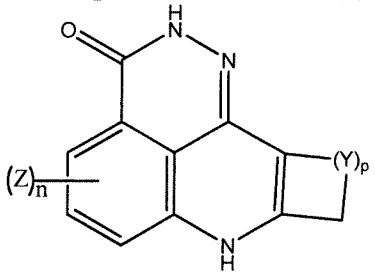
CLAIMS

1. A compound selected from a compound of Formula (**I**):



(**I**)

or a pharmaceutically acceptable salt thereof,

wherein:

Y, at each occurrence, is independently selected from $-CR^1R^2-$, $-R^3C=CR^4-$, $-NR^5-$, -O-, and -S-;

p is an integer ranging from 2 to 12;

Z, at each occurrence, is independently selected from hydrogen, halogen, ~~alkyl~~methyl, ~~alkenyl, alkynyl, cycloalkyl, aryl, heterocyclyl, heteroaryl, -CN, $-NO_2$, $-OR^6$, $-NR^6R^7$, $-NR^6COR^7$,~~ and $-NR^6-NR^7COR^8$, ~~$-NR^6SO_2R^7$, $-CONR^6R^7$, $-COOR^6$, and $-SO_2R^6$, wherein each of the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and heterocyclyl is optionally substituted with at least one substituent R^9~~;

n is an integer ranging from 0 to 3;

R^1 and R^2, which may be the same or different, are each selected from hydrogen, halogen, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, heterocyclyl, heteroaryl, $-NR^6R^7$, $-OR^6$, $-COR^6$, $-CO_2R^6$, $-CONR^6R^7$, $-NR^6CONR^7R^8$, $-NR^6CO_2R^7$, $-NR^6SO_2R^7$, and $-SO_2R^6$, wherein each of the alkyl, ~~alkenyl, alkynyl,~~ cycloalkyl, heteroaryl, aryl, and heterocyclyl is optionally substituted with at least one substituent R^9; and when $(Y)_p$ comprises $-CR^1R^2-CR^1R^2-$, optionally R^1 or R^2 substituted on each of the two carbons, together with the two carbons to which they are attached, form a 3- to 8-membered ring optionally substituted with at least one substituent R^9, wherein said ring is saturated or partially unsaturated having 0, 1 or 2 heteroatoms independently selected from $-NR^{10}-$, -O-, -S-, -SO- and $-SO_2-$;

R^3 and R^4, which may be the same or different, are each selected from hydrogen and alkyl, or R^3 and R^4, together with the carbons to which they are attached, form a 5-, 6-, 7-, or, 8-membered ring optionally substituted with at least one substituent R^9, wherein said ring is

partially or fully unsaturated having 0, 1 or 2 heteroatoms independently selected from -NR^{10}-, -O-, -S-, -SO- and -SO_2-;

R^5, at each occurrence, is independently selected from hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, heterocyclyl, heteroaryl, -COR^6, -CO_2R^6, -$CONR^6R^7$, $SO_2NR^6R^7$ and -SO_2R^6, wherein each of the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and heterocyclyl is optionally substituted by at least one substituent R^9;

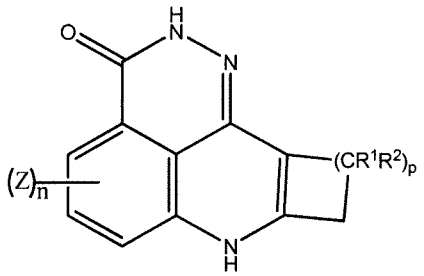
R^6, R^7 and R^8, which may be the same or different, are each selected from hydrogen~~,~~ and alkyl~~, alkenyl, alkynyl, cycloalkyl, heterocyclyl, aryl, and heteroaryl, wherein each of the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and heterocyclyl is optionally substituted by at least one substituent R^9~~;

R^9, at each occurrence, is independently selected from halogen, haloalkyl, alkyl, alkenyl, cycloalkyl, aryl, heteroaryl, heterocyclyl, alkynyl, oxo, -CN, -OR', -NR'R", -COR', -CO_2R', -CONR'R", -C(=NR')NR"R'", -NR'COR", -NR'CONR'R", -NR'CO_2R", -SR', - SOR', -SO_2R', -NR'SO_2NR"R'", and NR'SO_2R", wherein R', R", and R'" are independently selected from hydrogen, haloalkyl, alkyl, arylalkyl, alkenyl, alkynyl, cycloalkyl, heterocyclyl, aryl, and heteroaryl; and

R^{10} is selected from hydrogen, alkyl, cycloalkyl, aryl, heteroaryl, and heterocyclyl;

wherein the term "cycloalkyl" refers to a hydrocarbon group selected from saturated and partially unsaturated cyclic hydrocarbon groups.

2. The compound of Claim 1, which is selected from a compound of Formula (**II**):



(II)

or a pharmaceutically acceptable salt thereof,

wherein

p is an integer ranging from 2 to 12;

Z, at each occurrence, is independently selected from hydrogen, halogen, ~~alkyl~~methyl, ~~alkenyl, alkynyl, and~~cycloalkyl, aryl, heterocyclyl, heteroaryl, ~~-CN, -NO_2, -OR^6, -NR^6R^7, -NR^6COR^7,~~ -NR^6-NR^7COR^8~~, -$NR^6SO_2R^7$, -$CONR^6R^7$, -$COOR^6$, and -SO_2R^6, wherein each of the~~

~~alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and heterocyclyl is optionally substituted with at least one substituent R^9~~;

n is an integer ranging from 0 to 3;

R^1 and R^2, which may be the same or different, are each selected from hydrogen, halogen, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, heterocyclyl, heteroaryl, $-NR^6R^7$, $-OR^6$, $-COR^6$, $-CO_2R^6$, $-CONR^6R^7$, $-NR^6CONR^7R^8$, $-NR^6CO_2R^7$, $-NR^6SO_2R^7$, and $-SO_2R^6$, wherein each of the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and heterocyclyl is optionally substituted with at least one substituent R^9; and optionally R^1 or R^2 substituted on each of the two neighboring carbons, together with the two neighboring carbons to which they are attached, form a 3- to 8-membered ring optionally substituted with at least one substituent R^9, wherein said ring is saturated or partially unsaturated having 0, 1 or 2 heteroatoms independently selected from $-NR^{10}-$, -O-, -S-, -SO- and $-SO_2-$;

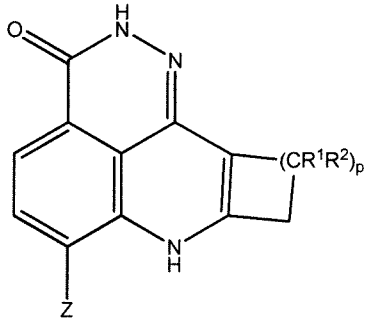
R^6, R^7 and R^8, which may be the same or different, are each selected from hydrogen, alkyl, ~~alkenyl, alkynyl, cycloalkyl, heterocyclyl, aryl, and heteroaryl, wherein each of the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and heterocyclyl is optionally substituted by at least one substituent R^9~~;

R^9, at each occurrence, is independently selected from hydrogen, halogen, haloalkyl, alkyl, alkenyl, cycloalkyl, aryl, heteroaryl, heterocyclyl, alkynyl, oxo, -CN, -OR', -NR'R", -COR', $-CO_2R'$, -CONR'R", -C(=NR')NR"R'", -NR'COR", -NR'CONR'R", $-NR'CO_2R"$, -SR', - SOR', $-SO_2R'$, $-NR'SO_2NR"R'"$, and $NR'SO_2R"$, wherein R', R", and R'" are independently selected from the group consisting of H, haloalkyl, alkyl, arylalkyl, alkenyl, alkynyl, cycloalkyl, heterocyclyl, aryl, and heteroaryl; and

R^{10} is selected from hydrogen, alkyl, cycloalkyl, aryl, hetereoaryl, and heterocyclyl;

wherein the term "cycloalkyl" refers to a hydrocarbon group selected from saturated and partially unsaturated cyclic hydrocarbon groups.

3. The compound of Claim 1, which is selected from a compound of Formula (**II-1**):



(II-1)

or a pharmaceutically acceptable salt thereof,

wherein

p is an integer ranging from 2 to 12;

Z, is selected from hydrogen, halogen, ~~alkyl~~methyl, ~~alkenyl, alkynyl,~~ and ~~cycloalkyl, aryl, heterocyclyl, heteroaryl, CN, NO_2, OR^6, NR^6R^7, NR^6COR^7,~~ NR^6-NR^7COR^8, ~~$NR^6SO_2R^7$, $CONR^6R^7$, $COOR^6$, and SO_2R^6, wherein each of the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and heterocyclyl is optionally substituted with at least one substituent R^9~~;

R^1 and R^2, which may be the same or different, are each selected from hydrogen, halogen, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, heterocyclyl, heteroaryl, $-NR^6R^7$, $-OR^6$, $-COR^6$, $-CO_2R^6$, $-CONR^6R^7$, $-NR^6CONR^7R^8$, $-NR^6CO_2R^7$, $-NR^6SO_2R^7$, and $-SO_2R^6$, wherein each of the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and heterocyclyl is optionally substituted with at least one substituent R^9; and optionally R^1 or R^2 substituted on each of the two neighboring carbons, together with the two neighboring carbons to which they are attached, form a 3- to 8-membered ring optionally substituted with at least one substituent R^9, wherein said ring is saturated or partially unsaturated having 0, 1 or 2 heteroatoms independently selected from $-NR^{10}$-, -O-, -S-, -SO- and $-SO_2$-;

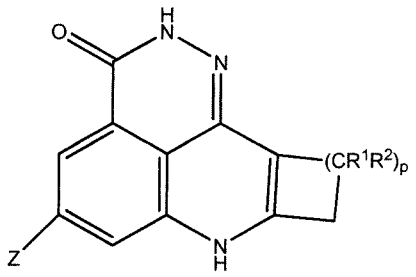
R^6, R^7 and R^8, which may be the same or different, are each selected from hydrogen, and alkyl~~, alkenyl, alkynyl, cycloalkyl, heterocyclyl, aryl, and heteroaryl, wherein each of the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and heterocyclyl is optionally substituted by at least one substituent R^9~~;

R^9, at each occurrence, is independently selected from hydrogen, halogen, haloalkyl, alkyl, alkenyl, cycloalkyl, aryl, heteroaryl, heterocyclyl, alkynyl, oxo, -CN, -OR', -NR'R", -COR', -CO_2R', -CONR'R", -C(=NR')NR"R'", -NR'COR", -NR'CONR'R", -NR'CO_2R", -SR', - SOR', -SO_2R', -NR'SO_2NR"R'", and NR'SO_2R", wherein R', R", and R'" are independently selected from hydrogen, haloalkyl, alkyl, arylalkyl, alkenyl, alkynyl, cycloalkyl, heterocyclyl, aryl, and heteroaryl; and

R^{10} is selected from hydrogen, alkyl, cycloalkyl, aryl, heteroaryl, and heterocyclyl;

wherein the term "cycloalkyl" refers to a hydrocarbon group selected from saturated and partially unsaturated cyclic hydrocarbon groups.

4. The compound of Claim 1, which is selected from a compound of Formula **(II-2):**



(II-2)

or a pharmaceutically acceptable salt thereof,

wherein

p is an integer ranging from 2 to 12;

Z is selected from hydrogen, halogen, ~~alkyl~~methyl, ~~alkenyl, alkynyl,~~ and ~~cycloalkyl, aryl, heterocyclyl, heteroaryl, CN, NO_2, OR^6, NR^6R^7, NR^6COR^7,~~ NR^6-NR^7COR^8, ~~$NR^6SO_2R^7$, $CONR^6R^7$, $COOR^6$, and SO_2R^6, wherein each of the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and heterocyclyl is optionally substituted with at least one substituent R^9~~;

R^1 and R^2, which may be the same or different, are each selected from hydrogen, halogen, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, heterocyclyl, heteroaryl, $-NR^6R^7$, $-OR^6$, $-COR^6$, $-CO_2R^6$, $-CONR^6R^7$, $-NR^6CONR^7R^8$, $-NR^6CO_2R^7$, $-NR^6SO_2R^7$, and $-SO_2R^6$, wherein each of the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and heterocyclyl is optionally substituted with at least one substituent R^9; and optionally R^1 or R^2 substituted on each of the two neighboring carbons, together with the two neighboring carbons to which they are attached, form a 3- to 8-membered ring optionally substituted with at least one substituent R^9, wherein said ring is saturated or partially unsaturated having 0, 1 or 2 heteroatoms independently selected from $-NR^{10}-$, -O-, -S-, -SO- and $-SO_2-$;

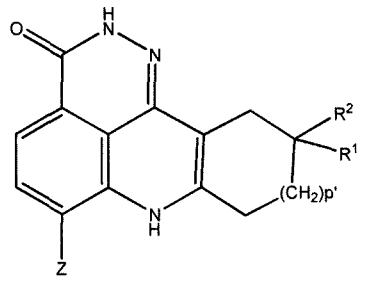
R^6, R^7 and R^8, which may be the same or different, are each selected from hydrogen, and alkyl~~, alkenyl, alkynyl, cycloalkyl, heterocyclyl, aryl, and heteroaryl, wherein each of the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and heterocyclyl is optionally substituted by at least one substituent R^9~~;

R^9, at each occurrence, is independently selected from hydrogen, halogen, haloalkyl, alkyl, alkenyl, cycloalkyl, aryl, heteroaryl, heterocyclyl, alkynyl, oxo, -CN, -OR', -NR'R", -COR', $-CO_2R'$, -CONR'R", -C(=NR')NR"R'", -NR'COR", -NR'CONR'R", $-NR'CO_2R"$, -SR', - SOR', $-SO_2R'$, $-NR'SO_2NR"R'"$, and $NR'SO_2R"$, wherein R', R", and R'" are independently selected from hydrogen, haloalkyl, alkyl, arylalkyl, alkenyl, alkynyl, cycloalkyl, heterocyclyl, aryl, and heteroaryl; and

R^{10} is selected from hydrogen, alkyl, cycloalkyl, aryl, heteroaryl, and heterocyclyl;

wherein the term "cycloalkyl" refers to a hydrocarbon group selected from saturated and partially unsaturated cyclic hydrocarbon groups.

5. The compound of Claim 1, which is selected from a compound of Formula (**II-3**):



(II-3)

or a pharmaceutically acceptable salt thereof,

wherein

p' is an integer ranging from 0-10;

Z is selected from the group consisting of hydrogen, halogen, ~~alkyl~~methyl, ~~alkenyl, alkynyl,~~ and ~~cycloalkyl, aryl, heterocyclyl, heteroaryl, CN, NO_2, OR^6, NR^6R^7, NR^6COR^7,~~ $-NR^6-NR^7COR^8$, ~~$NR^6SO_2R^7$, $CONR^6R^7$, $COOR^6$, and SO_2R^6, wherein each of the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and heterocyclyl is optionally substituted with at least one substituent R^9~~;

R^1 and R^2, which may be the same or different, are each selected from hydrogen, halogen, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, heterocyclyl, heteroaryl, $-NR^6R^7$, $-OR^6$, $-COR^6$, $-CO_2R^6$, $-CONR^6R^7$, $-NR^6CONR^7R^8$, $-NR^6CO_2R^7$, $-NR^6SO_2R^7$, and $-SO_2R^6$, wherein each of the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and heterocyclyl is optionally substituted with at least one substituent R^9;

R^6, R^7 and R^8, which may be the same or different, are each selected from hydrogen, alkyl, ~~alkenyl, alkynyl, cycloalkyl, heterocyclyl, aryl, and heteroaryl, wherein each of the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and heterocyclyl is optionally substituted by at least one substituent R^9~~;

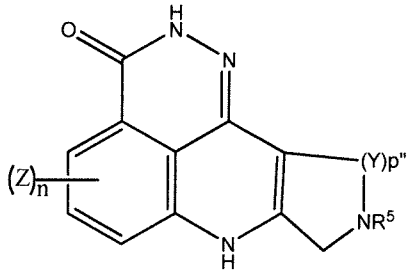
R^9, at each occurrence, is independently selected from hydrogen, halogen, haloalkyl, alkyl, alkenyl, cycloalkyl, aryl, heteroaryl, heterocyclyl, alkynyl, oxo, -CN, -OR', -NR'R", -COR', $-CO_2R'$, -CONR'R", -C(=NR')NR"R'", -NR'COR", -NR'CONR'R", $-NR'CO_2R"$, -SR', - SOR', $-SO_2R'$, $-NR'SO_2NR"R'"$, and $NR'SO_2R"$, wherein R', R", and R'" are independently selected from hydrogen, haloalkyl, alkyl, arylalkyl, alkenyl, alkynyl, cycloalkyl, heterocyclyl, aryl, and heteroaryl; and

wherein the term "cycloalkyl" refers to a hydrocarbon group selected from saturated and partially unsaturated cyclic hydrocarbon groups.

6. The compound of Claim 5, wherein p' is an integer of 1; R^1 and R^2, which may be the same or different, are each selected from hydrogen, halogen, alkyl, and aryl; Z is independently selected from halogen and ~~alkyl~~methyl.

7. The compound of Claim 5, wherein p' is an integer of 3; R^1 and R^2, which may be the same or different, are each selected from hydrogen, halogen, alkyl, and aryl; Z is independently selected from halogen and ~~alkyl~~methyl.

8. The compound of Claim 1, which is selected from a compound of Formula **(III):**



(III)

or a pharmaceutically acceptable salt thereof,

wherein:

Y, at each occurrence, is independently selected from $-CR^1R^2-$, $-R^3C{=}CR^4-$, $-NR^5-$, -O-, and -S-;

p" is an integer ranging from 1 to 11;

Z, at each occurrence, is independently selected from hydrogen, halogen, ~~alkyl~~methyl, ~~alkenyl, alkynyl,~~ and ~~cycloalkyl, aryl, heterocyclyl, heteroaryl, -CN, $-NO_2$, $-OR^6$, $-NR^6R^7$, $-NR^6COR^7$, $-NR^6-NR^7COR^8$, $-NR^6SO_2R^7$, $-CONR^6R^7$, $-COOR^6$, and $-SO_2R^6$, wherein each of the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and heterocyclyl is optionally substituted with at least one substituent R^9~~;

n is an integer ranging from 0 to 3;

R^1 and R^2, which may be the same or different, are each selected from hydrogen, halogen, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, heterocyclyl, heteroaryl, $-NR^6R^7$, $-OR^6$, $-COR^6$, $-CO_2R^6$, $-CONR^6R^7$, $-NR^6CONR^7R^8$, $-NR^6CO_2R^7$, $-NR^6SO_2R^7$, and $-SO_2R^6$, wherein each of the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and heterocyclyl is optionally substituted with at least one substituent R^9; and when $(Y)_{p"}$ comprises $-CR^1R^2-CR^1R^2-$, optionally R^1 or R^2 substituted on each of the two carbons, together with the two carbons to which they are attached,

form a 3- to 8-membered ring optionally substituted with at least one substituent R^9, wherein said ring is saturated or partially unsaturated having 0, 1 or 2 heteroatoms independently selected from $-NR^{10}-$, -O-, -S-, -SO- and $-SO_2-$;

R^3 and R^4, which may be the same or different, are each selected from hydrogen and alkyl, or R^3 and R^4, together with the atoms to which they are attached, form a 5-, 6-, 7-, or, 8-membered ring optionally substituted with at least one substituent R^9, wherein said ring is partially or fully unsaturated having 0, 1 or 2 heteroatoms independently selected from $-NR^{10}-$, -O-, -S-, -SO-, and $-SO_2-$;

R^5 is independently selected from hydrogen, halogen, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, heterocyclyl, heteroaryl, $-COR^6$, $-CO_2R^6$, $-CONR^6R^7$, $SO_2NR^6R^7$ and $-SO_2R^6$, wherein each of the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and heterocyclyl is optionally substituted by at least one substituent R^9;

R^6, R^7 and R^8, which may be the same or different, are each selected from hydrogen, alkyl~~, alkenyl, alkynyl, cycloalkyl, heterocyclyl, aryl, and heteroaryl, wherein each of the alkyl, alkenyl, alkynyl, cycloalkyl, heteroaryl, aryl, and heterocyclyl is optionally substituted by at least one substituent R^9~~;

R^9, at each occurrence, is independently selected from halogen, haloalkyl, alkyl, alkenyl, cycloalkyl, aryl, heteroaryl, heterocyclyl, alkynyl, oxo, -CN, -OR', -NR'R", -COR', $-CO_2R'$, -CONR'R", -C(=NR')NR"R'", -NR'COR", -NR'CONR'R", $-NR'CO_2R"$, -SR', - SOR', $-SO_2R'$, $-NR'SO_2NR"R'"$, and $NR'SO_2R"$, wherein R', R", and R'" are independently selected from hydrogen, haloalkyl, alkyl, arylalkyl, alkenyl, alkynyl, cycloalkyl, heterocyclyl, aryl, and heteroaryl; and

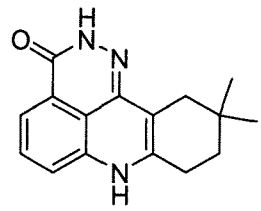
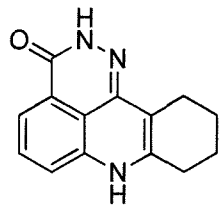
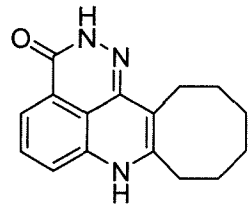
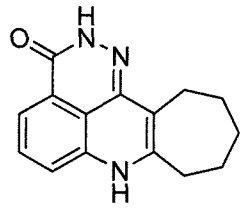
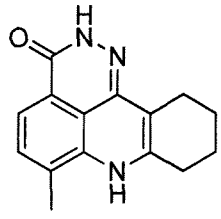
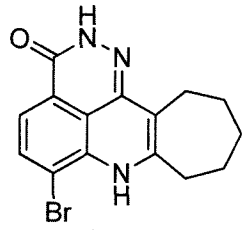
R^{10} is selected from hydrogen, alkyl, cycloalkyl, aryl, heteroaryl and heterocyclyl;

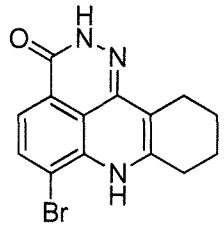
wherein the term "cycloalkyl" refers to a hydrocarbon group selected from saturated and partially unsaturated cyclic hydrocarbon groups.

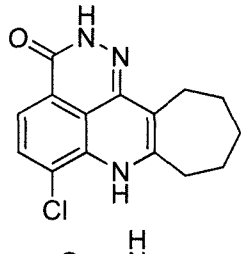
9. The compound of Claim 8, wherein p" in Formula (**III**) is an integer of 2 and Y is $-CR^1R^2-$, wherein R^1 and R^2 are hydrogen.

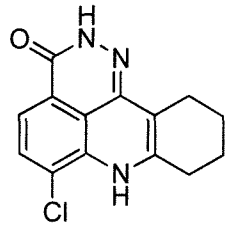
10. The compound of Claim 8, wherein R^5 in Formula (**III**) is selected from hydrogen, alkyl, $-COR^6$, and $-CO_2R^6$, wherein the alkyl is optionally substituted by an aryl group; and wherein R^6 is an alkyl group~~ optionally substituted by $-NR'CO_2R"$ or -NR'R", wherein R' and R" are independently selected from hydrogen, alkyl and arylalkyl; or R^6 is an cycloalkyl group optionally substituted by alkyl~~.

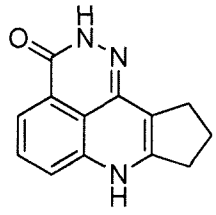
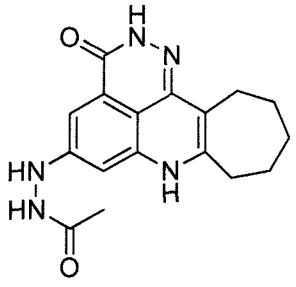
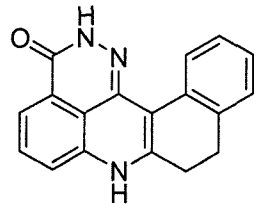
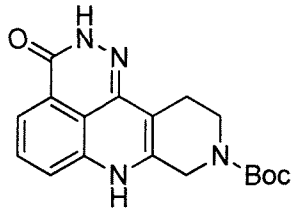
11. A compound selected from the following compounds

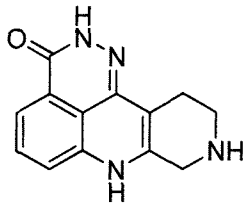







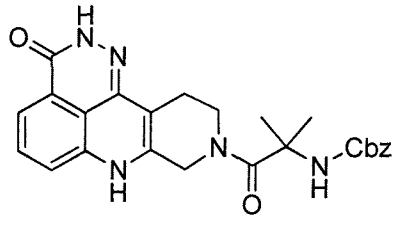


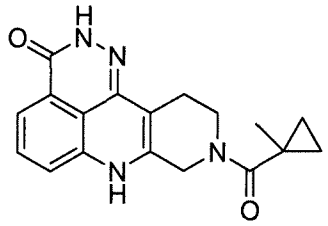
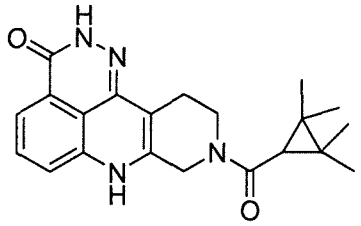
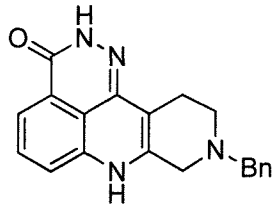




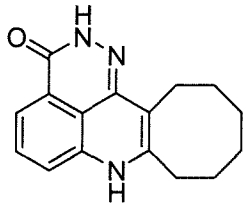




or a pharmaceutically acceptable salt thereof.

12. A compound



or a pharmaceutically acceptable salt thereof.

or a pharmaceutically acceptable salt thereof.

13. The compound of any one of Claims 1-12, having a Poly(ADP-ribose) polymerase-inhibiting activity corresponding to a IC_{50} of 1uM or less in a Poly(ADP-ribose) polymerase enzyme assay.

14. A pharmaceutical composition comprising at least one pharmaceutically acceptable carrier and as an active ingredient a therapeutically effective amount of a compound of any one of Claims 1-12 or a pharmaceutically acceptable salt thereof.

~~**15.** Use of a compound of any one of Claims 1-12 or a pharmaceutically acceptable salt thereof in the manufacture of medicaments for the treatment of at least one disease responsive to inhibition of Poly(ADP-ribose) polymerase.~~