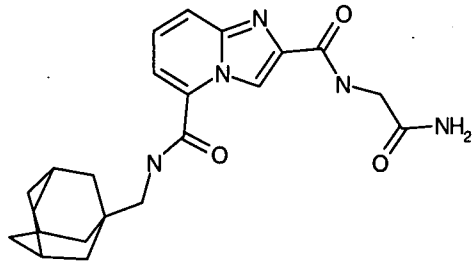
	Compound	Name	MS	R_T	IC_{50}
44		N-(adamantan-1-ylmethyl)-2-{2-[4-(methylsulfonyl)piperazin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	514.17	1.21	*
45		N-(adamantan-1-ylmethyl)-2-[2-(methyl{2-[(methylsulfonyl)amino]ethyl}amino)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	502.18	1.21	*
46		N-(adamantan-1-ylmethyl)-2-[2-oxo-2-(3-oxopiperazin-1-yl)ethyl]imidazo[1,2-a]pyridine-5-carboxamide	450.20	1.21	*
47		N-(adamantan-1-ylmethyl)-2-[2-(3-methoxypiperidin-1-yl)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	465.23	1.25	*
48		N-(adamantan-1-ylmethyl)-2-[2-(4-morpholin-4-ylpiperidin-1-yl)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	520.24	1.17	
49		N-(adamantan-1-ylmethyl)-2-[2-(4-carbamoylpiperidin-1-yl)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	368.17	1.2	*

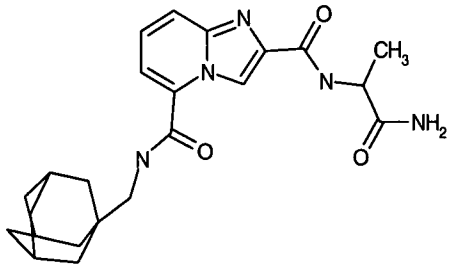
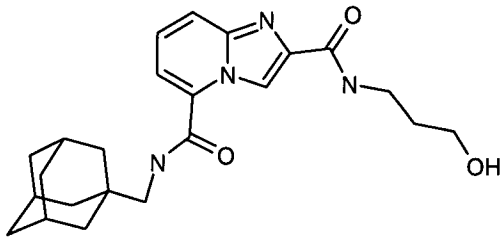
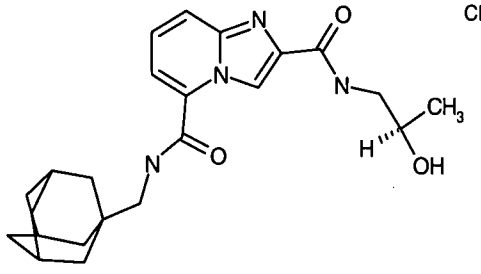
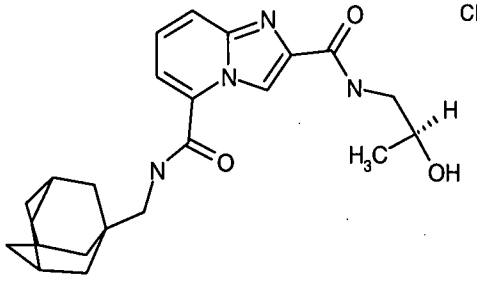
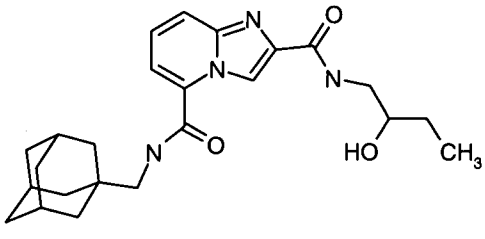
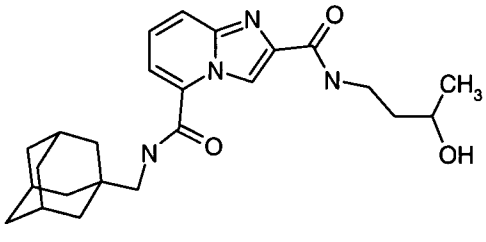
	Compound	Name	MS	R_T	IC_{50}
50		N-(adamantan-1-ylmethyl)-2-[2-(3-carbamoylpiperidin-1-yl)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	478.21	1.22	*
51		N-(adamantan-1-ylmethyl)-2-{2-[(2-hydroxyethyl)(methyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	425.21	1.21	*
52		N-(adamantan-1-ylmethyl)-2-{2-[(3-hydroxypropyl)(methyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	367.17	1.21	
53		N-(adamantan-1-ylmethyl)-2-[2-(3-hydroxypiperidin-1-yl)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	451.21	1.22	*
54		N-(adamantan-1-ylmethyl)-2-[2-(4-hydroxypiperidin-1-yl)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	451.21	1.22	*
55		N-(adamantan-1-ylmethyl)-2-[2-(3-hydroxyazetidin-1-yl)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	423.21	1.24	*

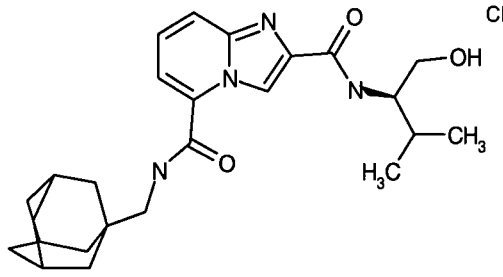
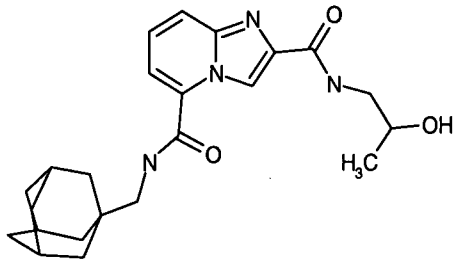
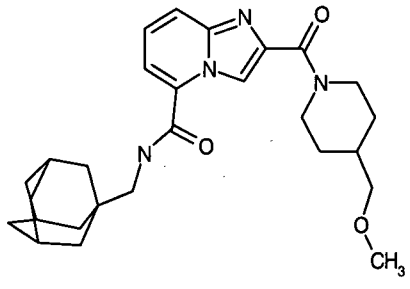
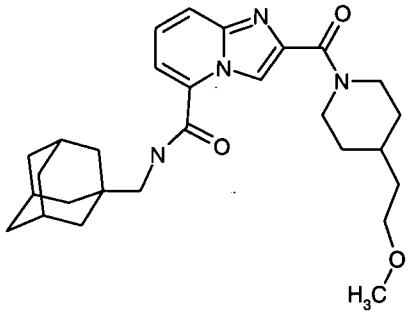
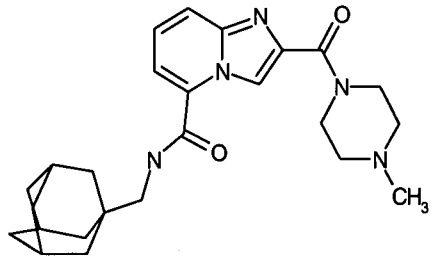
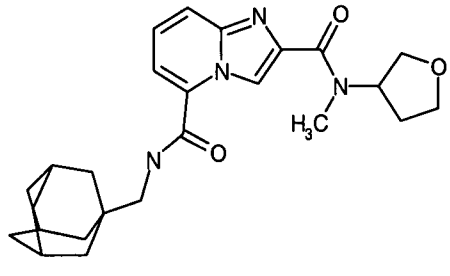
	Compound	Name	MS	R_T	IC_{50}
56		N-(adamantan-1-ylmethyl)-2-[2-(4-hydroxy-4-methylpiperidin-1-yl)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	465.22	1.23	*
57		N-(adamantan-1-ylmethyl)-2-{2-[(2-hydroxy-2-methylpropyl)(methyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	453.22	1.24	*
58		N-(adamantan-1-ylmethyl)-2-{2-[(3-hydroxy-3-methylbutyl)(methyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	467.22	1.25	*
59		N-(adamantan-1-ylmethyl)-2-{2-[(4-hydroxy-4-methylpentyl)(methyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	481.23	1.25	*
60		N-(adamantan-1-ylmethyl)-2-[2-(3-hydroxy-3-methylpyrrolidin-1-yl)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	451.19	1.23	*
61		{5-[(Adamantan-1-ylmethyl)-carbamoyl]-3-chloro-imidazo[1,2-a]pyridin-2-yl}-acetic acid ethyl ester	430.15	1.34	*

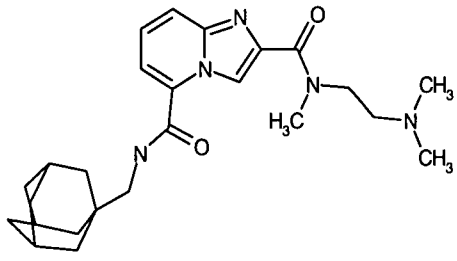
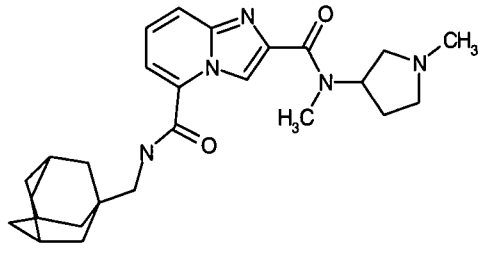
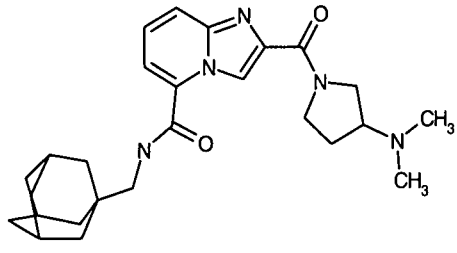
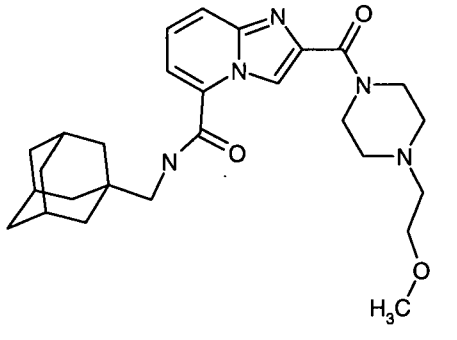
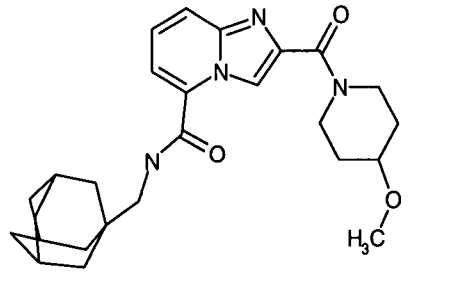
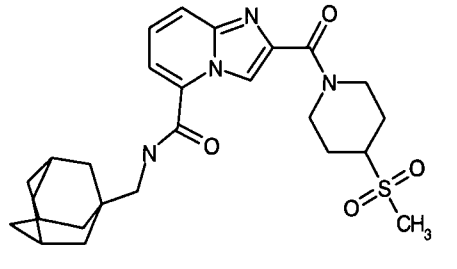
	Compound	Name	MS	R_T	IC_{50}
62	 Chiral	*tert*-butyl [(3R)-1-({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)pyrrolidin-3-yl]carbamate	508.26	1.25	*
63		methanesulfonic acid 2-{5-[(adamantan-1-ylmethyl)-carbamoyl]-imidazo[1,2-a]pyridin-2-yl}-ethyl ester	432.17	1.19	*
64		N-(adamantan-1-ylmethyl)-2-(2-oxo-2-piperazin-1-ylethyl)imidazo[1,2-a]pyridine-5-carboxamide	436.23	1.12	*
65		N-(adamantan-1-ylmethyl)-2-{[(2-hydroxyethyl)amino]methyl}imidazo[1,2-a]pyridine-5-carboxamide	383.23	1.18	*
66	 Chiral	N-(adamantan-1-ylmethyl)-2-({[(1S)-2-hydroxy-1-methylethyl]amino}methyl)imidazo[1,2-a]pyridine-5-carboxamide	397.24	1.19	*

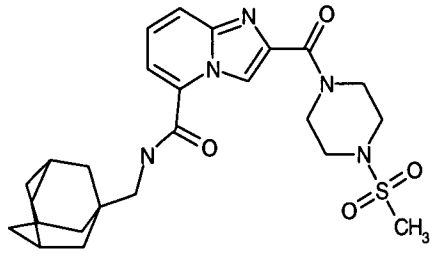
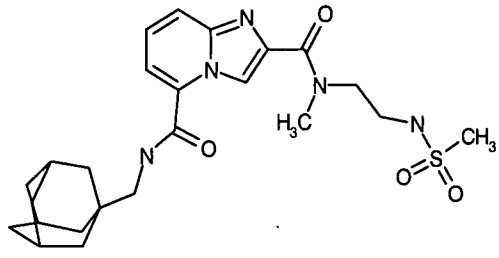
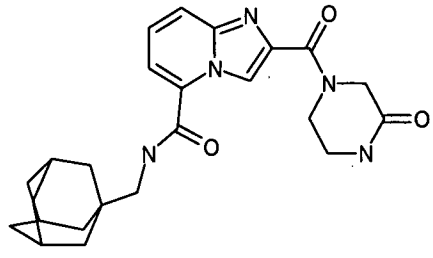
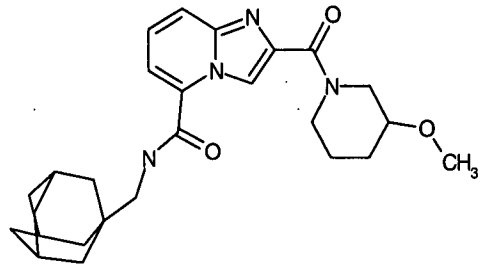
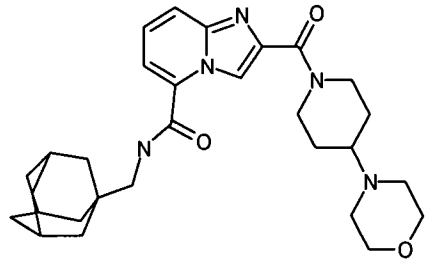
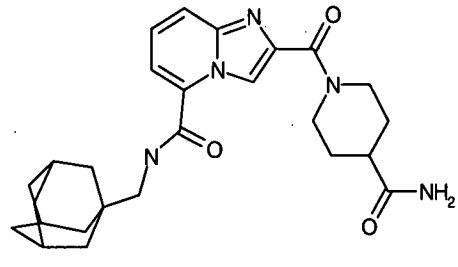
	Compound	Name	MS	R_T	IC_{50}
67		2-{[(2-acetamidoethyl)amino]methyl}-N-(adamantan-1-ylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	424.24	1.19	*
68		N-(adamantan-1-ylmethyl)-2-{[(pyridin-2-ylmethyl)amino]methyl}imidazo[1,2-a]pyridine-5-carboxamide	430.22	1.21	*
69	Chiral 	N-(adamantan-1-ylmethyl)-2-{[(3R)-3-aminopyrrolidin-1-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	408.25	1.14	*
70		2-[(3-acetamidopyrrolidin-1-yl)methyl]-N-(adamantan-1-ylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	450.25	1.19	*
71		N-(adamantan-1-ylmethyl)-2-{[3-(isobutyrylamino)pyrrolidin-1-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	478.27	1.22	*
72		5-N-(adamantan-1-ylmethyl)--ethylimidazo[1,2-a]pyridine-2,5-dicarboxamide	381.22	1.31	*

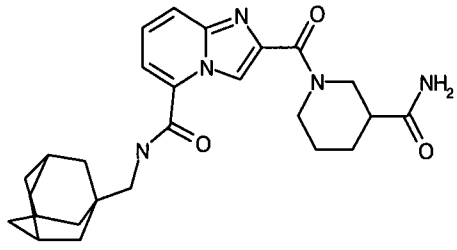
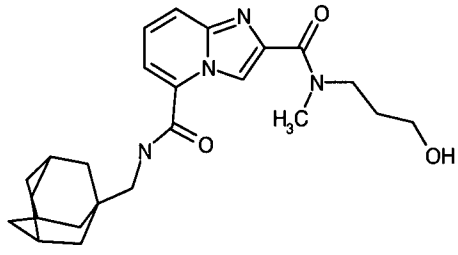
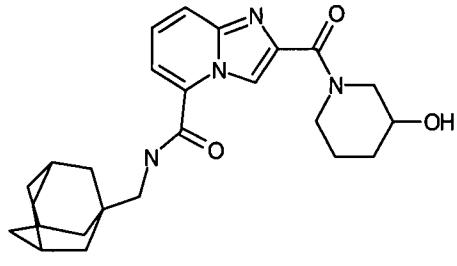
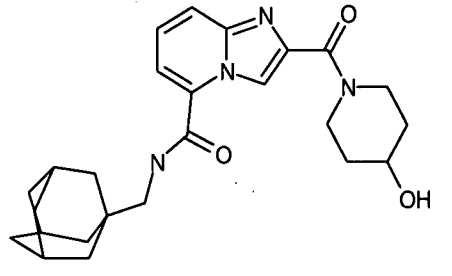
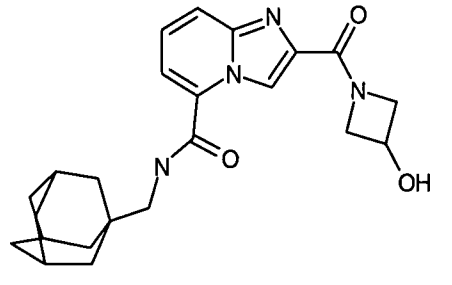
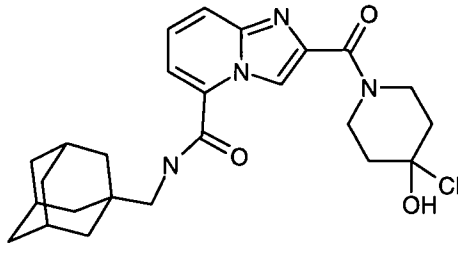
	Compound	Name	MS	R_T	IC_{50}
73		5-N-(adamantan-1-ylmethyl)--isobutylimidazo[1,2-a]pyridine-2,5-dicarboxamide	409.25	1.35	*
74		5-N-(adamantan-1-ylmethyl)--[2-(dimethylamino)-2-oxoethyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	438.23	1.29	*
75		5-N-(adamantan-1-ylmethyl)--{2-[(2-methoxyethyl)(methyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-2,5-dicarboxamide	482.23	1.3	*
76		5-N-(adamantan-1-ylmethyl)--(2-morpholin-4-yl-2-oxoethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide			*
77		5-N-(adamantan-1-ylmethyl)--(3-amino-3-oxopropyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide			*
78		5-N-(adamantan-1-ylmethyl)--(2-amino-2-oxoethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	410.21	1.26	*

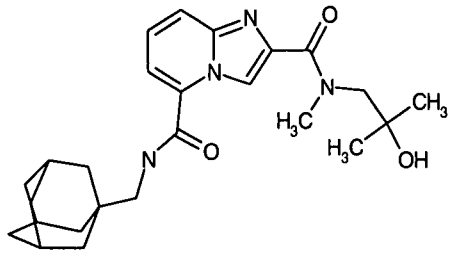
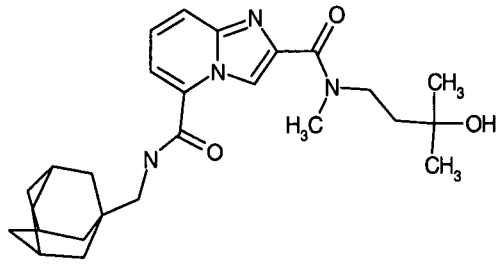
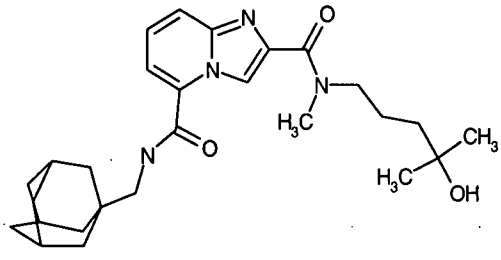
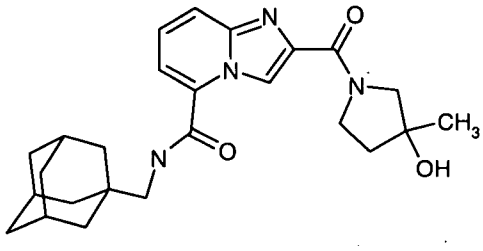
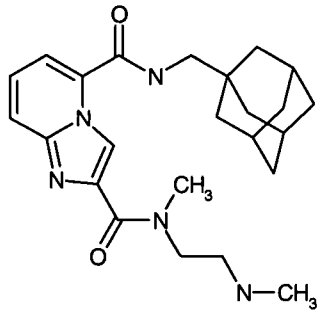
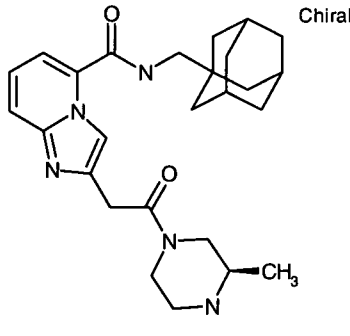
	Compound	Name	MS	R_T	IC_{50}
79		5-N-(adamantan-1-ylmethyl)--(2-amino-1-methyl-2-oxoethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	424.21	1.27	*
80		5-N-(adamantan-1-ylmethyl)--(3-hydroxypropyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	411.23	1.28	*
81	 Chiral	5-N-(adamantan-1-ylmethyl)--[(2R)-2-hydroxypropyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	411.23	1.29	*
82	 Chiral	5-N-(adamantan-1-ylmethyl)--[(2S)-2-hydroxypropyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	411.23	1.28	*
83		5-N-(adamantan-1-ylmethyl)--(2-hydroxybutyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	425.25	1.31	*
84		5-N-(adamantan-1-ylmethyl)--(3-hydroxybutyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	425.23	1.3	*

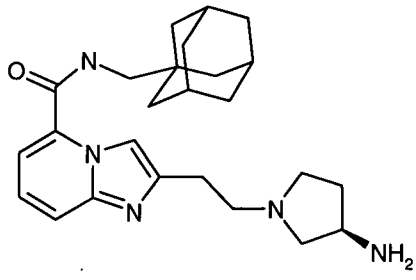
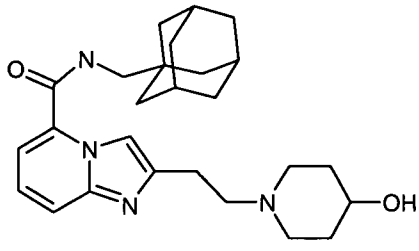
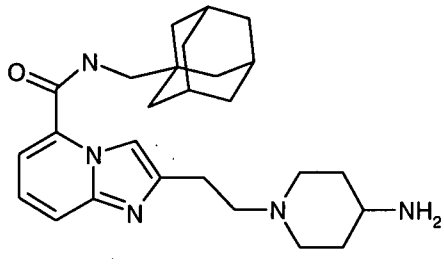
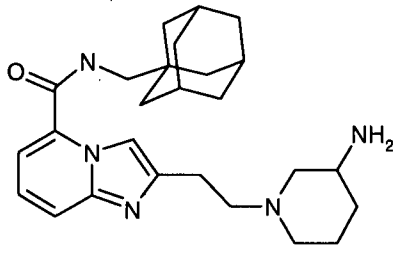
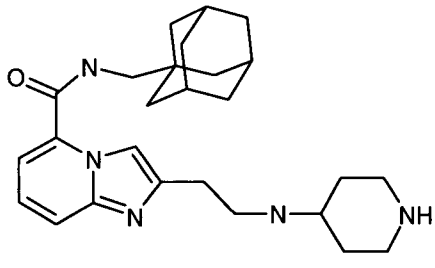
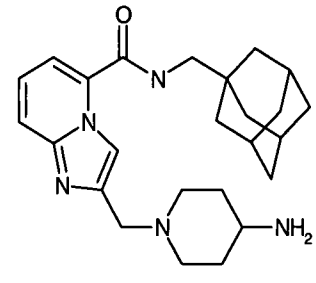
	Compound	Name	MS	R_T	IC_{50}
85	 Chiral	5-N-(adamantan-1-ylmethyl)--[(1R)-1-(hydroxymethyl)-2-methylpropyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	439.25	1.33	*
86		5-N-(adamantan-1-ylmethyl)--(2-hydroxypropyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	411.22	1.29	*
87		N-(adamantan-1-ylmethyl)-2-{[4-(methoxymethyl)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	465.25	1.34	*
88		N-(adamantan-1-ylmethyl)-2-{[4-(2-methoxyethyl)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	479.26	1.35	*
89		N-(adamantan-1-ylmethyl)-2-[(4-methylpiperazin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	436.24	1.22	*
90		5-N-(adamantan-1-ylmethyl)--methyl--(tetrahydrofuran-3-yl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	437.24	1.3	*

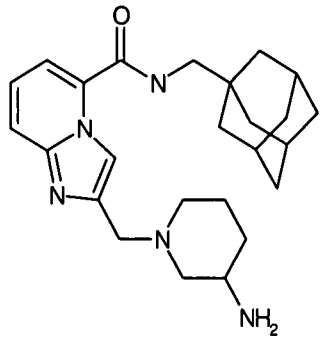
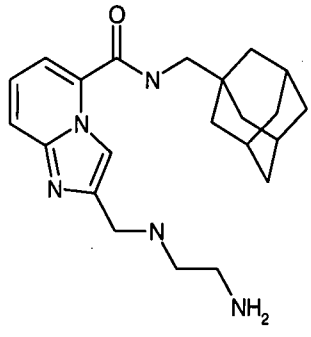
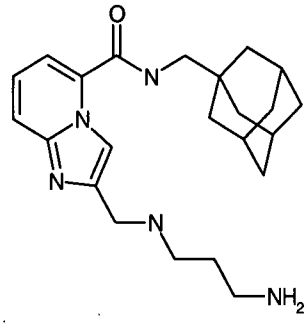
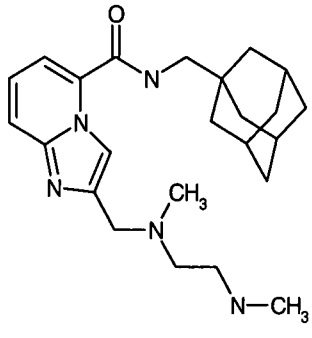
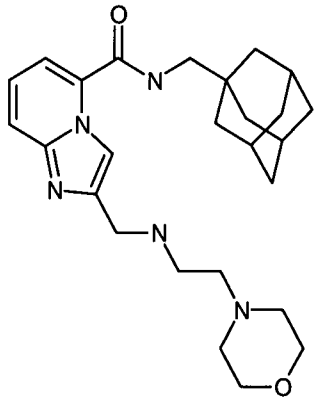
	Compound	Name	MS	R_T	IC_{50}
91		5-N-(adamantan-1-ylmethyl)--[2-(dimethylamino)ethyl]--methylimidazo[1,2-a]pyridine-2,5-dicarboxamide	438.22	1.22	*
92		5-N-(adamantan-1-ylmethyl)--methyl--(1-methylpyrrolidin-3-yl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	450.26	1.22	*
93		N-(adamantan-1-ylmethyl)-2-{[3-(dimethylamino)pyrrolidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	450.25	1.22	*
94		N-(adamantan-1-ylmethyl)-2-{[4-(2-methoxyethyl)piperazin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	480.25	1.23	*
95		N-(adamantan-1-ylmethyl)-2-[(4-methoxypiperidin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	451.24	1.33	*
96		N-(adamantan-1-ylmethyl)-2-{[4-(methylsulfonyl)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	499.18	1.27	*

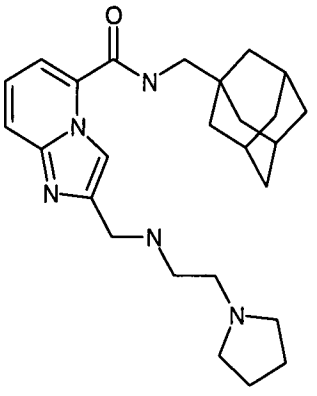
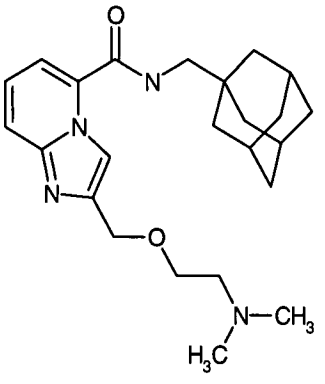
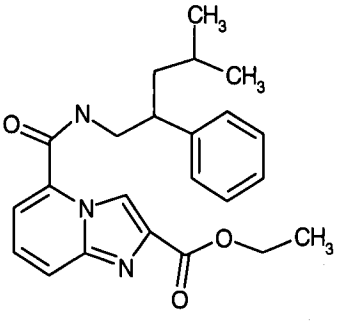
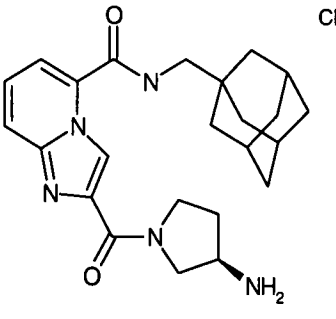
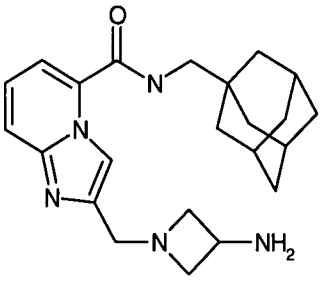
	Compound	Name	MS	R_T	IC_{50}
97		N-(adamantan-1-ylmethyl)-2-{[4-(methylsulfonyl)piperazin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	500.18	1.29	*
98		5-N-(adamantan-1-ylmethyl)--methyl--{2-[(methylsulfonyl)amino]ethyl}imidazo[1,2-a]pyridine-2,5-dicarboxamide	488.19	1.26	*
99		N-(adamantan-1-ylmethyl)-2-[(3-oxopiperazin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	436.22	1.27	*
100		N-(adamantan-1-ylmethyl)-2-[(3-methoxypiperidin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	451.23	1.33	*
101		N-(adamantan-1-ylmethyl)-2-[(4-morpholin-4-ylpiperidin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	506.26	1.22	*
102		N-(adamantan-1-ylmethyl)-2-[(4-carbamoylpiperidin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	464.23	1.26	*

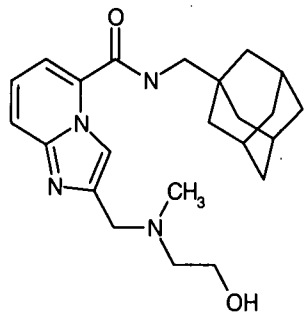
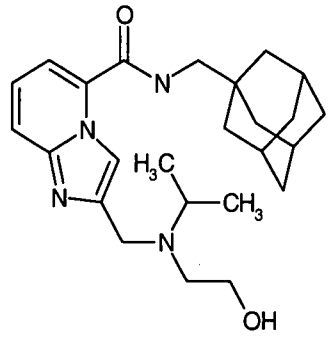
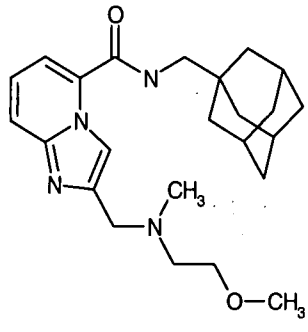
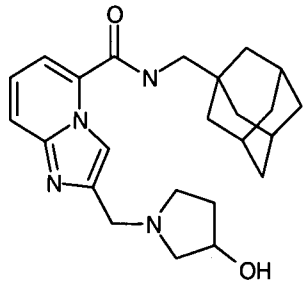
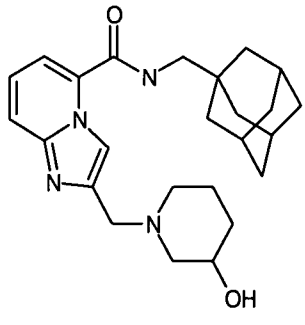
	Compound	Name	MS	R_T	IC_{50}
103		N-(adamantan-1-ylmethyl)-2-[(3-carbamoylpiperidin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	464.24	1.28	*
104		5-N-(adamantan-1-ylmethyl)--(3-hydroxypropyl)--methylimidazo[1,2-a]pyridine-2,5-dicarboxamide	500.16	1.27	
105		N-(adamantan-1-ylmethyl)-2-[(3-hydroxypiperidin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	437.24	1.29	*
106		N-(adamantan-1-ylmethyl)-2-[(4-hydroxypiperidin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	437.22	1.28	*
107		N-(adamantan-1-ylmethyl)-2-[(3-hydroxyazetidin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	409.24	1.34	*
108		N-(adamantan-1-ylmethyl)-2-[(4-hydroxy-4-methylpiperidin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	451.26	1.28	*

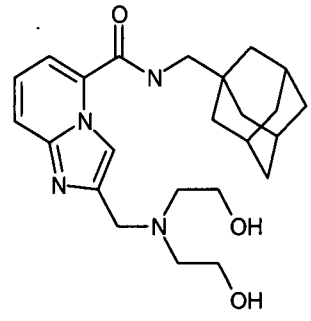
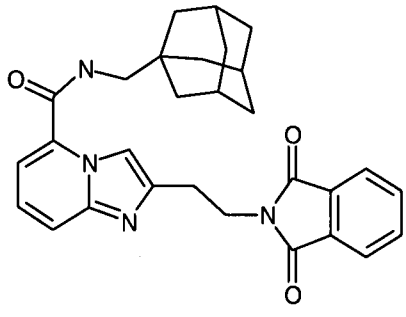
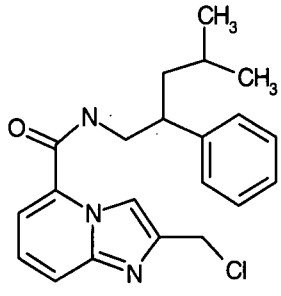
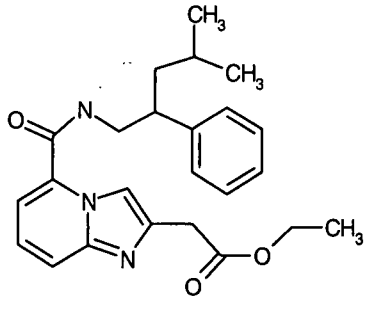
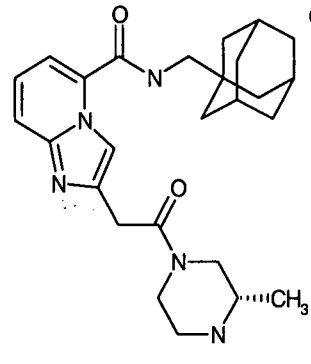
	Compound	Name	MS	R_T	IC_{50}
109		5-N-(adamantan-1-ylmethyl)--(2-hydroxy-2-methylpropyl)--methylimidazo[1,2-a]pyridine-2,5-dicarboxamide	439.24	1.3	*
110		5-N-(adamantan-1-ylmethyl)--(3-hydroxy-3-methylbutyl)--methylimidazo[1,2-a]pyridine-2,5-dicarboxamide	453.26	1.31	*
111		5-N-(adamantan-1-ylmethyl)--(4-hydroxy-4-methylpentyl)--methylimidazo[1,2-a]pyridine-2,5-dicarboxamide	467.26	1.32	*
112		N-(adamantan-1-ylmethyl)-2-[(3-hydroxy-3-methylpyrrolidin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	437.24	1.28	*
113		5-N-(adamantan-1-ylmethyl)--methyl--[2-(methylamino)ethyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	424.22	1.22	*
114	 Chiral	N-(adamantan-1-ylmethyl)-2-{2-[(3R)-3-methylpiperazin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	450.26	1.16	*

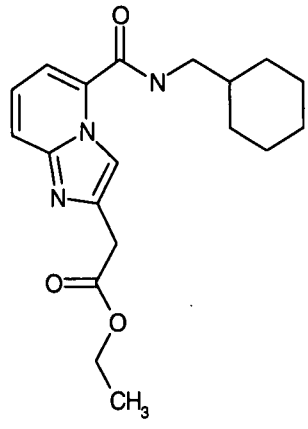
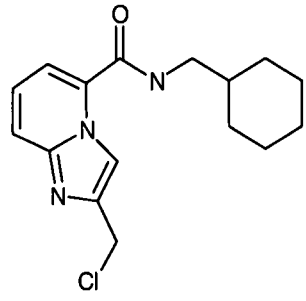
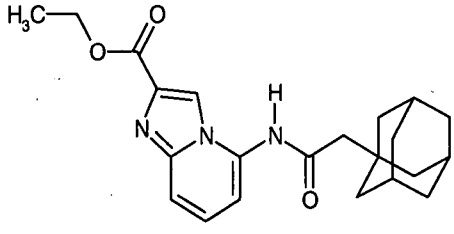
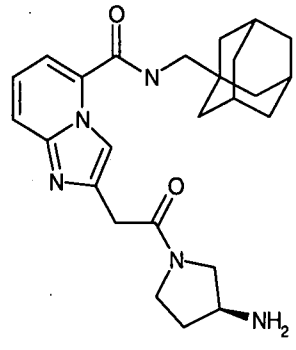
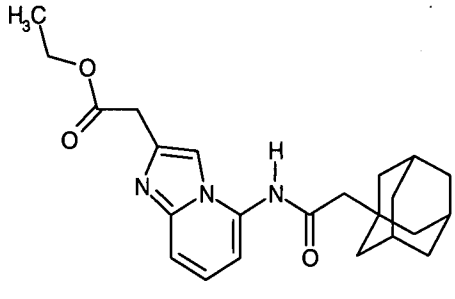
Compound	Name	MS	R_T	IC_{50}
115 	2-[2-((R)-3-amino-pyrrolidin-1-yl)-ethyl]-imidazo[1,2-a]pyridine-5-carboxylic acid (adamantan-1-ylmethyl)-amide	422.28	1.15	*
116 	2-[2-(4-hydroxy-piperidin-1-yl)-ethyl]-imidazo[1,2-a]pyridine-5-carboxylic acid (adamantan-1-ylmethyl)-amide	437.27	1.17	*
117 	2-[2-(4-amino-piperidin-1-yl)-ethyl]-imidazo[1,2-a]pyridine-5-carboxylic acid (adamantan-1-ylmethyl)-amide	436.28	1.15	*
118 	2-[2-(3-amino-piperidin-1-yl)-ethyl]-imidazo[1,2-a]pyridine-5-carboxylic acid (adamantan-1-ylmethyl)-amide	436.28	1.15	*
119 	2-[2-(piperidin-4-ylamino)-ethyl]-imidazo[1,2-a]pyridine-5-carboxylic acid (adamantan-1-ylmethyl)-amide	436.27	1.15	*
120 	N-(adamantan-1-ylmethyl)-2-[(4-aminopiperidin-1-yl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	422.27	1.17	*

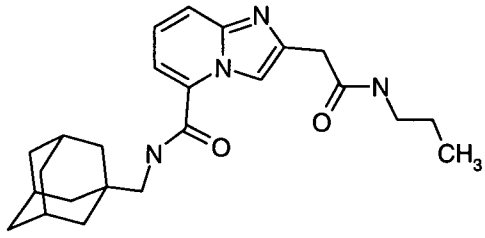
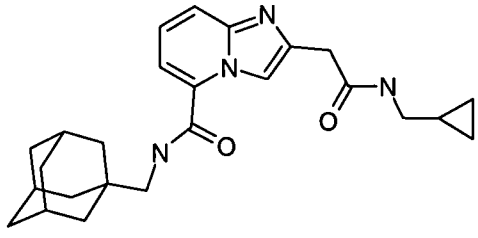
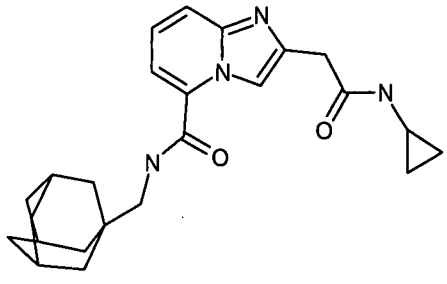
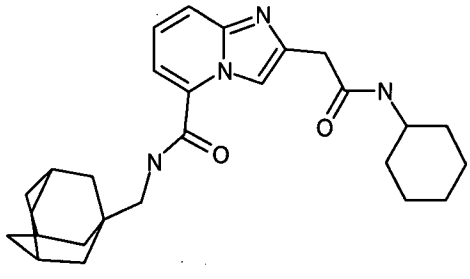
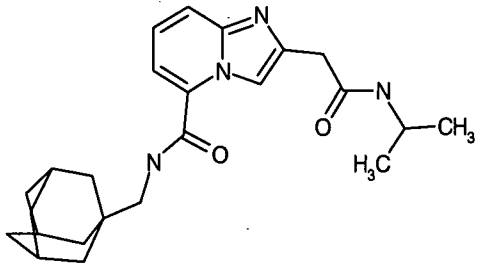
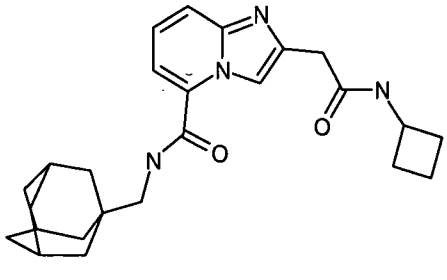
Compound		Name	MS	R_T	IC_{50}
121		N-(adamantan-1-ylmethyl)-2-[(3-aminopiperidin-1-yl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	422.27	1.17	*
122		N-(adamantan-1-ylmethyl)-2-{[(2-aminoethyl)amino]methyl}imidazo[1,2-a]pyridine-5-carboxamide	382.26	1.17	*
123		N-(adamantan-1-ylmethyl)-2-{[(3-aminopropyl)amino]methyl}imidazo[1,2-a]pyridine-5-carboxamide	396.28	1.17	*
124		N-(adamantan-1-ylmethyl)-2-({methyl[2-(methylamino)ethyl]amino}methyl)imidazo[1,2-a]pyridine-5-carboxamide	410.30	1.17	*
125		N-(adamantan-1-ylmethyl)-2-{[(2-morpholin-4-ylethyl)amino]methyl}imidazo[1,2-a]pyridine-5-carboxamide	452.27	1.18	*

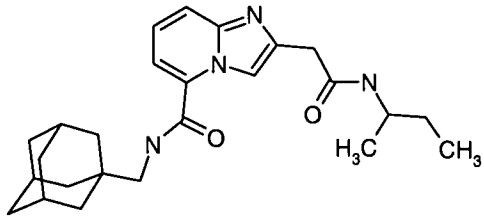
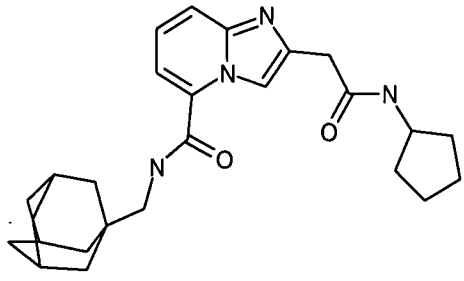
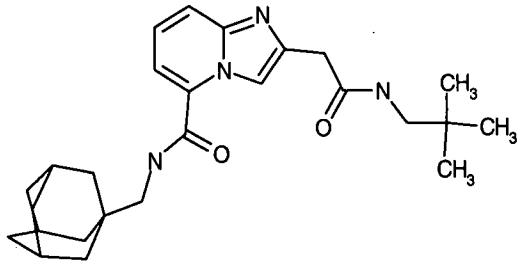
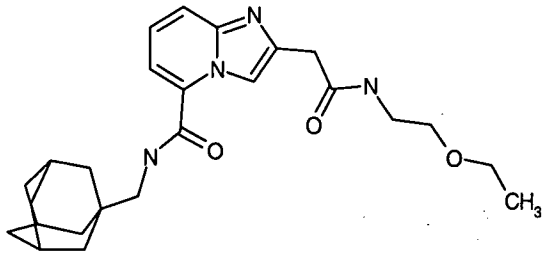
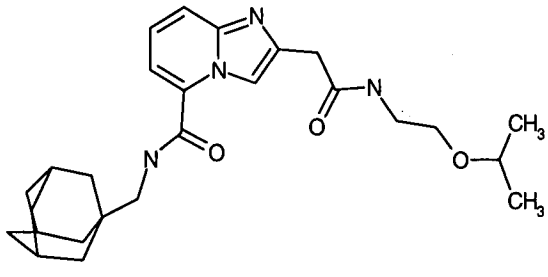
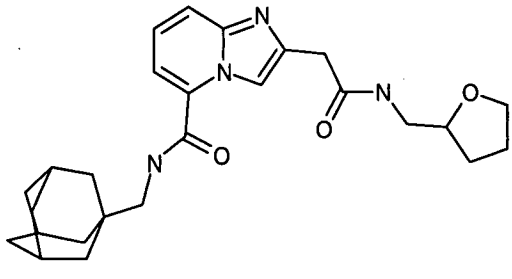
Compound		Name	MS	R_T	IC_{50}
126		N-(adamantan-1-ylmethyl)-2-{[(2-pyrrolidin-1-ylethyl)amino]methyl}imidazo[1,2-a]pyridine-5-carboxamide	436.29	1.17	*
127		N-(adamantan-1-ylmethyl)-2-{[2-(dimethylamino)ethoxy]methyl}imidazo[1,2-a]pyridine-5-carboxamide	411.25	1.18	*
128		ethyl 5-[(4-methyl-2-phenylpentyl)carbamoyl]imidazo[1,2-a]pyridine-2-carboxylate	394.20	1.34	*
129	 Chiral	N-(adamantan-1-ylmethyl)-2-{[(3R)-3-aminopyrrolidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	422.23	1.2	*
130		N-(adamantan-1-ylmethyl)-2-[(3-aminoazetidin-1-yl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	394.26	1.18	*

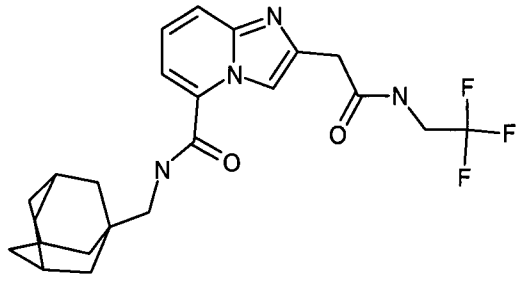
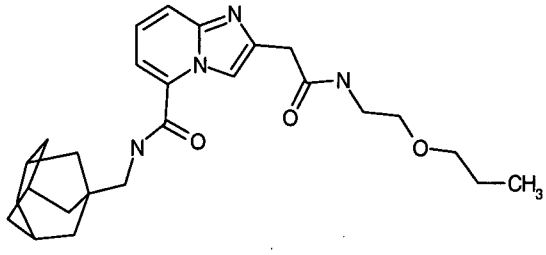
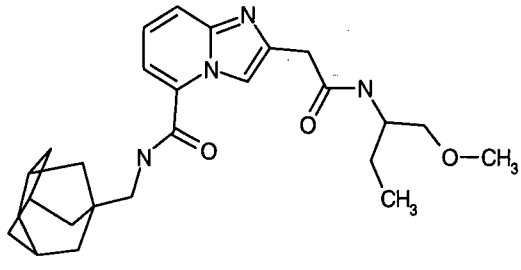
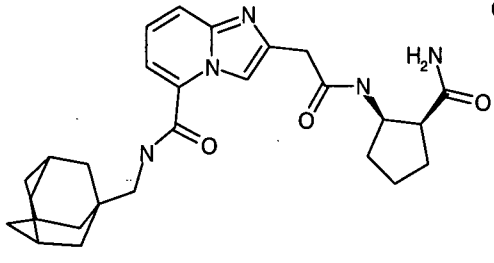
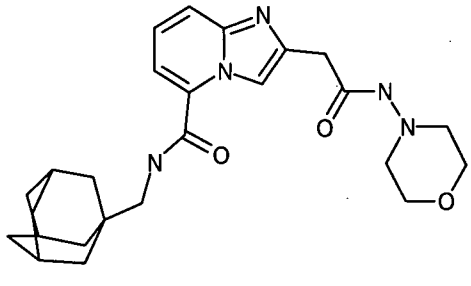
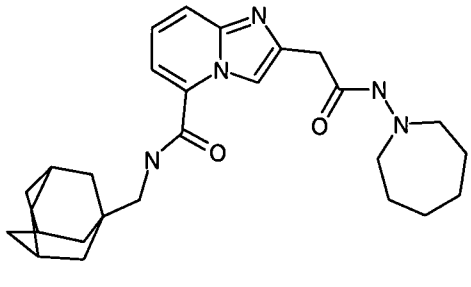
Compound		Name	MS	R_T	IC_{50}
131		N-(adamantan-1-ylmethyl)-2-{[(2-hydroxyethyl)(methyl)amino]methyl}imidazo[1,2-a]pyridine-5-carboxamide	397.25	1.08	*
132		N-(adamantan-1-ylmethyl)-2-{[(2-hydroxyethyl)(isopropyl)amino]methyl}imidazo[1,2-a]pyridine-5-carboxamide	425.28	1.17	*
133		N-(adamantan-1-ylmethyl)-2-{[(2-methoxyethyl)(methyl)amino]methyl}imidazo[1,2-a]pyridine-5-carboxamide	411.27	1.22	*
134		N-(adamantan-1-ylmethyl)-2-[(3-hydroxypyrrolidin-1-yl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	409.25	1.21	*
135		N-(adamantan-1-ylmethyl)-2-[(3-hydroxypiperidin-1-yl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	423.26	1.22	*

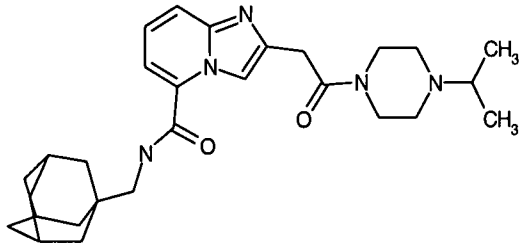
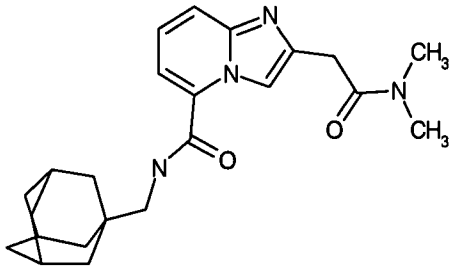
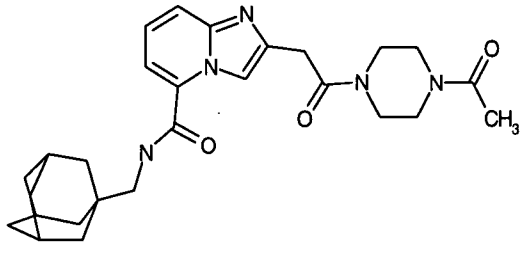
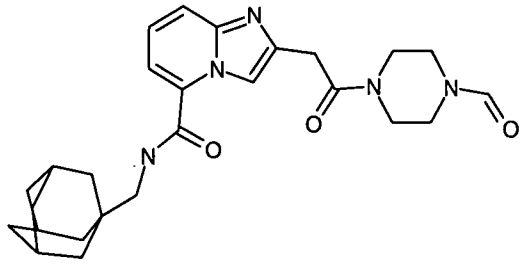
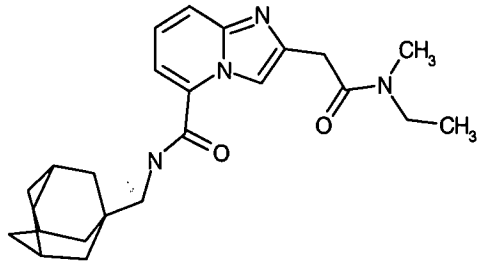
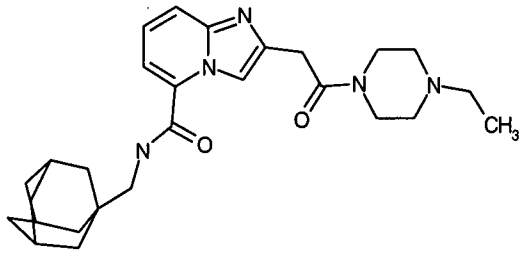
Compound		Name	MS	R_T	IC_{50}
136		N-(adamantan-1-ylmethyl)-2-{[bis(2-hydroxyethyl)amino]methyl}imidazo[1,2-a]pyridine-5-carboxamide	427.25	1.21	*
137		N-(adamantan-1-ylmethyl)-2-[2-(1,3-dioxo-1,3-dihydro-2H-isoindol-2-yl)ethyl]imidazo[1,2-a]pyridine-5-carboxamide	483.14	1.27	*
138		2-(chloromethyl)-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	370.16	1.27	*
139		ethyl {5-[(4-methyl-2-phenylpentyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}acetate	408.19	1.25	*
140	 Chiral	N-(adamantan-1-ylmethyl)-2-{2-[(3S)-3-methylpiperazin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	450.23	1.16	*

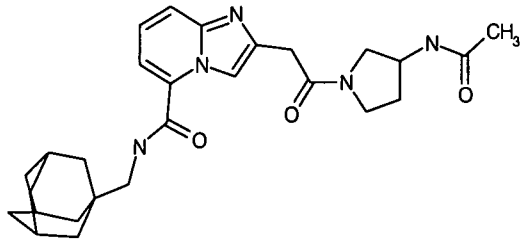
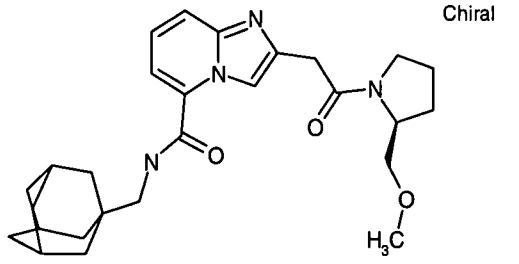
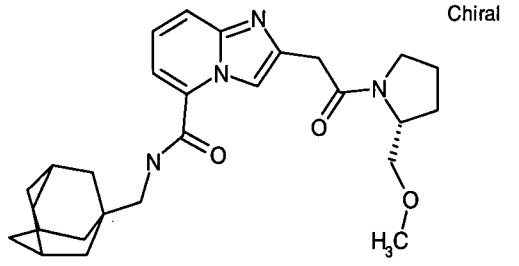
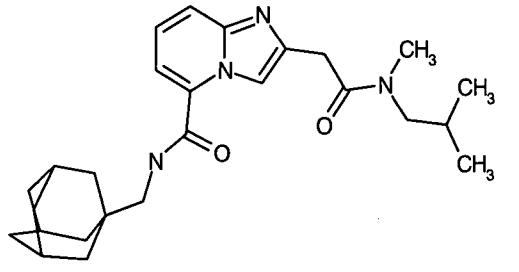
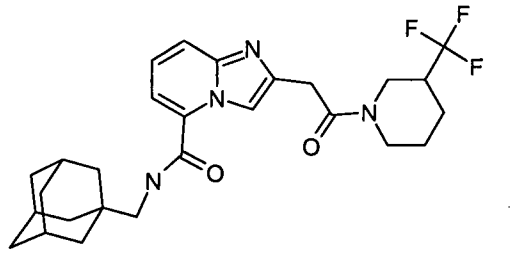
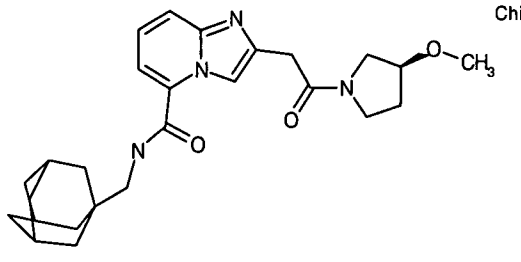
Compound		Name	MS	R_T	IC_{50}
141		ethyl {5-[(cyclohexylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}acetate	344.21	1.19	*
142		2-(chloromethyl)-N-(cyclohexylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	306.13	1.21	*
143		ethyl 5-[(adamantan-1-ylacetyl)amino]imidazo[1,2-a]pyridine-2-carboxylate	382.17	1.31	*
144		N-(adamantan-1-ylmethyl)-2-[2-(3-aminopyrrolidin-1-yl)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	436.22	1.16	*
145		ethyl {5-[(adamantan-1-ylacetyl)amino]imidazo[1,2-a]pyridin-2-yl}acetate			*

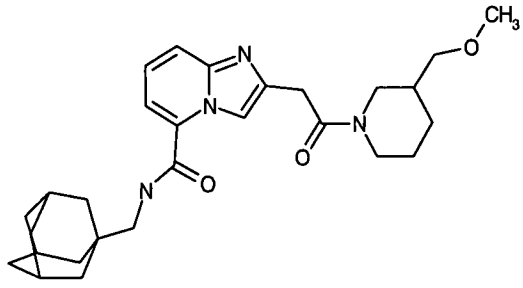
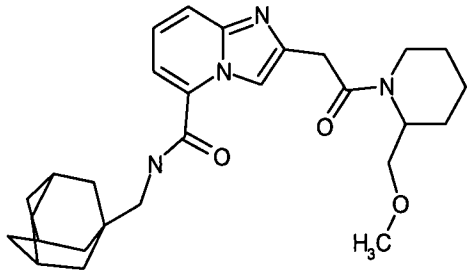
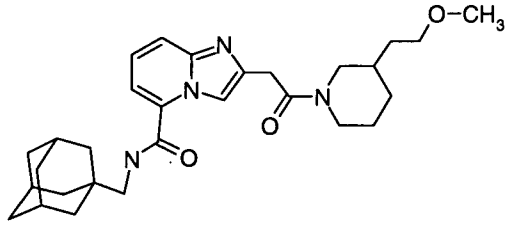
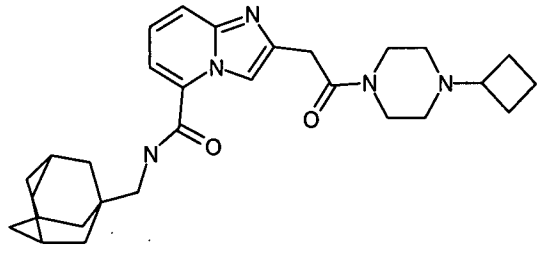
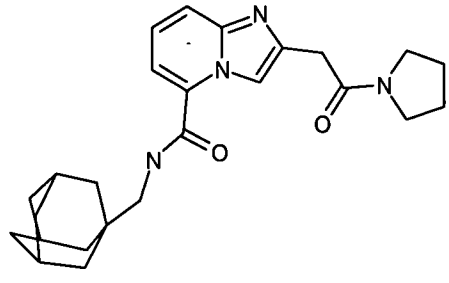
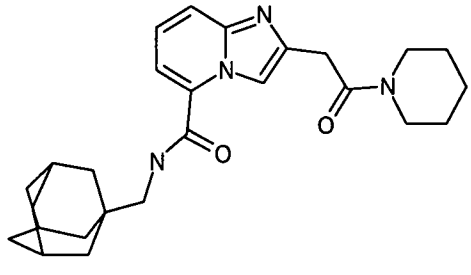
	Compound	Name	MS	R_T	IC_{50}
146		N-(adamantan-1-ylmethyl)-2-[2-oxo-2-(propylamino)ethyl]imidazo[1,2-a]pyridine-5-carboxamide	409.21	1.25	*
147		N-(adamantan-1-ylmethyl)-2-{2-[(cyclopropylmethyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	421.21	1.27	*
148		N-(adamantan-1-ylmethyl)-2-[2-(cyclopropylamino)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	407.20	1.24	*
149		N-(adamantan-1-ylmethyl)-2-[2-(cyclohexylamino)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide			*
150		N-(adamantan-1-ylmethyl)-2-[2-(isopropylamino)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	409.22	1.25	*
151		N-(adamantan-1-ylmethyl)-2-[2-(cyclobutylamino)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	421.21	1.26	*

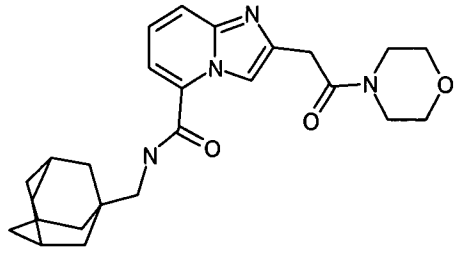
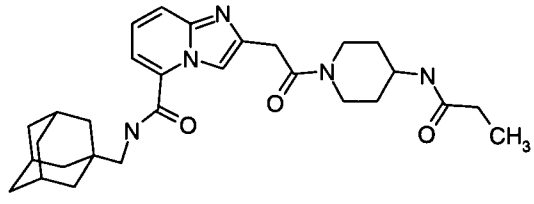
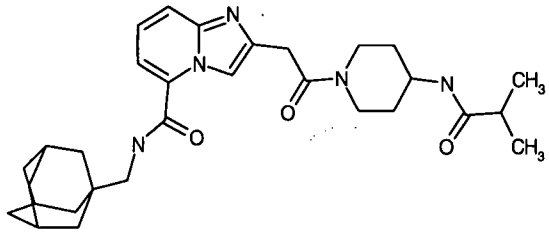
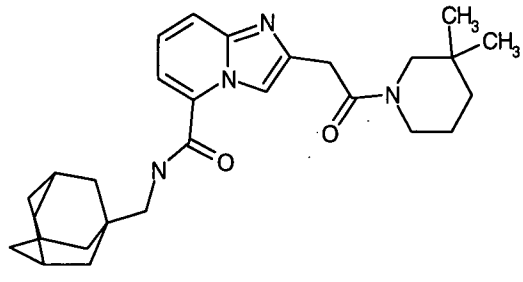
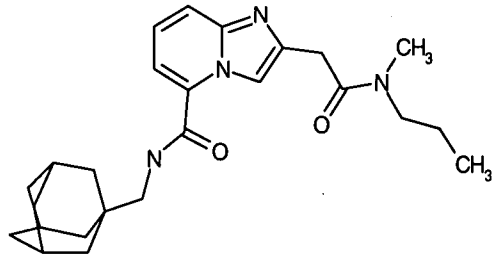
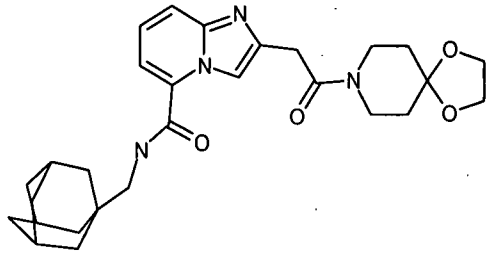
	Compound	Name	MS	R_T	IC_{50}
152		N-(adamantan-1-ylmethyl)-2-[2-(sec-butylamino)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	423.24	1.28	*
153		N-(adamantan-1-ylmethyl)-2-[2-(cyclopentylamino)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	435.24	1.28	*
154		N-(adamantan-1-ylmethyl)-2-{2-[(2,2-dimethylpropyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	437.25	1.29	*
155		N-(adamantan-1-ylmethyl)-2-{2-[(2-ethoxyethyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	439.22	1.24	*
156		N-(adamantan-1-ylmethyl)-2-{2-[(2-isopropoxyethyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	453.23	1.26	*
157		N-(adamantan-1-ylmethyl)-2-{2-oxo-2-[(tetrahydrofuran-2-ylmethyl)amino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	451.22	1.24	*

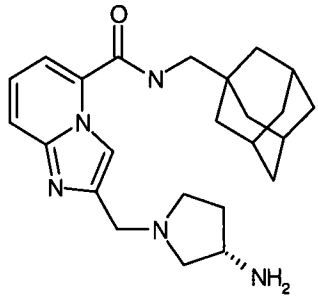
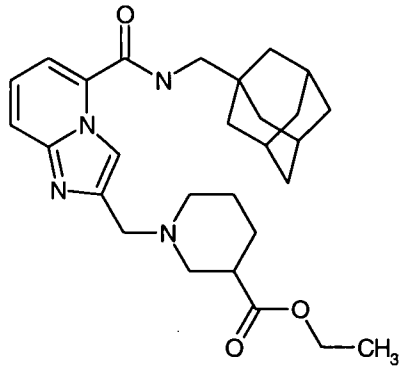
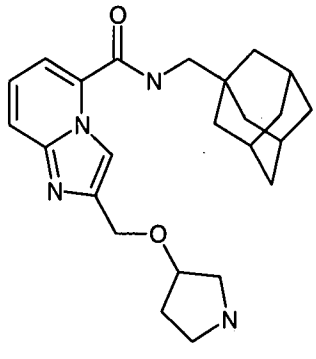
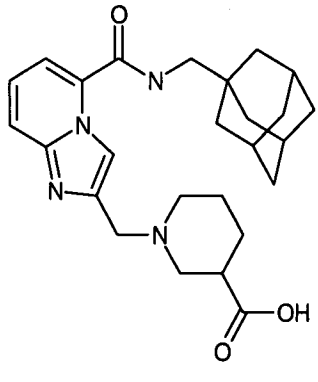
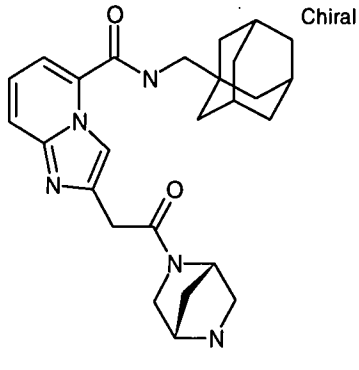
	Compound	Name	MS	R_T	IC_{50}
158		N-(adamantan-1-ylmethyl)-2-{2-oxo-2-[(2,2,2-trifluoroethyl)amino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	449.17	1.25	*
159		N-(adamantan-1-ylmethyl)-2-{2-oxo-2-[(2-propoxyethyl)amino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	453.25	1.27	*
160		N-(adamantan-1-ylmethyl)-2-(2-{[1-(methoxymethyl)propyl]amino}-2-oxoethyl)imidazo[1,2-a]pyridine-5-carboxamide	453.24	1.26	*
161	 Chiral	N-(adamantan-1-ylmethyl)-2-(2-{[(1R,2S)-2-carbamoylcyclopentyl]amino}-2-oxoethyl)imidazo[1,2-a]pyridine-5-carboxamide	478.23	1.23	*
162		N-(adamantan-1-ylmethyl)-2-[2-(morpholin-4-ylamino)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	452.22	1.22	*
163		N-(adamantan-1-ylmethyl)-2-[2-(azepan-1-ylamino)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide			*

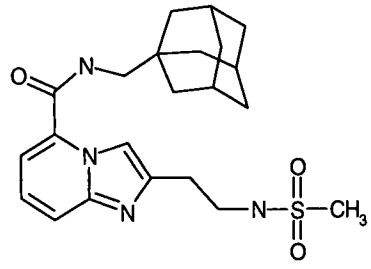
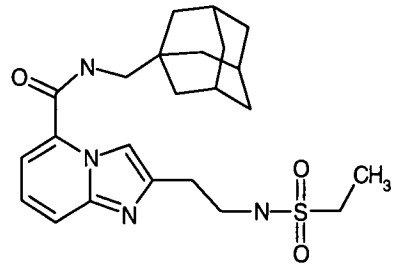
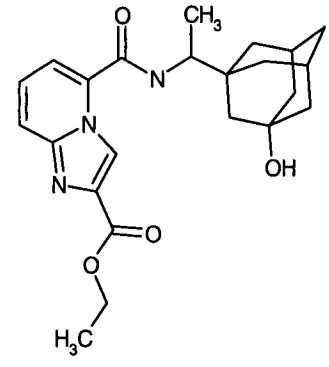
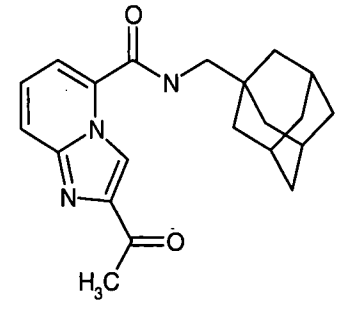
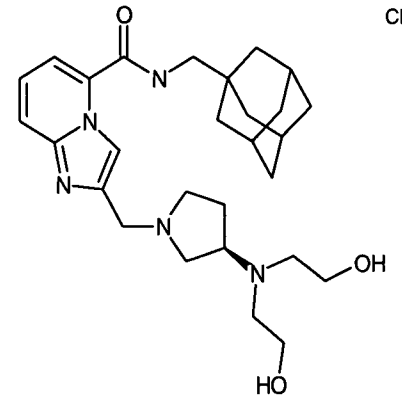
	Compound	Name	MS	R_T	IC_{50}
164		N-(adamantan-1-ylmethyl)-2-[2-(4-isopropylpiperazin-1-yl)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	478.25	1.17	*
165		N-(adamantan-1-ylmethyl)-2-[2-(dimethylamino)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide			*
166		2-[2-(4-acetylpiperazin-1-yl)-2-oxoethyl]-N-(adamantan-1-ylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	478.21	1.21	*
167		N-(adamantan-1-ylmethyl)-2-[2-(4-formylpiperazin-1-yl)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	464.22	1.21	*
168		N-(adamantan-1-ylmethyl)-2-{2-[ethyl(methyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	409.23	1.24	*
169		N-(adamantan-1-ylmethyl)-2-[2-(4-ethylpiperazin-1-yl)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	464.26	1.16	*

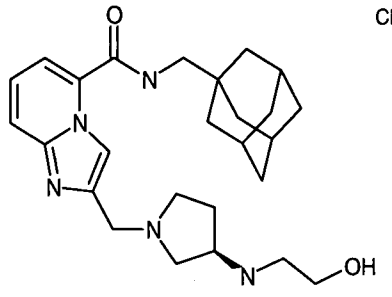
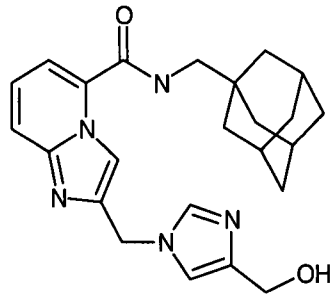
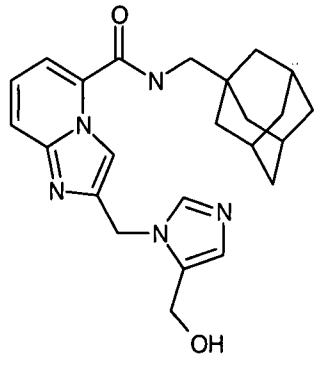
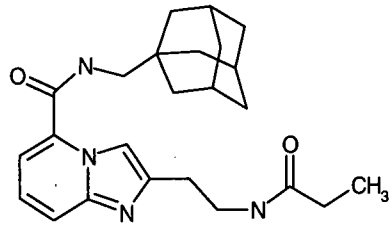
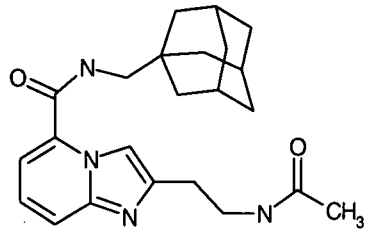
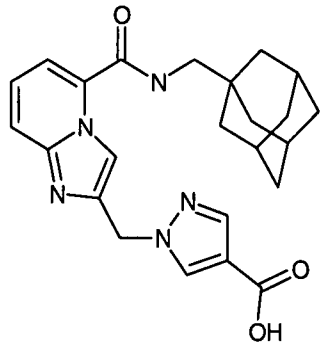
	Compound	Name	MS	R_T	IC_{50}
170		2-[2-(3-acetamidopyrrolidin-1-yl)-2-oxoethyl]-N-(adamantan-1-ylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	478.21	1.21	*
171	 Chiral	N-(adamantan-1-ylmethyl)-2-{2-[(2S)-2-(methoxymethyl)pyrrolidin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	465.24	1.25	*
172	 Chiral	N-(adamantan-1-ylmethyl)-2-{2-[(2R)-2-(methoxymethyl)pyrrolidin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	465.25	1.25	*
173		N-(adamantan-1-ylmethyl)-2-{2-[isobutyl(methyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	437.27	1.27	*
174		N-(adamantan-1-ylmethyl)-2-{2-oxo-2-[3-(trifluoromethyl)piperidin-1-yl]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	503.20	1.28	*
175	 Chiral	N-(adamantan-1-ylmethyl)-2-{2-[(3S)-3-methoxypyrrolidin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	451.25	1.23	*

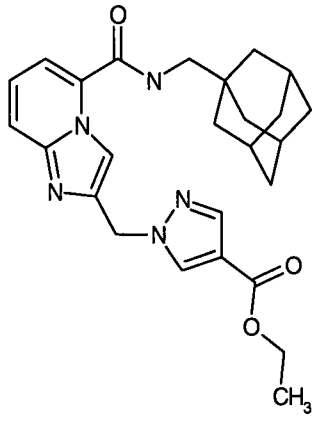
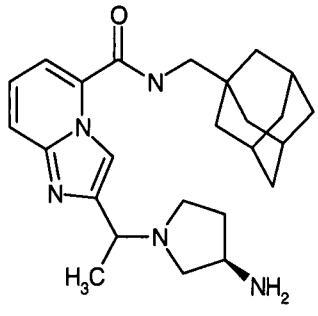
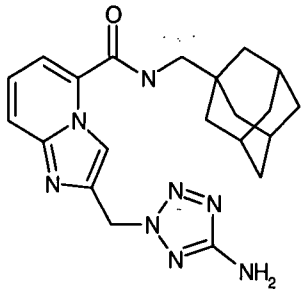
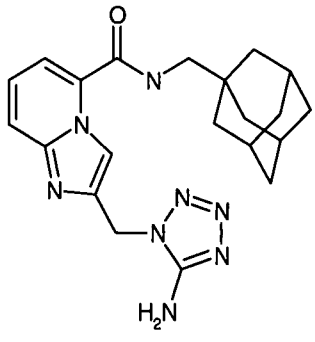
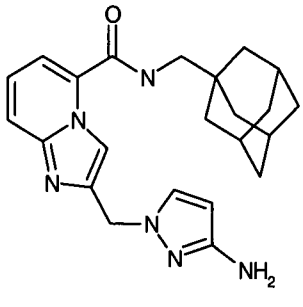
	Compound	Name	MS	R_T	IC_{50}
176		N-(adamantan-1-ylmethyl)-2-{2-[3-(methoxymethyl)piperidin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	479.25	1.26	*
177		N-(adamantan-1-ylmethyl)-2-{2-[2-(methoxymethyl)piperidin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	479.26	1.26	*
178		N-(adamantan-1-ylmethyl)-2-{2-[3-(2-methoxyethyl)piperidin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	493.25	1.27	*
179		N-(adamantan-1-ylmethyl)-2-[2-(4-cyclobutylpiperazin-1-yl)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	490.26	1.17	*
180		N-(adamantan-1-ylmethyl)-2-(2-oxo-2-pyrrolidin-1-ylethyl)imidazo[1,2-a]pyridine-5-carboxamide	421.23	1.24	*
181		N-(adamantan-1-ylmethyl)-2-(2-oxo-2-piperidin-1-ylethyl)imidazo[1,2-a]pyridine-5-carboxamide	435.25	1.26	*

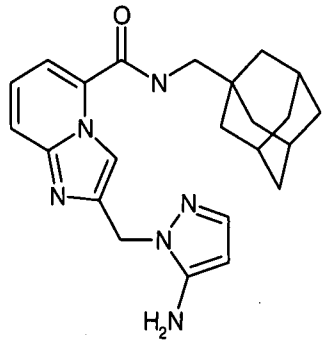
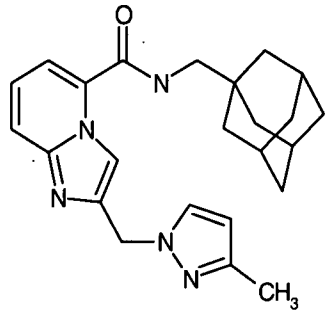
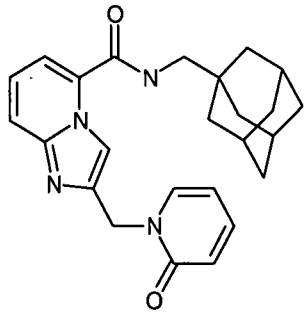
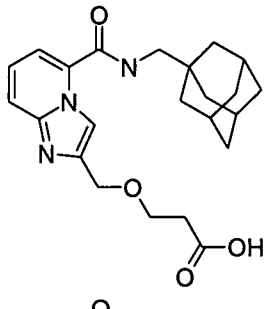
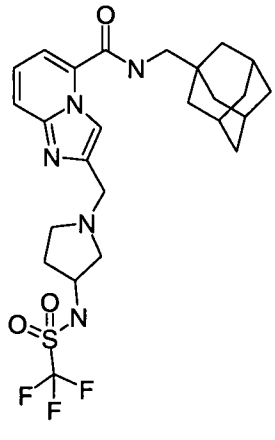
	Compound	Name	MS	R_T	IC_{50}
182		N-(adamantan-1-ylmethyl)-2-(2-morpholin-4-yl-2-oxoethyl)imidazo[1,2-a]pyridine-5-carboxamide	437.23	1.22	*
183		N-(adamantan-1-ylmethyl)-2-{2-oxo-2-[4-(propionylamino)piperidin-1-yl]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	506.23	1.23	*
184		N-(adamantan-1-ylmethyl)-2-{2-[4-(isobutyrylamino)piperidin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	520.25	1.24	*
185		N-(adamantan-1-ylmethyl)-2-[2-(3,3-dimethylpiperidin-1-yl)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	463.25	1.3	*
186		N-(adamantan-1-ylmethyl)-2-{2-[methyl(propyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	423.25	1.26	*
187		N-(adamantan-1-ylmethyl)-2-[2-(1,4-dioxa-8-azaspiro[4.5]dec-8-yl)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	493.22	1.24	*

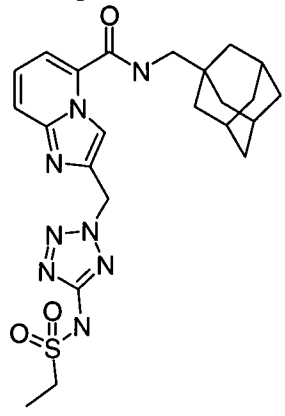
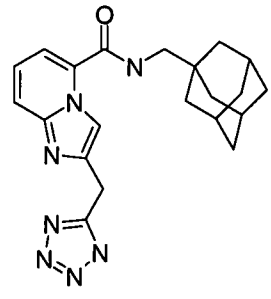
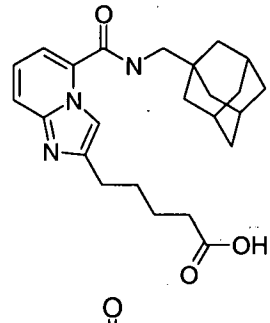
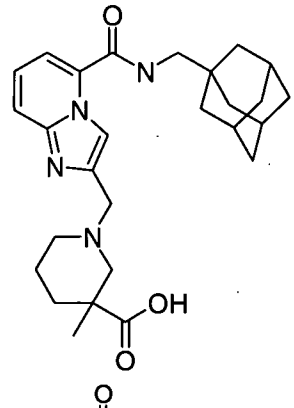
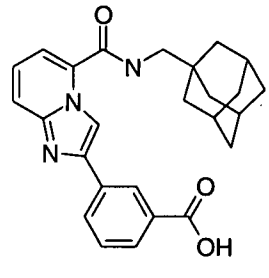
Compound		Name	MS	R_T	IC_{50}
188	 Chiral	N-(adamantan-1-ylmethyl)-2-{[(3S)-3-aminopyrrolidin-1-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	408.25	1.17	*
189		ethyl 1-({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)piperidine-3-carboxylate	479.25	1.25	*
190		N-(adamantan-1-ylmethyl)-2-[(pyrrolidin-3-yloxy)methyl]imidazo[1,2-a]pyridine-5-carboxamide	409.24	1.17	*
191		1-({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)piperidine-3-carboxylic acid	451.23	1.21	*
192	 Chiral	N-(adamantan-1-ylmethyl)-2-{2-[(1S,4S)-2,5-diazabicyclo[2.2.1]hept-2-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	448.24	1.15	*

Compound	Name	MS	R_T	IC_{50}
193 	N-(adamantan-1-ylmethyl)-2-{2-[(methylsulfonyl)amino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	431.20	1.39	*
194 	N-(adamantan-1-ylmethyl)-2-{2-[(ethylsulfonyl)amino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	445.22	1.4	*
195 	ethyl 5-{[1-(3-hydroxyadamantan-1-yl)ethyl]carbamoyl}imidazo[1,2-a]pyridine-2-carboxylate			
196 	2-acetyl-N-(adamantan-1-ylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	352.22	1.3	*
197  Chiral	N-(adamantan-1-ylmethyl)-2-({(3R)-3-[bis(2-hydroxyethyl)amino]pyrrolidin-1-yl}methyl)imidazo[1,2-a]pyridine-5-carboxamide	496.27	1.16	*

Compound	Chiral	Name	MS	R_T	IC_{50}
198		N-(adamantan-1-ylmethyl)-2-({(3R)-3-[(2-hydroxyethyl)amino]pyrrolidin-1-yl}methyl)imidazo[1,2-a]pyridine-5-carboxamide	452.27	1.17	*
199		N-(adamantan-1-ylmethyl)-2-{[4-(hydroxymethyl)-1H-imidazol-1-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	420.22	1.21	*
200		N-(adamantan-1-ylmethyl)-2-{[5-(hydroxymethyl)-1H-imidazol-1-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	420.21	1.21	*
201		N-(adamantan-1-ylmethyl)-2-[2-(propionylamino)ethyl]imidazo[1,2-a]pyridine-5-carboxamide	409.24	1.23	*
202		2-(2-acetamidoethyl)-N-(adamantan-1-ylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	395.23	1.22	*
203		1-({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)-1H-pyrazole-4-carboxylic acid			*

Compound		Name	MS	R_T	IC_{50}
204		ethyl 1-({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)-1H-pyrazole-4-carboxylate			*
205	 Chiral	N-(adamantan-1-ylmethyl)-2-{1-[(3R)-3-aminopyrrolidin-1-yl]ethyl}imidazo[1,2-a]pyridine-5-carboxamide			*
206		N-(adamantan-1-ylmethyl)-2-[(5-amino-2H-tetrazol-2-yl)methyl]imidazo[1,2-a]pyridine-5-carboxamide			*
207		N-(adamantan-1-ylmethyl)-2-[(5-amino-1H-tetrazol-1-yl)methyl]imidazo[1,2-a]pyridine-5-carboxamide			*
208		N-(adamantan-1-ylmethyl)-2-[(3-amino-1H-pyrazol-1-yl)methyl]imidazo[1,2-a]pyridine-5-carboxamide			*

Compound	Name	MS	R_T	IC_{50}
209 	N-(adamantan-1-ylmethyl)-2-[(5-amino-1H-pyrazol-1-yl)methyl]imidazo[1,2-a]pyridine-5-carboxamide			*
210 	N-(adamantan-1-ylmethyl)-2-[(3-methyl-1H-pyrazol-1-yl)methyl]imidazo[1,2-a]pyridine-5-carboxamide			*
211 	N-(adamantan-1-ylmethyl)-2-[(2-oxopyridin-1(2H)-yl)methyl]imidazo[1,2-a]pyridine-5-carboxamide			*
212 	3-{5-[(adamantan-1-ylmethyl)-carbamoyl]-imidazo[1,2-a]pyridin-2-ylmethoxy}-propionic acid			
213 	2-(3-trifluoromethanesulfonylamino-pyrrolidin-1-ylmethyl)-imidazo[1,2-a]pyridine-5-carboxylic acid (adamantan-1-ylmethyl)-amide			

Compound	Name	MS	R_T	IC_{50}
214 	2-(5-ethanesulfonylamino-tetrazol-2-ylmethyl)-imidazo[1,2-a]pyridine-5-carboxylic acid (adamantan-1-ylmethyl)-amide			
215 	2-(1H-tetrazol-5-ylmethyl)-imidazo[1,2-a]pyridine-5-carboxylic acid (adamantan-1-ylmethyl)-amide			
216 	5-{5-[(adamantan-1-ylmethyl)-carbamoyl]-imidazo[1,2-a]pyridin-2-yl}-pentanoic acid			
217 	1-{5-[(adamantan-1-ylmethyl)-carbamoyl]-imidazo[1,2-a]pyridin-2-ylmethyl}-3-methyl-piperidine-3-carboxylic acid			
218 	3-{5-[(adamantan-1-ylmethyl)-carbamoyl]-imidazo[1,2-a]pyridin-2-yl}-benzoic acid			

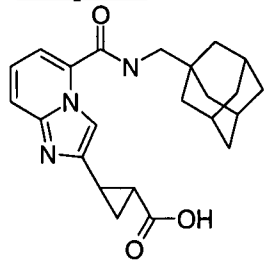
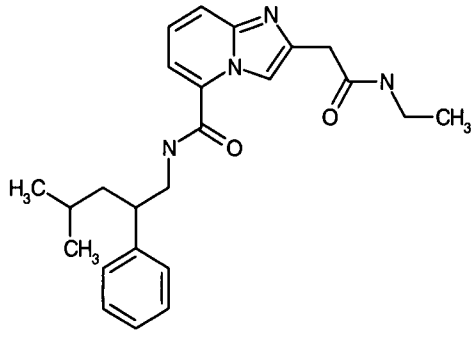
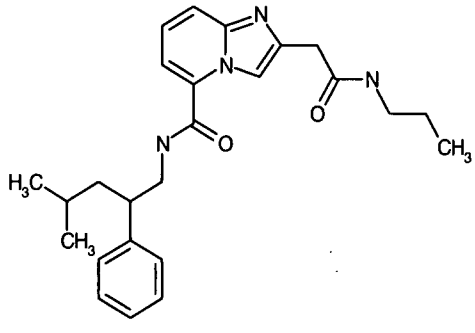
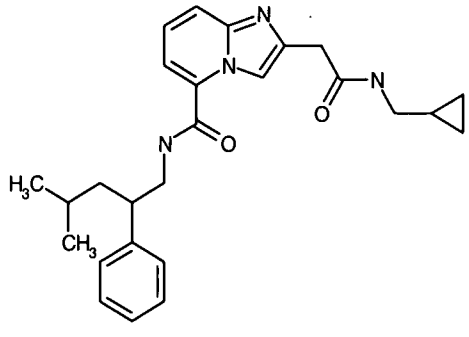
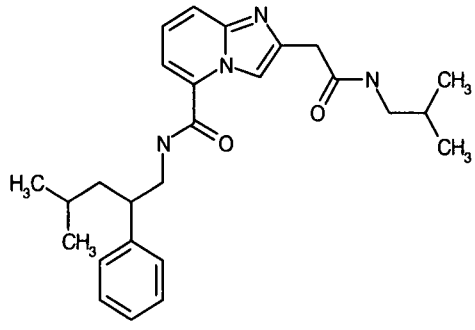
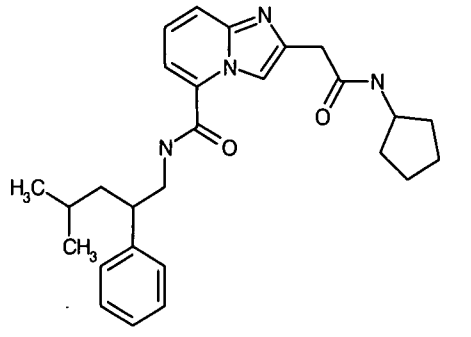
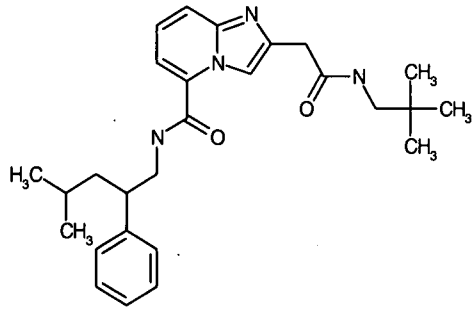
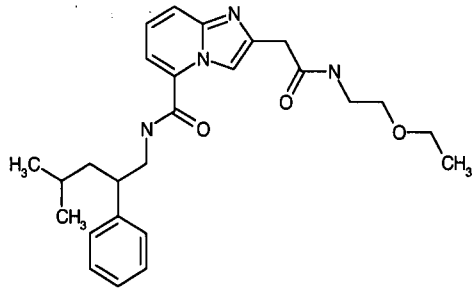
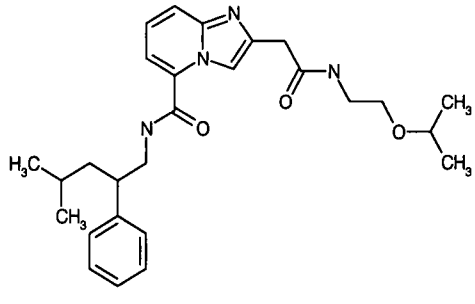
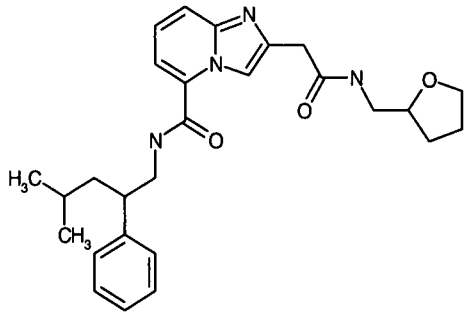
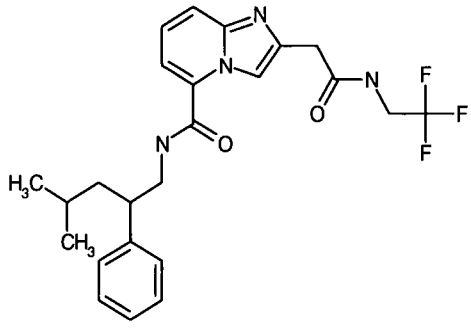
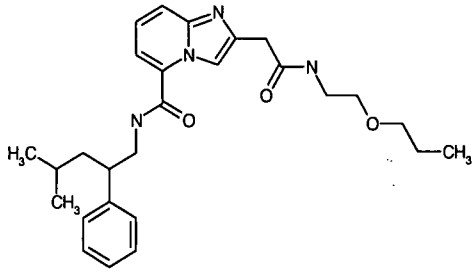
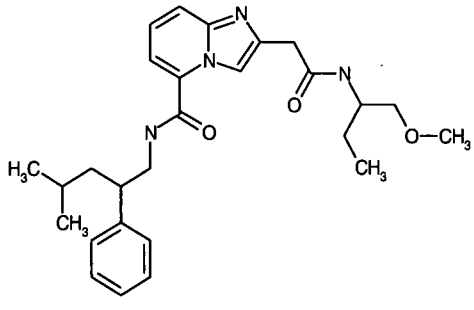
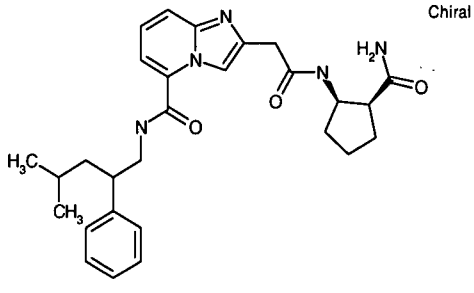
Compound	Name	MS	R_T	IC_{50}
219 	2-{5-[(adamantan-1-ylmethyl)-carbamoyl]-imidazo[1,2-a]pyridin-2-yl}-cyclopropanecarboxylic acid			

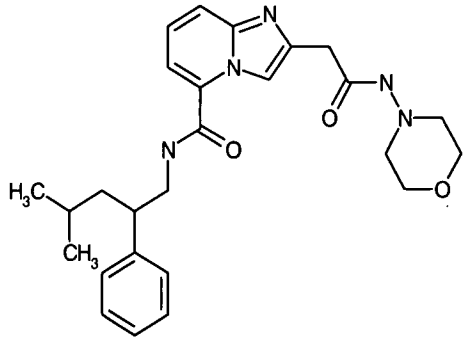
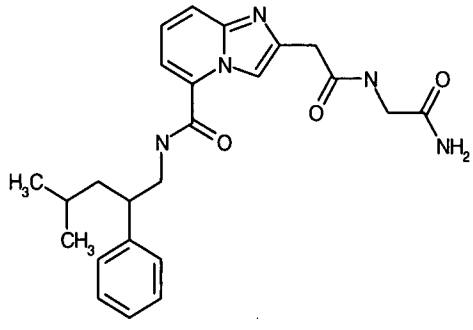
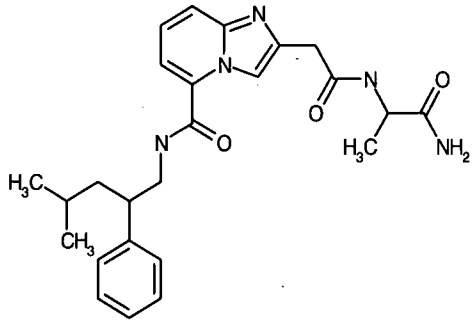
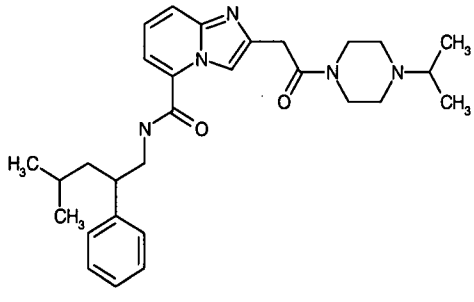
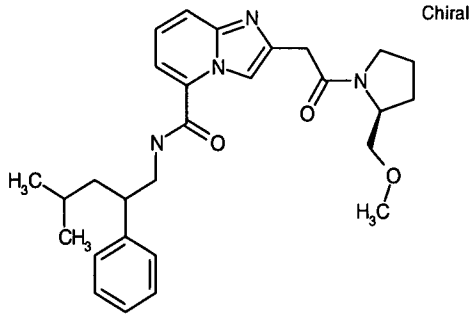
Table II

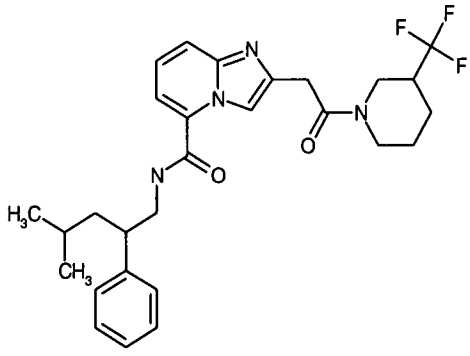
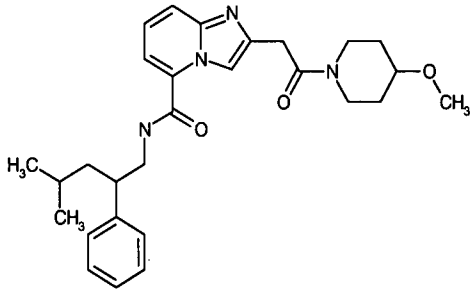
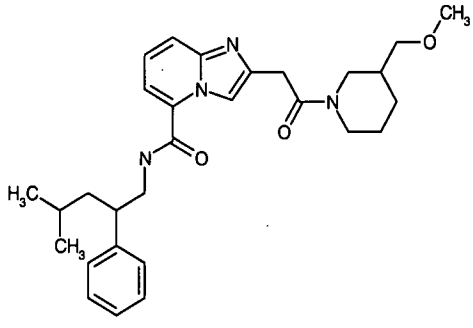
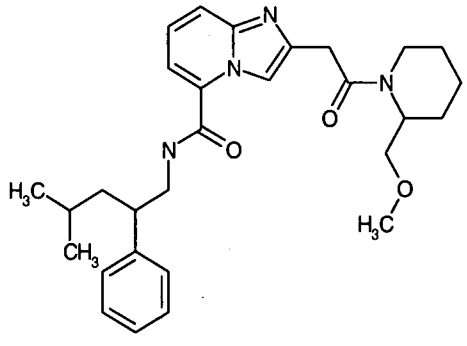
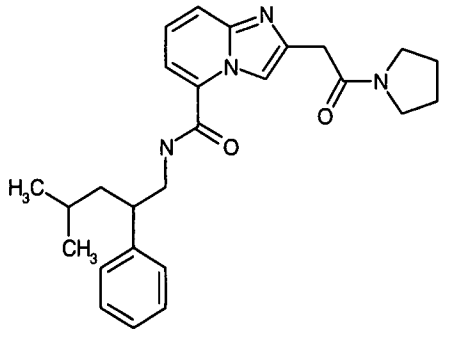
Representative Heteroaryl Amides

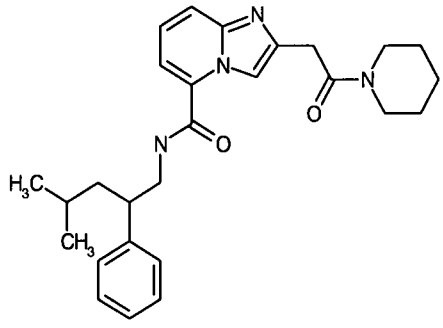
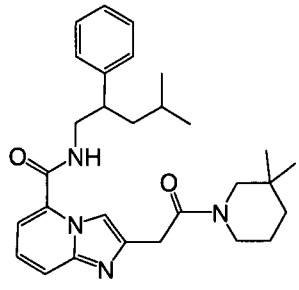
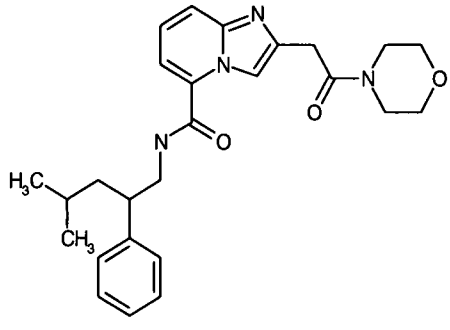
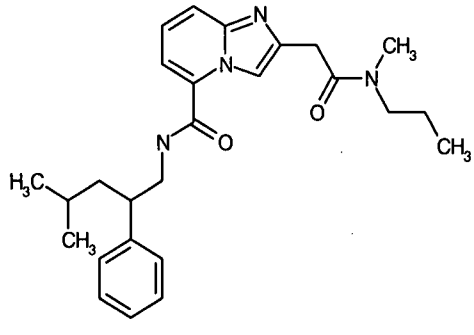
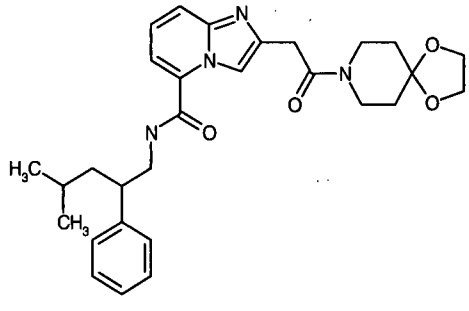
Compound	Name	MS	R_T	IC_{50}
220 	2-[2-(ethylamino)-2-oxoethyl]-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	407.23	1.23	*
221 	N-(4-methyl-2-phenylpentyl)-2-[2-oxo-2-(propylamino)ethyl]imidazo[1,2-a]pyridine-5-carboxamide	421.24	1.24	
222 	2-{2-[(cyclopropylmethyl)amino]-2-oxoethyl}-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	433.24	1.25	*

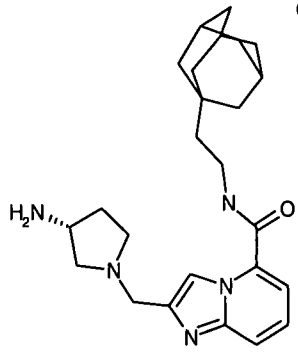
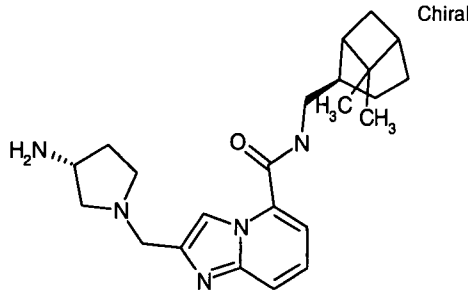
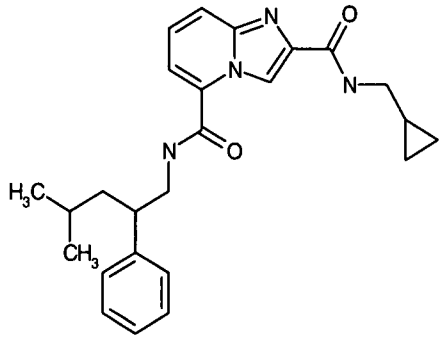
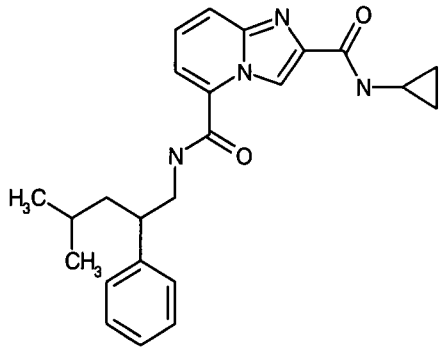
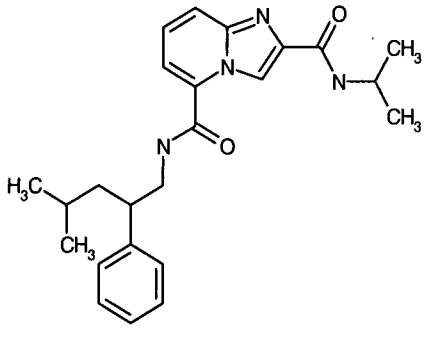
	Compound	Name	MS	R_T	IC_{50}
223		2-[2-(isobutylamino)-2-oxoethyl]-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	435.26	1.26	*
224		2-[2-(cyclopentylamino)-2-oxoethyl]-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	447.26	1.27	*
225		2-{2-[(2,2-dimethylpropyl)amino]-2-oxoethyl}-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	449.26	1.28	*
226		2-{2-[(2-ethoxyethyl)amino]-2-oxoethyl}-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	451.25	1.24	
227		2-{2-[(2-isopropoxyethyl)amino]-2-oxoethyl}-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	465.26	1.26	

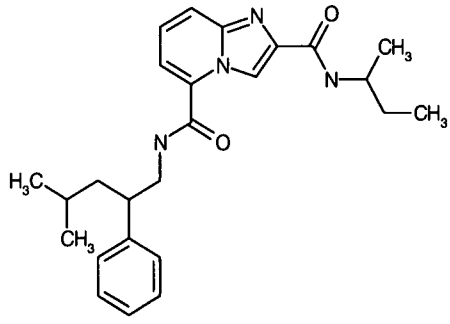
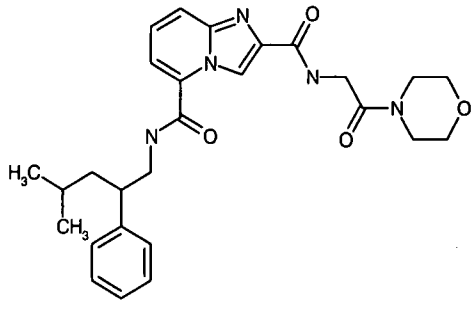
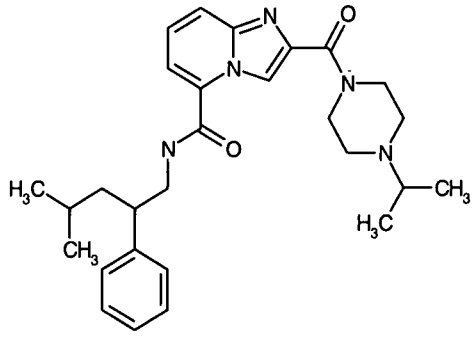
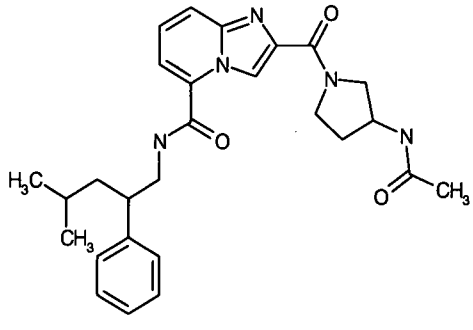
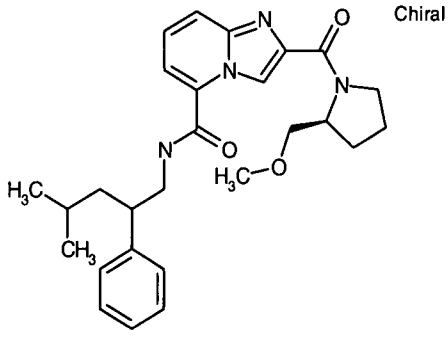
	Compound	Name	MS	R_T	IC_{50}
228		N-(4-methyl-2-phenylpentyl)-2-{2-oxo-2-[(tetrahydrofuran-2-ylmethyl)amino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	463.25	1.24	
229		N-(4-methyl-2-phenylpentyl)-2-{2-oxo-2-[(2,2,2-trifluoroethyl)amino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	461.35	1.24	*
230		N-(4-methyl-2-phenylpentyl)-2-{2-oxo-2-[(2-propoxyethyl)amino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	465.24	1.26	*
231		2-(2-{[1-(methoxymethyl)propyl]amino}-2-oxoethyl)-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	465.26	1.26	*
232	 Chiral	2-(2-{[(1R,2S)-2-carbamoylcyclopentyl]amino}-2-oxoethyl)-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	490.23	1.23	

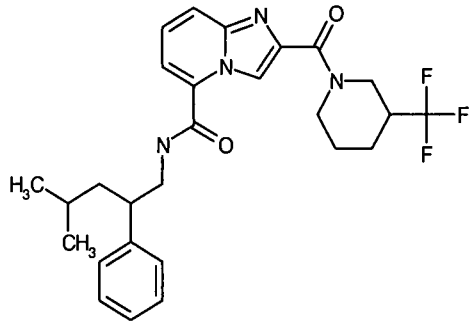
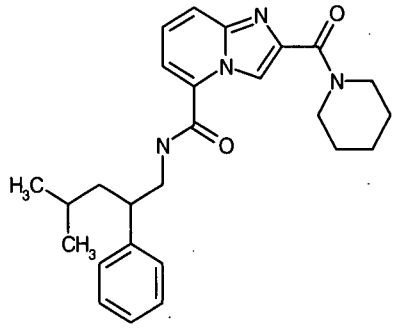
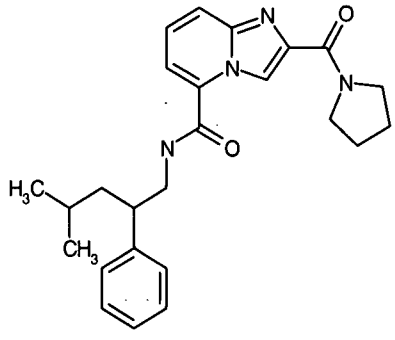
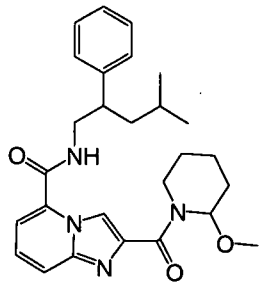
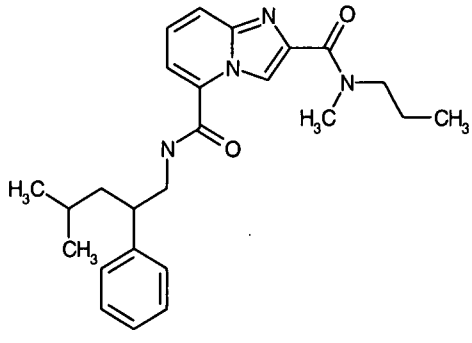
	Compound	Name	MS	R_T	IC_{50}
233		N-(4-methyl-2-phenylpentyl)-2-[2-(morpholin-4-ylamino)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	464.22	1.22	
234		2-{2-[(2-amino-2-oxoethyl)amino]-2-oxoethyl}-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	436.20	1.19	
235		2-{2-[(2-amino-1-methyl-2-oxoethyl)amino]-2-oxoethyl}-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	450.22	1.21	*
236		2-[2-(4-isopropylpiperazin-1-yl)-2-oxoethyl]-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	490.26	1.17	
237	 Chiral	2-{2-[(2S)-2-(methoxymethyl)pyrrolidin-1-yl]-2-oxoethyl}-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	477.25	1.25	

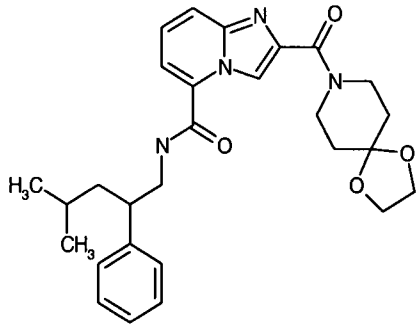
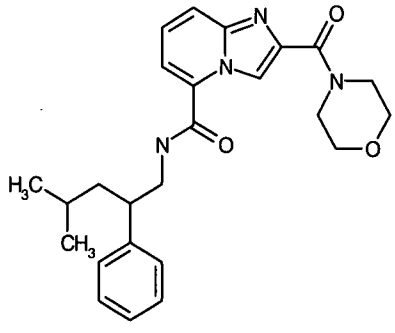
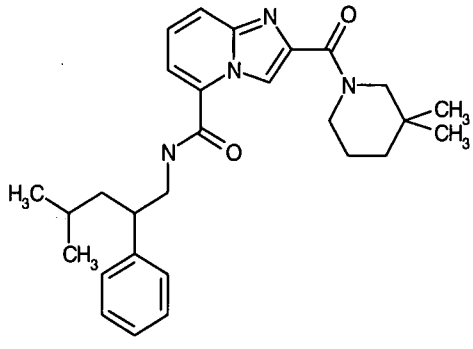
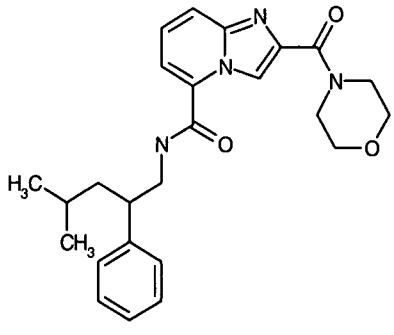
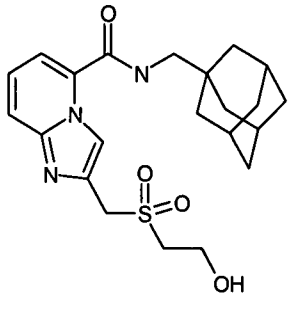
	Compound	Name	MS	R_T	IC_{50}
238		N-(4-methyl-2-phenylpentyl)-2-{2-oxo-2-[3-(trifluoromethyl)piperidin-1-yl]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	515.21	1.27	*
239		2-[2-(4-methoxypiperidin-1-yl)-2-oxoethyl]-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	477.27	1.23	*
240		2-{2-[3-(methoxymethyl)piperidin-1-yl]-2-oxoethyl}-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	491.26	1.26	*
241		2-{2-[2-(methoxymethyl)piperidin-1-yl]-2-oxoethyl}-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	491.26	1.26	*
242		N-(4-methyl-2-phenylpentyl)-2-(2-oxo-2-pyrrolidin-1-ylethyl)imidazo[1,2-a]pyridine-5-carboxamide	433.25	1.24	*

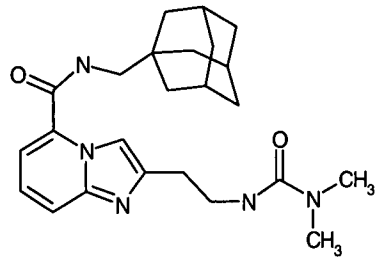
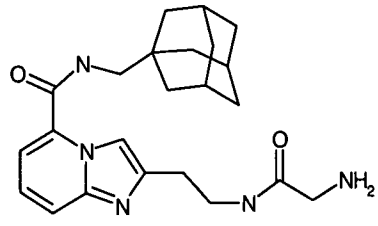
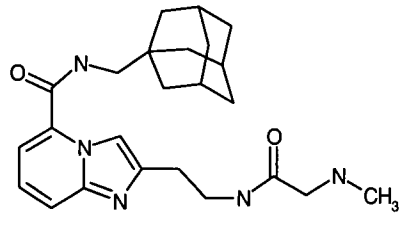
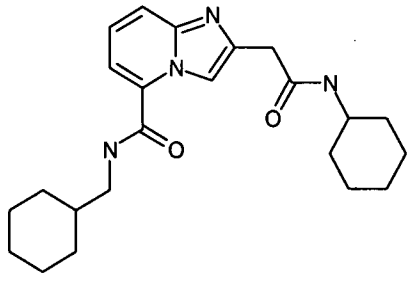
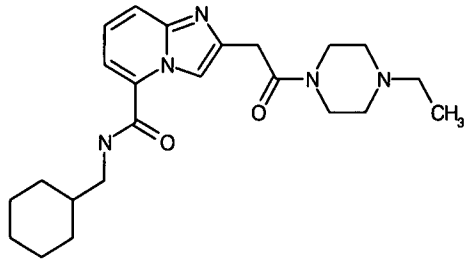
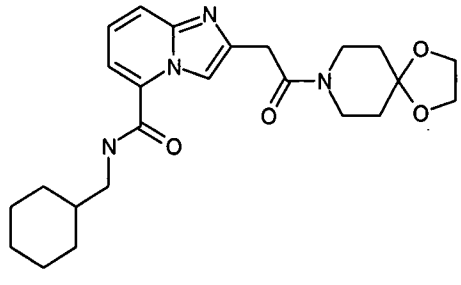
	Compound	Name	MS	R_T	IC_{50}
243		N-(4-methyl-2-phenylpentyl)-2-(2-oxo-2-piperidin-1-ylethyl)imidazo[1,2-a]pyridine-5-carboxamide	447.25	1.25	*
244		2-[2-(3,3-dimethylpiperidin-1-yl)-2-oxoethyl]-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	475.27	1.29	*
245		N-(4-methyl-2-phenylpentyl)-2-(2-morpholin-4-yl-2-oxoethyl)imidazo[1,2-a]pyridine-5-carboxamide	449.22	1.22	
246		N-(4-methyl-2-phenylpentyl)-2-{2-[methyl(propyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	435.26	1.25	*
247		2-[2-(1,4-dioxa-8-azaspiro[4.5]dec-8-yl)-2-oxoethyl]-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	505.24	1.24	*

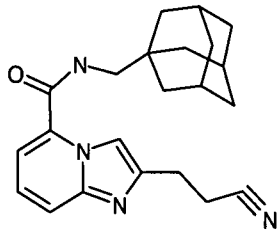
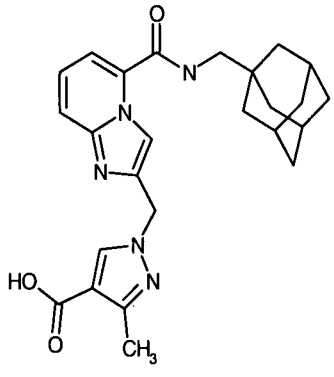
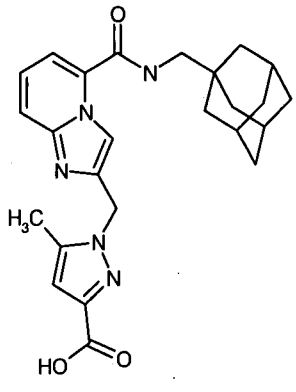
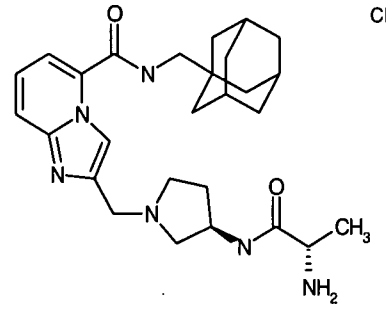
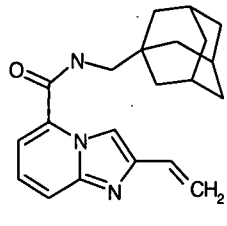
	Compound	Name	MS	R_T	IC_{50}
248	 Chiral	N-(2-adamantan-1-ylethyl)-2-{[(3R)-3-aminopyrrolidin-1-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	422.25	1.21	*
249	 Chiral	2-{[(3R)-3-aminopyrrolidin-1-yl]methyl}-N-{[(2R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	396.25	1.17	*
250		2-N-(cyclopropylmethyl)-5-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	419.19	1.32	
251		2-N-cyclopropyl-5-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	405.18	1.3	
252		2-N-isopropyl-5-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	407.20	1.31	

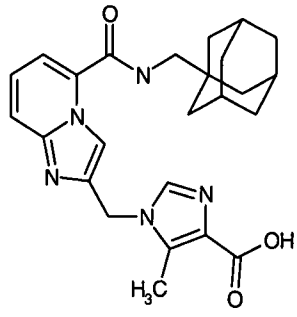
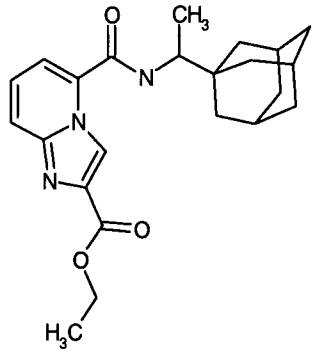
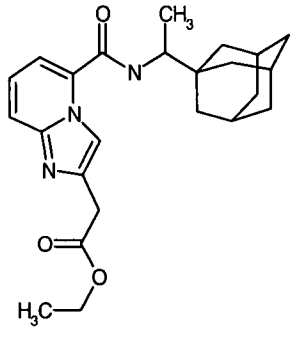
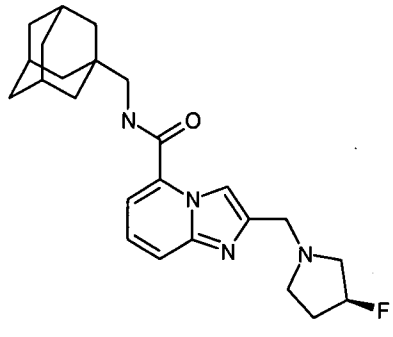
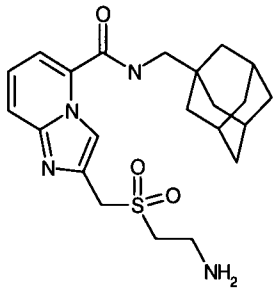
	Compound	Name	MS	R_T	IC_{50}
253		2-N-sec-butyl-5-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	421.21	1.34	
254		5-N-(4-methyl-2-phenylpentyl)-2-N-(2-morpholin-4-yl-2-oxoethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	492.19	1.27	
255		2-[(4-isopropylpiperazin-1-yl)carbonyl]-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	476.23	1.22	
256		2-[(3-acetamidopyrrolidin-1-yl)carbonyl]-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	476.21	1.25	
257	 Chiral	2-{[(2S)-2-(methoxymethyl)pyrrolidin-1-yl]carbonyl}-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	463.23	1.31	*

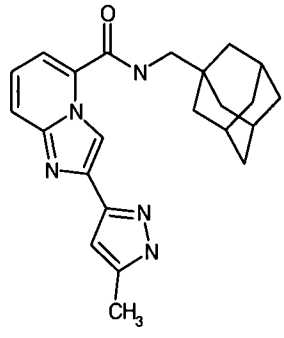
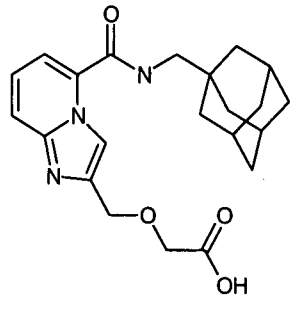
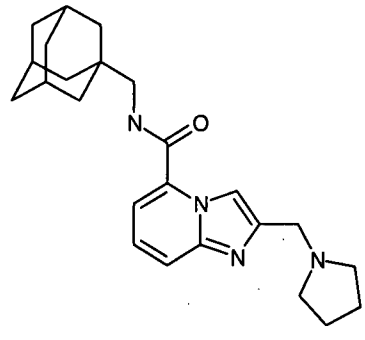
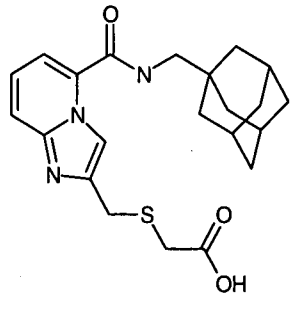
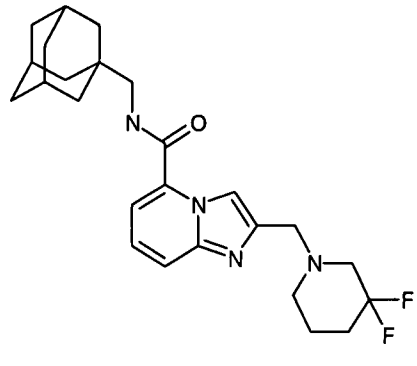
	Compound	Name	MS	R_T	IC_{50}
258		N-(4-methyl-2-phenylpentyl)-2-{[3-(trifluoromethyl)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	501.19	1.36	
259		N-(4-methyl-2-phenylpentyl)-2-(piperidin-1-ylcarbonyl)imidazo[1,2-a]pyridine-5-carboxamide	433.22	1.33	
260		N-(4-methyl-2-phenylpentyl)-2-(pyrrolidin-1-ylcarbonyl)imidazo[1,2-a]pyridine-5-carboxamide	419.22	1.29	*
261		2-{[2-(methoxymethyl)piperidin-1-yl]carbonyl}-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	477.23	1.32	*
262		2-N-methyl-5-N-(4-methyl-2-phenylpentyl)-2-N-propylimidazo[1,2-a]pyridine-2,5-dicarboxamide	421.23	1.32	*

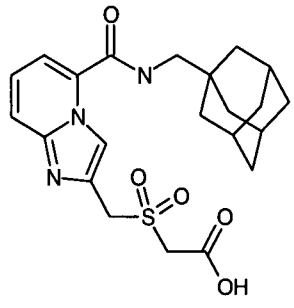
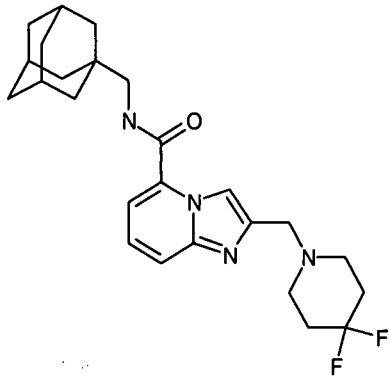
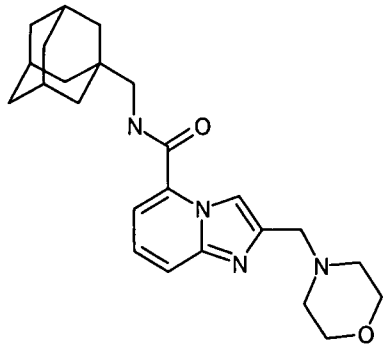
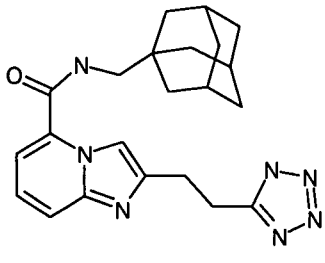
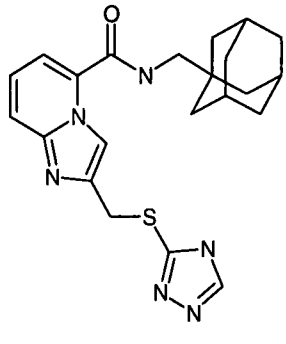
	Compound	Name	MS	R_T	IC_{50}
263		2-(1,4-dioxa-8-azaspiro[4.5]dec-8-ylcarbonyl)-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	491.21	1.33	*
264		N-(4-methyl-2-phenylpentyl)-2-(morpholin-4-ylcarbonyl)imidazo[1,2-a]pyridine-5-carboxamide	435.20	1.29	
265		2-[(3,3-dimethylpiperidin-1-yl)carbonyl]-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	461.25	1.38	
266		N-(adamantan-1-ylmethyl)-2-{[(2-aminoethyl)thio]methyl}imidazo[1,2-a]pyridine-5-carboxamide	399.18	1.1	*
267		N-(adamantan-1-ylmethyl)-2-{[(2-hydroxyethyl)sulfonyl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	432.16	1.15	*

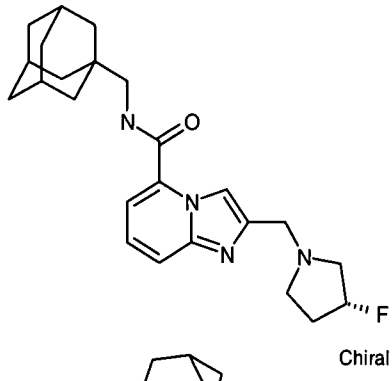
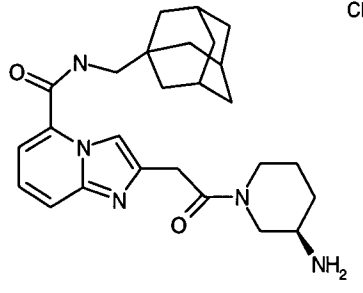
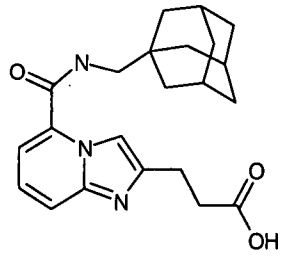
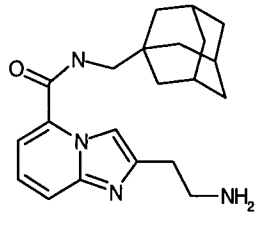
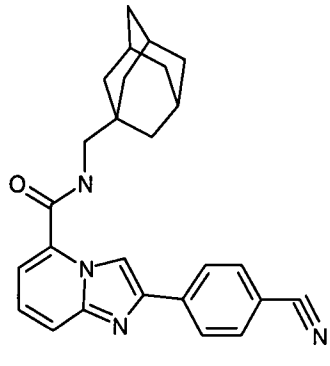
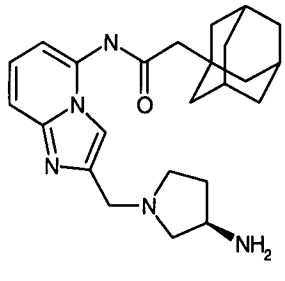
	Compound	Name	MS	R_T	IC_{50}
268		N-(adamantan-1-ylmethyl)-2-{2-[(dimethylcarbamoyl)amino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	424.30	1.15	*
269		N-(adamantan-1-ylmethyl)-2-[2-(glycylamino)ethyl]imidazo[1,2-a]pyridine-5-carboxamide	410.28	1.07	*
270		N-(adamantan-1-ylmethyl)-2-{2-[(N-methylglycyl)amino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	424.29	1.07	*
271		2-[2-(cyclohexylamino)-2-oxoethyl]-N-(cyclohexylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	397.21	1.24	
272		N-(cyclohexylmethyl)-2-[2-(4-ethylpiperazin-1-yl)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	234.17	1.15	
273		N-(cyclohexylmethyl)-2-[2-(1,4-dioxa-8-azaspiro[4.5]dec-8-yl)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	441.18	1.18	

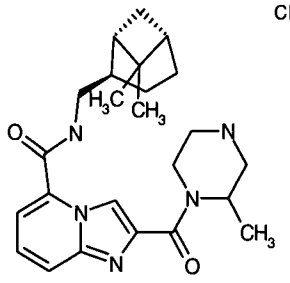
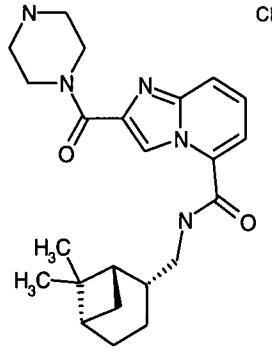
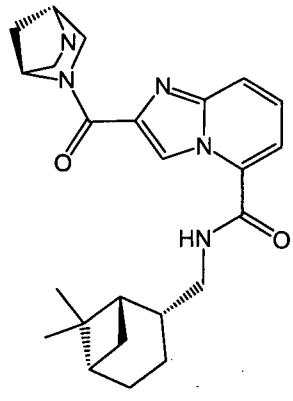
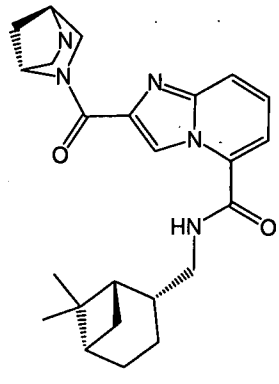
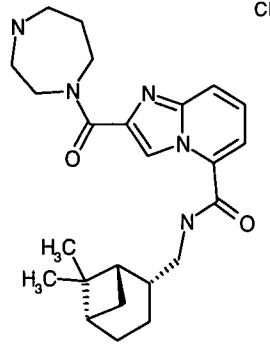
	Compound	Name	MS	R_T	IC_{50}
274		N-(adamantan-1-ylmethyl)-2-(2-cyanoethyl)imidazo[1,2-a]pyridine-5-carboxamide	363.17	1.14	*
275		1-({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)-3-methyl-1H-pyrazole-4-carboxylic acid	448.21	1.18	*
276		1-({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)-5-methyl-1H-pyrazole-3-carboxylic acid	448.21	1.17	*
277	 Chiral	N-(adamantan-1-ylmethyl)-2-{[(3R)-3-(L-alanylamino)pyrrolidin-1-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	479.29	1.09	*
278		N-(adamantan-1-ylmethyl)-2-vinylimidazo[1,2-a]pyridine-5-carboxamide	336.27	1.23	*

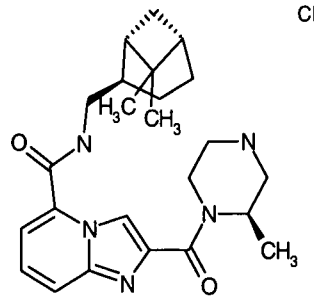
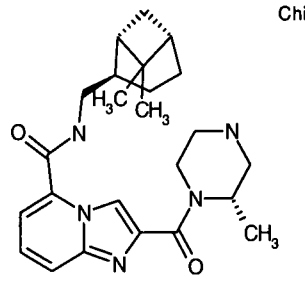
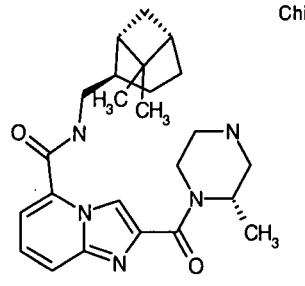
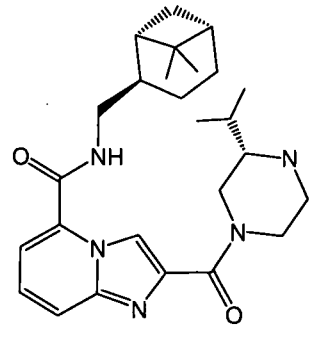
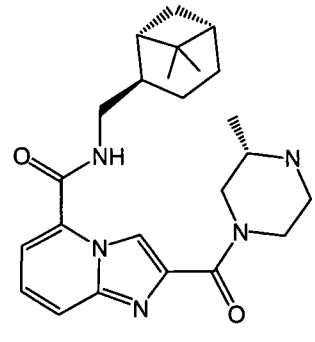
	Compound	Name	MS	R_T	IC_{50}
279		1-({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)-5-methyl-1H-imidazole-4-carboxylic acid	448.31	1.34	*
280		ethyl 5-[(1-adamantan-1-ylethyl)carbamoyl]imidazo[1,2-a]pyridine-2-carboxylate	396.30	1.36	*
281		ethyl {5-[(1-adamantan-1-ylethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}acetate	410.31	1.25	*
282		N-(adamantan-1-ylmethyl)-2-[(3-fluoropyrrolidin-1-yl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	411.33	1.21	*
283		N-(adamantan-1-ylmethyl)-2-{[(2-aminoethyl)sulfonyl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	431.28	1.19	*

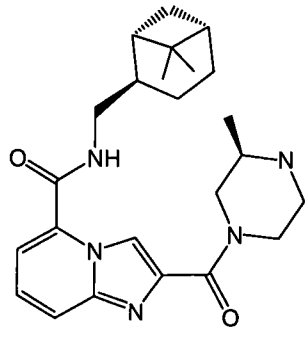
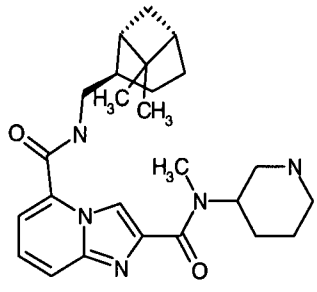
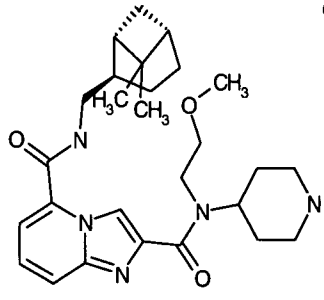
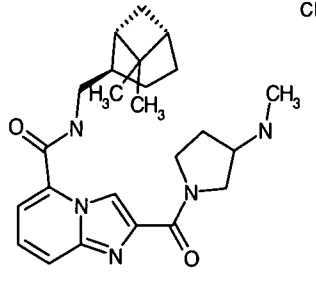
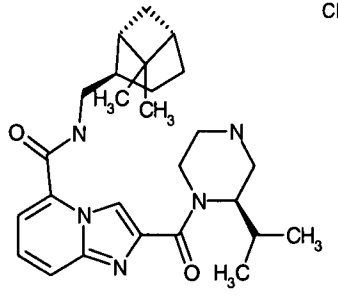
	Compound	Name	MS	R_T	IC_{50}
284		N-(adamantan-1-ylmethyl)-2-(5-methyl-1H-pyrazol-3-yl)imidazo[1,2-a]pyridine-5-carboxamide	390.30	1.25	*
285		({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methoxy)acetic acid	398.28	1.2	*
286		N-(adamantan-1-ylmethyl)-2-(pyrrolidin-1-ylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	393.34	1.2	*
287		[({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)thio]acetic acid	414.26	1.21	*
288		N-(adamantan-1-ylmethyl)-2-[(3,3-difluoropiperidin-1-yl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	443.34	1.23	*

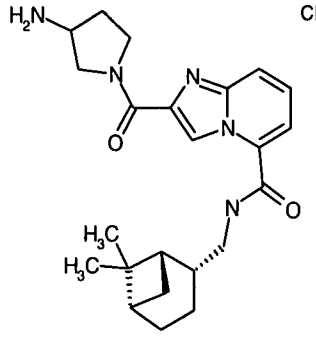
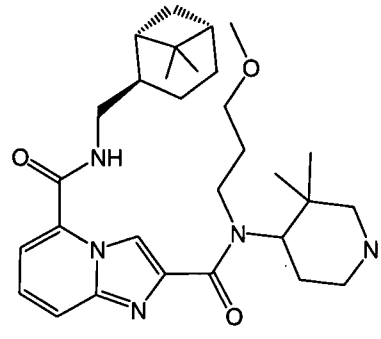
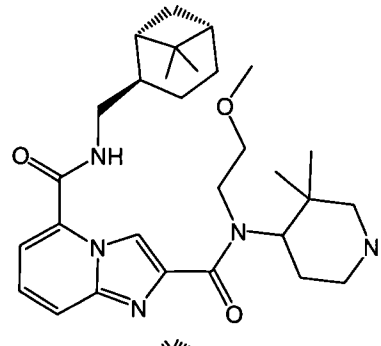
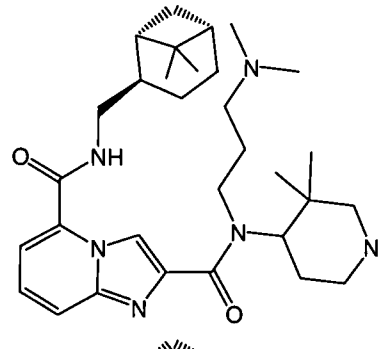
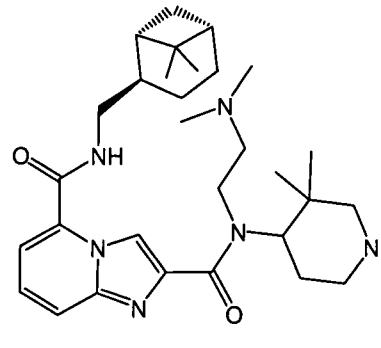
	Compound	Name	MS	R_T	IC_{50}
289		[({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)sulfonyl]acetic acid	446.25	1.22	*
290		N-(adamantan-1-ylmethyl)-2-[(4,4-difluoropiperidin-1-yl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	443.34	1.23	*
291		N-(adamantan-1-ylmethyl)-2-(morpholin-4-ylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	409.34	1.2	*
292		N-(adamantan-1-ylmethyl)-2-[2-(1H-tetrazol-5-yl)ethyl]imidazo[1,2-a]pyridine-5-carboxamide	406.30	1.2	*
293		N-(adamantan-1-ylmethyl)-2-[(4H-1,2,4-triazol-3-ylthio)methyl]imidazo[1,2-a]pyridine-5-carboxamide	423.28	1.21	*

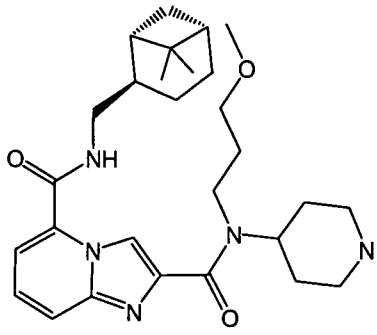
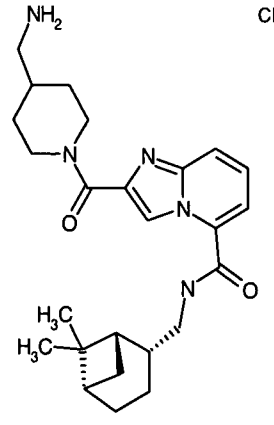
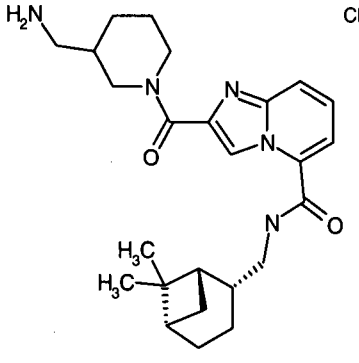
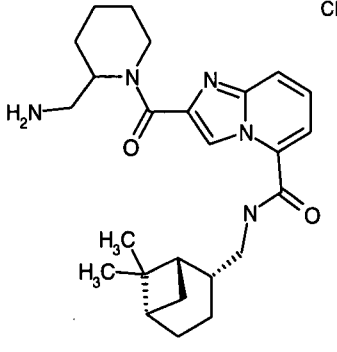
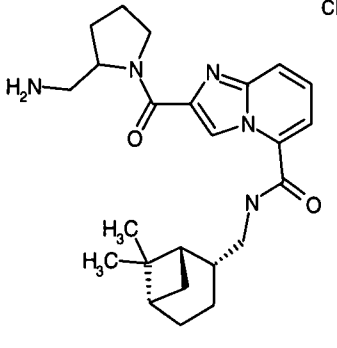
Compound		Name	MS	R_T	IC_{50}
294	 Chiral	N-(adamantan-1-ylmethyl)-2-[(3-fluoropyrrolidin-1-yl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	411.31	1.21	*
295		N-(adamantan-1-ylmethyl)-2-{2-[(3R)-3-aminopiperidin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	450.38	1.14	*
296		3-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}propanoic acid	382.27	1.2	*
297		N-(adamantan-1-ylmethyl)-2-(2-aminoethyl)imidazo[1,2-a]pyridine-5-carboxamide	353.32	1.14	*
298	 Chiral	N-(adamantan-1-ylmethyl)-2-(4-cyanophenyl)imidazo[1,2-a]pyridine-5-carboxamide	411.28	1.33	*
299		2-adamantan-1-yl-N-(2-{[(3R)-3-aminopyrrolidin-1-yl]methyl}imidazo[1,2-a]pyridin-5-yl)acetamide	408.35	1.14	*

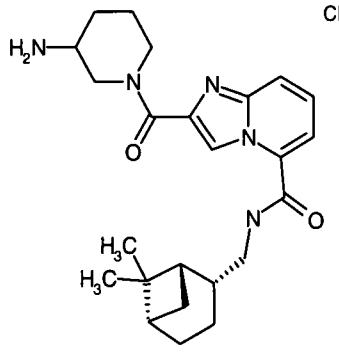
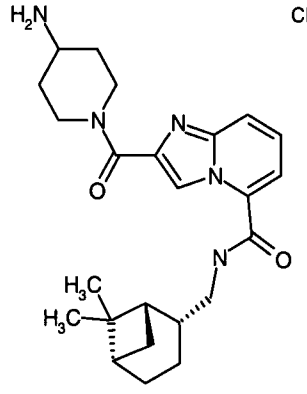
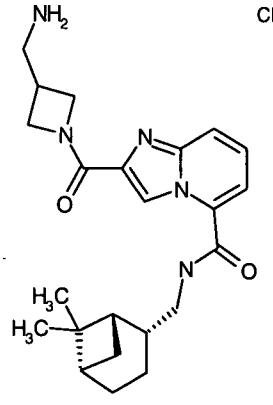
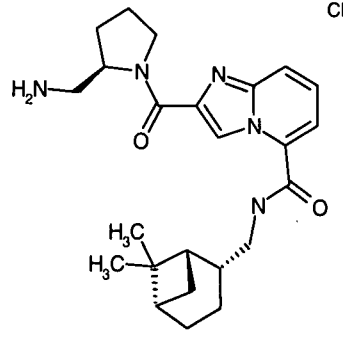
Compound		Name	MS	R_T	IC_{50}
300	Chiral 	N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-[(2-methylpiperazin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	424.33	1.21	
301	Chiral 	N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-(piperazin-1-ylcarbonyl)imidazo[1,2-a]pyridine-5-carboxamide	410.32	1.2	
302		2-[(1R,4R)-2,5-diazabicyclo[2.2.1]hept-2-ylcarbonyl]-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	422.31	1.21	*
303		2-[(1S,4S)-2,5-diazabicyclo[2.2.1]hept-2-ylcarbonyl]-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	422.32	1.21	*
304	Chiral 	2-(1,4-diazepan-1-ylcarbonyl)-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	424.34	1.2	*

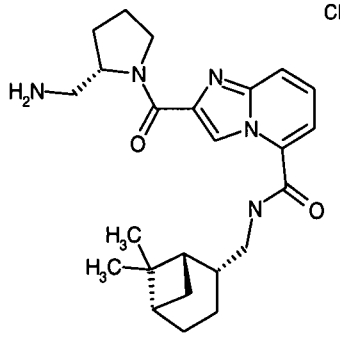
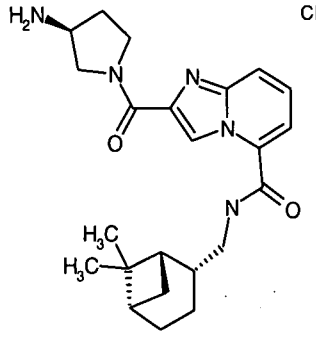
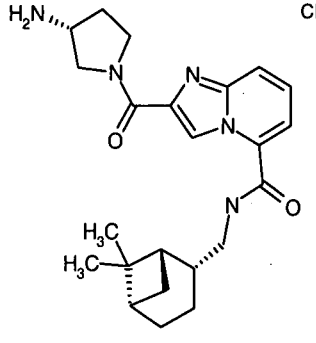
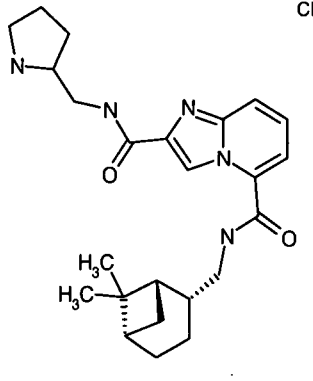
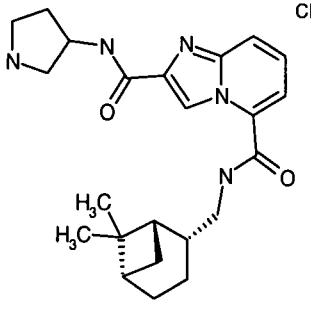
Compound		Name	MS	R_T	IC_{50}
305	 Chiral	N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{[(2R)-2-methylpiperazin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	424.33	1.21	*
306	 Chiral	N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{[(2S)-2-methylpiperazin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	424.34	1.21	
307	 Chiral	N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{[(3R)-3-isopropylpiperazin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	452.36	1.23	*
308		N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{[(3S)-3-isopropylpiperazin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	452.36	1.22	*
309		N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{[(3S)-3-methylpiperazin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	424.34	1.21	

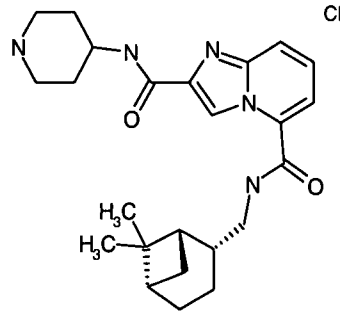
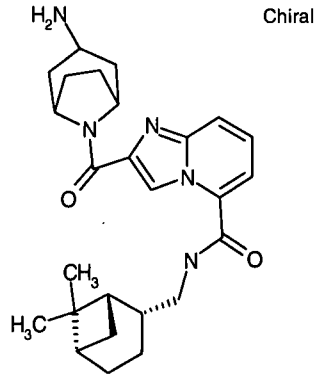
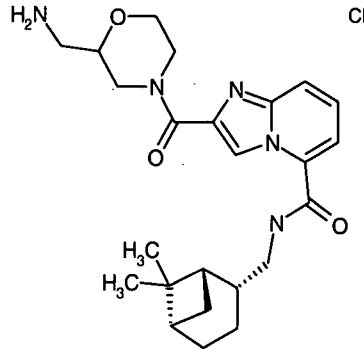
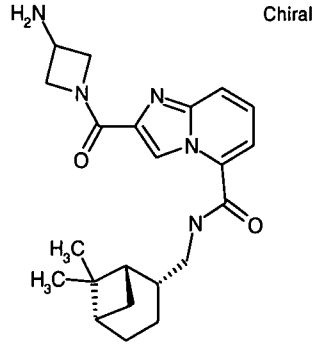
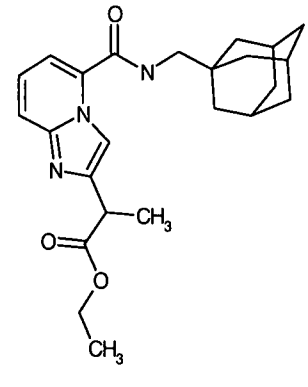
Compound		Name	MS	R_T	IC_{50}
310		N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{[(3R)-3-methylpiperazin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	424.33	1.21	
311	Chiral 	5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-methyl-2-N-piperidin-3-ylimidazo[1,2-a]pyridine-2,5-dicarboxamide	438.35	1.22	*
312	Chiral 	5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-(2-methoxyethyl)-2-N-piperidin-4-ylimidazo[1,2-a]pyridine-2,5-dicarboxamide	482.36	1.21	
313	Chiral 	N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{[3-(methylamino)pyrrolidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	424.35	1.2	*
314	Chiral 	N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{[(2R)-2-isopropylpiperazin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	452.36	1.24	

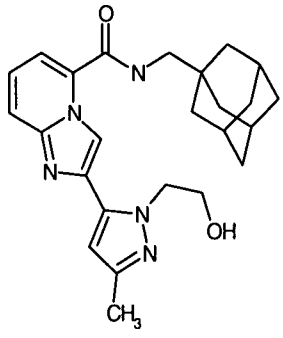
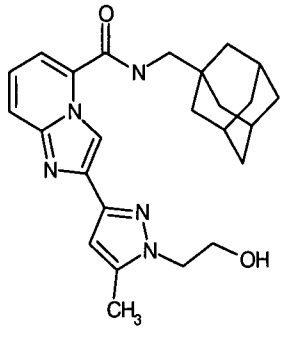
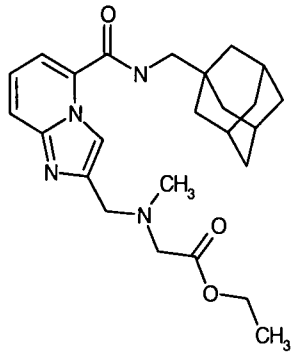
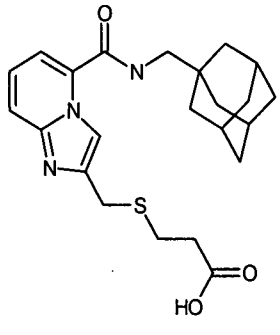
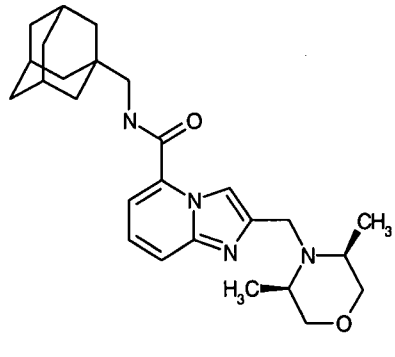
Compound		Name	MS	R_T	IC_{50}
315	 Chiral	2-[(3-aminopyrrolidin-1-yl)carbonyl]-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	410.32	1.19	*
316		5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-(3,3-dimethylpiperidin-4-yl)-2-N-(3-methoxypropyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	524.41	1.23	
317		5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-(3,3-dimethylpiperidin-4-yl)-2-N-(2-methoxyethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	510.40	1.23	
318		2-N-[3-(dimethylamino)propyl]-5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-(3,3-dimethylpiperidin-4-yl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	537.45	1.17	
319		2-N-[2-(dimethylamino)ethyl]-5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-(3,3-dimethylpiperidin-4-yl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	523.43	1.17	*

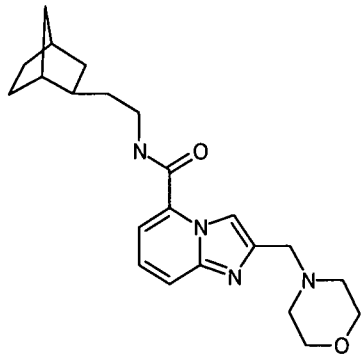
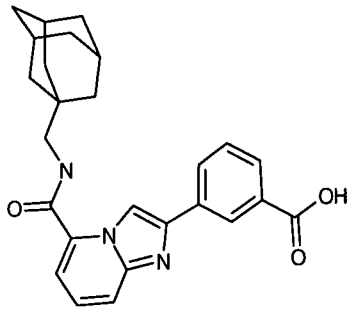
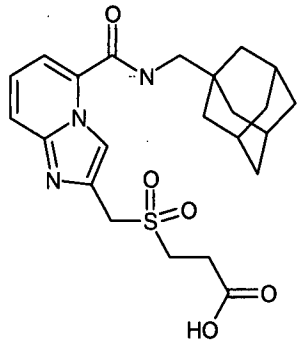
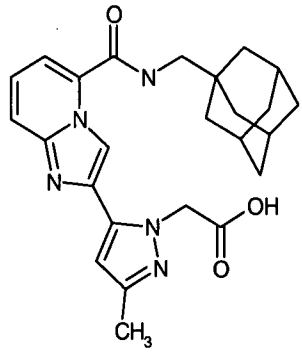
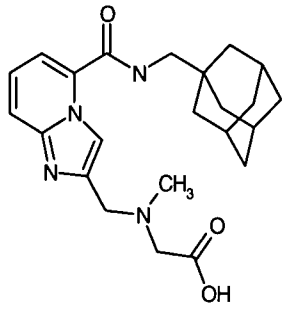
	Compound	Name	MS	R_T	IC_{50}
320		5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-(3-methoxypropyl)-2-N-piperidin-4-ylimidazo[1,2-a]pyridine-2,5-dicarboxamide	496.39	1.22	
321	 Chiral	2-{[4-(aminomethyl)piperidin-1-yl]carbonyl}-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	438.35	1.22	
322	 Chiral	2-{[3-(aminomethyl)piperidin-1-yl]carbonyl}-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	438.35	1.22	*
323	 Chiral	2-{[2-(aminomethyl)piperidin-1-yl]carbonyl}-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	438.35	1.22	
324	 Chiral	2-{[2-(aminomethyl)pyrrolidin-1-yl]carbonyl}-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	424.34	1.22	*

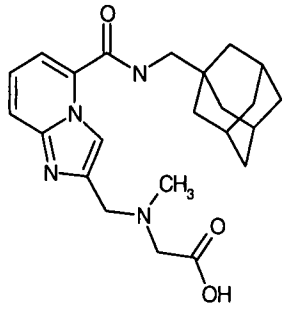
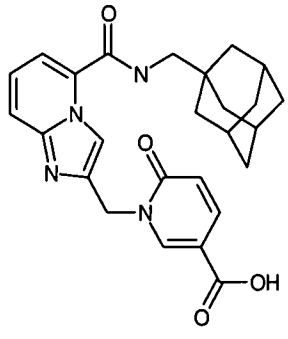
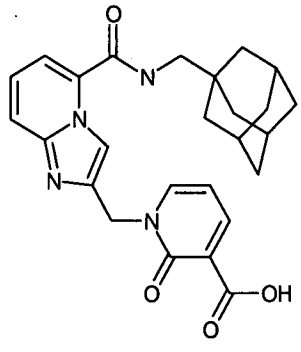
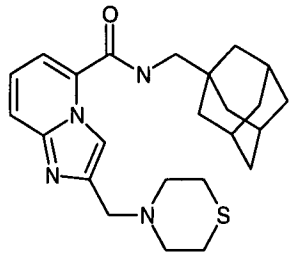
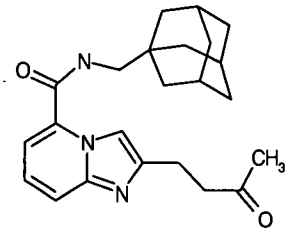
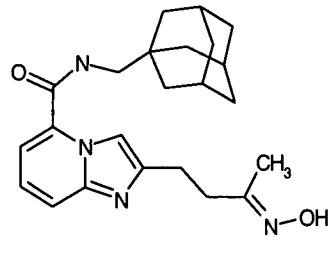
Compound		Name	MS	R_T	IC_{50}
325	 Chiral	2-[(3-aminopiperidin-1-yl)carbonyl]-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	424.34	1.21	*
326	 Chiral	2-[(4-aminopiperidin-1-yl)carbonyl]-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	424.34	1.21	*
327	 Chiral	2-{[3-(aminomethyl)azetidin-1-yl]carbonyl}-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	410.32	1.21	
328	 Chiral	2-{[(2R)-2-(aminomethyl)pyrrolidin-1-yl]carbonyl}-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	424.34	1.22	

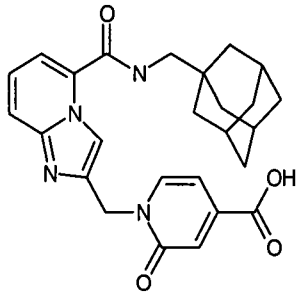
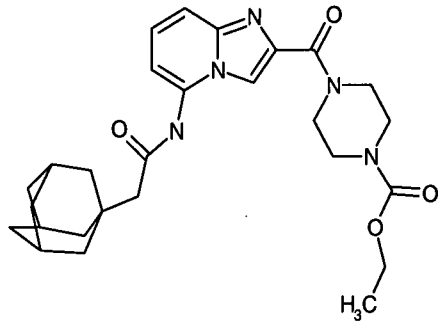
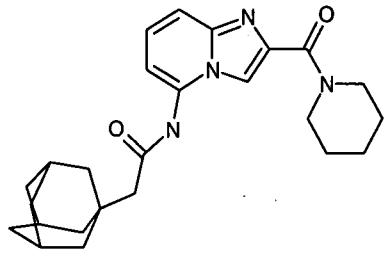
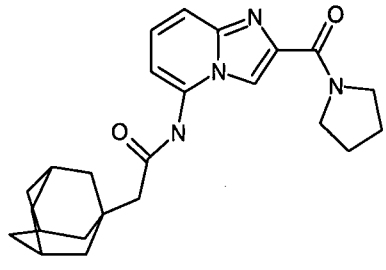
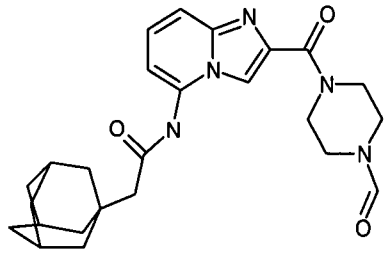
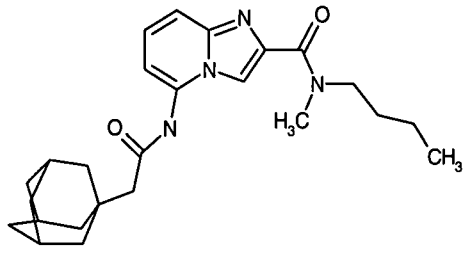
	Compound	Name	MS	R_T	IC_{50}
329	 Chiral	2-{[(2S)-2-(aminomethyl)pyrrolidin-1-yl]carbonyl}-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	424.35	1.22	
330	 Chiral	2-{[(3S)-3-aminopyrrolidin-1-yl]carbonyl}-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	410.32	1.2	*
331	 Chiral	2-{[(3R)-3-aminopyrrolidin-1-yl]carbonyl}-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	410.32	1.22	
332	 Chiral	5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-(pyrrolidin-2-ylmethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	424.33	1.22	
333	 Chiral	5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-pyrrolidin-3-ylimidazo[1,2-a]pyridine-2,5-dicarboxamide	410.32	1.21	*

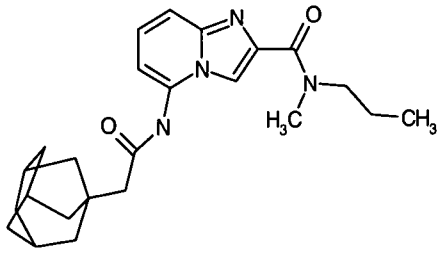
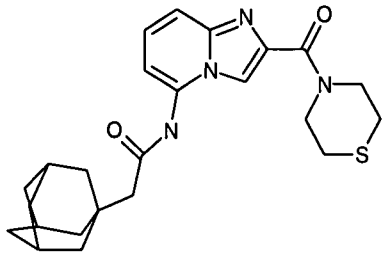
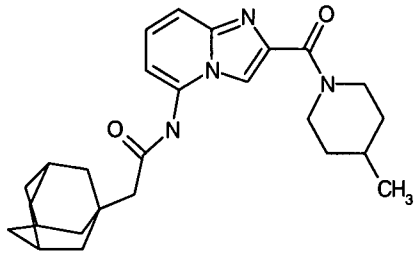
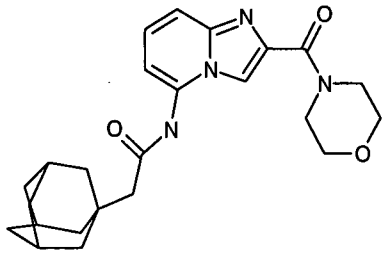
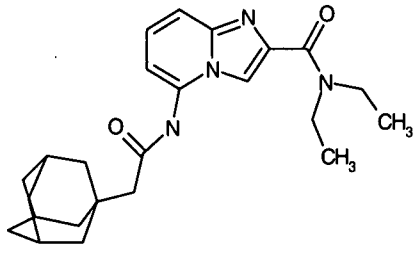
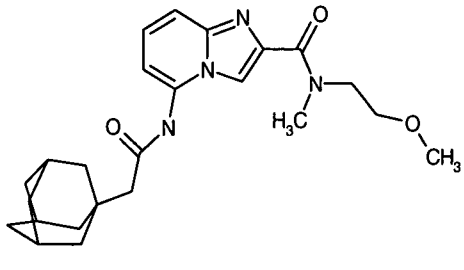
Compound		Name	MS	R_T	IC_{50}
334	 Chiral	5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-piperidin-4-ylimidazo[1,2-a]pyridine-2,5-dicarboxamide	424.33	1.21	
335	 Chiral	2-[(3-amino-8-azabicyclo[3.2.1]oct-8-yl)carbonyl]-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	450.35	1.22	*
336	 Chiral	2-{[2-(aminomethyl)morpholin-4-yl]carbonyl}-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	440.33	1.21	*
337	 Chiral	2-[(3-aminoazetidin-1-yl)carbonyl]-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	396.31	1.2	
338		ethyl 2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}propanoate	410.33	1.25	*

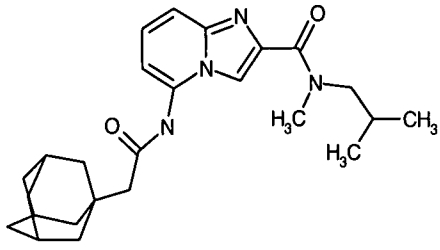
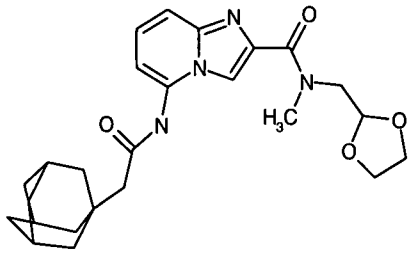
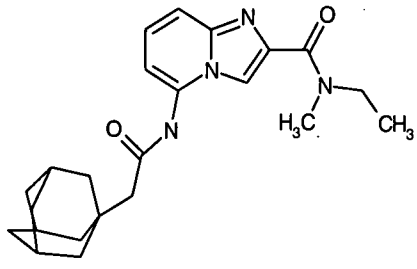
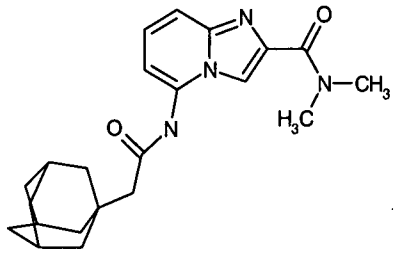
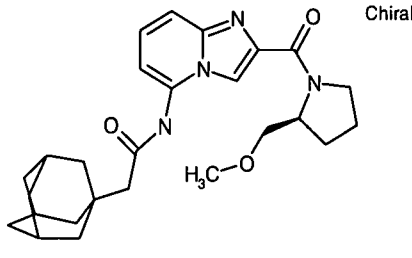
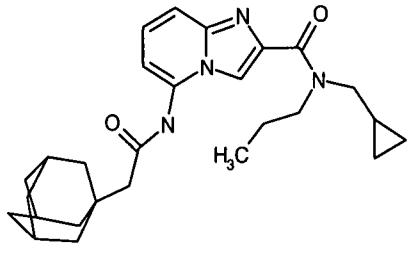
	Compound	Name	MS	R_T	IC_{50}
339		N-(adamantan-1-ylmethyl)-2-[1-(2-hydroxyethyl)-3-methyl-1H-pyrazol-5-yl]imidazo[1,2-a]pyridine-5-carboxamide	434.34	1.29	*
340		N-(adamantan-1-ylmethyl)-2-[1-(2-hydroxyethyl)-5-methyl-1H-pyrazol-3-yl]imidazo[1,2-a]pyridine-5-carboxamide	434.34	1.23	*
341		ethyl N-({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)-N-methylglycinate	439.36	1.23	*
342		3-[({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)thio]propanoic acid	428.29	1.22	*
343		rel-N-(adamantan-1-ylmethyl)-2-{[(3R,5S)-3,5-dimethylmorpholin-4-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	437.36	1.22	*

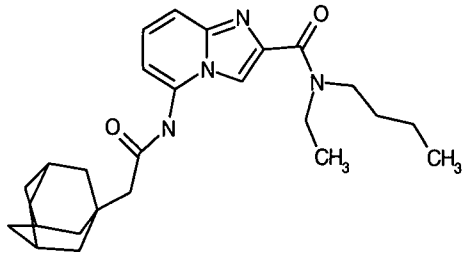
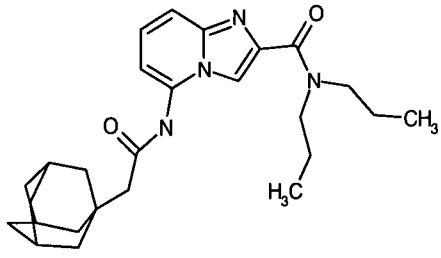
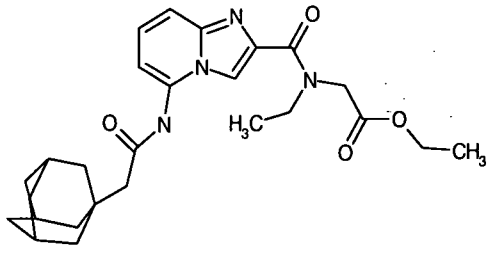
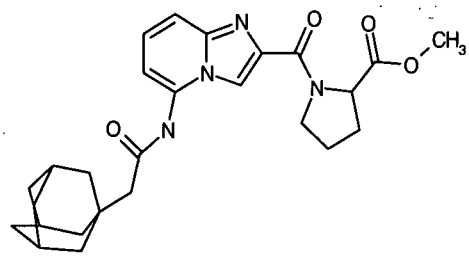
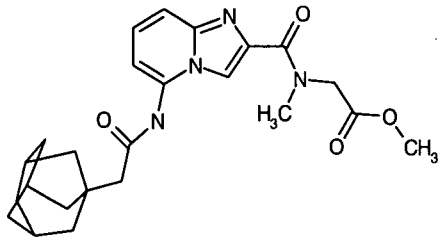
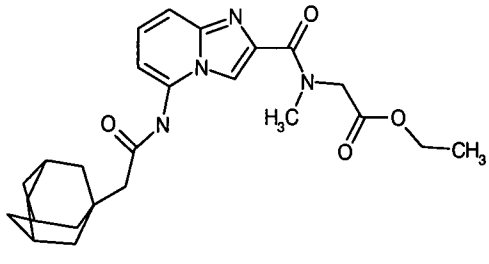
	Compound	Name	MS	R_T	IC_{50}
344		N-(2-bicyclo[2.2.1]hept-2-ylethyl)-2-(morpholin-4-ylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	383.32	1.18	*
345		3-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}benzoic acid	430.32	1.28	*
346		3-[({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)sulfonyl]propanoic acid	460.25	1.21	*
347		(5-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-3-methyl-1H-pyrazol-1-yl)acetic acid	448.30	1.29	*
348		N-({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)-N-methylglycine	411.31	1.22	*

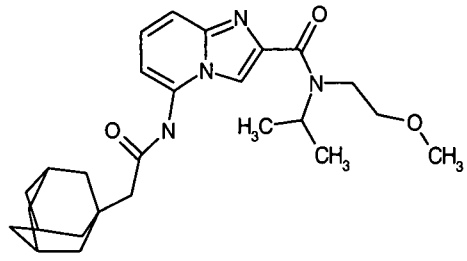
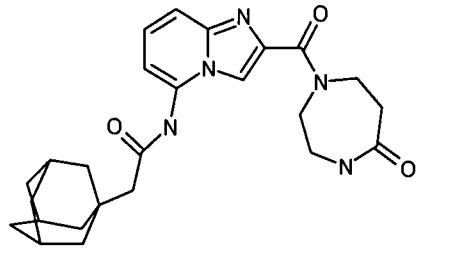
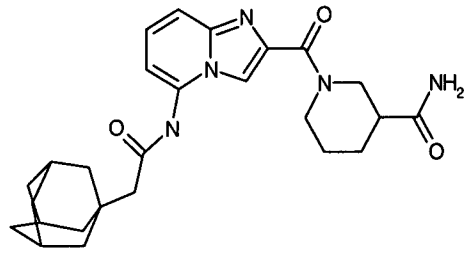
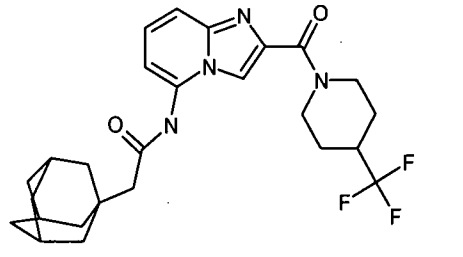
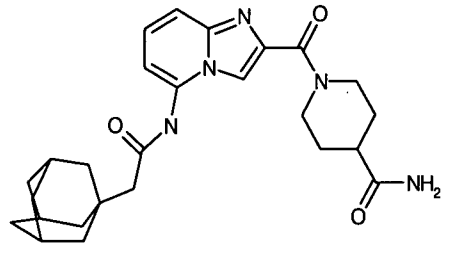
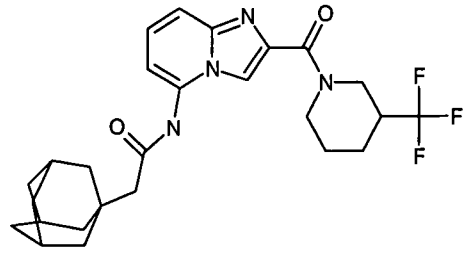
	Compound	Name	MS	R_T	IC_{50}
349		2-{[(3R)-3-aminopyrrolidin-1-yl]carbonyl}-N-[(6,6-dimethylbicyclo[3.1.1]hept-2-yl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	410.34	1.19	*
350		1-({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)-6-oxo-1,6-dihydropyridine-3-carboxylic acid	461.33	1.25	*
351		1-({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)-2-oxo-1,2-dihydropyridine-3-carboxylic acid	461.32	1.25	*
352		N-(adamantan-1-ylmethyl)-2-(thiomorpholin-4-ylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	425.34	1.22	*
353		N-(adamantan-1-ylmethyl)-2-(3-oxobutyl)imidazo[1,2-a]pyridine-5-carboxamide	380.31	1.21	*
354		N-(adamantan-1-ylmethyl)-2-[(3E)-3-(hydroxyimino)butyl]imidazo[1,2-a]pyridine-5-carboxamide	395.32	1.22	*

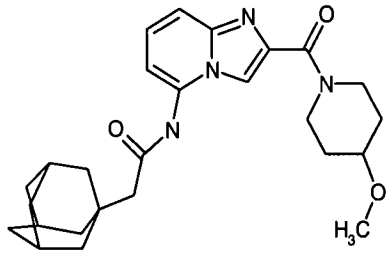
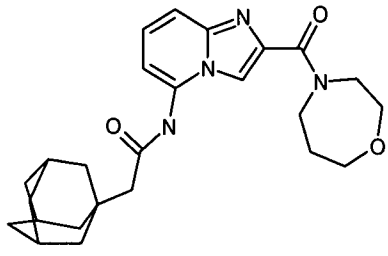
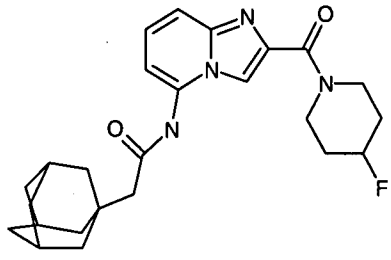
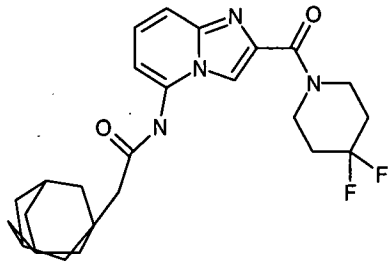
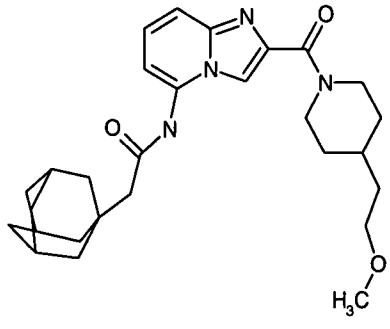
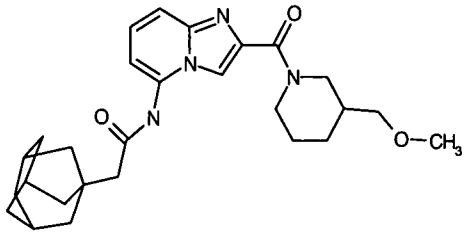
	Compound	Name	MS	R_T	IC_{50}
355		1-({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)-2-oxo-1,2-dihydropyridine-4-carboxylic acid	461.30	1.22	*
356		ethyl 4-({5-[(adamantan-1-ylacetyl)amino]imidazo[1,2-a]pyridin-2-yl}carbonyl)piperazine-1-carboxylate	494.32	1.29	*
357		2-adamantan-1-yl-N-[2-(piperidin-1-ylcarbonyl)imidazo[1,2-a]pyridin-5-yl]acetamide	421.32	1.29	*
358		2-adamantan-1-yl-N-[2-(pyrrolidin-1-ylcarbonyl)imidazo[1,2-a]pyridin-5-yl]acetamide	407.30	1.25	*
359		2-adamantan-1-yl-N-{2-[(4-formylpiperazin-1-yl)carbonyl]imidazo[1,2-a]pyridin-5-yl}acetamide	450.31	1.24	
360		5-[(adamantan-1-ylacetyl)amino]-N-butyl-N-methylimidazo[1,2-a]pyridine-2-carboxamide	423.34	1.31	*

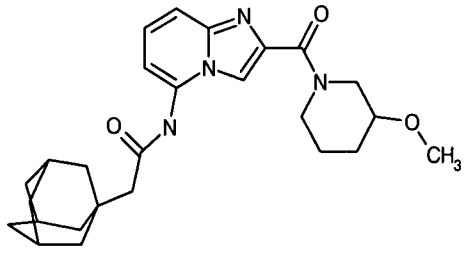
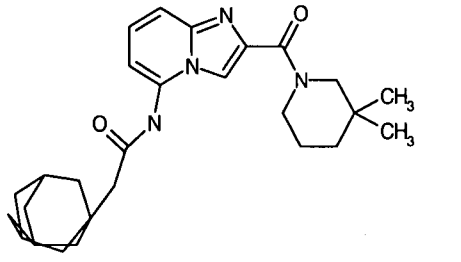
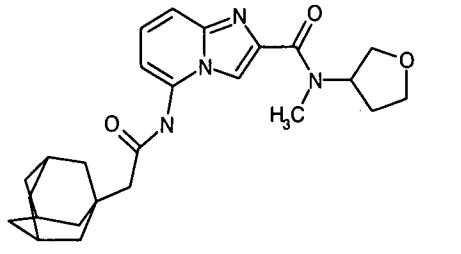
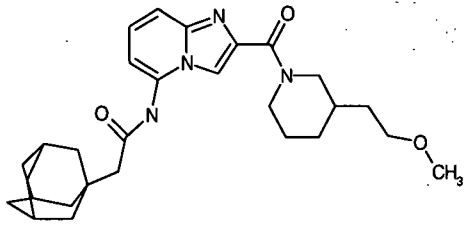
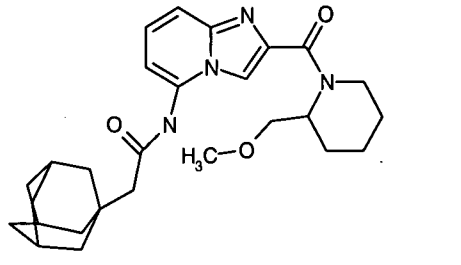
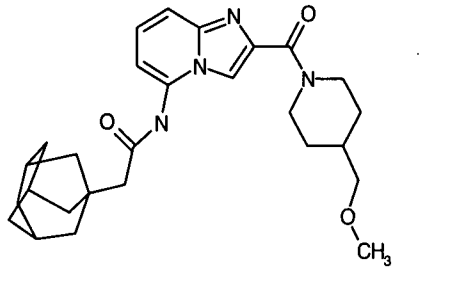
	Compound	Name	MS	R_T	IC_{50}
361		5-[(adamantan-1-ylacetyl)amino]-N-methyl-N-propylimidazo[1,2-a]pyridine-2-carboxamide	409.33	1.28	*
362		2-adamantan-1-yl-N-[2-(thiomorpholin-4-ylcarbonyl)imidazo[1,2-a]pyridin-5-yl]acetamide	439.28	1.3	*
363		2-adamantan-1-yl-N-{2-[(4-methylpiperidin-1-yl)carbonyl]imidazo[1,2-a]pyridin-5-yl}acetamide	435.33	1.32	*
364		2-adamantan-1-yl-N-[2-(morpholin-4-ylcarbonyl)imidazo[1,2-a]pyridin-5-yl]acetamide	423.30	1.26	*
365		5-[(adamantan-1-ylacetyl)amino]-N,N-diethylimidazo[1,2-a]pyridine-2-carboxamide	409.34	1.27	*
366		5-[(adamantan-1-ylacetyl)amino]-N-(2-methoxyethyl)-N-methylimidazo[1,2-a]pyridine-2-carboxamide	425.33	1.24	*

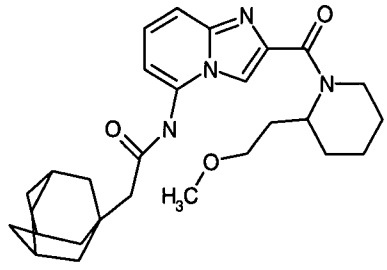
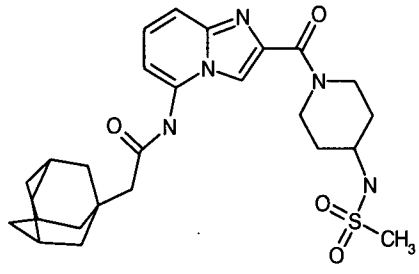
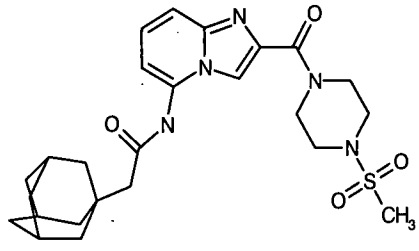
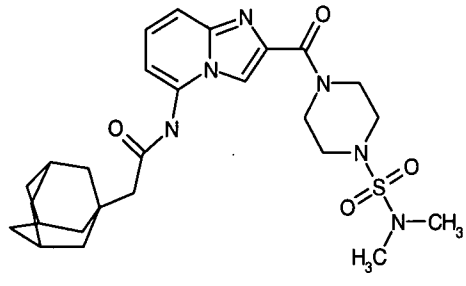
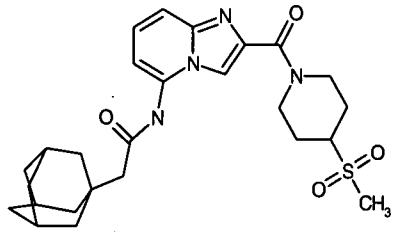
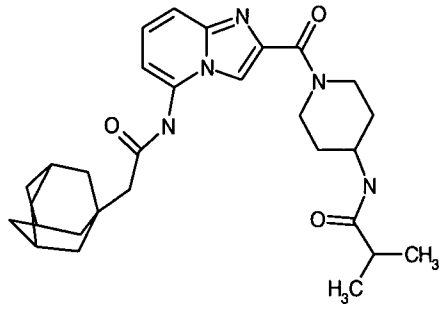
	Compound	Name	MS	R_T	IC_{50}
367		5-[(adamantan-1-ylacetyl)amino]-N-isobutyl-N-methylimidazo[1,2-a]pyridine-2-carboxamide	423.34	1.3	*
368		5-[(adamantan-1-ylacetyl)amino]-N-(1,3-dioxolan-2-ylmethyl)-N-methylimidazo[1,2-a]pyridine-2-carboxamide	453.32	1.25	*
369		5-[(adamantan-1-ylacetyl)amino]-N-ethyl-N-methylimidazo[1,2-a]pyridine-2-carboxamide	395.32	1.26	*
370		5-[(adamantan-1-ylacetyl)amino]-N,N-dimethylimidazo[1,2-a]pyridine-2-carboxamide	382.33	1.24	*
371	 Chiral	2-adamantan-1-yl-N-(2-{[(2S)-2-(methoxymethyl)pyrrolidin-1-yl]carbonyl}imidazo[1,2-a]pyridin-5-yl)acetamide	451.35	1.27	*
372		5-[(adamantan-1-ylacetyl)amino]-N-(cyclopropylmethyl)-N-propylimidazo[1,2-a]pyridine-2-carboxamide	449.36	1.34	*

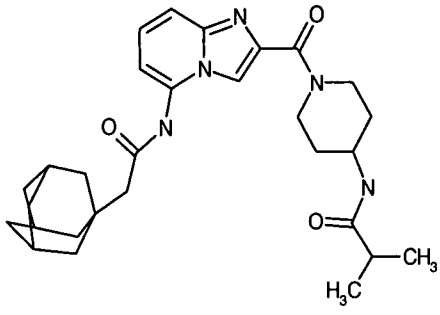
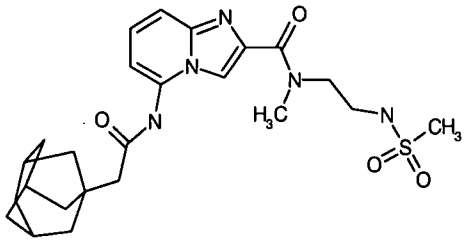
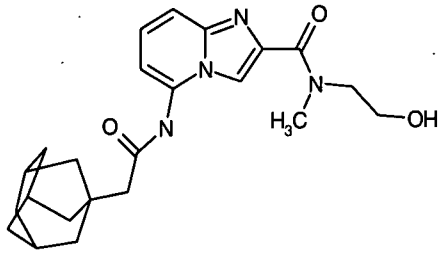
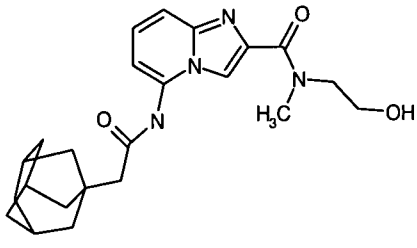
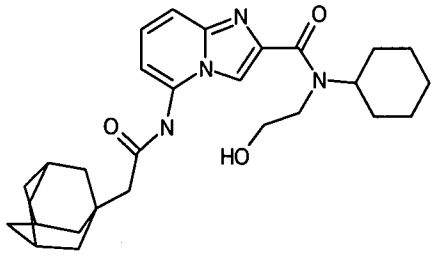
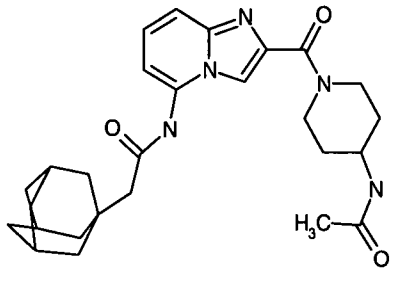
	Compound	Name	MS	R_T	IC_{50}
373		5-[(adamantan-1-ylacetyl)amino]-N-butyl-N-ethylimidazo[1,2-a]pyridine-2-carboxamide	437.36	1.33	*
374		5-[(adamantan-1-ylacetyl)amino]-N,N-dipropylimidazo[1,2-a]pyridine-2-carboxamide	437.36	1.33	*
375		ethyl N-({5-[(adamantan-1-ylacetyl)amino]imidazo[1,2-a]pyridin-2-yl}carbonyl)-N-ethylglycinate	467.35	1.3	*
376		methyl 1-({5-[(adamantan-1-ylacetyl)amino]imidazo[1,2-a]pyridin-2-yl}carbonyl)prolinate	465.34	1.27	*
377		methyl N-({5-[(adamantan-1-ylacetyl)amino]imidazo[1,2-a]pyridin-2-yl}carbonyl)-N-methylglycinate	439.32	1.25	*
378		ethyl N-({5-[(adamantan-1-ylacetyl)amino]imidazo[1,2-a]pyridin-2-yl}carbonyl)-N-methylglycinate	453.33	1.28	

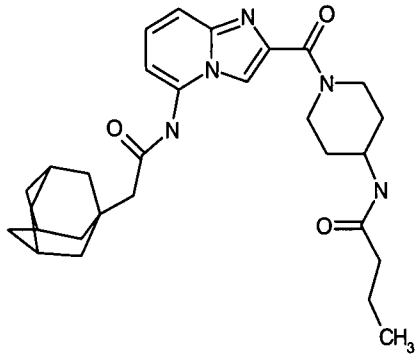
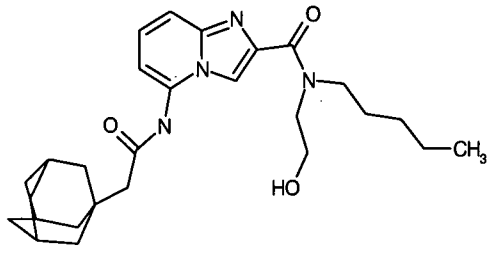
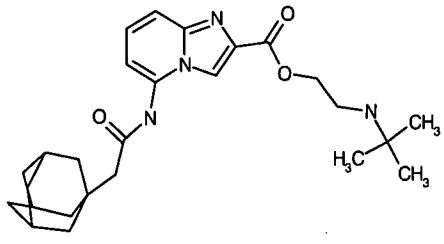
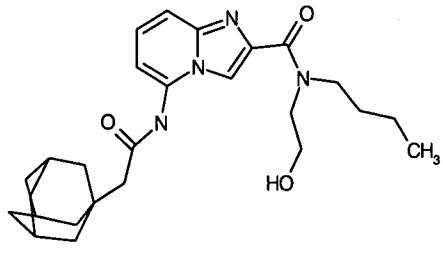
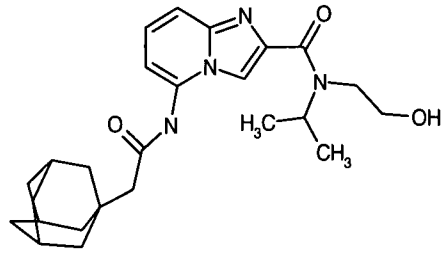
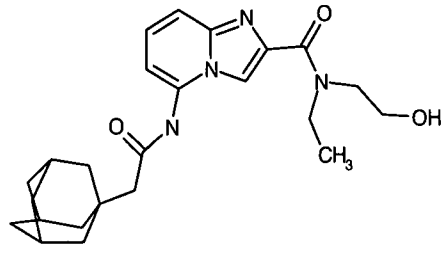
	Compound	Name	MS	R_T	IC_{50}
379		5-[(adamantan-1-ylacetyl)amino]-N-isopropyl-N-(2-methoxyethyl)imidazo[1,2-a]pyridine-2-carboxamide	453.37	1.28	*
380		2-adamantan-1-yl-N-{2-[(5-oxo-1,4-diazepan-1-yl)carbonyl]imidazo[1,2-a]pyridin-5-yl}acetamide	450.34	1.22	*
381		1-({5-[(adamantan-1-ylacetyl)amino]imidazo[1,2-a]pyridin-2-yl}carbonyl)piperidine-3-carboxamide	464.35	1.23	
382		2-adamantan-1-yl-N-(2-{[4-(trifluoromethyl)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridin-5-yl)acetamide	489.33	1.33	*
383		1-({5-[(adamantan-1-ylacetyl)amino]imidazo[1,2-a]pyridin-2-yl}carbonyl)piperidine-4-carboxamide	464.35	1.22	
384		2-adamantan-1-yl-N-(2-{[3-(trifluoromethyl)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridin-5-yl)acetamide	489.33	1.34	

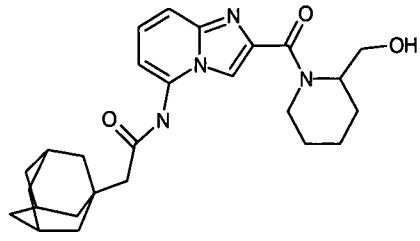
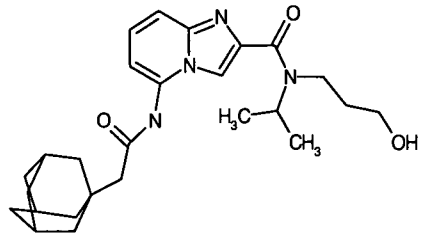
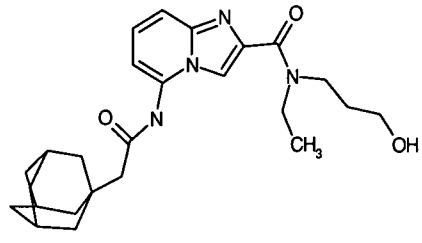
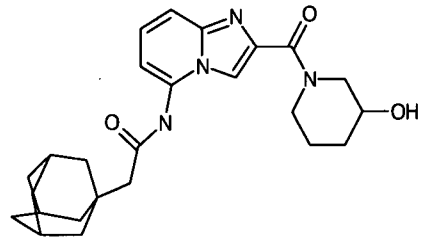
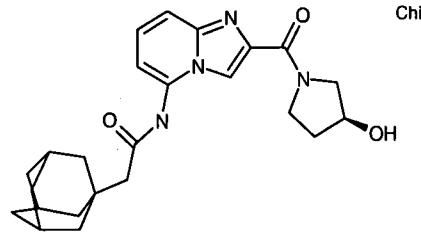
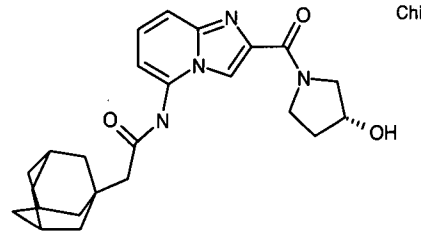
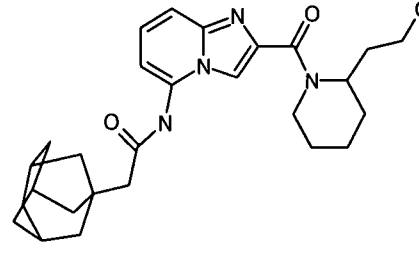
	Compound	Name	MS	R_T	IC_{50}
385		2-adamantan-1-yl-N-{2-[(4-methoxypiperidin-1-yl)carbonyl]imidazo[1,2-a]pyridin-5-yl}acetamide	451.35	1.27	*
386		2-adamantan-1-yl-N-[2-(1,4-oxazepan-4-ylcarbonyl)imidazo[1,2-a]pyridin-5-yl]acetamide	541.40	1.3	*
387		2-adamantan-1-yl-N-{2-[(4-fluoropiperidin-1-yl)carbonyl]imidazo[1,2-a]pyridin-5-yl}acetamide	439.33	1.28	*
388		2-adamantan-1-yl-N-{2-[(4,4-difluoropiperidin-1-yl)carbonyl]imidazo[1,2-a]pyridin-5-yl}acetamide	457.33	1.3	*
389		2-adamantan-1-yl-N-(2-{[4-(2-methoxyethyl)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridin-5-yl)acetamide	479.40	1.29	*
390		2-adamantan-1-yl-N-(2-{[3-(methoxymethyl)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridin-5-yl)acetamide	465.38	1.28	

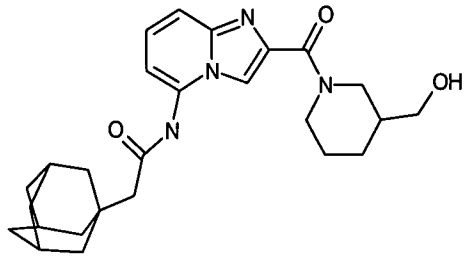
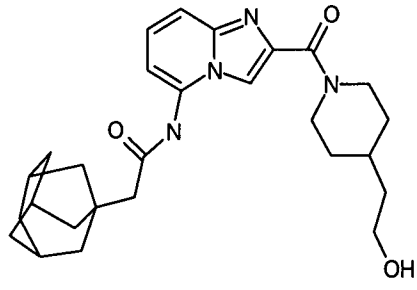
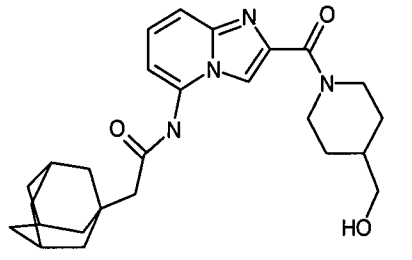
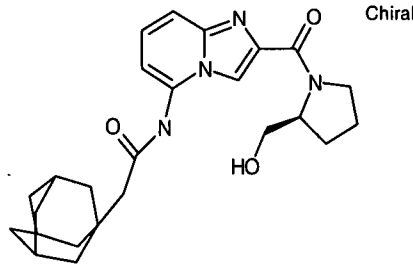
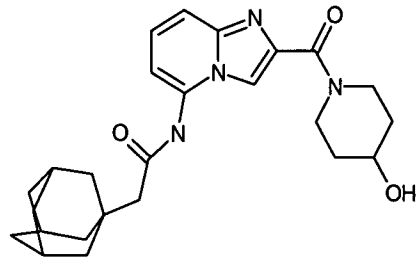
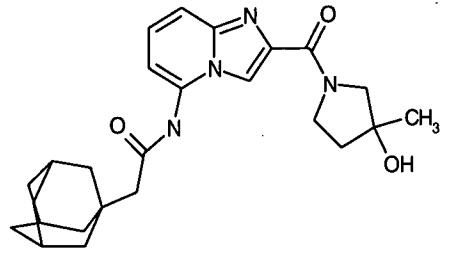
	Compound	Name	MS	R_T	IC_{50}
391		2-adamantan-1-yl-N-{2-[(3-methoxypiperidin-1-yl)carbonyl]imidazo[1,2-a]pyridin-5-yl}acetamide	451.36	1.27	*
392		2-adamantan-1-yl-N-{2-[(3,3-dimethylpiperidin-1-yl)carbonyl]imidazo[1,2-a]pyridin-5-yl}acetamide	449.38	1.33	
393		5-[(adamantan-1-ylacetyl)amino]-N-methyl-N-(tetrahydrofuran-3-yl)imidazo[1,2-a]pyridine-2-carboxamide	437.35	1.25	*
394		2-adamantan-1-yl-N-(2-{[3-(2-methoxyethyl)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridin-5-yl)acetamide	479.40	1.3	
395		2-adamantan-1-yl-N-(2-{[2-(methoxymethyl)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridin-5-yl)acetamide	465.38	1.27	*
396		2-adamantan-1-yl-N-(2-{[4-(methoxymethyl)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridin-5-yl)acetamide	465.38	1.28	*

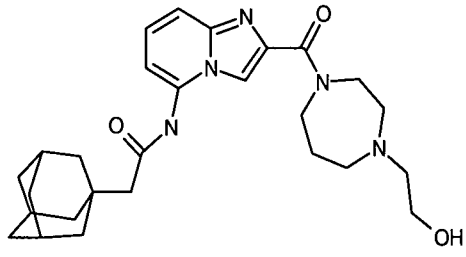
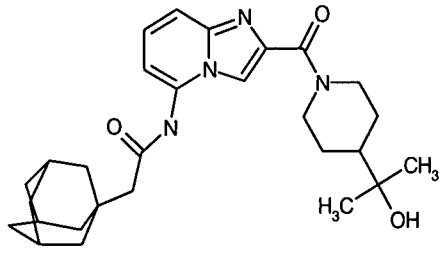
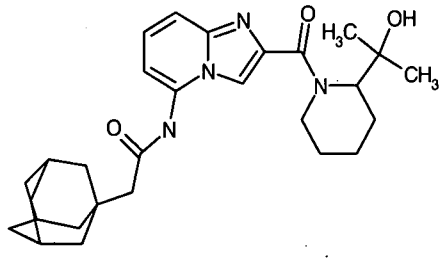
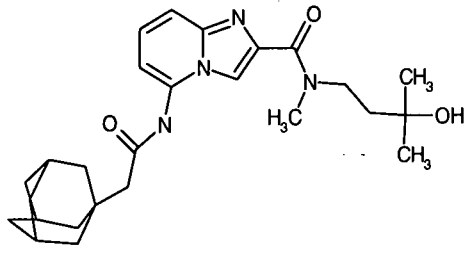
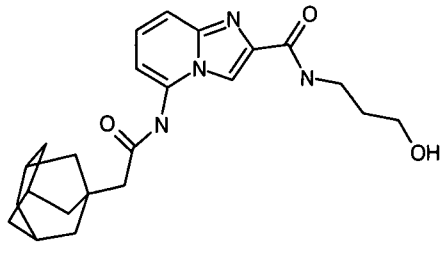
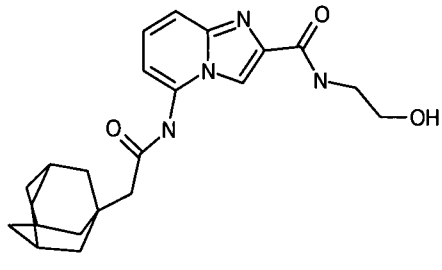
	Compound	Name	MS	R_T	IC_{50}
397		2-adamantan-1-yl-N-(2-{[2-(2-methoxyethyl)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridin-5-yl)acetamide	479.40	1.3	
398		2-adamantan-1-yl-N-[2-({4-[(methylsulfonyl)amino]piperidin-1-yl}carbonyl)imidazo[1,2-a]pyridin-5-yl]acetamide	514.35	1.22	*
399		2-adamantan-1-yl-N-(2-{[4-(methylsulfonyl)piperazin-1-yl]carbonyl}imidazo[1,2-a]pyridin-5-yl)acetamide	500.35	1.24	*
400		2-adamantan-1-yl-N-(2-{[4-(dimethylsulfamoyl)piperazin-1-yl]carbonyl}imidazo[1,2-a]pyridin-5-yl)acetamide	529.36	1.27	*
401		2-adamantan-1-yl-N-(2-{[4-(methylsulfonyl)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridin-5-yl)acetamide	499.34	1.23	
402		N-[1-({5-[(adamantan-1-ylacetyl)amino]imidazo[1,2-a]pyridin-2-yl}carbonyl)piperidin-4-yl]-2-methylpropanamide	506.41	1.27	*

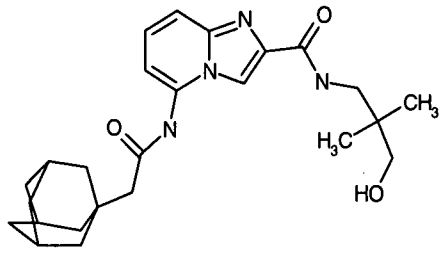
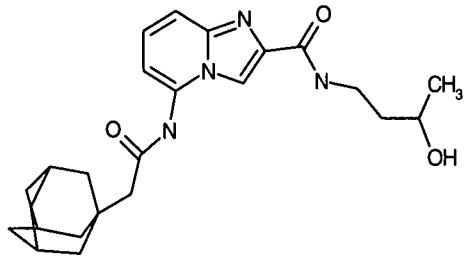
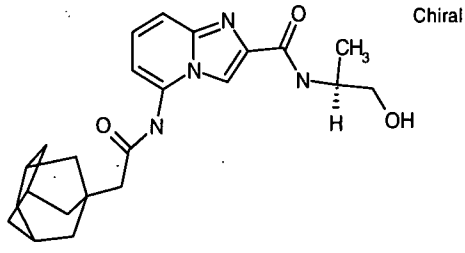
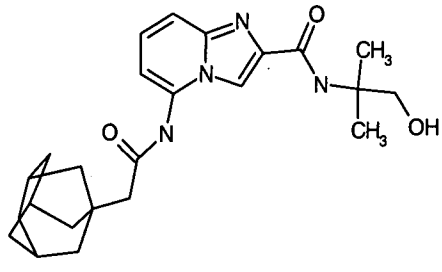
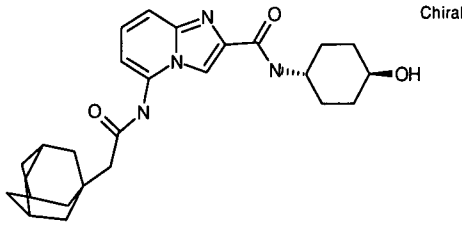
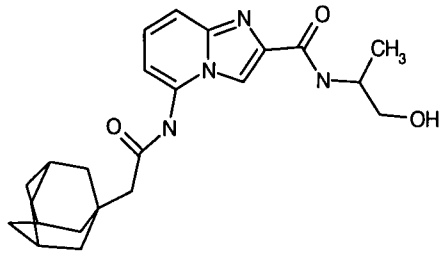
	Compound	Name	MS	R_T	IC_{50}
403		N-[1-({5-[(adamantan-1-ylacetyl)amino]imidazo[1,2-a]pyridin-2-yl}carbonyl)piperidin-4-yl]propanamide	492.39	1.24	*
404		5-[(adamantan-1-ylacetyl)amino]-N-methyl-N-{2-[(methylsulfonyl)amino]ethyl}imidazo[1,2-a]pyridine-2-carboxamide	488.33	1.21	*
405		5-[(adamantan-1-ylacetyl)amino]-N-(2-hydroxyethyl)-N-methylimidazo[1,2-a]pyridine-2-carboxamide	411.34	1.22	*
406		5-[(adamantan-1-ylacetyl)amino]-N-(2-hydroxyethyl)-N-propylimidazo[1,2-a]pyridine-2-carboxamide	439.37	1.25	*
407		5-[(adamantan-1-ylacetyl)amino]-N-cyclohexyl-N-(2-hydroxyethyl)imidazo[1,2-a]pyridine-2-carboxamide	479.40	1.31	*
408		N-{2-[(4-acetamidopiperidin-1-yl)carbonyl]imidazo[1,2-a]pyridin-5-yl}-2-adamantan-1-ylacetamide	478.38	1.23	*

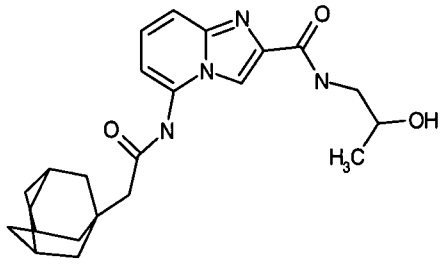
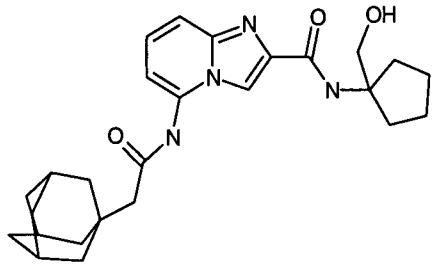
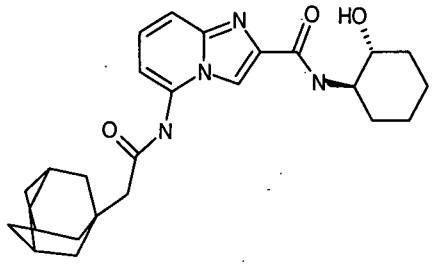
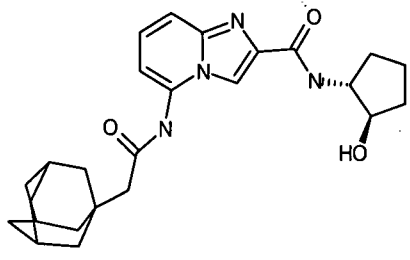
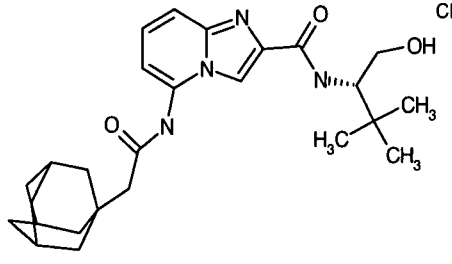
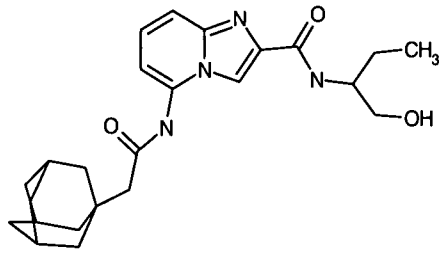
Compound		Name	MS	R_T	IC_{50}
409		N-[1-({5-[(adamantan-1-ylacetyl)amino]imidazo[1,2-a]pyridin-2-yl}carbonyl)piperidin-4-yl]butanamide	506.41	1.27	*
410		5-[(adamantan-1-ylacetyl)amino]-N-(2-hydroxyethyl)-N-pentylimidazo[1,2-a]pyridine-2-carboxamide	467.39	1.32	*
411		2-(tert-butylamino)ethyl 5-[(adamantan-1-ylacetyl)amino]imidazo[1,2-a]pyridine-2-carboxylate	453.37	1.23	*
412		5-[(adamantan-1-ylacetyl)amino]-N-butyl-N-(2-hydroxyethyl)imidazo[1,2-a]pyridine-2-carboxamide	453.37	1.29	*
413		5-[(adamantan-1-ylacetyl)amino]-N-(2-hydroxyethyl)-N-isopropylimidazo[1,2-a]pyridine-2-carboxamide	439.35	1.26	*
414		5-[(adamantan-1-ylacetyl)amino]-N-ethyl-N-(2-hydroxyethyl)imidazo[1,2-a]pyridine-2-carboxamide	425.35	1.24	*

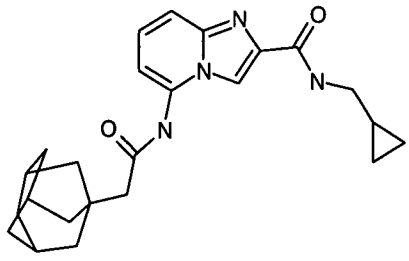
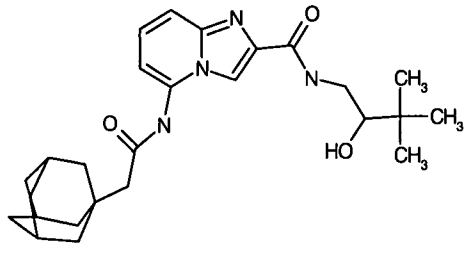
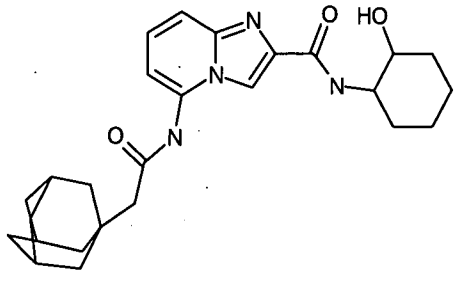
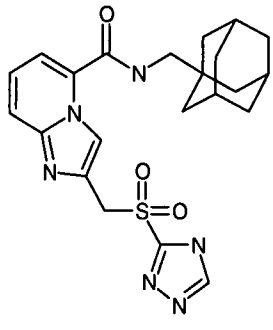
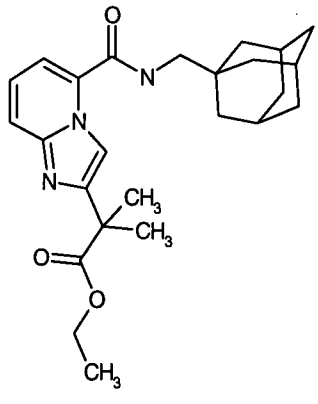
	Compound	Name	MS	R_T	IC_{50}
415		2-adamantan-1-yl-N-(2-{[2-(hydroxymethyl)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridin-5-yl)acetamide	451.36	1.25	*
416		5-[(adamantan-1-ylacetyl)amino]-N-(3-hydroxypropyl)-N-isopropylimidazo[1,2-a]pyridine-2-carboxamide	453.36	1.26	*
417		5-[(adamantan-1-ylacetyl)amino]-N-ethyl-N-(3-hydroxypropyl)imidazo[1,2-a]pyridine-2-carboxamide	368.27	1.27	*
418		2-adamantan-1-yl-N-{2-[(3-hydroxypiperidin-1-yl)carbonyl]imidazo[1,2-a]pyridin-5-yl}acetamide	437.33	1.24	*
419	Chiral 	2-adamantan-1-yl-N-(2-{[(3S)-3-hydroxypyrrolidin-1-yl]carbonyl}imidazo[1,2-a]pyridin-5-yl)acetamide	423.32	1.21	*
420	Chiral 	2-adamantan-1-yl-N-(2-{[(3R)-3-hydroxypyrrolidin-1-yl]carbonyl}imidazo[1,2-a]pyridin-5-yl)acetamide	423.33	1.2	
421		2-adamantan-1-yl-N-(2-{[2-(2-hydroxyethyl)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridin-5-yl)acetamide	465.36	1.28	

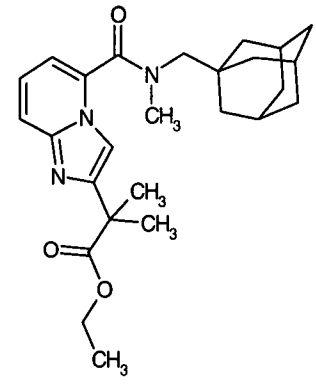
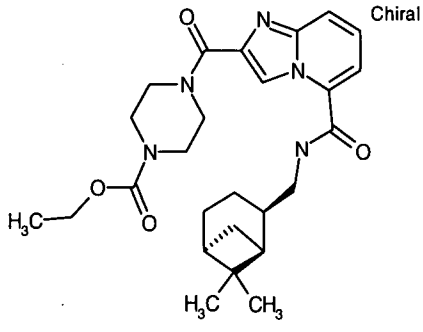
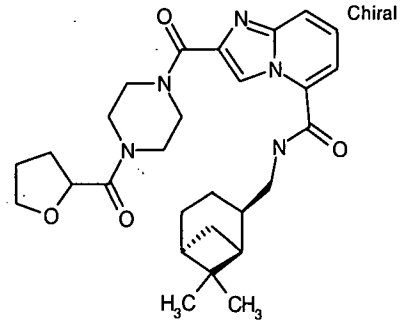
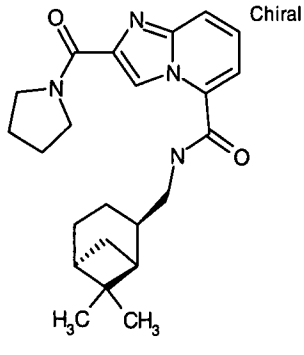
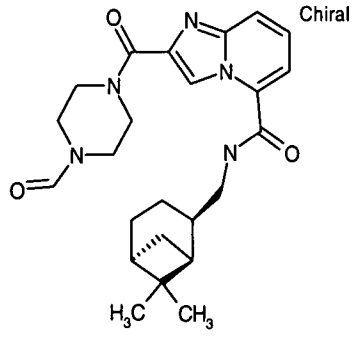
	Compound	Name	MS	R_T	IC_{50}
422		2-adamantan-1-yl-N-(2-{[3-(hydroxymethyl)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridin-5-yl)acetamide	451.34	1.25	
423		2-adamantan-1-yl-N-(2-{[4-(2-hydroxyethyl)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridin-5-yl)acetamide	465.35	1.25	*
424		2-adamantan-1-yl-N-(2-{[4-(hydroxymethyl)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridin-5-yl)acetamide	451.34	1.23	*
425	 Chiral	2-adamantan-1-yl-N-(2-{[(2S)-2-(hydroxymethyl)pyrrolidin-1-yl]carbonyl}imidazo[1,2-a]pyridin-5-yl)acetamide	437.33	1.24	
426		2-adamantan-1-yl-N-{2-[(4-hydroxypiperidin-1-yl)carbonyl]imidazo[1,2-a]pyridin-5-yl}acetamide	437.33	1.23	*
427		2-adamantan-1-yl-N-{2-[(3-hydroxy-3-methylpyrrolidin-1-yl)carbonyl]imidazo[1,2-a]pyridin-5-yl}acetamide	437.32	1.22	

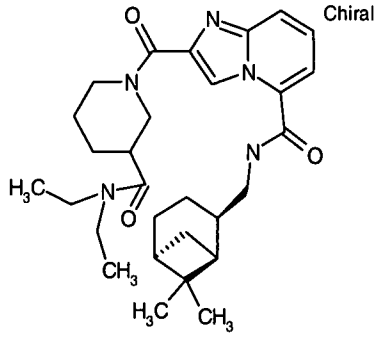
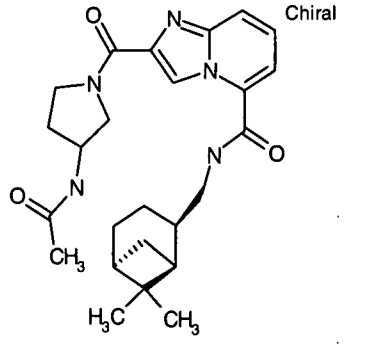
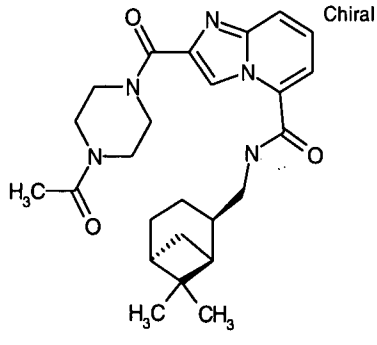
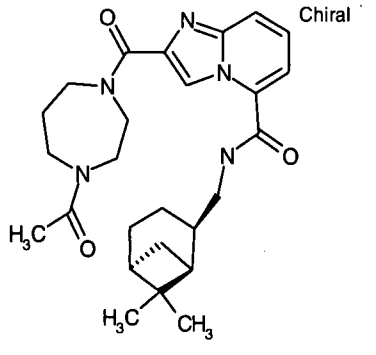
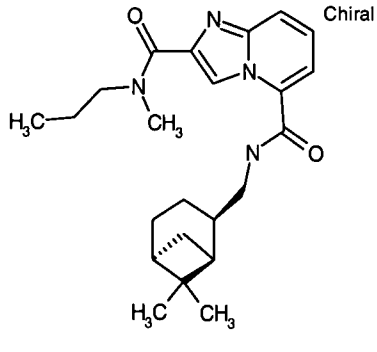
	Compound	Name	MS	R_T	IC_{50}
428		2-adamantan-1-yl-N-(2-{[4-(2-hydroxyethyl)-1,4-diazepan-1-yl]carbonyl}imidazo[1,2-a]pyridin-5-yl)acetamide	480.37	1.19	
429		2-adamantan-1-yl-N-(2-{[4-(1-hydroxy-1-methylethyl)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridin-5-yl)acetamide	479.37	1.27	
430		2-adamantan-1-yl-N-(2-{[2-(1-hydroxy-1-methylethyl)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridin-5-yl)acetamide	479.36	1.29	
431		5-[(adamantan-1-ylacetyl)amino]-N-(3-hydroxy-3-methylbutyl)-N-methylimidazo[1,2-a]pyridine-2-carboxamide	453.35	1.26	*
432		5-[(adamantan-1-ylacetyl)amino]-N-(3-hydroxypropyl)imidazo[1,2-a]pyridine-2-carboxamide	411.31	1.25	
433		5-[(adamantan-1-ylacetyl)amino]-N-(2-hydroxyethyl)imidazo[1,2-a]pyridine-2-carboxamide	397.28	1.24	

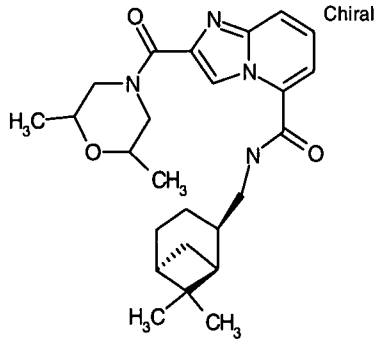
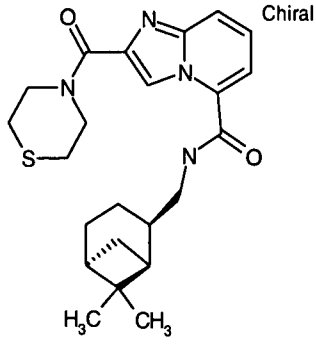
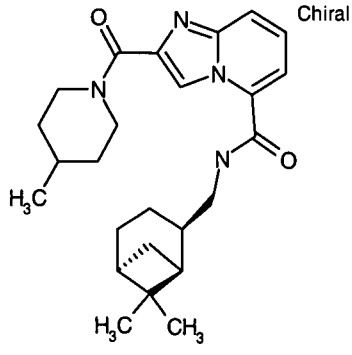
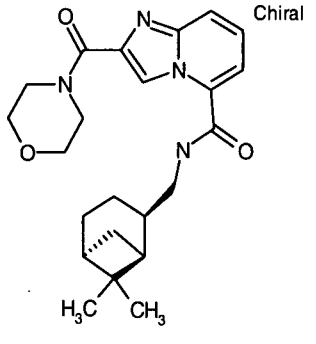
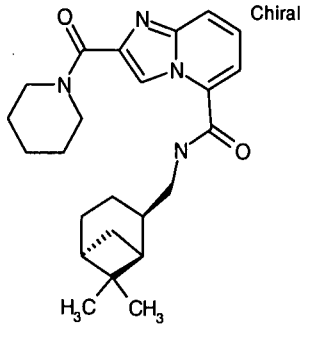
	Compound	Name	MS	R_T	IC_{50}
434		5-[(adamantan-1-ylacetyl)amino]-N-(3-hydroxy-2,2-dimethylpropyl)imidazo[1,2-a]pyridine-2-carboxamide	439.33	1.3	
435		5-[(adamantan-1-ylacetyl)amino]-N-(3-hydroxybutyl)imidazo[1,2-a]pyridine-2-carboxamide	425.32	1.27	
436	 Chiral	5-[(adamantan-1-ylacetyl)amino]-N-[(1S)-2-hydroxy-1-methylethyl]imidazo[1,2-a]pyridine-2-carboxamide	411.30	1.26	
437		5-[(adamantan-1-ylacetyl)amino]-N-(2-hydroxy-1,1-dimethylethyl)imidazo[1,2-a]pyridine-2-carboxamide	425.31	1.29	*
438	 Chiral	5-[(adamantan-1-ylacetyl)amino]-N-(trans-4-hydroxycyclohexyl)imidazo[1,2-a]pyridine-2-carboxamide	451.33	1.27	
439		5-[(adamantan-1-ylacetyl)amino]-N-(2-hydroxy-1-methylethyl)imidazo[1,2-a]pyridine-2-carboxamide	411.31	1.25	

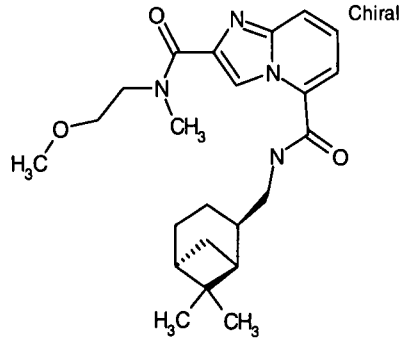
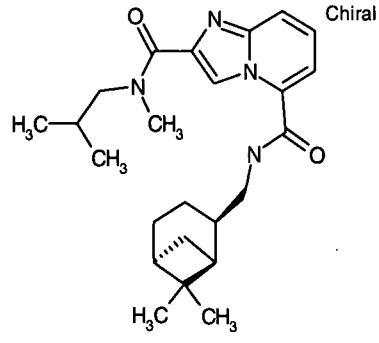
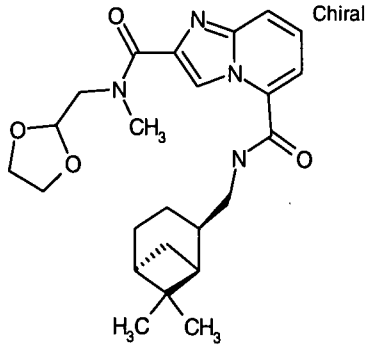
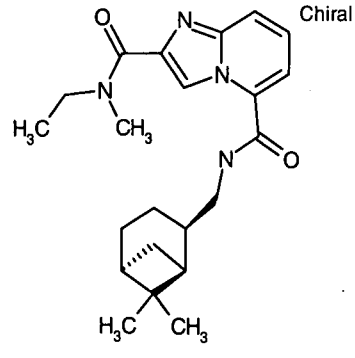
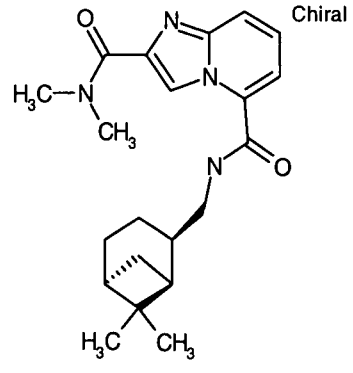
	Compound	Name	MS	R_T	IC_{50}
440		5-[(adamantan-1-ylacetyl)amino]-N-(2-hydroxypropyl)imidazo[1,2-a]pyridine-2-carboxamide	411.31	1.28	
441		5-[(adamantan-1-ylacetyl)amino]-N-[1-(hydroxymethyl)cyclopentyl]imidazo[1,2-a]pyridine-2-carboxamide	451.33	1.31	*
442	 Chiral	5-[(adamantan-1-ylacetyl)amino]-N-[(1R,2R)-2-hydroxycyclohexyl]imidazo[1,2-a]pyridine-2-carboxamide	451.32	1.29	*
443	 Chiral	5-[(adamantan-1-ylacetyl)amino]-N-[(1R,2R)-2-hydroxycyclopentyl]imidazo[1,2-a]pyridine-2-carboxamide	437.31	1.29	*
444	 Chiral	5-[(adamantan-1-ylacetyl)amino]-N-[(1S)-1-(hydroxymethyl)-2,2-dimethylpropyl]imidazo[1,2-a]pyridine-2-carboxamide	453.35	1.32	
445		5-[(adamantan-1-ylacetyl)amino]-N-[1-(hydroxymethyl)propyl]imidazo[1,2-a]pyridine-2-carboxamide	425.31	1.27	

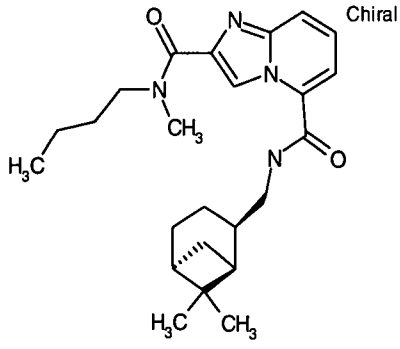
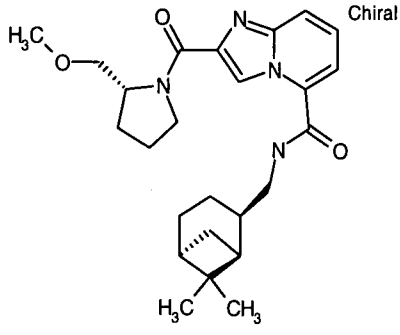
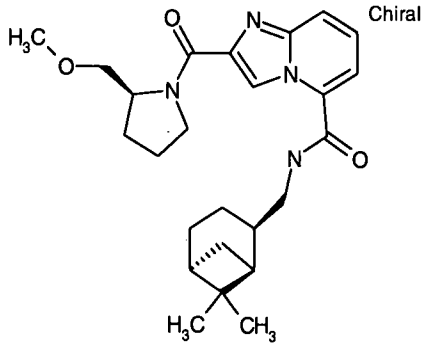
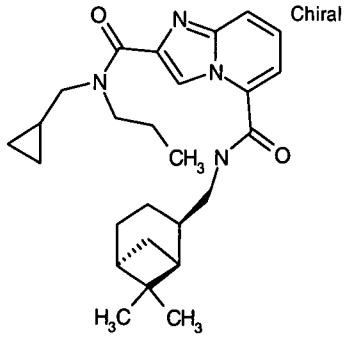
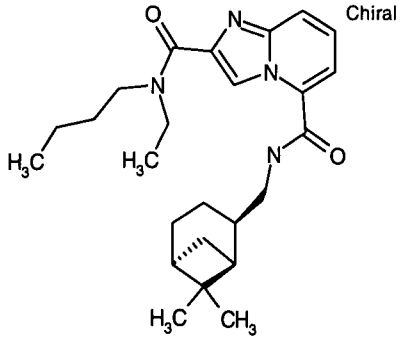
	Compound	Name	MS	R_T	IC_{50}
446		5-[(adamantan-1-ylacetyl)amino]-N-(cyclopropylmethyl)imidazo[1,2-a]pyridine-2-carboxamide	407.31	1.31	
447		5-[(adamantan-1-ylacetyl)amino]-N-(2-hydroxy-3,3-dimethylbutyl)imidazo[1,2-a]pyridine-2-carboxamide	453.34	1.32	*
448		5-[(adamantan-1-ylacetyl)amino]-N-(2-hydroxycyclohexyl)imidazo[1,2-a]pyridine-2-carboxamide	451.32	1.31	
449		N-(adamantan-1-ylmethyl)-2-[(4H-1,2,4-triazol-3-ylsulfonyl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	455.26	1.22	*
450		ethyl 2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-2-methylpropanoate	424.34	1.28	*

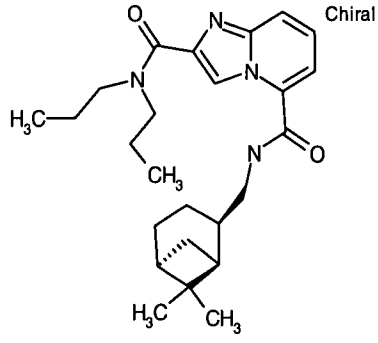
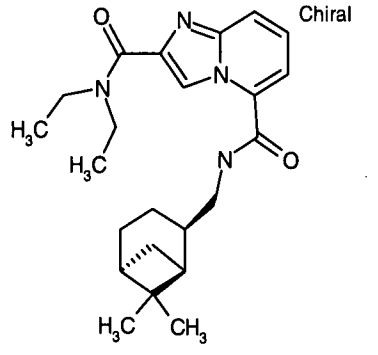
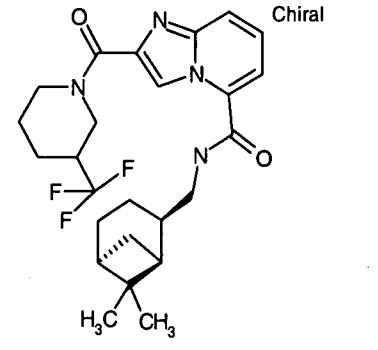
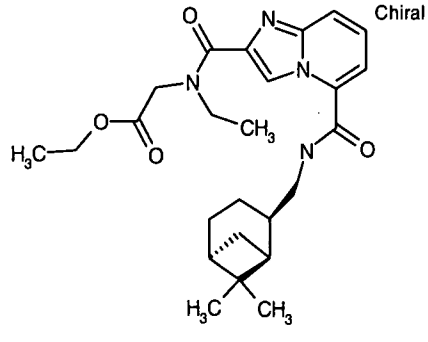
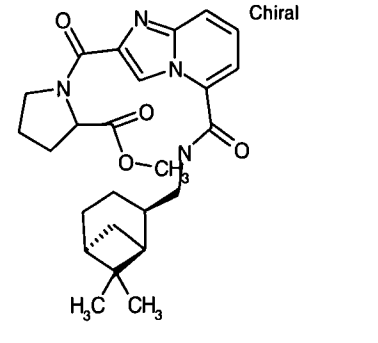
	Compound	Name	MS	R_T	IC_{50}
451		ethyl 2-{5-[(adamantan-1-ylmethyl)(methyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-2-methylpropanoate	438.35	1.26	*
452	 Chiral	ethyl 4-{[5-({[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}carbamoyl)imidazo[1,2-a]pyridin-2-yl]carbonyl}piperazine-1-carboxylate	482.34	1.31	*
453	 Chiral	N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{[4-(tetrahydrofuran-2-ylcarbonyl)piperazin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	508.34	1.28	
454	 Chiral	N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-(pyrrolidin-1-ylcarbonyl)imidazo[1,2-a]pyridine-5-carboxamide	395.31	1.28	*
455	 Chiral	N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-[(4-formylpiperazin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	438.33	1.27	

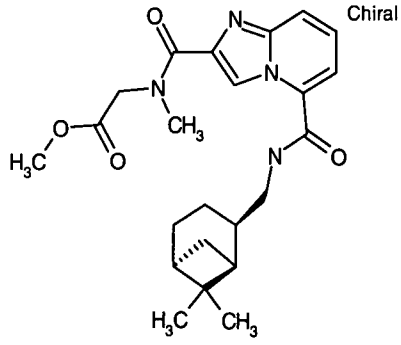
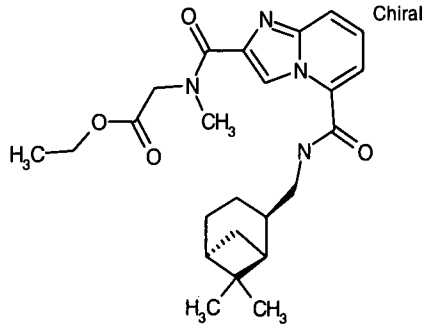
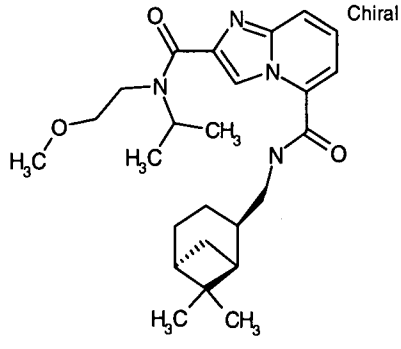
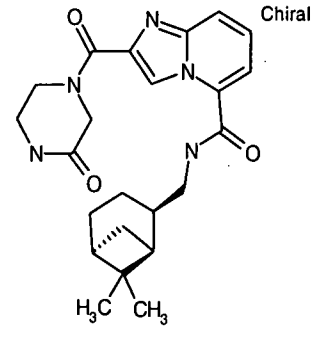
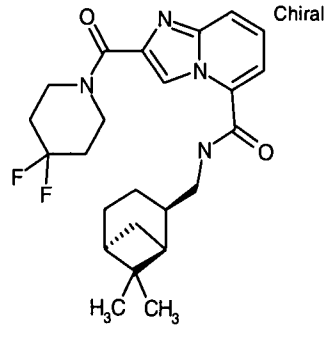
	Compound	Name	MS	R_T	IC_{50}
456	 Chiral	2-{[3-(diethylcarbamoyl)piperidin-1-yl]carbonyl}-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	508.38	1.31	*
457	 Chiral	2-[(3-acetamidopyrrolidin-1-yl)carbonyl]-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	452.32	1.25	*
458	 Chiral	2-[(4-acetylpiperazin-1-yl)carbonyl]-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	452.33	1.26	
459	 Chiral	2-[(4-acetyl-1,4-diazepan-1-yl)carbonyl]-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	466.34	1.26	
460	 Chiral	5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-methyl-2-N-propylimidazo[1,2-a]pyridine-2,5-dicarboxamide	397.32	1.31	*

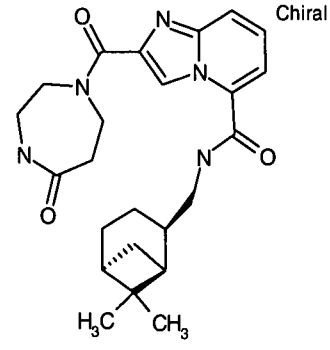
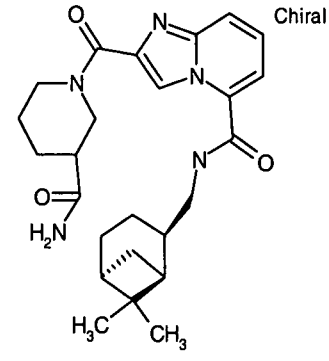
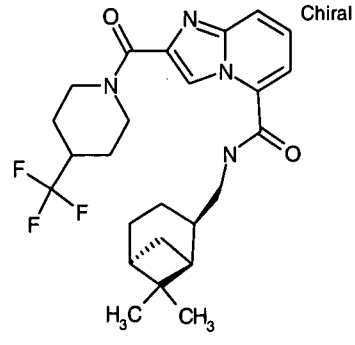
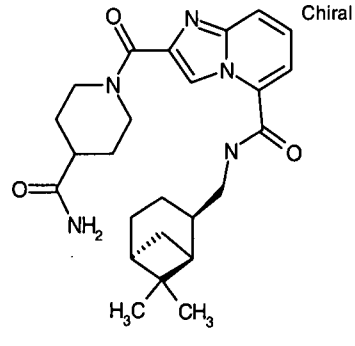
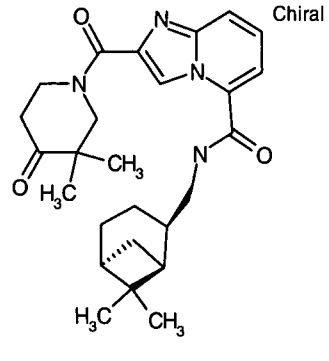
Compound		Name	MS	R_T	IC_{50}
461	 Chiral	N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-[(2,6-dimethylmorpholin-4-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	439.33	1.32	
462	 Chiral	N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-(thiomorpholin-4-ylcarbonyl)imidazo[1,2-a]pyridine-5-carboxamide	427.27	1.32	*
463	 Chiral	N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-[(4-methylpiperidin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	423.33	1.35	*
464	 Chiral	N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-(morpholin-4-ylcarbonyl)imidazo[1,2-a]pyridine-5-carboxamide	411.29	1.28	*
465	 Chiral	N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-(piperidin-1-ylcarbonyl)imidazo[1,2-a]pyridine-5-carboxamide	409.33	1.32	*

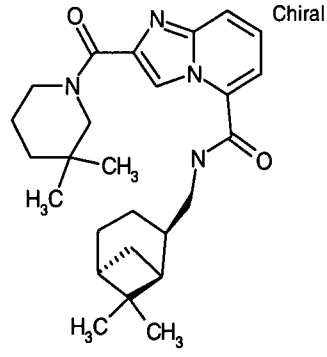
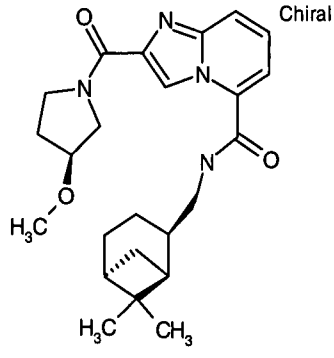
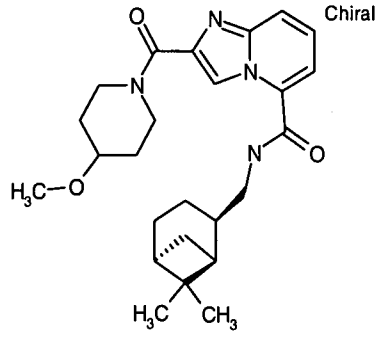
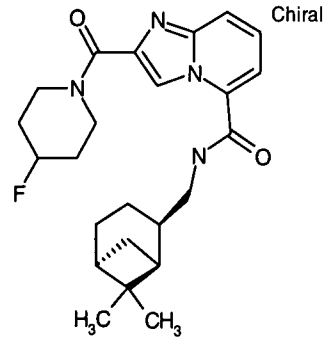
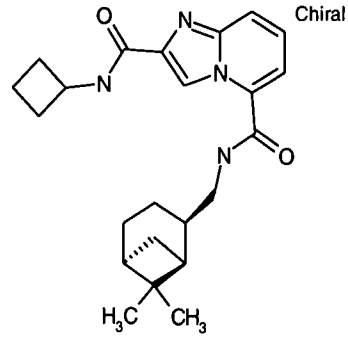
Compound		Name	MS	R_T	IC_{50}
466	 Chiral	5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-(2-methoxyethyl)-2-N-methylimidazo[1,2-a]pyridine-2,5-dicarboxamide	413.31	1.27	*
467	 Chiral	5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-isobutyl-2-N-methylimidazo[1,2-a]pyridine-2,5-dicarboxamide	411.33	1.33	*
468	 Chiral	5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-(1,3-dioxolan-2-ylmethyl)-2-N-methylimidazo[1,2-a]pyridine-2,5-dicarboxamide	441.31	1.27	*
469	 Chiral	5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-ethyl-2-N-methylimidazo[1,2-a]pyridine-2,5-dicarboxamide	383.31	1.29	*
470	 Chiral	5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N,2-N-dimethylimidazo[1,2-a]pyridine-2,5-dicarboxamide	369.29	1.27	*

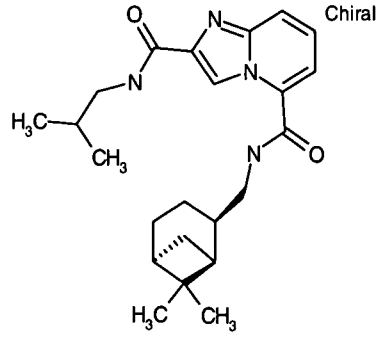
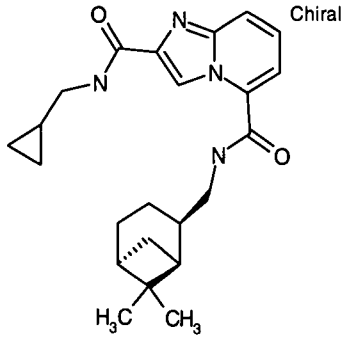
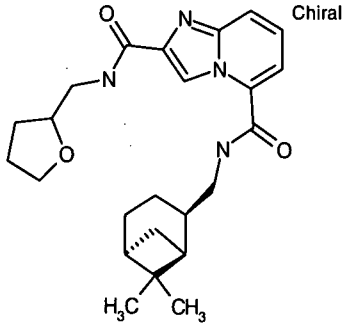
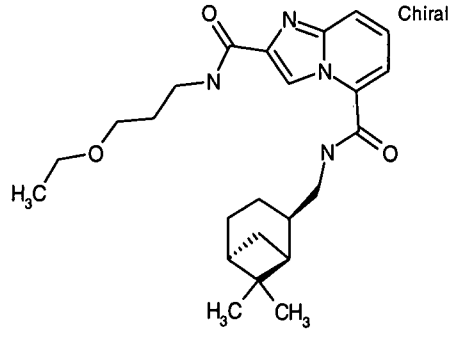
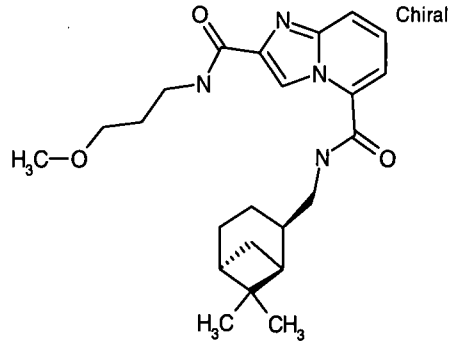
	Compound	Name	MS	R_T	IC_{50}
471	 Chiral	2-N-butyl-5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-methylimidazo[1,2-a]pyridine-2,5-dicarboxamide	411.33	1.34	*
472	 Chiral	N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{[(2R)-2-(methoxymethyl)pyrrolidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	439.33	1.3	
473	 Chiral	N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{[(2S)-2-(methoxymethyl)pyrrolidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	439.33	1.3	*
474	 Chiral	2-N-(cyclopropylmethyl)-5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-propylimidazo[1,2-a]pyridine-2,5-dicarboxamide	437.34	1.36	*
475	 Chiral	2-N-butyl-5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-ethylimidazo[1,2-a]pyridine-2,5-dicarboxamide	425.34	1.36	*

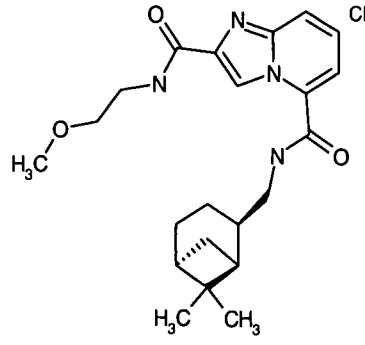
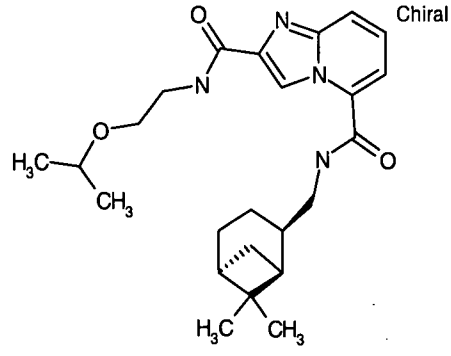
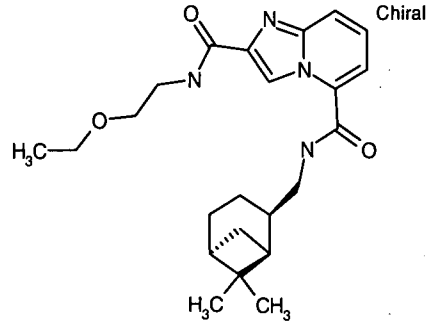
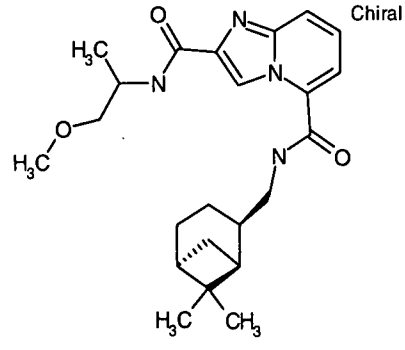
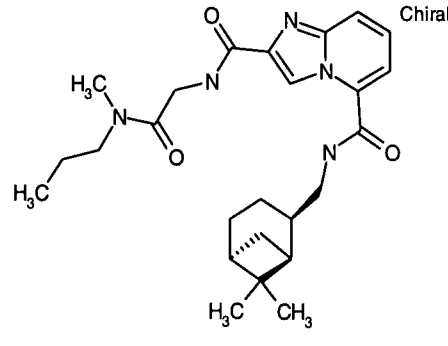
Compound		Name	MS	R_T	IC_{50}
476		5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N,2-N-dipropylimidazo[1,2-a]pyridine-2,5-dicarboxamide	425.34	1.36	*
477		5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N,2-N-diethylimidazo[1,2-a]pyridine-2,5-dicarboxamide	397.32	1.31	*
478		N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{[3-(trifluoromethyl)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	477.30	1.35	
479		ethyl N-{[5-({[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}carbamoyl)imidazo[1,2-a]pyridin-2-yl]carbonyl}-N-ethylglycinate	455.32	1.31	*
480		methyl 1-{[5-({[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}carbamoyl)imidazo[1,2-a]pyridin-2-yl]carbonyl}prolinate	453.32	1.29	*

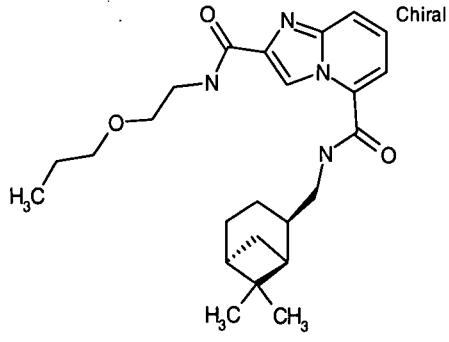
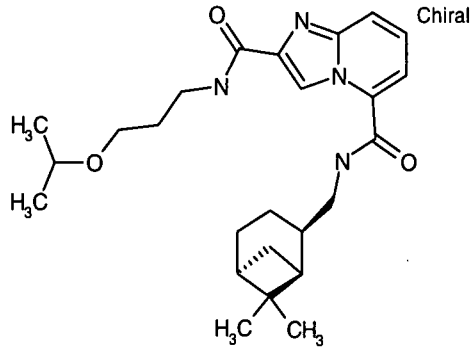
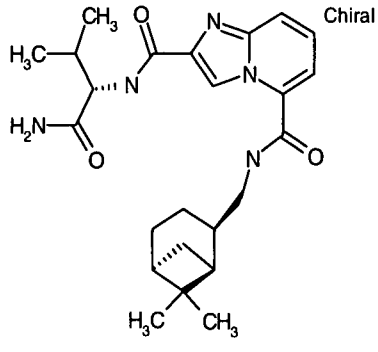
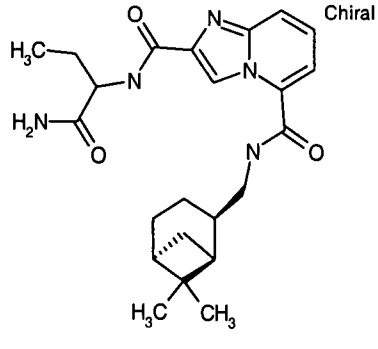
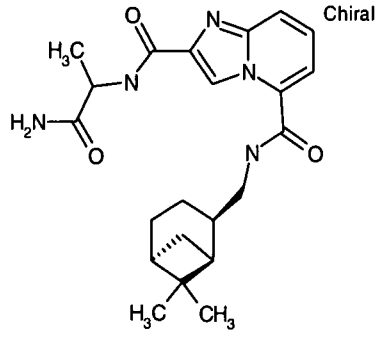
	Compound	Name	MS	R_T	IC_{50}
481		methyl N-{[5-({[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}carbamoyl)imidazo[1,2-a]pyridin-2-yl]carbonyl}-N-methylglycinate	427.29	1.27	*
482		ethyl N-{[5-({[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}carbamoyl)imidazo[1,2-a]pyridin-2-yl]carbonyl}-N-methylglycinate	441.30	1.3	*
483		5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-isopropyl-2-N-(2-methoxyethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	441.34	1.32	*
484		N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-[(3-oxopiperazin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	424.32	1.25	
485		2-[(4,4-difluoropiperidin-1-yl)carbonyl]-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	445.30	1.33	*

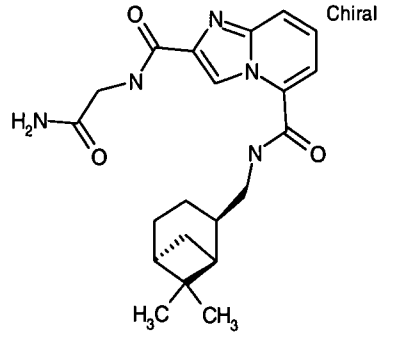
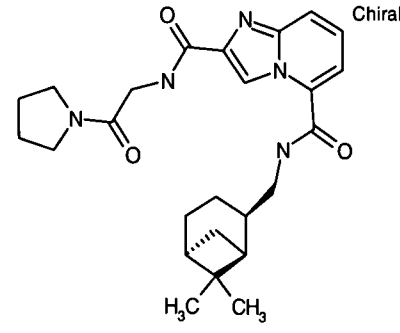
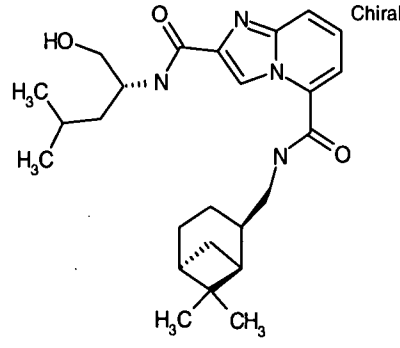
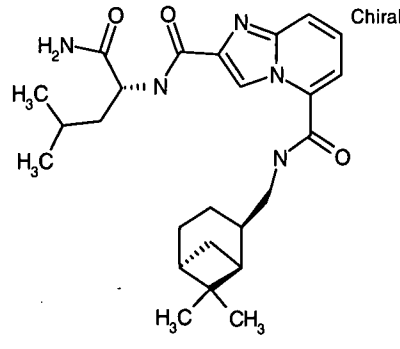
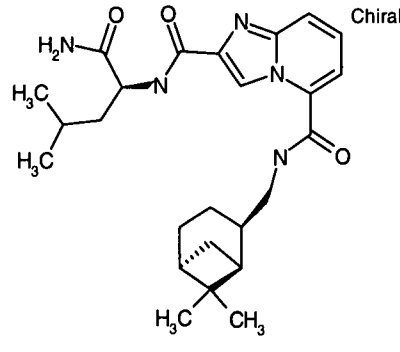
Compound		Name	MS	R_T	IC_{50}
486	 Chiral	N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-[(5-oxo-1,4-diazepan-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	438.31	1.25	
487	 Chiral	2-[(3-carbamoylpiperidin-1-yl)carbonyl]-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	452.33	1.26	
488	 Chiral	N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{[4-(trifluoromethyl)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	477.38	1.44	*
489	 Chiral	2-[(4-carbamoylpiperidin-1-yl)carbonyl]-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	452.32	1.24	
490	 Chiral	N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-[(3,3-dimethyl-4-oxopiperidin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	451.32	1.31	

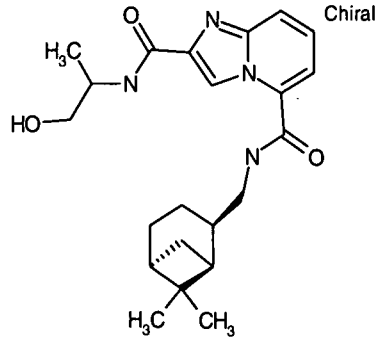
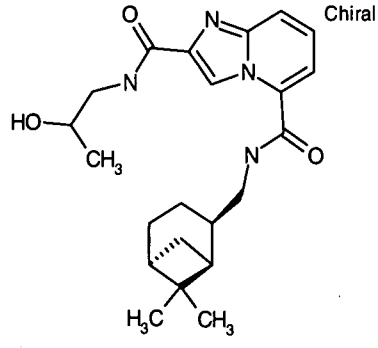
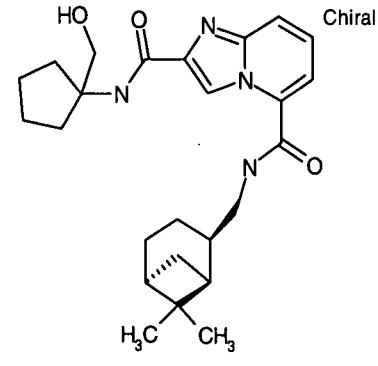
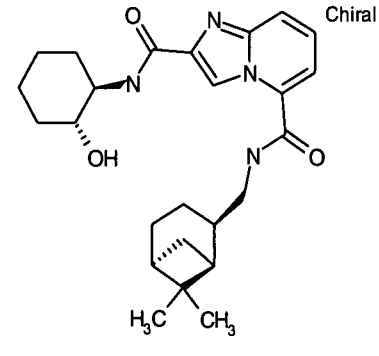
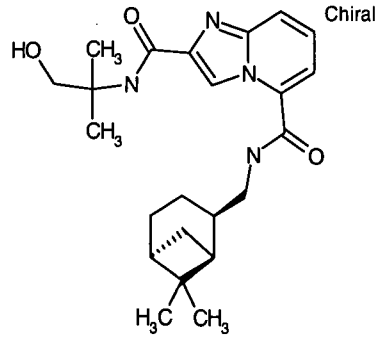
Compound		Name	MS	R_T	IC_{50}
491		N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-[(3,3-dimethylpiperidin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	437.36	1.36	*
492		N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{[(3S)-3-methoxypyrrolidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	425.32	1.27	*
493		N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-[(4-methoxypiperidin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	439.32	1.3	*
494		N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-[(4-fluoropiperidin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	427.30	1.31	*
495		2-N-cyclobutyl-5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-2,5-dicarboxamide	395.31	1.32	*

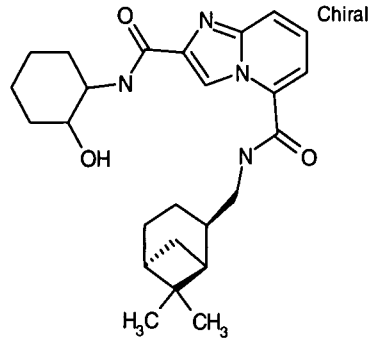
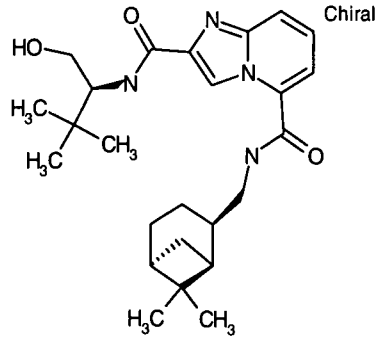
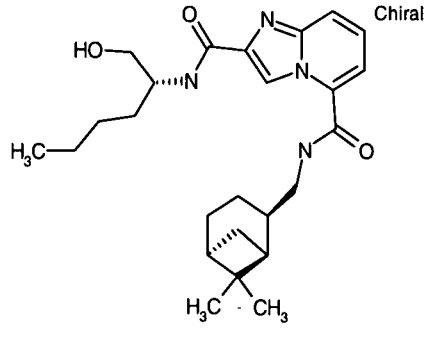
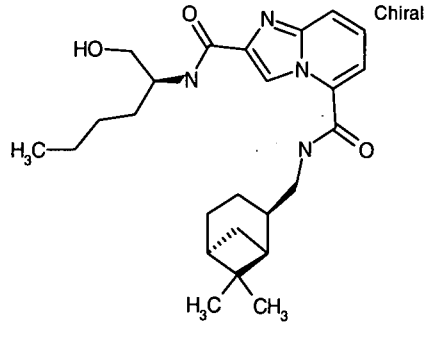
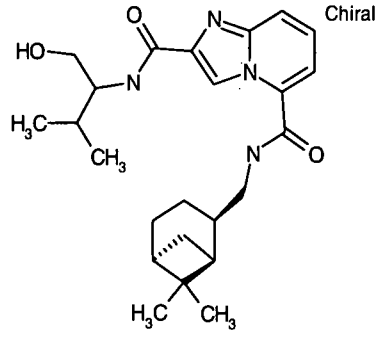
Compound		Name	MS	R_T	IC_{50}
496		5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-isobutylimidazo[1,2-a]pyridine-2,5-dicarboxamide	397.32	1.33	*
497		2-N-(cyclopropylmethyl)-5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-2,5-dicarboxamide	395.31	1.32	*
498		5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-(tetrahydrofuran-2-ylmethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	425.31	1.3	
499		5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-(3-ethoxypropyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	427.33	1.31	
500		5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-(3-methoxypropyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	413.31	1.29	

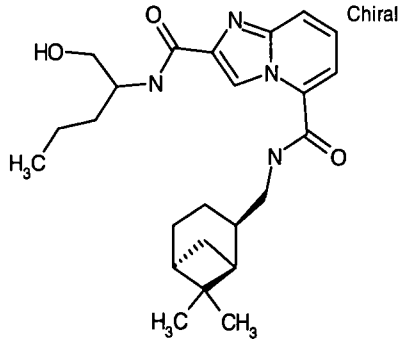
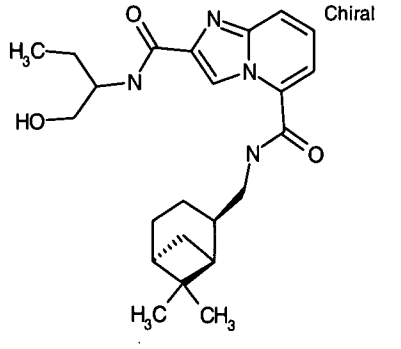
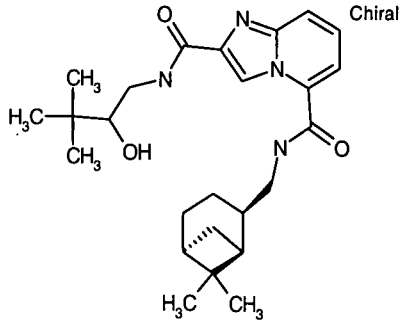
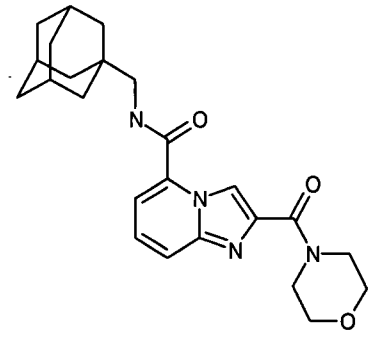
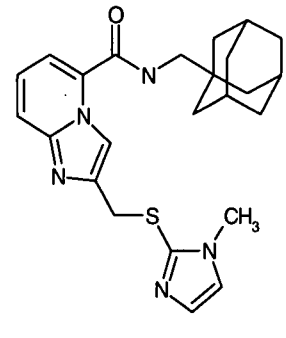
Compound		Name	MS	R_T	IC_{50}
501	 Chiral	5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-(2-methoxyethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	399.30	1.29	
502	 Chiral	5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-(2-isopropoxyethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	427.33	1.32	
503	 Chiral	5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-(2-ethoxyethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	413.32	1.3	
504	 Chiral	5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-(2-methoxy-1-methylethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	413.32	1.3	
505	 Chiral	5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-{2-[methyl(propyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-2,5-dicarboxamide	454.34	1.3	*

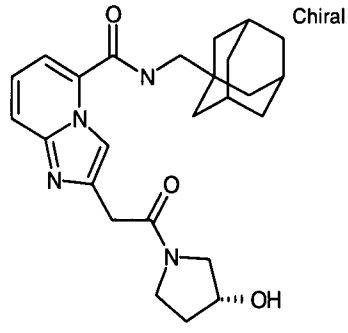
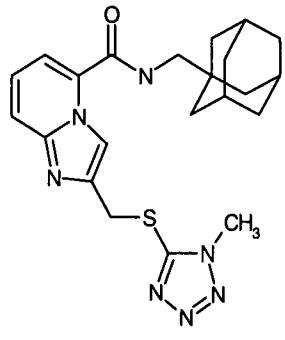
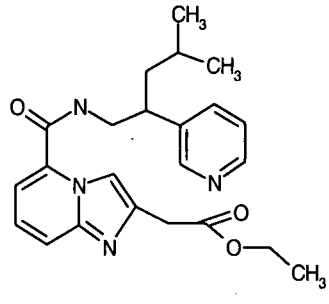
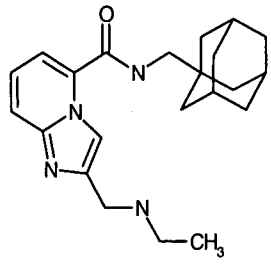
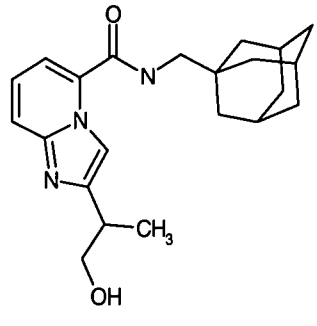
Compound		Name	MS	R_T	IC_{50}
506		5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-(2-propoxyethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	427.33	1.33	
507		5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-(3-isopropoxypropyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	441.34	1.33	
508		2-N-[(1S)-1-carbamoyl-2-methylpropyl]-5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-2,5-dicarboxamide	440.33	1.29	
509		2-N-(1-carbamoylpropyl)-5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-2,5-dicarboxamide	426.31	1.28	
510		2-N-(2-amino-1-methyl-2-oxoethyl)-5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-2,5-dicarboxamide	412.30	1.26	

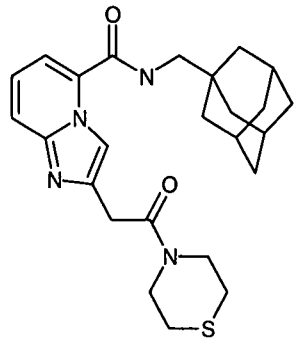
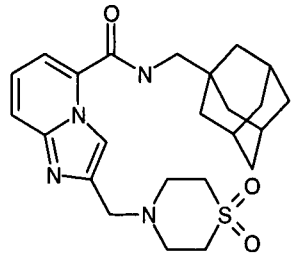
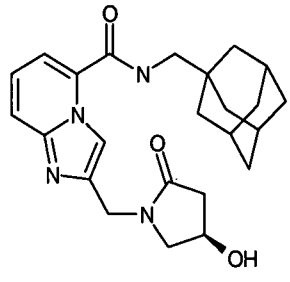
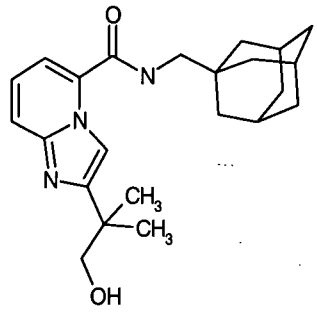
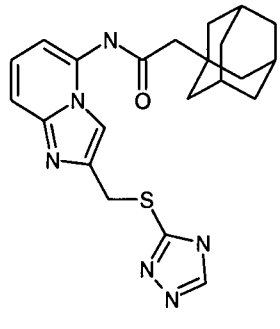
Compound		Name	MS	R_T	IC_{50}
511		2-N-(2-amino-2-oxoethyl)-5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-2,5-dicarboxamide	398.28	1.24	
512		5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-(2-oxo-2-pyrrolidin-1-ylethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	452.33	1.28	
513		5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-[(1R)-1-(hydroxymethyl)-3-methylbutyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	441.36	1.33	
514		2-N-[(1R)-1-carbamoyl-3-methylbutyl]-5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-2,5-dicarboxamide	454.34	1.31	*
515		2-N-[(1S)-1-carbamoyl-3-methylbutyl]-5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-2,5-dicarboxamide	454.33	1.31	*

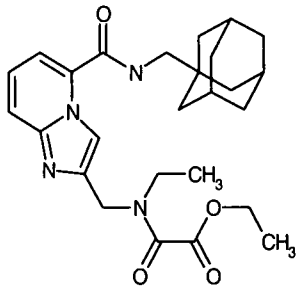
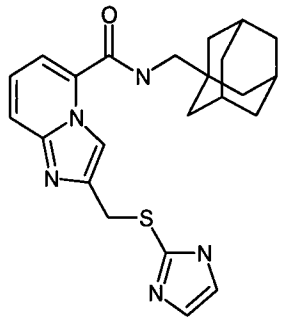
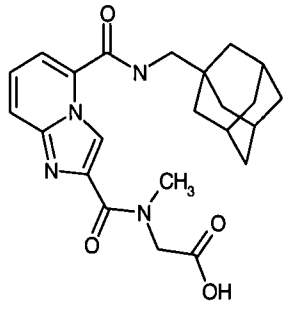
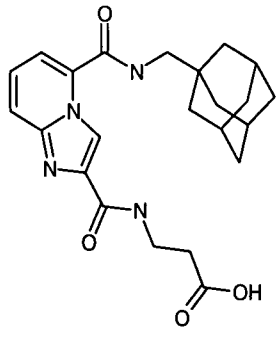
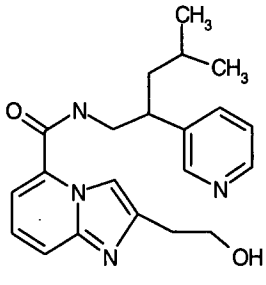
Compound		Name	MS	R_T	IC_{50}
516		5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-(2-hydroxy-1-methylethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	399.30	1.26	
517		5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-(2-hydroxypropyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	399.31	1.26	
518		5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-[1-(hydroxymethyl)cyclopentyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	439.33	1.32	*
519		5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-[(1R,2R)-2-hydroxycyclohexyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	439.34	1.3	*
520		5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-(2-hydroxy-1,1-dimethylethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	413.32	1.29	*

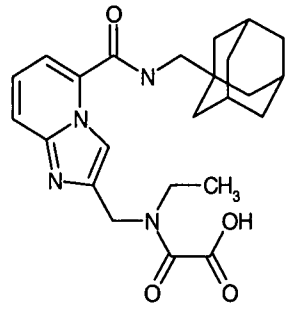
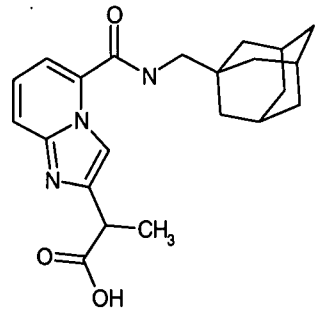
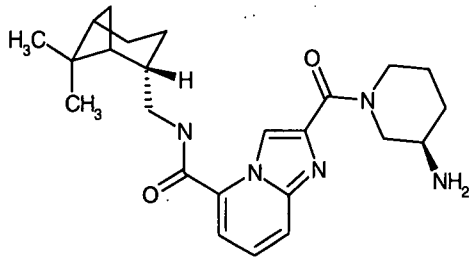
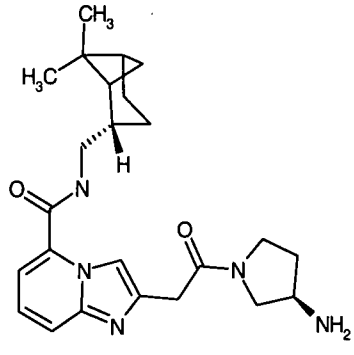
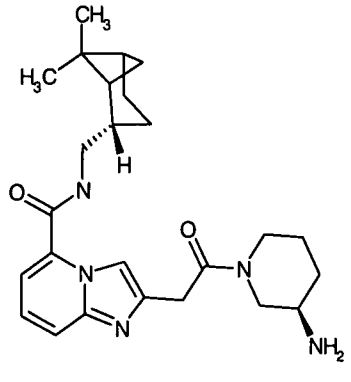
Compound		Name	MS	R_T	IC_{50}
521		5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-(2-hydroxycyclohexyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	439.33	1.31	
522		5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-[(1S)-1-(hydroxymethyl)-2,2-dimethylpropyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	441.34	1.33	*
523		5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-[(1R)-1-(hydroxymethyl)pentyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	441.34	1.33	
524		5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-[(1S)-1-(hydroxymethyl)pentyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	441.34	1.33	
525		5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-[1-(hydroxymethyl)-2-methylpropyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	427.32	1.31	

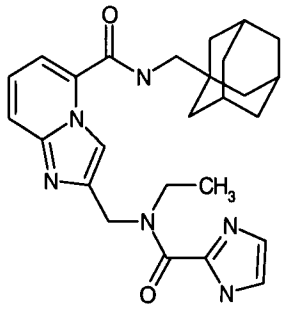
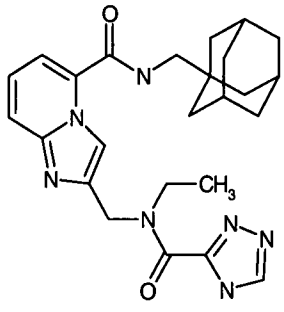
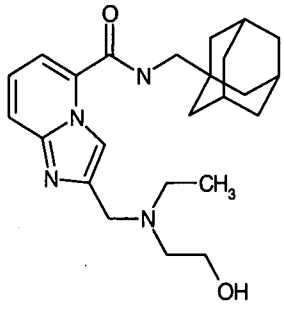
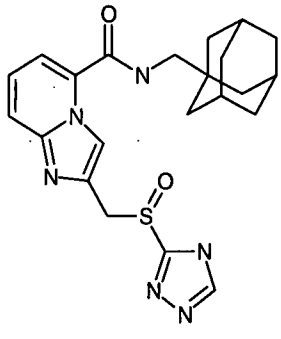
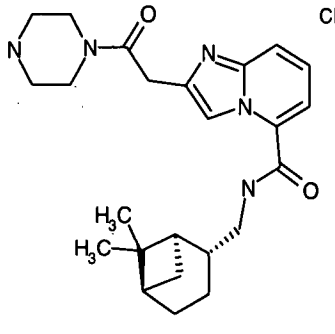
	Compound	Name	MS	R_T	IC_{50}
526	 Chiral	5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-[1-(hydroxymethyl)butyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	427.33	1.3	
527	 Chiral	5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-[1-(hydroxymethyl)propyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	413.32	1.28	
528	 Chiral	5-N-{[(1S,2R,5S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-N-(2-hydroxy-3,3-dimethylbutyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	441.35	1.32	*
529		N-(adamantan-1-ylmethyl)-2-(morpholin-4-ylcarbonyl)imidazo[1,2-a]pyridine-5-carboxamide	423.33	1.28	*
530		N-(adamantan-1-ylmethyl)-2-{[(1-methyl-1H-imidazol-2-yl)thio]methyl}imidazo[1,2-a]pyridine-5-carboxamide	436.31	1.2	*

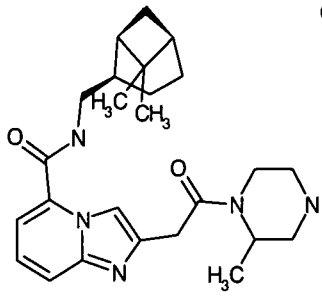
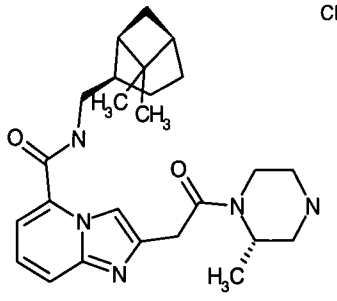
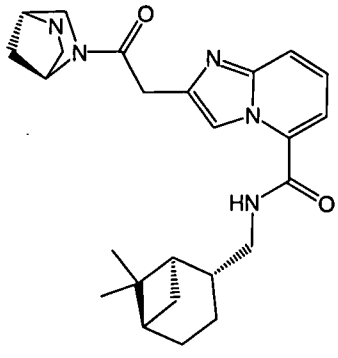
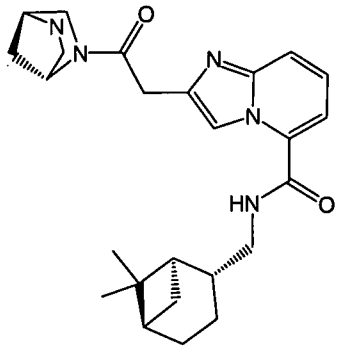
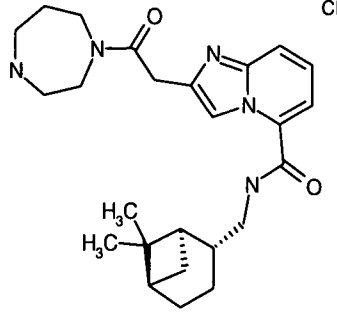
	Compound	Name	MS	R_T	IC_{50}
531	 Chiral	N-(adamantan-1-ylmethyl)-2-{2-[(3R)-3-hydroxypyrrolidin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	437.35	1.2	*
532		N-(adamantan-1-ylmethyl)-2-{[(1-methyl-1H-tetrazol-5-yl)thio]methyl}imidazo[1,2-a]pyridine-5-carboxamide	438.30	1.23	*
533		ethyl {5-[(4-methyl-2-pyridin-3-ylpentyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}acetate	409.30	1.06	*
534		N-(adamantan-1-ylmethyl)-2-[(ethylamino)methyl]imidazo[1,2-a]pyridine-5-carboxamide	367.32	1.2	*
535		N-(adamantan-1-ylmethyl)-2-(2-hydroxy-1-methylethyl)imidazo[1,2-a]pyridine-5-carboxamide	368.34	1.22	*

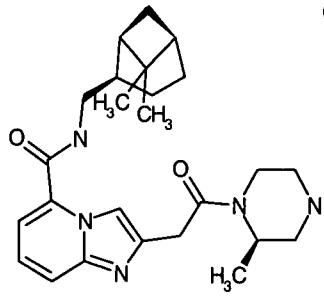
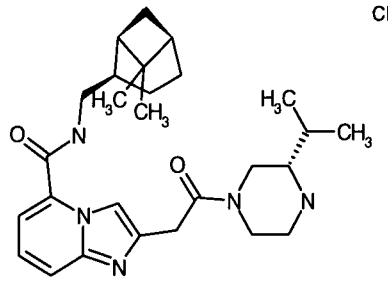
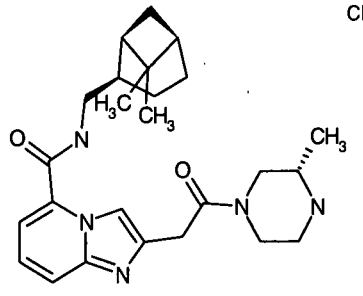
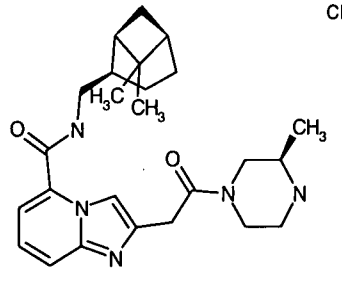
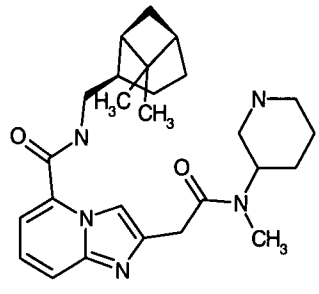
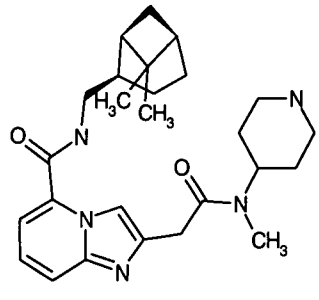
	Compound	Name	MS	R_T	IC_{50}
536		N-(adamantan-1-ylmethyl)-2-(2-oxo-2-thiomorpholin-4-ylethyl)imidazo[1,2-a]pyridine-5-carboxamide	453.32	1.23	*
537		N-(adamantan-1-ylmethyl)-2-[(1,1-dioxidothiomorpholin-4-yl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	457.31	1.21	*
538	 Chiral	N-(adamantan-1-ylmethyl)-2-{[(4R)-4-hydroxy-2-oxopyrrolidin-1-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	423.32	1.19	*
539		N-(adamantan-1-ylmethyl)-2-(2-hydroxy-1,1-dimethylethyl)imidazo[1,2-a]pyridine-5-carboxamide	382.34	1.23	*
540		2-adamantan-1-yl-N-{2-[(4H-1,2,4-triazol-3-ylthio)methyl]imidazo[1,2-a]pyridin-5-yl}acetamide	423.29	1.19	*

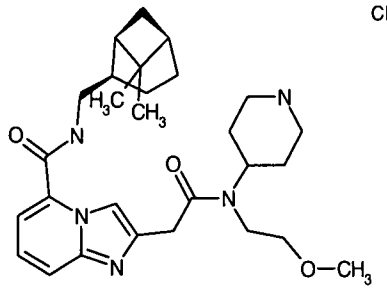
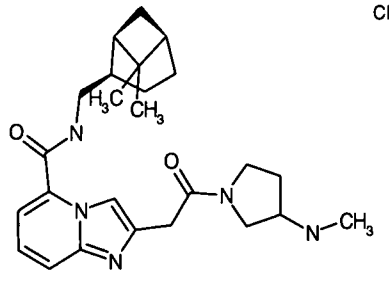
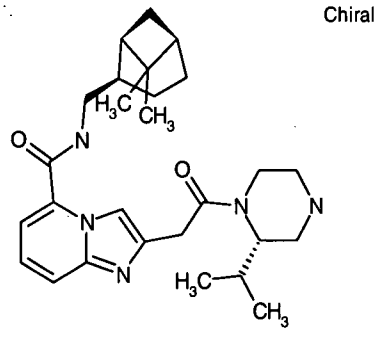
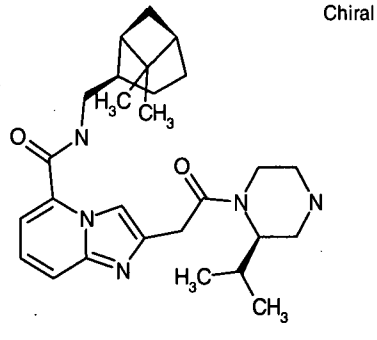
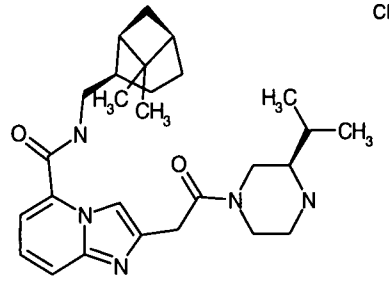
Compound		Name	MS	R_T	IC_{50}
541		ethyl [({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)(ethyl)amino](oxo)acetate	467.13	1.75	*
542		N-(adamantan-1-ylmethyl)-2-[(1H-imidazol-2-ylthio)methyl]imidazo[1,2-a]pyridine-5-carboxamide	422.30	1.19	*
543		N-({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}carbonyl)-N-methylglycine	425.33	1.25	
544		N-({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}carbonyl)-beta-alanine	425.32	1.26	*
545		2-(2-hydroxyethyl)-N-(4-methyl-2-pyridin-3-ylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	367.31	0.97	*

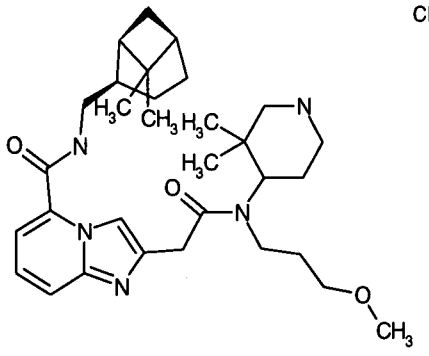
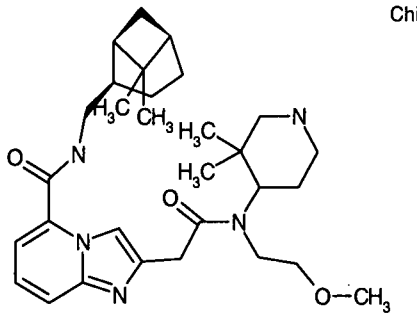
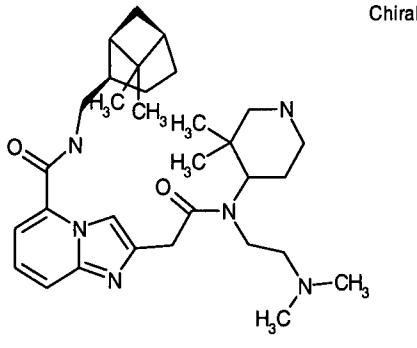
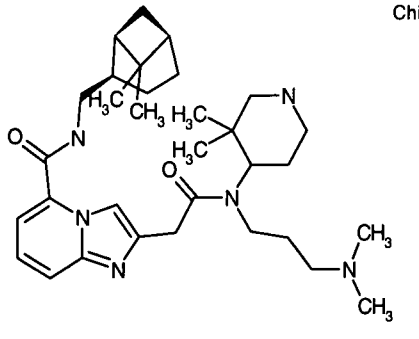
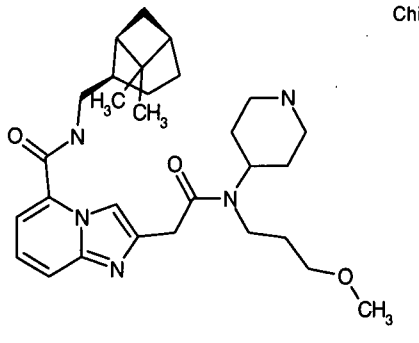
	Compound	Name	MS	R_T	IC_{50}
546		[({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)(ethyl)amino](oxo)acetic acid	395.33	1.23	*
547		2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}propanoic acid	382.31	1.22	*
548		rel-2-{[(3R)-3-aminopiperidin-1-yl]carbonyl}-N-{[(2S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	424.37	1.2	*
549		rel-2-{2-[(3R)-3-aminopyrrolidin-1-yl]-2-oxoethyl}-N-{[(2S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	424.37	1.14	*
550		rel-2-{2-[(3R)-3-aminopiperidin-1-yl]-2-oxoethyl}-N-{[(2S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	438.39	1.15	*

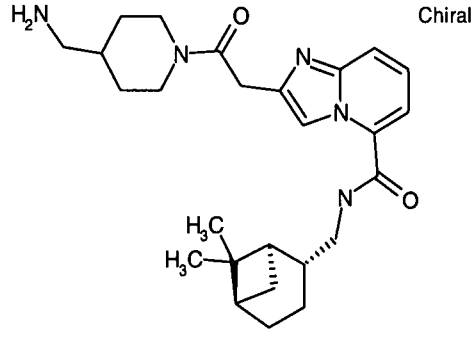
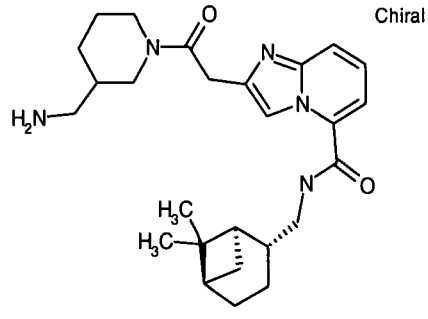
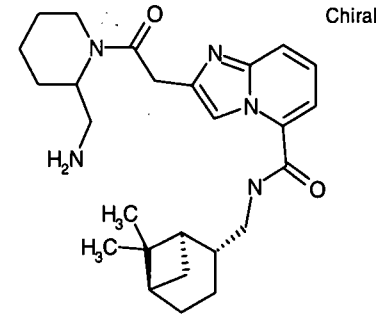
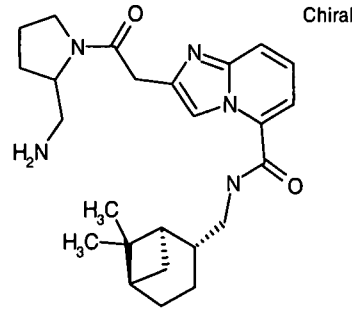
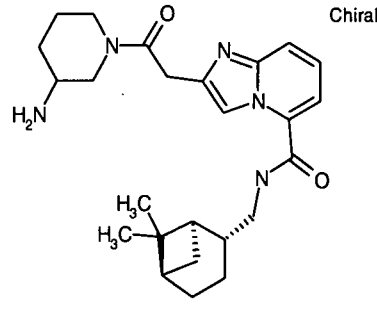
Compound		Name	MS	R_T	IC_{50}
551		N-(adamantan-1-ylmethyl)-2-{[ethyl(1H-imidazol-2-ylcarbonyl)amino]methyl}imidazo[1,2-a]pyridine-5-carboxamide	461.16	1.23	*
552		N-(adamantan-1-ylmethyl)-2-{[ethyl(4H-1,2,4-triazol-3-ylcarbonyl)amino]methyl}imidazo[1,2-a]pyridine-5-carboxamide	462.17	1.23	*
553		N-(adamantan-1-ylmethyl)-2-{[ethyl(2-hydroxyethyl)amino]methyl}imidazo[1,2-a]pyridine-5-carboxamide	411.39	1.21	*
554		N-(adamantan-1-ylmethyl)-2-[(4H-1,2,4-triazol-3-ylsulfinyl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	439.26	1.21	*
555	 Chiral	N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-(2-oxo-2-piperazin-1-ylethyl)imidazo[1,2-a]pyridine-5-carboxamide	424.35	1.15	*

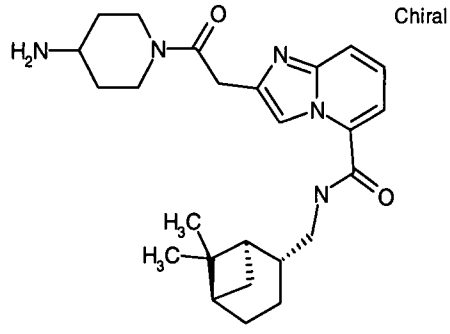
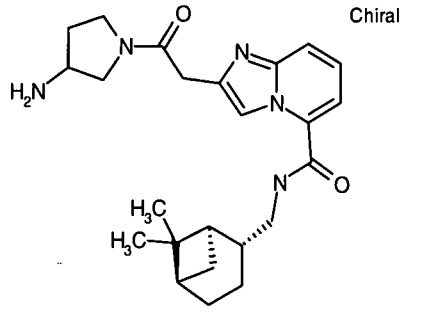
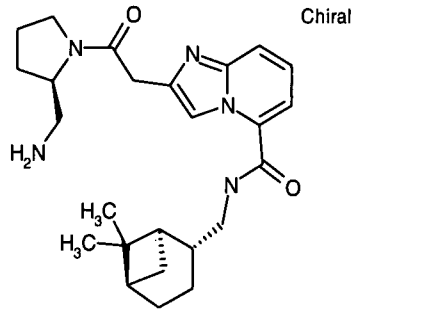
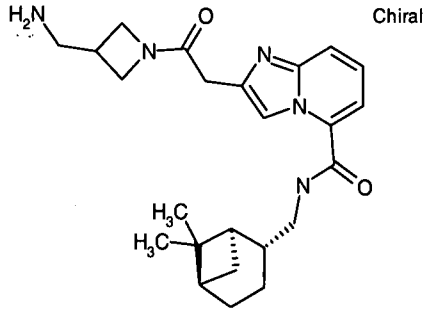
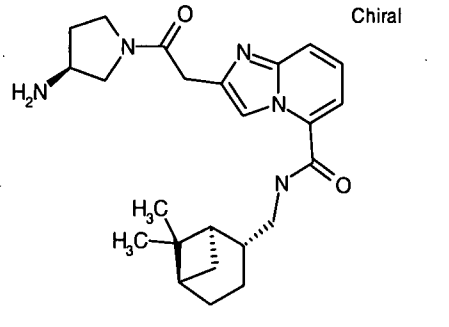
	Compound	Name	MS	R_T	IC_{50}
556	 Chiral	N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-[2-(2-methylpiperazin-1-yl)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	438.36	1.15	*
557	 Chiral	N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{2-[(2S)-2-methylpiperazin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	438.36	1.15	*
558		2-{2-[(1R,4R)-2,5-diazabicyclo[2.2.1]hept-2-yl]-2-oxoethyl}-N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	436.35	1.15	*
559		2-{2-[(1S,4S)-2,5-diazabicyclo[2.2.1]hept-2-yl]-2-oxoethyl}-N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	436.35	1.15	*
560	 Chiral	2-[2-(1,4-diazepan-1-yl)-2-oxoethyl]-N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	438.36	1.15	*

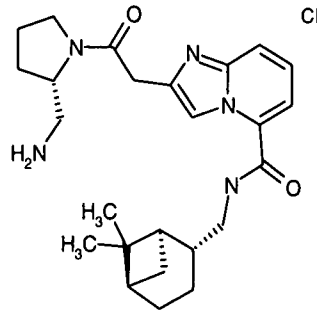
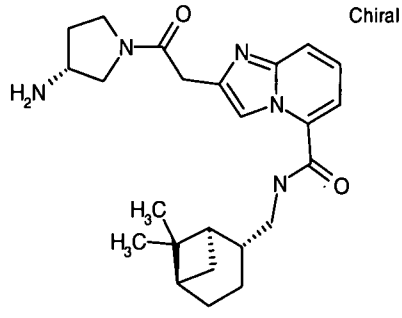
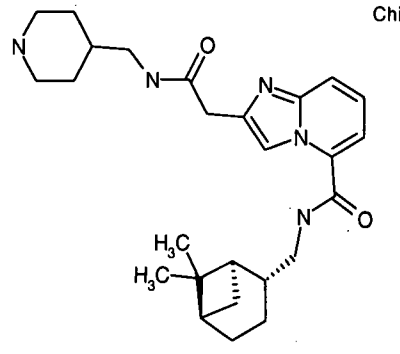
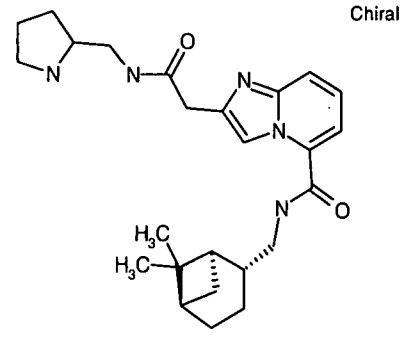
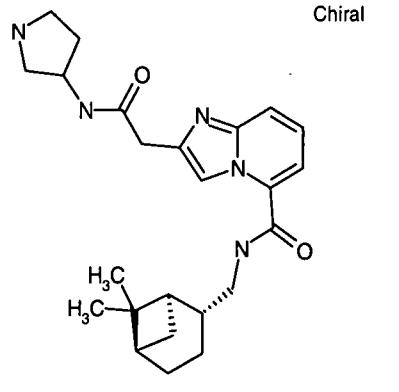
Compound		Name	MS	R_T	IC_{50}
561	 Chiral	N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{2-[(2R)-2-methylpiperazin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	438.36	1.15	*
562	 Chiral	N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{2-[(3S)-3-isopropylpiperazin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	466.41	1.17	*
563	 Chiral	N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{2-[(3S)-3-methylpiperazin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	438.36	1.16	*
564	 Chiral	N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{2-[(3R)-3-methylpiperazin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	438.37	1.15	*
565	 Chiral	N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{2-[methyl(piperidin-3-yl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	452.38	1.16	*
566	 Chiral	N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{2-[methyl(piperidin-4-yl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	452.39	1.15	

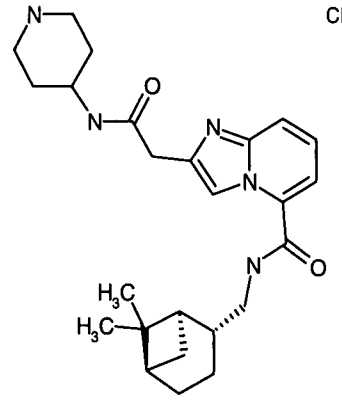
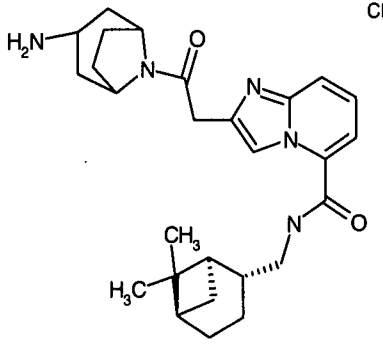
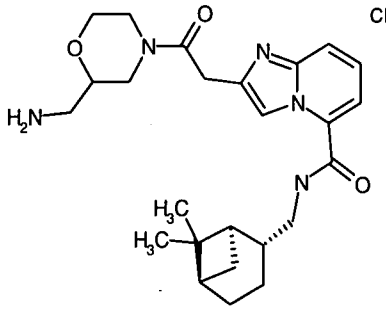
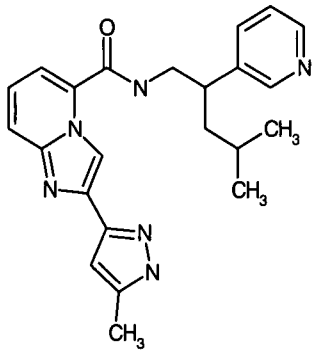
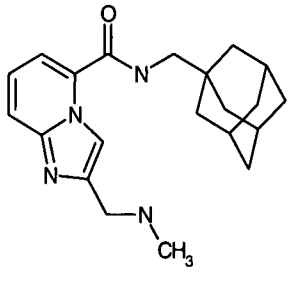
Compound		Name	MS	R_T	IC_{50}
567	 Chiral	N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{2-[(2-methoxyethyl)(piperidin-4-yl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	496.42	1.17	*
568	 Chiral	N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{2-[3-(methylamino)pyrrolidin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	438.37	1.15	*
569	 Chiral	N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{2-[(2S)-2-isopropylpiperazin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	466.40	1.17	*
570	 Chiral	N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{2-[(2R)-2-isopropylpiperazin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	466.40	1.17	*
571	 Chiral	N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{2-[(3R)-3-isopropylpiperazin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	466.40	1.17	*

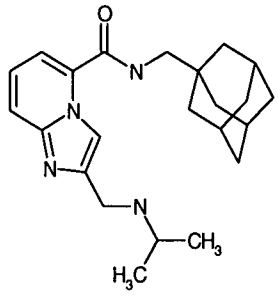
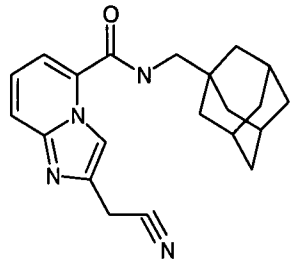
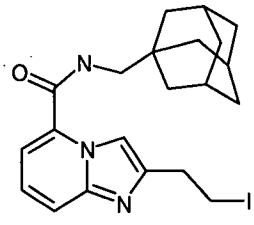
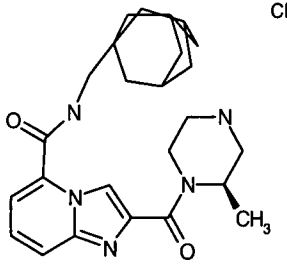
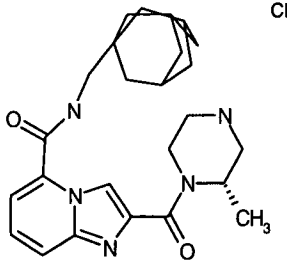
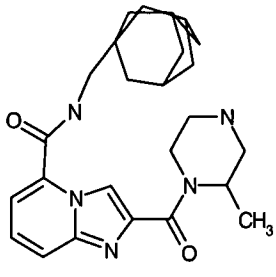
Compound		Name	MS	R_T	IC_{50}
572	 Chiral	N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{2-[(3,3-dimethylpiperidin-4-yl)(3-methoxypropyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	538.46	1.18	*
573	 Chiral	N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{2-[(3,3-dimethylpiperidin-4-yl)(2-methoxyethyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	524.45	1.17	*
574	 Chiral	2-(2-{[2-(dimethylamino)ethyl](3,3-dimethylpiperidin-4-yl)amino}-2-oxoethyl)-N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	537.48	1.12	*
575	 Chiral	2-(2-{[3-(dimethylamino)propyl](3,3-dimethylpiperidin-4-yl)amino}-2-oxoethyl)-N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	551.50	1.13	
576	 Chiral	N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{2-[(3-methoxypropyl)(piperidin-4-yl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	510.43	1.17	

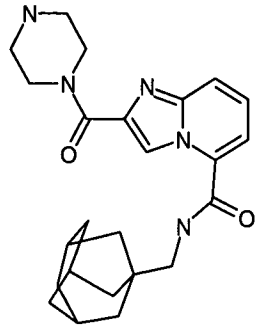
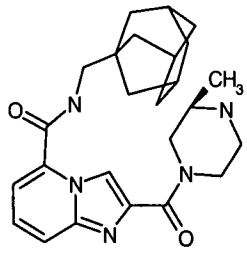
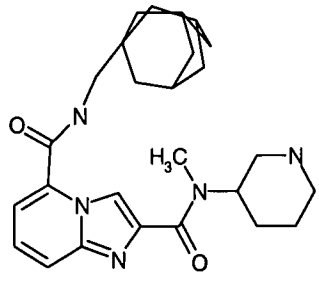
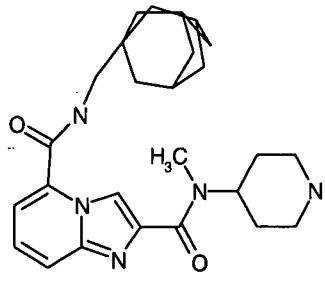
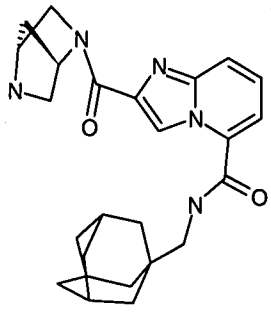
	Compound	Name	MS	R_T	IC_{50}
577	 Chiral	2-{2-[4-(aminomethyl)piperidin-1-yl]-2-oxoethyl}-N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	452.39	1.15	
578	 Chiral	2-{2-[3-(aminomethyl)piperidin-1-yl]-2-oxoethyl}-N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	452.39	1.16	*
579	 Chiral	2-{2-[2-(aminomethyl)piperidin-1-yl]-2-oxoethyl}-N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	452.40	1.17	*
580	 Chiral	2-{2-[2-(aminomethyl)pyrrolidin-1-yl]-2-oxoethyl}-N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	438.38	1.16	*
581	 Chiral	2-[2-(3-aminopiperidin-1-yl)-2-oxoethyl]-N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	438.39	1.15	*

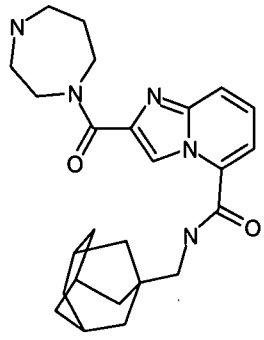
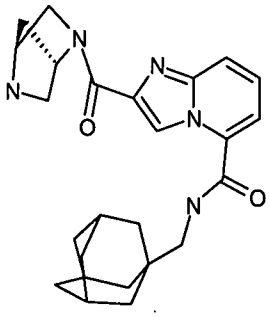
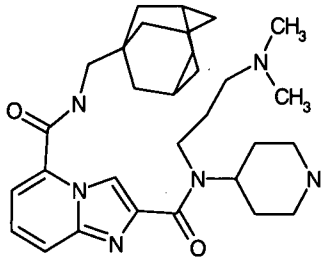
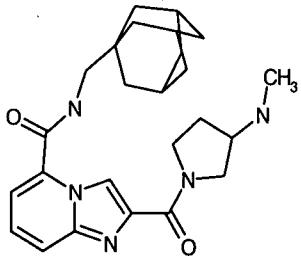
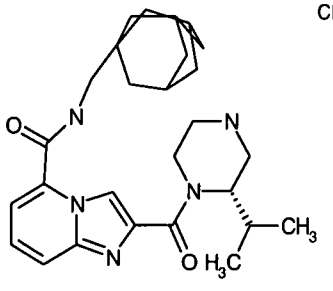
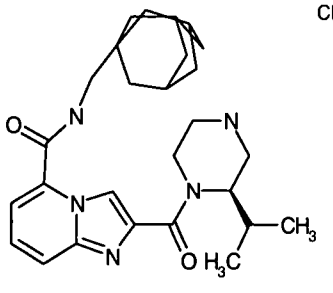
Compound		Name	MS	R_T	IC_{50}
582	 Chiral	2-[2-(4-aminopiperidin-1-yl)-2-oxoethyl]-N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	438.38	1.14	
583	 Chiral	2-[2-(3-aminopyrrolidin-1-yl)-2-oxoethyl]-N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	424.36	1.15	
584	 Chiral	2-{2-[(2R)-2-(aminomethyl)pyrrolidin-1-yl]-2-oxoethyl}-N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	438.38	1.16	*
585	 Chiral	2-{2-[3-(aminomethyl)azetidin-1-yl]-2-oxoethyl}-N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	424.37	1.15	
586	 Chiral	2-{2-[(3S)-3-aminopyrrolidin-1-yl]-2-oxoethyl}-N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	424.38	1.15	

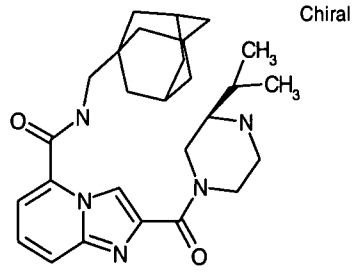
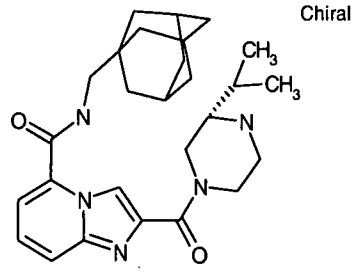
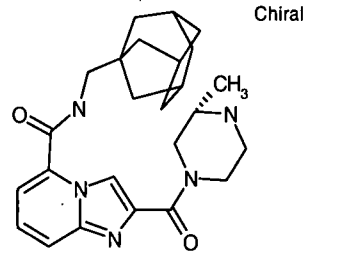
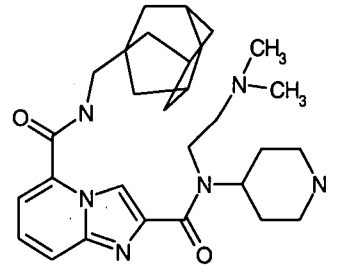
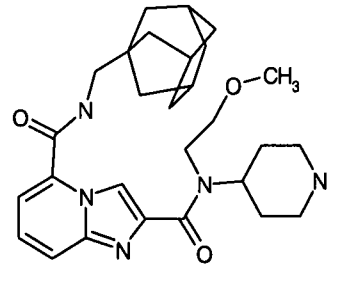
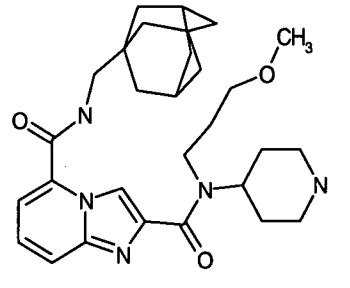
	Compound	Name	MS	R_T	IC_{50}
587	 Chiral	2-{2-[(2S)-2-(aminomethyl)pyrrolidin-1-yl]-2-oxoethyl}-N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	438.39	1.16	*
588	 Chiral	2-{2-[(3R)-3-aminopyrrolidin-1-yl]-2-oxoethyl}-N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	424.36	1.15	*
589	 Chiral	N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{2-oxo-2-[(piperidin-4-ylmethyl)amino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	452.40	1.16	*
590	 Chiral	N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{2-oxo-2-[(pyrrolidin-2-ylmethyl)amino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	438.38	1.16	*
591	 Chiral	N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-[2-oxo-2-(pyrrolidin-3-ylamino)ethyl]imidazo[1,2-a]pyridine-5-carboxamide	424.37	1.16	*

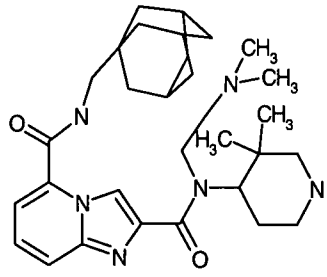
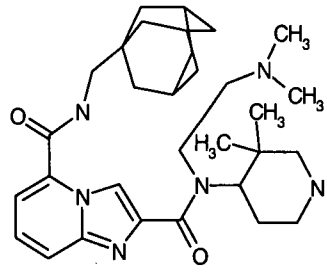
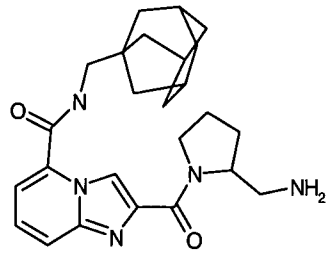
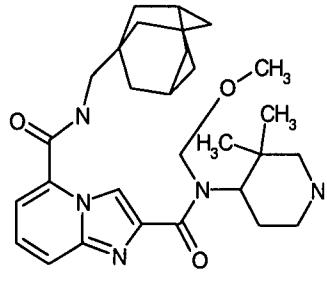
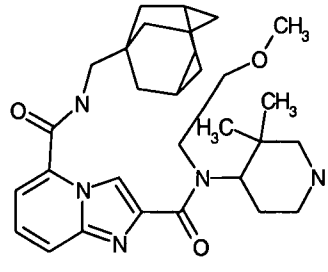
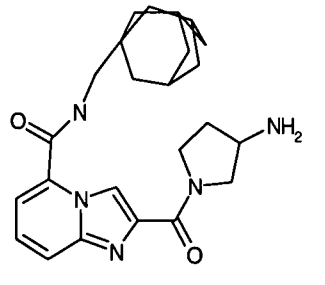
Compound		Name	MS	R_T	IC_{50}
592	 Chiral	N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-[2-oxo-2-(piperidin-4-ylamino)ethyl]imidazo[1,2-a]pyridine-5-carboxamide	438.39	1.15	*
593	 Chiral	2-[2-(3-amino-8-azabicyclo[3.2.1]oct-8-yl)-2-oxoethyl]-N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	464.40	1.15	
594	 Chiral	2-{2-[2-(aminomethyl)morpholin-4-yl]-2-oxoethyl}-N-{[(1R,2R,5R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	454.39	1.15	*
595		2-(5-methyl-1H-pyrazol-3-yl)-N-(4-methyl-2-pyridin-3-ylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	403.32	1.08	*
596		N-(adamantan-1-ylmethyl)-2-[(methylamino)methyl]imidazo[1,2-a]pyridine-5-carboxamide	353.32	1.2	*

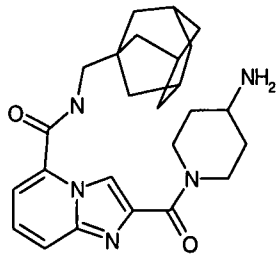
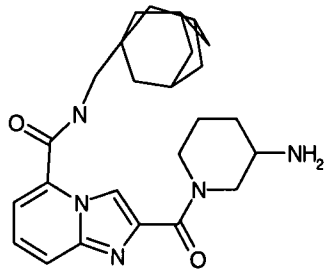
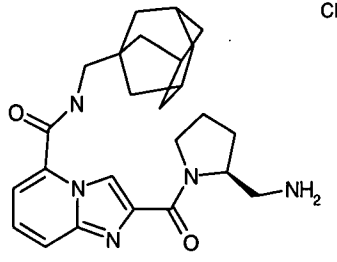
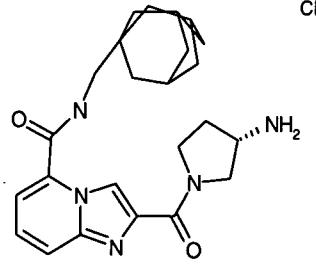
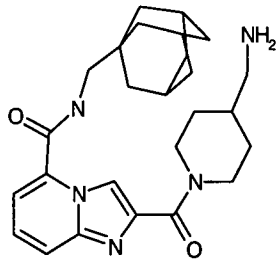
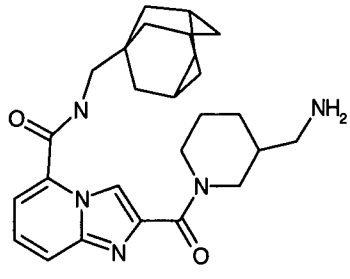
Compound		Name	MS	R_T	IC_{50}
597		N-(adamantan-1-ylmethyl)-2-[(isopropylamino)methyl]imidazo[1,2-a]pyridine-5-carboxamide	381.34	1.21	*
598		N-(adamantan-1-ylmethyl)-2-(cyanomethyl)imidazo[1,2-a]pyridine-5-carboxamide	349.28	1.25	*
599		N-(adamantan-1-ylmethyl)-2-(2-iodoethyl)imidazo[1,2-a]pyridine-5-carboxamide	464.20	1.27	*
600	Chiral 	N-(adamantan-1-ylmethyl)-2-{[(2R)-2-methylpiperazin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	436.38	1.21	*
601	Chiral 	N-(adamantan-1-ylmethyl)-2-{[(2S)-2-methylpiperazin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	436.38	1.21	*
602		N-(adamantan-1-ylmethyl)-2-[(2-methylpiperazin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	436.38	1.21	*

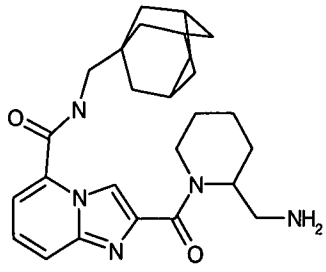
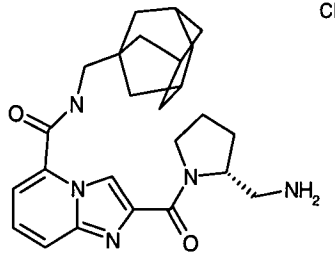
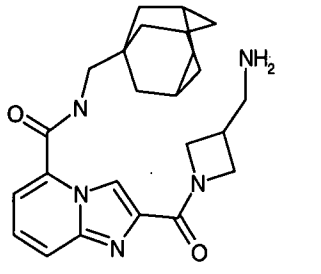
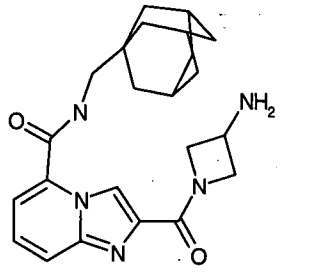
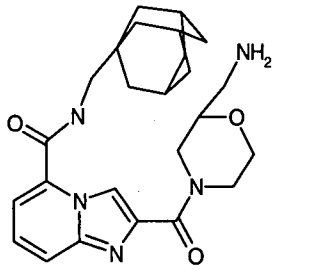
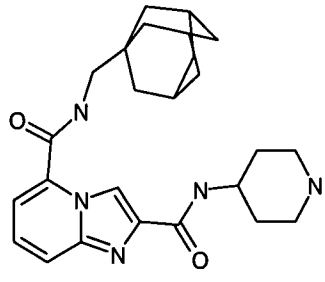
Compound		Name	MS	R_T	IC_{50}
603		N-(adamantan-1-ylmethyl)-2-(piperazin-1-ylcarbonyl)imidazo[1,2-a]pyridine-5-carboxamide	422.37	1.2	*
604	 Chiral	N-(adamantan-1-ylmethyl)-2-{[(3R)-3-methylpiperazin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	436.37	1.21	*
605		5-N-(adamantan-1-ylmethyl)-2-N-methyl-2-N-piperidin-3-ylimidazo[1,2-a]pyridine-2,5-dicarboxamide	450.39	1.21	*
606		5-N-(adamantan-1-ylmethyl)-2-N-methyl-2-N-piperidin-4-ylimidazo[1,2-a]pyridine-2,5-dicarboxamide	450.39	1.2	*
607	 Chiral	N-(adamantan-1-ylmethyl)-2-[(1R,4R)-2,5-diazabicyclo[2.2.1]hept-2-ylcarbonyl]imidazo[1,2-a]pyridine-5-carboxamide	434.37	1.21	*

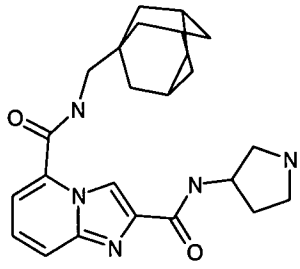
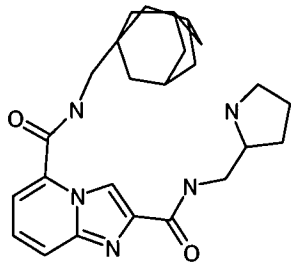
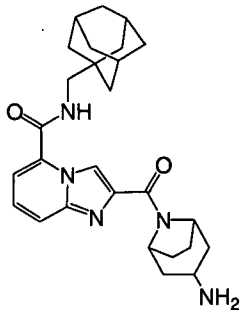
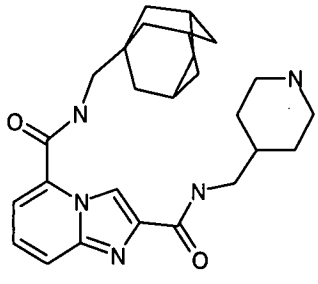
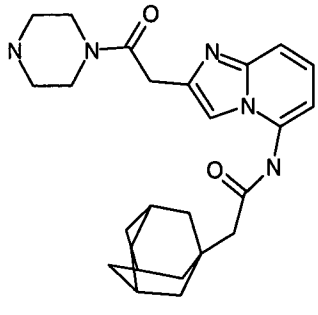
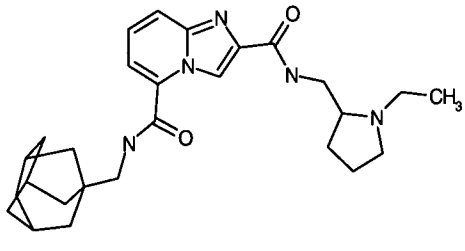
Compound		Name	MS	R_T	IC_{50}
608		N-(adamantan-1-ylmethyl)-2-(1,4-diazepan-1-ylcarbonyl)imidazo[1,2-a]pyridine-5-carboxamide	436.38	1.21	*
609	Chiral 	N-(adamantan-1-ylmethyl)-2-[(1S,4S)-2,5-diazabicyclo[2.2.1]hept-2-ylcarbonyl]imidazo[1,2-a]pyridine-5-carboxamide	434.36	1.21	*
610		5-N-(adamantan-1-ylmethyl)-2-N-[3-(dimethylamino)propyl]-2-N-piperidin-4-ylimidazo[1,2-a]pyridine-2,5-dicarboxamide	521.47	1.15	*
611		N-(adamantan-1-ylmethyl)-2-{[3-(methylamino)pyrrolidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	436.38	1.2	*
612	Chiral 	N-(adamantan-1-ylmethyl)-2-{[(2S)-2-isopropylpiperazin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	464.41	1.23	*
613	Chiral 	N-(adamantan-1-ylmethyl)-2-{[(2R)-2-isopropylpiperazin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	464.42	1.24	*

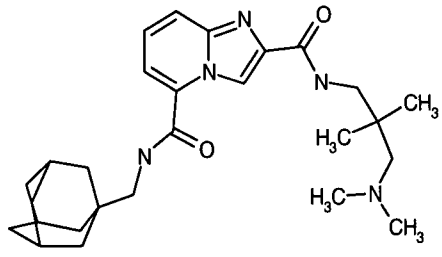
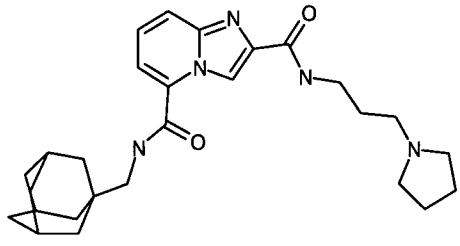
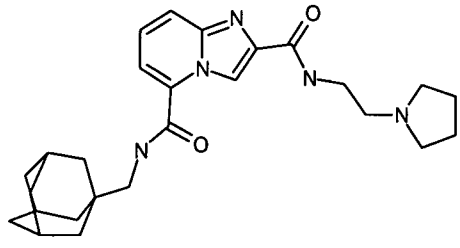
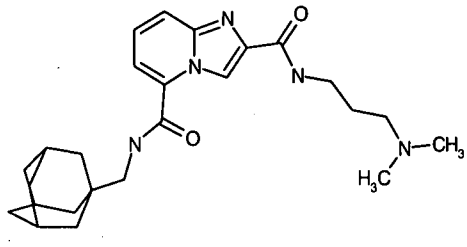
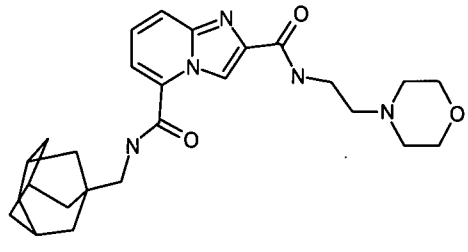
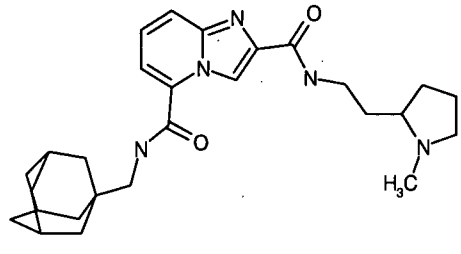
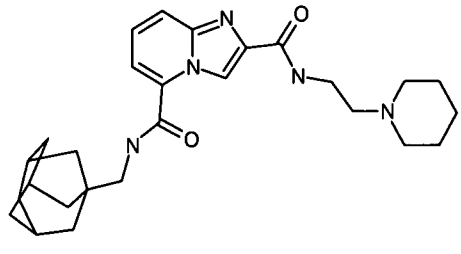
	Compound	Name	MS	R_T	IC_{50}
614	 Chiral	N-(adamantan-1-ylmethyl)-2-{[(3R)-3-isopropylpiperazin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	464.41	1.25	*
615	 Chiral	N-(adamantan-1-ylmethyl)-2-{[(3S)-3-isopropylpiperazin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	464.41	1.23	*
616	 Chiral	N-(adamantan-1-ylmethyl)-2-{[(3S)-3-methylpiperazin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	436.38	1.2	*
617		5-N-(adamantan-1-ylmethyl)-2-N-[2-(dimethylamino)ethyl]-2-N-piperidin-4-ylimidazo[1,2-a]pyridine-2,5-dicarboxamide	507.46	1.15	*
618		5-N-(adamantan-1-ylmethyl)-2-N-(2-methoxyethyl)-2-N-piperidin-4-ylimidazo[1,2-a]pyridine-2,5-dicarboxamide	494.42	1.22	*
619		5-N-(adamantan-1-ylmethyl)-2-N-(3-methoxypropyl)-2-N-piperidin-4-ylimidazo[1,2-a]pyridine-2,5-dicarboxamide	508.44	1.22	*

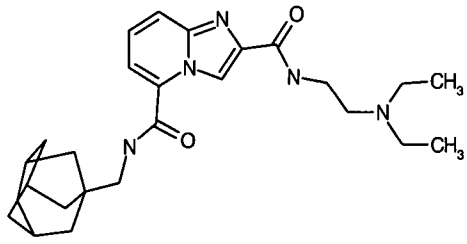
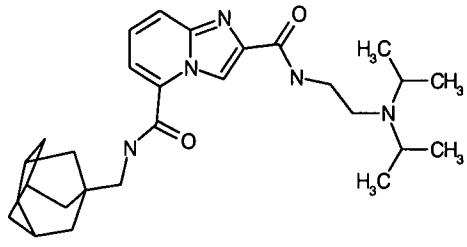
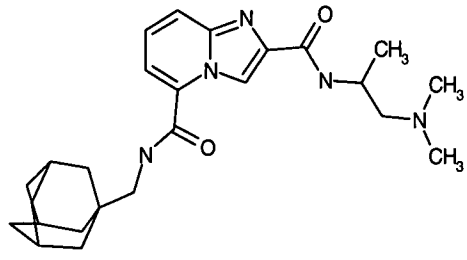
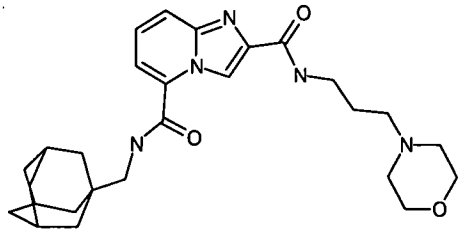
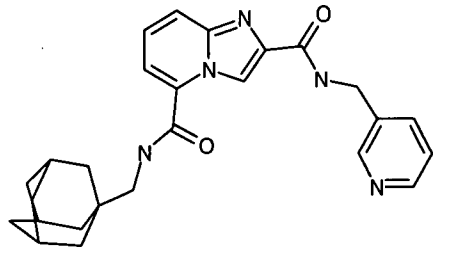
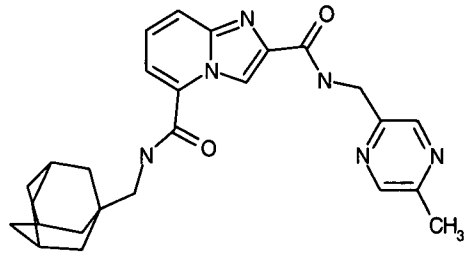
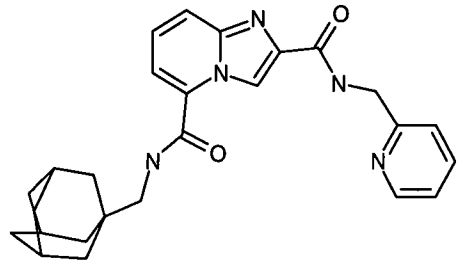
	Compound	Name	MS	R_T	IC_{50}
620		5-N-(adamantan-1-ylmethyl)-2-N-[2-(dimethylamino)ethyl]-2-N-(3,3-dimethylpiperidin-4-yl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	535.49	1.17	*
621		5-N-(adamantan-1-ylmethyl)-2-N-[3-(dimethylamino)propyl]-2-N-(3,3-dimethylpiperidin-4-yl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	549.51	1.16	*
622		N-(adamantan-1-ylmethyl)-2-{[2-(aminomethyl)pyrrolidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	436.39	1.22	*
623		5-N-(adamantan-1-ylmethyl)-2-N-(3,3-dimethylpiperidin-4-yl)-2-N-(2-methoxyethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	522.46	1.23	*
624		5-N-(adamantan-1-ylmethyl)-2-N-(3,3-dimethylpiperidin-4-yl)-2-N-(3-methoxypropyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	536.48	1.24	*
625		N-(adamantan-1-ylmethyl)-2-[(3-aminopyrrolidin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	422.37	1.19	*

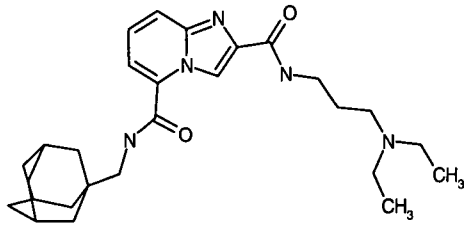
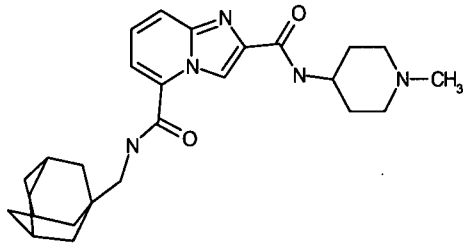
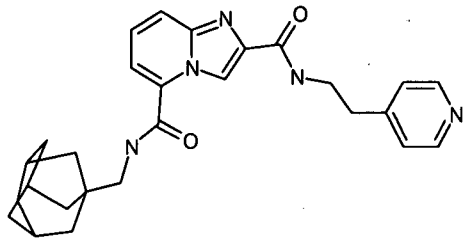
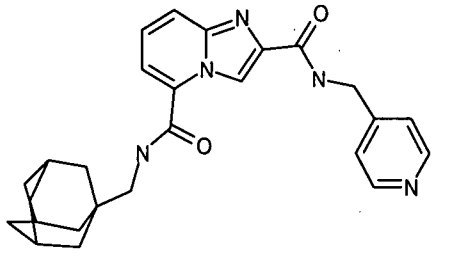
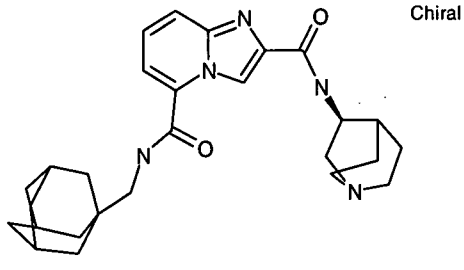
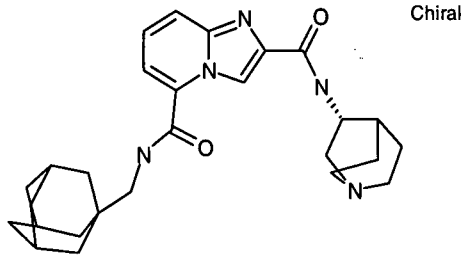
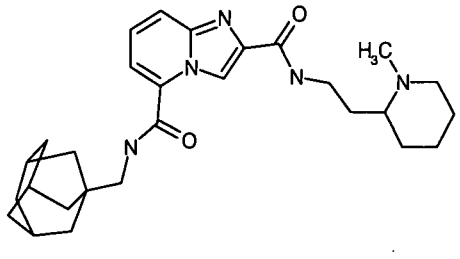
	Compound	Name	MS	R_T	IC_{50}
626		N-(adamantan-1-ylmethyl)-2-[(4-aminopiperidin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	436.38	1.21	*
627		N-(adamantan-1-ylmethyl)-2-[(3-aminopiperidin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	436.39	1.21	*
628	Chiral 	N-(adamantan-1-ylmethyl)-2-{[(2S)-2-(aminomethyl)pyrrolidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	436.38	1.22	*
629	Chiral 	N-(adamantan-1-ylmethyl)-2-{[(3S)-3-aminopyrrolidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	422.37	1.19	*
630		N-(adamantan-1-ylmethyl)-2-{[4-(aminomethyl)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	450.39	1.22	*
631		N-(adamantan-1-ylmethyl)-2-{[3-(aminomethyl)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	450.40	1.22	*

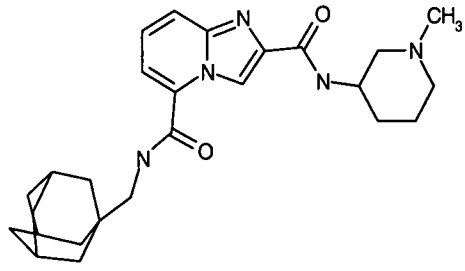
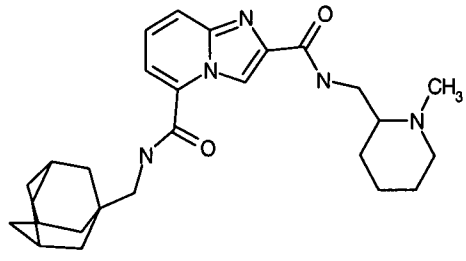
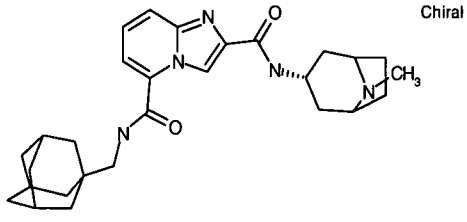
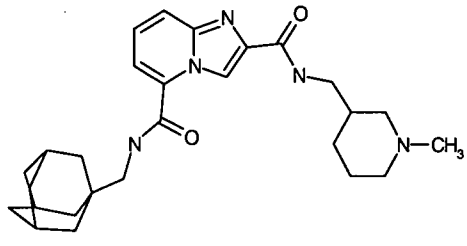
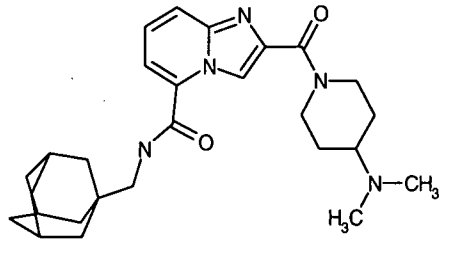
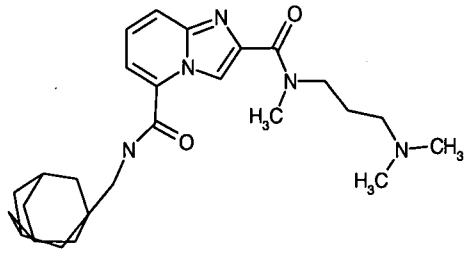
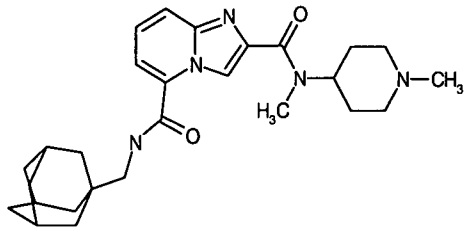
	Compound	Name	MS	R_T	IC_{50}
632		N-(adamantan-1-ylmethyl)-2-{[2-(aminomethyl)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	450.40	1.22	*
633	 Chiral	N-(adamantan-1-ylmethyl)-2-{[(2R)-2-(aminomethyl)pyrrolidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	436.38	1.22	*
634		N-(adamantan-1-ylmethyl)-2-{[3-(aminomethyl)azetidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	422.37	1.2	*
635		N-(adamantan-1-ylmethyl)-2-[(3-aminoazetidin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	408.35	1.2	*
636		N-(adamantan-1-ylmethyl)-2-{[2-(aminomethyl)morpholin-4-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	452.38	1.21	*
637		5-N-(adamantan-1-ylmethyl)-2-N-piperidin-4-ylimidazo[1,2-a]pyridine-2,5-dicarboxamide	436.38	1.21	*

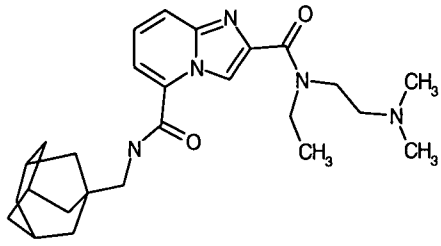
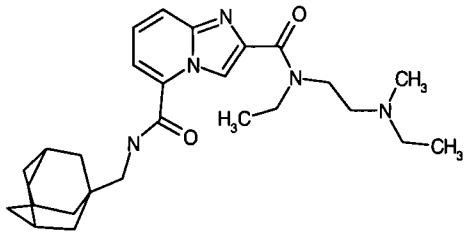
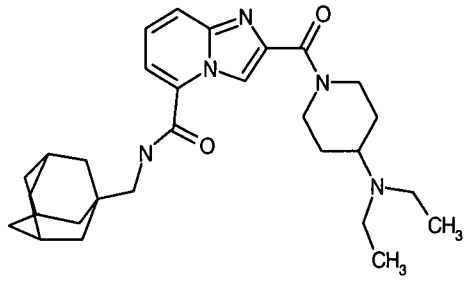
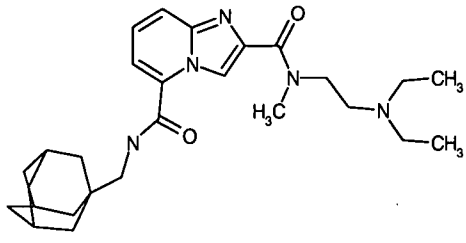
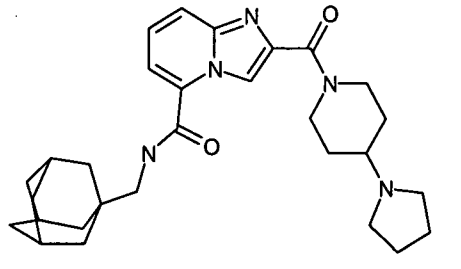
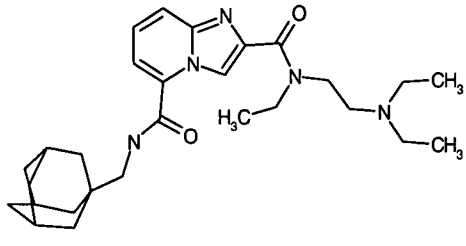
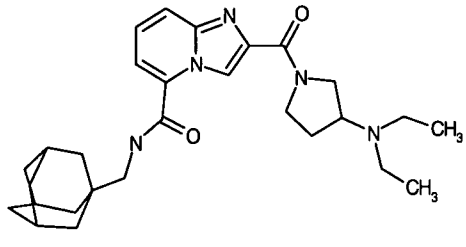
Compound		Name	MS	R_T	IC_{50}
638		5-N-(adamantan-1-ylmethyl)-2-N-pyrrolidin-3-ylimidazo[1,2-a]pyridine-2,5-dicarboxamide	422.37	1.21	*
639		5-N-(adamantan-1-ylmethyl)-2-N-(pyrrolidin-2-ylmethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	436.39	1.21	*
640		N-(adamantan-1-ylmethyl)-2-[(3-amino-8-azabicyclo[3.2.1]oct-8-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	462.40	1.22	*
641		5-N-(adamantan-1-ylmethyl)-2-N-(piperidin-4-ylmethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	450.40	1.22	
642		2-adamantan-1-yl-N-[2-(2-oxo-2-piperazin-1-ylethyl)imidazo[1,2-a]pyridin-5-yl]acetamide	436.40	1.14	
643		5-N-(adamantan-1-ylmethyl)-2-N-[(1-ethylpyrrolidin-2-yl)methyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	464.37	1.24	*

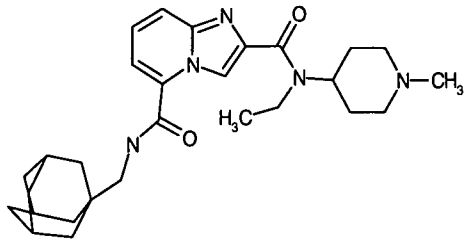
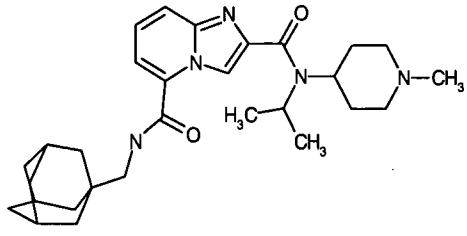
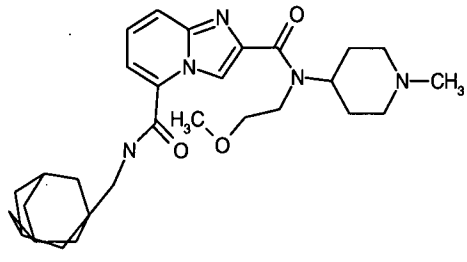
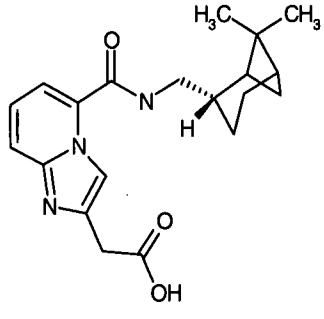
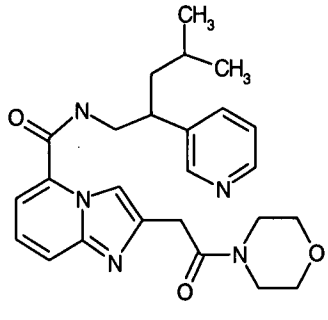
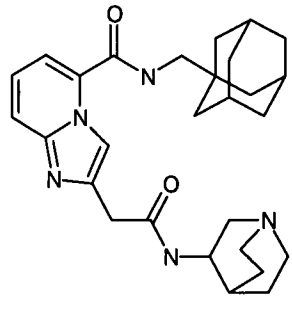
	Compound	Name	MS	R_T	IC_{50}
644		5-N-(adamantan-1-ylmethyl)-2-N-[3-(dimethylamino)-2,2-dimethylpropyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	466.38	1.23	*
645		5-N-(adamantan-1-ylmethyl)-2-N-(3-pyrrolidin-1-ylpropyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	464.36	1.23	*
646		5-N-(adamantan-1-ylmethyl)-2-N-(2-pyrrolidin-1-ylethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	450.35	1.23	*
647		5-N-(adamantan-1-ylmethyl)-2-N-[3-(dimethylamino)propyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	438.35	1.22	*
648		5-N-(adamantan-1-ylmethyl)-2-N-(2-morpholin-4-ylethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	466.34	1.22	*
649		5-N-(adamantan-1-ylmethyl)-2-N-[2-(1-methylpyrrolidin-2-yl)ethyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	464.36	1.23	*
650		5-N-(adamantan-1-ylmethyl)-2-N-(2-piperidin-1-ylethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	464.37	1.23	*

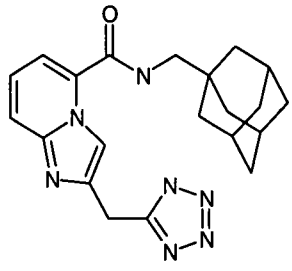
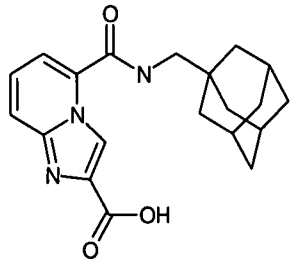
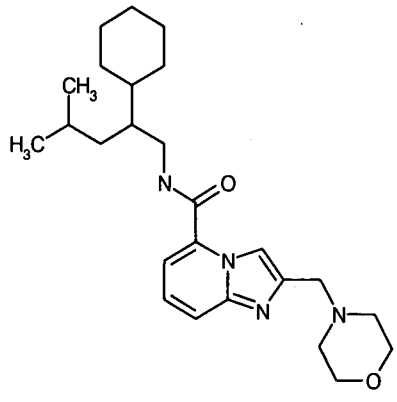
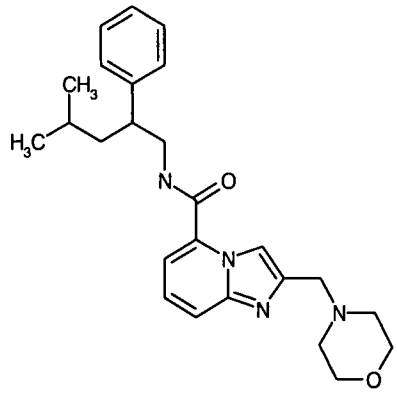
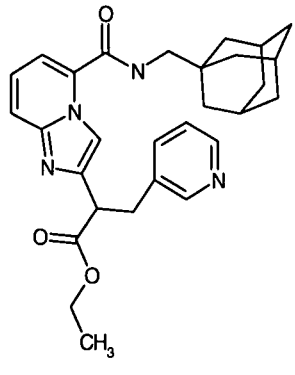
	Compound	Name	MS	R_T	IC_{50}
651		5-N-(adamantan-1-ylmethyl)-2-N-[2-(diethylamino)ethyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	452.36	1.23	*
652		5-N-(adamantan-1-ylmethyl)-2-N-[2-(diisopropylamino)ethyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	480.39	1.24	*
653		5-N-(adamantan-1-ylmethyl)-2-N-[2-(dimethylamino)-1-methylethyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	438.35	1.23	*
654		5-N-(adamantan-1-ylmethyl)-2-N-(3-morpholin-4-ylpropyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	480.36	1.22	*
655		5-N-(adamantan-1-ylmethyl)-2-N-(pyridin-3-ylmethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	444.30	1.23	*
656		5-N-(adamantan-1-ylmethyl)-2-N-[(5-methylpyrazin-2-yl)methyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	459.31	1.29	*
657		5-N-(adamantan-1-ylmethyl)-2-N-(pyridin-2-ylmethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	452.40	1.25	

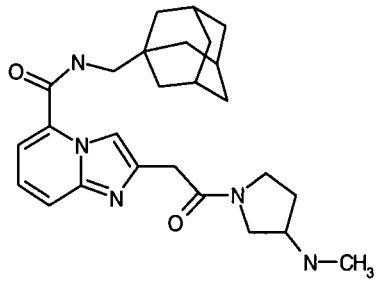
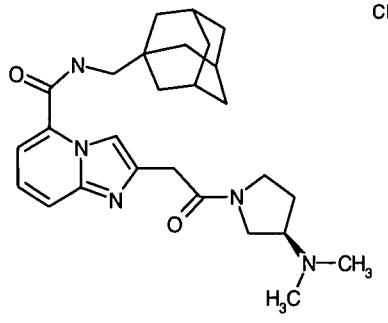
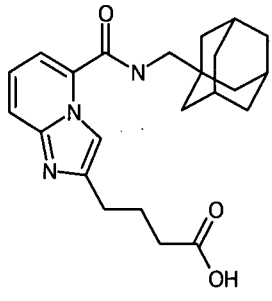
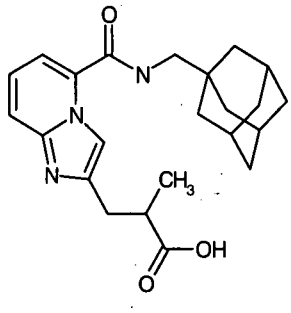
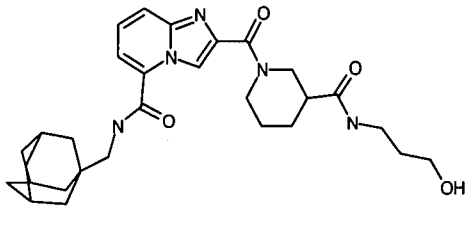
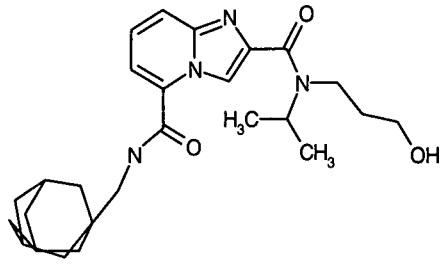
	Compound	Name	MS	R_T	IC_{50}
658		5-N-(adamantan-1-ylmethyl)-2-N-[3-(diethylamino)propyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	466.38	1.23	*
659		5-N-(adamantan-1-ylmethyl)-2-N-(1-methylpiperidin-4-yl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	450.35	1.23	*
660		5-N-(adamantan-1-ylmethyl)-2-N-(2-pyridin-4-ylethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	458.32	1.22	*
661		5-N-(adamantan-1-ylmethyl)-2-N-(pyridin-4-ylmethyl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	444.31	1.22	*
662	Chiral 	5-N-(adamantan-1-ylmethyl)-2-N-[(3S)-1-azabicyclo[2.2.2]oct-3-yl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	462.34	1.23	*
663	Chiral 	5-N-(adamantan-1-ylmethyl)-2-N-[(3R)-1-azabicyclo[2.2.2]oct-3-yl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	462.34	1.23	
664		5-N-(adamantan-1-ylmethyl)-2-N-[2-(1-methylpiperidin-2-yl)ethyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	478.38	1.24	*

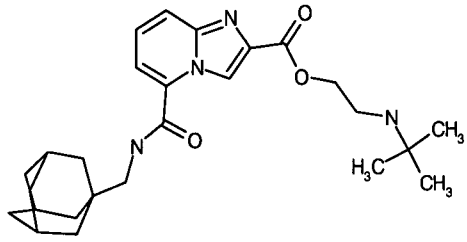
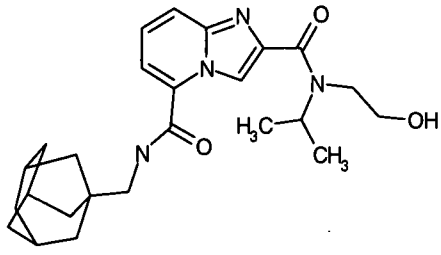
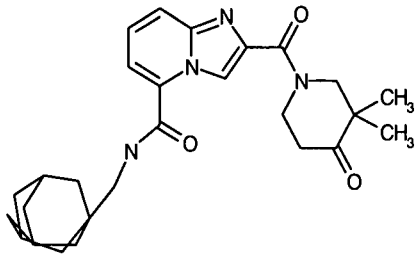
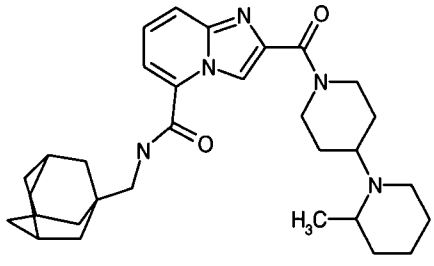
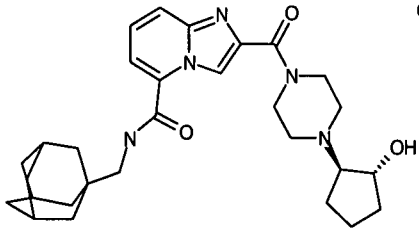
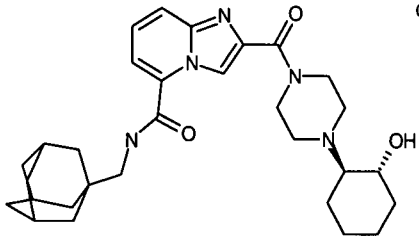
	Compound	Name	MS	R_T	IC_{50}
665		5-N-(adamantan-1-ylmethyl)-2-N-(1-methylpiperidin-3-yl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	450.37	1.23	
666		5-N-(adamantan-1-ylmethyl)-2-N-[(1-methylpiperidin-2-yl)methyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	464.36	1.24	*
667	 Chiral	5-N-(adamantan-1-ylmethyl)-2-N-(8-methyl-8-azabicyclo[3.2.1]oct-3-yl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	476.36	1.23	*
668		5-N-(adamantan-1-ylmethyl)-2-N-[(1-methylpiperidin-3-yl)methyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	464.36	1.23	*
669		N-(adamantan-1-ylmethyl)-2-{[4-(dimethylamino)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	464.36	1.21	*
670		5-N-(adamantan-1-ylmethyl)-2-N-[3-(dimethylamino)propyl]-2-N-methylimidazo[1,2-a]pyridine-2,5-dicarboxamide	452.36	1.22	*
671		5-N-(adamantan-1-ylmethyl)-2-N-methyl-2-N-(1-methylpiperidin-4-yl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	464.36	1.21	*

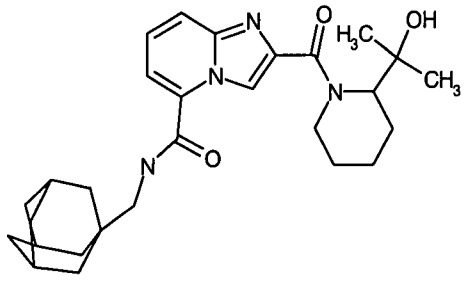
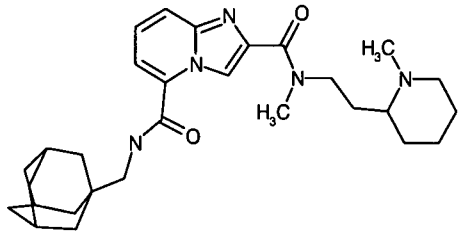
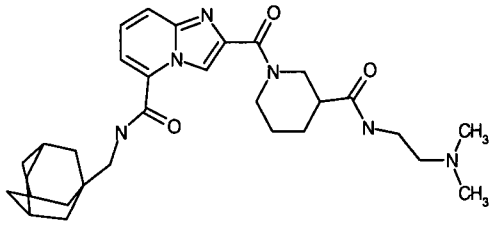
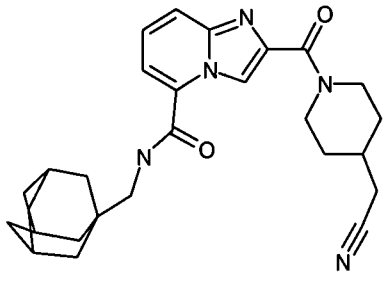
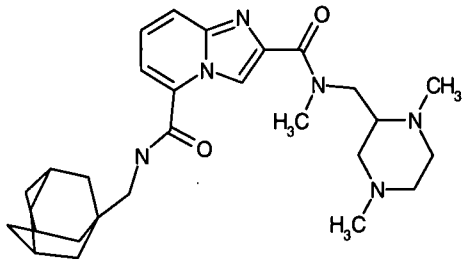
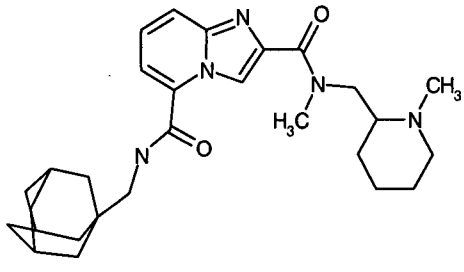
	Compound	Name	MS	R_T	IC_{50}
672		5-N-(adamantan-1-ylmethyl)-2-N-[2-(dimethylamino)ethyl]-2-N-ethylimidazo[1,2-a]pyridine-2,5-dicarboxamide	452.36	1.23	*
673		5-N-(adamantan-1-ylmethyl)-2-N-ethyl-2-N-{2-[ethyl(methyl)amino]ethyl}imidazo[1,2-a]pyridine-2,5-dicarboxamide	466.38	1.23	*
674		N-(adamantan-1-ylmethyl)-2-{[4-(diethylamino)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	492.39	1.22	*
675		5-N-(adamantan-1-ylmethyl)-2-N-[2-(diethylamino)ethyl]-2-N-methylimidazo[1,2-a]pyridine-2,5-dicarboxamide	466.38	1.22	*
676		N-(adamantan-1-ylmethyl)-2-[(4-pyrrolidin-1-ylpiperidin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	490.37	1.22	*
677		5-N-(adamantan-1-ylmethyl)-2-N-[2-(diethylamino)ethyl]-2-N-ethylimidazo[1,2-a]pyridine-2,5-dicarboxamide	480.39	1.24	*
678		N-(adamantan-1-ylmethyl)-2-{[3-(diethylamino)pyrrolidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	478.38	1.22	*

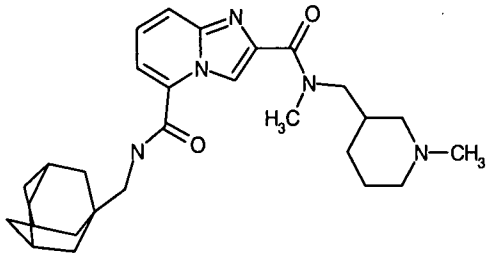
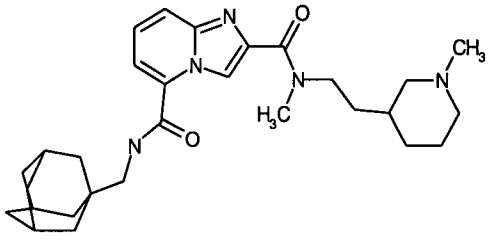
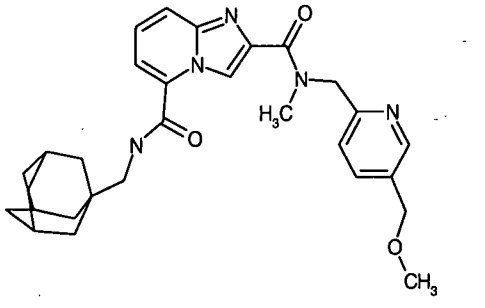
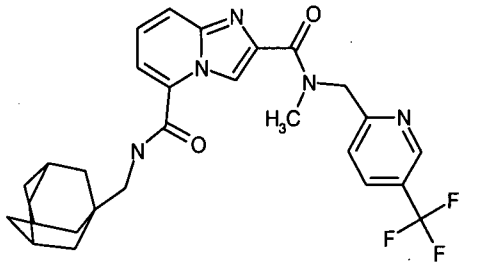
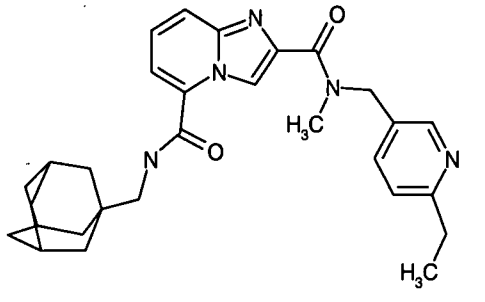
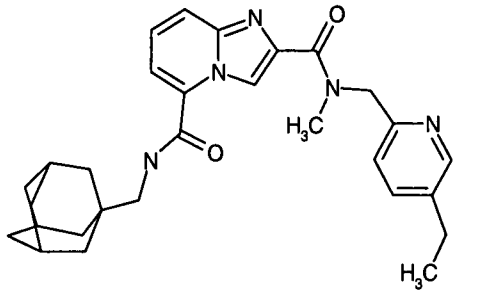
	Compound	Name	MS	R_T	IC_{50}
679		5-N-(adamantan-1-ylmethyl)-2-N-ethyl-2-N-(1-methylpiperidin-4-yl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	478.38	1.22	*
680		5-N-(adamantan-1-ylmethyl)-2-N-isopropyl-2-N-(1-methylpiperidin-4-yl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	492.39	1.24	*
681		5-N-(adamantan-1-ylmethyl)-2-N-(2-methoxyethyl)-2-N-(1-methylpiperidin-4-yl)imidazo[1,2-a]pyridine-2,5-dicarboxamide	508.38	1.22	*
682		(5-{[(6,6-dimethylbicyclo[3.1.1]hept-2-yl)methyl]carbamoyl}imidazo[1,2-a]pyridin-2-yl)acetic acid	356.27	1.2	*
683		N-(4-methyl-2-pyridin-3-ylpentyl)-2-(2-morpholin-4-yl-2-oxoethyl)imidazo[1,2-a]pyridine-5-carboxamide	450.34	1	
684		N-(adamantan-1-ylmethyl)-2-[2-(1-azabicyclo[2.2.2]oct-3-ylamino)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	476.40	1.15	*

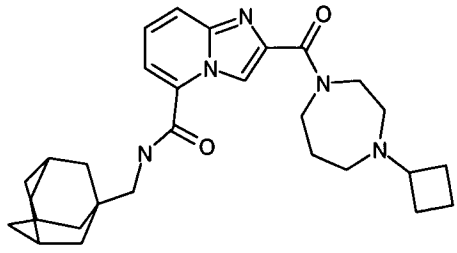
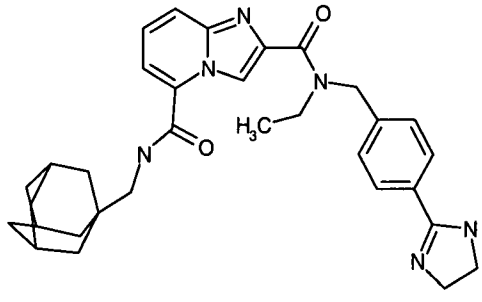
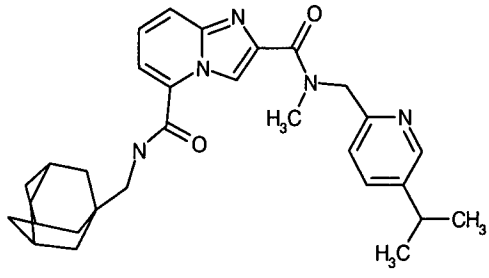
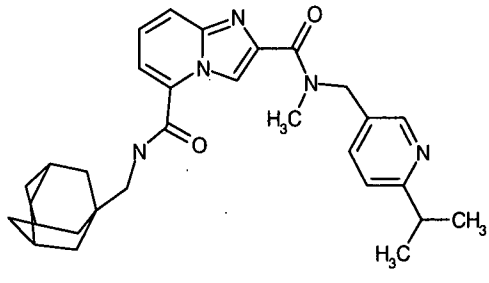
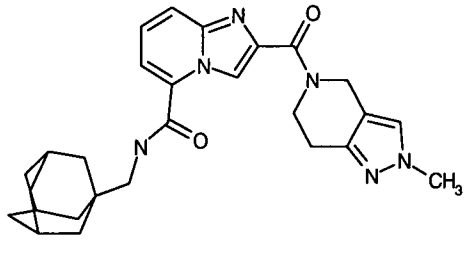
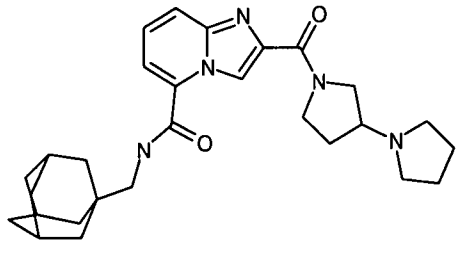
Compound		Name	MS	R_T	IC_{50}
685		N-(adamantan-1-ylmethyl)-2-(1H-tetrazol-5-ylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	392.31	1.21	*
686		5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridine-2-carboxylic acid	354.27	1.25	*
687		N-(2-cyclohexyl-4-methylpentyl)-2-(morpholin-4-ylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	427.39	1.17	*
688		N-(4-methyl-2-phenylpentyl)-2-(morpholin-4-ylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	421.34	1.09	*
689		ethyl 2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-3-pyridin-3-ylpropanoate	487.37	1.12	*

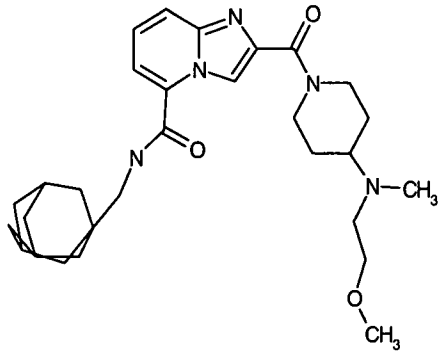
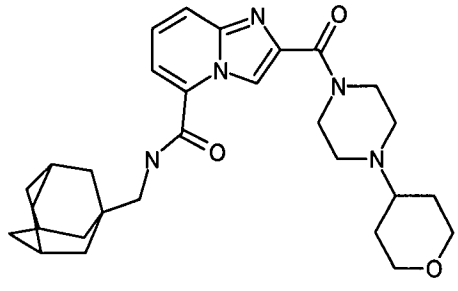
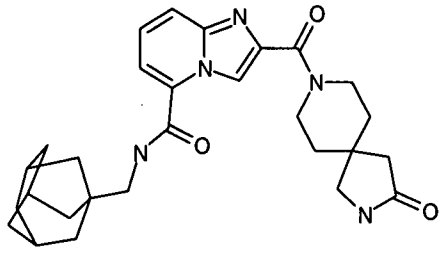
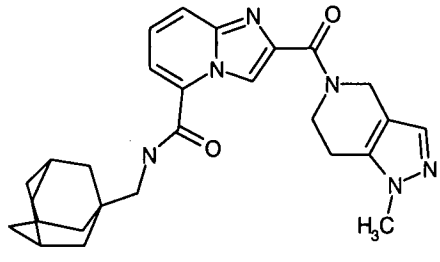
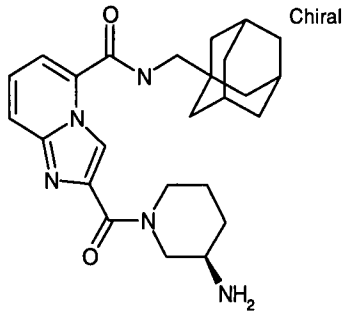
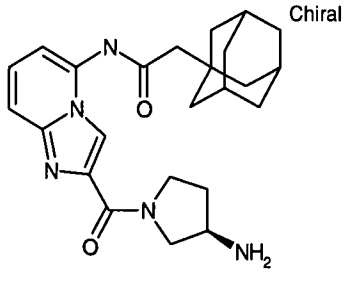
	Compound	Name	MS	R_T	IC_{50}
690	 Chiral	N-(adamantan-1-ylmethyl)-2-{2-[3-(methylamino)pyrrolidin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	450.37	1.03	*
691		N-(adamantan-1-ylmethyl)-2-{2-[(3R)-3-(dimethylamino)pyrrolidin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	464.38	1.04	*
692		4-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}butanoic acid	396.29	1.1	*
693		3-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-2-methylpropanoic acid	396.29	1.12	*
694		N-(adamantan-1-ylmethyl)-2-({3-[(3-hydroxypropyl)carbamoyl]piperidin-1-yl}carbonyl)imidazo[1,2-a]pyridine-5-carboxamide	522.37	1.27	*
695		5-N-(adamantan-1-ylmethyl)-2-N-(3-hydroxypropyl)-2-N-isopropylimidazo[1,2-a]pyridine-2,5-dicarboxamide	453.35	1.3	*

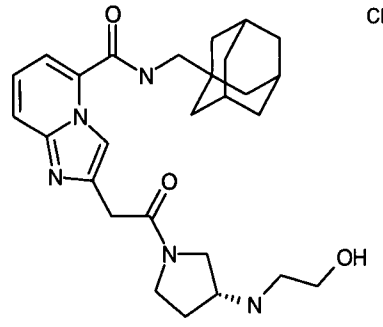
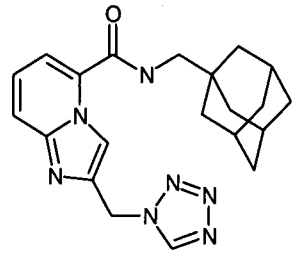
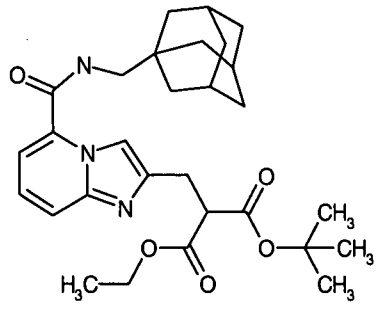
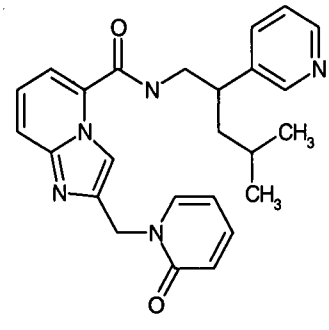
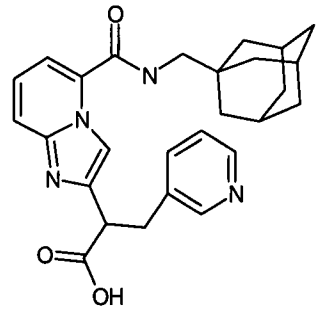
	Compound	Name	MS	R_T	IC_{50}
696		2-(tert-butylamino)ethyl 5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridine-2-carboxylate	397.30	1.29	*
697		5-N-(adamantan-1-ylmethyl)-2-N-(2-hydroxyethyl)-2-N-isopropylimidazo[1,2-a]pyridine-2,5-dicarboxamide	439.34	1.29	*
698		N-(adamantan-1-ylmethyl)-2-[(3,3-dimethyl-4-oxopiperidin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	463.33	1.33	*
699		N-(adamantan-1-ylmethyl)-2-[(2-methyl-1,4'-bipiperidin-1'-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	518.41	1.23	*
700	Chiral 	N-(adamantan-1-ylmethyl)-2-({4-[(1R,2R)-2-hydroxycyclopentyl]piperazin-1-yl}carbonyl)imidazo[1,2-a]pyridine-5-carboxamide	506.37	1.21	*
701	Chiral 	N-(adamantan-1-ylmethyl)-2-({4-[(1R,2R)-2-hydroxycyclohexyl]piperazin-1-yl}carbonyl)imidazo[1,2-a]pyridine-5-carboxamide	520.39	1.23	*

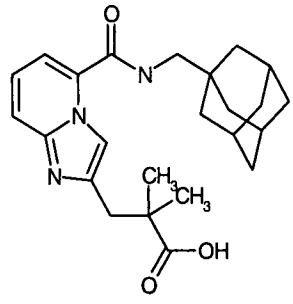
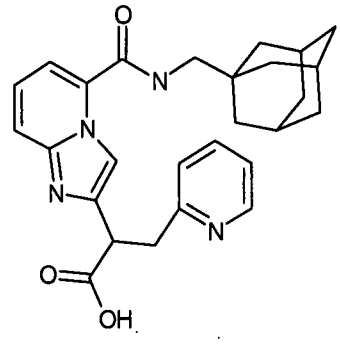
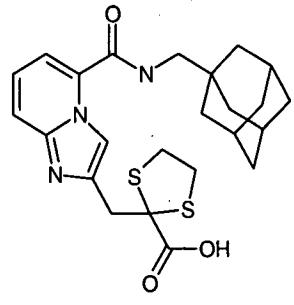
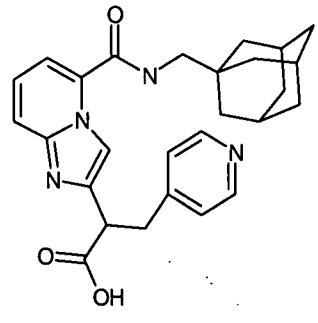
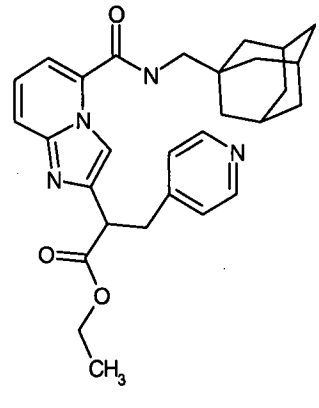
	Compound	Name	MS	R_T	IC_{50}
702		N-(adamantan-1-ylmethyl)-2-{[2-(1-hydroxy-1-methylethyl)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	479.36	1.33	*
703		5-N-(adamantan-1-ylmethyl)-2-N-methyl-2-N-[2-(1-methylpiperidin-2-yl)ethyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	506.36	1.3	
704		N-(adamantan-1-ylmethyl)-2-[(3-{[2-(dimethylamino)ethyl]carbamoyl}piperidin-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	535.40	1.23	*
705		N-(adamantan-1-ylmethyl)-2-{[4-(cyanomethyl)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	460.33	1.28	*
706		5-N-(adamantan-1-ylmethyl)-2-N-[(1,4-dimethylpiperazin-2-yl)methyl]-2-N-methylimidazo[1,2-a]pyridine-2,5-dicarboxamide	286.27	1.22	*
707		5-N-(adamantan-1-ylmethyl)-2-N-methyl-2-N-[(1-methylpiperidin-2-yl)methyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	478.38	1.24	*

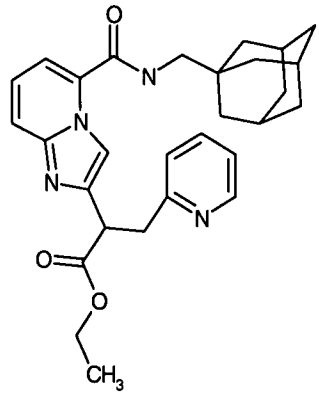
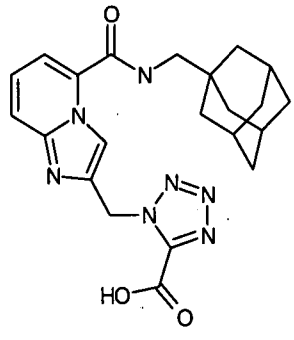
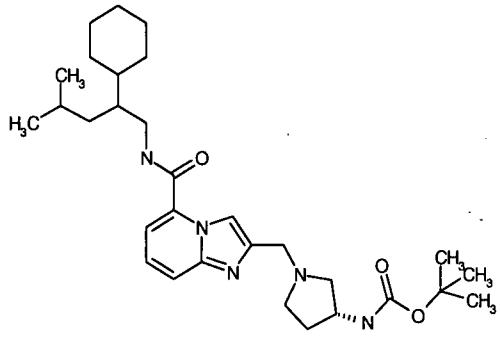
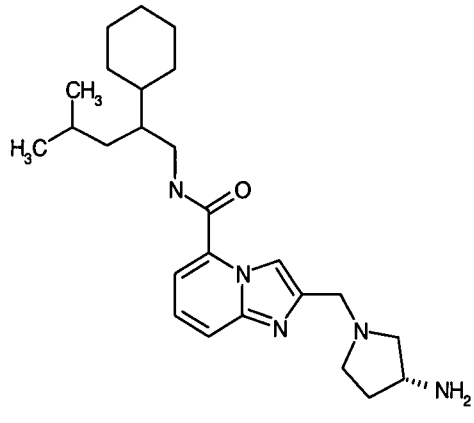
	Compound	Name	MS	R_T	IC_{50}
708		5-N-(adamantan-1-ylmethyl)-2-N-methyl-2-N-[(1-methylpiperidin-3-yl)methyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide			
709		5-N-(adamantan-1-ylmethyl)-2-N-methyl-2-N-[2-(1-methylpiperidin-3-yl)ethyl]imidazo[1,2-a]pyridine-2,5-dicarboxamide	492.40	1.24	
710		5-N-(adamantan-1-ylmethyl)-2-N-{[5-(methoxymethyl)pyridin-2-yl]methyl}-2-N-methylimidazo[1,2-a]pyridine-2,5-dicarboxamide	502.34	1.27	*
711		5-N-(adamantan-1-ylmethyl)-2-N-methyl-2-N-{[5-(trifluoromethyl)pyridin-2-yl]methyl}imidazo[1,2-a]pyridine-2,5-dicarboxamide	526.31	1.34	*
712		5-N-(adamantan-1-ylmethyl)-2-N-[(6-ethylpyridin-3-yl)methyl]-2-N-methylimidazo[1,2-a]pyridine-2,5-dicarboxamide	486.35	1.23	*
713		5-N-(adamantan-1-ylmethyl)-2-N-[(5-ethylpyridin-2-yl)methyl]-2-N-methylimidazo[1,2-a]pyridine-2,5-dicarboxamide	486.35	1.27	*

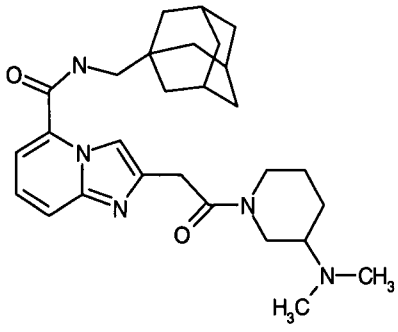
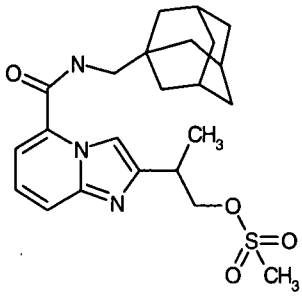
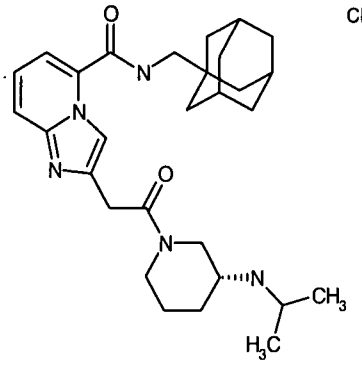
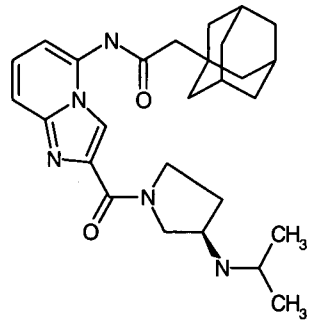
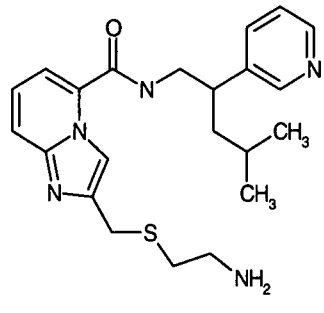
	Compound	Name	MS	R_T	IC_{50}
714		N-(adamantan-1-ylmethyl)-2-[(4-cyclobutyl-1,4-diazepan-1-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	490.38	1.22	*
715		5-N-(adamantan-1-ylmethyl)-2-N-[4-(4,5-dihydro-1H-imidazol-2-yl)benzyl]-2-N-ethylimidazo[1,2-a]pyridine-2,5-dicarboxamide	539.36	1.24	*
716		5-N-(adamantan-1-ylmethyl)-2-N-[(5-isopropylpyridin-2-yl)methyl]-2-N-methylimidazo[1,2-a]pyridine-2,5-dicarboxamide	500.36	1.28	*
717		5-N-(adamantan-1-ylmethyl)-2-N-[(6-isopropylpyridin-3-yl)methyl]-2-N-methylimidazo[1,2-a]pyridine-2,5-dicarboxamide	500.37	1.24	*
718		N-(adamantan-1-ylmethyl)-2-[(2-methyl-2,4,6,7-tetrahydro-5H-pyrazolo[4,3-c]pyridin-5-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	473.33	1.3	*
719		N-(adamantan-1-ylmethyl)-2-(1,3'-bipyrrolidin-1'-ylcarbonyl)imidazo[1,2-a]pyridine-5-carboxamide	476.37	1.22	*

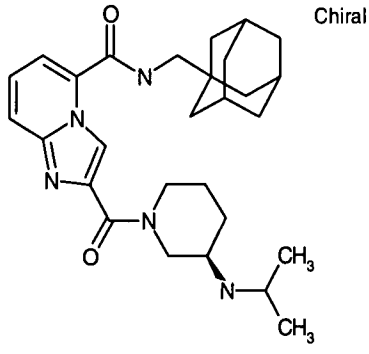
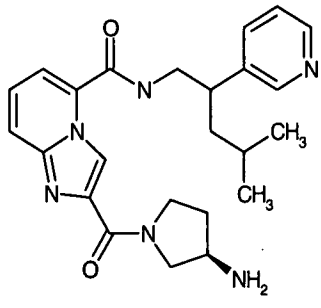
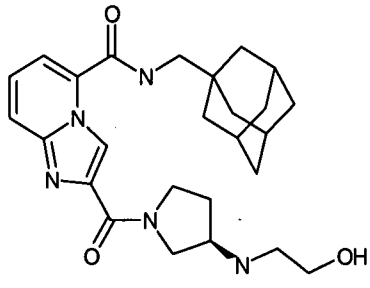
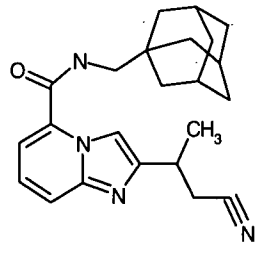
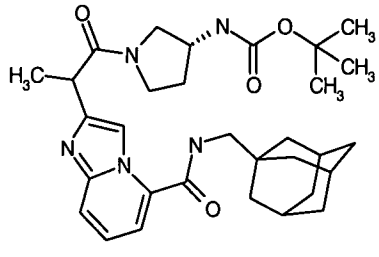
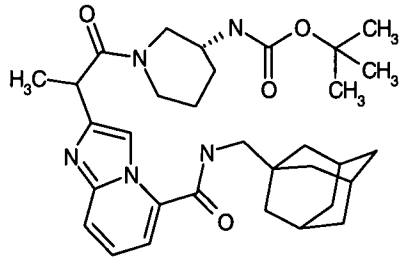
	Compound	Name	MS	R_T	IC_{50}
720		N-(adamantan-1-ylmethyl)-2-({4-[(2-methoxyethyl)(methyl)amino]piperidin-1-yl}carbonyl)imidazo[1,2-a]pyridine-5-carboxamide	508.40	1.22	*
721		N-(adamantan-1-ylmethyl)-2-{[4-(tetrahydro-2H-pyran-4-yl)piperazin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	506.38	1.22	*
722		N-(adamantan-1-ylmethyl)-2-[(3-oxo-2,8-diazaspiro[4.5]dec-8-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	354.26	1.26	*
723		N-(adamantan-1-ylmethyl)-2-[(1-methyl-1,4,6,7-tetrahydro-5H-pyrazolo[4,3-c]pyridin-5-yl)carbonyl]imidazo[1,2-a]pyridine-5-carboxamide	473.33	1.29	*
724	 Chiral	N-(adamantan-1-ylmethyl)-2-{[(3R)-3-aminopiperidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	436.32	1.09	*
725	 Chiral	2-adamantan-1-yl-N-(2-{[(3R)-3-aminopyrrolidin-1-yl]carbonyl}imidazo[1,2-a]pyridin-5-yl)acetamide	422.34	1.06	*

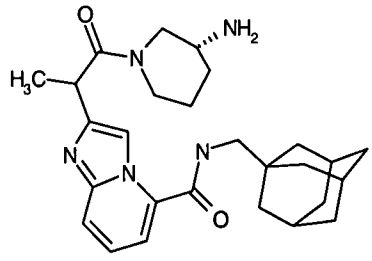
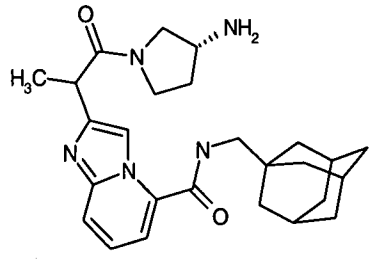
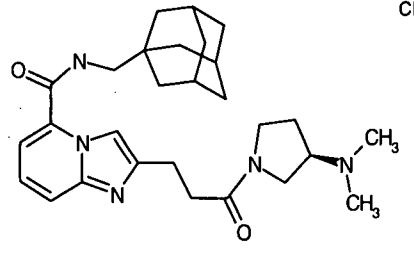
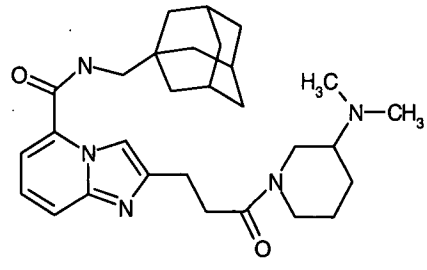
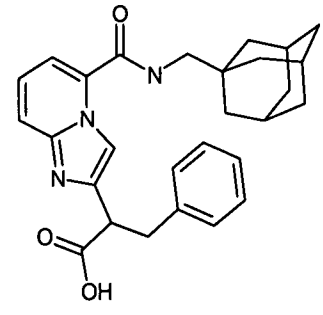
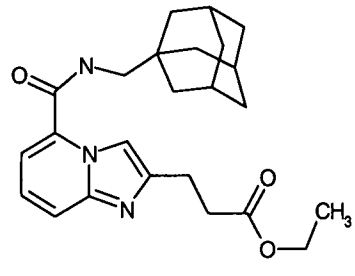
Compound	Chiral	Name	MS	R_T	IC_{50}
726		N-(adamantan-1-ylmethyl)-2-(2-{(3R)-3-[(2-hydroxyethyl)amino]pyrrolidin-1-yl}-2-oxoethyl)imidazo[1,2-a]pyridine-5-carboxamide	480.39	1.03	*
727		N-(adamantan-1-ylmethyl)-2-(1H-tetrazol-1-ylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	392.30	1.11	*
728		tert-butyl ethyl ({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)malonate	510.40	1.21	*
729		N-(4-methyl-2-pyridin-3-ylpentyl)-2-[(2-oxopyridin-1(2H)-yl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	430.32	0.91	*
730		2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-3-pyridin-3-ylpropanoic acid	459.33	1.06	*

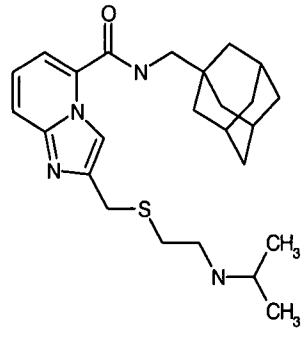
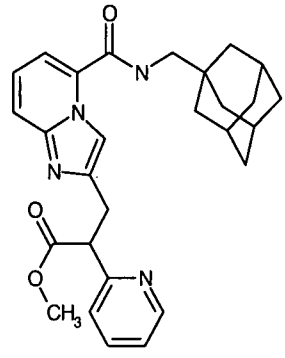
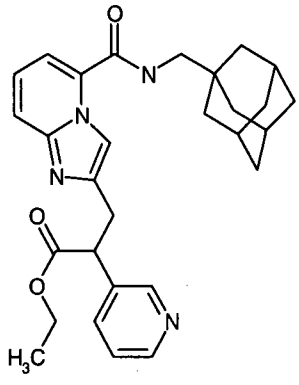
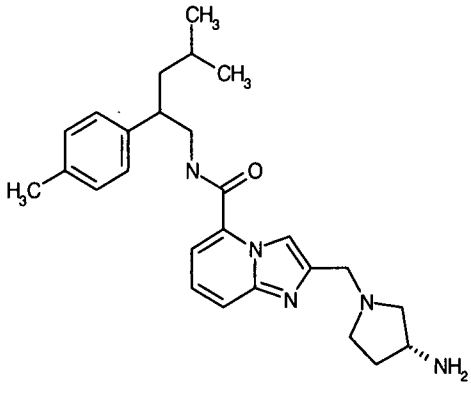
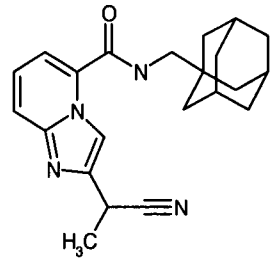
	Compound	Name	MS	R_T	IC_{50}
731		3-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-2,2-dimethylpropanoic acid	410.30	1.12	*
732		2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-3-pyridin-2-ylpropanoic acid	459.34	1.08	*
733		2-({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)-1,3-dithiolane-2-carboxylic acid	472.23	1.13	*
734		2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-3-pyridin-4-ylpropanoic acid	459.34	1.06	*
735		ethyl 2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-3-pyridin-4-ylpropanoate	487.36	1.11	*

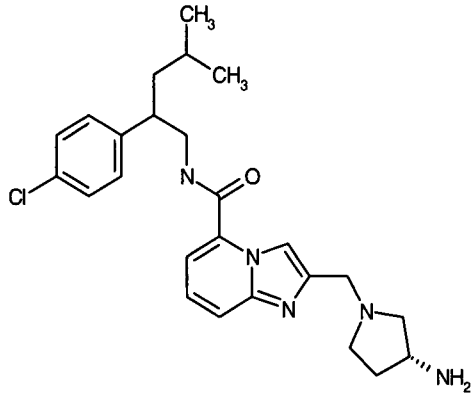
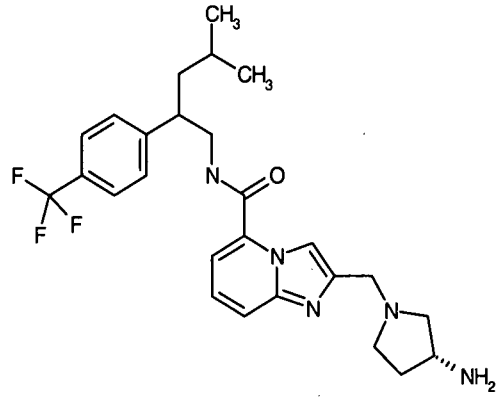
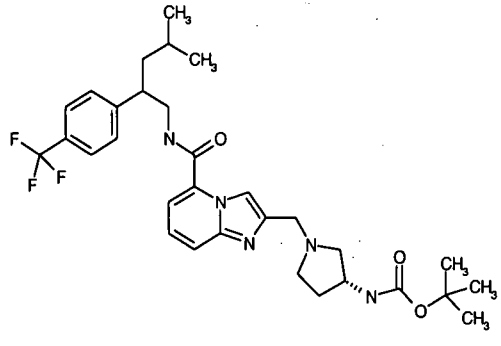
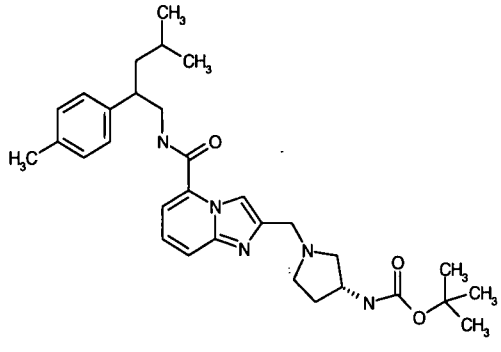
	Compound	Name	MS	R_T	IC_{50}
736		ethyl 2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-3-pyridin-2-ylpropanoate	487.37	1.14	*
737		1-({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)-1H-tetrazole-5-carboxylic acid	436.30	1.1	*
738		tert-butyl [1-({5-[(2-cyclohexyl-4-methylpentyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)pyrrolidin-3-yl]carbamate	526.47	1.33	*
739		2-[(3-aminopyrrolidin-1-yl)methyl]-N-(2-cyclohexyl-4-methylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	426.41	1.23	*

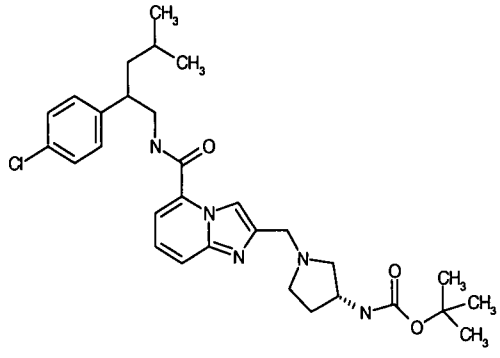
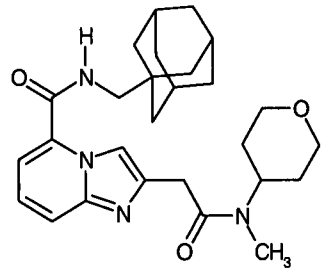
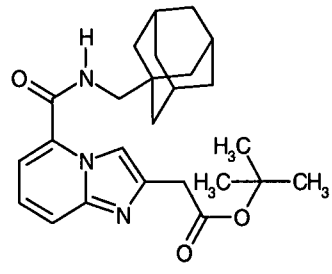
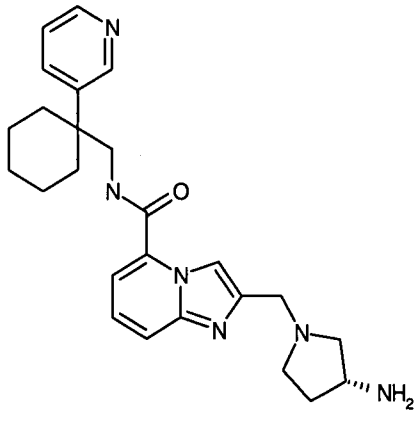
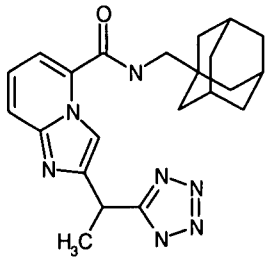
Compound		Name	MS	R_T	IC_{50}
740		N-(adamantan-1-ylmethyl)-2-{2-[3-(dimethylamino)piperidin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	478.42	1.16	*
741		2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}propyl methanesulfonate	446.31	1.22	*
742	 Chiral	N-(adamantan-1-ylmethyl)-2-{2-[(3R)-3-(isopropylamino)piperidin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	478.43	1.2	*
743		2-adamantan-1-yl-N-(2-{[3-(isopropylamino)pyrrolidin-1-yl]carbonyl}imidazo[1,2-a]pyridin-5-yl)acetamide	464.41	1.19	*
744		2-{[(2-aminoethyl)thio]methyl}-N-(4-methyl-2-pyridin-3-ylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	412.33	0.84	*

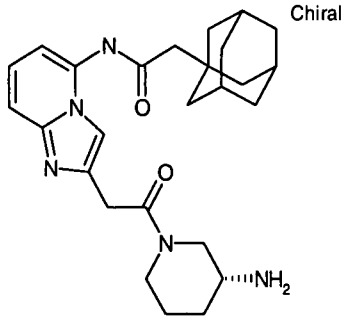
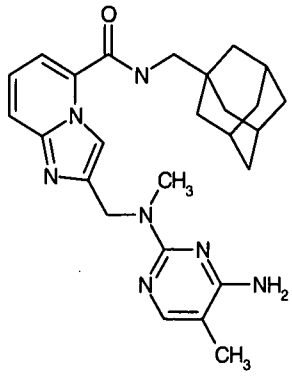
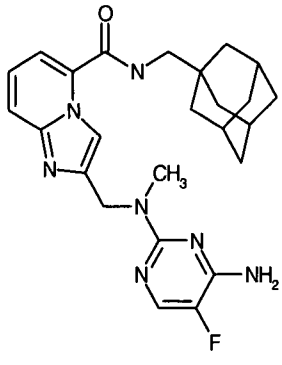
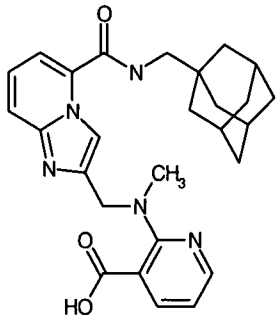
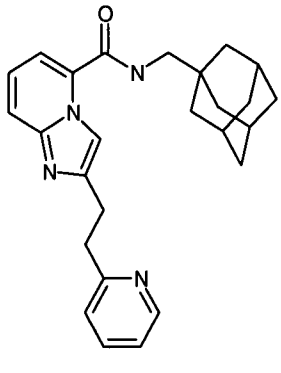
	Compound	Name	MS	R_T	IC_{50}
745	 Chiral	N-(adamantan-1-ylmethyl)-2-{[(3R)-3-(isopropylamino)piperidin-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	492.44	1.2	*
746		2-[(3-aminopyrrolidin-1-yl)carbonyl]-N-(4-methyl-2-pyridin-3-ylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	435.37	0.98	*
747		N-(adamantan-1-ylmethyl)-2-({3-[(2-hydroxyethyl)amino]pyrrolidin-1-yl}carbonyl)imidazo[1,2-a]pyridine-5-carboxamide	466.40	1.2	*
748		N-(adamantan-1-ylmethyl)-2-(2-cyano-1-methylethyl)imidazo[1,2-a]pyridine-5-carboxamide	377.34	1.23	*
749		tert-butyl [1-(2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}propanoyl)pyrrolidin-3-yl]carbamate	550.44	1.28	*
750		tert-butyl [1-(2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}propanoyl)piperidin-3-yl]carbamate	564.45	1.29	*

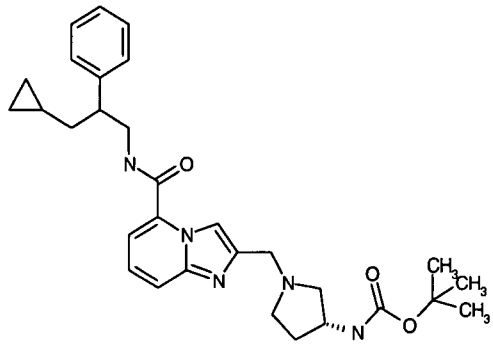
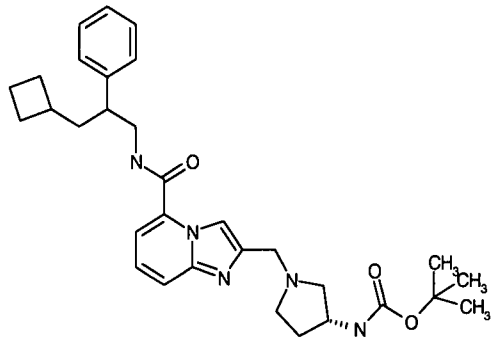
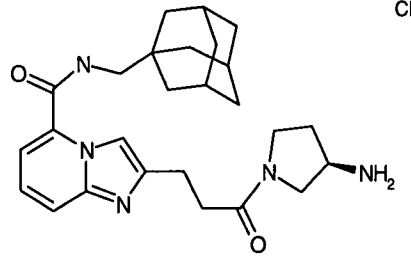
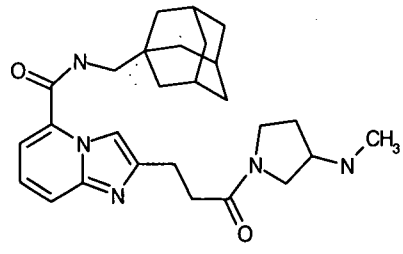
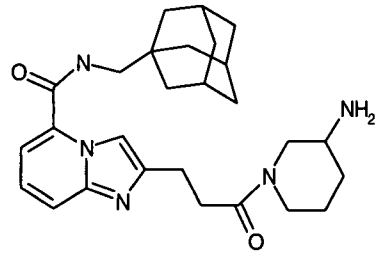
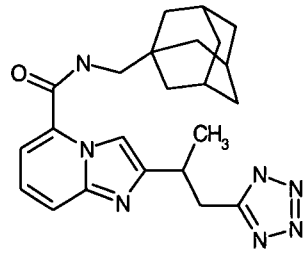
	Compound	Name	MS	R_T	IC_{50}
751		N-(adamantan-1-ylmethyl)-2-[2-(3-aminopiperidin-1-yl)-1-methyl-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	464.41	1.17	*
752		N-(adamantan-1-ylmethyl)-2-[2-(3-aminopyrrolidin-1-yl)-1-methyl-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	450.39	1.16	*
753	Chiral 	N-(adamantan-1-ylmethyl)-2-{3-[(3R)-3-(dimethylamino)pyrrolidin-1-yl]-3-oxopropyl}imidazo[1,2-a]pyridine-5-carboxamide	478.44	1.15	*
754		N-(adamantan-1-ylmethyl)-2-{3-[3-(dimethylamino)piperidin-1-yl]-3-oxopropyl}imidazo[1,2-a]pyridine-5-carboxamide	492.46	1.15	*
755		2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-3-phenylpropanoic acid	458.33	1.29	*
756		ethyl 3-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}propanoate	410.37	1.25	*

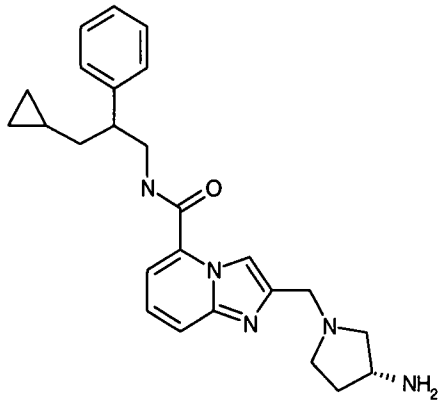
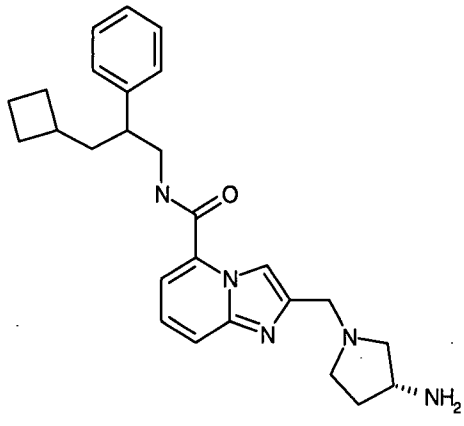
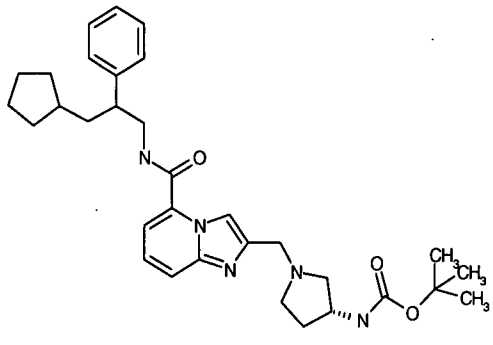
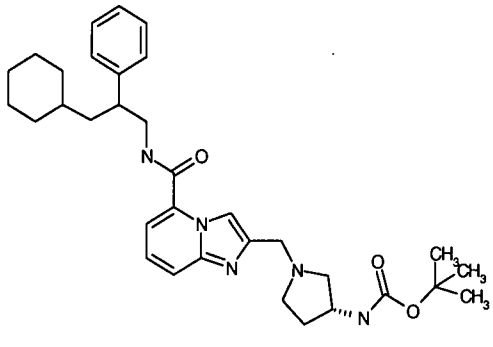
	Compound	Name	MS	R_T	IC_{50}
757		N-(adamantan-1-ylmethyl)-2-({[2-(isopropylamino)ethyl]thio}methyl)imidazo[1,2-a]pyridine-5-carboxamide	441.39	1.17	*
758		methyl 3-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-2-pyridin-2-ylpropanoate	473.36	1.24	*
759		ethyl 3-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-2-pyridin-3-ylpropanoate	487.39	1.22	*
760		2-[(3-aminopyrrolidin-1-yl)methyl]-N-[4-methyl-2-(4-methylphenyl)pentyl]imidazo[1,2-a]pyridine-5-carboxamide	434.39	1.19	*
761		N-(adamantan-1-ylmethyl)-2-(1-cyanoethyl)imidazo[1,2-a]pyridine-5-carboxamide	363.34	1.29	*

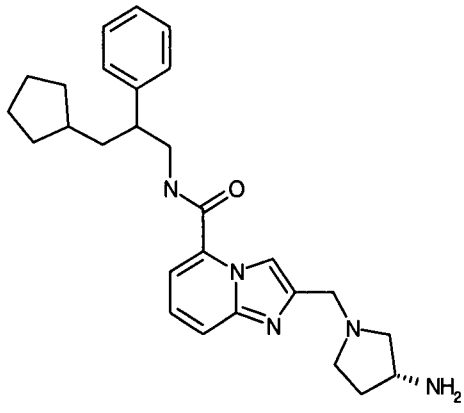
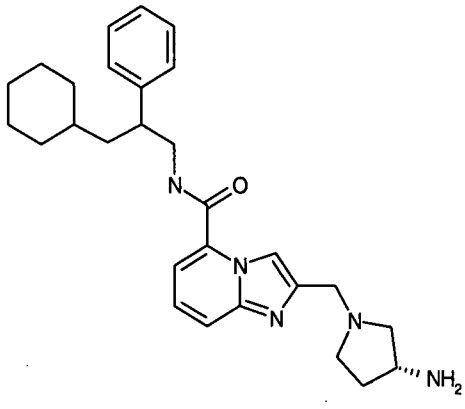
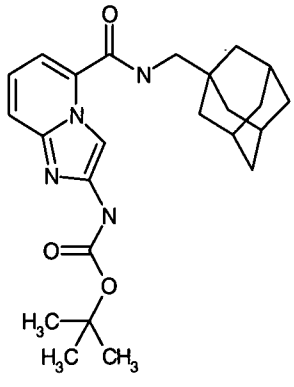
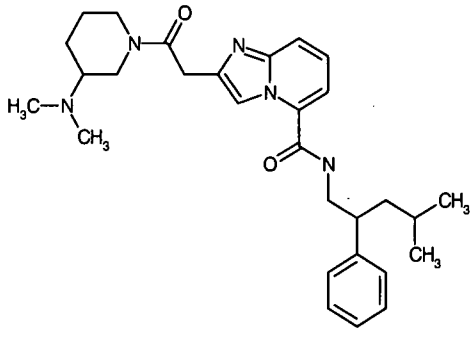
	Compound	Name	MS	R_T	IC_{50}
762		2-[(3-aminopyrrolidin-1-yl)methyl]-N-[2-(4-chlorophenyl)-4-methylpentyl]imidazo[1,2-a]pyridine-5-carboxamide	454.36	1.19	*
763		2-[(3-aminopyrrolidin-1-yl)methyl]-N-{4-methyl-2-[4-(trifluoromethyl)phenyl]pentyl}imidazo[1,2-a]pyridine-5-carboxamide	488.35	1.2	*
764		tert-butyl (1-{[5-({4-methyl-2-[4-(trifluoromethyl)phenyl]pentyl}carbamoyl)imidazo[1,2-a]pyridin-2-yl]methyl}pyrrolidin-3-yl)carbamate	588.44	1.28	*
765		tert-butyl {1-[(5-{[4-methyl-2-(4-methylphenyl)pentyl]carbamoyl}imidazo[1,2-a]pyridin-2-yl)methyl]pyrrolidin-3-yl}carbamate	534.47	1.28	*

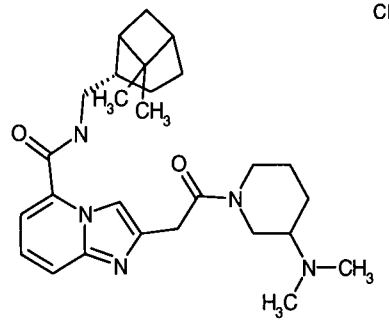
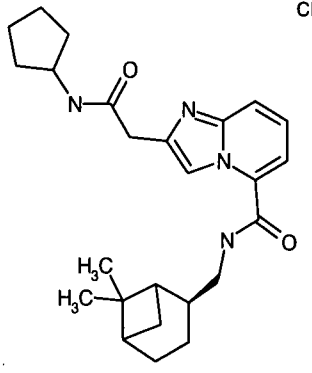
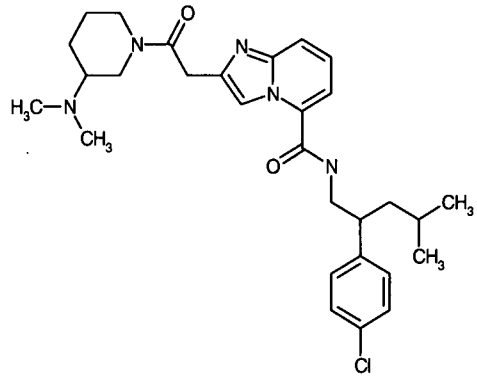
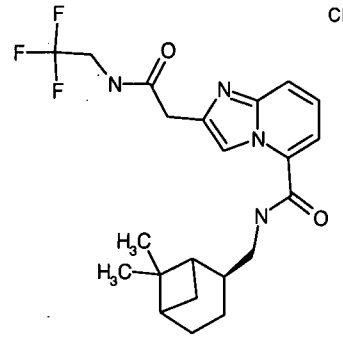
	Compound	Name	MS	R_T	IC_{50}
766		tert-butyl {1-[(5-{[2-(4-chlorophenyl)-4-methylpentyl]carbamoyl}imidazo[1,2-a]pyridin-2-yl)methyl]pyrrolidin-3-yl}carbamate	554.41	1.28	*
767		N-(adamantan-1-ylmethyl)-2-{2-[methyl(tetrahydro-2H-pyran-4-yl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	465.35	1.23	*
768		tert-butyl {5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}acetate	424.38	1.28	*
769		2-[(3-aminopyrrolidin-1-yl)methyl]-N-[(1-pyridin-3-ylcyclohexyl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	433.37	0.6	*
770		N-(adamantan-1-ylmethyl)-2-[1-(1H-tetrazol-5-yl)ethyl]imidazo[1,2-a]pyridine-5-carboxamide	406.35	1.25	*

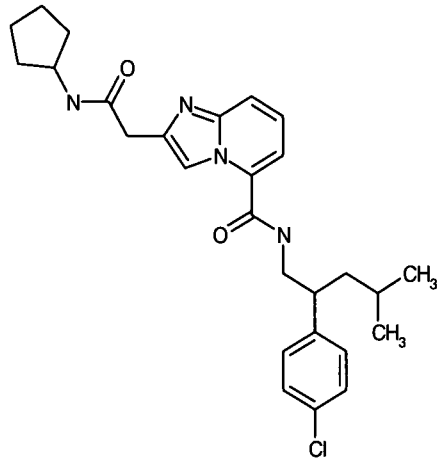
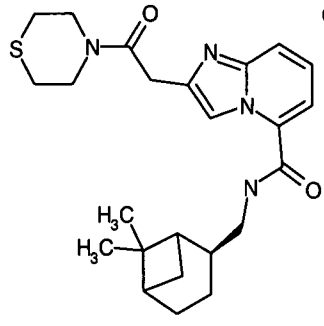
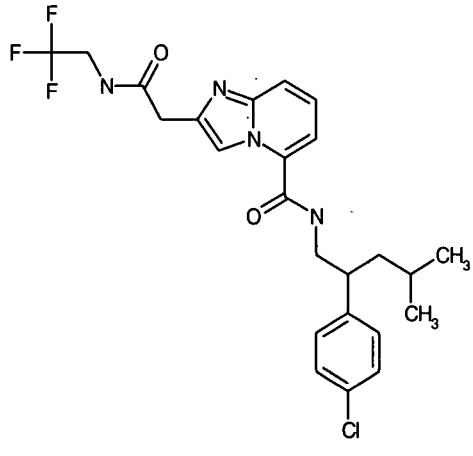
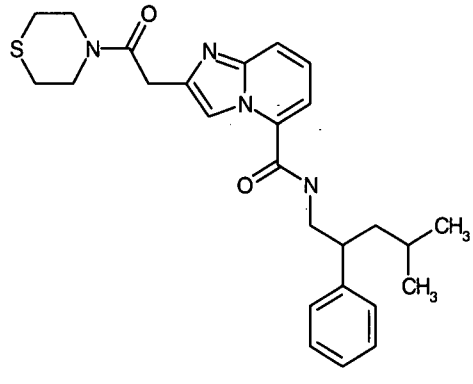
Compound		Name	MS	R_T	IC_{50}
771	 Chiral	2-adamantan-1-yl-N-(2-{2-[(3R)-3-aminopiperidin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridin-5-yl)acetamide	450.37	1.14	*
772		N-(adamantan-1-ylmethyl)-2-{[(4-amino-5-methylpyrimidin-2-yl)(methyl)amino]methyl}imidazo[1,2-a]pyridine-5-carboxamide	460.38	1.17	*
773		N-(adamantan-1-ylmethyl)-2-{[(4-amino-5-fluoropyrimidin-2-yl)(methyl)amino]methyl}imidazo[1,2-a]pyridine-5-carboxamide	464.35	1.17	*
774		2-[({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)(methyl)amino]nicotinic acid	474.34	1.24	*
775		N-(adamantan-1-ylmethyl)-2-(2-pyridin-2-ylethyl)imidazo[1,2-a]pyridine-5-carboxamide	415.33	1.18	*

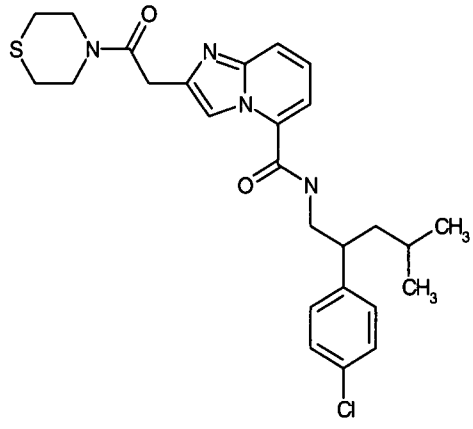
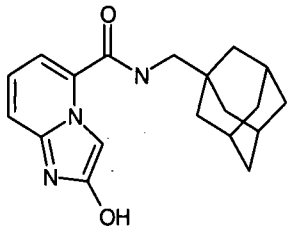
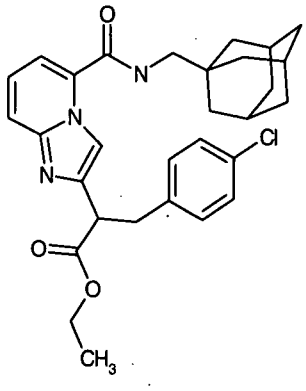
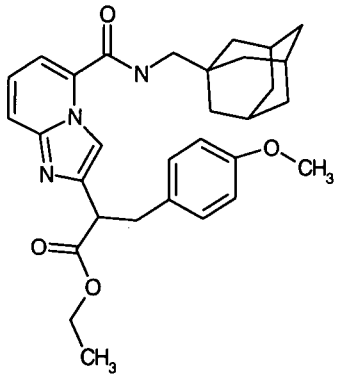
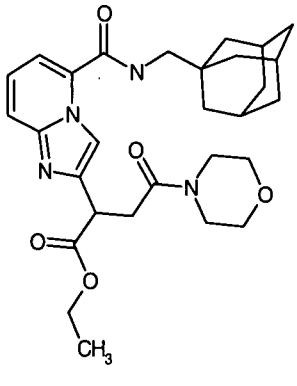
	Compound	Name	MS	R_T	IC_{50}
776		tert-butyl [1-({5-[(3-cyclopropyl-2-phenylpropyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)pyrrolidin-3-yl]carbamate	518.44	1.24	*
777		tert-butyl [1-({5-[(3-cyclobutyl-2-phenylpropyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)pyrrolidin-3-yl]carbamate	532.45	1.27	*
778	 Chiral	N-(adamantan-1-ylmethyl)-2-{3-[(3R)-3-aminopyrrolidin-1-yl]-3-oxopropyl}imidazo[1,2-a]pyridine-5-carboxamide	450.39	1.14	*
779		N-(adamantan-1-ylmethyl)-2-{3-[3-(methylamino)pyrrolidin-1-yl]-3-oxopropyl}imidazo[1,2-a]pyridine-5-carboxamide	464.42	1.15	*
780		N-(adamantan-1-ylmethyl)-2-[3-(3-aminopiperidin-1-yl)-3-oxopropyl]imidazo[1,2-a]pyridine-5-carboxamide	464.43	1.15	*
781		N-(adamantan-1-ylmethyl)-2-[1-methyl-2-(1H-tetrazol-5-yl)ethyl]imidazo[1,2-a]pyridine-5-carboxamide	420.34	1.21	*

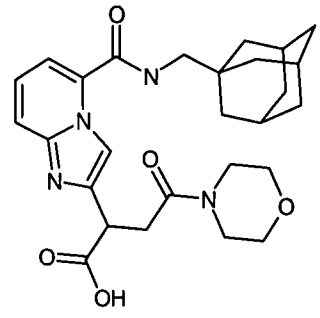
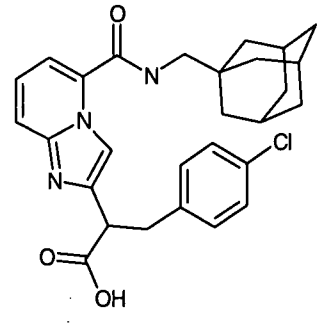
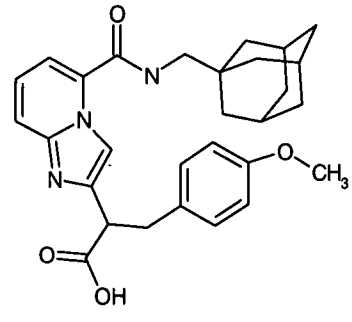
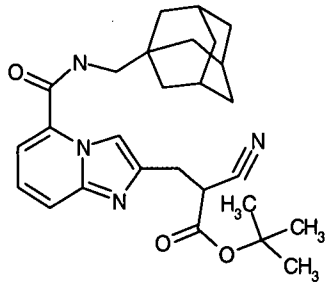
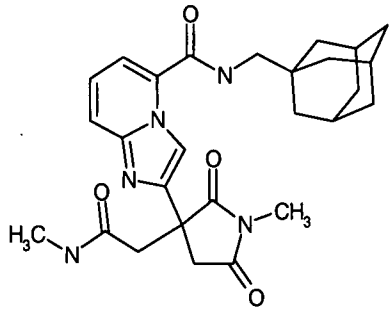
Compound		Name	MS	R_T	IC_{50}
782		2-[(3-aminopyrrolidin-1-yl)methyl]-N-(3-cyclopropyl-2-phenylpropyl)imidazo[1,2-a]pyridine-5-carboxamide	418.36	1.14	*
783		2-[(3-aminopyrrolidin-1-yl)methyl]-N-(3-cyclobutyl-2-phenylpropyl)imidazo[1,2-a]pyridine-5-carboxamide	432.39	1.18	*.61
784		tert-butyl [1-({5-[(3-cyclopentyl-2-phenylpropyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)pyrrolidin-3-yl]carbamate	546.43	1.29	*
785		tert-butyl [1-({5-[(3-cyclohexyl-2-phenylpropyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)pyrrolidin-3-yl]carbamate	560.45	1.3	*

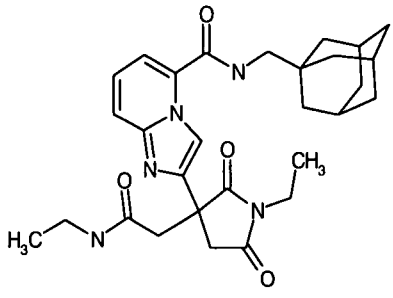
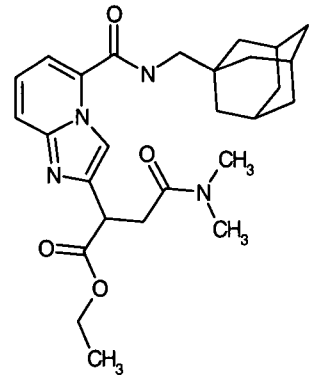
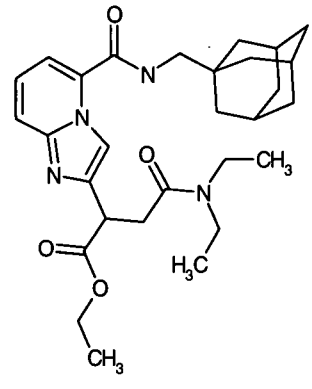
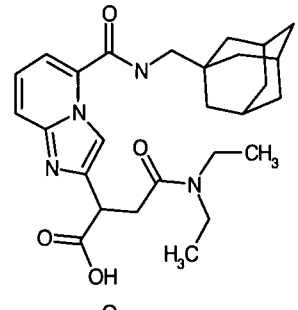
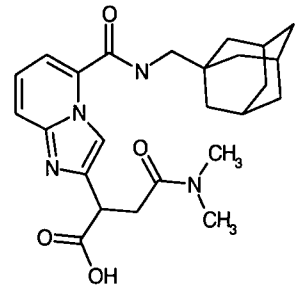
Compound		Name	MS	R_T	IC_{50}
786		2-[(3-aminopyrrolidin-1-yl)methyl]-N-(3-cyclopentyl-2-phenylpropyl)imidazo[1,2-a]pyridine-5-carboxamide	446.38	1.2	*
787		2-[(3-aminopyrrolidin-1-yl)methyl]-N-(3-cyclohexyl-2-phenylpropyl)imidazo[1,2-a]pyridine-5-carboxamide	460.40	1.22	*
788		tert-butyl {5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}carbamate	369.28	1.33	*
789		2-{2-[3-(dimethylamino)piperidin-1-yl]-2-oxoethyl}-N-(4-methyl-2-phenylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	490.45	1.17	*

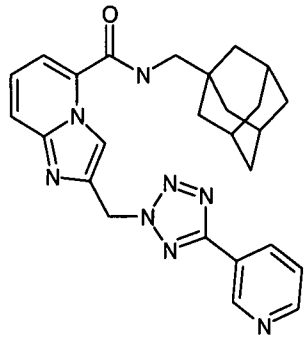
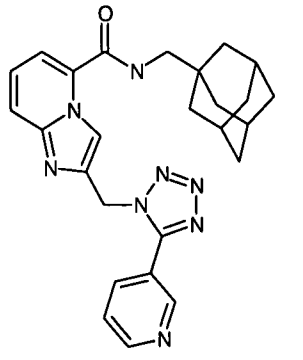
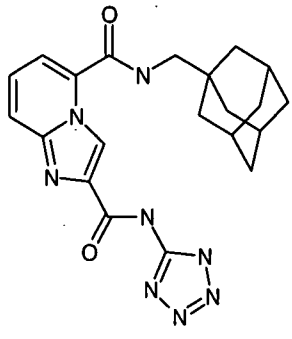
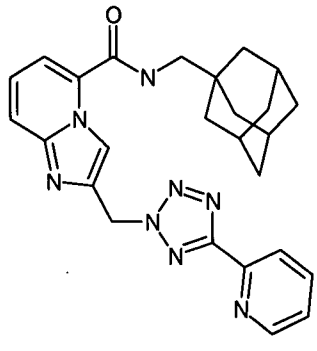
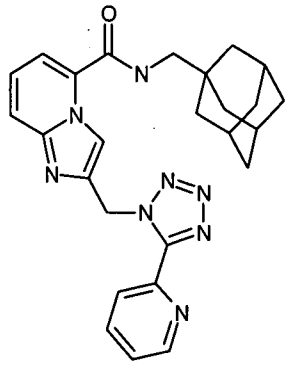
	Compound	Name	MS	R_T	IC_{50}
790	 Chiral	2-{2-[3-(dimethylamino)piperidin-1-yl]-2-oxoethyl}-N-{[(2S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	466.45	1.16	*
791	 Chiral	2-[2-(cyclopentylamino)-2-oxoethyl]-N-{[(2S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	423.40	1.26	*
792	 Chiral	N-[2-(4-chlorophenyl)-4-methylpentyl]-2-{2-[3-(dimethylamino)piperidin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	524.42	1.19	*
793		N-{[(2S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-{2-oxo-2-[(2,2,2-trifluoroethyl)amino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	437.34	1.24	*

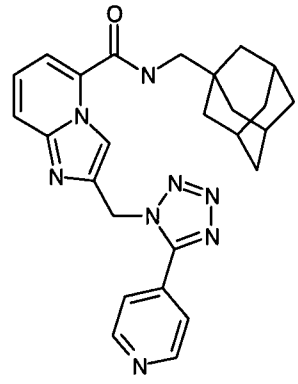
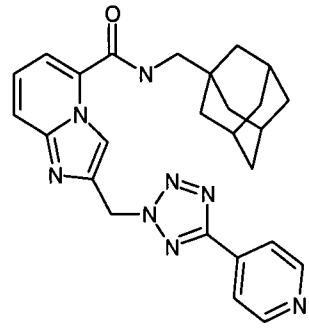
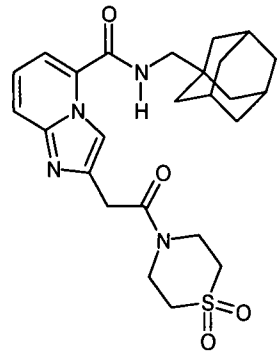
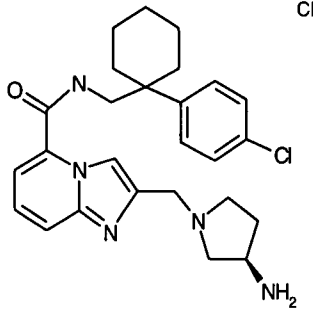
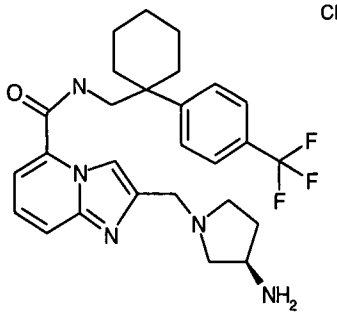
Compound	Name	MS	R_T	IC_{50}
794  Chiral	N-[2-(4-chlorophenyl)-4-methylpentyl]-2-[2-(cyclopentylamino)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	481.37	1.29	*
795 	N-{[(2S)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-(2-oxo-2-thiomorpholin-4-ylethyl)imidazo[1,2-a]pyridine-5-carboxamide	441.35	1.24	*
796 	N-[2-(4-chlorophenyl)-4-methylpentyl]-2-{2-oxo-2-[(2,2,2-trifluoroethyl)amino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	495.31	1.27	*
797 	N-(4-methyl-2-phenylpentyl)-2-(2-oxo-2-thiomorpholin-4-ylethyl)imidazo[1,2-a]pyridine-5-carboxamide	465.36	1.24	*

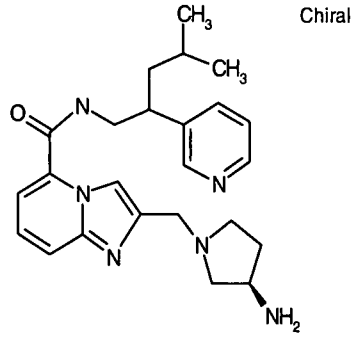
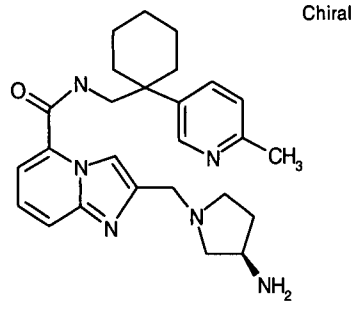
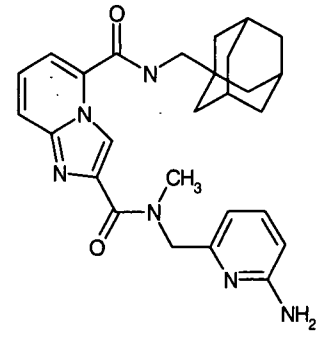
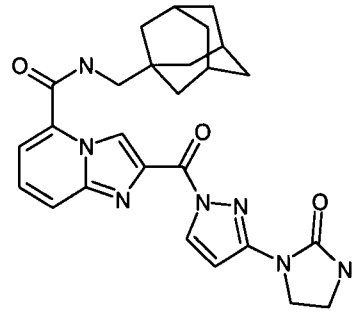
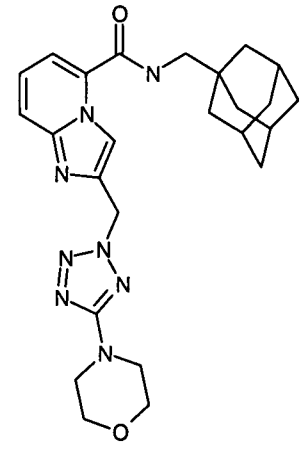
Compound		Name	MS	R_T	IC_{50}
798		N-[2-(4-chlorophenyl)-4-methylpentyl]-2-(2-oxo-2-thiomorpholin-4-ylethyl)imidazo[1,2-a]pyridine-5-carboxamide	499.33	1.27	*
799		N-(adamantan-1-ylmethyl)-2-hydroxyimidazo[1,2-a]pyridine-5-carboxamide	378.43	1.52	*
800		ethyl 2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-3-(4-chlorophenyl)propanoate	520.32	1.35	*
801		ethyl 2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-3-(4-methoxyphenyl)propanoate	516.36	1.32	*
802		ethyl 2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-4-morpholin-4-yl-4-oxobutanoate	523.38	1.26	*

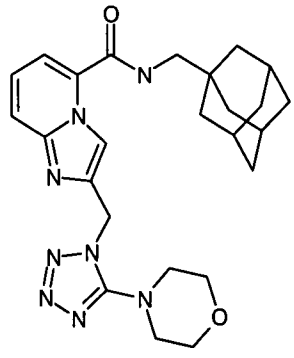
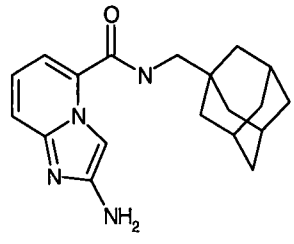
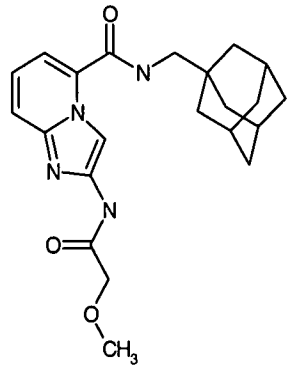
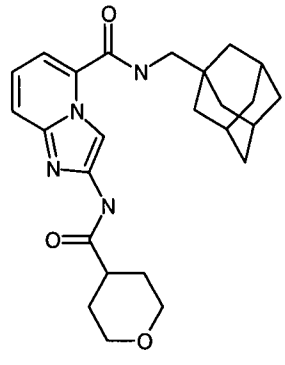
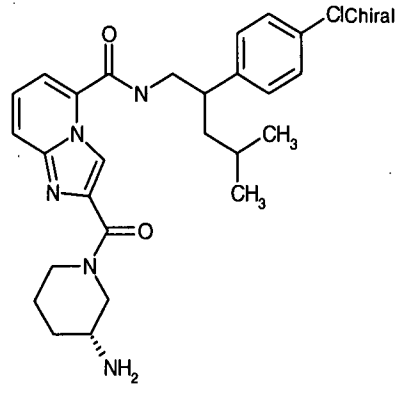
Compound		Name	MS	R_T	IC_{50}
803		2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-4-morpholin-4-yl-4-oxobutanoic acid	495.34	1.21	*
804		2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-3-(4-chlorophenyl)propanoic acid	492.26	1.32	*
805		2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-3-(4-methoxyphenyl)propanoic acid	488.34	1.28	*
806		tert-butyl 3-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-2-cyanopropanoate	407.29	1.28	*
807		N-(adamantan-1-ylmethyl)-2-{1-methyl-3-[2-(methylamino)-2-oxoethyl]-2,5-dioxopyrrolidin-3-yl}imidazo[1,2-a]pyridine-5-carboxamide	492.38	1.26	*

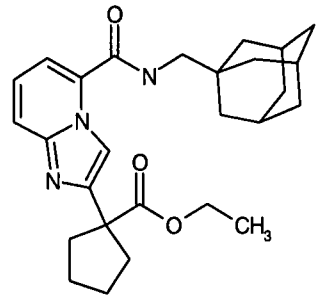
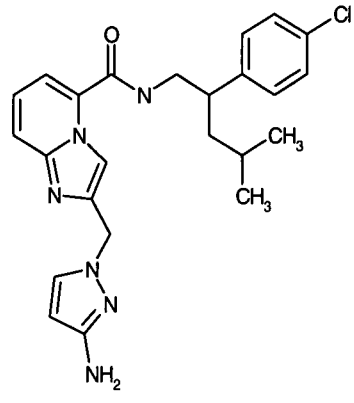
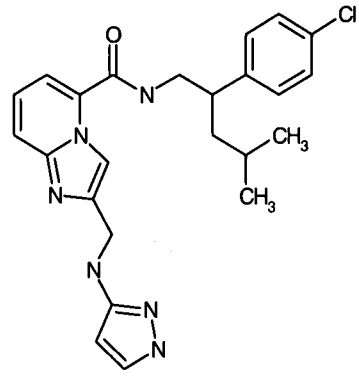
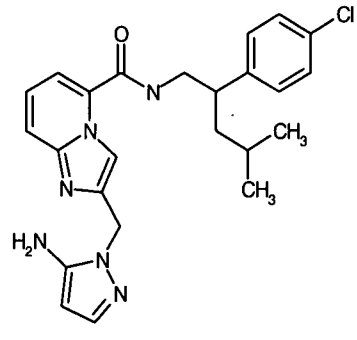
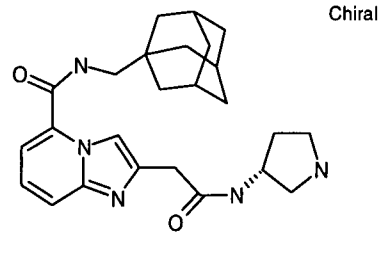
	Compound	Name	MS	R_T	IC_{50}
808		N-(adamantan-1-ylmethyl)-2-{1-ethyl-3-[2-(ethylamino)-2-oxoethyl]-2,5-dioxopyrrolidin-3-yl}imidazo[1,2-a]pyridine-5-carboxamide	520.41	1.29	*
809		ethyl 2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-4-(dimethylamino)-4-oxobutanoate	481.37	1.25	*
810		ethyl 2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-4-(diethylamino)-4-oxobutanoate	509.41	1.28	*
811		2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-4-(diethylamino)-4-oxobutanoic acid	481.38	1.24	*
812		2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-4-(dimethylamino)-4-oxobutanoic acid	453.36	1.21	*

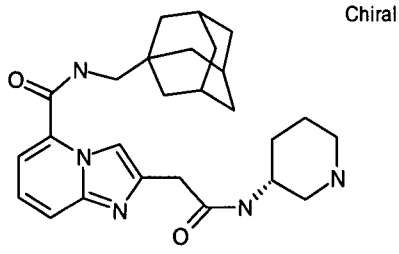
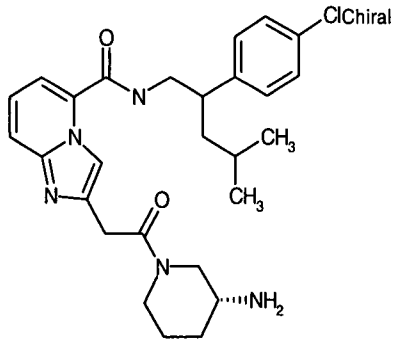
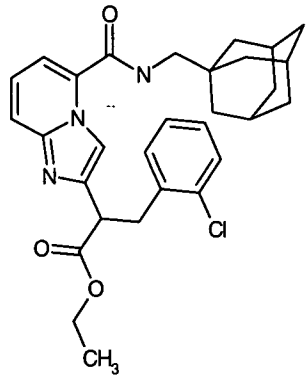
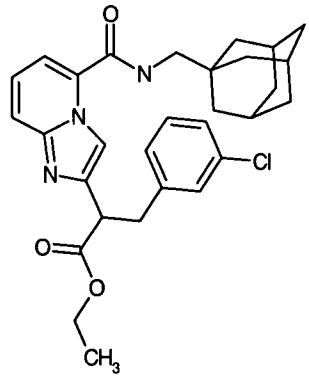
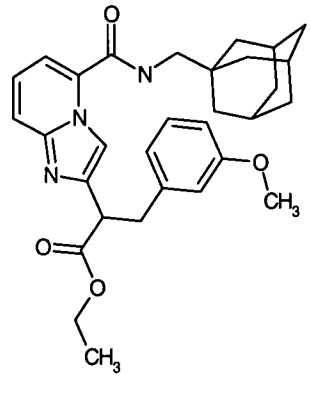
Compound		Name	MS	R_T	IC_{50}
813		N-(adamantan-1-ylmethyl)-2-[(5-pyridin-3-yl-2H-tetrazol-2-yl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	469.35	1.29	*
814		N-(adamantan-1-ylmethyl)-2-[(5-pyridin-3-yl-1H-tetrazol-1-yl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	469.36	1.27	*
815		5-N-(adamantan-1-ylmethyl)-2-N-1H-tetrazol-5-ylimidazo[1,2-a]pyridine-2,5-dicarboxamide	421.29	1.3	*
816		N-(adamantan-1-ylmethyl)-2-[(5-pyridin-2-yl-2H-tetrazol-2-yl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	469.36	1.28	*
817		N-(adamantan-1-ylmethyl)-2-[(5-pyridin-2-yl-1H-tetrazol-1-yl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	469.36	1.29	*

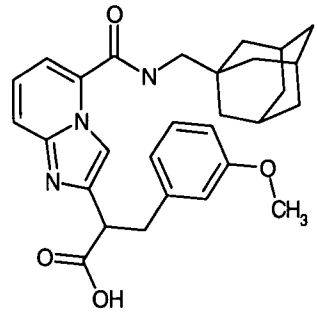
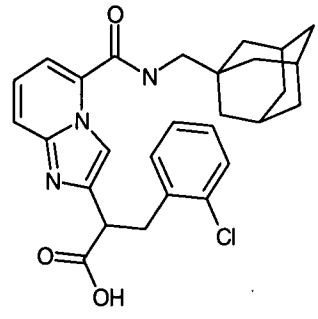
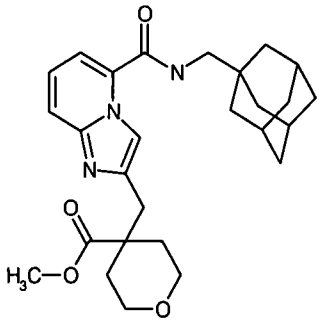
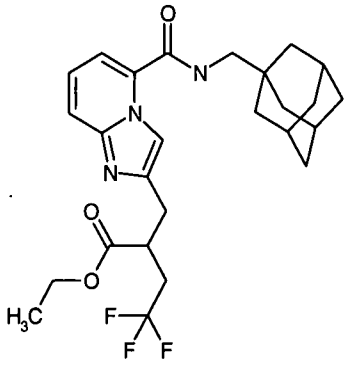
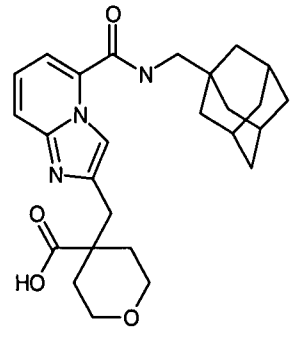
	Compound	Name	MS	R_T	IC_{50}
818		N-(adamantan-1-ylmethyl)-2-[(5-pyridin-4-yl-1H-tetrazol-1-yl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	469.37	1.27	*
819		N-(adamantan-1-ylmethyl)-2-[(5-pyridin-4-yl-2H-tetrazol-2-yl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	469.36	1.27	*
820		N-(adamantan-1-ylmethyl)-2-[2-(1,1-dioxidothiomorpholin-4-yl)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	485.33	1.18	*
821	Chiral 	2-{[(3R)-3-aminopyrrolidin-1-yl]methyl}-N-{[1-(4-chlorophenyl)cyclohexyl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	466.36	1.19	*
822	Chiral 	2-{[(3R)-3-aminopyrrolidin-1-yl]methyl}-N-({1-[4-(trifluoromethyl)phenyl]cyclohexyl}methyl)imidazo[1,2-a]pyridine-5-carboxamide	500.38	1.2	*

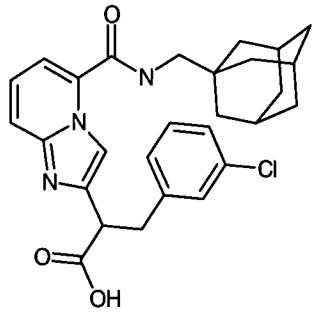
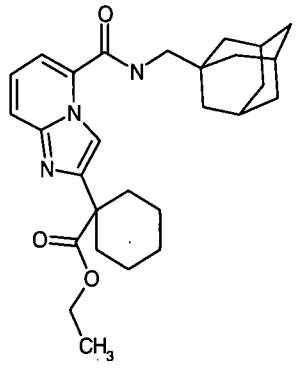
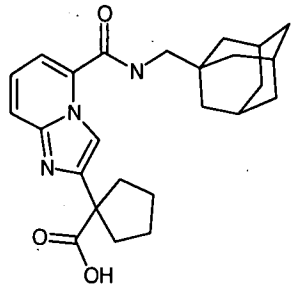
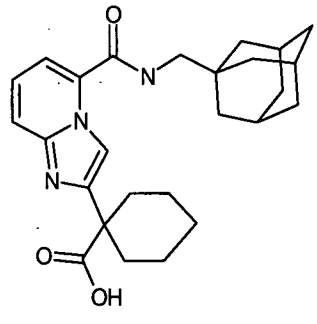
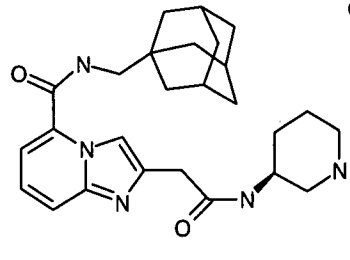
Compound		Name	MS	R_T	IC_{50}
823	 Chiral	2-{[(3R)-3-aminopyrrolidin-1-yl]methyl}-N-(4-methyl-2-pyridin-3-ylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	420.36	1.21	*
824	 Chiral	2-{[(3R)-3-aminopyrrolidin-1-yl]methyl}-N-{[1-(6-methylpyridin-3-yl)cyclohexyl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	447.58	1.12	*
825		5-N-(adamantan-1-ylmethyl)-2-N-[(6-aminopyridin-2-yl)methyl]-2-N-methylimidazo[1,2-a]pyridine-2,5-dicarboxamide	473.37	1.23	*
826		N-(adamantan-1-ylmethyl)-2-{[3-(2-oxoimidazolidin-1-yl)-1H-pyrazol-1-yl]carbonyl}imidazo[1,2-a]pyridine-5-carboxamide	488.34	1.31	*
827		N-(adamantan-1-ylmethyl)-2-[(5-morpholin-4-yl-2H-tetrazol-2-yl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	477.38	1.3	*

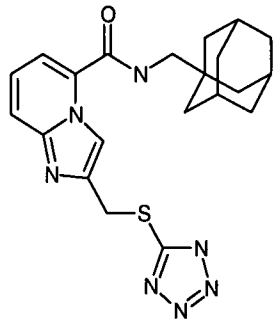
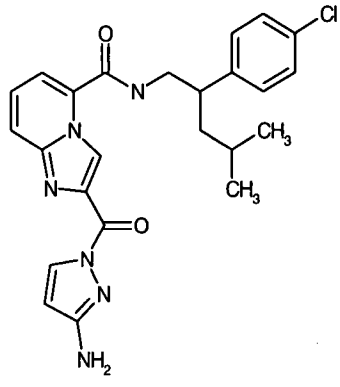
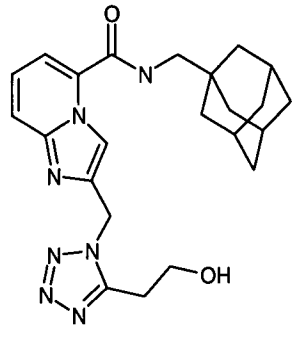
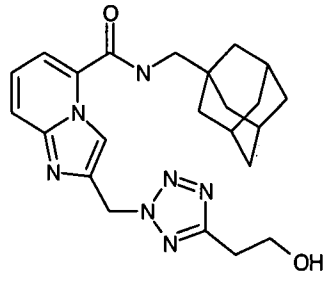
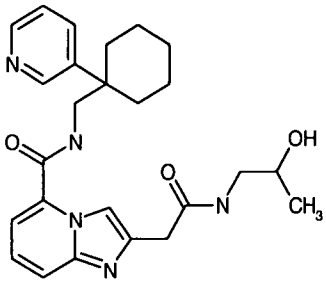
Compound		Name	MS	R_T	IC_{50}
828		N-(adamantan-1-ylmethyl)-2-[(5-morpholin-4-yl-1H-tetrazol-1-yl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	477.37	1.27	*
829		N-(adamantan-1-ylmethyl)-2-aminoimidazo[1,2-a]pyridine-5-carboxamide	620.50	1.44	*
830		N-(adamantan-1-ylmethyl)-2-[(methoxyacetyl)amino]imidazo[1,2-a]pyridine-5-carboxamide	397.34	1.28	*
831		N-(adamantan-1-ylmethyl)-2-[(tetrahydro-2H-pyran-4-ylcarbonyl)amino]imidazo[1,2-a]pyridine-5-carboxamide	437.37	1.29	*
832		2-{[(3R)-3-aminopiperidin-1-yl]carbonyl}-N-[2-(4-chlorophenyl)-4-methylpentyl]imidazo[1,2-a]pyridine-5-carboxamide	482.33	1.24	*

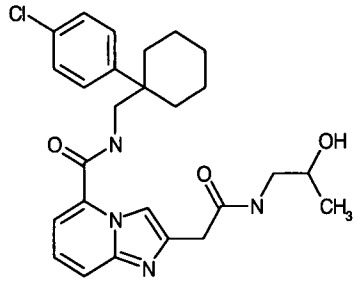
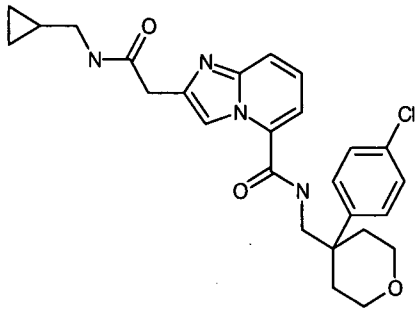
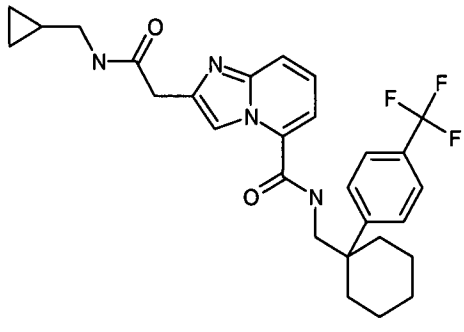
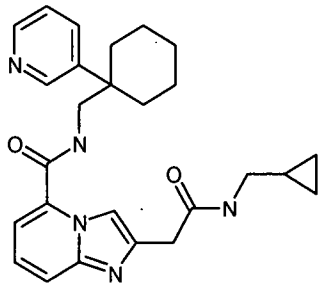
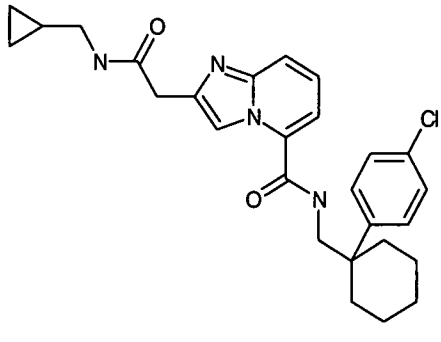
Compound		Name	MS	R_T	IC_{50}
833		ethyl 1-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}cyclopentanecarboxylate	450.37	1.31	*
834		2-[(3-amino-1H-pyrazol-1-yl)methyl]-N-[2-(4-chlorophenyl)-4-methylpentyl]imidazo[1,2-a]pyridine-5-carboxamide	451.30	1.23	*
835		N-[2-(4-chlorophenyl)-4-methylpentyl]-2-[(1H-pyrazol-3-ylamino)methyl]imidazo[1,2-a]pyridine-5-carboxamide	451.30	1.24	*
836		2-[(5-amino-1H-pyrazol-1-yl)methyl]-N-[2-(4-chlorophenyl)-4-methylpentyl]imidazo[1,2-a]pyridine-5-carboxamide	451.30	1.25	*
837	 Chiral	N-(adamantan-1-ylmethyl)-2-{2-oxo-2-[(3R)-pyrrolidin-3-ylamino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	436.38	1.16	*

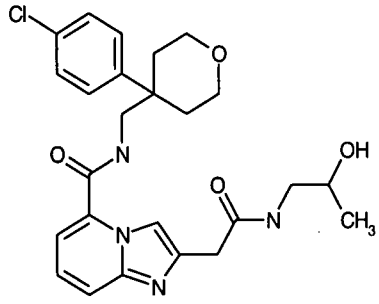
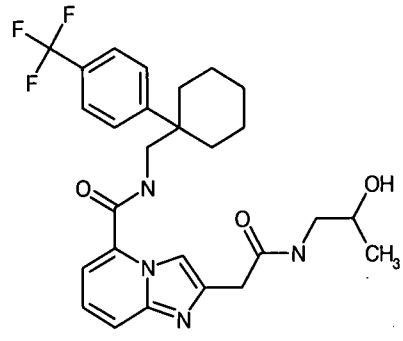
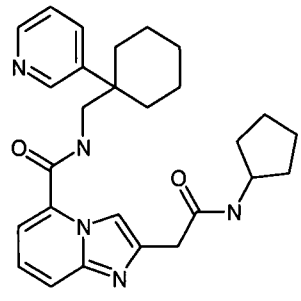
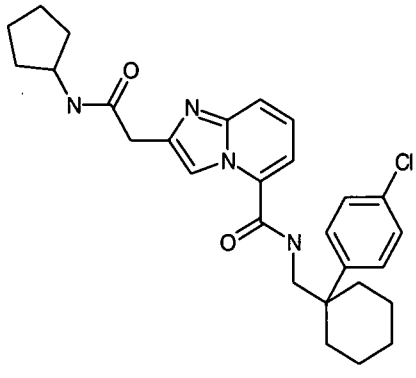
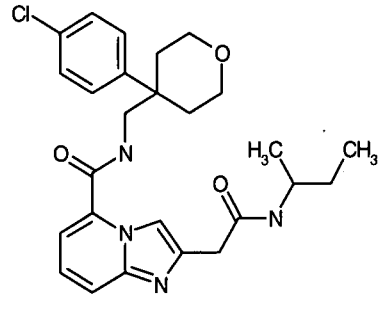
Compound		Name	MS	R_T	IC_{50}
838	 Chiral	N-(adamantan-1-ylmethyl)-2-{2-oxo-2-[(3R)-piperidin-3-ylamino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	450.39	1.16	*
839	 ClChiral	2-{2-[(3R)-3-aminopiperidin-1-yl]-2-oxoethyl}-N-[2-(4-chlorophenyl)-4-methylpentyl]imidazo[1,2-a]pyridine-5-carboxamide	496.35	1.19	*
840		ethyl 2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-3-(2-chlorophenyl)propanoate	520.33	1.37	*
841		ethyl 2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-3-(3-chlorophenyl)propanoate	520.30	1.38	*
842		ethyl 2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-3-(3-methoxyphenyl)propanoate	516.34	1.36	*

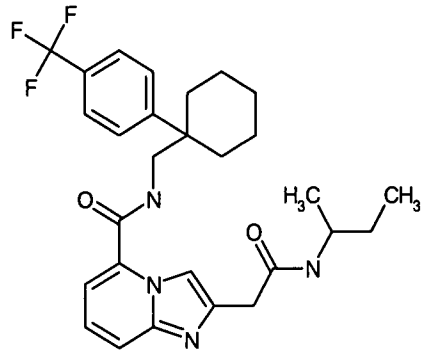
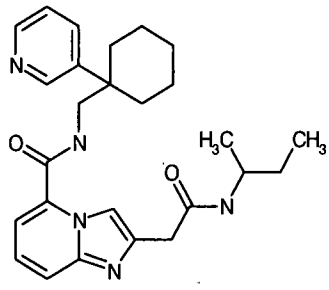
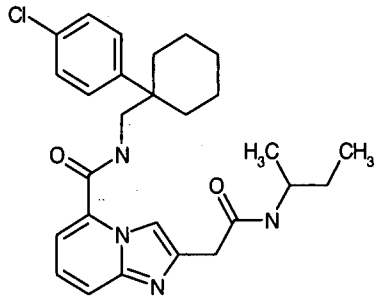
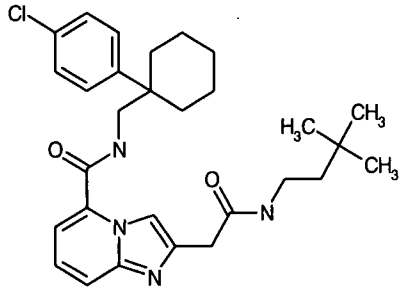
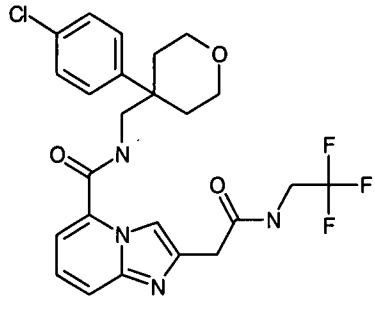
	Compound	Name	MS	R_T	IC_{50}
843		2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-3-(3-methoxyphenyl)propanoic acid	488.33	1.3	*
844		2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-3-(2-chlorophenyl)propanoic acid	492.30	1.32	*
845		methyl 4-({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)tetrahydro-2H-pyran-4-carboxylate	466.37	1.25	*
846		ethyl 2-({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)-4,4,4-trifluorobutanoate	492.34	1.31	*
847		4-({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)tetrahydro-2H-pyran-4-carboxylic acid	452.35	1.22	*

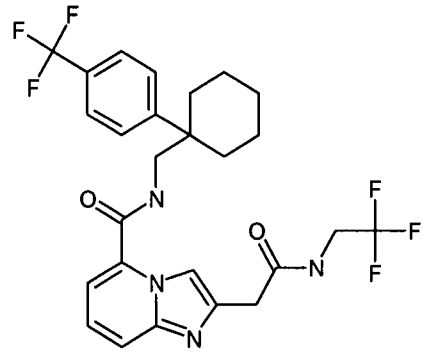
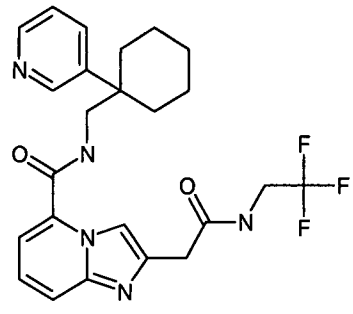
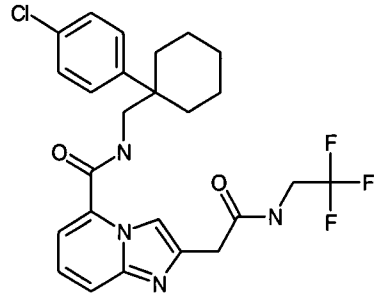
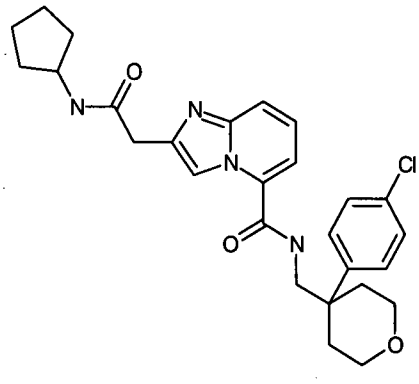
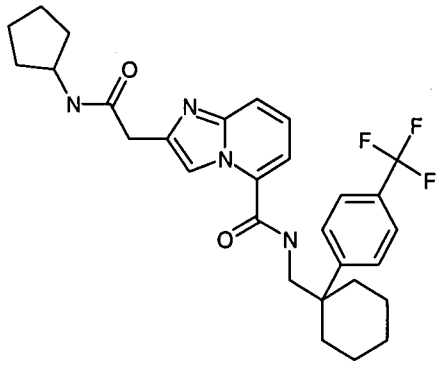
Compound		Name	MS	R_T	IC_{50}
848		2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-3-(3-chlorophenyl)propanoic acid	492.28	1.33	*
849		ethyl 1-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}cyclohexanecarboxylate	464.36	1.35	*
850		1-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}cyclopentanecarboxylic acid	422.34	1.28	*
851		1-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}cyclohexanecarboxylic acid	436.36	1.3	*
852	 Chiral	N-(adamantan-1-ylmethyl)-2-{2-oxo-2-[(3S)-piperidin-3-ylamino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	450.36	1.16	*

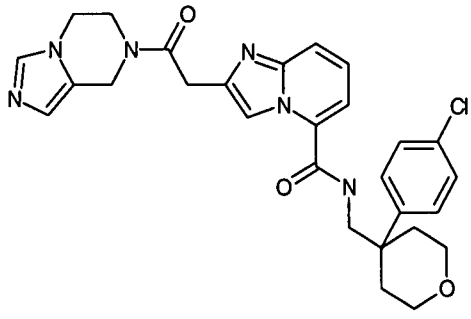
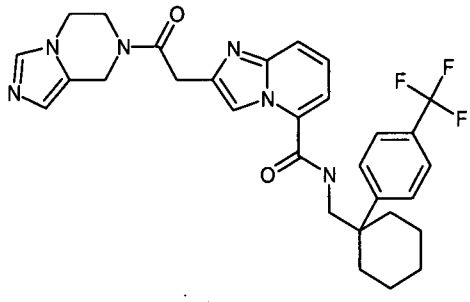
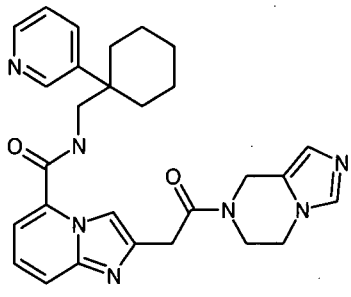
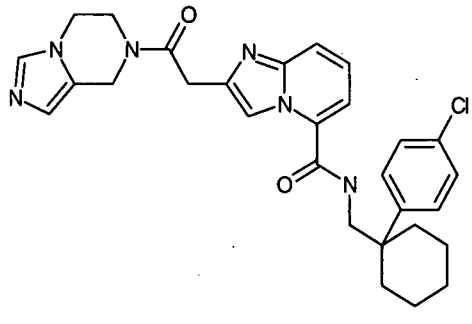
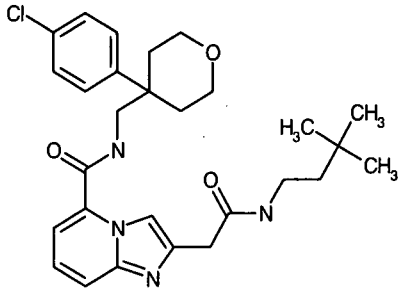
	Compound	Name	MS	R_T	IC_{50}
853		N-(adamantan-1-ylmethyl)-2-[(1H-tetrazol-5-ylthio)methyl]imidazo[1,2-a]pyridine-5-carboxamide	424.30	1.24	*
854		2-[(3-amino-1H-pyrazol-1-yl)carbonyl]-N-[2-(4-chlorophenyl)-4-methylpentyl]imidazo[1,2-a]pyridine-5-carboxamide	465.24	1.33	*
855		N-(adamantan-1-ylmethyl)-2-{[5-(2-hydroxyethyl)-1H-tetrazol-1-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	436.32	1.25	*
856		N-(adamantan-1-ylmethyl)-2-{[5-(2-hydroxyethyl)-2H-tetrazol-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	436.36	1.26	*
857		2-{2-[(2-hydroxypropyl)amino]-2-oxoethyl}-N-[(1-pyridin-3-ylcyclohexyl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	450.32	0.98	*

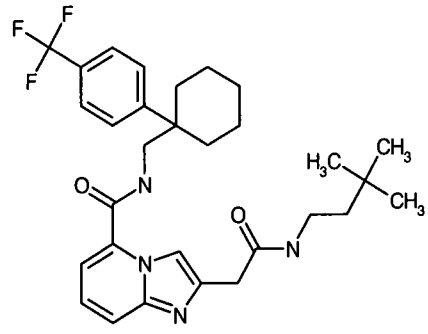
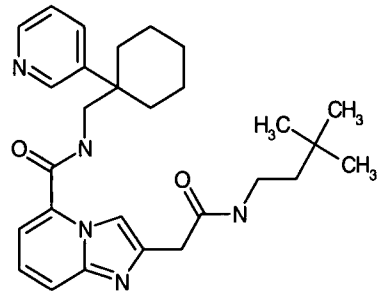
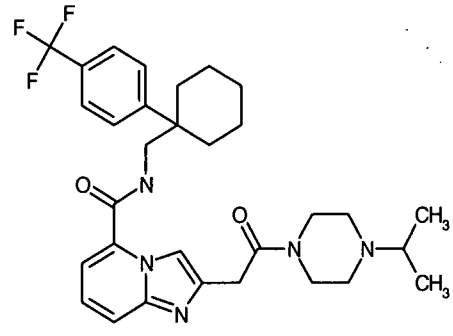
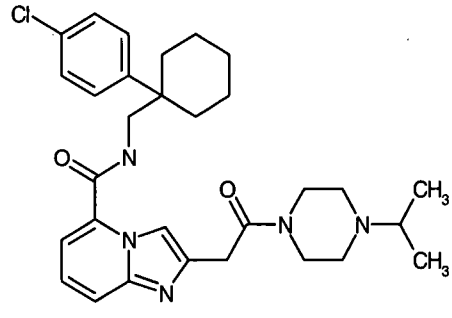
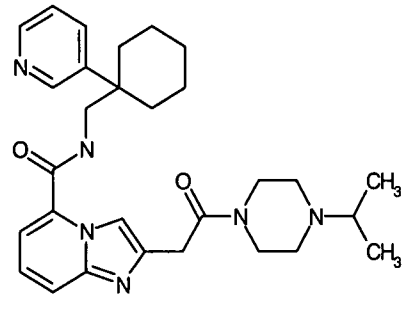
	Compound	Name	MS	R_T	IC_{50}
858		N-{[1-(4-chlorophenyl)cyclohexyl]methyl}-2-{2-[(2-hydroxypropyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	483.28	1.24	*
859		N-{[4-(4-chlorophenyl)tetrahydro-2H-pyran-4-yl]methyl}-2-{2-[(cyclopropylmethyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	481.27	1.18	
860		2-{2-[(cyclopropylmethyl)amino]-2-oxoethyl}-N-({1-[4-(trifluoromethyl)phenyl]cyclohexyl}methyl)imidazo[1,2-a]pyridine-5-carboxamide	513.32	1.29	*
861		2-{2-[(cyclopropylmethyl)amino]-2-oxoethyl}-N-[(1-pyridin-3-ylcyclohexyl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	446.32	1.06	
862		N-{[1-(4-chlorophenyl)cyclohexyl]methyl}-2-{2-[(cyclopropylmethyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	479.29	1.29	*

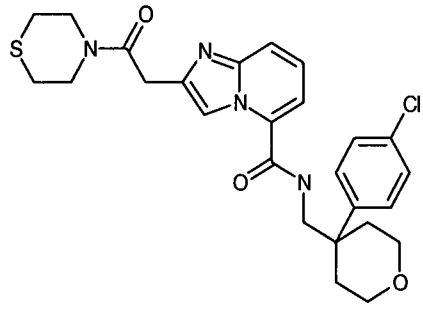
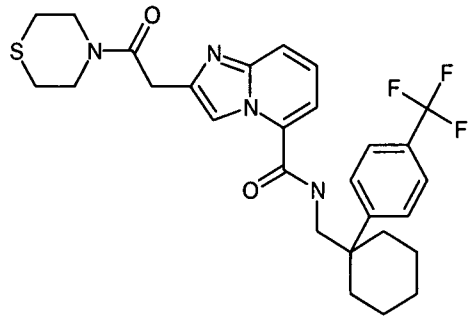
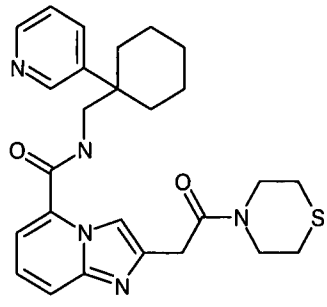
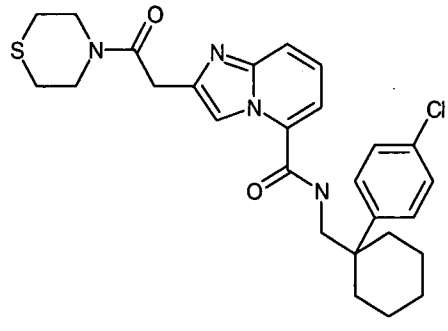
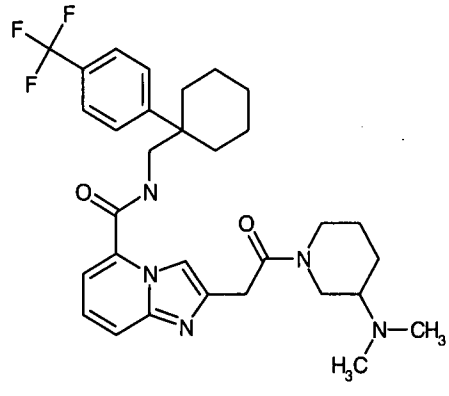
Compound		Name	MS	R_T	IC_{50}
863		N-{[4-(4-chlorophenyl)tetrahydro-2H-pyran-4-yl]methyl}-2-{2-[(2-hydroxypropyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	485.26	1.13	
864		2-{2-[(2-hydroxypropyl)amino]-2-oxoethyl}-N-({1-[4-(trifluoromethyl)phenyl]cyclohexyl}methyl)imidazo[1,2-a]pyridine-5-carboxamide	517.30	1.26	*
865		2-[2-(cyclopentylamino)-2-oxoethyl]-N-[(1-pyridin-3-ylcyclohexyl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	460.35	1.09	*
866		N-{[1-(4-chlorophenyl)cyclohexyl]methyl}-2-[2-(cyclopentylamino)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	493.31	1.3	*
867		2-[2-(sec-butylamino)-2-oxoethyl]-N-{[4-(4-chlorophenyl)tetrahydro-2H-pyran-4-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	483.29	1.2	

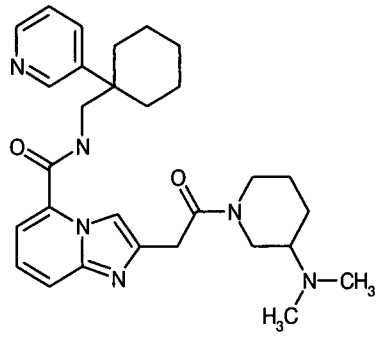
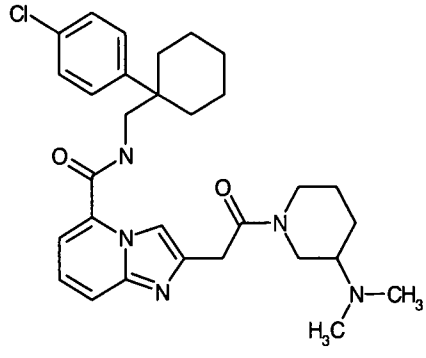
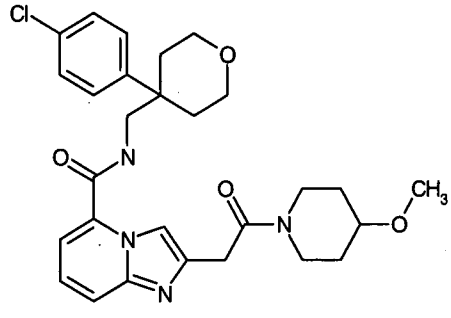
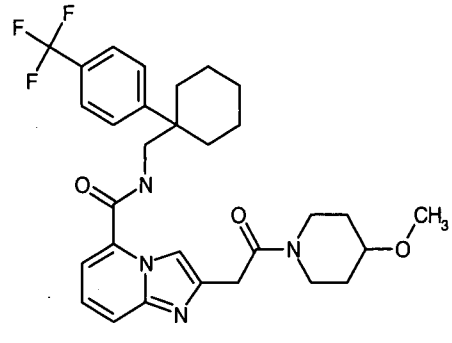
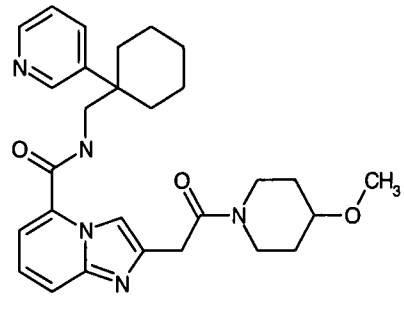
	Compound	Name	MS	R_T	IC_{50}
868		2-[2-(sec-butylamino)-2-oxoethyl]-N-({1-[4-(trifluoromethyl)phenyl]cyclohexyl}methyl)imidazo[1,2-a]pyridine-5-carboxamide	515.34	1.3	*
869		2-[2-(sec-butylamino)-2-oxoethyl]-N-[(1-pyridin-3-ylcyclohexyl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	448.35	1.07	*
870		2-[2-(sec-butylamino)-2-oxoethyl]-N-{[1-(4-chlorophenyl)cyclohexyl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	481.31	1.29	*
871		N-{[1-(4-chlorophenyl)cyclohexyl]methyl}-2-{2-[(3,3-dimethylbutyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	509.35	1.33	*
872		N-{[4-(4-chlorophenyl)tetrahydro-2H-pyran-4-yl]methyl}-2-{2-oxo-2-[(2,2,2-trifluoroethyl)amino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	509.24	1.18	*

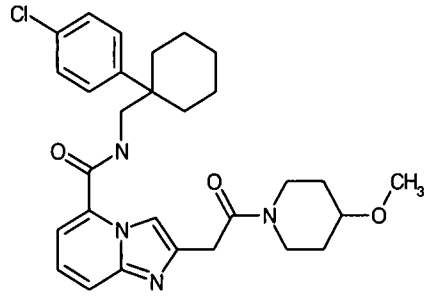
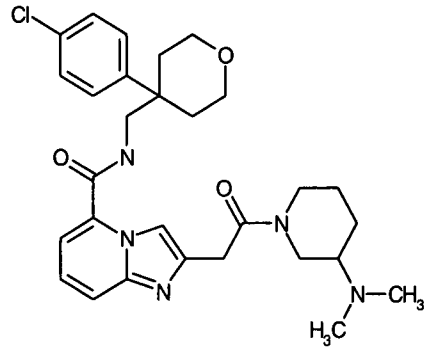
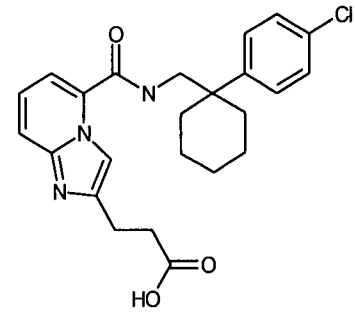
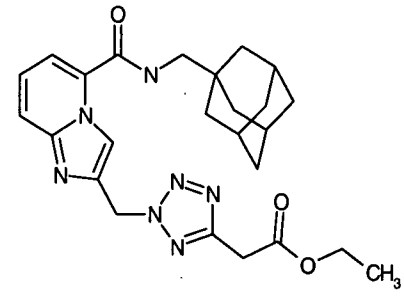
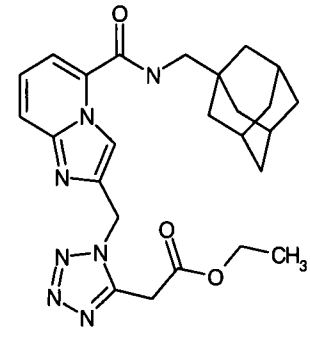
	Compound	Name	MS	R_T	IC_{50}
873		2-{2-oxo-2-[(2,2,2-trifluoroethyl)amino]ethyl}-N-({1-[4-(trifluoromethyl)phenyl]cyclohexyl}methyl)imidazo[1,2-a]pyridine-5-carboxamide	487.31	1.28	*
874		2-{2-oxo-2-[(2,2,2-trifluoroethyl)amino]ethyl}-N-[(1-pyridin-3-ylcyclohexyl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	474.29	1.05	*
875		N-{[1-(4-chlorophenyl)cyclohexyl]methyl}-2-{2-oxo-2-[(2,2,2-trifluoroethyl)amino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	507.26	1.28	*
876		N-{[4-(4-chlorophenyl)tetrahydro-2H-pyran-4-yl]methyl}-2-[2-(cyclopentylamino)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	495.30	1.2	
877		2-[2-(cyclopentylamino)-2-oxoethyl]-N-({1-[4-(trifluoromethyl)phenyl]cyclohexyl}methyl)imidazo[1,2-a]pyridine-5-carboxamide	527.34	1.31	*

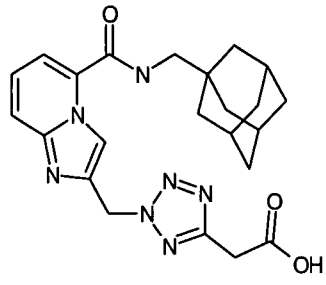
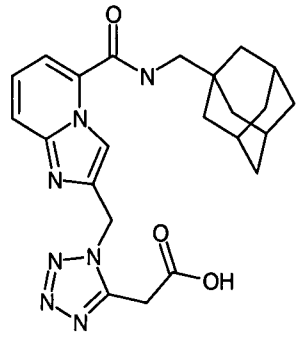
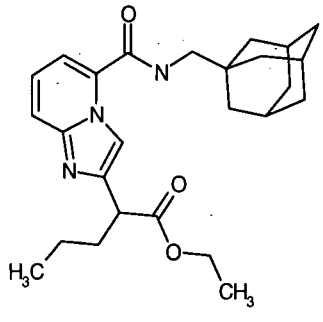
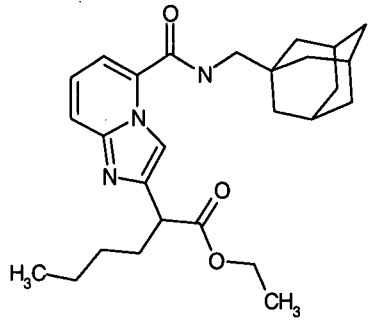
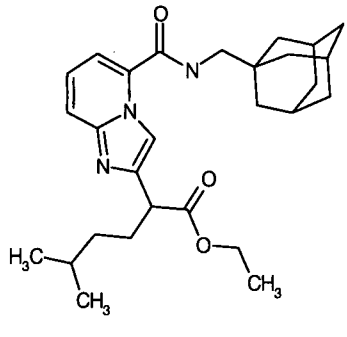
	Compound	Name	MS	R_T	IC_{50}
878		N-{[4-(4-chlorophenyl)tetrahydro-2H-pyran-4-yl]methyl}-2-[2-(5,6-dihydroimidazo[1,5-a]pyrazin-7(8H)-yl)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	533.30	1.08	
879		2-[2-(5,6-dihydroimidazo[1,5-a]pyrazin-7(8H)-yl)-2-oxoethyl]-N-({1-[4-(trifluoromethyl)phenyl]cyclohexyl}methyl)imidazo[1,2-a]pyridine-5-carboxamide	565.35	1.2	*
880		2-[2-(5,6-dihydroimidazo[1,5-a]pyrazin-7(8H)-yl)-2-oxoethyl]-N-[(1-pyridin-3-ylcyclohexyl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	498.36	0.68	
881		N-{[1-(4-chlorophenyl)cyclohexyl]methyl}-2-[2-(5,6-dihydroimidazo[1,5-a]pyrazin-7(8H)-yl)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	531.32	1.18	*
882		N-{[4-(4-chlorophenyl)tetrahydro-2H-pyran-4-yl]methyl}-2-{2-[(3,3-dimethylbutyl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	511.34	1.25	*

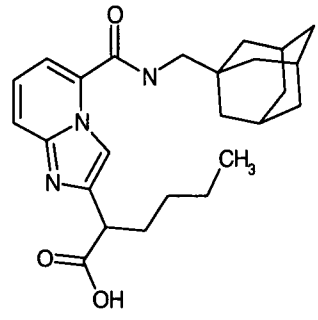
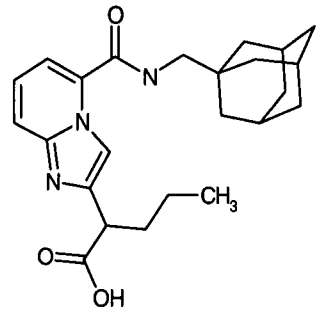
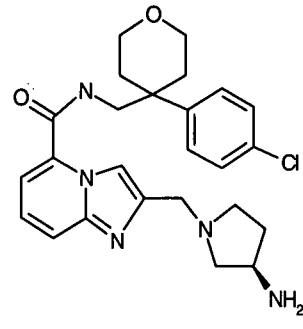
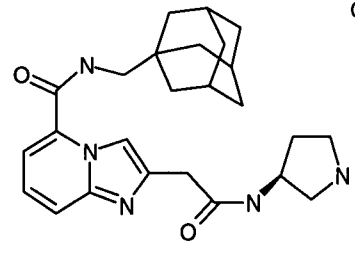
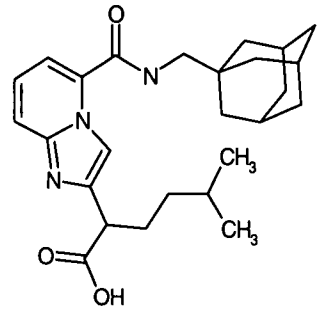
	Compound	Name	MS	R_T	IC_{50}
883		2-{2-[(3,3-dimethylbutyl)amino]-2-oxoethyl}-N-({1-[4-(trifluoromethyl)phenyl]cyclohexyl}methyl)imidazo[1,2-a]pyridine-5-carboxamide	543.39	1.33	*
884		2-{2-[(3,3-dimethylbutyl)amino]-2-oxoethyl}-N-[(1-pyridin-3-ylcyclohexyl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	476.39	1.14	*
885		2-[2-(4-isopropylpiperazin-1-yl)-2-oxoethyl]-N-({1-[4-(trifluoromethyl)phenyl]cyclohexyl}methyl)imidazo[1,2-a]pyridine-5-carboxamide	570.41	1.2	*
886		N-{[1-(4-chlorophenyl)cyclohexyl]methyl}-2-[2-(4-isopropylpiperazin-1-yl)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	536.38	1.19	*
887		2-[2-(4-isopropylpiperazin-1-yl)-2-oxoethyl]-N-[(1-pyridin-3-ylcyclohexyl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	503.41	0.86	

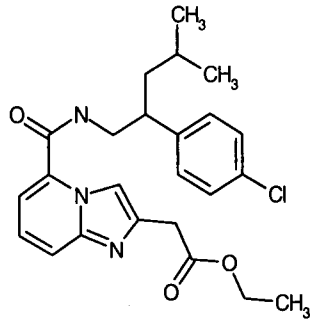
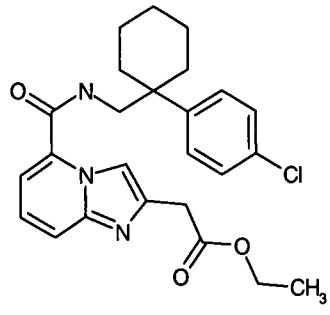
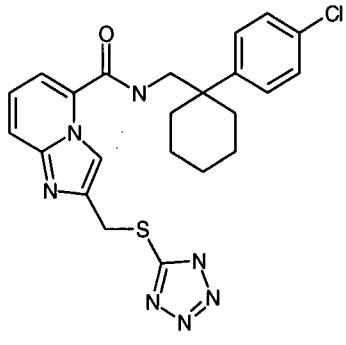
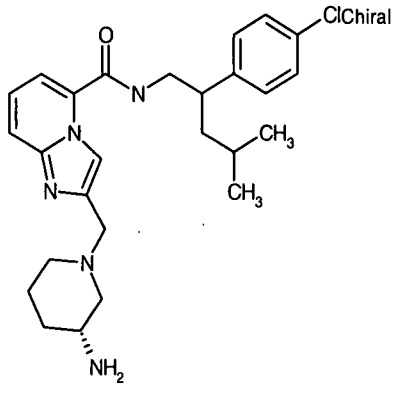
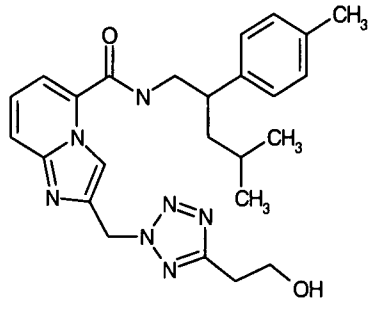
	Compound	Name	MS	R_T	IC_{50}
888		N-{[4-(4-chlorophenyl)tetrahydro-2H-pyran-4-yl]methyl}-2-(2-oxo-2-thiomorpholin-4-ylethyl)imidazo[1,2-a]pyridine-5-carboxamide	513.27	1.17	
889		2-(2-oxo-2-thiomorpholin-4-ylethyl)-N-({1-[4-(trifluoromethyl)phenyl]cyclohexyl}methyl)imidazo[1,2-a]pyridine-5-carboxamide	545.31	1.29	*
890		2-(2-oxo-2-thiomorpholin-4-ylethyl)-N-[(1-pyridin-3-ylcyclohexyl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	478.32	1.05	*
891		N-{[1-(4-chlorophenyl)cyclohexyl]methyl}-2-(2-oxo-2-thiomorpholin-4-ylethyl)imidazo[1,2-a]pyridine-5-carboxamide	511.28	1.28	*
892		2-{2-[3-(dimethylamino)piperidin-1-yl]-2-oxoethyl}-N-({1-[4-(trifluoromethyl)phenyl]cyclohexyl}methyl)imidazo[1,2-a]pyridine-5-carboxamide	570.42	1.2	*

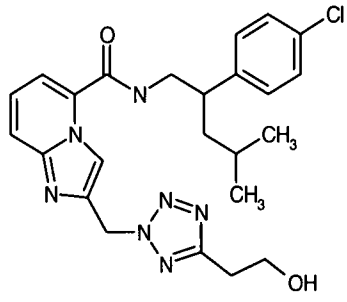
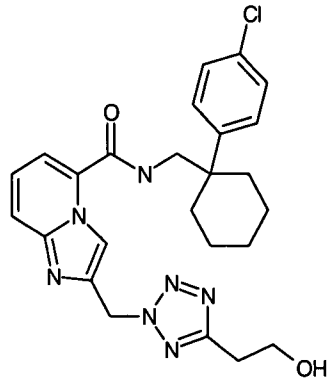
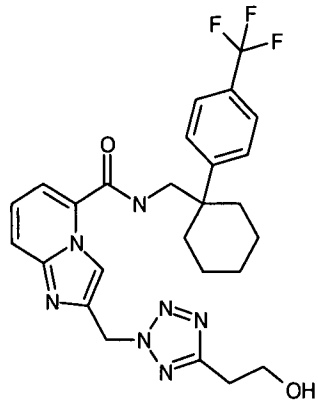
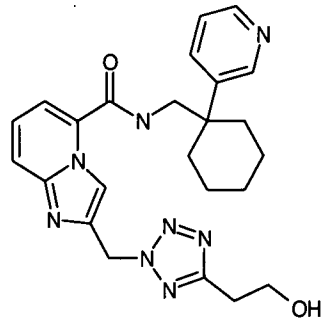
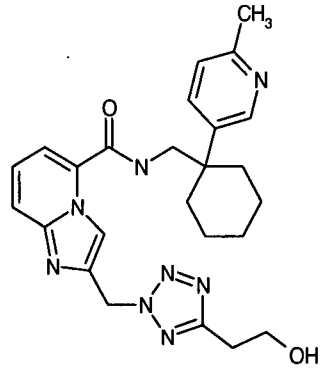
	Compound	Name	MS	R_T	IC_{50}
893		2-{2-[3-(dimethylamino)piperidin-1-yl]-2-oxoethyl}-N-[(1-pyridin-3-ylcyclohexyl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	503.41	0.9	*
894		N-{[1-(4-chlorophenyl)cyclohexyl]methyl}-2-{2-[3-(dimethylamino)piperidin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	536.39	1.19	*
895		N-{[4-(4-chlorophenyl)tetrahydro-2H-pyran-4-yl]methyl}-2-[2-(4-methoxypiperidin-1-yl)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	525.32	1.16	
896		2-[2-(4-methoxypiperidin-1-yl)-2-oxoethyl]-N-({1-[4-(trifluoromethyl)phenyl]cyclohexyl}methyl)imidazo[1,2-a]pyridine-5-carboxamide	557.38	1.27	*
897		2-[2-(4-methoxypiperidin-1-yl)-2-oxoethyl]-N-[(1-pyridin-3-ylcyclohexyl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	490.38	1.04	*

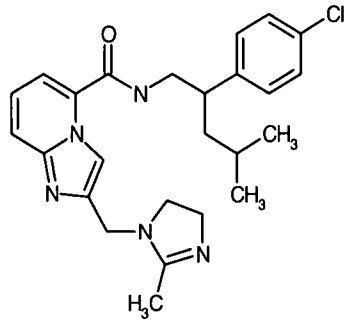
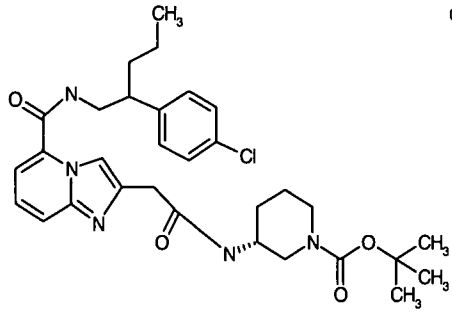
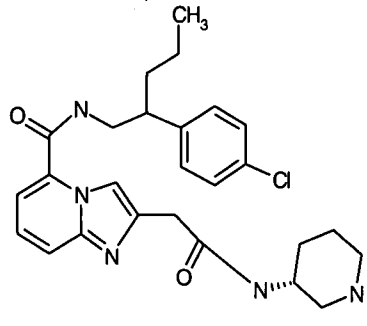
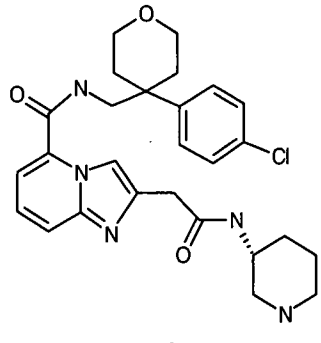
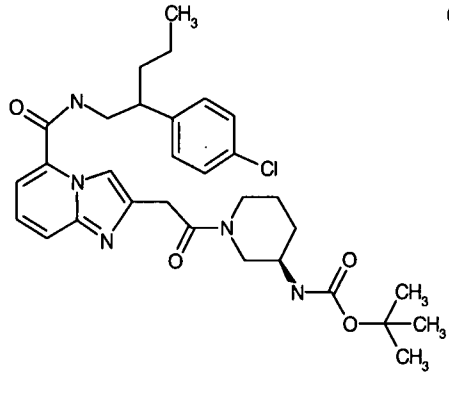
	Compound	Name	MS	R_T	IC_{50}
898		N-{[1-(4-chlorophenyl)cyclohexyl]methyl}-2-[2-(4-methoxypiperidin-1-yl)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	523.35	1.26	*
899		N-{[4-(4-chlorophenyl)tetrahydro-2H-pyran-4-yl]methyl}-2-{2-[3-(dimethylamino)piperidin-1-yl]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	538.36	1.08	*
900		3-[5-({[1-(4-chlorophenyl)cyclohexyl]methyl}carbamoyl)imidazo[1,2-a]pyridin-2-yl]propanoic acid	440.28	1.25	*
901		ethyl [2-({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)-2H-tetrazol-5-yl]acetate	478.31	1.3	*
902		ethyl [1-({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)-1H-tetrazol-5-yl]acetate	478.32	1.3	*

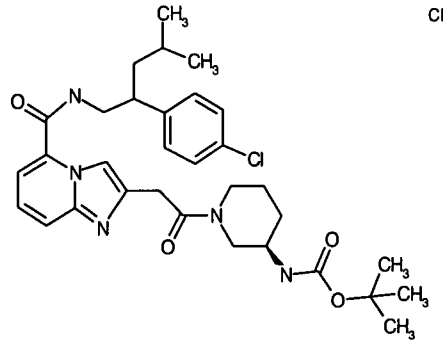
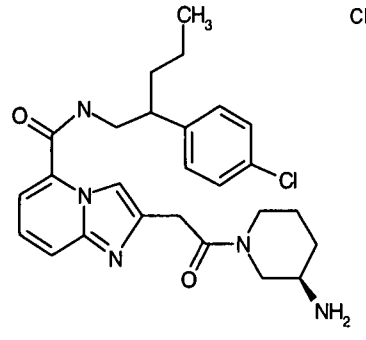
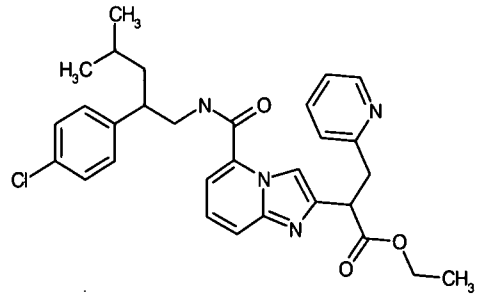
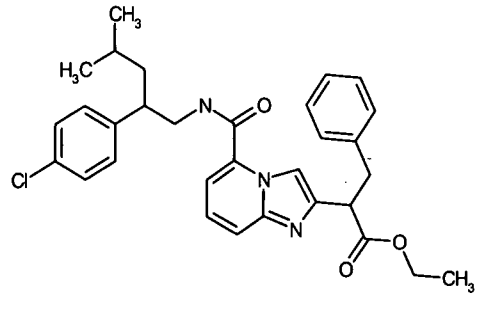
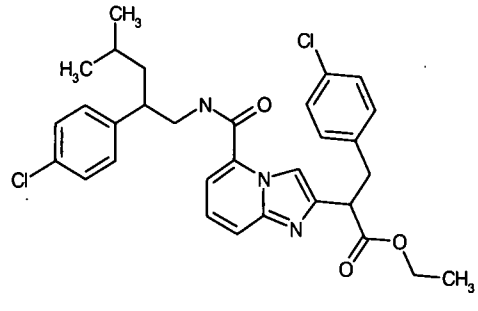
	Compound	Name	MS	R_T	IC_{50}
903		[2-({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)-2H-tetrazol-5-yl]acetic acid	450.30	1.26	*
904		[1-({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)-1H-tetrazol-5-yl]acetic acid	450.30	1.25	*
905		ethyl 2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}pentanoate	438.37	1.32	*
906		ethyl 2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}hexanoate	452.39	1.34	*
907		ethyl 2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-5-methylhexanoate	466.40	1.36	*

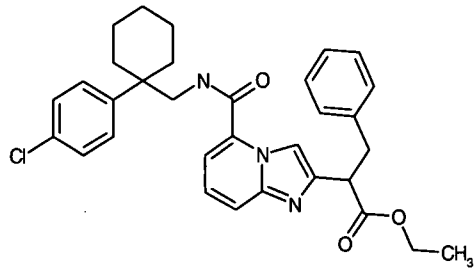
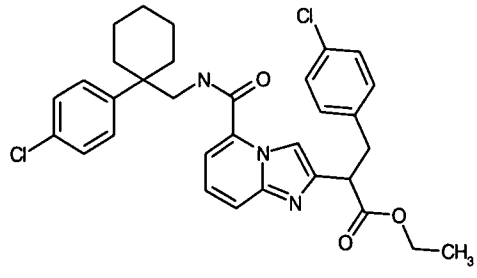
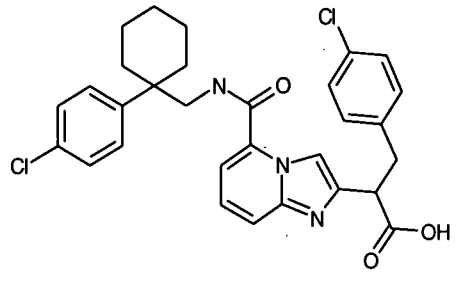
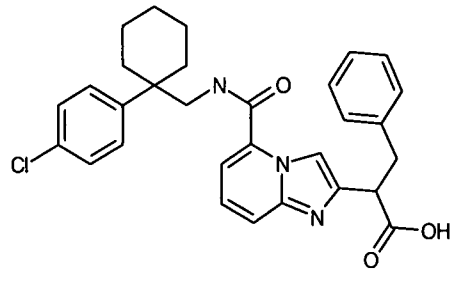
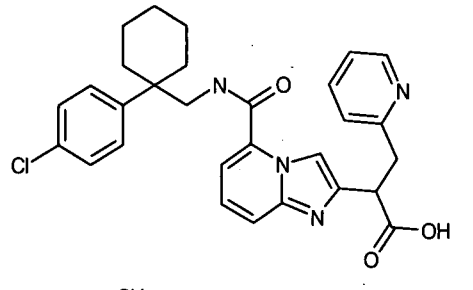
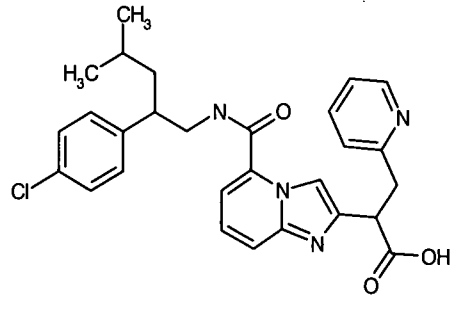
Compound		Name	MS	R_T	IC_{50}
908		2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}hexanoic acid	424.37	1.3	*
909		2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}pentanoic acid	410.34	1.28	*
910	Chiral 	2-{[(3R)-3-aminopyrrolidin-1-yl]methyl}-N-{[4-(4-chlorophenyl)tetrahydro-2H-pyran-4-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	468.27	1.1	*
911	Chiral 	N-(adamantan-1-ylmethyl)-2-{2-oxo-2-[(3S)-pyrrolidin-3-ylamino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	436.32	1.16	*
912		2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-5-methylhexanoic acid	438.32	1.32	*

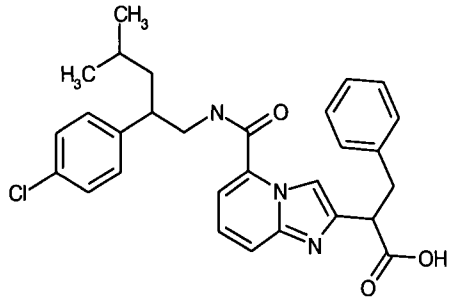
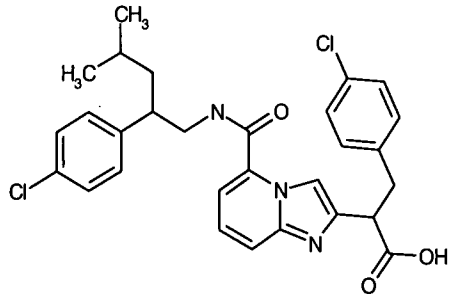
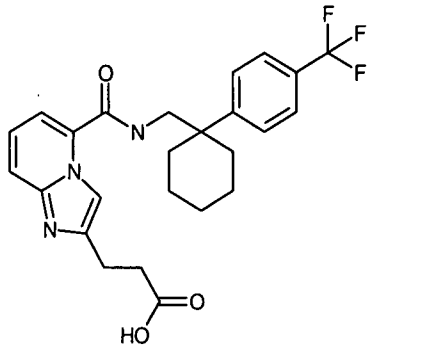
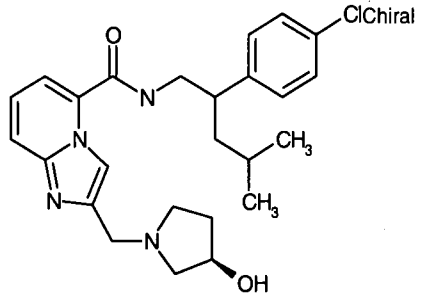
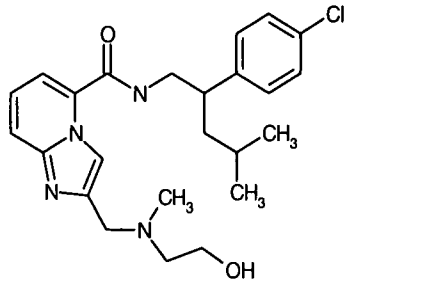
Compound		Name	MS	R_T	IC_{50}
913		ethyl (5-{[2-(4-chlorophenyl)-4-methylpentyl]carbamoyl}imidazo[1,2-a]pyridin-2-yl)acetate	442.24	1.29	*
914		ethyl [5-({[1-(4-chlorophenyl)cyclohexyl]methyl}carbamoyl)imidazo[1,2-a]pyridin-2-yl]acetate	454.24	1.28	*
915		N-{[1-(4-chlorophenyl)cyclohexyl]methyl}-2-[(1H-tetrazol-5-ylthio)methyl]imidazo[1,2-a]pyridine-5-carboxamide	482.27	1.27	*
916		2-{[(3R)-3-aminopiperidin-1-yl]methyl}-N-[2-(4-chlorophenyl)-4-methylpentyl]imidazo[1,2-a]pyridine-5-carboxamide	468.33	1.21	*
917		2-{[5-(2-hydroxyethyl)-2H-tetrazol-2-yl]methyl}-N-[4-methyl-2-(4-methylphenyl)pentyl]imidazo[1,2-a]pyridine-5-carboxamide	434.28	1.28	*

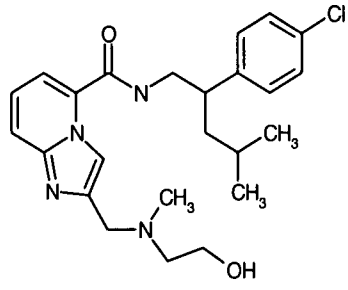
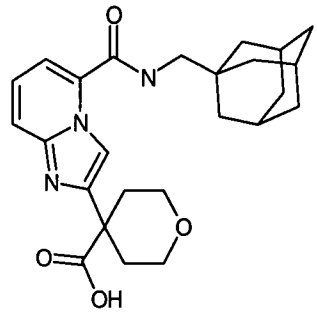
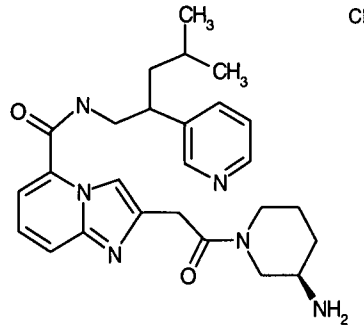
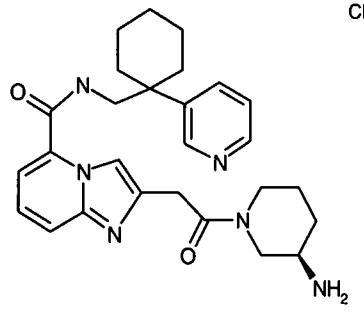
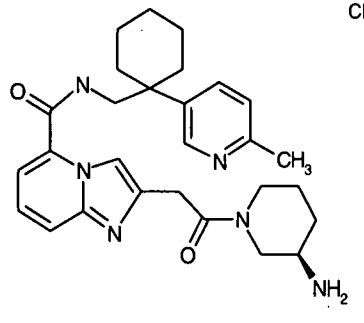
Compound		Name	MS	R_T	IC_{50}
918		N-[2-(4-chlorophenyl)-4-methylpentyl]-2-{[5-(2-hydroxyethyl)-2H-tetrazol-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	454.23	1.29	*
919		N-{[1-(4-chlorophenyl)cyclohexyl]methyl}-2-{[5-(2-hydroxyethyl)-2H-tetrazol-2-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	466.24	1.28	*
920		2-{[5-(2-hydroxyethyl)-2H-tetrazol-2-yl]methyl}-N-({1-[4-(trifluoromethyl)phenyl]cyclohexyl}methyl)imidazo[1,2-a]pyridine-5-carboxamide	528.27	1.29	*
921		2-{[5-(2-hydroxyethyl)-2H-tetrazol-2-yl]methyl}-N-[(1-pyridin-3-ylcyclohexyl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	461.26	1.01	*
922		2-{[5-(2-hydroxyethyl)-2H-tetrazol-2-yl]methyl}-N-{[1-(6-methylpyridin-3-yl)cyclohexyl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	475.27	1.03	*

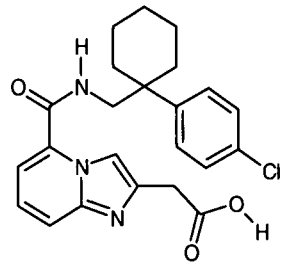
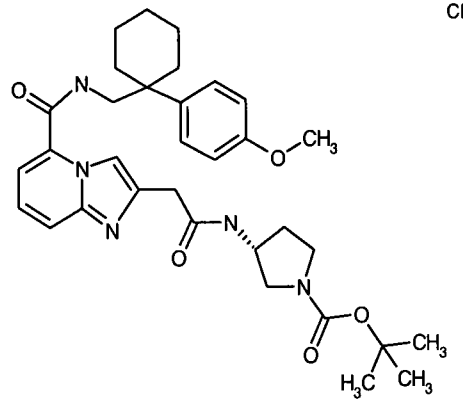
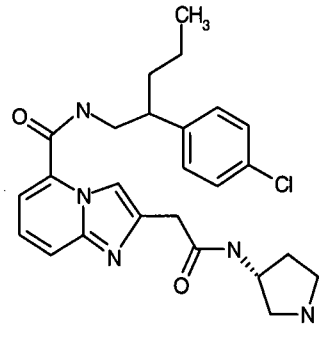
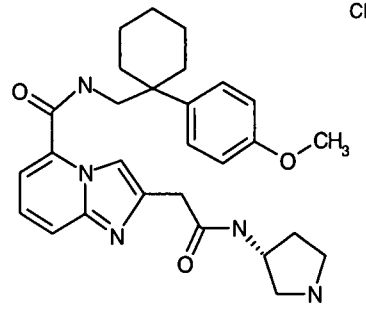
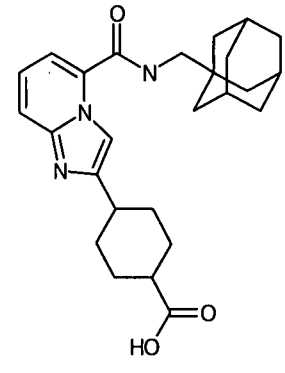
	Compound	Name	MS	R_T	IC_{50}
923		N-[2-(4-chlorophenyl)-4-methylpentyl]-2-[(2-methyl-4,5-dihydro-1H-imidazol-1-yl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	452.27	1.24	*
924	 Chiral	tert-butyl (3R)-3-{[(5-{[2-(4-chlorophenyl)pentyl]carbamoyl}imidazo[1,2-a]pyridin-2-yl)acetyl]amino}piperidine-1-carboxylate	582.34	1.29	*
925	 Chiral	N-[2-(4-chlorophenyl)pentyl]-2-{2-oxo-2-[(3R)-piperidin-3-ylamino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	482.28	1.16	*
926		N-{[4-(4-chlorophenyl)tetrahydro-2H-pyran-4-yl]methyl}-2-{2-oxo-2-[(3R)-piperidin-3-ylamino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	510.28	1.08	*
927	 Chiral	tert-butyl {(3R)-1-[(5-{[2-(4-chlorophenyl)pentyl]carbamoyl}imidazo[1,2-a]pyridin-2-yl)acetyl]piperidin-3-yl}carbamate	582.34	1.28	

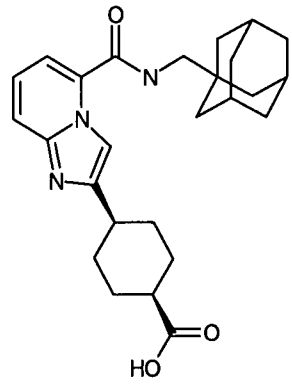
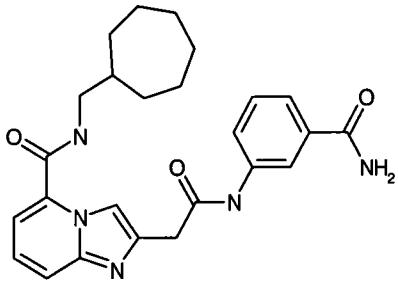
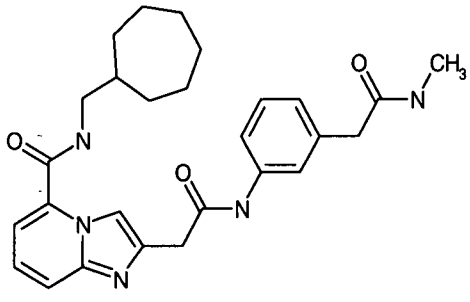
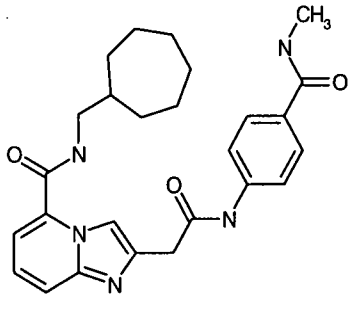
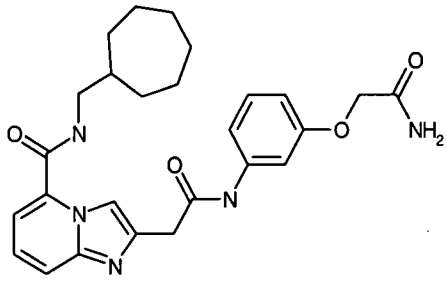
Compound		Name	MS	R_T	IC_{50}
928	 Chiral	tert-butyl {(3R)-1-[(5-{[2-(4-chlorophenyl)-4-methylpentyl]carbamoyl}imidazo[1,2-a]pyridin-2-yl)acetyl]piperidin-3-yl}carbamate	596.36	1.31	*
929	 Chiral	2-{2-[(3R)-3-aminopiperidin-1-yl]-2-oxoethyl}-N-[2-(4-chlorophenyl)pentyl]imidazo[1,2-a]pyridine-5-carboxamide	482.29	1.17	*
930		ethyl 2-(5-{[2-(4-chlorophenyl)-4-methylpentyl]carbamoyl}imidazo[1,2-a]pyridin-2-yl)-3-pyridin-2-ylpropanoate	533.26	1.28	*
931		ethyl 2-(5-{[2-(4-chlorophenyl)-4-methylpentyl]carbamoyl}imidazo[1,2-a]pyridin-2-yl)-3-phenylpropanoate	532.26	1.36	*
932		ethyl 3-(4-chlorophenyl)-2-(5-{[2-(4-chlorophenyl)-4-methylpentyl]carbamoyl}imidazo[1,2-a]pyridin-2-yl)propanoate	566.25	1.38	*

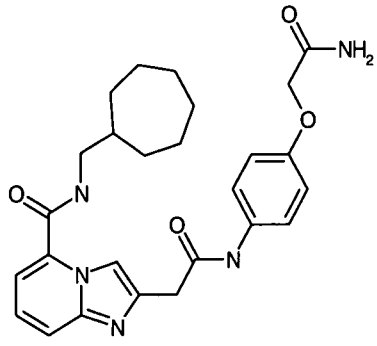
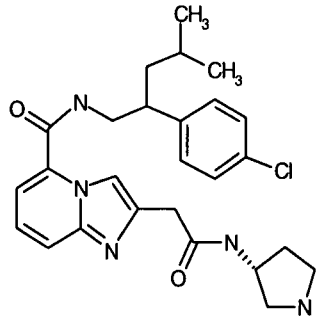
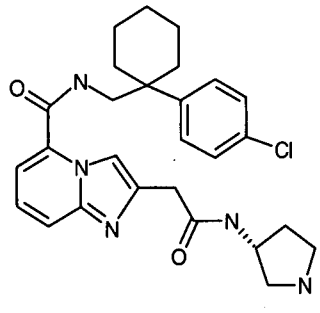
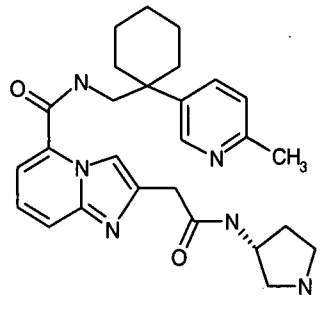
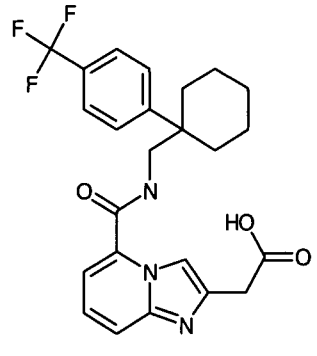
	Compound	Name	MS	R_T	IC_{50}
933		ethyl 2-[5-({[1-(4-chlorophenyl)cyclohexyl]methyl}carbamoyl)imidazo[1,2-a]pyridin-2-yl]-3-phenylpropanoate	544.28	1.35	*
934		ethyl 3-(4-chlorophenyl)-2-[5-({[1-(4-chlorophenyl)cyclohexyl]methyl}carbamoyl)imidazo[1,2-a]pyridin-2-yl]propanoate	578.26	1.38	*
935		3-(4-chlorophenyl)-2-[5-({[1-(4-chlorophenyl)cyclohexyl]methyl}carbamoyl)imidazo[1,2-a]pyridin-2-yl]propanoic acid	550.21	1.33	*
936		2-[5-({[1-(4-chlorophenyl)cyclohexyl]methyl}carbamoyl)imidazo[1,2-a]pyridin-2-yl]-3-phenylpropanoic acid	516.25	1.31	*
937		2-[5-({[1-(4-chlorophenyl)cyclohexyl]methyl}carbamoyl)imidazo[1,2-a]pyridin-2-yl]-3-pyridin-2-ylpropanoic acid	517.21	1.23	*
938		2-(5-{[2-(4-chlorophenyl)-4-methylpentyl]carbamoyl}imidazo[1,2-a]pyridin-2-yl)-3-pyridin-2-ylpropanoic acid	461.23	1.24	*

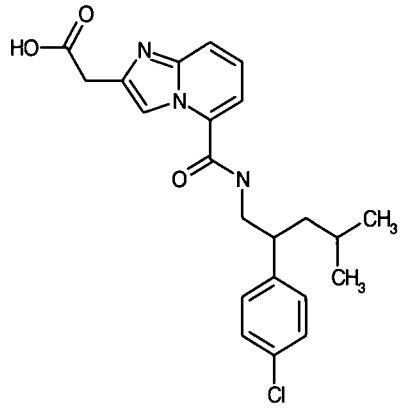
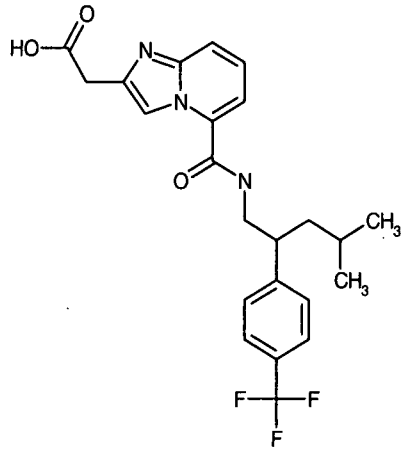
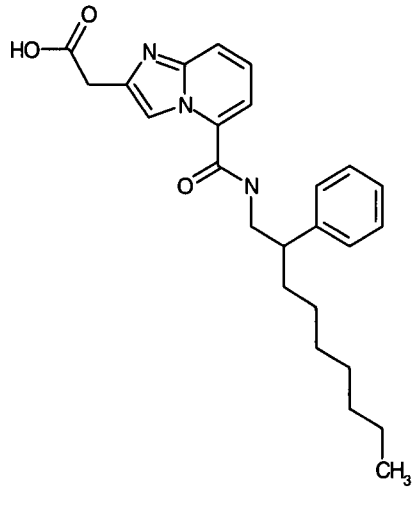
Compound		Name	MS	R_T	IC_{50}
939		2-(5-{[2-(4-chlorophenyl)-4-methylpentyl]carbamoyl}imidazo[1,2-a]pyridin-2-yl)-3-phenylpropanoic acid	504.26	1.31	*
940		3-(4-chlorophenyl)-2-(5-{[2-(4-chlorophenyl)-4-methylpentyl]carbamoyl}imidazo[1,2-a]pyridin-2-yl)propanoic acid	538.20	1.34	*
941		3-{5-[({1-[4-(trifluoromethyl)phenyl]cyclohexyl}methyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}propanoic acid	474.25	1.25	*
942		N-[2-(4-chlorophenyl)-4-methylpentyl]-2-{[(3R)-3-hydroxypyrrolidin-1-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	455.28	1.24	*
943		N-[2-(4-chlorophenyl)-4-methylpentyl]-2-{[(2-hydroxyethyl)(methyl)amino]methyl}imidazo[1,2-a]pyridine-5-carboxamide	443.28	1.23	*

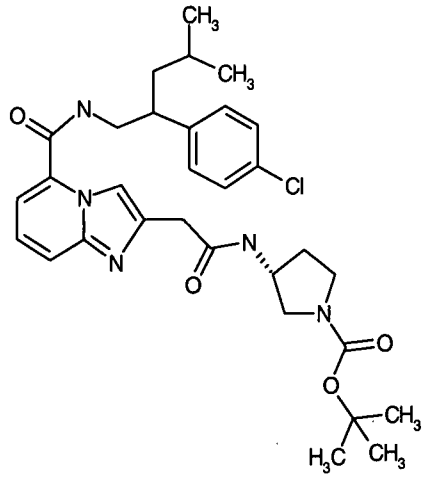
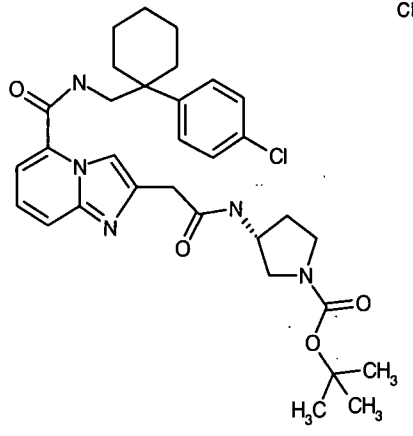
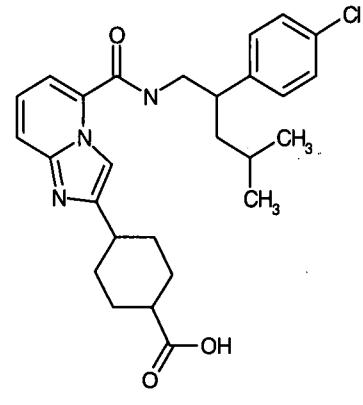
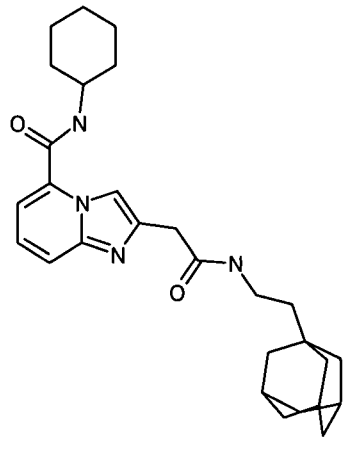
	Compound	Name	MS	R_T	IC_{50}
944		ethyl 4-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}tetrahydro-2H-pyran-4-carboxylate	466.32	1.29	*
945		4-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}tetrahydro-2H-pyran-4-carboxylic acid	438.29	1.24	*
946	 Chiral	2-{2-[(3R)-3-aminopiperidin-1-yl]-2-oxoethyl}-N-(4-methyl-2-pyridin-3-ylpentyl)imidazo[1,2-a]pyridine-5-carboxamide	463.32	0.94	*
947	 Chiral	2-{2-[(3R)-3-aminopiperidin-1-yl]-2-oxoethyl}-N-[(1-pyridin-3-ylcyclohexyl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	475.32	0.84	*
948	 Chiral	2-{2-[(3R)-3-aminopiperidin-1-yl]-2-oxoethyl}-N-{[1-(6-methylpyridin-3-yl)cyclohexyl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	489.34	0.93	*

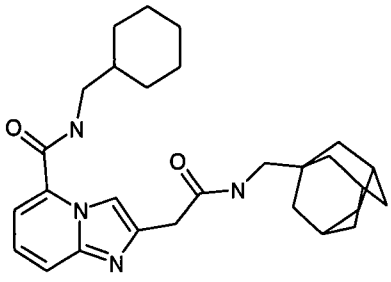
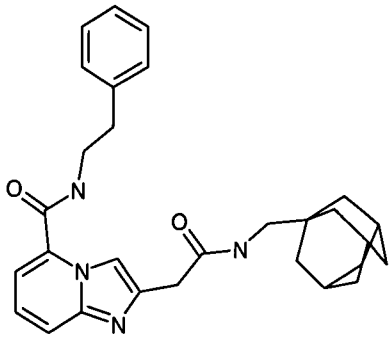
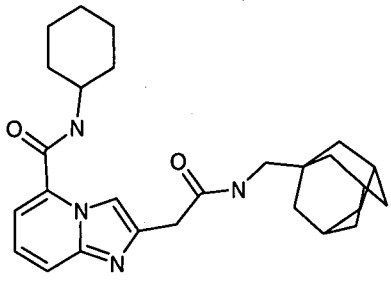
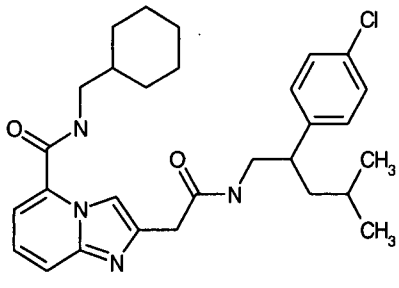
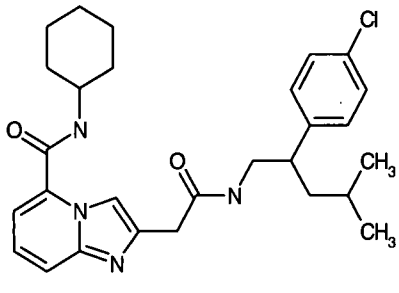
	Compound	Name	MS	R_T	IC_{50}
949		[5-({[1-(4-chlorophenyl)cyclohexyl]methyl}carbamoyl)imidazo[1,2-a]pyridin-2-yl]acetic acid	426.21	1.23	*
950	 Chiral	tert-butyl (3R)-3-({[5-({[1-(4-methoxyphenyl)cyclohexyl]methyl}carbamoyl)imidazo[1,2-a]pyridin-2-yl]acetyl}amino)pyrrolidine-1-carboxylate	590.36	1.28	*
951	 Chiral	N-[2-(4-chlorophenyl)pentyl]-2-{2-oxo-2-[(3R)-pyrrolidin-3-ylamino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	468.25	1.17	*
952	 Chiral	N-{[1-(4-methoxyphenyl)cyclohexyl]methyl}-2-{2-oxo-2-[(3R)-pyrrolidin-3-ylamino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	490.32	1.16	*
953		4-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}cyclohexanecarboxylic acid	436.32	1.25	

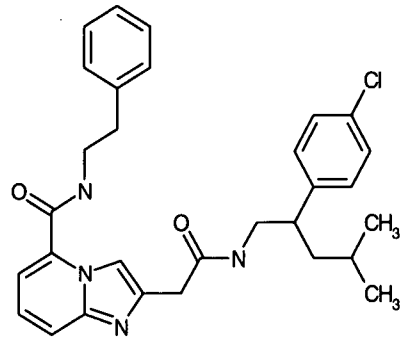
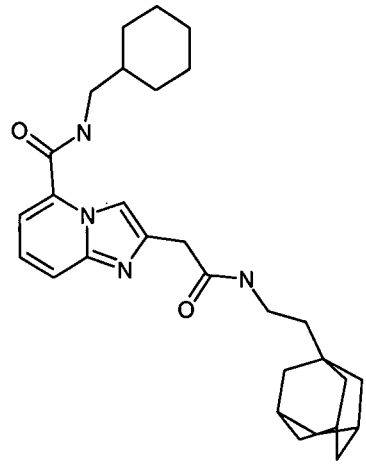
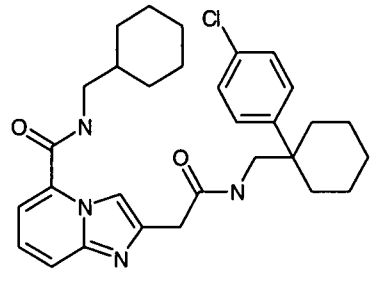
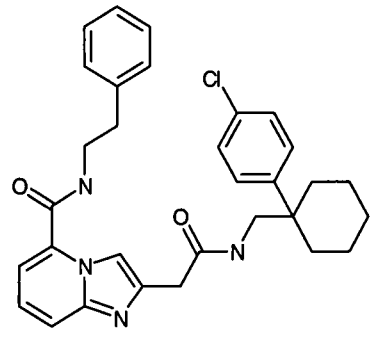
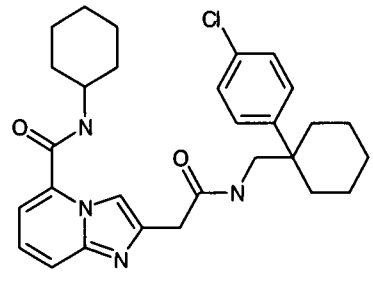
	Compound	Name	MS	R_T	IC_{50}
954		cis-4-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}cyclohexanecarboxylic acid	436.31	1.25	*
955		2-{2-[(3-carbamoylphenyl)amino]-2-oxoethyl}-N-(cycloheptylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	448.25	1.18	*
956		N-(cycloheptylmethyl)-2-[2-({3-[2-(methylamino)-2-oxoethyl]phenyl}amino)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	476.28	1.19	
957		N-(cycloheptylmethyl)-2-(2-{[4-(methylcarbamoyl)phenyl]amino}-2-oxoethyl)imidazo[1,2-a]pyridine-5-carboxamide	462.27	1.2	*
958		2-(2-{[3-(2-amino-2-oxoethoxy)phenyl]amino}-2-oxoethyl)-N-(cycloheptylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	478.26	1.19	*

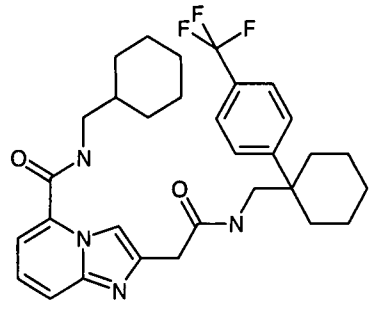
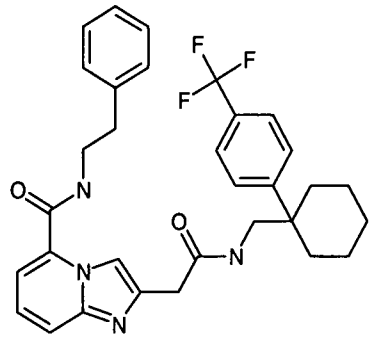
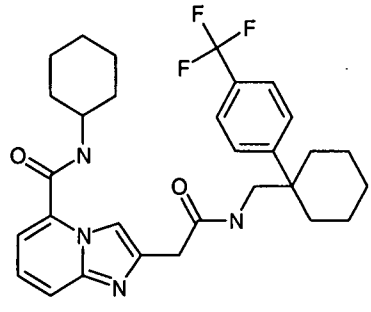
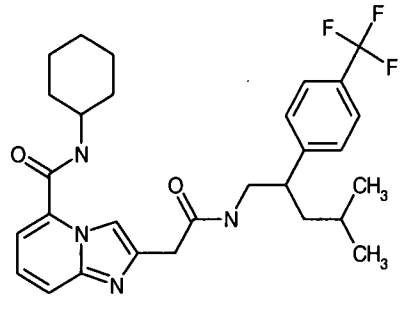
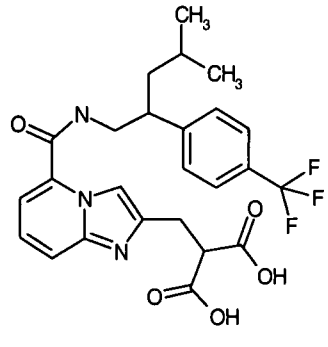
Compound		Name	MS	R_T	IC_{50}
959		2-(2-{[4-(2-amino-2-oxoethoxy)phenyl]amino}-2-oxoethyl)-N-(cycloheptylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	478.26	1.18	
960	 Chiral	N-[2-(4-chlorophenyl)-4-methylpentyl]-2-{2-oxo-2-[(3R)-pyrrolidin-3-ylamino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	482.25	1.13	*
961	 Chiral	N-{[1-(4-chlorophenyl)cyclohexyl]methyl}-2-{2-oxo-2-[(3R)-pyrrolidin-3-ylamino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	494.31	1.13	*
962	 Chiral	N-{[1-(6-methylpyridin-3-yl)cyclohexyl]methyl}-2-{2-oxo-2-[(3R)-pyrrolidin-3-ylamino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	238.23	0.86	*
963		{5-[({1-[4-(trifluoromethyl)phenyl]cyclohexyl}methyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}acetic acid	460.18	1.25	*

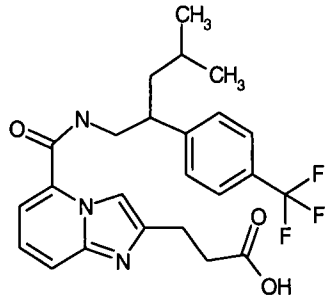
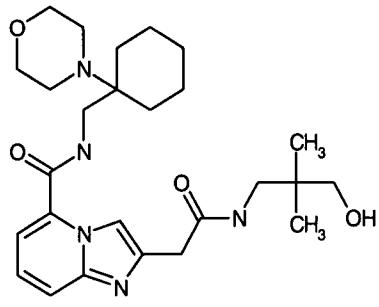
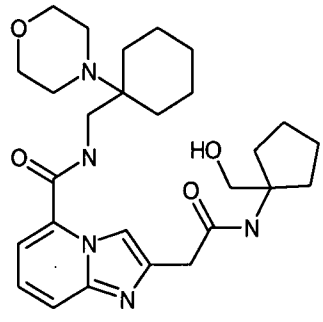
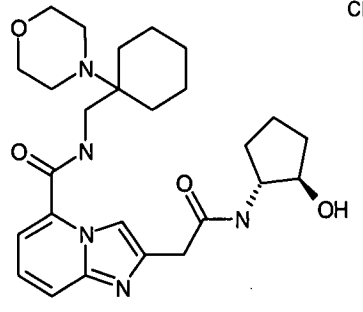
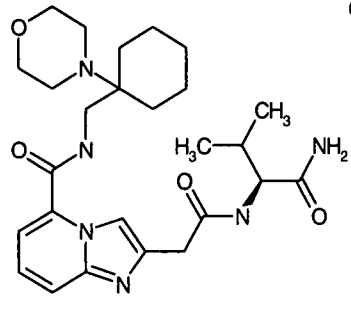
Compound		Name	MS	R_T	IC_{50}
964		(5-{[2-(4-chlorophenyl)-4-methylpentyl]carbamoyl}imidazo[1,2-a]pyridin-2-yl)acetic acid	414.17	1.24	*
965		[5-({4-methyl-2-[4-(trifluoromethyl)phenyl]pentyl}carbamoyl)imidazo[1,2-a]pyridin-2-yl]acetic acid	448.19	1.25	*
966		{5-[(2-phenylnonyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}acetic acid	422.27	1.3	*

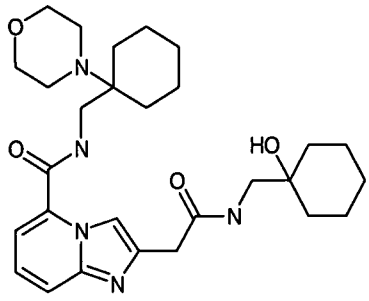
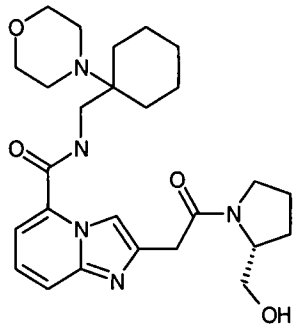
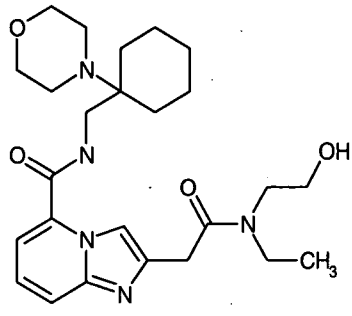
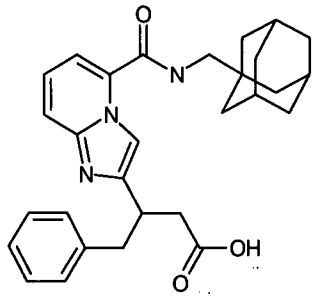
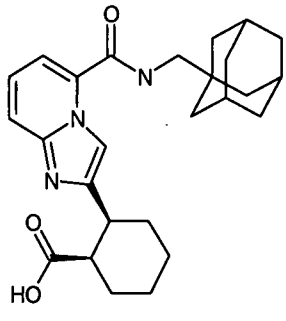
Compound		Name	MS	R_T	IC_{50}
967	 Chiral	tert-butyl 3-{[(5-{[2-(4-chlorophenyl)-4-methylpentyl]carbamoyl}imidazo[1,2-a]pyridin-2-yl)acetyl]amino}pyrrolidine-1-carboxylate	582.37	1.25	*
968		tert-butyl (3R)-3-({[5-({[1-(4-chlorophenyl)cyclohexyl]methyl}carbamoyl)imidazo[1,2-a]pyridin-2-yl]acetyl}amino)pyrrolidine-1-carboxylate	594.36	1.24	*
969		4-(5-{[2-(4-chlorophenyl)-4-methylpentyl]carbamoyl}imidazo[1,2-a]pyridin-2-yl)cyclohexanecarboxylic acid	482.28	1.22	*
970		2-{2-[(2-adamantan-1-ylethyl)amino]-2-oxoethyl}-N-cyclohexylimidazo[1,2-a]pyridine-5-carboxamide	463.32	1.32	

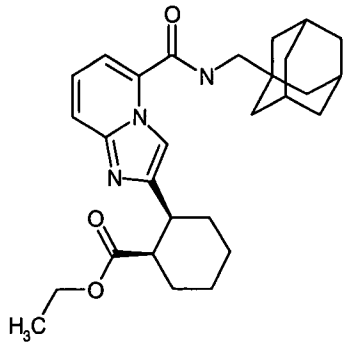
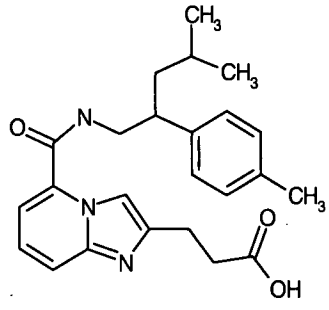
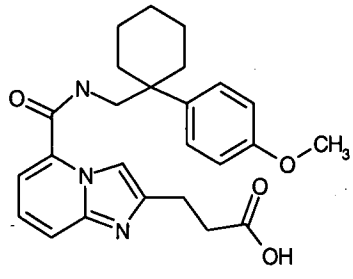
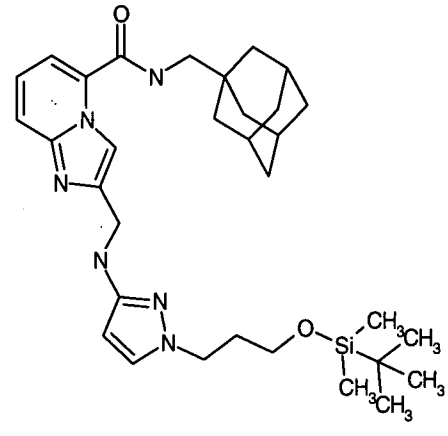
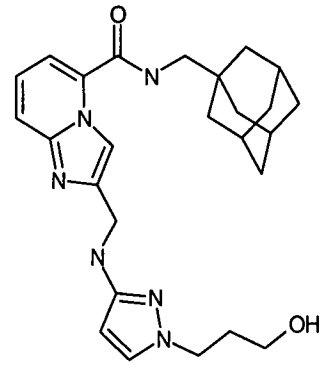
	Compound	Name	MS	R_T	IC_{50}
971		2-{2-[(adamantan-1-ylmethyl)amino]-2-oxoethyl}-N-(cyclohexylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	463.33	1.32	*
972		2-{2-[(adamantan-1-ylmethyl)amino]-2-oxoethyl}-N-(2-phenylethyl)imidazo[1,2-a]pyridine-5-carboxamide	471.30	1.29	*
973		2-{2-[(adamantan-1-ylmethyl)amino]-2-oxoethyl}-N-cyclohexylimidazo[1,2-a]pyridine-5-carboxamide	449.31	1.29	*
974		2-(2-{[2-(4-chlorophenyl)-4-methylpentyl]amino}-2-oxoethyl)-N-(cyclohexylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	509.29	1.34	
975		2-(2-{[2-(4-chlorophenyl)-4-methylpentyl]amino}-2-oxoethyl)-N-cyclohexylimidazo[1,2-a]pyridine-5-carboxamide	495.28	1.32	*

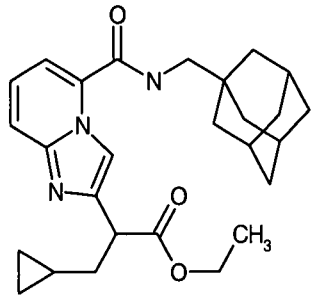
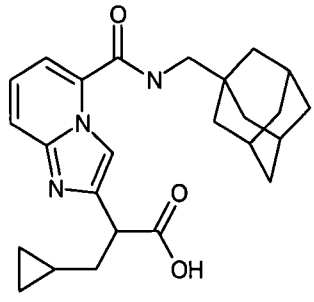
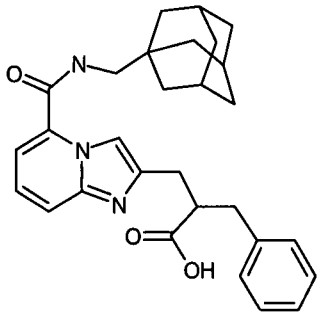
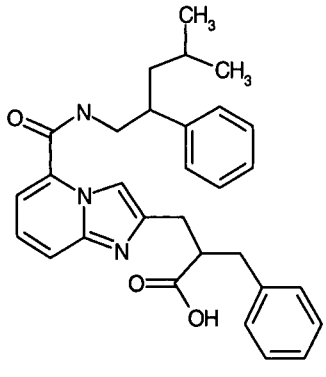
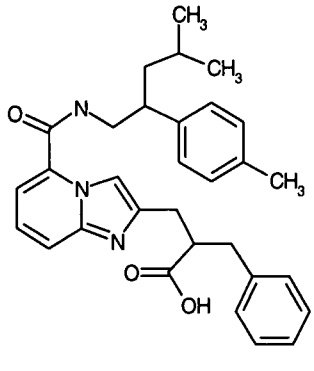
Compound		Name	MS	R_T	IC_{50}
976		2-(2-{[2-(4-chlorophenyl)-4-methylpentyl]amino}-2-oxoethyl)-N-(2-phenylethyl)imidazo[1,2-a]pyridine-5-carboxamide	517.26	1.31	
977		2-{2-[(2-adamantan-1-ylethyl)amino]-2-oxoethyl}-N-(cyclohexylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	477.36	1.35	*
978		2-[2-({[1-(4-chlorophenyl)cyclohexyl]methyl}amino)-2-oxoethyl]-N-(cyclohexylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	521.29	1.34	*
979		2-[2-({[1-(4-chlorophenyl)cyclohexyl]methyl}amino)-2-oxoethyl]-N-(2-phenylethyl)imidazo[1,2-a]pyridine-5-carboxamide	529.26	1.31	*
980		2-[2-({[1-(4-chlorophenyl)cyclohexyl]methyl}amino)-2-oxoethyl]-N-cyclohexylimidazo[1,2-a]pyridine-5-carboxamide	507.27	1.32	*

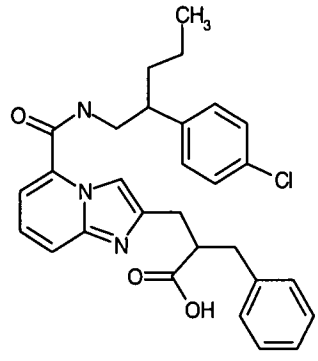
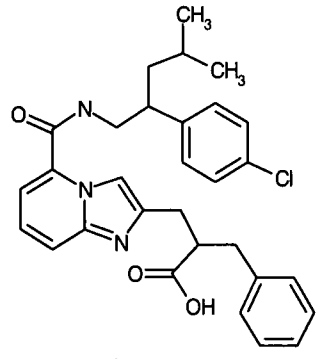
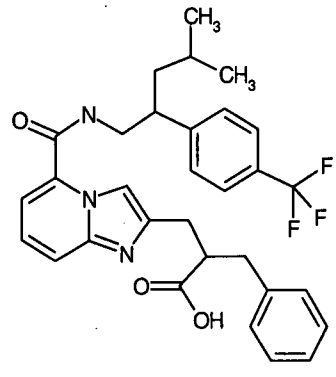
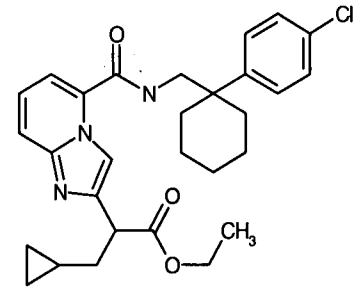
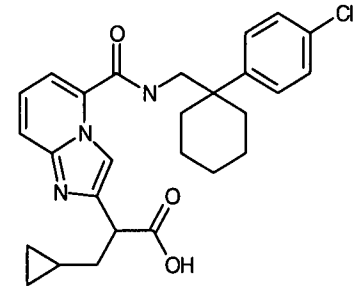
	Compound	Name	MS	R_T	IC_{50}
981		N-(cyclohexylmethyl)-2-{2-oxo-2-[({1-[4-(trifluoromethyl)phenyl]cyclohexyl}methyl)amino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	555.32	1.35	
982		2-{2-oxo-2-[({1-[4-(trifluoromethyl)phenyl]cyclohexyl}methyl)amino]ethyl}-N-(2-phenylethyl)imidazo[1,2-a]pyridine-5-carboxamide	563.28	1.32	
983		N-cyclohexyl-2-{2-oxo-2-[({1-[4-(trifluoromethyl)phenyl]cyclohexyl}methyl)amino]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	541.31	1.33	
984		N-cyclohexyl-2-[2-({4-methyl-2-[4-(trifluoromethyl)phenyl]pentyl}amino)-2-oxoethyl]imidazo[1,2-a]pyridine-5-carboxamide	529.30	1.32	
985		{[5-({4-methyl-2-[4-(trifluoromethyl)phenyl]pentyl}carbamoyl)imidazo[1,2-a]pyridin-2-yl]methyl}malonic acid	506.25	1.2	

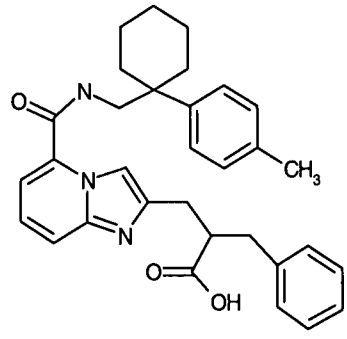
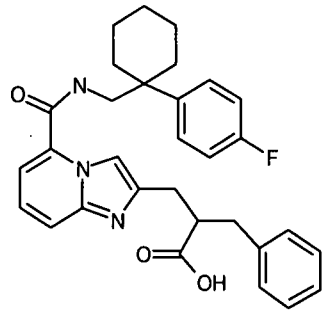
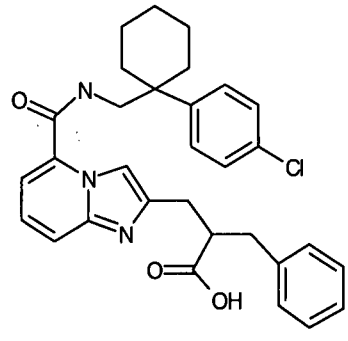
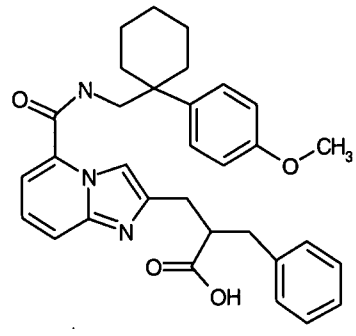
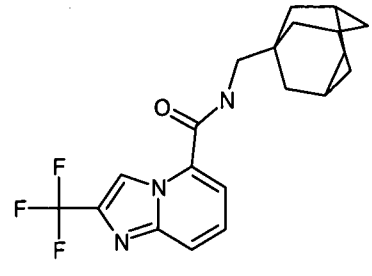
	Compound	Name	MS	R_T	IC_{50}
986		3-[5-({4-methyl-2-[4-(trifluoromethyl)phenyl]pentyl}carbamoyl)imidazo[1,2-a]pyridin-2-yl]propanoic acid	462.25	1.2	*
987		2-{2-[(3-hydroxy-2,2-dimethylpropyl)amino]-2-oxoethyl}-N-[(1-morpholin-4-ylcyclohexyl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	486.31	0.96	
988		2-(2-{[1-(hydroxymethyl)cyclopentyl]amino}-2-oxoethyl)-N-[(1-morpholin-4-ylcyclohexyl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	498.30	1.01	*
989	Chiral 	2-(2-{[(1R,2R)-2-hydroxycyclopentyl]amino}-2-oxoethyl)-N-[(1-morpholin-4-ylcyclohexyl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	484.30	0.92	
990	Chiral 	2-(2-{[(1S)-1-carbamoyl-2-methylpropyl]amino}-2-oxoethyl)-N-[(1-morpholin-4-ylcyclohexyl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	499.30	0.9	

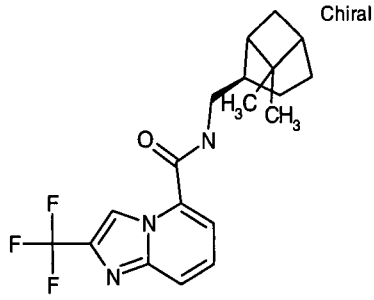
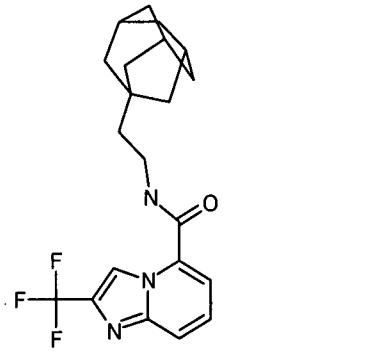
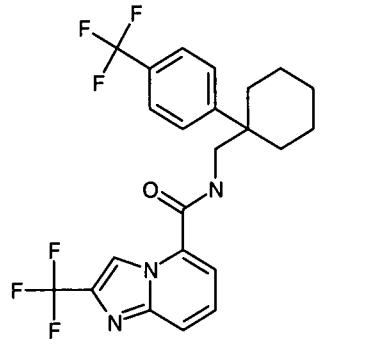
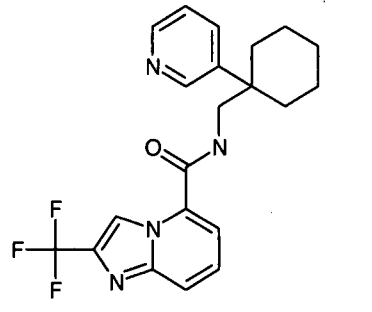
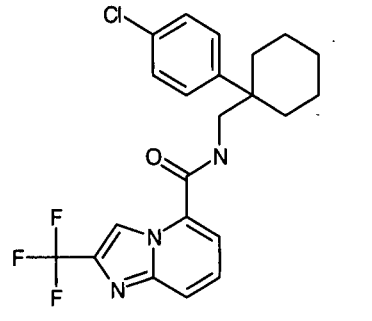
Compound		Name	MS	R_T	IC_{50}
991		2-(2-{[(1-hydroxycyclohexyl)methyl]amino}-2-oxoethyl)-N-[(1-morpholin-4-ylcyclohexyl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	512.32	1.05	
992	 Chiral	2-{2-[(2R)-2-(hydroxymethyl)pyrrolidin-1-yl]-2-oxoethyl}-N-[(1-morpholin-4-ylcyclohexyl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	484.30	0.9	
993		2-{2-[ethyl(2-hydroxyethyl)amino]-2-oxoethyl}-N-[(1-morpholin-4-ylcyclohexyl)methyl]imidazo[1,2-a]pyridine-5-carboxamide	472.29	0.75	
994		3-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-4-phenylbutanoic acid	472.25	1.29	*
995		rel-(1R,2S)-2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}cyclohexanecarboxylic acid	436.25	1.28	*

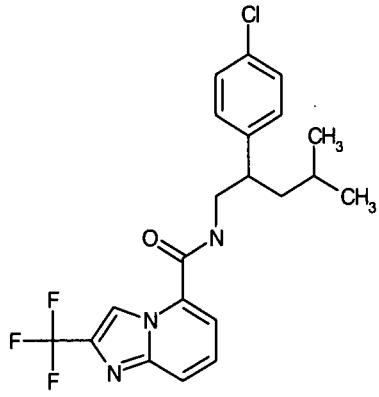
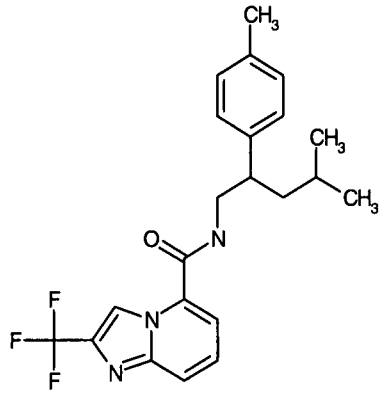
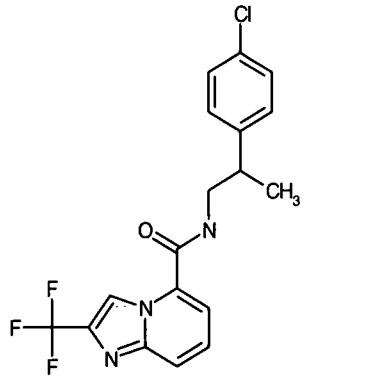
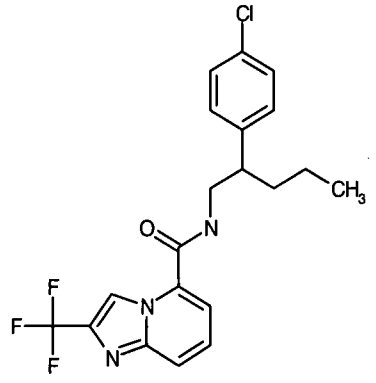
	Compound	Name	MS	R_T	IC_{50}
996		ethyl rel-(1R,2S)-2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}cyclohexanecarboxylate	464.27	1.32	*
997		3-(5-{[4-methyl-2-(4-methylphenyl)pentyl]carbamoyl}imidazo[1,2-a]pyridin-2-yl)propanoic acid	408.22	1.24	
998		3-[5-({[1-(4-methoxyphenyl)cyclohexyl]methyl}carbamoyl)imidazo[1,2-a]pyridin-2-yl]propanoic acid	436.21	1.21	*
999		N-(adamantan-1-ylmethyl)-2-({[1-(3-{[tert-butyl(dimethyl)silyl]oxy}propyl)-1H-pyrazol-3-yl]amino}methyl)imidazo[1,2-a]pyridine-5-carboxamide	577.34	1.39	*
1000		N-(adamantan-1-ylmethyl)-2-({[1-(3-hydroxypropyl)-1H-pyrazol-3-yl]amino}methyl)imidazo[1,2-a]pyridine-5-carboxamide	463.27	1.21	*

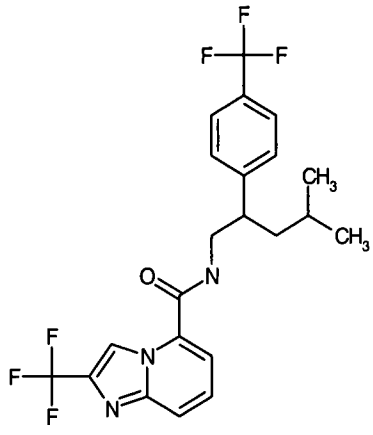
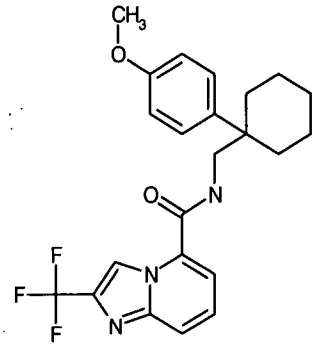
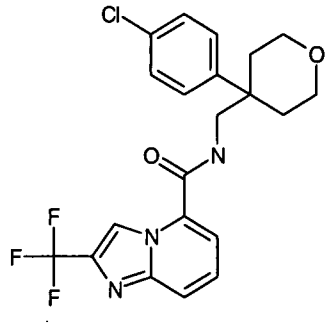
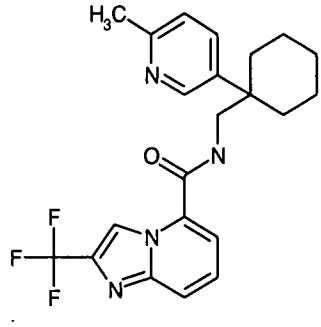
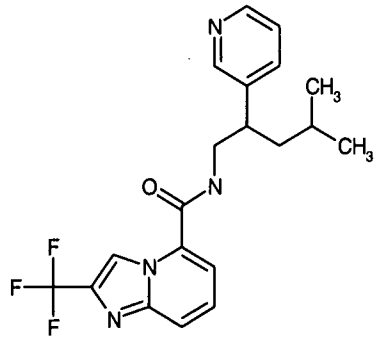
Compound		Name	MS	R_T	IC_{50}
1001		ethyl 2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-3-cyclopropylpropanoate	450.26	1.32	*
1002		2-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-3-cyclopropylpropanoic acid	422.31	1.28	*
1003		3-{5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}-2-benzylpropanoic acid	472.29	1.29	*
1004		2-benzyl-3-{5-[(4-methyl-2-phenylpentyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}propanoic acid	484.29	1.28	*
1005		2-benzyl-3-(5-{[4-methyl-2-(4-methylphenyl)pentyl]carbamoyl}imidazo[1,2-a]pyridin-2-yl)propanoic acid	498.32	1.3	*

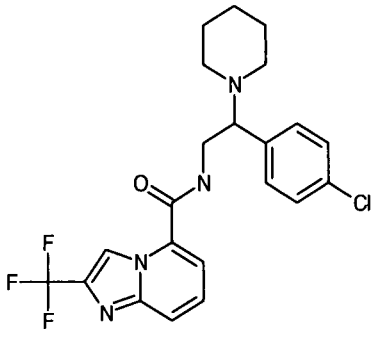
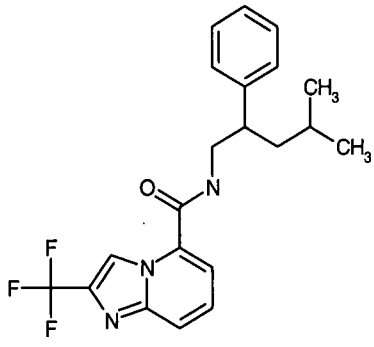
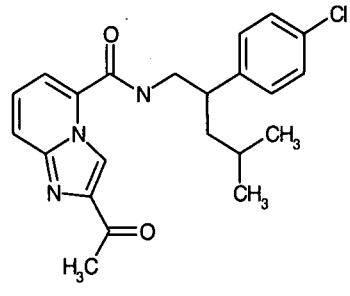
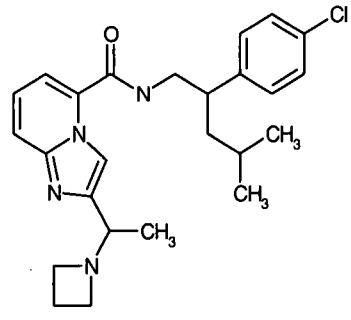
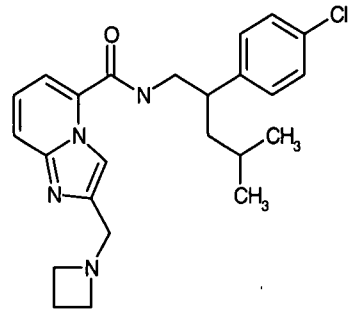
Compound		Name	MS	R_T	IC_{50}
1006		2-benzyl-3-(5-{[2-(4-chlorophenyl)pentyl]carbamoyl}imidazo[1,2-a]pyridin-2-yl)propanoic acid	504.25	1.29	*
1007		2-benzyl-3-(5-{[2-(4-chlorophenyl)-4-methylpentyl]carbamoyl}imidazo[1,2-a]pyridin-2-yl)propanoic acid	518.26	1.3	*
1008		2-benzyl-3-[5-({4-methyl-2-[4-(trifluoromethyl)phenyl]pentyl}carbamoyl)imidazo[1,2-a]pyridin-2-yl]propanoic acid	552.29	1.3	*
1009		ethyl 2-[5-({[1-(4-chlorophenyl)cyclohexyl]methyl}carbamoyl)imidazo[1,2-a]pyridin-2-yl]-3-cyclopropylpropanoate	508.25	1.33	*
1010		2-[5-({[1-(4-chlorophenyl)cyclohexyl]methyl}carbamoyl)imidazo[1,2-a]pyridin-2-yl]-3-cyclopropylpropanoic acid	480.23	1.29	*

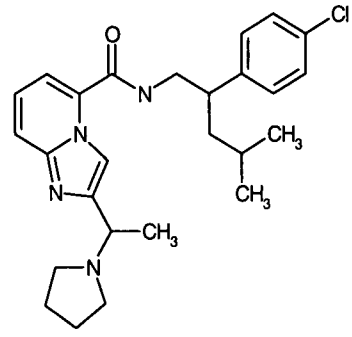
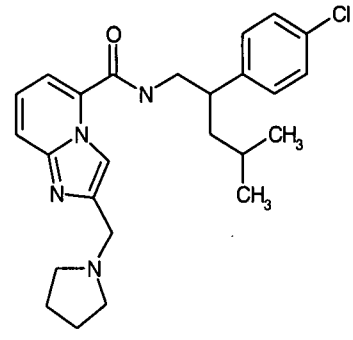
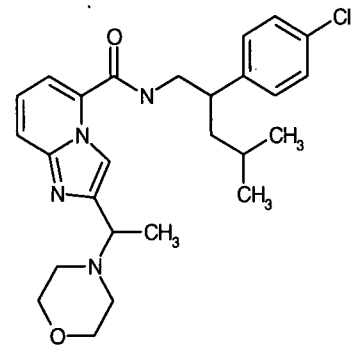
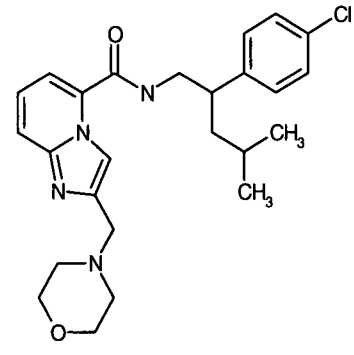
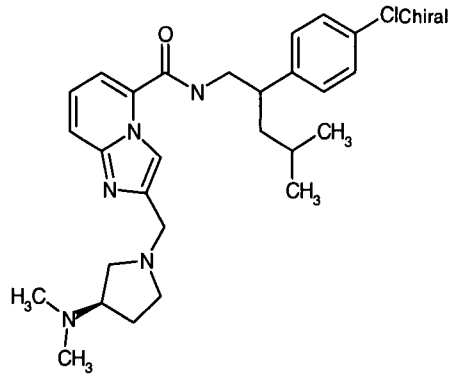
Compound		Name	MS	R_T	IC_{50}
1011		2-benzyl-3-[5-({[1-(4-methylphenyl)cyclohexyl]methyl}carbamoyl)imidazo[1,2-a]pyridin-2-yl]propanoic acid	510.28	1.31	*
1012		2-benzyl-3-[5-({[1-(4-fluorophenyl)cyclohexyl]methyl}carbamoyl)imidazo[1,2-a]pyridin-2-yl]propanoic acid	514.27	1.28	*
1013		2-benzyl-3-[5-({[1-(4-chlorophenyl)cyclohexyl]methyl}carbamoyl)imidazo[1,2-a]pyridin-2-yl]propanoic acid	530.24	1.3	*
1014		2-benzyl-3-[5-({[1-(4-methoxyphenyl)cyclohexyl]methyl}carbamoyl)imidazo[1,2-a]pyridin-2-yl]propanoic acid	526.29	1.28	*
1015		N-(adamantan-1-ylmethyl)-2-(trifluoromethyl)imidazo[1,2-a]pyridine-5-carboxamide	378.16	1.41	*

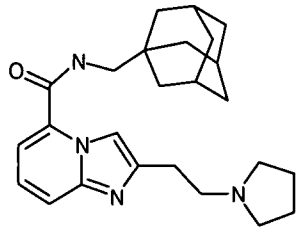
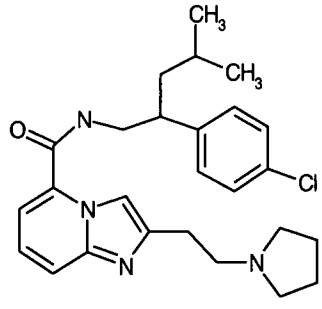
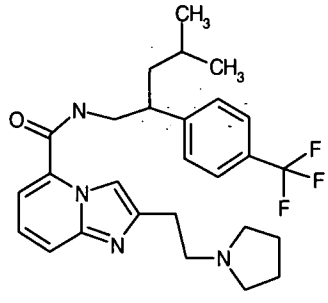
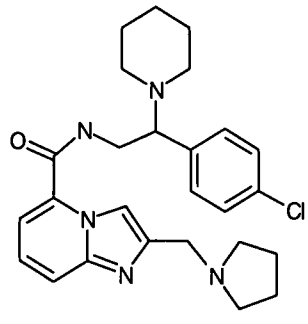
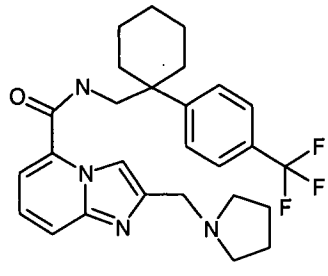
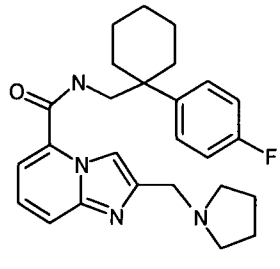
Compound	Name	MS	R_T	IC_{50}
1016 	N-{[(2R)-6,6-dimethylbicyclo[3.1.1]hept-2-yl]methyl}-2-(trifluoromethyl)imidazo[1,2-a]pyridine-5-carboxamide	366.18	1.41	*
1017 	N-(2-adamantan-1-ylethyl)-2-(trifluoromethyl)imidazo[1,2-a]pyridine-5-carboxamide	392.18	1.45	
1018 	2-(trifluoromethyl)-N-({1-[4-(trifluoromethyl)phenyl]cyclohexyl}methyl)imidazo[1,2-a]pyridine-5-carboxamide	470.13	1.4	*
1019 	N-[(1-pyridin-3-ylcyclohexyl)methyl]-2-(trifluoromethyl)imidazo[1,2-a]pyridine-5-carboxamide	403.16	1.16	
1020 	N-{[1-(4-chlorophenyl)cyclohexyl]methyl}-2-(trifluoromethyl)imidazo[1,2-a]pyridine-5-carboxamide	436.11	1.41	*

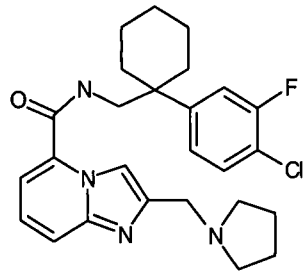
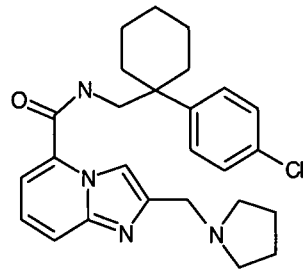
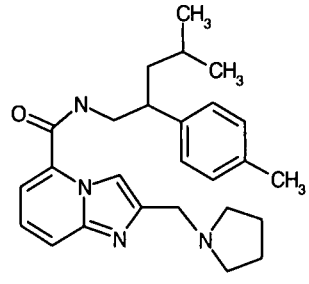
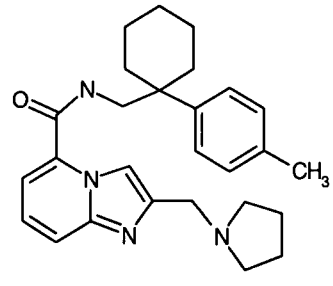
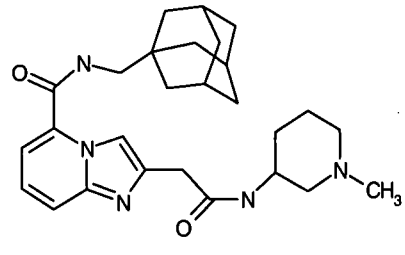
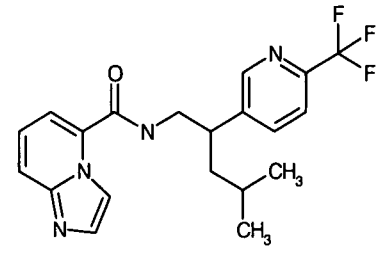
Compound		Name	MS	R_T	IC_{50}
1021		N-[2-(4-chlorophenyl)-4-methylpentyl]-2-(trifluoromethyl)imidazo[1,2-a]pyridine-5-carboxamide	424.12	1.41	*
1022		N-[4-methyl-2-(4-methylphenyl)pentyl]-2-(trifluoromethyl)imidazo[1,2-a]pyridine-5-carboxamide	404.17	1.41	
1023		N-[2-(4-chlorophenyl)propyl]-2-(trifluoromethyl)imidazo[1,2-a]pyridine-5-carboxamide	382.09	1.34	
1024		N-[2-(4-chlorophenyl)pentyl]-2-(trifluoromethyl)imidazo[1,2-a]pyridine-5-carboxamide	410.11	1.38	

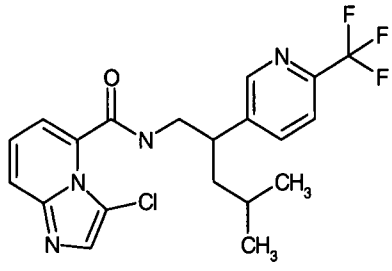
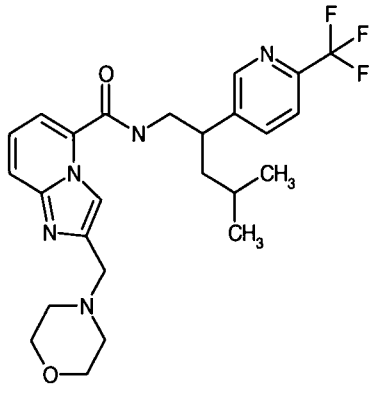
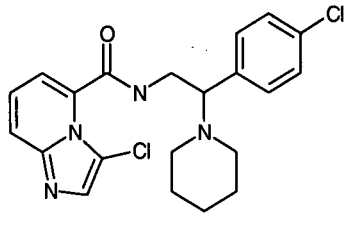
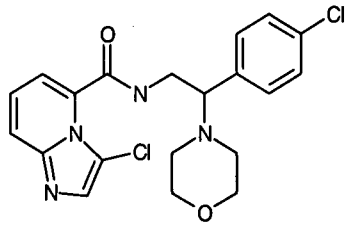
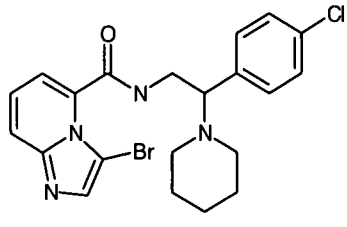
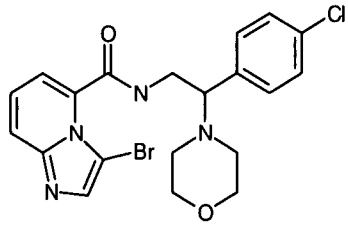
Compound		Name	MS	R_T	IC_{50}
1025		N-{4-methyl-2-[4-(trifluoromethyl)phenyl]pentyl}-2-(trifluoromethyl)imidazo[1,2-a]pyridine-5-carboxamide	458.13	1.4	*
1026		N-{[1-(4-methoxyphenyl)cyclohexyl]methyl}-2-(trifluoromethyl)imidazo[1,2-a]pyridine-5-carboxamide	432.16	1.38	*
1027		N-{[4-(4-chlorophenyl)tetrahydro-2H-pyran-4-yl]methyl}-2-(trifluoromethyl)imidazo[1,2-a]pyridine-5-carboxamide	438.09	1.3	
1028		N-{[1-(6-methylpyridin-3-yl)cyclohexyl]methyl}-2-(trifluoromethyl)imidazo[1,2-a]pyridine-5-carboxamide	417.17	1.16	
1029		N-(4-methyl-2-pyridin-3-ylpentyl)-2-(trifluoromethyl)imidazo[1,2-a]pyridine-5-carboxamide	391.16	1.18	

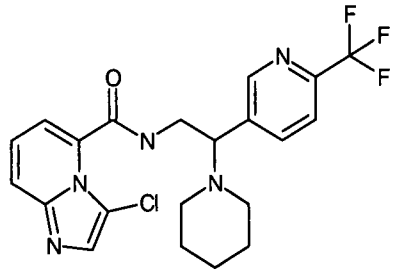
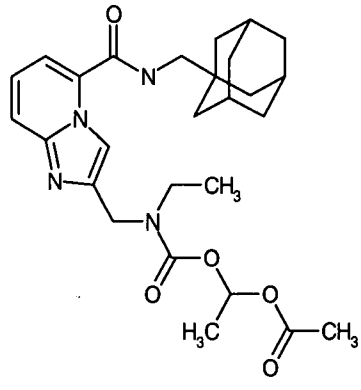
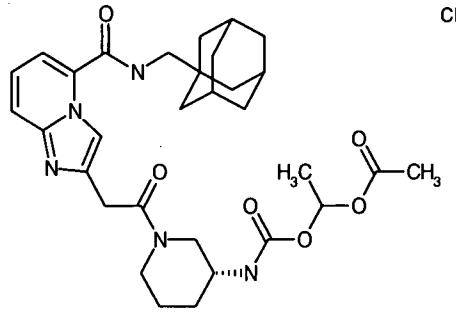
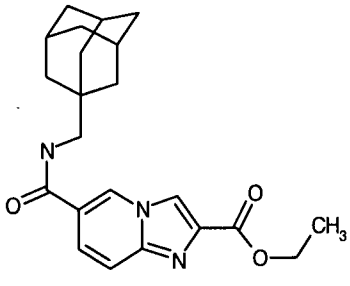
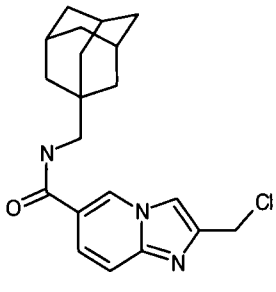
Compound		Name	MS	R_T	IC_{50}
1030		N-[2-(4-chlorophenyl)-2-piperidin-1-ylethyl]-2-(trifluoromethyl)imidazo[1,2-a]pyridine-5-carboxamide	451.13	1.18	8
1031		N-(4-methyl-2-phenylpentyl)-2-(trifluoromethyl)imidazo[1,2-a]pyridine-5-carboxamide	390.17	1.38	
1032		2-acetyl-N-[2-(4-chlorophenyl)-4-methylpentyl]imidazo[1,2-a]pyridine-5-carboxamide	398.19	1.27	*
1033		2-(1-azetidin-1-ylethyl)-N-[2-(4-chlorophenyl)-4-methylpentyl]imidazo[1,2-a]pyridine-5-carboxamide	439.32	1.19	*
1034		2-(azetidin-1-ylmethyl)-N-[2-(4-chlorophenyl)-4-methylpentyl]imidazo[1,2-a]pyridine-5-carboxamide	425.32	1.18	*

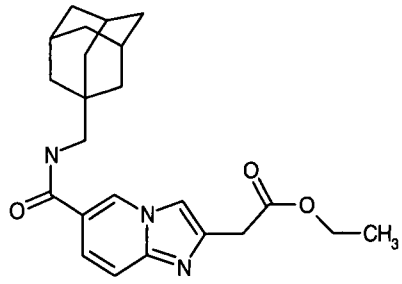
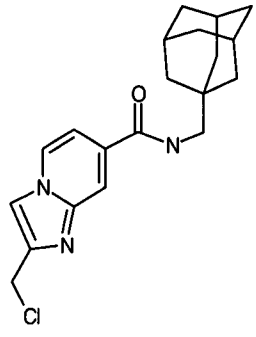
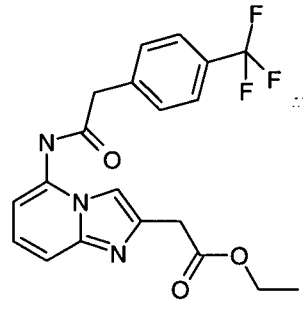
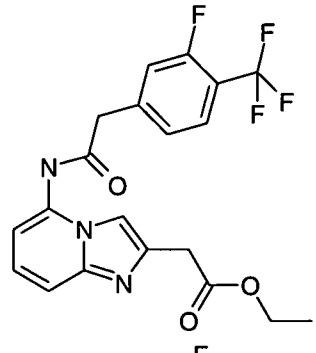
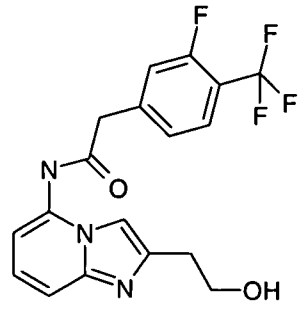
Compound		Name	MS	R_T	IC_{50}
1035		N-[2-(4-chlorophenyl)-4-methylpentyl]-2-(1-pyrrolidin-1-ylethyl)imidazo[1,2-a]pyridine-5-carboxamide	453.34	1.2	*
1036		N-[2-(4-chlorophenyl)-4-methylpentyl]-2-(pyrrolidin-1-ylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	439.33	1.18	*
1037		N-[2-(4-chlorophenyl)-4-methylpentyl]-2-(1-morpholin-4-ylethyl)imidazo[1,2-a]pyridine-5-carboxamide	469.35	1.19	*
1038		N-[2-(4-chlorophenyl)-4-methylpentyl]-2-(morpholin-4-ylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	455.34	1.18	*
1039		N-[2-(4-chlorophenyl)-4-methylpentyl]-2-{[(3R)-3-(dimethylamino)pyrrolidin-1-yl]methyl}imidazo[1,2-a]pyridine-5-carboxamide	482.39	1.14	*

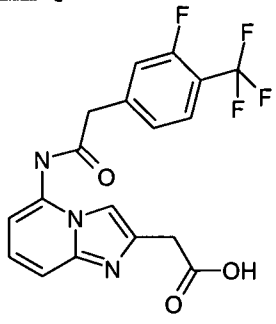
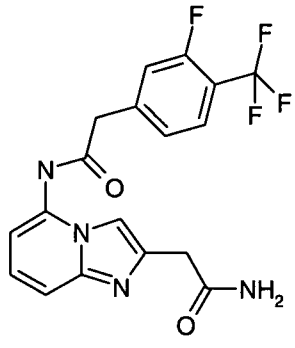
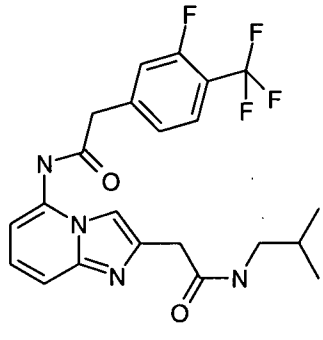
Compound		Name	MS	R_T	IC_{50}
1040		N-(adamantan-1-ylmethyl)-2-(2-pyrrolidin-1-ylethyl)imidazo[1,2-a]pyridine-5-carboxamide	407.37	1.11	*
1041		N-[2-(4-chlorophenyl)-4-methylpentyl]-2-(2-pyrrolidin-1-ylethyl)imidazo[1,2-a]pyridine-5-carboxamide	453.35	1.15	*
1042		N-{4-methyl-2-[4-(trifluoromethyl)phenyl]pentyl}-2-(2-pyrrolidin-1-ylethyl)imidazo[1,2-a]pyridine-5-carboxamide	487.37	1.16	*
1043		N-[2-(4-chlorophenyl)-2-piperidin-1-ylethyl]-2-(pyrrolidin-1-ylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	466.24	0.97	*
1044		2-(pyrrolidin-1-ylmethyl)-N-({1-[4-(trifluoromethyl)phenyl]cyclohexyl}methyl)imidazo[1,2-a]pyridine-5-carboxamide	485.24	1.19	*
1045		N-{[1-(4-fluorophenyl)cyclohexyl]methyl}-2-(pyrrolidin-1-ylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	435.25	1.16	*

Compound		Name	MS	R_T	IC_{50}
1046		N-{[1-(4-chloro-3-fluorophenyl)cyclohexyl]methyl}-2-(pyrrolidin-1-ylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	469.23	1.18	*
1047		N-{[1-(4-chlorophenyl)cyclohexyl]methyl}-2-(pyrrolidin-1-ylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	451.23	1.17	*
1048		N-[4-methyl-2-(4-methylphenyl)pentyl]-2-(pyrrolidin-1-ylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	419.28	1.18	*
1049		N-{[1-(4-methylphenyl)cyclohexyl]methyl}-2-(pyrrolidin-1-ylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	431.30	1.18	*
1050		N-(adamantan-1-ylmethyl)-2-{2-[(1-methylpiperidin-3-yl)amino]-2-oxoethyl}imidazo[1,2-a]pyridine-5-carboxamide	464.31	1.09	*
1051		N-{4-methyl-2-[6-(trifluoromethyl)pyridin-3-yl]pentyl}imidazo[1,2-a]pyridine-5-carboxamide	391.23	1.19	*

Compound		Name	MS	R_T	IC_{50}
1052		3-chloro-N-{4-methyl-2-[6-(trifluoromethyl)pyridin-3-yl]pentyl}imidazo[1,2-a]pyridine-5-carboxamide	425.19	1.24	*
1053		N-{4-methyl-2-[6-(trifluoromethyl)pyridin-3-yl]pentyl}-2-(morpholin-4-ylmethyl)imidazo[1,2-a]pyridine-5-carboxamide	490.27	1.19	*
1054		3-chloro-N-[2-(4-chlorophenyl)-2-piperidin-1-ylethyl]imidazo[1,2-a]pyridine-5-carboxamide	417.17	1.05	*
1055		3-chloro-N-[2-(4-chlorophenyl)-2-morpholin-4-ylethyl]imidazo[1,2-a]pyridine-5-carboxamide	419.16	0.99	*
1056		3-bromo-N-[2-(4-chlorophenyl)-2-piperidin-1-ylethyl]imidazo[1,2-a]pyridine-5-carboxamide	463.14	1.05	*
1057		3-bromo-N-[2-(4-chlorophenyl)-2-morpholin-4-ylethyl]imidazo[1,2-a]pyridine-5-carboxamide	465.12	1.01	*

Compound		Name	MS	R_T	IC_{50}
1058		3-chloro-N-{2-piperidin-1-yl-2-[6-(trifluoromethyl)pyridin-3-yl]ethyl}imidazo[1,2-a]pyridine-5-carboxamide	452.22	0.96	*
1059		1-{[({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}methyl)(ethyl)carbamoyl]oxy}ethyl acetate	497.35	1.28	*
1060		Chiral 1-({[(3R)-1-({5-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}acetyl)piperidin-3-yl]carbamoyl}oxy)ethyl acetate	580.38	1.25	*
1061		ethyl 6-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridine-2-carboxylate	382.19	1.32	*
1062		N-(adamantan-1-ylmethyl)-2-(chloromethyl)imidazo[1,2-a]pyridine-6-carboxamide	358.14	1.26	*

Compound		Name	MS	R_T	IC_{50}
1063		ethyl {6-[(adamantan-1-ylmethyl)carbamoyl]imidazo[1,2-a]pyridin-2-yl}acetate	396.20	1.24	*
1064		N-(adamantan-1-ylmethyl)-2-(chloromethyl)imidazo[1,2-a]pyridine-7-carboxamide	358.17	1.26	*
1065		{5-[2-(4-Trifluoromethyl-phenyl)-acetylamino]-imidazo[1,2-a]pyridin-2-yl}-acetic acid ethyl ester			
1066		{5-[2-(3-Fluoro-4-trifluoromethyl-phenyl)-acetylamino]-imidazo[1,2-a]pyridin-2-yl}-acetic acid ethyl ester			
1067		N-[2-(2-Hydroxy-ethyl)-imidazo[1,2-a]pyridin-5-yl]-2-(4-trifluoromethyl-phenyl)-acetamide			

Compound	Name	MS	R_T	IC_{50}
1068 	{5-[2-(3-Fluoro-4-trifluoromethyl-phenyl)-acetylamino]-imidazo[1,2-a]pyridin-2-yl}-acetic acid			
1069 	2-{5-[2-(4-Trifluoromethyl-phenyl)-acetylamino]-imidazo[1,2-a]pyridin-2-yl}-acetamide			
1070 	N-[2-(Isobutylcarbamoyl-methyl)-imidazo[1,2-a]pyridin-5-yl]-2-(4-trifluoromethyl-phenyl)-acetamide			

EXAMPLE 4

P2X7 Calcium Mobilization Assay

This Example illustrates representative calcium mobilization assays for use in evaluating test compounds for agonist and antagonist activity.

A. HIGH THROUGHPUT ASSAY OF P2X7 RECEPTORS

SH-SY5Y cells, ATCC Number CRL-2266, (American Type Culture Collection, Manassas, VA) are cultured under DMEM/High medium supplemented with 10% FBS, and 10 mM HEPES (Invitrogen Corp., Carlsbad, CA) in 5% CO_2 and at 37 °C. One day prior to the experiment, cells are plated at a density of 100,000 cells/well in a 96 well black/clear TC plate (Corning® Costar®, Sigma-Aldrich Co., St. Louis, MO). At the beginning of the experiment, the culture medium is removed and cells are incubated with 50 µL of 2.3 µM Fluo-4 AM dye (Invitrogen Corp.) in the assay solution (5 mM KCl, 9.6 mM $NaH_2PO_4 \cdot H_2O$, 25 mM HEPES, 280 mM Sucrose, 5 mM Glucose, and 0.5 mM $CaCl_2$; pH is adjusted to 7.4 with NaOH) for an hour at 37 °C. After one hour dye incubation, wells are rinsed once with 50 µL assay solution, and are then incubated for an hour at room temperature

with 100 μL assay solution containing the test compound. The final concentration of test compound generally ranges from 1 to 2500 nM; for positive control cells, no test compound is added. After the one hour incubation, plates are transferred to a FLIPR^{TETRA} instrument (Molecular Devices, Sunnyvale, CA) for calcium mobilization analysis.

For determination of antagonist activity, 50 μL of $P2X_7$ agonist (2'(3')-O-(4-benzoyl-benzoyl)adenosine 5'-triphosephate (BzATP; Sigma-Aldrich) in the assay solution is transferred using the FLIPR into the plate, such that the final agonist concentration is 80 μM (about EC_{50}). In negative control cells, 50 μL of assay solution without agonist is added at this stage. The peak fluorescence signal over a 2 minute period is then measured.

The data is analyzed as follows. First, the average maximum relative fluorescent unit (RFU) response from the negative control wells (no agonist) is subtracted from the maximum response detected for each of the other experimental wells. Second, average maximum RFU response is calculated for the positive control wells (agonist wells). Then, percent inhibition for each compound tested is calculated using the equation:

Percent Inhibition = 100 – 100 × (Peak Signal in Test Cells / Peak Signal in Control Cells)

The % inhibition data is plotted as a function of test compound concentration and test compound IC_{50} is determined using, for example, KALEIDAGRAPH software (Synergy Software, Reading, PA) best fit of the data to the equation:

$$y = m_1*(1/(1+(m_2/m_0)^{m3}))$$

where y is the percent inhibition, m_0 is the concentration of the agonist, m_1 is the maximum RFU, m_2 corresponds to the test compound IC_{50} (the concentration required to provide a 50% decrease, relative to the response observed in the presence of agonist and without antagonist) and m_3 is the Hill coefficient. For antagonists of the $P2X_7$ receptor, the IC_{50} so calculated is preferably below 20 micromolar, more preferably below 10 micromolar, even more preferably below 5 micromolar and most preferably below 1 micromolar.

Similar assays are performed in the absence of added agonist for the determination of agonist activity of the test compounds. Within such assays, the ability of a test compound to act as an agonist of $P2X_7$ receptor is determined by measuring the fluorescence response elicited by the test compound as a function of compound concentration. $P2X_7$ receptor antagonists that exhibit no detectable agonist activity elicit no detectable fluorescence response at a concentration of 2,500 nM.

B. ELECTROPHYSIOLOGY ASSAY FOR P2X7 RECEPTORS

SH-SY5Y cells are cultured under DMEM/High medium supplemented with 10% FBS, and 10 mM HEPES (Invitrogen Corp., Carlsbad, CA) in 5% CO_2 and at 37 °C, and are split onto 12 mm round Poly-D-Lysine (PDL) coated coverslips (BD Biosciences, San Jose, CA) in a 35 mm dish with a density of 130K cells/dish a day prior to the experiment. Whole cell voltage clamp recordings are made with the Axopatch-200B amplifier (Axon Instruments, Foster City, CA). The recording

electrodes are pulled from borosilicate pipettes (World Precision Instruments, Sarasota, FL) on a horizontal puller (Sutter Instrument Model P-87) and have resistances ranging from 2 to 3 MΩ when backfilled with internal solution. All voltage protocols are generated using pClamp 8 (Axon Instruments) software. Data are digitized at 1 or 5 kHz and recorded onto a PC for further analysis. Data are analyzed using Clampfit (Axon Instruments), Excel (Microsoft, Redmond, WA), and Origin software (MicroCal, LLC; Northampton, MA). All whole-cell recordings are conducted at room temperature. Internal solution contains (in mM): 100 KF, 40 KCl, 5 NaCl, 10 EGTA and 10 HEPES (pH = 7.4 adjusted with KOH). The external solution contains 70 mM NaCl, 0.3 mM $CaCl_2$, 5 mM KCl, 20 mM HEPES, 10 mM glucose, and 134 mM sucrose (pH = 7.4 adjusted with NaOH). All chemicals are from Sigma, unless otherwise stated.

$P2X_7$ receptor is activated by 200 μM of $P2X_7$ agonist, BzATP. At a holding potential of -80 mV, the activated inward current is recorded in the presence and absence of the test compound. Then, percent inhibition for each compound tested is calculated using the equation:

% Inhibition = 100 – 100 × (Current Amplitude in Compound / Current Amplitude in Control).

To determine a test compound's IC_{50} for $P2X_7$ receptor electrophysiologically, several concentrations of the compound are tested and their inhibitions on $P2X_7$ currents are calculated as above. This dose-response curve is best fitted using Origin software (Microcal, MA) with the following equation:

$$\text{Percent Inhibition} = 100/(1 + (IC_{50}/C)^N)$$

where C is the concentration of the antagonist, N is the Hill coefficient, and IC_{50} represents the compound IC_{50} value against $P2X_7$ receptors.

EXAMPLE 5

Carrageenan-Induced Mechanical Hyperalgesia (Paw Pressure) Assay for Determining Pain Relief

This Example illustrates a representative method for assessing the degree of pain relief provided by a test compound.

Adult male Sprague Dawley rats (200-300g; obtained from Harlan Sprague Dawley, Inc., Indianapolis, IN) are housed under a 12 h light/dark cycle with access to food and water *ad libitum*. For the assay, all animals are habituated once, baselined twice and tested once, with each procedure being conducted on a separate day. Prior to each day's procedure, animals are allowed to acclimate for at least 1 hour in the testing room before the start of the procedure. For habituation, each animal is gently restrained with each hindpaw consecutively extended in front of the animal as is necessary for testing. This procedure is performed by alternating hindpaws and repeated three times for each hindpaw. Animals are then subjected to the first baseline, second baseline and testing on consecutive days. For each baseline, the animal is restrained as in the habituation session and the paw tested using the paw pressure testing apparatus (Digital Randall Selitto, IITC Inc., Woodland Hills, CA). Animals

are baselined and tested in groups of ten, each animal being tested once on the left and right hindpaws, followed by the next consecutive animal. This procedure is repeated three times for a total of three measurements on each hindpaw. If any individual read is drastically different (varies by more than about 100 g) from the other two on a given hindpaw, the hindpaw is retested a 4th time, and the average of the three most consistent scores is used. On test day, all animals are injected with 0.1 mL intraplantar 0.5% -1.5% carrageenan (dissolved in saline) 3 hours prior to testing. Test compounds or vehicle may be administered by various routes at various timepoints prior to testing, but for any particular assay, the routes and timepoints are the same for animals in each treatment group administered test compound (a different dosage of test compound may be administered to each such group) and those in the treatment group administered vehicle control. If a compound is orally administered, the animals are food-deprived the evening before testing. As with the baseline, each hindpaw is tested three times and the results recorded for analysis.

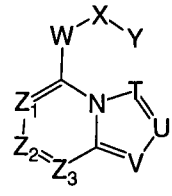
Hypersensitivity of nociception values are calculated for each treatment group as the mean of the left foot gram force scores on test day (left foot only or LFO score). Statistical significance between treatment groups is determined by running an ANOVA on LFO scores followed with a least significant difference (LSD) post hoc test. A $p<0.05$ is considered to be a statistically significant difference.

Compounds are said to relieve pain in this model if they result in a statistically significant reduction in hypersensitivity of nociception values compared to vehicle controls, determined as described above, when administered (0.01-50 mg/kg, orally, parenterally or topically) immediately prior to testing as a single bolus, or for several days: once or twice or three times daily prior to testing.

CLAIMS

What is claimed is:

1. A compound of the formula:



or a pharmaceutically acceptable salt or hydrate thereof, wherein:

T, U and V are independently chosen from CR_3, CR_A and N, such that exactly one of T, U and V is CR_A;

W is $-C(=O)NR_4-$, $-NR_4C(=O)-$ or $-NR_4-NR_4-C(=O)-$;

X is absent or C_1-C_6alkylene that is substituted with from 0 to 4 substituents independently chosen from:

(i) C_1-C_4alkyl, (C_3-C_8cycloalkyl)C_0-C_2alkyl, (4- to 10-membered heterocycle)C_0-C_4alkyl, and phenylC_0-C_2alkyl;

(ii) substituents that taken together with the atom to which they are attached or with the atoms through which they are connected form a 3- to 8-membered cycloalkyl or heterocycloalkyl ring; and

(iii) a substituent that taken together with R_4 and the atoms through which they are connected forms a 4- to 7-membered heterocycloalkyl;

Y is C_3-C_{16}cycloalkyl, 4- to 16-membered heterocycloalkyl, 6- to 16-membered aryl or 5- to 16-membered heteroaryl, each of which is substituted with from 0 to 6 substituents independently chosen from hydroxy, halogen, cyano, amino, nitro, oxo, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6aminoalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_2-C_6alkyl ether, C_1-C_6alkanoyl, C_1-C_6alkylsulfonyl, (C_3-C_7cycloalkyl)C_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)aminocarbonyl, mono- or di-(C_1-C_6alkyl)aminosulfonyl and (C_1-C_6alkyl)sulfonylamino;

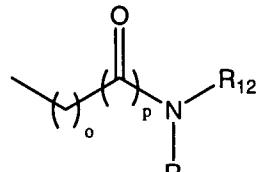
Z_1 and Z_3 are independently N or CR_2;

Z_2 is N, CR_2 or CR_A;

Each R_2 and each R_3 is independently chosen from hydrogen, halogen, cyano, amino, nitro, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6aminoalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_1-C_6alkanoyl, C_2-C_6alkyl ether, (C_3-C_7cycloalkyl)C_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkylsulfonyl, C_1-

C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)aminocarbonyl, mono- or di-(C_1-C_6alkyl)aminosulfonyl and (C_1-C_6alkyl)sulfonylamino;

Each R_4 is independently hydrogen, C_1-C_6alkyl, or (C_3-C_8cycloalkyl)C_0-C_2alkyl, or R_4 taken together with a substituent of X and the atoms through which they are connected forms a 4- to 7-membered heterocycloalkyl;



R_A is a group of the formula -L-A, , or a group chosen from M, such that R_A is not absent, wherein:

L is absent or C_1-C_6alkylene that is optionally modified by the replacement of a carbon-carbon single bond with a double or triple carbon-carbon bond, and which alkylene is optionally substituted with oxo; and

A is absent or CO, O, NR_6, S, SO, SO_2, $CONR_6$, NR_6CO, (C_4-C_{12}cycloalkyl), (4- to 7-membered heterocycle), phenyl-E-, or (5- or 6-membered heterocycle)-E-; wherein R_6 is hydrogen or C_1-C_6alkyl and E is O, S, SO_2 or NH;

such that each –L-A is substituted with from 1 to 6 groups independently chosen from M; and

each M is:

(i) hydroxy, halogen, cyano, amino, imino, hydroxyimino, aminocarbonyl, aminosulfonyl or COOH;

(ii) C_1-C_6haloalkyl, C_1-C_6alkoxy, C_1-C_6alkylthio, (3- to 12-membered carbocycle)C_0-C_4alkyl, (4- to 10-membered heterocycle)C_0-C_4alkyl, C_2-C_6alkyl ether, C_1-C_6alkanoyl, C_1-C_6alkanoyloxy, C_1-C_6alkanoylamino, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylC_0-C_4alkyl, C_1-C_6alkylsulfonylamino, C_1-C_6alkylsulfonylaminoC_0-C_4alkyl, C_1-C_6alkylsulfonyloxy, mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminosulfonyl, mono- or di-(C_1-C_6alkyl)aminocarbonylC_0-C_4alkyl or C_1-C_6alkylsilyloxy; each of which is substituted with from 0 to 6 substituents independently chosen from oxo, amino, halogen, hydroxy, cyano, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl optionally substituted with COOH, amino, cyano, C_1-C_6alkoxycarbonyl or C_1-C_6alkoxy, C_1-C_6hydroxyalkyl, C_1-C_6haloalkyl, imino, hydroxyimino, C_1-C_6alkoxy that is optionally substituted with C_1-C_6alkanoyloxy, C_1-C_6haloalkoxy, C_1-C_6alkoxy, C_2-C_6alkyl ether, C_1-C_6alkanoyl, C_1-C_6alkanoyloxy, C_1-C_6alkoxycarbonyl, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, mono- or di-(C_1-C_6alkyl)aminosulfonyl, mono- or di-(C_1-C_6alkylamino)carbonyl, phenyl optionally substituted with halogen or C_1-C_6haloalkyl, cycloalkyl, and 4- to 7-membered heterocycle; or

(iii) two M taken together with the atoms through which they are connected form a bridge of the Formula $-(CH_2)_q-P-(CH_2)_r-$, wherein q and r are independently 0 or 1 and P is CH_2, O, NH or S, the bridge optionally substituted with from 0 to 2 substituents independently chosen from oxo and C_1-C_4alkyl; or

(iv) when –L-A- is substituted by at least two M at the same atom of –L-A-, two M taken together with the atom to which they are attached form a 3- to 7-membered carbocyclic or heterocycloalkyl ring that is substituted with from 0 to 2 substituents independently chosen from oxo and C_1-C_4alkyl;

such that: (i) R_A is not C_1-C_6alkoxy; (ii) R_A is a group of the formula –L-A and L is not absent if a group represented by M is aromatic and Y is aromatic or a 6-membered heterocycloalkyl; and (iii) if Y is optionally substituted phenyl, then R_A is not C_1-C_4alkoxycarbonyl;

o is an integer ranging from 0 to 4;

p is 0 or 1; and

R_{11} and R_{12} are:

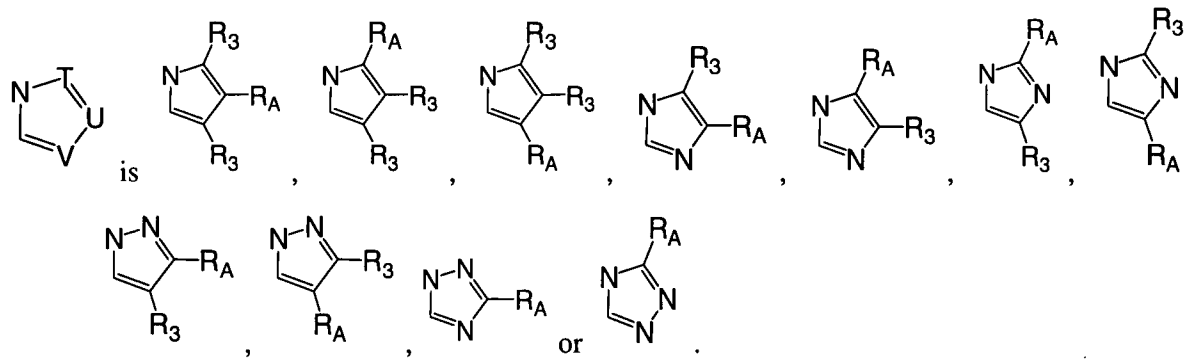
(i) independently chosen from:

(a) hydrogen,

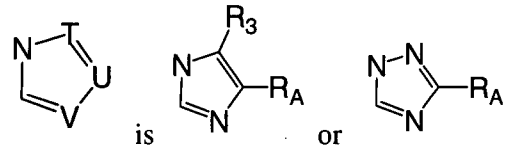
(b) C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_2-C_6alkyl ether, (C_3-C_7cycloalkyl)C_0-C_4alkyl, and phenylC_0-C_2alkyl, each of which is substituted with from 0 to 4 substituents independently chosen from hydroxy, halogen, cyano, amino, aminocarbonyl, aminosulfonyl, COOH, oxo, C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, C_2-C_6alkyl ether, mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminocarbonyl, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, 4- to 7-membered heterocycloalkyl that is optionally substituted with one or two methyl groups, and 5- or 6-membered heteroaryl; or

(ii) taken together to form a 5- to 7-membered heterocycloalkyl that is substituted with from 0 to 4 substituents independently chosen from halogen, hydroxy, cyano, amino, aminocarbonyl, aminosulfonyl, COOH, oxo, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_2-C_6alkyl ether, (C_3-C_7cycloalkyl)C_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminocarbonyl, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, 4- to 7-membered heterocycloalkyl that is optionally substituted with one or two methyl groups, and 5- or 6-membered heteroaryl.

2. A compound or salt or hydrate thereof according to claim 1, wherein:



3. A compound or salt or hydrate thereof according to claim 2, wherein:



4. A compound or salt or hydrate thereof according to any one of claims 1-3, wherein each R_3 is independently hydrogen or C_1-C_4alkyl.

5. A compound or salt or hydrate thereof according to any one of claims 1-4, wherein R_A is hydroxy, halogen, C_1-C_6hydroxyalkyl, C_1-C_6aminoalkyl, C_1-C_6cyanoalkyl, C_2-C_8alkyl ether, C_2-C_8alkyl thioether, (C_3-C_{12}cycloalkyl)C_0-C_4alkyl, phenyl, phenylC_1-C_4alkyl, (4- to 10-membered heterocycle)C_0-C_4alkyl, phenyl-E-C_0-C_4alkyl, (5- or 6-membered heterocycle)-E-C_0-C_4alkyl, C_1-C_6alkylsulfonylC_0-C_4alkyl, (C_1-C_8alkylsulfonylamino)C_0-C_4alkyl, (C_1-C_8alkanoyloxy)C_0-C_4alkyl, (C_1-C_8alkylsulfonyloxy)C_0-C_4alkyl, (mono- or di-C_1-C_8alkylamino)C_0-C_4alkyl, and (mono- or di-C_1-C_8alkylaminocarbonyl)C_0-C_4alkyl, wherein E is O, S, SO_2 or NH; each of which is substituted with from 0 to 6 substituents independently chosen from:

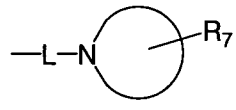
(i) oxo, amino, cyano, hydroxy, imino, hydroxyimino, aminocarbonyl, aminosulfonyl and COOH; and

(ii) C_1-C_6haloalkyl, C_1-C_6oxoalkyl, C_1-C_6alkoxy, C_2-C_6alkyl ether, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonyloxy, C_1-C_6alkylsulfonylamino, mono- or di-(C_1-C_6alkyl)aminocarbonyl, mono- or di-C_1-C_6alkylaminosulfonyl, C_1-C_6alkylsilyloxy, (C_3-C_{12}cycloalkyl)C_0-C_4alkyl, phenylC_0-C_4alkyl and (4- to 7-membered heterocycle)C_0-C_4alkyl; each of which is substituted with from 0 to 4 substituents independently chosen from halogen, hydroxy, amino, oxo, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy that is optionally substituted with C_1-C_6alkanoyloxy, C_2-C_6alkyl ether, C_1-C_6alkanoyloxy, C_1-C_6alkoxycarbonyl, mono- or di-(C_1-C_6alkyl)amino and 5- or 6-membered heterocycle.

6. A compound or salt or hydrate thereof according to claim 5, wherein R_A is C_1-C_6hydroxyalkyl, C_1-C_6cyanoalkyl, C_2-C_6alkyl ether, C_2-C_6alkyl thioether, mono- or di-(C_1-

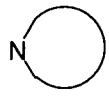
C_6alkyl)aminoC_0-C_4alkyl, mono- or di-(C_1-C_8alkyl)aminocarbonylC_0-C_4alkyl, C_1-C_6alkylsulfonylC_0-C_4alkyl, (4- to 7-membered heterocycloalkyl)C_1-C_4alkyl, (5-membered heteroaryl)C_0-C_4alkyl, or phenyl; each of which is substituted with from 0 to 4 substituents independently chosen from amino, hydroxy, halogen, cyano, oxo, aminocarbonyl, COOH, aminosulfonyl, C_1-C_6alkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, C_2-C_6alkyl ether, mono- or di-(C_1-C_6alkyl)amino, mono- or di-(C_1-C_6alkyl)aminocarbonyl, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, 4- to 7-membered heterocycloalkyl that is optionally substituted with one or two methyl groups, and 5- or 6-membered heteroaryl.

7. A compound or salt or hydrate thereof according to claim 5, wherein R_A is a group of the formula:



wherein:

L is absent or C_1-C_6alkylene that is optionally substituted with oxo;



represents a 4- to 7-membered heterocycloalkyl ; and

R_7 represents from 0 to 4 substituents independently chosen from:

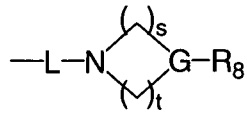
(i) hydroxy, halogen, amino, oxo, aminocarbonyl, aminosulfonyl and COOH;

(ii) C_1-C_6alkyl, C_1-C_6alkoxy, C_1-C_6haloalkyl, mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, C_1-C_6alkylsulfonylC_0-C_4alkyl, C_1-C_6alkylsulfonylaminoC_0-C_4alkyl, and 4- to 7-membered heterocycle; each of which is substituted with from 0 to 4 substituents independently chosen from halogen, hydroxy, amino, oxo, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl, C_1-C_6alkoxy, mono- or di-(C_1-C_6alkyl)amino, and C_1-C_6alkylsulfonylamino;

(iii) two R_7 taken together with the atoms through which they are connected form a bridge of the Formula -$(CH_2)_q$-P-$(CH_2)_r$-, wherein q and r are independently 0 or 1 and P is CH_2, O, NH or S; or

(iv) two R_7 taken together with the atom to which they are attached form a spiro 4- to 7-membered heterocycloalkyl ring that is substituted with from 0 to 2 substituents independently chosen from oxo and C_1-C_4alkyl.

8. A compound or salt or hydrate thereof according to claim 7, wherein R_A is a group of the formula:



wherein:

L is C_1-C_2alkylene that is optionally substituted with oxo;

G is CH or N;

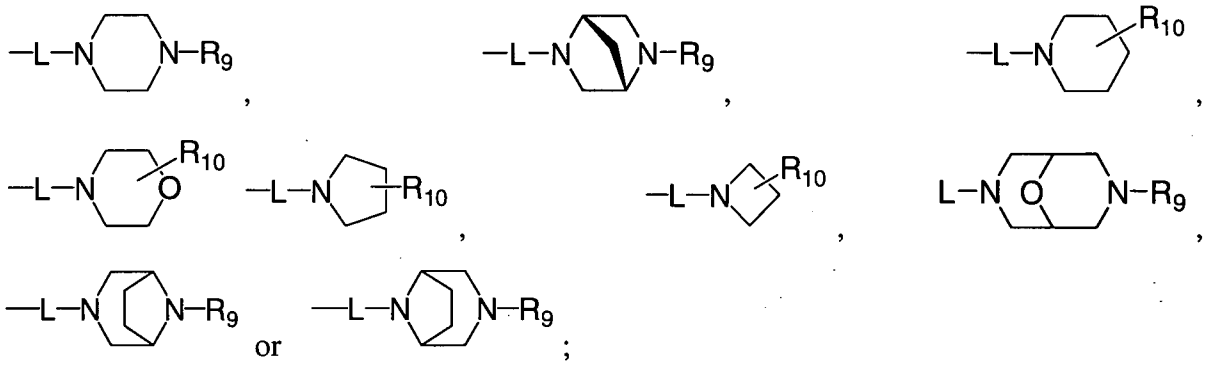
s and t are independently 0, 1, 2, 3 or 4, such that the sum of s and t ranges from 2 to 5; and

R_8 is:

(i) hydrogen, aminocarbonyl, aminosulfonyl or COOH; or

(ii) C_1-C_6alkyl, mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, C_1-C_6alkylsulfonylC_0-C_4alkyl, C_1-C_6alkylsulfonylaminoC_0-C_4alkyl, or 4- to 7-membered heterocycle; each of which is substituted with from 0 to 4 substituents independently chosen from halogen, hydroxy, amino, oxo, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl, C_1-C_6alkoxy, mono- or di-(C_1-C_6alkyl)amino, and C_1-C_6alkylsulfonylamino.

9. A compound or salt or hydrate thereof according to claim 7, wherein R_A is:



wherein:

R_9 is: (i) C_1-C_6alkyl that is optionally substituted with COOH; or (ii) a 5- or 6-membered heteroaryl that is unsubstituted or substituted with 1 or 2 oxo; and

R_{10} represents zero, one or two substituents chosen from:

(i) amino, COOH or aminocarbonyl;

(ii) C_1-C_6alkyl that is optionally substituted with COOH or C_1-C_6alkoxy;

(iii) C_1-C_6alkoxy, C_1-C_6haloalkyl, mono- or di-(C_1-C_6alkyl)aminoC_0-C_2alkyl, C_1-C_6alkylsulfonyl and C_1-C_6alkylsulfonylamino; each of which is substituted with from 0 to 3 substituents independently chosen from hydroxy, oxo and COOH; and

(iv) C_1-C_6haloalkylsulfonylamino.

10. A compound or salt or hydrate thereof according to claim 5, wherein R_A is C_1-C_6alkyl, C_2-C_6alkyl ether, or mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, each of which is substituted with from 1 to 4 substituents independently chosen from halogen, hydroxy, amino, oxo, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkoxy, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkanoylamino, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonyloxy, C_1-C_6alkylsulfonylamino, and 4- to 7-membered heterocycle.

11. A compound or salt or hydrate thereof according to claim 10, wherein R_A is:

(i) C_1-C_6alkyl that is substituted with COOH; or

(ii) mono-(C_1-C_6alkyl)aminoC_0-C_2alkyl that is substituted with from 0 to 2 substituents independently chosen from hydroxy, oxo, COOH and C_1-C_4alkylsulfonylamino.

12. A compound or salt or hydrate thereof according to any one of claims 1-4, wherein:

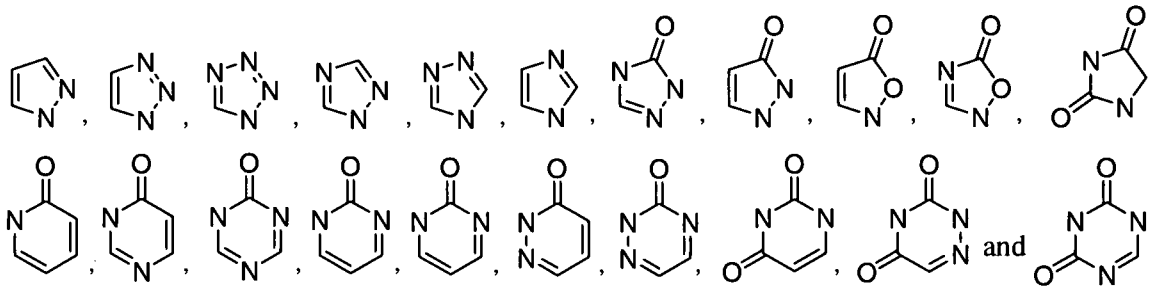
A is absent; and

M is phenyl or a 5- or 6-membered heteroaryl, each of which is substituted with from 0 to 4 substituents independently chosen from oxo, amino, halogen, hydroxy, cyano, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl optionally substituted with COOH or C_1-C_6alkoxy, C_1-C_6hydroxyalkyl, C_1-C_6haloalkyl, imino, hydroxyimino, C_1-C_6alkoxy that is optionally substituted with C_1-C_6alkanoyloxy, C_1-C_6haloalkoxy, C_1-C_6alkoxy, C_2-C_6alkyl ether, C_1-C_6alkanoyloxy, C_1-C_6alkoxycarbonyl, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, mono- or di-(C_1-C_6alkyl)aminosulfonyl, mono- or di-(C_1-C_6alkylamino)carbonyl, phenyl, cycloalkyl, and 4- to 7-membered heterocycle.

13. A compound or salt or hydrate thereof according to claim 12, wherein M is:

(i) phenyl, pyridyl or pyrimidinyl, each of which is substituted with from 0 to 4 substituents independently chosen from oxo, amino, halogen, hydroxy, cyano, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, C_2-C_6alkyl ether, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, mono- or di-(C_1-C_6alkyl)aminosulfonyl, mono- or di-(C_1-C_6alkylamino)carbonyl, and 4- to 7-membered heterocycle; or

(ii) a heteroaryl chosen from:



each of which is substituted with from 0 to 2 substituents independently chosen from amino, halogen, hydroxy, cyano, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, C_2-C_6alkyl ether, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, mono- or di-(C_1-C_6alkyl)aminosulfonyl.

14. A compound or salt or hydrate thereof according to any one of claims 1-13, wherein Z_1, Z_2 and Z_3 are each CR_2.

15. A compound or salt or hydrate thereof according to any one of claims 1-13, wherein Z_1 is N and Z_2 and Z_3 are each CR_2.

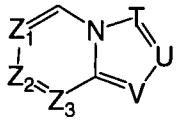
16. A compound or salt or hydrate thereof according to any one of claims 1-13, wherein Z_2 is N and Z_1 and Z_3 are each CR_2.

17. A compound or salt or hydrate thereof according to any one of claims 1-13, wherein Z_3 is N and Z_1 and Z_2 are each CR_2.

18. A compound or salt or hydrate thereof according to any one of claims 1-13, wherein Z_1 and Z_3 are N and Z_2 is CR_2.

19. A compound or salt or hydrate thereof according to any one of claims 1-18, wherein each R_2 is hydrogen or C_1-C_6alkyl.

20. A compound or salt or hydrate thereof according to claim 1, wherein: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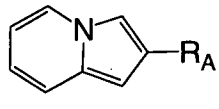
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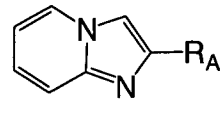
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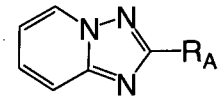
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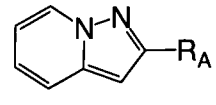
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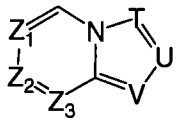
21. A compound or salt or hydrate thereof according to claim 1, wherein: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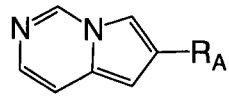
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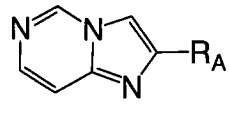
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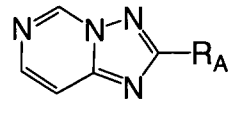
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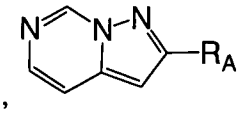
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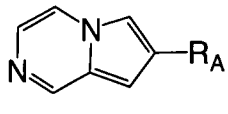
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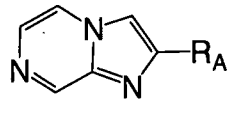
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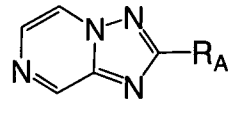
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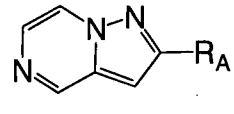
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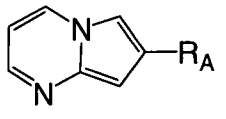
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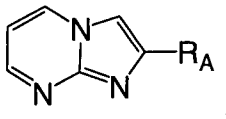
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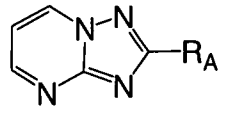
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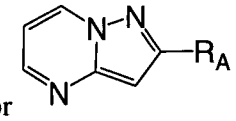
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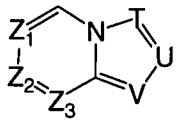
22. A compound or salt or hydrate thereof according to claim 1, wherein: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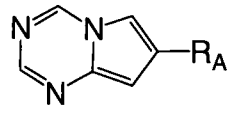
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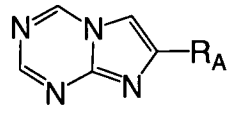
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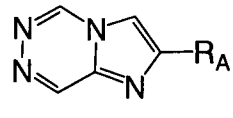
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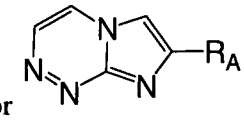
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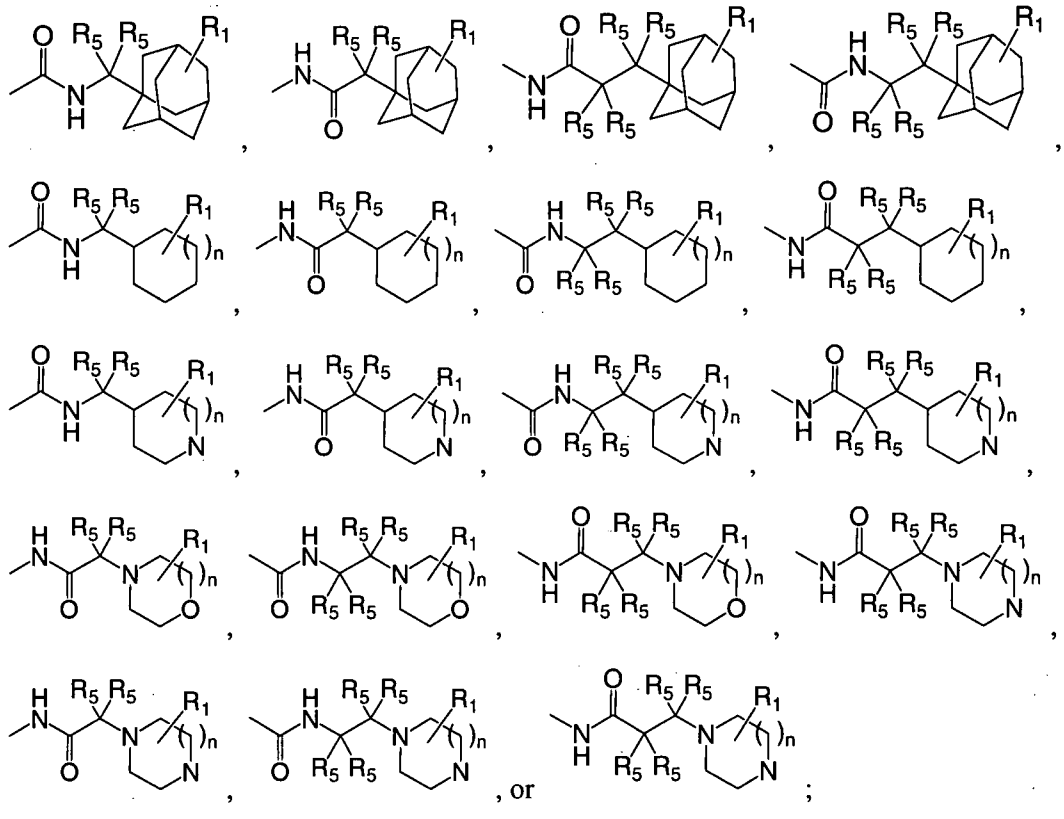
23. A compound or salt or hydrate thereof according to any one of claims 1-22, wherein X is methylene or ethylene, each of which is substituted with from 0 to 4 substituents independently chosen from C_1-C_4alkyl, (C_3-C_8cycloalkyl)C_0-C_2alkyl, phenyl and substituents that are taken together to form a 3- to 7-membered cycloalkyl or heterocycloalkyl ring.

24. A compound or salt or hydrate thereof according to any one of claims 1-24, wherein Y is cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cycloheptyl, piperidinyl, piperazinyl, morpholinyl, 6,6-dimethyl-bicyclo[3.1.1]heptane-2-yl, or adamantyl, each of which is substituted with from 0 to 4 substituents independently chosen from halogen, hydroxy, cyano, amino, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, and mono- or di-(C_1-C_6alkyl)amino.

25. A compound or salt or hydrate thereof according to any one of claims 1-22, wherein –W-X-Y is:



wherein:

n is 0, 1 or 2;

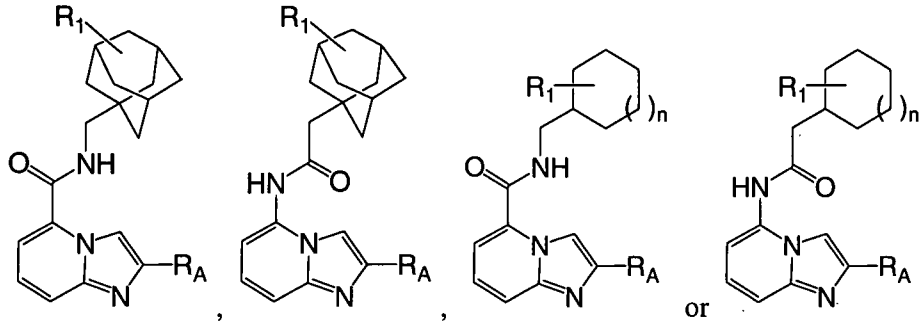
R_1 represents from 0 to 2 substituents independently chosen from halogen, hydroxy, cyano, amino, nitro, aminocarbonyl, aminosulfonyl, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, (C_3-C_7cycloalkyl)C_0-C_4alkyl, and mono- or di-(C_1-C_6alkyl)amino; or two substituents represented by R_1 are taken together to form:

(a) a C_1-C_3alkylene bridge that is optionally substituted with one or two C_1-C_4alkyl moieties; or

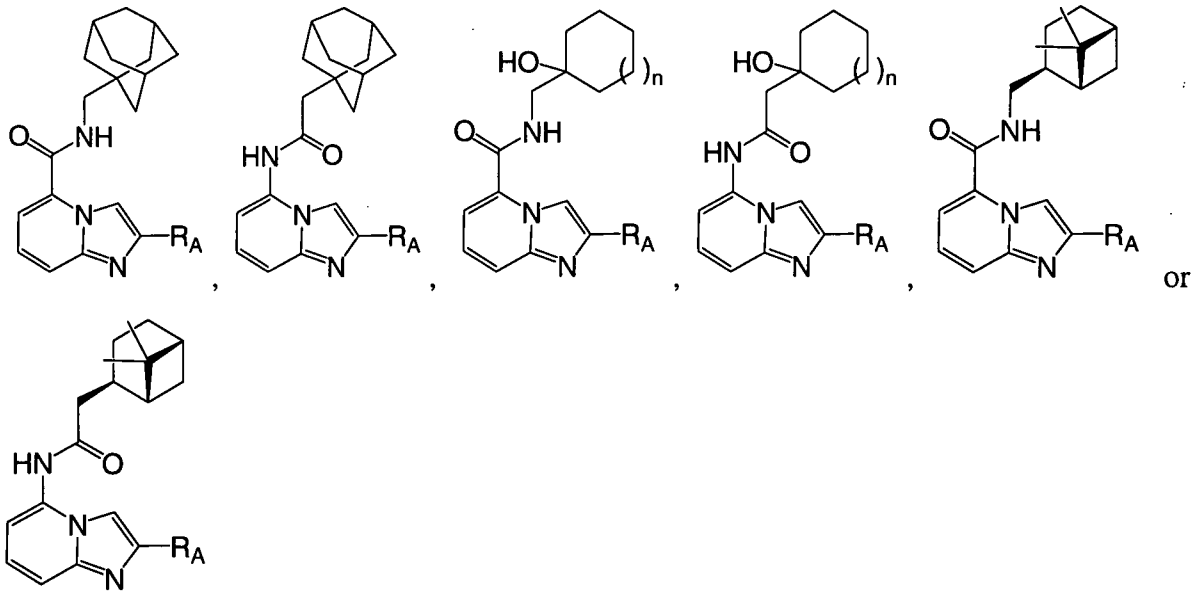
(b) with the atom to which they are attached or with the atoms through which they are connected, a fused or spiro 3- to 7-membered carbocyclic or heterocyclic ring; and

each R_5 is independently hydrogen, C_1-C_4alkyl, (C_3-C_7cycloalkyl)C_0-C_2alkyl or phenylC_0-C_2alkyl; or two R_5 taken together with the atom to which they are attached form a C_3-C_8cycloalkyl or a 4- to 7-membered heterocycloalkyl.

26. A compound or salt or hydrate thereof according to claim 25, wherein the compound has the formula:



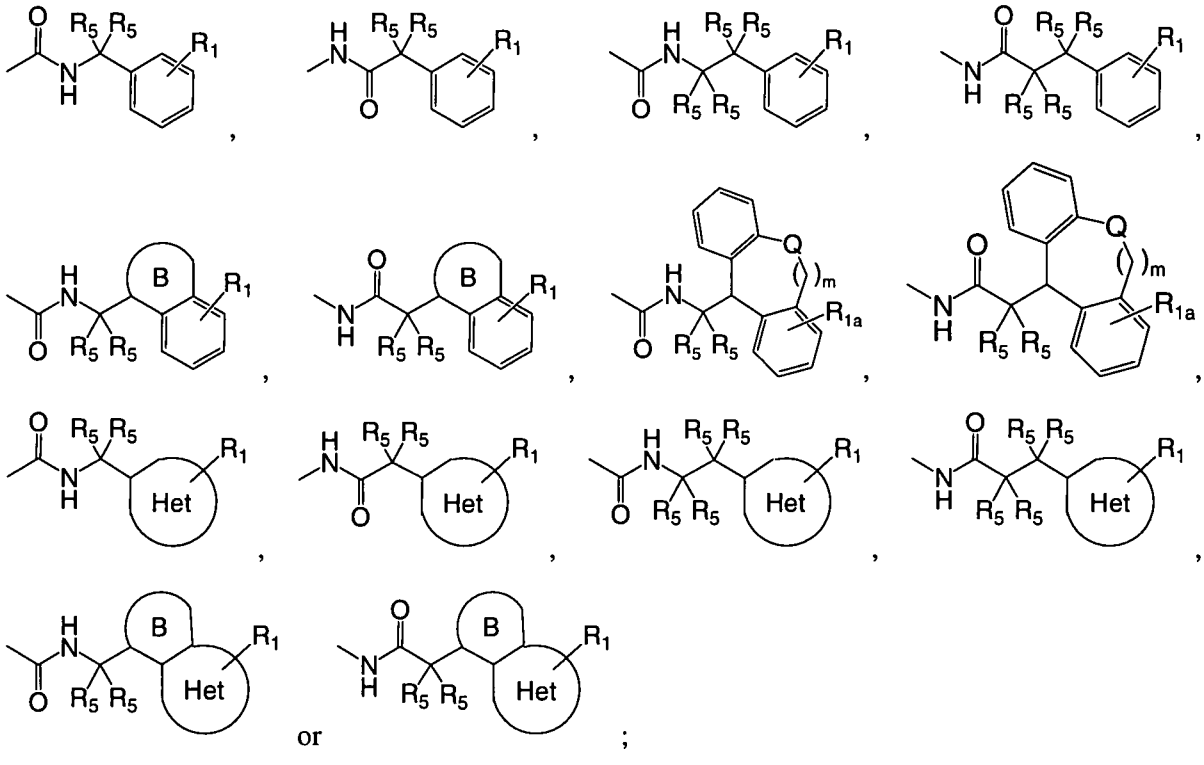
27. A compound or salt or hydrate thereof according to claim 26, wherein the compound has the formula:



28. A compound or salt or hydrate thereof according to any one of claims 1-23, wherein Y is phenyl or a 5- or 6-membered heteroaryl; each of which is optionally fused to a 5- to 7-membered carbocyclic or heterocyclic ring; each of which Y is substituted with from 0 to 4 substituents independently chosen from halogen, hydroxy, cyano, amino, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, and mono- or di-(C_1-C_6alkyl)amino.

29. A compound or salt or hydrate thereof according to any one of claims 1-23, wherein –

W-X-Y is:



wherein:

is a 5- to 7-membered carbocyclic or heterocyclic ring;

is a 5- or 6-membered heteroaryl;

R_1 represents from 0 to 2 substituents independently chosen from halogen, hydroxy, cyano, amino, nitro, aminocarbonyl, aminosulfonyl, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, (C_3-C_7cycloalkyl)C_0-C_4alkyl, and mono- or di-(C_1-C_6alkyl)amino; or two substituents represented by R_1 taken together with the atoms through which they are connected form a fused 3- to 7-membered carbocyclic or heterocyclic ring;

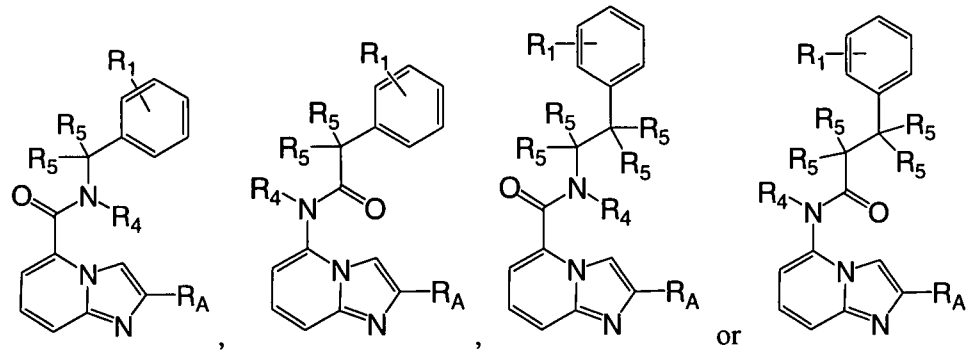
R_{1a} represents from 0 to 2 substituents independently chosen from halogen, hydroxy, cyano, amino, nitro, aminocarbonyl, aminosulfonyl, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, (C_3-C_7cycloalkyl)C_0-C_4alkyl, and mono- or di-(C_1-C_6alkyl)amino;

Each R_5 is independently hydrogen, C_1-C_6alkyl, C_3-C_7cycloalkyl or phenyl; or two R_5 taken together with the atom to which they are attached form a C_3-C_8cycloalkyl;

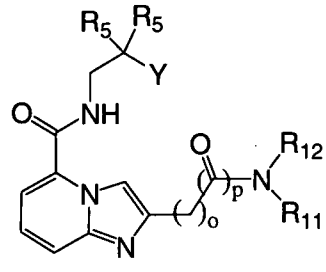
Q is CH_2, CO, O, NH, S, SO or SO_2; and

m is 0 or 1.

30. A compound or salt or hydrate thereof according to claim 29, wherein the compound has the formula:



31. A compound or salt or hydrate thereof according to claim 1, wherein the compound satisfies the formula:



wherein:

o is an integer ranging from 0 to 4;

p is 0 or 1;

each R_5 is independently hydrogen, C_1-C_6alkyl, (C_3-C_7cycloalkyl)C_0-C_2alkyl or phenylC_0-C_2alkyl; or two R_5 taken together with the atom to which they are attached form a C_3-C_8cycloalkyl or a 4- to 7-membered heterocycloalkyl;

Y is cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cycloheptyl, piperidinyl, piperazinyl, morpholinyl, 6,6-dimethyl-bicyclo[3.1.1]heptane-2-yl, adamantyl, phenyl or a 5- or 6-membered heteroaryl; each of which is substituted with from 0 to 4 substituents independently chosen from halogen, hydroxy, cyano, amino, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, and mono- or di-(C_1-C_6alkyl)amino; and

R_{11} and R_{12} are:

(i) independently chosen from:

(a) hydrogen, and

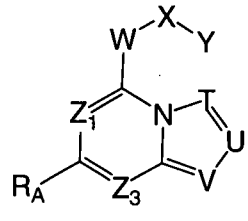
(b) C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_2-C_6alkyl ether, (C_3-C_7cycloalkyl)C_0-C_4alkyl, and phenylC_0-C_2alkyl, each of which is substituted with from 0 to 4 substituents independently chosen from hydroxy, halogen, cyano, amino, aminocarbonyl, aminosulfonyl, COOH, oxo, C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, C_2-C_6alkyl ether, mono- or di-(C_1-C_6alkyl)aminoC_0-

C_4alkyl, mono- or di-(C_1-C_6alkyl)aminocarbonyl, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, 4- to 7-membered heterocycloalkyl that is optionally substituted with one or two methyl groups, and 5- or 6-membered heteroaryl; or

(ii) R_{11} and R_{12} are taken together to form a 5- to 7-membered heterocycloalkyl that is substituted with from 0 to 4 substituents independently chosen from halogen, hydroxy, cyano, amino, aminocarbonyl, aminosulfonyl, COOH, oxo, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_2-C_6alkyl ether, (C_3-C_7cycloalkyl)C_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminocarbonyl, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, 4- to 7-membered heterocycloalkyl that is optionally substituted with one or two methyl groups, and 5- or 6-membered heteroaryl.

32. A compound or salt or hydrate thereof according to claim 1, wherein the compound is a compound recited in Table I or Table II.

33. A compound of the formula:



or a pharmaceutically acceptable salt or hydrate thereof, wherein:

T, U and V are independently chosen from CR_3, CR_A and N, such that exactly one of T, U and V is CR_A;

W is –C(=O)NR_4-, –NR_4C(=O)- or –NR_4-NR_4-C(=O)-;

X is absent or C_1-C_6alkylene that is substituted with from 0 to 4 substituents independently chosen from:

(i) C_1-C_4alkyl, (C_3-C_8cycloalkyl)C_0-C_2alkyl, (4- to 10-membered heterocycle)C_0-C_4alkyl and phenylC_0-C_2alkyl;

(ii) substituents that taken together with the atom to which they are attached or with the atoms through which they are connected form a 3- to 8-membered cycloalkyl or heterocycloalkyl ring; and

(iii) a substituent that taken together with R_4 and the atoms through which they are connected forms a 4- to 7-membered heterocycloalkyl;

Y is C_3-C_{16}cycloalkyl, 4- to 16-membered heterocycloalkyl, 6- to 16-membered aryl or 5- to 16-membered heteroaryl, each of which is substituted with from 0 to 6 substituents independently chosen from hydroxy, halogen, cyano, amino, nitro, oxo, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6aminoalkyl,

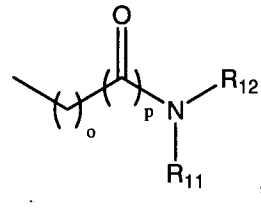
C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_2-C_6alkyl ether, C_1-C_6alkanoyl, C_1-C_6alkylsulfonyl, (C_3-C_7cycloalkyl)C_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)aminocarbonyl, mono- or di-(C_1-C_6alkyl)aminosulfonyl and (C_1-C_6alkyl)sulfonylamino;

Z_1 and Z_3 are independently N or CR_2;

Z_2 is N, CR_2 or CR_A;

Each R_2 and each R_3 is independently chosen from hydrogen, halogen, cyano, amino, nitro, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6aminoalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_1-C_6alkanoyl, C_2-C_6alkyl ether, (C_3-C_7cycloalkyl)C_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkylsulfonyl, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)aminocarbonyl, mono- or di-(C_1-C_6alkyl)aminosulfonyl and (C_1-C_6alkyl)sulfonylamino;

Each R_4 is independently hydrogen, C_1-C_6alkyl, or (C_3-C_8cycloalkyl)C_0-C_2alkyl, or R_4 taken together with a substituent of X and the atoms through which they are connected forms a 4- to 7-membered heterocycloalkyl;

R_A is a group of the formula -L-A, 

, or a group chosen from M, such that R_A is not absent, wherein:

L is absent or C_1-C_6alkylene that is optionally modified by the replacement of a carbon-carbon single bond with a double or triple carbon-carbon bond, and which alkylene is optionally substituted with oxo; and

A is absent or CO, O, NR_6, S, SO, SO_2, $CONR_6$, NR_6CO, (C_4-C_{12}cycloalkyl), (4- to 7-membered heterocycle), phenyl-E-, or (5- or 6-membered heterocycle)-E-; wherein R_6 is hydrogen or C_1-C_6alkyl and E is O, S, SO_2 or NH;

such that each –L-A is substituted with from 1 to 6 groups independently chosen from M; and

each M is:

(i) hydroxy, halogen, cyano, amino, imino, hydroxyimino, aminocarbonyl, aminosulfonyl or COOH;

(ii) C_1-C_6haloalkyl, C_1-C_6alkoxy, C_1-C_6alkylthio, (3- to 12-membered carbocycle)C_0-C_4alkyl, (4- to 10-membered heterocycle)C_0-C_4alkyl, C_2-C_6alkyl ether, C_1-C_6alkanoyl, C_1-C_6alkanoyloxy, C_1-C_6alkanoylamino, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylC_0-C_4alkyl, C_1-C_6alkylsulfonylamino, C_1-C_6alkylsulfonylaminoC_0-C_4alkyl, C_1-C_6alkylsulfonyloxy, mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminosulfonyl, mono- or di-(C_1-C_6alkyl)aminocarbonylC_0-C_4alkyl or C_1-C_6alkylsilyloxy; each of which is substituted with from 0 to 6 substituents independently chosen from oxo, amino, halogen, hydroxy, cyano, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl optionally

substituted with COOH, amino, cyano, C_1-C_6alkoxycarbonyl or C_1-C_6alkoxy, C_1-C_6hydroxyalkyl, C_1-C_6haloalkyl, imino, hydroxyimino, C_1-C_6alkoxy that is optionally substituted with C_1-C_6alkanoyloxy, C_1-C_6haloalkoxy, C_1-C_6alkoxy, C_2-C_6alkyl ether, C_1-C_6alkanoyl, C_1-C_6alkanoyloxy, C_1-C_6alkoxycarbonyl, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, mono- or di-(C_1-C_6alkyl)aminosulfonyl, mono- or di-(C_1-C_6alkylamino)carbonyl, phenyl optionally substituted with halogen or C_1-C_6haloalkyl, cycloalkyl, and 4- to 7-membered heterocycle; or

(iii) two M taken together with the atoms through which they are connected form a bridge of the Formula $-(CH_2)_q$-P-$(CH_2)_r$-, wherein q and r are independently 0 or 1 and P is CH_2, O, NH or S, the bridge optionally substituted with from 0 to 2 substituents independently chosen from oxo and C_1-C_4alkyl; or

(iv) when –L-A- is substituted by at least two M at the same atom of –L-A-, two M taken together with the atom to which they are attached form a 3- to 7-membered carbocyclic or heterocycloalkyl ring that is substituted with from 0 to 2 substituents independently chosen from oxo and C_1-C_4alkyl;

such that: (i) R_A is not C_1-C_6alkoxy; (ii) R_A is a group of the formula –L-A and L is not absent if a group represented by M is aromatic and Y is aromatic or a 6-membered heterocycloalkyl; and (iii) if Y is optionally substituted phenyl, then R_A is not C_1-C_4alkoxycarbonyl;

o is an integer ranging from 0 to 4;

p is 0 or 1; and

R_{11} and R_{12} are:

(i) independently chosen from:

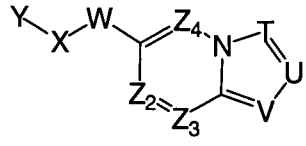
(a) hydrogen,

(b) C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_2-C_6alkyl ether, (C_3-C_7cycloalkyl)C_0-C_4alkyl, and phenylC_0-C_2alkyl, each of which is substituted with from 0 to 4 substituents independently chosen from hydroxy, halogen, cyano, amino, aminocarbonyl, aminosulfonyl, COOH, oxo, C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, C_2-C_6alkyl ether, mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminocarbonyl, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, 4- to 7-membered heterocycloalkyl that is optionally substituted with one or two methyl groups, and 5- or 6-membered heteroaryl; or

(ii) taken together to form a 5- to 7-membered heterocycloalkyl that is substituted with from 0 to 4 substituents independently chosen from halogen, hydroxy, cyano, amino, aminocarbonyl, aminosulfonyl, COOH, oxo, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-

C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_2-C_6alkyl ether, (C_3-C_7cycloalkyl)C_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminocarbonyl, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, 4- to 7-membered heterocycloalkyl that is optionally substituted with one or two methyl groups, and 5- or 6-membered heteroaryl.

34. A compound of the formula:



or a pharmaceutically acceptable salt or hydrate thereof, wherein:

T, U and V are independently chosen from CR_3, CR_A and N, such that exactly one of T, U and V is CR_A;

W is $-C(=O)NR_4-$, $-NR_4C(=O)-$ or $-NR_4-NR_4-C(=O)-$;

X is absent or C_1-C_6alkylene that is substituted with from 0 to 4 substituents independently chosen from:

(i) C_1-C_4alkyl, (C_3-C_8cycloalkyl)C_0-C_2alkyl, (4- to 10-membered heterocycle)C_0-C_4alkyl and phenylC_0-C_2alkyl;

(ii) substituents that taken together with the atom to which they are attached or with the atoms through which they are connected form a 3- to 8-membered cycloalkyl or heterocycloalkyl ring; and

(iii) a substituent that taken together with R_4 and the atoms through which they are connected forms a 4- to 7-membered heterocycloalkyl;

Y is C_3-C_{16}cycloalkyl, 4- to 16-membered heterocycloalkyl, 6- to 16-membered aryl or 5- to 16-membered heteroaryl, each of which is substituted with from 0 to 6 substituents independently chosen from hydroxy, halogen, cyano, amino, nitro, oxo, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6aminoalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_2-C_6alkyl ether, C_1-C_6alkanoyl, C_1-C_6alkylsulfonyl, (C_3-C_7cycloalkyl)C_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)aminocarbonyl, mono- or di-(C_1-C_6alkyl)aminosulfonyl and (C_1-C_6alkyl)sulfonylamino;

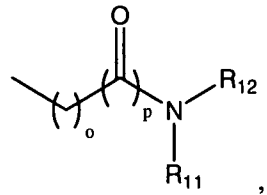
Z_1 and Z_3 are independently N or CR_2;

Z_2 is N, CR_2 or CR_A;

Each R_2 and each R_3 is independently chosen from hydrogen, halogen, cyano, amino, nitro, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6aminoalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_1-C_6alkanoyl, C_2-C_6alkyl ether, (C_3-C_7cycloalkyl)C_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkylsulfonyl, C_1-

C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)aminocarbonyl, mono- or di-(C_1-C_6alkyl)aminosulfonyl and (C_1-C_6alkyl)sulfonylamino;

Each R_4 is independently hydrogen, C_1-C_6alkyl, or (C_3-C_8cycloalkyl)C_0-C_2alkyl, or R_4 taken together with a substituent of X and the atoms through which they are connected forms a 4- to 7-membered heterocycloalkyl;



R_A is a group of the formula -L-A, , or a group chosen from M, such that R_A is not absent, wherein:

L is absent or C_1-C_6alkylene that is optionally modified by the replacement of a carbon-carbon single bond with a double or triple carbon-carbon bond, and which alkylene is optionally substituted with oxo; and

A is absent or CO, O, NR_6, S, SO, SO_2, $CONR_6$, NR_6CO, (C_4-C_{12}cycloalkyl), (4- to 7-membered heterocycle), phenyl-E-, or (5- or 6-membered heterocycle)-E-; wherein R_6 is hydrogen or C_1-C_6alkyl and E is O, S, SO_2 or NH;

such that each –L-A is substituted with from 1 to 6 groups independently chosen from M; and

each M is:

(i) hydroxy, halogen, cyano, amino, imino, hydroxyimino, aminocarbonyl, aminosulfonyl or COOH;

(ii) C_1-C_6haloalkyl, C_1-C_6alkoxy, C_1-C_6alkylthio, (3- to 12-membered carbocycle)C_0-C_4alkyl, (4- to 10-membered heterocycle)C_0-C_4alkyl, C_2-C_6alkyl ether, C_1-C_6alkanoyl, C_1-C_6alkanoyloxy, C_1-C_6alkanoylamino, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylC_0-C_4alkyl, C_1-C_6alkylsulfonylamino, C_1-C_6alkylsulfonylaminoC_0-C_4alkyl, C_1-C_6alkylsulfonyloxy, mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminosulfonyl, mono- or di-(C_1-C_6alkyl)aminocarbonylC_0-C_4alkyl or C_1-C_6alkylsilyloxy; each of which is substituted with from 0 to 6 substituents independently chosen from oxo, amino, halogen, hydroxy, cyano, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl optionally substituted with COOH, amino, cyano, C_1-C_6alkoxycarbonyl or C_1-C_6alkoxy, C_1-C_6hydroxyalkyl, C_1-C_6haloalkyl, imino, hydroxyimino, C_1-C_6alkoxy that is optionally substituted with C_1-C_6alkanoyloxy, C_1-C_6haloalkoxy, C_1-C_6alkoxy, C_2-C_6alkyl ether, C_1-C_6alkanoyl, C_1-C_6alkanoyloxy, C_1-C_6alkoxycarbonyl, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, mono- or di-(C_1-C_6alkyl)aminosulfonyl, mono- or di-(C_1-C_6alkylamino)carbonyl, phenyl optionally substituted with halogen or C_1-C_6haloalkyl, cycloalkyl, and 4- to 7-membered heterocycle; or

(iii) two M taken together with the atoms through which they are connected form a bridge of the Formula $-(CH_2)_q-P-(CH_2)_r-$, wherein q and r are independently 0 or 1 and P is CH_2, O, NH or S, the bridge optionally substituted with from 0 to 2 substituents independently chosen from oxo and C_1-C_4alkyl; or

(iv) when –L-A- is substituted by at least two M at the same atom of –L-A-, two M taken together with the atom to which they are attached form a 3- to 7-membered carbocyclic or heterocycloalkyl ring that is substituted with from 0 to 2 substituents independently chosen from oxo and C_1-C_4alkyl;

such that: (i) R_A is not C_1-C_6alkoxy; (ii) R_A is a group of the formula –L-A and L is not absent if a group represented by M is aromatic and Y is aromatic or a 6-membered heterocycloalkyl; and (iii) if Y is optionally substituted phenyl, then R_A is not C_1-C_4alkoxycarbonyl;

o is an integer ranging from 0 to 4;

p is 0 or 1; and

R_{11} and R_{12} are:

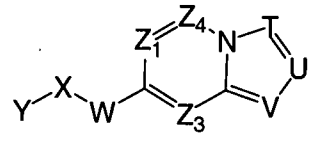
(i) independently chosen from:

(a) hydrogen,

(b) C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_2-C_6alkyl ether, (C_3-C_7cycloalkyl)C_0-C_4alkyl, and phenylC_0-C_2alkyl, each of which is substituted with from 0 to 4 substituents independently chosen from hydroxy, halogen, cyano, amino, aminocarbonyl, aminosulfonyl, COOH, oxo, C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, C_2-C_6alkyl ether, mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminocarbonyl, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, 4- to 7-membered heterocycloalkyl that is optionally substituted with one or two methyl groups, and 5- or 6-membered heteroaryl; or

(ii) taken together to form a 5- to 7-membered heterocycloalkyl that is substituted with from 0 to 4 substituents independently chosen from halogen, hydroxy, cyano, amino, aminocarbonyl, aminosulfonyl, COOH, oxo, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_2-C_6alkyl ether, (C_3-C_7cycloalkyl)C_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminocarbonyl, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, 4- to 7-membered heterocycloalkyl that is optionally substituted with one or two methyl groups, and 5- or 6-membered heteroaryl.

35. A compound of the formula:



or a pharmaceutically acceptable salt or hydrate thereof, wherein:

T, U and V are independently chosen from CR_3, CR_A and N, such that exactly one of T, U and V is CR_A;

W is $-C(=O)NR_4-$, $-NR_4C(=O)-$ or $-NR_4-NR_4-C(=O)-$;

X is absent or C_1-C_6alkylene that is substituted with from 0 to 4 substituents independently chosen from:

(i) C_1-C_4alkyl, (C_3-C_8cycloalkyl)C_0-C_2alkyl, (4- to 10-membered heterocycle)C_0-C_4alkyl and phenylC_0-C_2alkyl;

(ii) substituents that taken together with the atom to which they are attached or with the atoms through which they are connected form a 3- to 8-membered cycloalkyl or heterocycloalkyl ring; and

(iii) a substituent that taken together with R_4 and the atoms through which they are connected forms a 4- to 7-membered heterocycloalkyl;

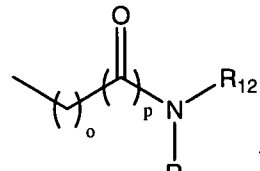
Y is C_3-C_{16}cycloalkyl, 4- to 16-membered heterocycloalkyl, 6- to 16-membered aryl or 5- to 16-membered heteroaryl, each of which is substituted with from 0 to 6 substituents independently chosen from hydroxy, halogen, cyano, amino, nitro, oxo, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6aminoalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_2-C_6alkyl ether, C_1-C_6alkanoyl, C_1-C_6alkylsulfonyl, (C_3-C_7cycloalkyl)C_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)aminocarbonyl, mono- or di-(C_1-C_6alkyl)aminosulfonyl and (C_1-C_6alkyl)sulfonylamino;

Z_1 and Z_3 are independently N or CR_2;

Z_2 is N, CR_2 or CR_A;

Each R_2 and each R_3 is independently chosen from hydrogen, halogen, cyano, amino, nitro, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6aminoalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_1-C_6alkanoyl, C_2-C_6alkyl ether, (C_3-C_7cycloalkyl)C_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkylsulfonyl, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)aminocarbonyl, mono- or di-(C_1-C_6alkyl)aminosulfonyl and (C_1-C_6alkyl)sulfonylamino;

Each R_4 is independently hydrogen, C_1-C_6alkyl, or (C_3-C_8cycloalkyl)C_0-C_2alkyl, or R_4 taken together with a substituent of X and the atoms through which they are connected forms a 4- to 7-membered heterocycloalkyl;



R_A is a group of the formula -L-A, , or a group chosen from M, such that R_A is not absent, wherein:

L is absent or C_1-C_6alkylene that is optionally modified by the replacement of a carbon-carbon single bond with a double or triple carbon-carbon bond, and which alkylene is optionally substituted with oxo; and

A is absent or CO, O, NR_6, S, SO, SO_2, $CONR_6$, NR_6CO, (C_4-C_{12}cycloalkyl), (4- to 7-membered heterocycle), phenyl-E-, or (5- or 6-membered heterocycle)-E-; wherein R_6 is hydrogen or C_1-C_6alkyl and E is O, S, SO_2 or NH;

such that each –L-A is substituted with from 1 to 6 groups independently chosen from M; and

each M is:

(i) hydroxy, halogen, cyano, amino, imino, hydroxyimino, aminocarbonyl, aminosulfonyl or COOH;

(ii) C_1-C_6haloalkyl, C_1-C_6alkoxy, C_1-C_6alkylthio, (3- to 12-membered carbocycle)C_0-C_4alkyl, (4- to 10-membered heterocycle)C_0-C_4alkyl, C_2-C_6alkyl ether, C_1-C_6alkanoyl, C_1-C_6alkanoyloxy, C_1-C_6alkanoylamino, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylC_0-C_4alkyl, C_1-C_6alkylsulfonylamino, C_1-C_6alkylsulfonylaminoC_0-C_4alkyl, C_1-C_6alkylsulfonyloxy, mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminosulfonyl, mono- or di-(C_1-C_6alkyl)aminocarbonylC_0-C_4alkyl or C_1-C_6alkylsilyloxy; each of which is substituted with from 0 to 6 substituents independently chosen from oxo, amino, halogen, hydroxy, cyano, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl optionally substituted with COOH, amino, cyano, C_1-C_6alkoxycarbonyl or C_1-C_6alkoxy, C_1-C_6hydroxyalkyl, C_1-C_6haloalkyl, imino, hydroxyimino, C_1-C_6alkoxy that is optionally substituted with C_1-C_6alkanoyloxy, C_1-C_6haloalkoxy, C_1-C_6alkoxy, C_2-C_6alkyl ether, C_1-C_6alkanoyl, C_1-C_6alkanoyloxy, C_1-C_6alkoxycarbonyl, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, mono- or di-(C_1-C_6alkyl)aminosulfonyl, mono- or di-(C_1-C_6alkylamino)carbonyl, phenyl optionally substituted with halogen or C_1-C_6haloalkyl, cycloalkyl, and 4- to 7-membered heterocycle; or

(iii) two M taken together with the atoms through which they are connected form a bridge of the Formula -$(CH_2)_q$-P-$(CH_2)_r$-, wherein q and r are independently 0 or 1 and P is CH_2, O, NH or S, the bridge optionally substituted with from 0 to 2 substituents independently chosen from oxo and C_1-C_4alkyl; or

(iv) when –L-A- is substituted by at least two M at the same atom of –L-A-, two M taken together with the atom to which they are attached form a 3- to 7-membered carbocyclic or

heterocycloalkyl ring that is substituted with from 0 to 2 substituents independently chosen from oxo and C_1-C_4alkyl;

such that: (i) R_A is not C_1-C_6alkoxy; (ii) R_A is a group of the formula –L-A and L is not absent if a group represented by M is aromatic and Y is aromatic or a 6-membered heterocycloalkyl; and (iii) if Y is optionally substituted phenyl, then R_A is not C_1-C_4alkoxycarbonyl;

o is an integer ranging from 0 to 4;

p is 0 or 1; and

R_{11} and R_{12} are:

(i) independently chosen from:

(a) hydrogen,

(b) C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_2-C_6alkyl ether, (C_3-C_7cycloalkyl)C_0-C_4alkyl, and phenylC_0-C_2alkyl, each of which is substituted with from 0 to 4 substituents independently chosen from hydroxy, halogen, cyano, amino, aminocarbonyl, aminosulfonyl, COOH, oxo, C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, C_2-C_6alkyl ether, mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminocarbonyl, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, 4- to 7-membered heterocycloalkyl that is optionally substituted with one or two methyl groups, and 5- or 6-membered heteroaryl; or

(ii) taken together to form a 5- to 7-membered heterocycloalkyl that is substituted with from 0 to 4 substituents independently chosen from halogen, hydroxy, cyano, amino, aminocarbonyl, aminosulfonyl, COOH, oxo, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_2-C_6alkyl ether, (C_3-C_7cycloalkyl)C_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminocarbonyl, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, 4- to 7-membered heterocycloalkyl that is optionally substituted with one or two methyl groups, and 5- or 6-membered heteroaryl.

36. A compound or salt or hydrate thereof according to any one of claims 1-35, wherein the compound exhibits no detectable agonist activity an *in vitro* assay of $P2X_7$ receptor agonism.

37. A compound or salt or hydrate thereof according to any one of claims 1-36, wherein the compound has an IC_{50} value of 20 micromolar or less in an assay for $P2X_7$ receptor antagonism.

38. A pharmaceutical composition, comprising at least one compound or salt or hydrate thereof according to any one of claims 1-37 in combination with a physiologically acceptable carrier or excipient.

39. A pharmaceutical composition according to claim 38, wherein the composition is formulated as an injectible fluid, an aerosol, a cream, an oral liquid, a tablet, a gel, a pill, a capsule, a syrup, or a transdermal patch.

40. A method for modulating the activity of a $P2X_7$ receptor *in vitro*, the method comprising contacting $P2X_7$ receptor with at least one compound or salt or hydrate thereof according to any one of claims 1-37, under conditions and in an amount sufficient to detectably alter $P2X_7$ receptor activity.

41. A method for modulating the activity of a $P2X_7$ receptor in a patient, comprising contacting cells expressing $P2X_7$ receptor with at least one compound or salt or hydrate thereof according to any one of claims 1-37, in an amount sufficient to detectably alter $P2X_7$ receptor activity *in vitro*, and thereby altering the activity of the $P2X_7$ receptor in the patient.

42. A method according to claim 41, wherein the patient is a human.

43. A method for treating a condition responsive to $P2X_7$ receptor modulation in a patient, comprising administering to the patient a therapeutically effective amount of at least one compound or salt or hydrate thereof according to any one of claims 1-37, and thereby alleviating the condition in the patient.

44. A method according to claim 43, wherein the condition is pain.

45. A method according to claim 44, wherein the pain is neuropathic pain.

46. A method according to claim 44, wherein the pain is arthritis-associated pain, a neuropathic pain syndrome, visceral pain, dental pain, headache, stump pain, meralgia paresthetica, burning-mouth syndrome, pain associated with nerve and root damage, causalgia, neuritis, neuronitis, neuralgia, surgery-related pain, musculoskeletal pain, central nervous system pain, spinal pain, Charcot's pains, ear pain, muscle pain, eye pain, orofacial pain, carpel tunnel syndrome, acute and chronic back pain, gout, scar pain, hemorrhoidal pain, dyspeptic pains, angina, nerve root pain, complex regional pain syndrome, cancer-associated pain, pain associated with venom exposure, trauma-associated pain, pain associated with autoimmune diseases or immunodeficiency disorders, or pain that results from hot flashes, burns, sunburn, or exposure to heat, cold or external chemical stimuli.

47. A method according to claim 43, wherein the condition is inflammation, a neurological or neurodegenerative disorder, a cardiovascular disorder or an immune system disorder.

48. A method according to claim 43, wherein the condition is osteoarthritis, rheumatoid arthritis, lupus erythematosus, multiple sclerosis, arthrosclerosis, glaucoma, irritable bowel

syndrome, inflammatory bowel disease, Alzheimer's disease, traumatic brain injury, asthma, chronic obstructive pulmonary disease, or interstitial fibrosis.

49. A method for inhibiting death of retinal ganglion cells in a patient, comprising administering to the patient a therapeutically effective amount of at least one compound or salt or hydrate thereof according to any one of claims 1-37, and thereby inhibiting death of retinal ganglion cells in the patient.

50. A method according to any one of claims 43-49, wherein the patient is a human.

51. A compound or salt or hydrate thereof according to any one of claims 1, 33, 34 or 35, wherein the compound is radiolabeled.

52. A method for determining the presence or absence of $P2X_7$ receptor in a sample, comprising the steps of:

(a) contacting a sample with a compound or salt or hydrate thereof according to any one of claims 1-37, under conditions that permit modulation by the compound of $P2X_7$ receptor activity; and

(b) detecting a signal indicative of a level of the compound or salt or hydrate thereof modulating $P2X_7$ receptor activity, and therefrom determining the presence or absence of $P2X_7$ receptor in the sample.

53. A packaged pharmaceutical preparation, comprising:

(a) a pharmaceutical composition according to claim 38 in a container; and

(b) instructions for using the composition to treat pain.

54. A packaged pharmaceutical preparation, comprising:

(a) a pharmaceutical composition according to claim 38 in a container; and

(b) instructions for using the composition to treat inflammation, a neurological or neurodegenerative disorder, a cardiovascular disorder or an immune system disorder.

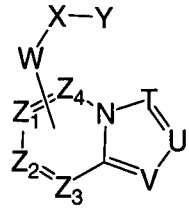
55. A method for treating or preventing cirrhosis in a patient, comprising administering to the patient a therapeutically effective amount of a $P2X_7$ antagonist.

56. A method according to claim 55, wherein the $P2X_7$ antagonist exhibits an IC_{50} that is 20 micromolar or less in an *in vitro* assay for $P2X_7$ receptor antagonist activity.

57. A method according to claim 56, wherein the $P2X_7$ antagonist exhibits an IC_{50} that is 1 micromolar or less in an *in vitro* assay for $P2X_7$ receptor antagonist activity.

58. A method according to claim 57, wherein the $P2X_7$ antagonist exhibits no detectable agonist activity in an *in vitro* assay for $P2X_7$ receptor agonist activity.

59. A method according to any one of claims 55-58, wherein the $P2X_7$ antagonist has the formula:



or is a pharmaceutically acceptable salt or solvate thereof, wherein:

T, U and V are independently chosen from CR_3, CR_A and N; in certain embodiments, exactly one of T, U and V is CR_A;

W is $-C(=O)NR_4-$, $-NR_4C(=O)-$ or $-NR_4-NR_4-C(=O)-$; and is attached via a carbon atom at Z_1, Z_2 or Z_4;

X is absent or C_1-C_6alkylene that is substituted with from 0 to 4 substituents independently chosen from: (i) C_1-C_4alkyl, (C_3-C_8cycloalkyl)C_0-C_2alkyl, (4- to 10-membered heterocycle)C_0-C_4alkyl and phenylC_0-C_2alkyl; (ii) substituents that taken together with the atom to which they are attached or with the atoms through which they are connected form a 3- to 8-membered cycloalkyl or heterocycloalkyl ring; ; and (iii) a substituent that taken together with R_4 and the atoms through which they are connected forms a 4- to 7-membered heterocycloalkyl

Y is C_1-C_8alkyl, C_3-C_{16}cycloalkyl, 4- to 16-membered heterocycloalkyl, 6- to 16-membered aryl or (5- to 16-membered heteroaryl, each of which is optionally substituted and each of which is preferably substituted with from 0 to 6 substituents independently chosen from hydroxy, halogen, cyano, amino, nitro, oxo, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6aminoalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_2-C_6alkyl ether, C_1-C_6alkanoyl, C_1-C_6alkylsulfonyl, (C_3-C_7cycloalkyl)C_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)aminocarbonyl, mono- or di-(C_1-C_6alkyl)aminosulfonyl and (C_1-C_6alkyl)sulfonylamino; or Y is substituted by at least two substituents taken together with the atoms through which they are connected form a bridge the Formula $-(CH_2)_q$-P-$(CH_2)_r$-, wherein q and r are independently 0 or 1 and P is CH_2, O, NH or S, the bridge optionally substituted with from 0 to 2 substituents independently chosen from C_1-C_4alkyl; or

Y is substituted by at least two substituents taken together with the atom to which they are attached form a spiro 3- to 7-membered carbocyclic or heterocycloalkyl ring;

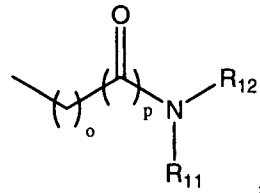
Z_1, Z_3 and Z_4 are independently N, CH or a substituted carbon (*e.g.*, CR_2);

Z_2 is N, CH or a substituted carbon (*e.g.*, CR_A or CR_2);

Each R_2 and each R_3 is independently chosen from hydrogen, halogen, cyano, amino, nitro, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6aminoalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_1-C_6alkanoyl, C_2-C_6alkyl

ether, (C_3-C_7cycloalkyl)C_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkylsulfonyl, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)aminocarbonyl, mono- or di-(C_1-C_6alkyl)aminosulfonyl and (C_1-C_6alkyl)sulfonylamino;

Each R_4 is independently hydrogen, C_1-C_6alkyl, or (C_3-C_8cycloalkyl)C_0-C_2alkyl; or R_4 taken together with a substituent of X and the atoms through which they are connected forms a 4- to 7-membered heterocycloalkyl;



R_A is a group of the formula -L-A, , or a group chosen from M, such that R_A is not absent, wherein:

L is absent or C_1-C_6alkylene that is optionally modified by the replacement of a carbon-carbon single bond with a double or triple carbon-carbon bond, which alkylene is optionally substituted with oxo; and

A is absent or CO, O, NR_6, S, SO, SO_2, $CONR_6$, NR_6CO, (C_4-C_{12}cycloalkyl), (4- to 7-membered heterocycle), phenyl-E-, or (5- or 6-membered heterocycle)-E-; wherein R_6 is hydrogen or C_1-C_6alkyl and E is O, S, SO_2 or NH;

such that each –L-A is substituted with from 0 to 6, or from 1 to 6, groups independently chosen from M; and

each M is:

(i) C_1-C_6haloalkyl, C_1-C_6alkoxy, C_1-C_6alkylthio, (3- to 12-membered carbocycle)C_0-C_4alkyl, (4- to 10-membered heterocycle)C_0-C_4alkyl, C_2-C_6alkyl ether, C_1-C_6alkanoyl, C_1-C_6alkanoyloxy, C_1-C_6alkanoylamino, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylC_0-C_4alkyl, C_1-C_6alkylsulfonylamino, C_1-C_6alkylsulfonylaminoC_0-C_4alkyl, C_1-C_6alkylsulfonyloxy, mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminosulfonyl, mono- or di-(C_1-C_6alkyl)aminocarbonylC_0-C_4alkyl or C_1-C_6alkylsilyloxy; each of which is substituted with from 0 to 6 substituents independently chosen from oxo, amino, halogen, hydroxy, cyano, aminocarbonyl, aminosulfonyl, COOH, C_1-C_6alkyl optionally substituted with COOH, amino, cyano, C_1-C_6alkoxycarbonyl or C_1-C_6alkoxy, C_1-C_6hydroxyalkyl, C_1-C_6haloalkyl, imino, hydroxyimino, C_1-C_6alkoxy that is optionally substituted with C_1-C_6alkanoyloxy, C_1-C_6haloalkoxy, C_1-C_6alkoxy, C_2-C_6alkyl ether, C_1-C_6alkanoyl, C_1-C_6alkanoyloxy, C_1-C_6alkoxycarbonyl, C_1-C_6alkanoylamino, mono- or di-(C_1-C_6alkyl)amino, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, mono- or di-(C_1-C_6alkyl)aminosulfonyl, mono- or di-(C_1-C_6alkylamino)carbonyl, phenyl optionally substituted with halogen or C_1-C_6haloalkyl, cycloalkyl, and 4- to 7-membered heterocycle; or

(iii) two M taken together with the atoms through which they are connected form a bridge of the Formula $-(CH_2)_q-P-(CH_2)_r-$, wherein q and r are independently 0 or 1 and P is CH_2, O, NH or S, the bridge optionally substituted with from 0 to 2 substituents independently chosen from oxo and C_1-C_4alkyl; or

(iv) when –L-A- is substituted by at least two M at the same atom of –L-A-, two M taken together with the atom to which they are attached form a spiro 3- to 7-membered carbocyclic or heterocycloalkyl ring that is substituted with from 0 to 2 substituents independently chosen from oxo and C_1-C_4alkyl;

o is an integer ranging from 0 to 4;

p is 0 or 1; and

R_{11} and R_{12} are:

(i) independently chosen from:

(a) hydrogen,

(b) C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_2-C_6alkyl ether, (C_3-C_7cycloalkyl)C_0-C_4alkyl, and phenylC_0-C_2alkyl, each of which is substituted with from 0 to 4 substituents independently chosen from hydroxy, halogen, cyano, amino, aminocarbonyl, aminosulfonyl, COOH, oxo, C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, C_2-C_6alkyl ether, mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminocarbonyl, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, 4- to 7-membered heterocycloalkyl that is optionally substituted with one or two methyl groups, and 5- or 6-membered heteroaryl; or

(ii) taken together to form a 5- to 7-membered heterocycloalkyl that is substituted with from 0 to 4 substituents independently chosen from halogen, hydroxy, cyano, amino, aminocarbonyl, aminosulfonyl, COOH, oxo, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_6haloalkyl, C_1-C_6hydroxyalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_2-C_6alkyl ether, (C_3-C_7cycloalkyl)C_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminoC_0-C_4alkyl, mono- or di-(C_1-C_6alkyl)aminocarbonyl, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfonylamino, 4- to 7-membered heterocycloalkyl that is optionally substituted with one or two methyl groups, and 5- or 6-membered heteroaryl.

60. The use of a compound or salt or hydrate thereof according to any one of claims 1-37 for the manufacture of a medicament for the treatment of a condition responsive to $P2X_7$ receptor modulation.

61. A use according to claim 60, wherein the condition is pain, inflammation, a neurological or neurodegenerative disorder, a cardiovascular disorder or an immune system disorder.