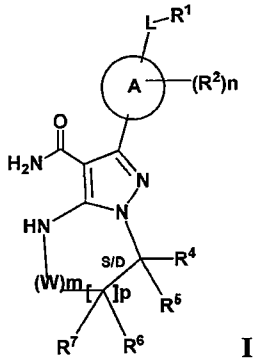
WHAT IS CLAIMED IS:

1. A compound of formula:



I

stereoisomers thereof, and pharmaceutically acceptable salts thereof, wherein:

A is a 5- or 6-membered aromatic ring comprising 0-3 heteroatoms of N, S or O;

each W is independently $-(CH_2)-$ or -C(O)-;

L is a bond, $CH_2$, $NR^{12}$, O, or S;

S/D is a single or double bond, and when a double bond, $R^5$ and $R^7$ are absent;

m is 0, or an integer of 1-4;

n is 0, or an integer of 1-4, wherein when n is more than 1, each $R^2$ may be different;

p is 0, or an integer of 1-2, wherein when p is 0, m is non-zero, and when p is more than 1, each $R^6$ and each $R^7$ may be different;

$R^1$, $R^4$, $R^5$, $R^6$,and $R^7$ are each independently H, halogen, heteroalkyl, alkyl,alkenyl, cycloalkyl, aryl, saturated or unsaturated heterocyclyl, heteroaryl, alkynyl,-CN, $-NR^{13}R^{14}$, $-OR^{13}$, $-COR^{13}$, $-CO_2R^{13}$, $-CONR^{13}R^{14}$, $-C(=NR^{13})NR^{14}R^{15}$, $-NR^{13}COR^{14}$, $-NR^{13}CONR^{14}R^{15}$, $-NR^{13}CO_2R^{14}$, $-SO_2R^{13}$, $-NR^{13}SO_2NR^{14}R^{15}$, or $-NR^{13}SO_2R^{14}$, wherein the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and saturated or unsaturated heterocyclyl are optionally substituted with at least one substituent $R^{16}$,wherein ($R^4$ and $R^5$), or ($R^4$ and $R^6$), or ($R^6$ and $R^7$), or ($R^6$ and $R^6$ when p is 2), together with the atoms to which they are attached, can form a ring selected from cycloalkyl, saturated or unsaturated heterocycle, aryl, and heteroaryl rings optionally substituted with at least one substituent $R^{16}$;

$R^2$ is halogen, alkyl, -S-alkyl, -CN, $-NR^{13}R^{14}$, $-OR^{13}$, $-COR^{13}$, $-CO_2R^{13}$, $-CONR^{13}R^{14}$, $-C(=NR^{13})NR^{14}R^{15}$, $-NR^{13}COR^{14}$, $-NR^{13}CONR^{14}R^{15}$, $-NR^{13}CO_2R^{14}$, $-SO_2R^{13}$, $-NR^{13}SO_2NR^{14}R^{15}$, or $-NR^{13}SO_2R^{14}$;

$R^{12}$ is H or lower alkyl;

$R^{13}$, $R^{14}$ and $R^{15}$ are each independently H, heteroalkyl, alkyl, alkenyl, alkynyl, cycloalkyl, saturated or unsaturated heterocyclyl, aryl, or heteroaryl; wherein ($R^{13}$ and $R^{14}$), and/or ($R^{14}$ and $R^{15}$) together with the atom(s) to which they are attached, each can form a ring selected from cycloalkyl, saturated or unsaturated heterocycle, aryl, and heteroaryl rings optionally substituted with at least one substituent $R^{16}$;

$R^{16}$ is halogen, subsituted or unsubstitued alkyl, substituted or unsubstituted alkenyl, subsituted or unsubstitued alkynyl, subsituted or unsubstitued cycloalkyl, subsituted or unsubstitued aryl, subsituted or unsubstitued heteroaryl, subsituted or unsubstitued heterocyclyl, oxo, -CN, -OR', -NR'R'', -COR', -$CO_2$R', -CONR'R'', -C(=NR')NR''R''', -NR'COR'', -NR'CONR'R'', -NR'$CO_2$R'', -$SO_2$R', -$SO_2$aryl, -NR'$SO_2$NR''R''', or -NR'$SO_2$R'', wherein R', R'', and R''' are independently hydrogen, halogen, subsituted or unsubstitued alkyl, substituted or unsubstituted alkenyl, subsituted or unsubstitued alkynyl, subsituted or unsubstitued cycloalkyl, subsituted or unsubstitued aryl, subsituted or unsubstitued heteroaryl, subsituted or unsubstitued heterocyclyl, wherein (R' and R''), and/or (R'' and R''') together with the atoms to which they are attached, can form a ring selected from cycloalkyl, saturated or unsaturated heterocycle, aryl, and heteroaryl rings.

2. The compound of claim 1, comprising one or more embodiments:

(a) S/D is a double bond and $R^5$ and $R^7$ are absent;

(b) $R^1$ is H, halogen, alkoxy, heteroalkyl, alkyl, alkenyl, cycloalkyl, aryl, saturated or unsaturated heterocyclyl, heteroaryl, wherein the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and saturated or unsaturated heterocyclyl are optionally substituted with at least one substituent $R^{16}$;

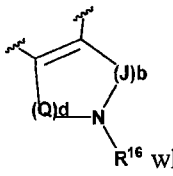
(c) p is 1 and m is 0, 1 or 2;

(d) A is phenyl;

(e) each $R^2$ is independently halogen, lower alkyl, or lower alkoxy;

(f) $R^4$ and $R^6$, together with the atoms to which they are attached, form a ring selected from cycloalkyl, saturated or unsaturated heterocycle, aryl, and heteroaryl rings optionally substituted with at least one substituent $R^{16}$;

(g) $R^4$ and $R^6$, together with the atoms to which they are attached, form a ring of formula:




wherein:

Q is -$CH_2$- ; J is -$CH_2$-; and d and b are each independently 0, or an integer of 1-4;

(h) S/D is a single bond; and/or

(i) p is 0 and $R^6$ and $R^7$ are absent.

3. The compound of claim 1, wherein:

(*i*) S/D is a double bond and $R^5$ and $R^7$ are absent; $R^1$ is H, halogen, alkoxy,heteroalkyl, alkyl, alkenyl, cycloalkyl, aryl, saturated or unsaturated heterocyclyl, heteroaryl, wherein the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and saturated or unsaturated heterocyclyl are optionally substituted with at least one substituent $R^{16}$; and $R^{16}$ is halogen, lower alkyl, or lower alkoxy; or

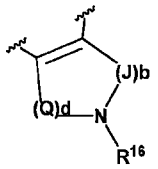
(*ii*) S/D is a double bond and $R^5$ and $R^7$ are absent; p is 1 and m is 0, 1 or 2; or

(*iii*) S/D is a double bond and $R^5$ and $R^7$ are absent; p is 1 and m is 0, 1 or 2; A is phenyl; and each $R^2$ is independently halogen, lower alkyl, or lower alkoxy; or

(*iv*) S/D is a double bond and $R^5$ and $R^7$ are absent; and $R^4$ and $R^6$, together with the atoms to which they are attached, form a ring selected from cycloalkyl, saturated or unsaturated heterocycle, aryl, and heteroaryl rings optionally substituted with at least one substituent $R^{16}$; or

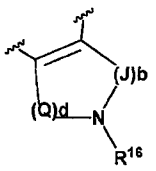
(*v*) S/D is a double bond and $R^5$ and $R^7$ are absent; $R^4$ and $R^6$, together with the atoms to which they are attached, form a ring selected from cycloalkyl, saturated or unsaturated heterocycle, aryl, and heteroaryl rings optionally substituted with at least one substituent $R^{16}$; A is phenyl; and each $R^2$ is independently halogen, lower alkyl, or lower alkoxy; or

(*vi*) S/D is a double bond and $R^5$ and $R^7$ are absent; $R^4$ and $R^6$, together with the atoms to which they are attached, form a ring selected from cycloalkyl, saturated or unsaturated heterocycle, aryl, and heteroaryl rings optionally substituted with at least one substituent $R^{16}$; p is 1 and m is 0, 1 or 2; A is phenyl; each $R^2$ is independently halogen, lower alkyl, or lower alkoxy; and the $R^4$-$R^6$ ring is of formula:




wherein Q is -$CH_2$- ; J is -$CH_2$-; and d and b are each independently 0, or an integer of 1-4; or

(*vii*) S/D is a double bond and $R^5$ and $R^7$ are absent; $R^4$ and $R^6$, together with the atoms to which they are attached, form a ring selected from cycloalkyl, saturated or unsaturated heterocycle, aryl, and heteroaryl rings optionally substituted with at least one substituent $R^{16}$; p is 1 and m is 0, 1 or 2; A is phenyl; each $R^2$ is independently halogen, lower alkyl, or lower alkoxy; and the $R^4$-$R^6$ ring is of formula:



wherein Q is $-CH_2-$ ; J is $-CH_2-$; and d and b are each independently 0, or an integer of 1-4; and $R^1$ is H, halogen, alkoxy, heteroalkyl, alkyl, alkenyl, cycloalkyl, aryl, saturated or unsaturated heterocyclyl, heteroaryl, wherein the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and saturated or unsaturated heterocyclyl are optionally substituted with at least one substituent $R^{16}$; or

(*viii*) S/D is a single bond; p is 1 and m is 0, 1 or 2; A is phenyl; each $R^2$ is independently halogen, lower alkyl, or lower alkoxy; or

(*ix*) S/D is a single bond; p is 1 and m is 0, 1 or 2; A is phenyl; each $R^2$ is independently halogen, lower alkyl, or lower alkoxy, and $R^1$ is H, halogen, alkoxy, heteroalkyl, alkyl, alkenyl, cycloalkyl, aryl, saturated or unsaturated heterocyclyl, heteroaryl, wherein the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and saturated or unsaturated heterocyclyl are optionally substituted with at least one substituent $R^{16}$; and $R^{16}$ is halogen, lower alkyl, or lower alkoxy; or

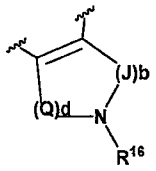
(*x*) S/D is a single bond; p is 0 and $R^6$ and $R^7$ are absent; A is phenyl; and each $R^2$ is independently halogen, lower alkyl, or lower alkoxy; or

(*xi*) S/D is a single bond; p is 0 and $R^6$ and $R^7$ are absent; A is phenyl; and each $R^2$ is independently halogen, lower alkyl, or lower alkoxy, and $R^1$ is H, halogen, alkoxy, heteroalkyl, alkyl, alkenyl, cycloalkyl, aryl, saturated or unsaturated heterocyclyl, heteroaryl, wherein the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and saturated or unsaturated heterocyclyl are optionally substituted with at least one substituent $R^{16}$.

4. The compound of claim 1, wherein:

S/D is a double bond and $R^5$ and $R^7$ are absent; p is 1 and m is 0, 1 or 2; A is phenyl (see, formula **II**);

S/D is a double bond and $R^5$ and $R^7$ are absent; p is 1 and m is 0, 1 or 2; A is phenyl; and $R^4$ and $R^6$, together with the atoms to which they are attached, form a ring of formula:



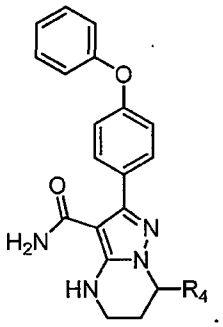
wherein Q is $-CH_2-$ ; J is $-CH_2-$; and d and b are each independently 0, or an integer of 1-4 (see, formula **III**);

S/D is a single bond; p is 1 and m is 0, 1 or 2; A is phenyl (see, formula **IV**); or

S/D is a single bond; p is 0 and $R^6$ and $R^7$ are absent; A is phenyl (see, formula **V**).

5. The compound of claim 1, wherein:

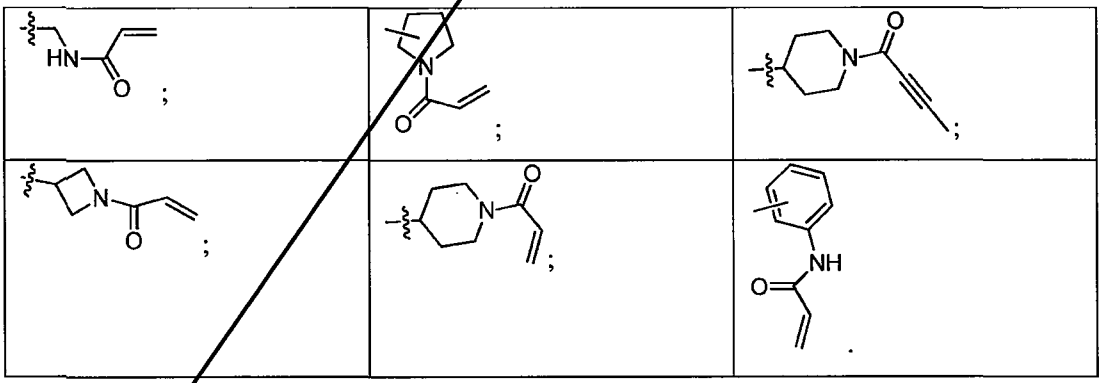
A is phenyl; W is $-(CH_2)-$; L is O; S/D is a single bond; m is 1; n is 0; p is 1; $R^1$ is phenyl; $R^2$ is absent; $R^5$ is H; and $R^6$ and $R^7$ are H; yielding the combination structure:



6. The compound of claim 5 wherein R4 is N-containing C1-C8 alkyl, N-containing C3-C8 cycloalkyl and phenyl, each optionally substituted.

7. The compound of claim 5 wherein R4 is methylamine, aniline, azetidine, pyrrolidine, piperidine, azacycloheptenyl, each N-substituted with a moietie selected from benzyl, acyl, acryloyl, substitued-acryloyl, propiolyl, and substituted-propiolyl.

8. The compound of claim 5 wherein R4 is selected from structures:



9. The compound of claim 5 wherein $R^4$ is 1-acryloylpiperidin-4-yl (compound 27) or 1-(but-2-ynoyl)piperidin-4-yl (compound 176).

10. A compound of the examples herein, or of Table I, II or III, stereoisomers thereof, and pharmaceutically acceptable salts thereof.

11. The compound of any of claims 1 to 10, having a Btk-inhibiting activity corresponding to an IC50 of 10 uM or less in a Btk Kinase Assay.

12. A pharmaceutical composition comprising a therapeutically effective amount of a compound of any of claims 1 to 10 in unit dosage form and one or more pharmaceutically acceptable carriers.

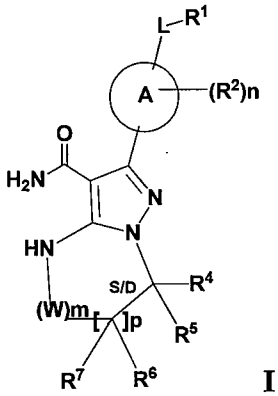
13. A combination comprising a therapeutically effective amount of a compound of any of claims 1 to 10 and a different agent therapeutically active against an autoimmune and/or inflammatory disease or cancer.

14. A method of treating a disease associated with undesirable Btk activity, which comprises administering to a person in need thereof an effective amount of a compound of any of claims 1-10, an N-oxide thereof or a prodrug thereof, wherein the disease is an allergic disease, an autoimmune disease, an inflammatory disease, or cancer.

15. The method of claim 14 wherein the disease is a B-cell proliferative disorder, selected from chronic lymphocytic lymphoma, non-Hodgkin's lymphoma, diffuse large B cell lymphoma, mantle cell lymphoma, follicular lymphoma and chronic lymphocytic leukemia.

## CLAIMS

1. A compound of formula:



I

stereoisomers thereof, and pharmaceutically acceptable salts thereof, wherein:

A is a 5- or 6-membered aromatic ring comprising 0-3 heteroatoms of N, S or O;

each W is independently $-(CH_2)-$ or -C(O)-;

L is a bond, $CH_2$, $NR^{12}$, O, or S;

S/D is a single or double bond, and when a double bond, $R^5$ and $R^7$ are absent;

m is 0, or an integer of 1-4;

n is 0, or an integer of 1-4, wherein when n is more than 1, each $R^2$ may be different;

p is 0, or an integer of 1-2, wherein when p is 0, m is non-zero, and when p is more than 1, each $R^6$ and each $R^7$ may be different;

$R^1$, $R^4$, $R^5$, $R^6$,and $R^7$ are each independently H, halogen, heteroalkyl, alkyl, alkenyl, cycloalkyl, aryl, saturated or unsaturated heterocyclyl, heteroaryl, alkynyl,-CN, $-NR^{13}R^{14}$, $-OR^{13}$, $-COR^{13}$, $-CO_2R^{13}$, $-CONR^{13}R^{14}$, $-C(=NR^{13})NR^{14}R^{15}$, $-NR^{13}COR^{14}$, $-NR^{13}CONR^{14}R^{15}$, $-NR^{13}CO_2R^{14}$, $-SO_2R^{13}$, $-NR^{13}SO_2NR^{14}R^{15}$, or $-NR^{13}SO_2R^{14}$, wherein the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and saturated or unsaturated heterocyclyl are optionally substituted with at least one substituent $R^{16}$,wherein ($R^4$ and $R^5$), or ($R^4$ and $R^6$), or ($R^6$ and $R^7$), or ($R^6$ and $R^6$ when p is 2), together with the atoms to which they are attached, can form a ring selected from cycloalkyl, saturated or unsaturated heterocycle, aryl, and heteroaryl rings optionally substituted with at least one substituent $R^{16}$;

$R^2$ is halogen, alkyl, -S-alkyl, -CN, $-NR^{13}R^{14}$, $-OR^{13}$, $-COR^{13}$, $-CO_2R^{13}$, $-CONR^{13}R^{14}$, $-C(=NR^{13})NR^{14}R^{15}$, $-NR^{13}COR^{14}$, $-NR^{13}CONR^{14}R^{15}$, $-NR^{13}CO_2R^{14}$, $-SO_2R^{13}$, $-NR^{13}SO_2NR^{14}R^{15}$, or $-NR^{13}SO_2R^{14}$;

$R^{12}$ is H or lower alkyl;

$R^{13}$, $R^{14}$ and $R^{15}$ are each independently H, heteroalkyl, alkyl, alkenyl, alkynyl, cycloalkyl, saturated or unsaturated heterocyclyl, aryl, or heteroaryl; wherein ($R^{13}$ and $R^{14}$), and/or ($R^{14}$ and $R^{15}$) together with the atom(s) to which they are attached, each can form a ring selected from cycloalkyl, saturated or unsaturated heterocycle, aryl, and heteroaryl rings optionally substituted with at least one substituent $R^{16}$;

$R^{16}$ is halogen, subsituted or unsubstitued alkyl, substituted or unsubstituted alkenyl, subsituted or unsubstitued alkynyl, subsituted or unsubstitued cycloalkyl, subsituted or unsubstitued aryl, subsituted or unsubstitued heteroaryl, subsituted or unsubstitued heterocyclyl, oxo, -CN, -OR', -NR'R'', -COR', $-CO_2R'$, -CONR'R'', $-C(=NR')NR''R'''$, -NR'COR'', -NR'CONR'R'', $-NR'CO_2R''$, $-SO_2R'$, $-SO_2$aryl, $-NR'SO_2NR''R'''$, or $-NR'SO_2R''$, wherein R', R'', and R''' are independently hydrogen, halogen, subsituted or unsubstitued alkyl, substituted or unsubstituted alkenyl, subsituted or unsubstitued alkynyl,

subsituted or unsubstitued cycloalkyl, subsituted or unsubstitued aryl, subsituted or unsubstitued heteroaryl, subsituted or unsubstitued heterocyclyl, wherein (R' and R"), and/or (R" and R"') together with the atoms to which they are attached, can form a ring selected from cycloalkyl, saturated or unsaturated heterocycle, aryl, and heteroaryl rings.

2. The compound of claim 1, comprising one or more embodiments:

(a) S/D is a double bond and $R^5$ and $R^7$ are absent;

(b) $R^1$ is H, halogen, alkoxy, heteroalkyl, alkyl, alkenyl, cycloalkyl, aryl, saturated or unsaturated heterocyclyl, heteroaryl, wherein the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and saturated or unsaturated heterocyclyl are optionally substituted with at least one substituent $R^{16}$;

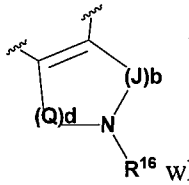
(c) p is 1 and m is 0, 1 or 2;

(d) A is phenyl;

(e) each $R^2$ is independently halogen, lower alkyl, or lower alkoxy;

(f) $R^4$ and $R^6$, together with the atoms to which they are attached, form a ring selected from cycloalkyl, saturated or unsaturated heterocycle, aryl, and heteroaryl rings optionally substituted with at least one substituent $R^{16}$;

(g) $R^4$ and $R^6$, together with the atoms to which they are attached, form a ring of formula:




wherein:

Q is $-CH_2-$ ; J is $-CH_2-$; and d and b are each independently 0, or an integer of 1-4;

(h) S/D is a single bond; and/or

(i) p is 0 and $R^6$ and $R^7$ are absent.

3. The compound of claim 1, wherein:

(*i*) S/D is a double bond and $R^5$ and $R^7$ are absent; $R^1$ is H, halogen, alkoxy,heteroalkyl, alkyl, alkenyl, cycloalkyl, aryl, saturated or unsaturated heterocyclyl, heteroaryl, wherein the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and saturated or unsaturated heterocyclyl are optionally substituted with at least one substituent $R^{16}$; and $R^{16}$ is halogen, lower alkyl, or lower alkoxy; or

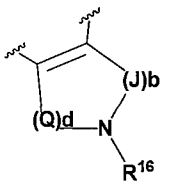
(*ii*) S/D is a double bond and $R^5$ and $R^7$ are absent; p is 1 and m is 0, 1 or 2; or

(*iii*) S/D is a double bond and $R^5$ and $R^7$ are absent; p is 1 and m is 0, 1 or 2; A is phenyl; and each $R^2$ is independently halogen, lower alkyl, or lower alkoxy; or

(*iv*) S/D is a double bond and $R^5$ and $R^7$ are absent; and $R^4$ and $R^6$, together with the atoms to which they are attached, form a ring selected from cycloalkyl, saturated or unsaturated heterocycle, aryl, and heteroaryl rings optionally substituted with at least one substituent $R^{16}$; or

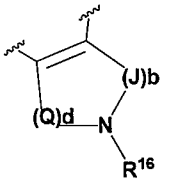
(*v*) S/D is a double bond and $R^5$ and $R^7$ are absent; $R^4$ and $R^6$, together with the atoms to which they are attached, form a ring selected from cycloalkyl, saturated or unsaturated heterocycle, aryl, and heteroaryl rings optionally substituted with at least one substituent $R^{16}$; A is phenyl; and each $R^2$ is independently halogen, lower alkyl, or lower alkoxy; or

(*vi*) S/D is a double bond and $R^5$ and $R^7$ are absent; $R^4$ and $R^6$, together with the atoms to which they are attached, form a ring selected from cycloalkyl, saturated or unsaturated heterocycle, aryl, and heteroaryl rings optionally substituted with at least one substituent $R^{16}$; p is 1 and m is 0, 1 or 2; A is phenyl; each $R^2$ is independently halogen, lower alkyl, or lower alkoxy; and the $R^4$-$R^6$ ring is of formula:




wherein Q is -$CH_2$- ; J is -$CH_2$-; and d and b are each independently 0, or an integer of 1-4; or

(*vii*) S/D is a double bond and $R^5$ and $R^7$ are absent; $R^4$ and $R^6$, together with the atoms to which they are attached, form a ring selected from cycloalkyl, saturated or unsaturated heterocycle, aryl, and heteroaryl rings optionally substituted with at least one substituent $R^{16}$; p is 1 and m is 0, 1 or 2; A is phenyl; each $R^2$ is independently halogen, lower alkyl, or lower alkoxy; and the $R^4$-$R^6$ ring is of formula:




wherein Q is -$CH_2$- ; J is -$CH_2$-; and d and b are each independently 0, or an integer of 1-4; and $R^1$ is H, halogen, alkoxy, heteroalkyl, alkyl, alkenyl, cycloalkyl, aryl, saturated or unsaturated heterocyclyl, heteroaryl, wherein the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and saturated or unsaturated heterocyclyl are optionally substituted with at least one substituent $R^{16}$; or

(*viii*) S/D is a single bond; p is 1 and m is 0, 1 or 2; A is phenyl; each $R^2$ is independently halogen, lower alkyl, or lower alkoxy; or

(*ix*) S/D is a single bond; p is 1 and m is 0, 1 or 2; A is phenyl; each $R^2$ is independently halogen, lower alkyl, or lower alkoxy, and $R^1$ is H, halogen, alkoxy, heteroalkyl, alkyl, alkenyl, cycloalkyl, aryl, saturated or unsaturated heterocyclyl, heteroaryl, wherein the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and saturated or unsaturated heterocyclyl are optionally substituted with at least one substituent $R^{16}$; and $R^{16}$ is halogen, lower alkyl, or lower alkoxy; or

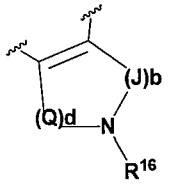
(*x*) S/D is a single bond; p is 0 and $R^6$ and $R^7$ are absent; A is phenyl; and each $R^2$ is independently halogen, lower alkyl, or lower alkoxy; or

(*xi*) S/D is a single bond; p is 0 and $R^6$ and $R^7$ are absent; A is phenyl; and each $R^2$ is independently halogen, lower alkyl, or lower alkoxy, and $R^1$ is H, halogen, alkoxy, heteroalkyl, alkyl, alkenyl, cycloalkyl, aryl, saturated or unsaturated heterocyclyl, heteroaryl, wherein the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and saturated or unsaturated heterocyclyl are optionally substituted with at least one substituent $R^{16}$.

4. The compound of claim 1, wherein:

S/D is a double bond and $R^5$ and $R^7$ are absent; p is 1 and m is 0, 1 or 2; A is phenyl;

S/D is a double bond and $R^5$ and $R^7$ are absent; p is 1 and m is 0, 1 or 2; A is phenyl; and $R^4$ and $R^6$, together with the atoms to which they are attached, form a ring of formula:



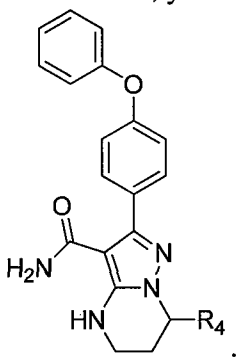

wherein Q is -$CH_2$- ; J is -$CH_2$-; and d and b are each independently 0, or an integer of 1-4;

S/D is a single bond; p is 1 and m is 0, 1 or 2; A is phenyl; or

S/D is a single bond; p is 0 and $R^6$ and $R^7$ are absent; A is phenyl.

5. The compound of claim 1, wherein:

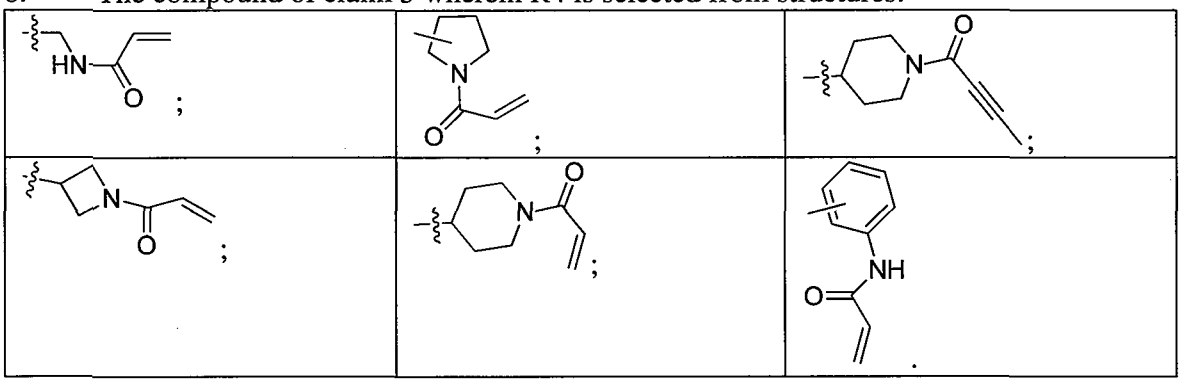
A is phenyl; W is $-(CH_2)-$; L is O; S/D is a single bond; m is 1; n is 0; p is 1; $R^1$ is phenyl; $R^2$ is absent; $R^5$ is H; and $R^6$ and $R^7$ are H; yielding the combination structure:



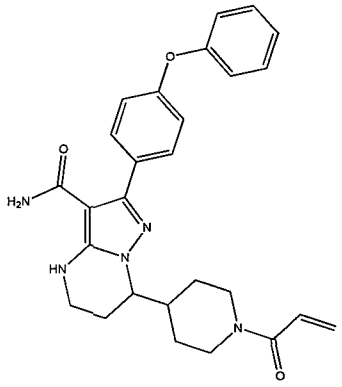
6. The compound of claim 5 wherein R4 is N-containing C1-C8 alkyl, N-containing C3-C8 cycloalkyl and phenyl, each optionally substituted.

7. The compound of claim 5 wherein R4 is methylamine, aniline, azetidine, pyrrolidine, piperidine, azacycloheptenyl, each N-substituted with a moietie selected from benzyl, acyl, acryloyl, substitued-acryloyl, propiolyl, and substituted-propiolyl.

8. The compound of claim 5 wherein R4 is selected from structures:

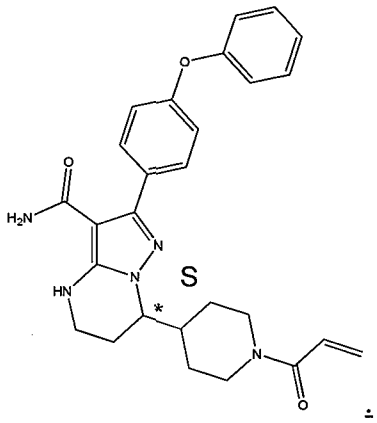


9. The compound of claim 5 wherein $R^4$ is 1-acryloylpiperidin-4-yl (compound 27), of formula:

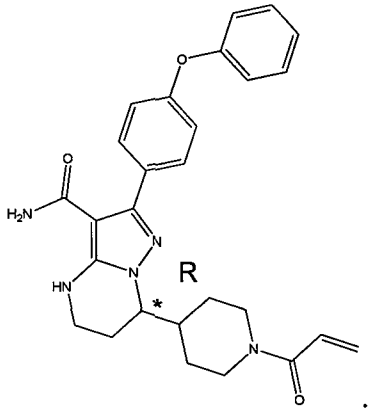


27

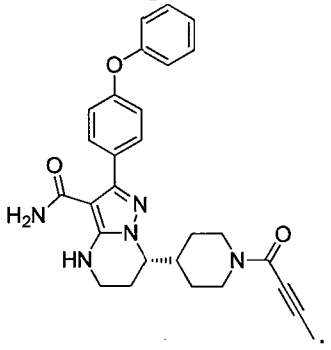
10. The compound of claim 5 wherein $R^4$ is 1-acryloylpiperidin-4-yl (compound 27), enantiomeric stereoisomer S of structure:



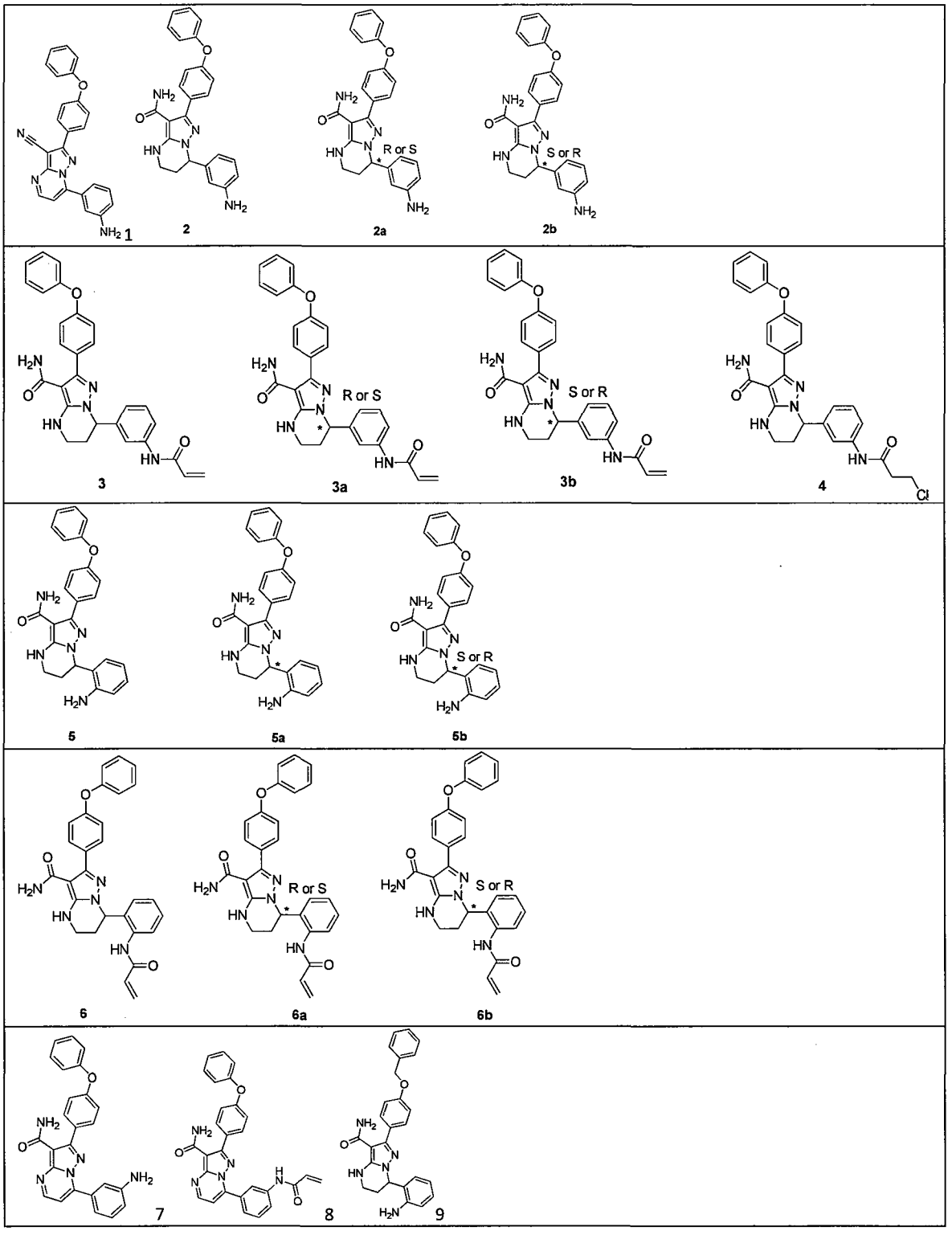

11. The compound of claim 5 wherein $R^4$ is 1-acryloylpiperidin-4-yl (compound 27), enantiomeric stereoisomer R of structure:

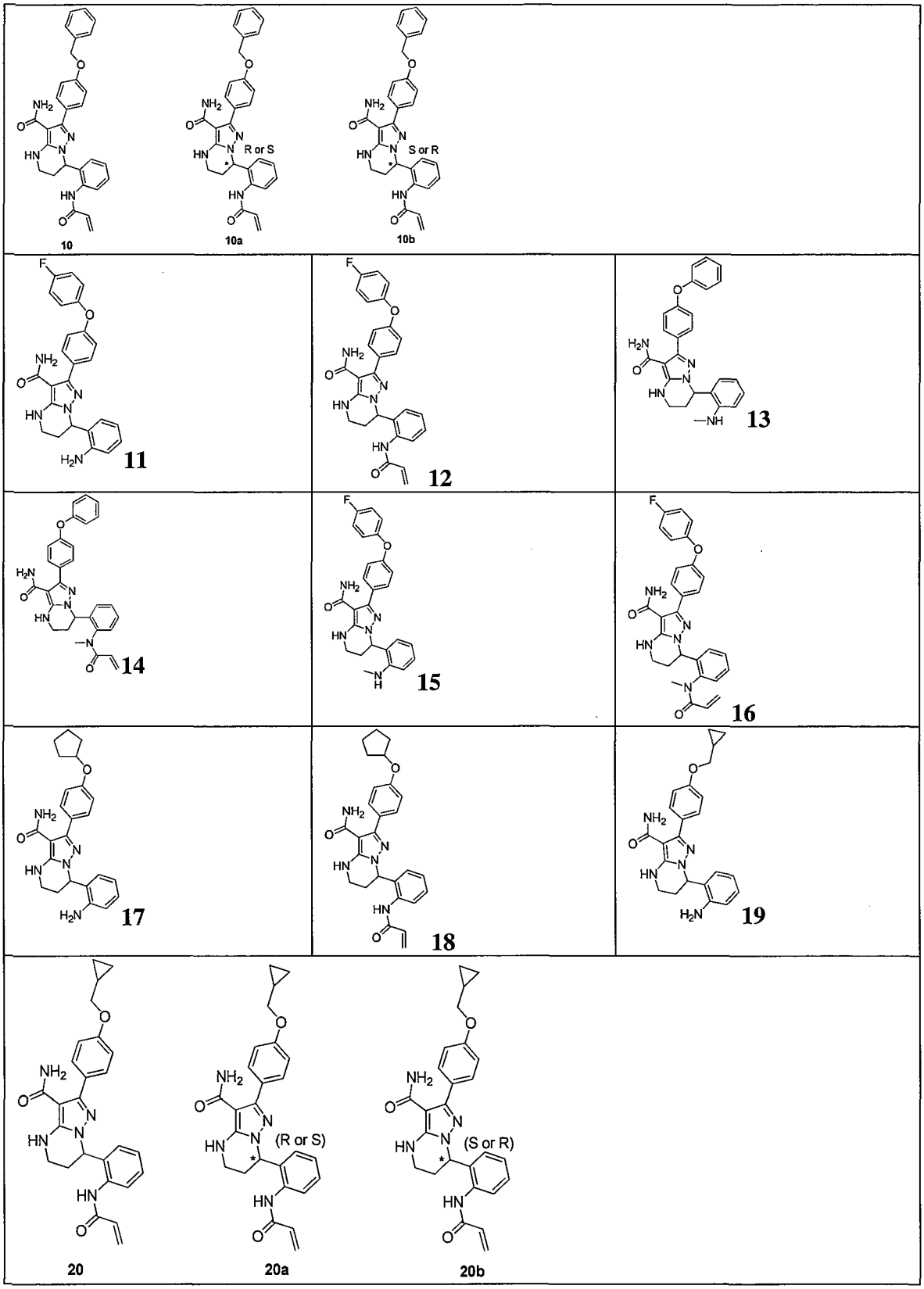


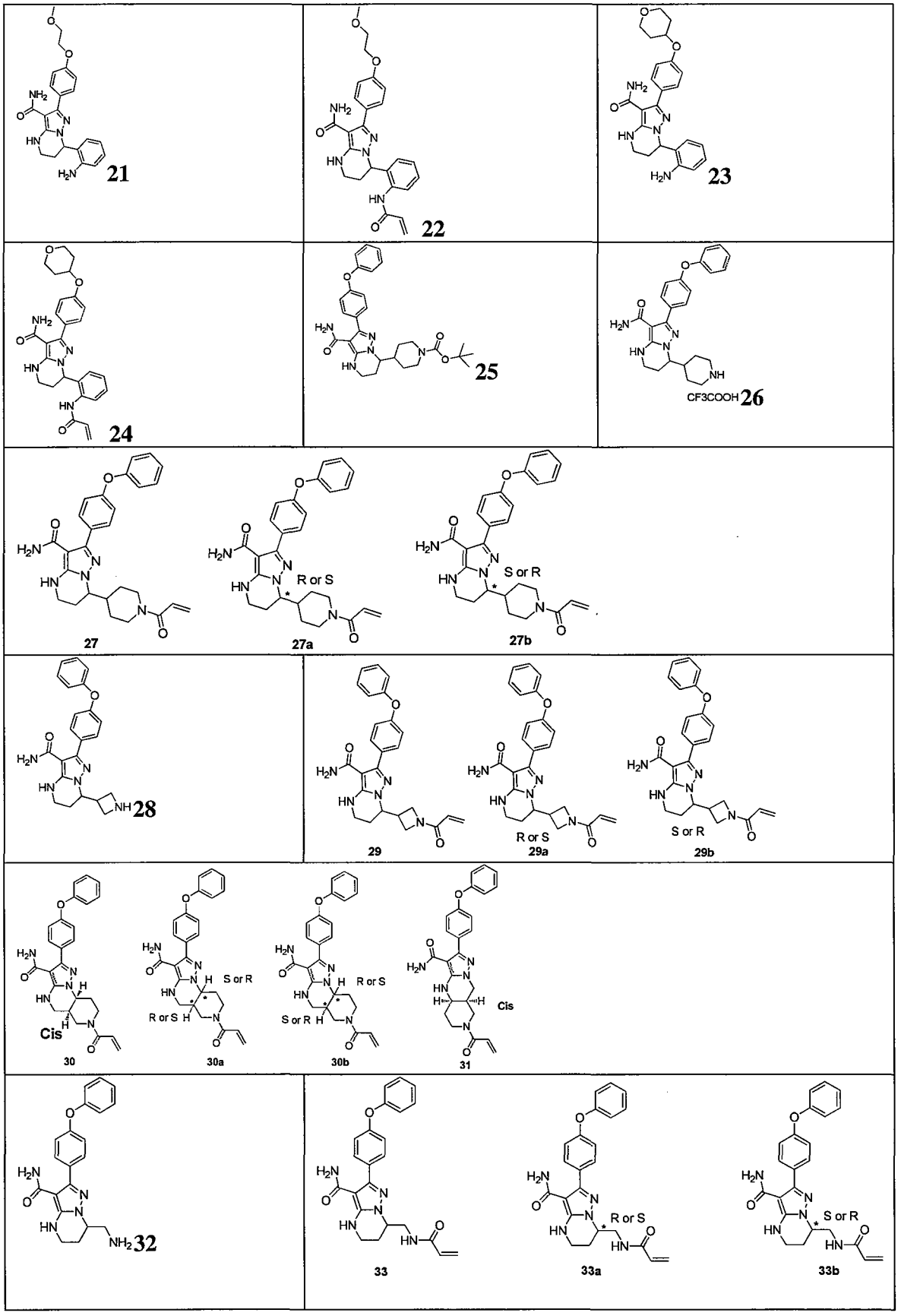

12. The compound of claim 5 wherein $R^4$ is 1-(but-2-ynoyl)piperidin-4-yl (compound 176):

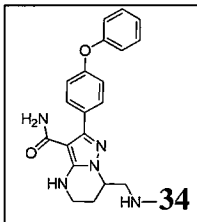
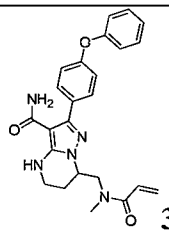
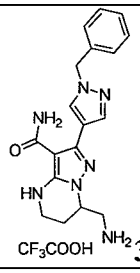
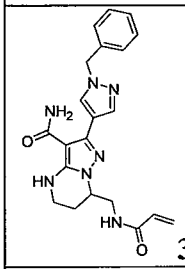
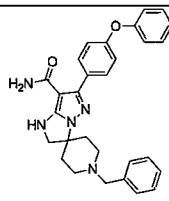
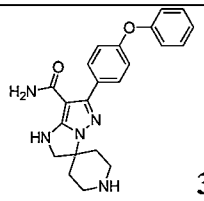
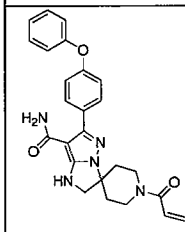
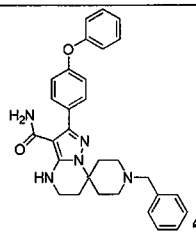
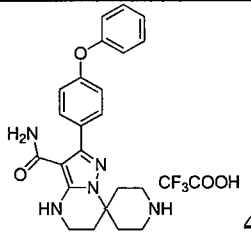
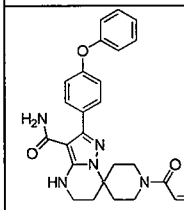
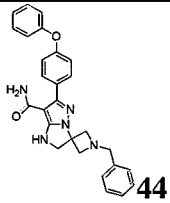
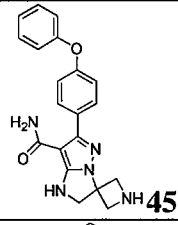
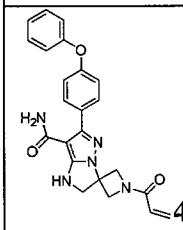
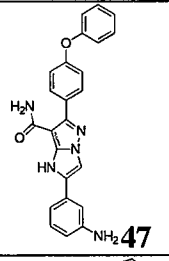
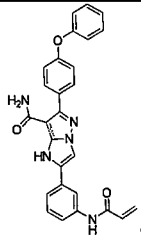
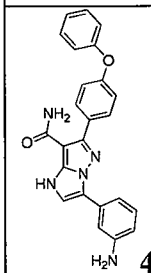
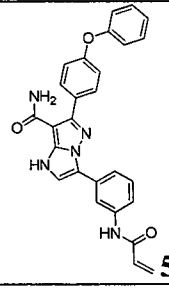
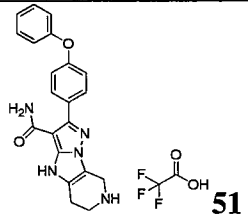


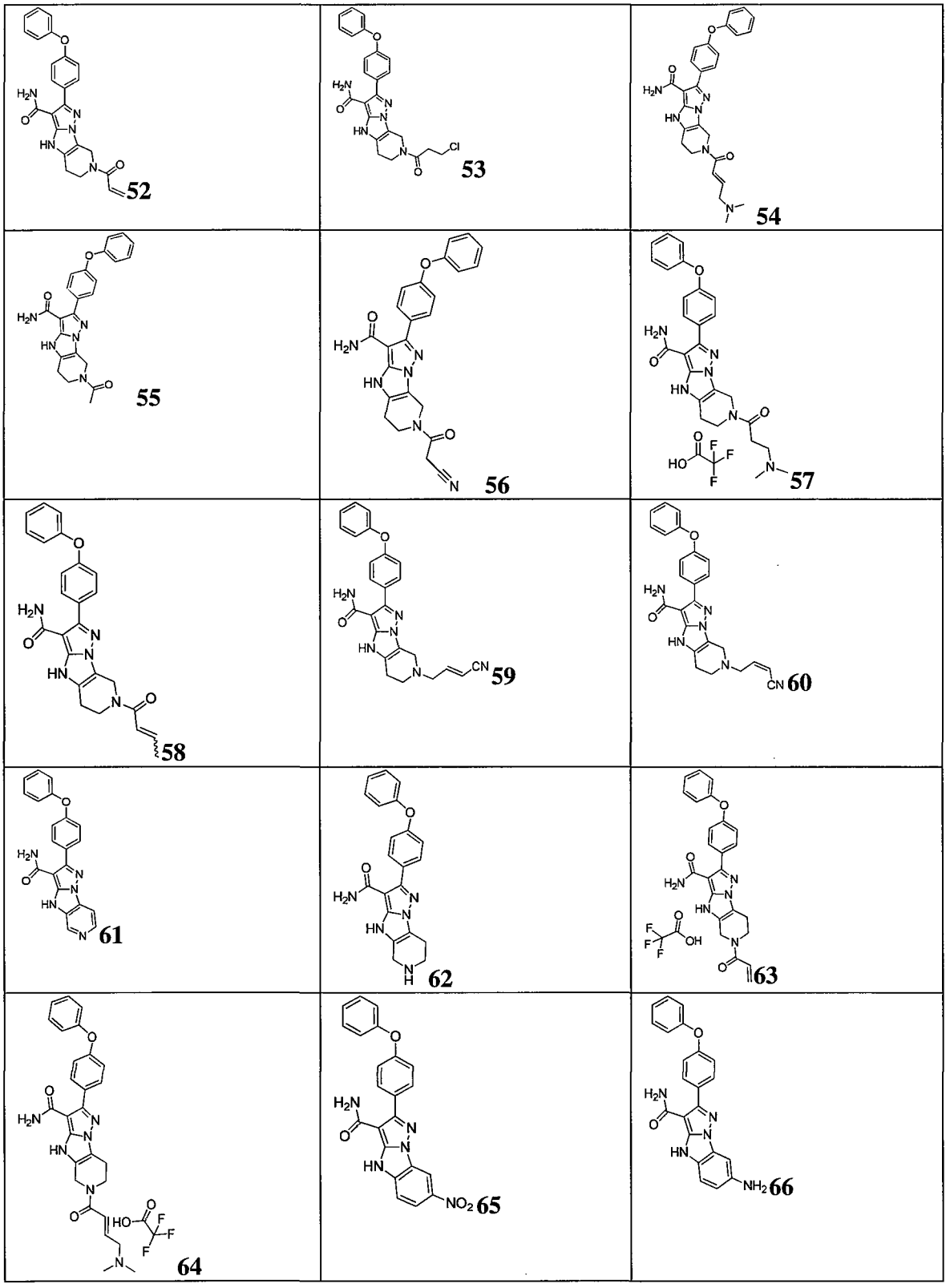

13. A compound according to claim 1 selected from the group consisting of, stereoisomers thereof, and pharmaceutically acceptable salts thereof:

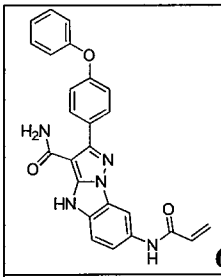
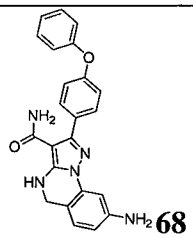
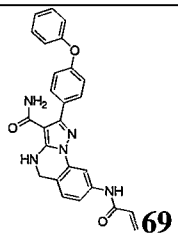
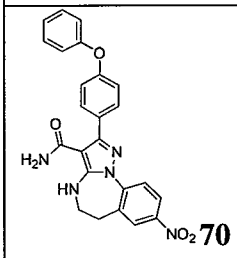
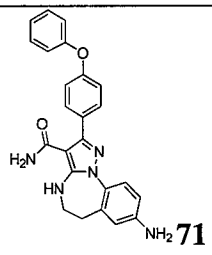
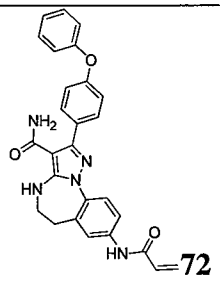
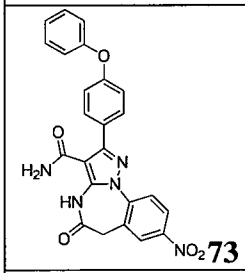
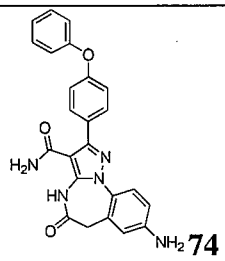
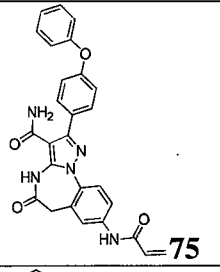
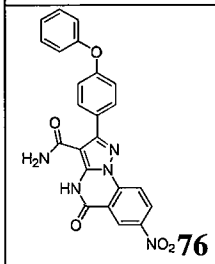
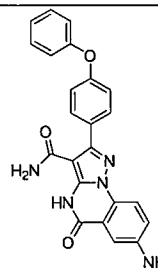
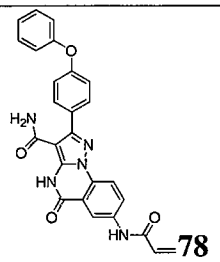
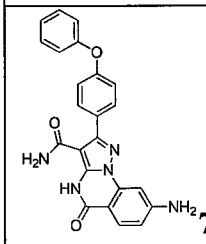
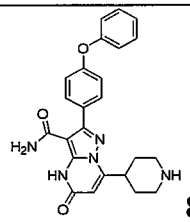
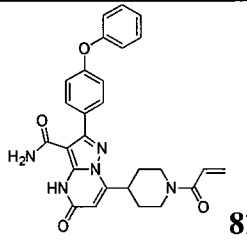
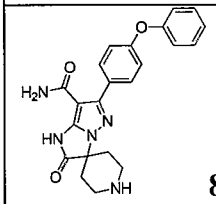
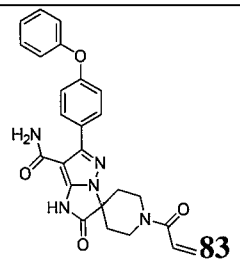
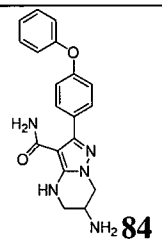

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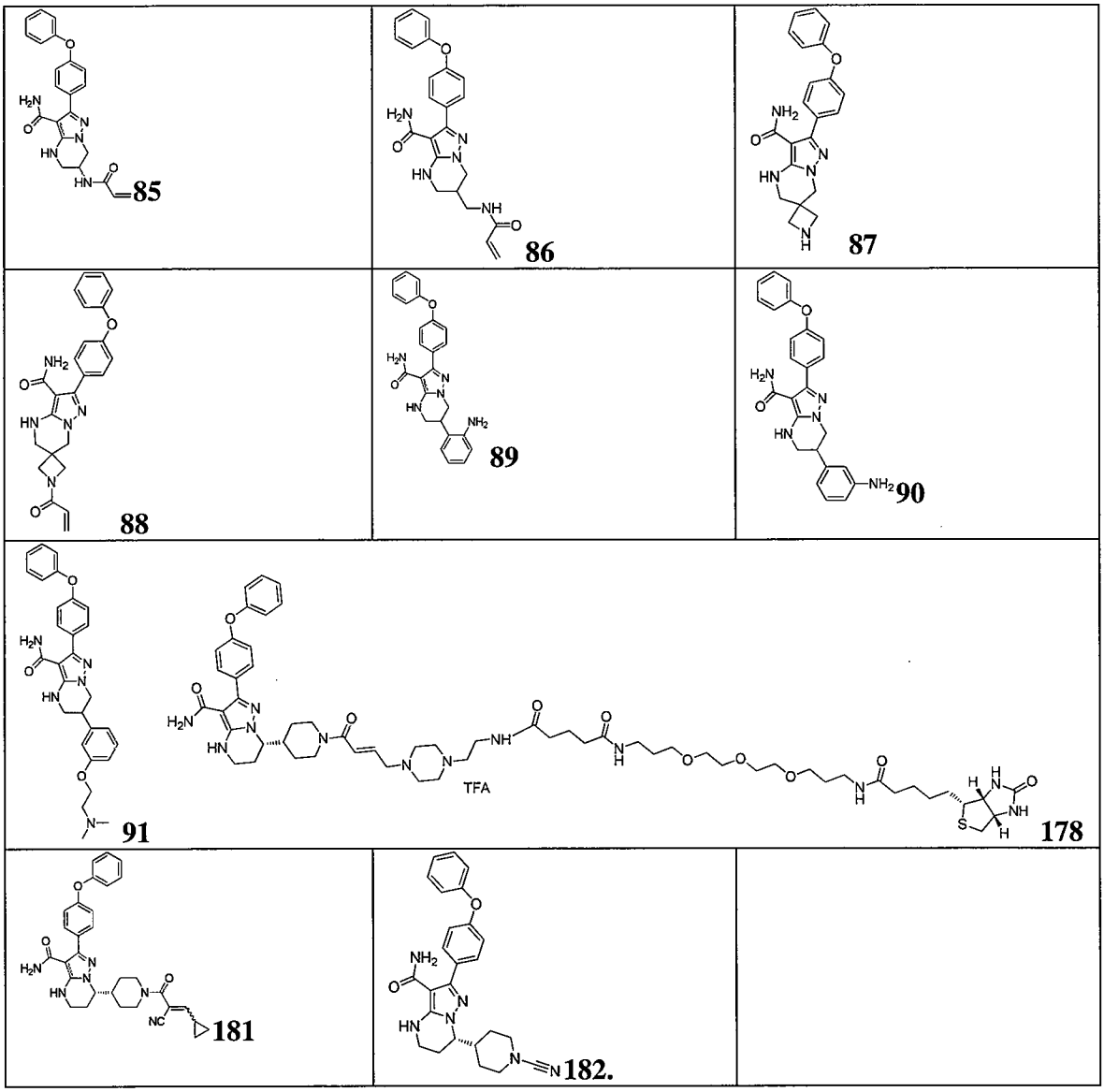

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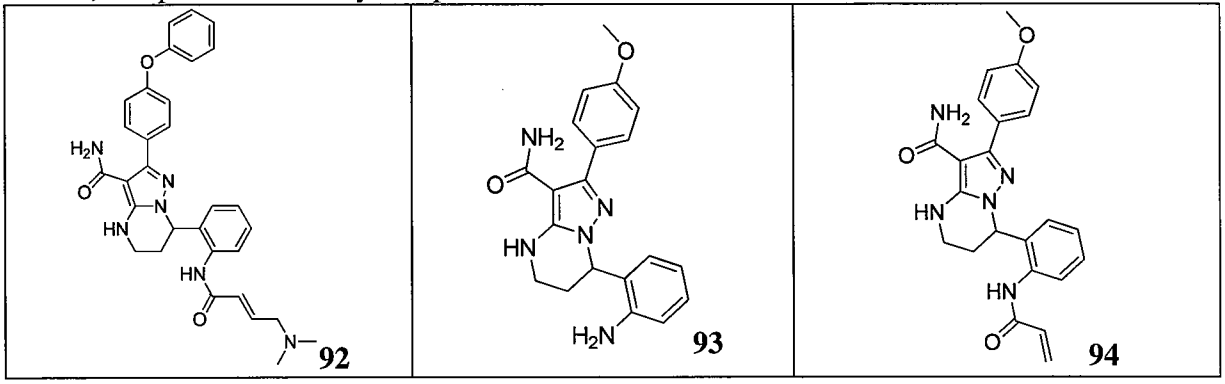
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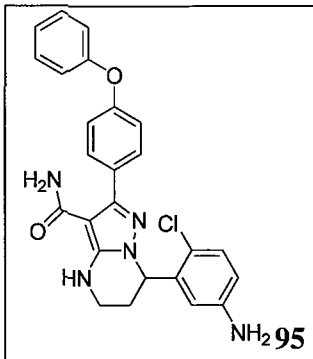
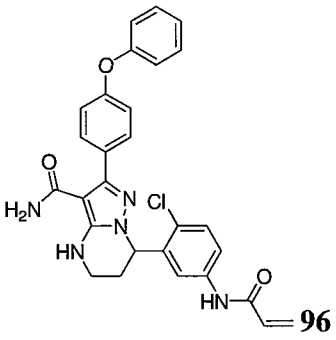
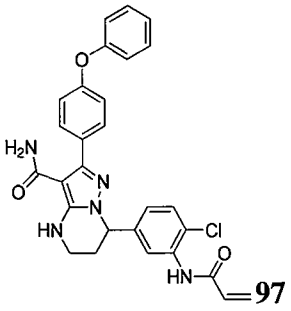
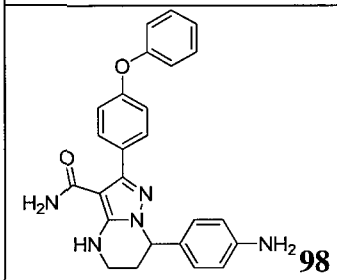
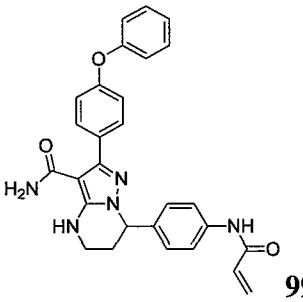
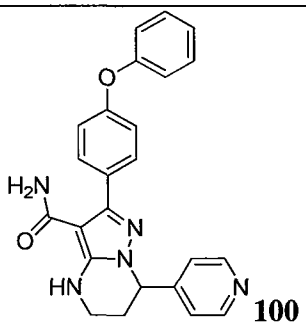
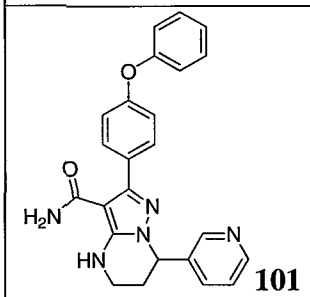
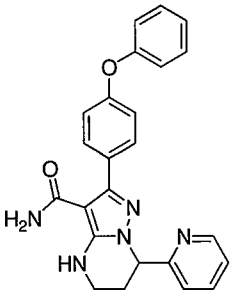
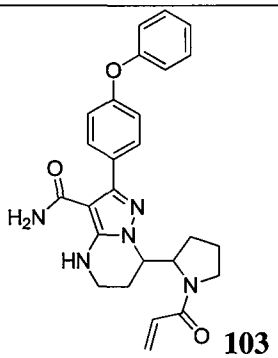
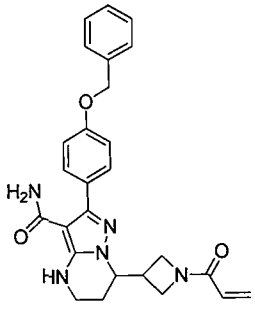
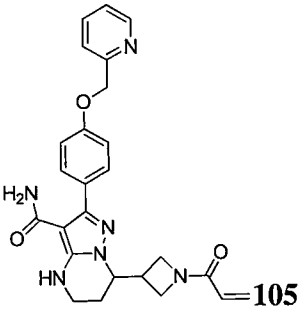
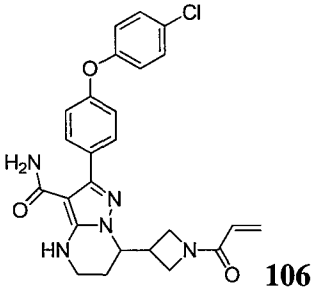

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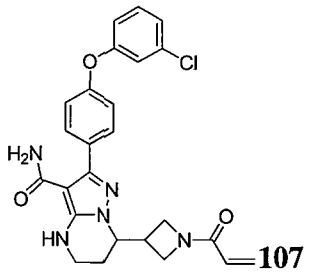
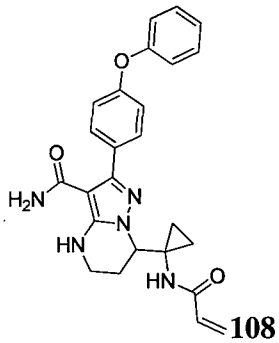
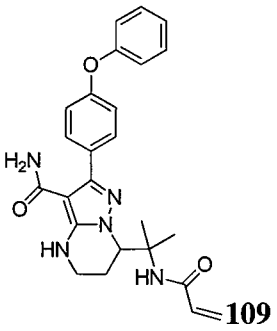
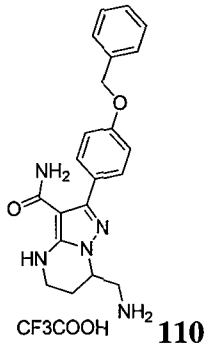
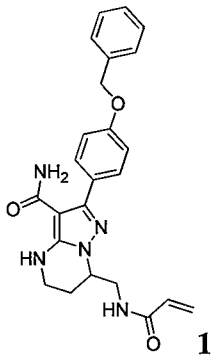
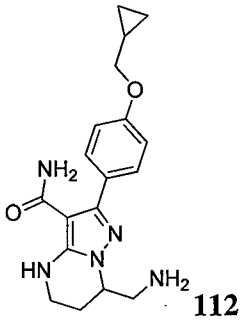
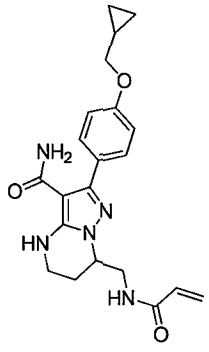
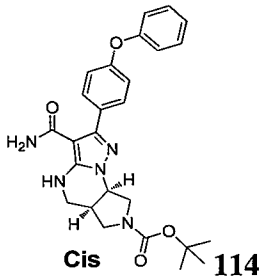
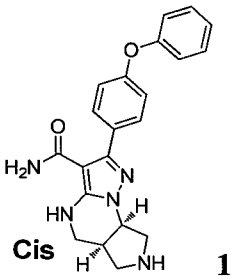
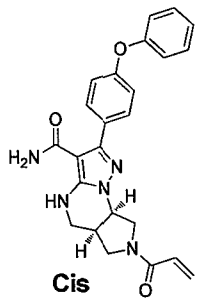
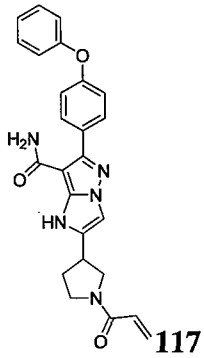
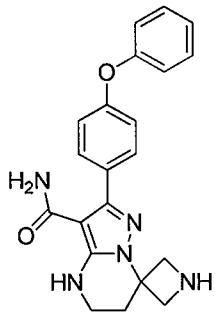
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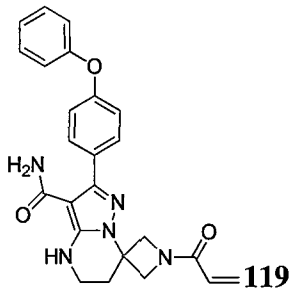
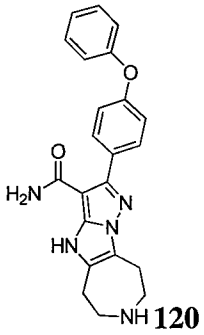
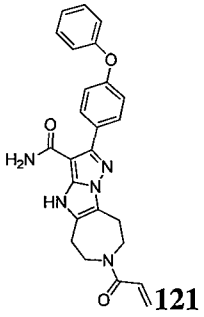
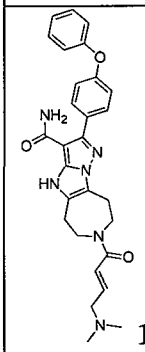
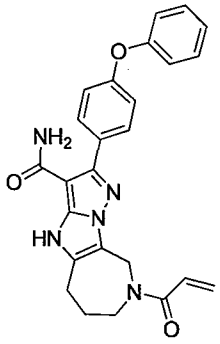
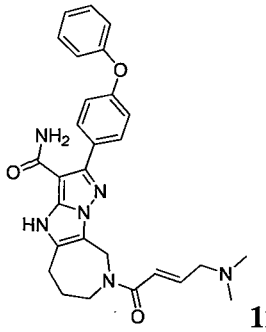
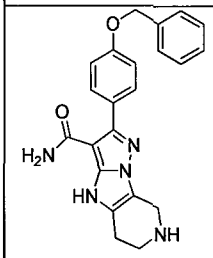
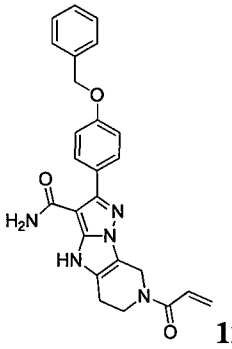
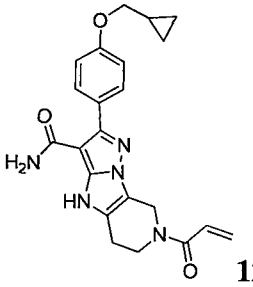
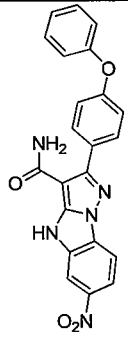
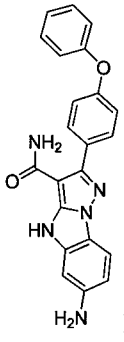
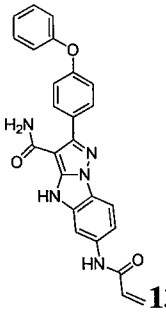


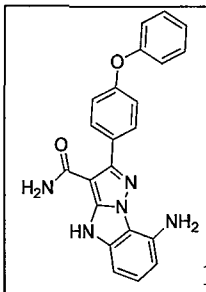
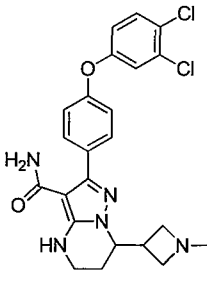
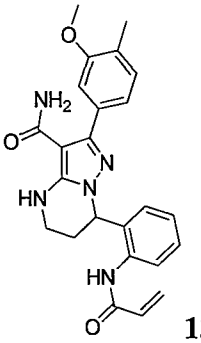
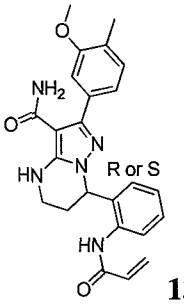
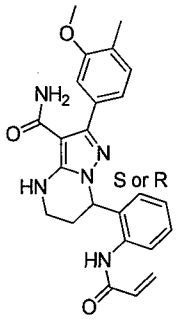
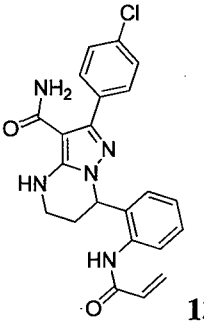
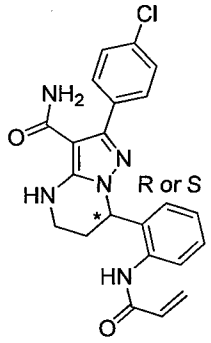
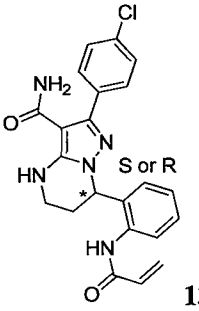
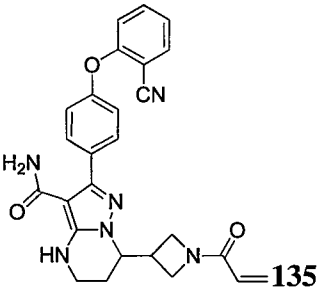
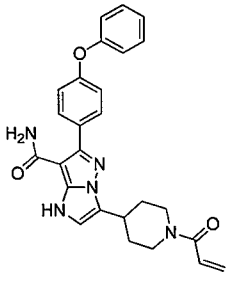
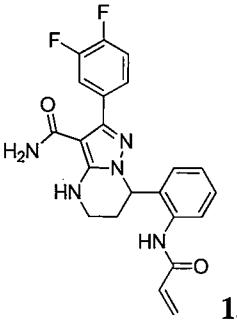
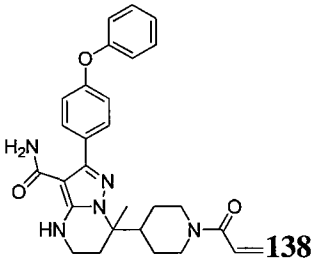

14. A compound according to claim 1 selected from the group consisting of, stereoisomers thereof, and pharmaceutically acceptable salts thereof:

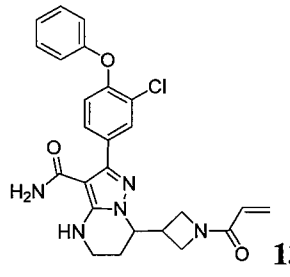
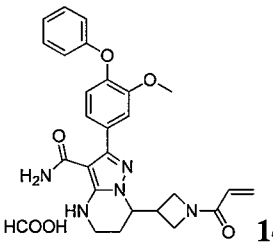
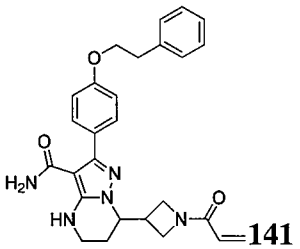
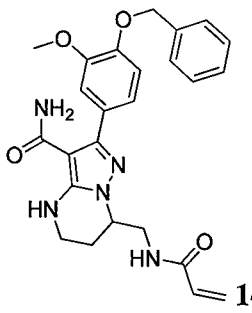
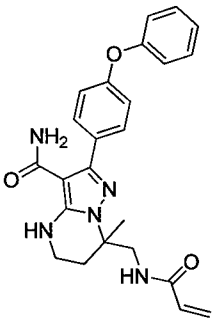
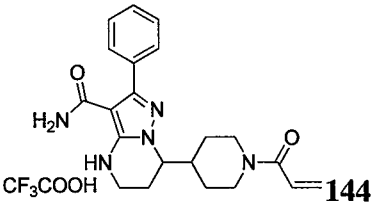
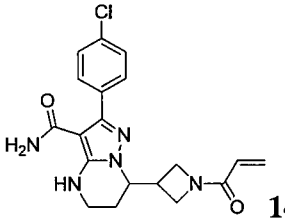
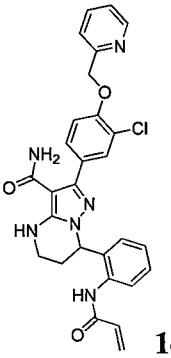
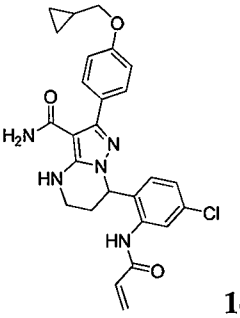
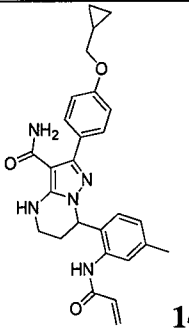
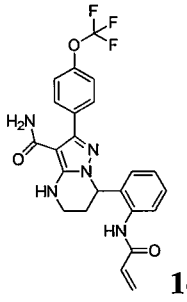
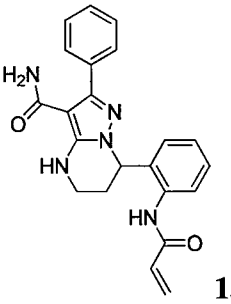


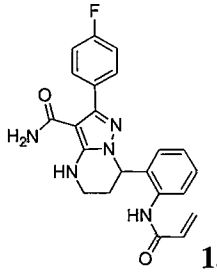
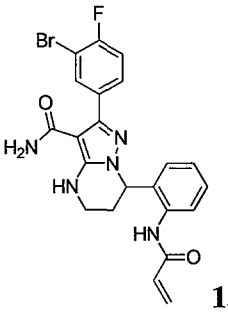
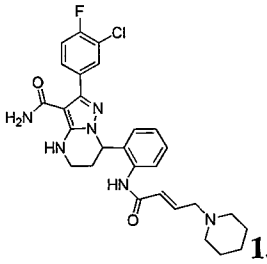
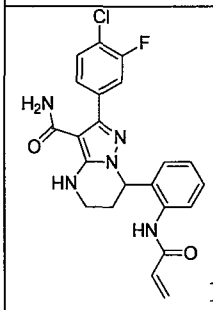
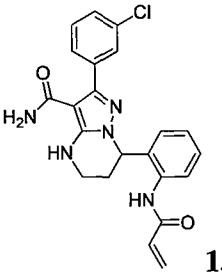
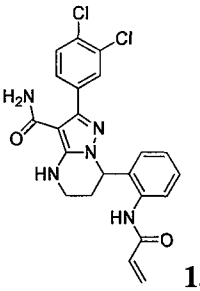
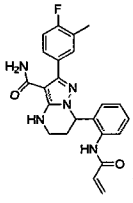
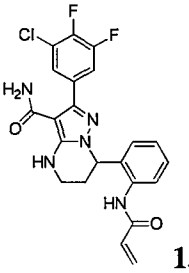
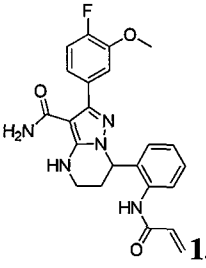
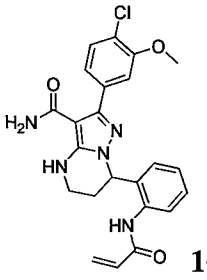
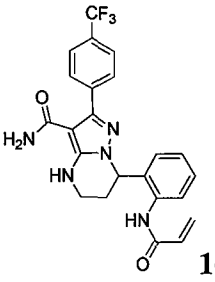
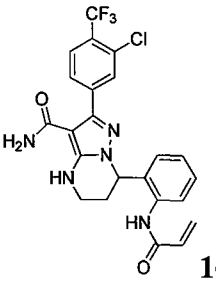
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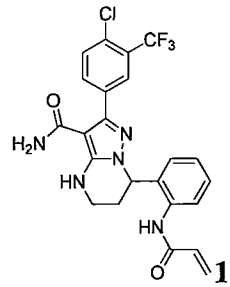
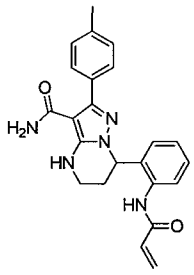
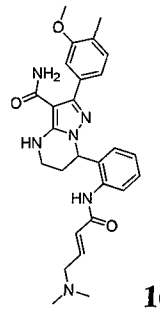
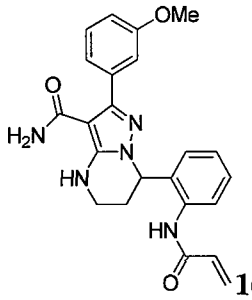
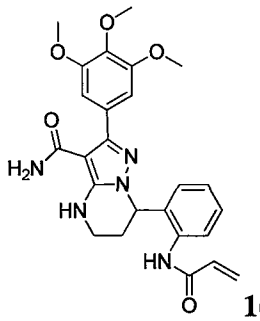
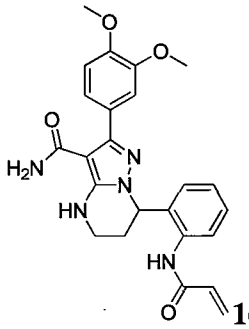
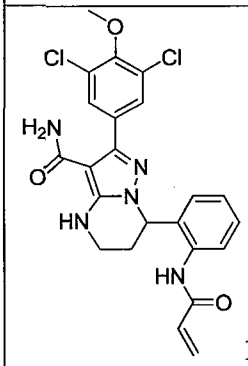
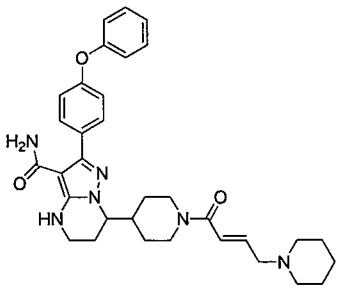
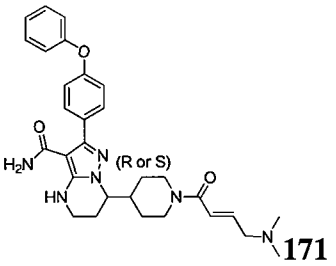
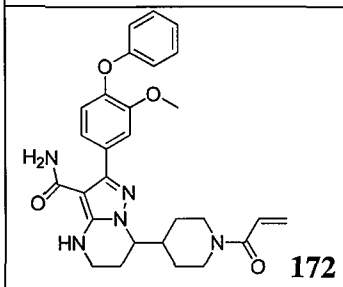
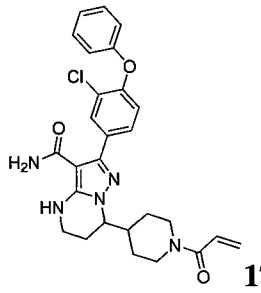
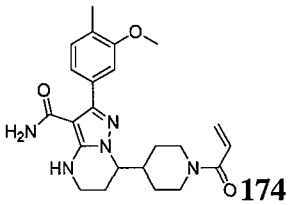
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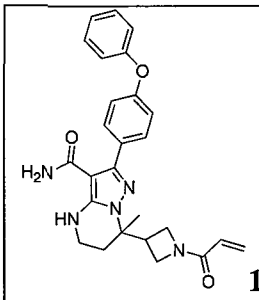
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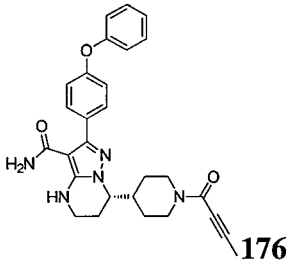
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|  **131** |  **132** |  **133** |
|  **133a (peak 1)** |  **133b (peak 2)** |  **134** |
|  **134a (peak 1)** |  **134b (peak 2)** |  **135** |
|  **136** |  **137** |  **138** |

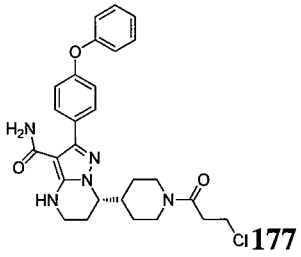
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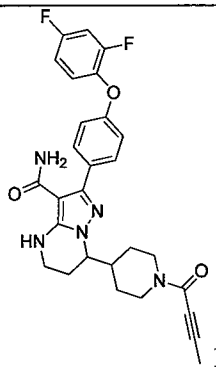
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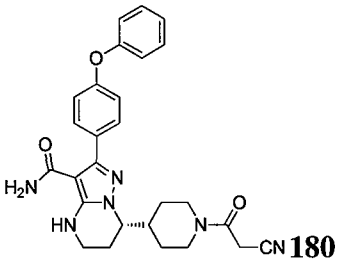
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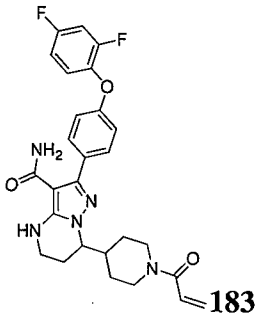

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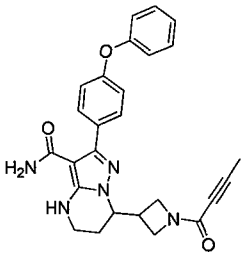

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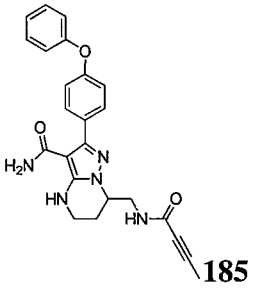

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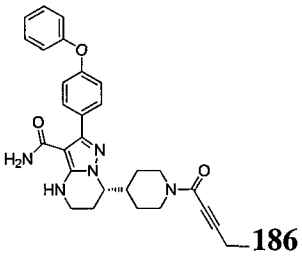

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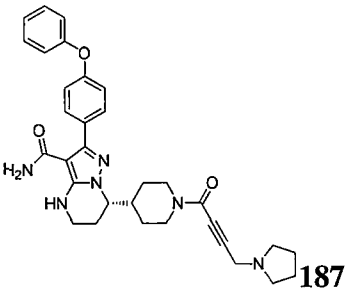

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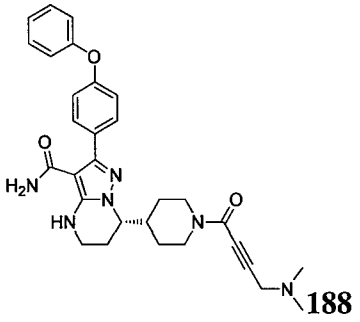

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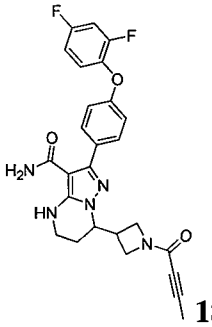

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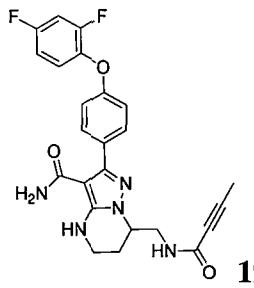
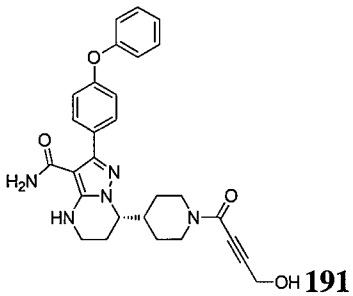
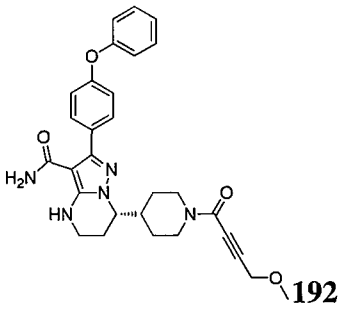
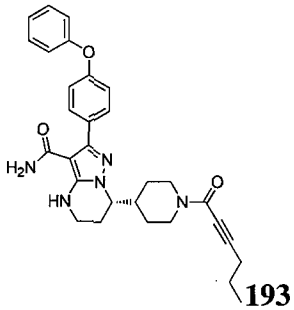
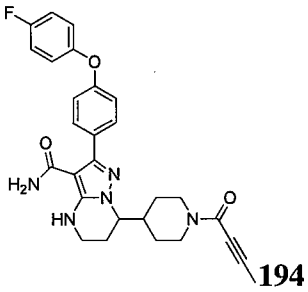
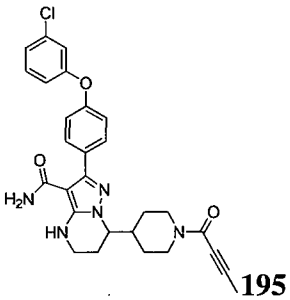
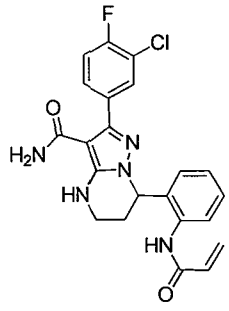

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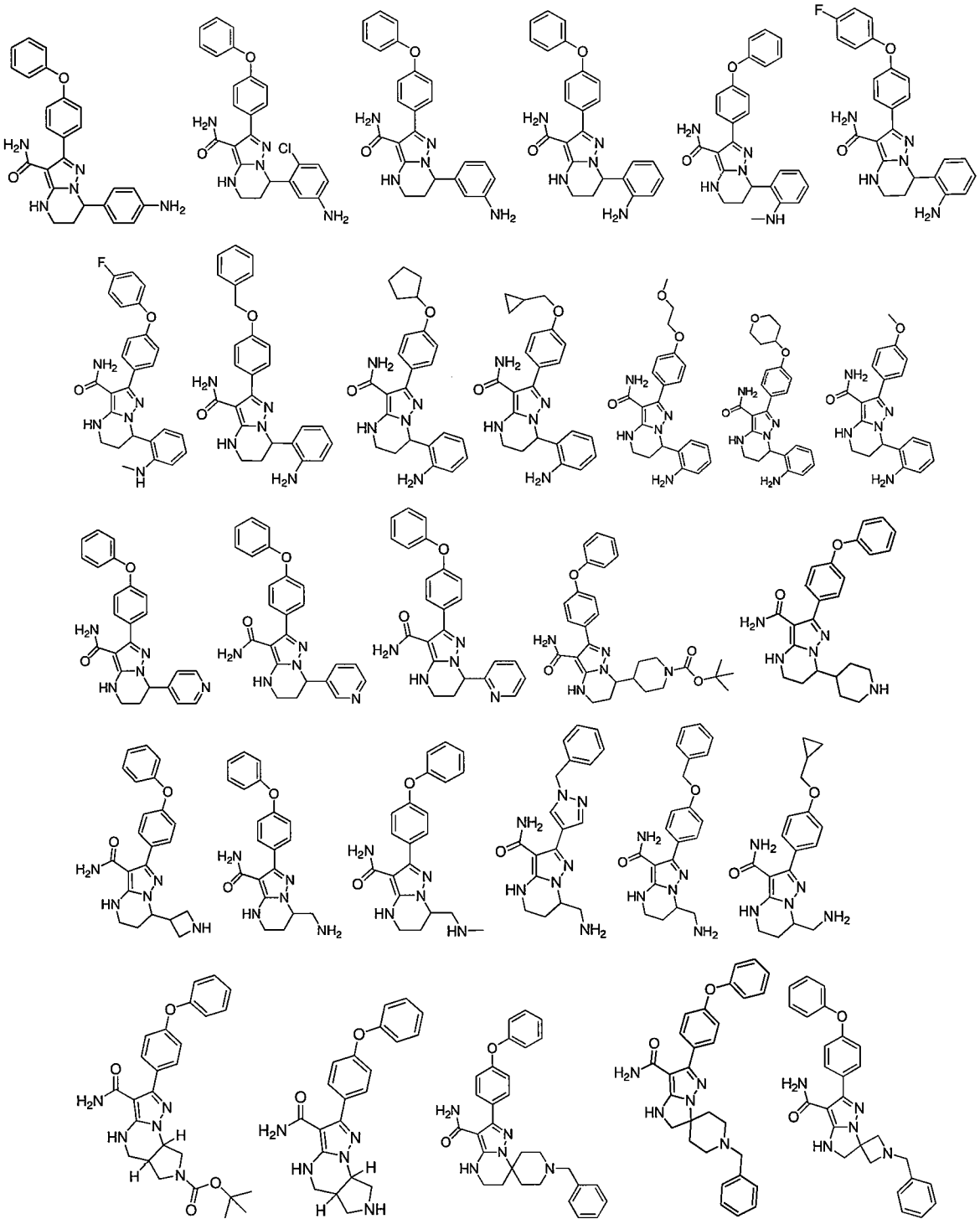

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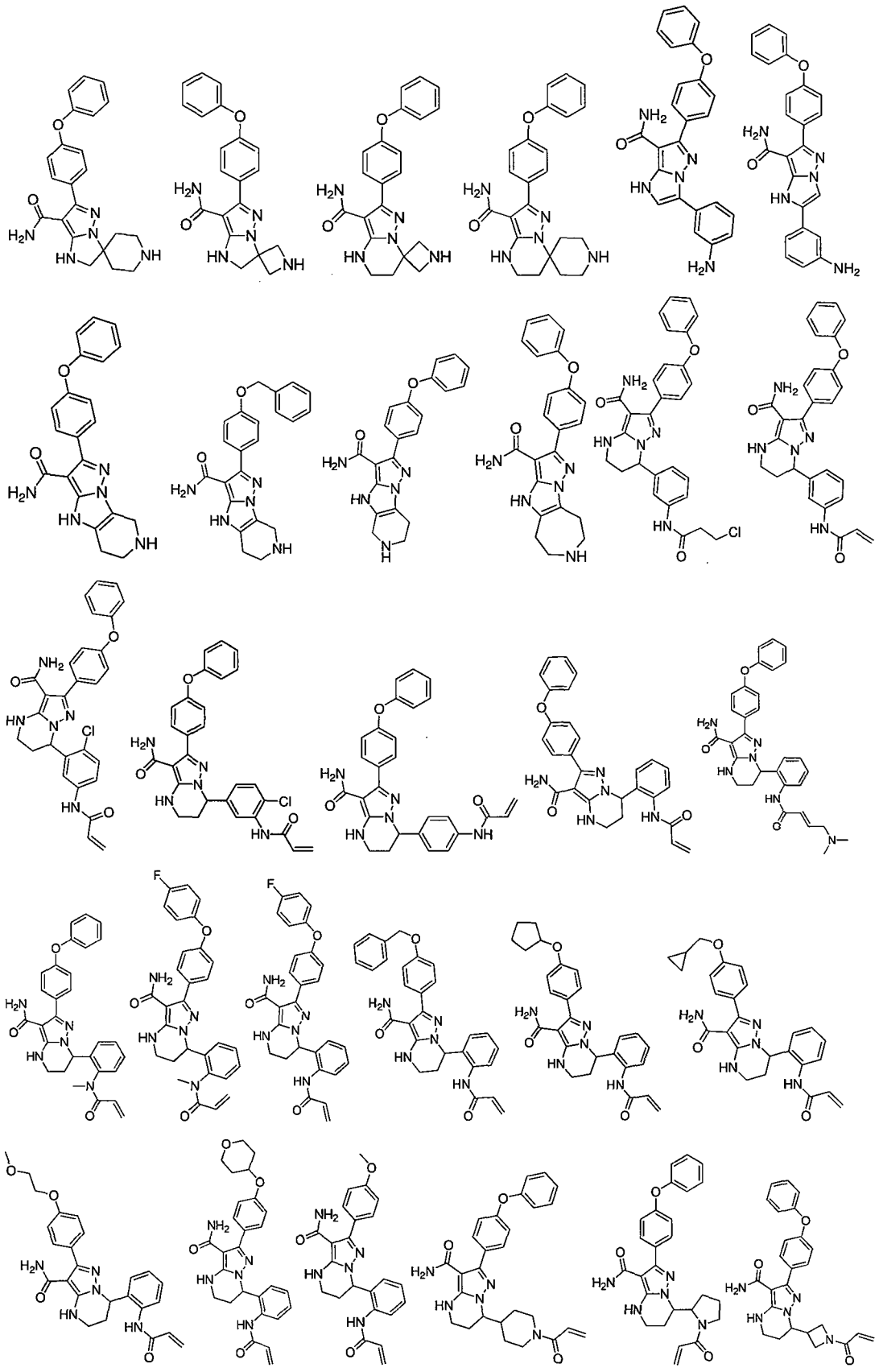

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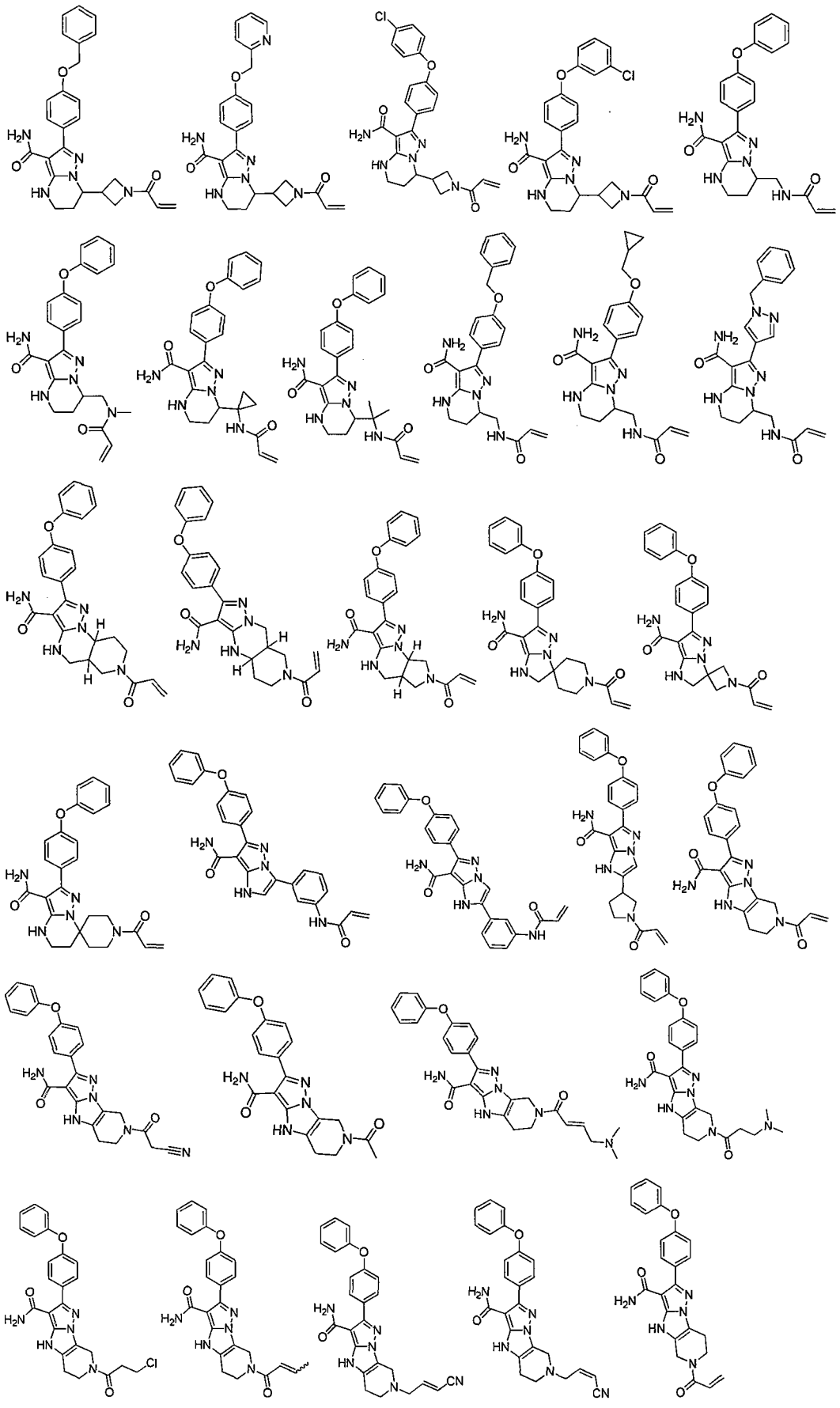

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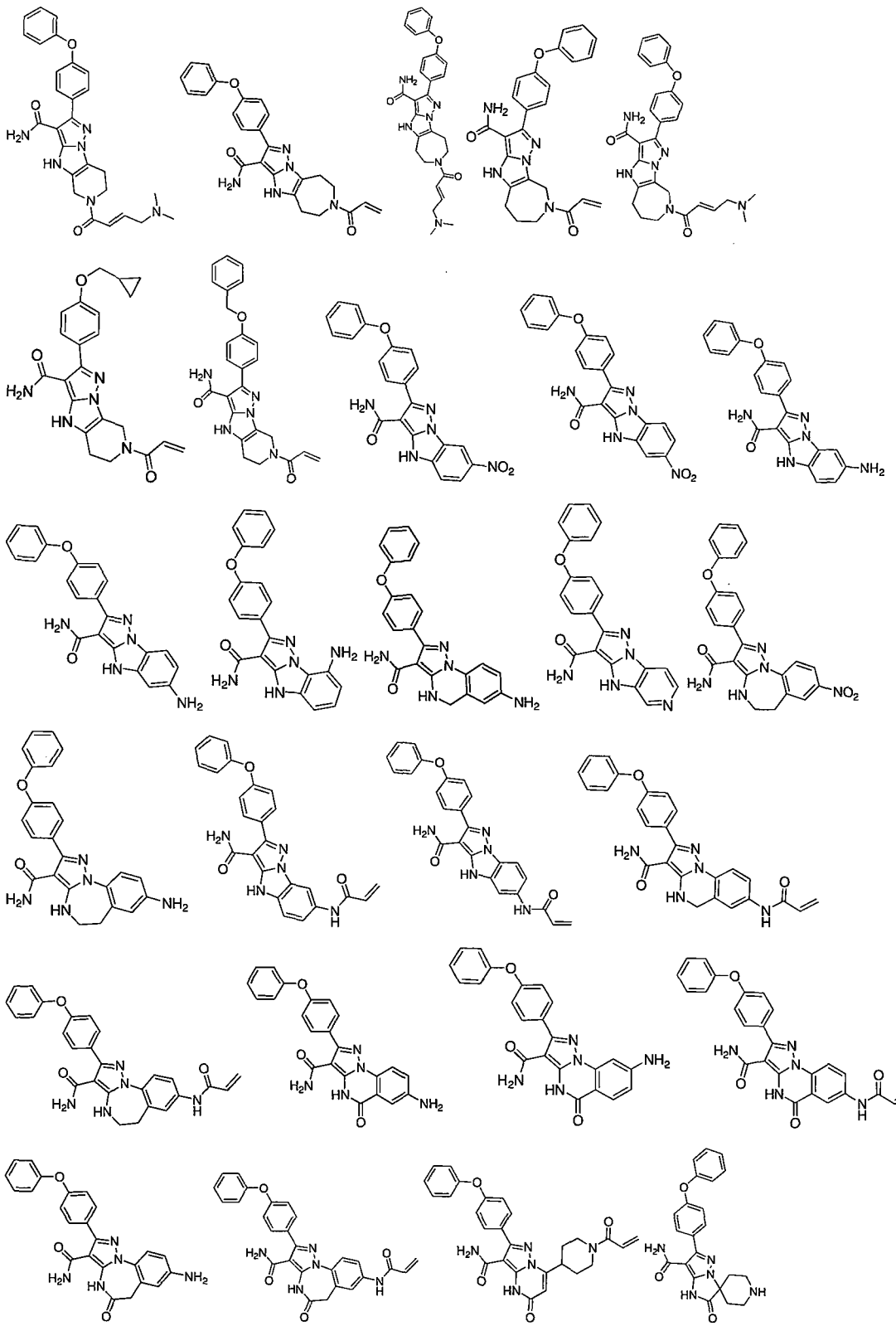
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|  **190** |  **191** |  **192** |
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|  **196.** | | |

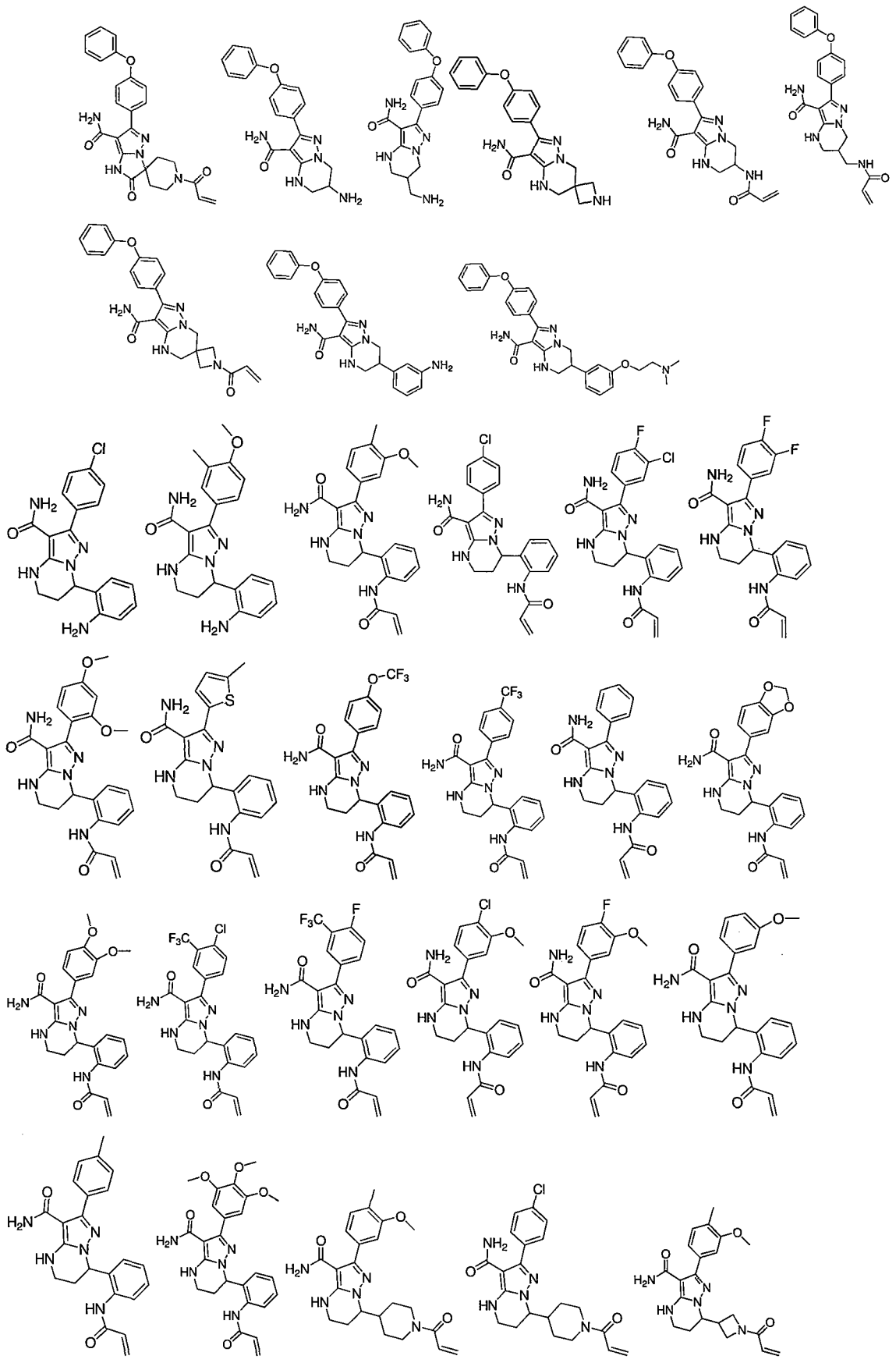
15. A compound according to claim 1 selected from the group consisting of, stereoisomers thereof, and pharmaceutically acceptable salts thereof:

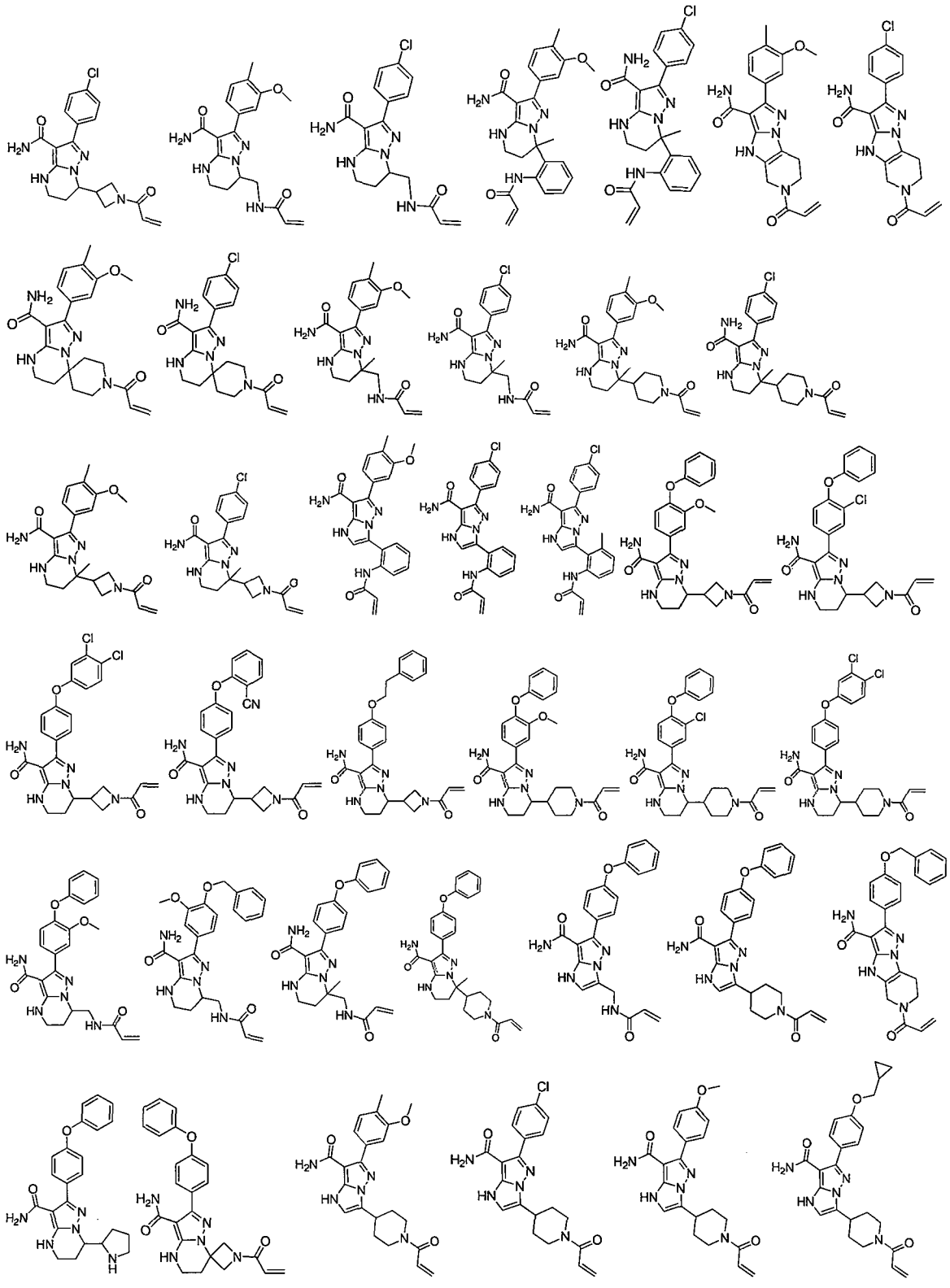


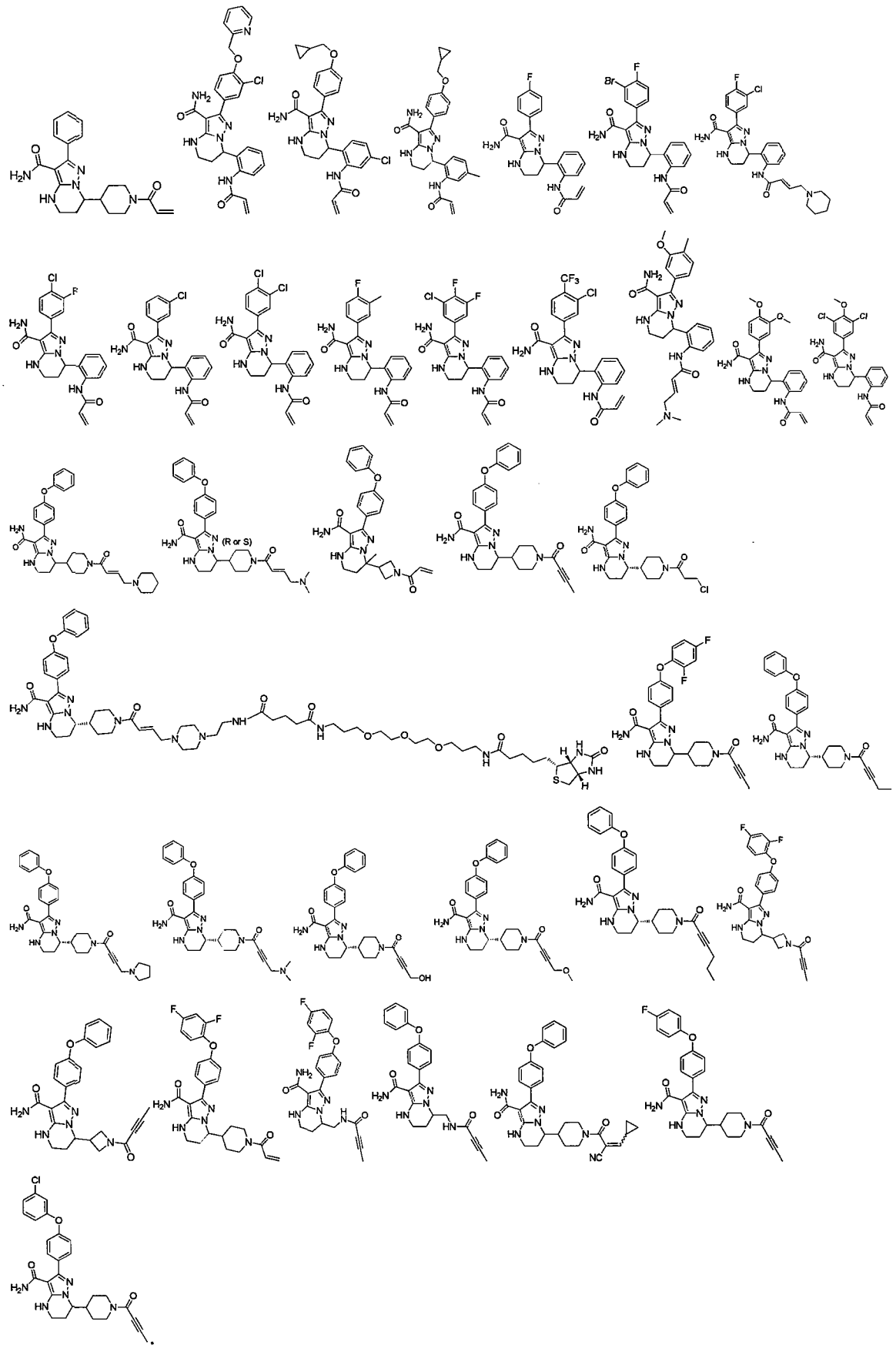












16. The compound of any of claims 1 to 15, having a Btk-inhibiting activity corresponding to an IC50 of 10 uM or less in a Btk Kinase Assay.

17. A pharmaceutical composition comprising a therapeutically effective amount of a compound of any of claims 1 to 15 in unit dosage form and one or more pharmaceutically acceptable carriers.

18. A combination comprising a therapeutically effective amount of a compound of any of claims 1 to 15 and a different agent therapeutically active against an autoimmune and/or inflammatory disease or cancer.

19. A compound for use in treating a disease associated with undesirable Btk activity, which comprises administering to a person in need thereof an effective amount of a compound of any of claims 1-15, an N-oxide thereof or a prodrug thereof, wherein the disease is an allergic disease, an autoimmune disease, an inflammatory disease, or cancer.

20. The compound of claim 19 wherein the disease is a B-cell proliferative disorder, selected from chronic lymphocytic lymphoma, non-Hodgkin's lymphoma, diffuse large B cell lymphoma, mantle cell lymphoma, follicular lymphoma and chronic lymphocytic leukemia.