[0054] In some embodiments, a compound of formula (VI), or a pharmaceutically acceptable salt, or solvate thereof, is:

6-(4-fluorobenzyl)-5,6,11,11a-tetrahydro-1H-imidazo[1',5':1,6]pyrido[3,4-b]indol-3(2H)-one (compound no. 1-13);

6-(4-fluorobenzyl)-5,6,11,11a-tetrahydro-1*H*-imidazo[1',5':1,6]pyrido[3,4-*b*] indole-1,3(2*H*)-dione (compound no. 1-15);

(*S*)-6-(4-fluorobenzyl)-5,6,11,11a-tetrahydro-1*H*-imidazo[1',5':1,6]pyrido[3,4-*b*]indole-1,3(2*H*)-dione (compound no. 1-130);

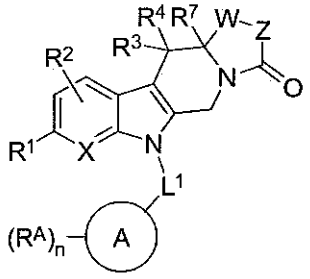
8-[*p*-fluorophenyl)methyl]-6.8.11.13-tetrazatetracyclo[7.7.0.02, 7.011,15] hexadeca-1(9),2(7),3,5-tetraen-12,14-dione (compound no. C109);

6-(4-fluorobenzyl)-11,11-dimethyl-5,6,11,11a-tetrahydro-1*H*-imidazo[1',5':1,6] pyrido[3,4-*b*]indole-1,3(2*H*)-dione (compound no. A110);

6-(4-fluorobenzyl)-11,11-dimethyl-5,6,11,11a-tetrahydro-1H-imidazo[1',5':1,6]pyrido[3,4-b]indole-1,3(2H)-dione (compound no. A110 Enantiomer A); or

6-(4-fluorobenzyl)-11,11-dimethyl-5,6,11,11a-tetrahydro-1H-imidazo[1',5':1,6]pyrido[3,4-b]indole-1,3(2H)-dione (compound no. A110 Enantiomer B).

[0055] In one aspect, described herein is a compound having the structure of Formula (II), or a pharmaceutically acceptable salt or solvate thereof:



Formula (II)

wherein,

R^1 is H, halogen, —CN, C_1-C_4alkyl, or —CF_3;

R^2 is H, halogen, —CN, —OH, C_1-C_4alkyl, C_1-C_4fluoroalkyl, C_1-C_4deuteroalkyl, C_1-C_4alkoxy, or C_1-C_4fluoroalkoxy;

R^3 is H or —CH_3;

R^4 is H or —CH_3;

R^7 is H;

L^1 is C_1-C_4alkylene;

A is a substituted or unsubstituted phenyl or substituted or unsubstituted monocyclic heteroaryl;

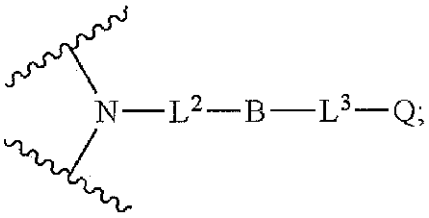
each R^A substituent is independently H, halogen, OH, —OR^9, —CN, —NO_2, C_1-C_6alkyl, C_1-C_6fluoroalkyl, C_1-C_6heteroalkyl, or substituted or unsubstituted C_3-C_8cycloalkyl;

n is 0, 1, 2, 3, or 4;

X is —CH=, —N=, or —CF=;

W is —C(=O)—;

Z is



L^2 is C_1-C_6alkylene;

B is absent;

L^3 is absent or C_3-C_6cycloalkylene;

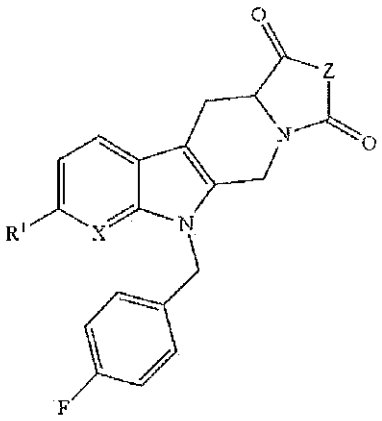
Q is —CO_2H, —CO_2(C_1-C_6alkyl), —OH, —$B(OH)_2$, —C(=O)$NHSO_2R^9$, —C(=O)$N(R^{10})_2$, —C(=O)NH—OH, —C(=O)NH—CN, —$SO_2NHC(=O)R^9$, —$OP(=O)(OH)_2$, —$P(=O)(OH)_2$, tetrazolyl, substituted or unsubstituted monocyclic heterocycle, —$S(=O)_2R^9$, —$S(=O)R^9$, —SR^9, —$S(=O)_2N(R^{10})_2$, —$NR^{10}S(=O)_2R^9$, —$OC(=O)R^9$, —OCO_2R^9, —$N(R^{10})_2$, —$C(=O)N(R^{10})_2$, —$OC(=O)N(R^{10})_2$, —$NHC(=O)R^9$, or —$NHC(=O)OR^9$;

each R^9 is independently C_1-C_6alkyl, C_1-C_6fluoroalkyl, C_1-C_6deuteroalkyl, C_3-C_6cycloalkyl, a substituted or unsubstituted phenyl, —C_1-C_4alkylene-substituted or unsubstituted aryl, a substituted or unsubstituted monocyclic heteroaryl, —C_1-C_4alkylene-substituted or unsubstituted monocyclic heteroaryl, or a substituted or unsubstituted bicyclic heteroaryl;

each R^{10} is independently H, C_1-C_6alkyl, C_1-C_6fluoroalkyl, C_1-C_6deuteroalkyl, C_3-C_6cycloalkyl, a substituted or unsubstituted phenyl, —C_1-C_4alkylene-substituted or unsubstituted aryl, a substituted or unsubstituted monocyclic heteroaryl, or —C_1-C_4alkylene-substituted or unsubstituted monocyclic heteroaryl;

or two R^{10} groups attached to the same N atom are taken together with the N atom to which they are attached to form a substituted or unsubstituted heterocycle.

[0055a] In one aspect, described herein is a compound having the following structure, or a pharmaceutically acceptable salt or solvate thereof:

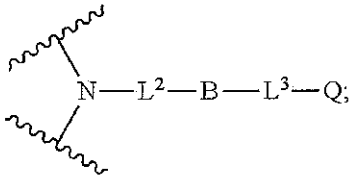


wherein:

R^1 is H or Cl;

X is —CH= or —N=;

Z is



L^2 is C_1-C_6alkylene;

B is absent;

L^3 is absent or C_3-C_6cycloalkylene; and

Q is —CO_2H, —CO_2(C_1-C_6alkyl), —OH, or —OP(=O)$(OH)_2$.

[0056] In one aspect, described herein is a pharmaceutical composition comprising a compound described herein, or a pharmaceutically acceptable salt, or solvate thereof, and at least one pharmaceutically acceptable excipient. In some embodiments, the pharmaceutical composition is formulated for administration to a mammal by intravenous administration, subcutaneous administration, oral administration, inhalation, nasal administration, dermal administration, or ophthalmic administration. In some embodiments, the pharmaceutical composition is in the form of a tablet, a pill, a capsule, a liquid, a suspension, a gel, a dispersion, a solution, an emulsion, an ointment, or a lotion.

[0057] In one aspect, described herein is a method of treating or preventing any one of the diseases or conditions described herein comprising administering a therapeutically effective amount of a compound described herein, or a pharmaceutically acceptable salt, or solvate thereof, to a mammal in need thereof.

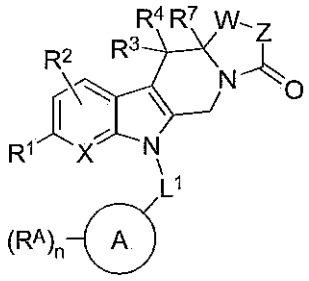
[0058] In another aspect, described herein is a method for treating or preventing cancer, or fibrosis, or combinations thereof in a mammal comprising administering a therapeutically

effective amount of a compound described herein, or a pharmaceutically acceptable salt, or solvate thereof, to the mammal in need thereof.

Claims

What is claimed is:

1. A compound having the structure of Formula (II), or a pharmaceutically acceptable salt or solvate thereof:



Formula (II)

wherein,

R^1 is H, halogen, —CN, C_1-C_4alkyl, or —CF_3;

R^2 is H, halogen, —CN, —OH, C_1-C_4alkyl, C_1-C_4fluoroalkyl, C_1-C_4deuteroalkyl, C_1-C_4alkoxy, or C_1-C_4fluoroalkoxy;

R^3 is H or —CH_3;

R^4 is H or —CH_3;

R^7 is H;

L^1 is C_1-C_4alkylene;

A is a substituted or unsubstituted phenyl or substituted or unsubstituted monocyclic heteroaryl;

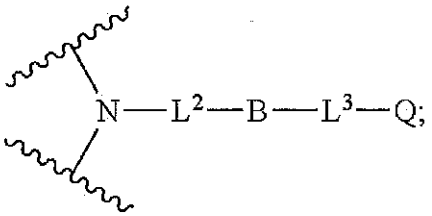
each R^A substituent is independently H, halogen, OH, —OR^9, —CN, —NO_2, C_1-C_6alkyl, C_1-C_6fluoroalkyl, C_1-C_6heteroalkyl, or substituted or unsubstituted C_3-C_8cycloalkyl;

n is 0, 1, 2, 3, or 4;

X is —CH=, —N=, or —CF=;

W is —C(=O)—;

Z is



L^2 is C_1-C_6alkylene;

B is absent;

L^3 is absent or C_3-C_6cycloalkylene;

Q is —CO_2H, —CO_2(C_1-C_6alkyl), —OH, —$B(OH)_2$, —C(=O)$NHSO_2R^9$, —C(=O)$N(R^{10})_2$, —C(=O)NH—OH, —C(=O)NH—CN, —$SO_2NHC(=O)R^9$, —$OP(=O)(OH)_2$, —$P(=O)(OH)_2$, tetrazolyl, substituted or unsubstituted monocyclic heterocycle, —$S(=O)_2R^9$, —$S(=O)R^9$, —SR^9, —$S(=O)_2N(R^{10})_2$, —$NR^{10}S(=O)_2R^9$, —$OC(=O)R^9$, —OCO_2R^9, —$N(R^{10})_2$, —C(=O)$N(R^{10})_2$, —$OC(=O)N(R^{10})_2$, —$NHC(=O)R^9$, or —$NHC(=O)OR^9$;
each R^9 is independently C_1-C_6alkyl, C_1-C_6fluoroalkyl, C_1-C_6deuteroalkyl, C_3-C_6cycloalkyl, a substituted or unsubstituted phenyl, —C_1-C_4alkylene-substituted or unsubstituted aryl, a substituted or unsubstituted monocyclic heteroaryl, —C_1-C_4alkylene-substituted or unsubstituted monocyclic heteroaryl, or a substituted or unsubstituted bicyclic heteroaryl;
each R^{10} is independently H, C_1-C_6alkyl, C_1-C_6fluoroalkyl, C_1-C_6deuteroalkyl, C_3-C_6cycloalkyl, a substituted or unsubstituted phenyl, —C_1-C_4alkylene-substituted or unsubstituted aryl, a substituted or unsubstituted monocyclic heteroaryl, or —C_1-C_4alkylene-substituted or unsubstituted monocyclic heteroaryl;
or two R^{10} groups attached to the same N atom are taken together with the N atom to which they are attached to form a substituted or unsubstituted heterocycle.

2. The compound of claim 1, or a pharmaceutically acceptable salt or solvate thereof, wherein:
Q is —CO_2H, —CO_2(C_1-C_6alkyl), —OH, —$B(OH)_2$, —C(=O)$NHSO_2R^9$, —C(=O)$N(R^{10})_2$, —C(=O)NH—OH, —C(=O)NH—CN, —$SO_2NHC(=O)R^9$, —$OP(=O)(OH)_2$, —$P(=O)(OH)_2$, or tetrazolyl.

3. The compound of claim 2, or a pharmaceutically acceptable salt or solvate thereof, wherein:
Q is —CO_2H, —CO_2(C_1-C_6alkyl), —$B(OH)_2$, —C(=O)$NHSO_2R^9$, —C(=O)$N(R^{10})_2$, or tetrazolyl.

4. The compound of claim 3, or a pharmaceutically acceptable salt, or solvate thereof, wherein:
L^2 is —CH_2—, —CH_2CH_2—, —$CH_2CH_2CH_2$—, or —$CH_2CH_2CH_2CH_2$—; and
Q is —CO_2H, or —CO_2(C_1-C_6alkyl).

5. The compound of claim 2, or a pharmaceutically acceptable salt, or solvate thereof, wherein:
L^1 is —CH_2—; and
A is phenyl.

6. The compound of claim 2, or a pharmaceutically acceptable salt, or solvate thereof, wherein:

L^1 is —CH_2—; and

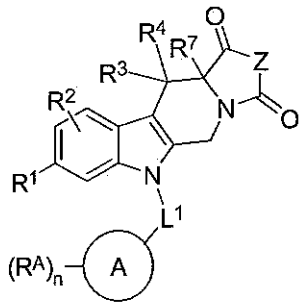
A is furanyl, pyrrolyl, oxazolyl, thiazolyl, imidazolyl, pyrazolyl, triazolyl, tetrazolyl, isoxazolyl, isothiazolyl, oxadiazolyl, thiadiazolyl, pyridinyl, pyrimidinyl, pyrazinyl, pyridazinyl, or triazinyl.

7. The compound of claim 5, or a pharmaceutically acceptable salt, or solvate thereof, wherein:

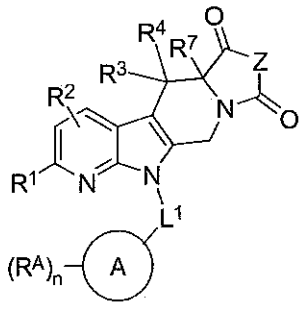
R^1 is H, F, Cl, Br, —CN, —CH_3, or —CF_3; and

R^2 is H, F, Cl, Br, I, —CN, —OH, —CH_3, —CF_3, —CD_3, —OCH_3, —OCH_2CH_3, —OCF_3, or —OCH_2CF_3.

8. The compound of claim 1, or a pharmaceutically acceptable salt or solvate thereof, wherein the compound has the following structure of Formula (III), or Formula (IV):



Formula (III)



Formula (IV)

9. A compound of claim 1, wherein the compound is:

4-(6-(4-fluorobenzyl)-1,3-dioxo-11,11a-dihydro-1H-imidazo[1′,5′:1,6]pyrido[3,4-b]indol-2(3H,5H,6H)-yl)butanoic acid;

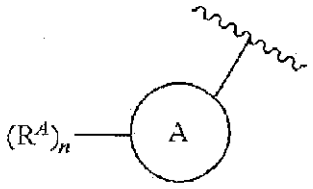
(S)-4-(6-(4-fluorobenzyl)-1,3-dioxo-11,11a-dihydro-1H-imidazo[1′,5′:1,6]pyrido[3,4-b]indol-2(3H,5H,6H)-yl)butanoic acid;

(R)-4-(6-(4-fluorobenzyl)-1,3-dioxo-11,11a-dihydro-1H-imidazo[1′,5′:1,6]pyrido[3,4-b]indol-2(3H,5H,6H)-yl)butanoic acid;

3-(6-(4-fluorobenzyl)-1,3-dioxo-11,11a-dihydro-1H-imidazo[1′,5′:1,6]pyrido[3,4-b]indol-2(3H,5H,6H)-yl)propanoic acid;
3-(6-(4-fluorobenzyl)-1,3-dioxo-11,11a-dihydro-1H-imidazo[1′,5′:1,6]pyrido[3,4-b]indol-2(3H,5H,6H)-yl)propanoic acid (Enantiomer A);
3-(6-(4-fluorobenzyl)-1,3-dioxo-11,11a-dihydro-1H-imidazo[1′,5′:1,6]pyrido[3,4-b]indol-2(3H,5H,6H)-yl)propanoic acid (Enantiomer B);
4-(1,3-dioxo-6-(3-phenylpropyl)-11,11a-dihydro-1H-imidazo[1′,5′:1,6]pyrido[3,4-b]indol-2(3H,5H,6H)-yl)butanoic acid;
(S)-4-(6-((6-methoxypyridin-3-yl)methyl)-1,3-dioxo-11,11a-dihydro-1H-imidazo[1′,5′:1,6]pyrido[3,4-b]indol-2(3H,5H,6H)-yl)butanoic acid;
(S)-3-(6-((6-methoxypyridin-3-yl)methyl)-1,3-dioxo-11,11a-dihydro-1H-imidazo[1′,5′:1,6]pyrido[3,4-b]indol-2(3H,5H,6H)-yl)propanoic acid;
6-(4-fluorobenzyl)-2-(2-hydroxyethyl)-5,6,11,11a-tetrahydro-1H-imidazo[1′,5′:1,6]pyrido[3,4-b]indole-1,3(2H)-dione;
2-(6-(4-fluorobenzyl)-1,3-dioxo-5,6,11,11a-tetrahydro-1H-imidazo[1′,5′:1,6]pyrido[3,4-b]indol-2(3H)-yl)acetic acid;
(S)-4-(6-(4-fluorobenzyl)-1,3-dioxo-5,6,11,11a-tetrahydro-1H-imidazo[1′,5′:1,6]pyrido[3,4-b]indol-2(3H)-yl)-2,2-dimethylbutanoic acid;
(S)-4-(6-(4-fluorobenzyl)-1,3-dioxo-5,6,11,11a-tetrahydro-1H-imidazo[1′,5′:1,6]pyrido[3,4-b]indol-2(3H)-yl)-3,3-dimethylbutanoic acid;
(S)-4-(8-chloro-6-(4-fluorobenzyl)-1,3-dioxo-5,6,11,11a-tetrahydro-1H-imidazo[1′,5′:1,6]pyrido[3,4-b]indol-2(3H)-yl)butanoic acid;
(S)-3-(6-((6-chloropyridin-3-yl)methyl)-1,3-dioxo-5,6,11,11a-tetrahydro-1H-imidazo[1′,5′:1,6]pyrido[3,4-b]indol-2(3H)-yl)propanoic acid;
(S)-1-((6-((6-methoxypyridin-3-yl)methyl)-1,3-dioxo-5,6,11,11a-tetrahydro-1H-imidazo[1′,5′:1,6]pyrido[3,4-b]indol-2(3H)-yl)methyl)cyclopropane-1-carboxylic acid;
(S)-3-(6-(4-fluorobenzyl)-1,3-dioxo-5,6,11,11a-tetrahydro-1H-imidazo[1′,5′:1,6]pyrido[3,4-b]indol-2(3H)-yl)-2,2-dimethylpropanoic acid;
(S)-1-((6-(4-fluorobenzyl)-1,3-dioxo-5,6,11,11a-tetrahydro-1H-imidazo[1′,5′:1,6]pyrido[3,4-b]indol-2(3H)-yl)methyl)cyclopropane-1-carboxylic acid;
3-{8-[(4-fluorophenyl)methyl]-12,14-dioxo-6,8, 11,13-tetraazatetracyclo[7.7.0.0^{2,7}.0^{11,15}]hexadeca-1(9),2(7),3,5-tetraen-13-yl}propionic acid;
3-{8-[(4-fluorophenyl)methyl]-12,14-dioxo-6,8, 11,13-tetraazatetracyclo[7.7.0.0^{2,7}.0^{11,15}]hexadeca-1(9),2(7),3,5-tetraen-13-yl}propionic acid (Enantiomer A);

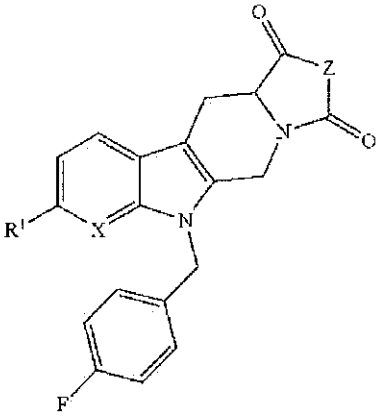
3-{8-[(4-fluorophenyl)methyl]-12,14-dioxo-6,8,11,13-tetraazatetracyclo[7.7.0.0^{2,7}.0^{11,15}]hexadeca-1(9),2(7),3,5-tetraen-13-yl}propionic acid (Enantiomer B);
3-(6-(4-fluorobenzyl)-11,11-dimethyl-1,3-dioxo-5,6,11,11a-tetrahydro-1H-imidazo[1',5':1,6]pyrido[3,4-b]indol-2(3H)-yl)propanoic acid;
(S)-3-(1,3-dioxo-6-((2-(trifluoromethyl)thiazol-5-yl)methyl)-11,11a-dihydro-1H-imidazo[1',5':1,6]pyrido[3,4-b]indol-2(3H,5H,6H)-yl)propanoic acid;
(S)-3-(6-(4-methoxybenzyl)-1,3-dioxo-11,11a-dihydro-1H-imidazo[1',5': 1,6]pyrido[3,4-b]indol-2(3H,5H,6H)-yl)propanoic acid;
(S)-3-(6-(2,4-dichlorobenzyl)-1,3-dioxo-11,11a-dihydro-1H-imidazo[1',5': 1,6]pyrido[3,4-b]indol-2(3H,5H,6H)-yl)propanoic acid;
(S)-3-(6-(4-chloro-2-fluorobenzyl)-1,3-dioxo-11,11a-dihydro-1H-imidazo[1',5':1,6]pyrido[3,4-b]indol-2(3H,5H,6H)-yl)propanoic acid;
(S)-3-(6-(2,4-difluorobenzyl)-1,3-dioxo-11,11a-dihydro-1H-imidazo[1',5': 1,6]pyrido[3,4-b]indol-2(3H,5H,6H)-yl)propanoic acid;
(S)-3-(6-((6-fluoropyridin-3-yl)methyl)-1,3-dioxo-11,11a-dihydro-1H-imidazo[1',5':1,6]pyrido[3,4-b]indol-2(3H,5H,6H)-yl)propanoic acid;
3-{8-[(4-fluorophenyl)methyl]-12,14-dioxo-6,8,11,13-tetrazatetracyclo[7.7.0.0^{2,7}.0^{11,15}]hexadeca-1(9),2(7),3,5-tetraene-13-yl}-2,2-dimethyl propionic acid;
3-{8-[(4-fluorophenyl)methyl]-16,16-dimethyl-12,14-dioxo-6,8,11,13-tetrazatetracyclo[7.7.0.0^{2,7}.0^{11,15}]hexadeca-1(9),2(7),3,5-tetraene-13-yl}propionic acid;
(S)-3-(6-(4-fluorobenzyl)-1,3-dioxo-11,11a-dihydro-1H-imidazo[1',5':1,6]pyrido[3,4-b]indol-2(3H,5H,6H)-yl)-N-(methylsulfonyl)propanamide;
(S)-3-(6-(4-fluorobenzyl)-1,3-dioxo-11,11a-dihydro-1H-imidazo[1',5':1,6]pyrido[3,4-b]indol-2(3H,5H,6H)-yl)-N-(phenylsulfonyl)propanamide;
2-((2H-tetrazol-5-yl)methyl)-6-(4-fluorobenzyl)-5,6,11,11a-tetrahydro-1H-imidazo[1',5':1,6]pyrido[3,4-b]indole-1,3(2H)-dione; or
3-{8-[(4-fluorophenyl)methyl]-16,16-dimethyl-12,14-dioxo-6,8,11,13-tetrazatetracyclo[7.7.0.0^{2,7}.0^{11,15}]hexadeca-1(9),2(7),3,5-tetraene-13-yl}-2,2-dimethylpropionic acid;
or a pharmaceutically acceptable salt, or solvate thereof of any one of the preceding compounds.

10. The compound of claim 8, or a pharmaceutically acceptable salt or solvate thereof: wherein:
L^1 is —CH_2—; and



is phenyl; 3-fluorophenyl; 4-fluorophenyl; 3-chlorophenyl; 4-chlorophenyl; 3,5-difluorophenyl; 2,4-difluorophenyl; 3,5-dichlorophenyl; 2,4-dichlorophenyl; 2-methoxypyridin-5-yl; 2-ethoxypyridin-5-yl; 2-chloropyridin-5-yl; 2-trifluoromethylthiazol-5-yl; thien-2-yl; or 5-chlorothien-2-yl.

11. A compound having the following structure, or a pharmaceutically acceptable salt or solvate thereof:

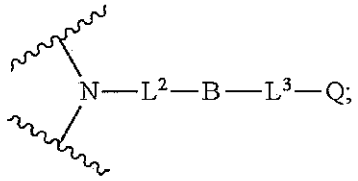


wherein:

R^1 is H or Cl;

X is —CH= or —N=;

Z is



L^2 is C_1-C_6alkylene;

B is absent;

L^3 is absent or C_3-C_6cycloalkylene; and

Q is —CO_2H, —CO_2(C_1-C_6alkyl), —OH, or —OP(=O)$(OH)_2$.

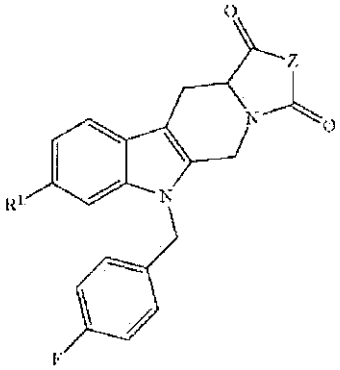
12. The compound of claim 11, or a pharmaceutically acceptable salt thereof, wherein:

L^2 is —CH_2—, —CH_2CH_2—, —$CH_2CH_2CH_2$—, or —$CH_2CH_2CH_2CH_2$—.

13. The compound of claim 11, or a pharmaceutically acceptable salt thereof, wherein: $-L^2-B-L^3-Q$ is $—CH_2CO_2H$, $—CH_2CH_2CO_2H$, $—CH_2CH_2OH$, $—CH_2CH(CH_3)CO_2H$, $—CH_2C(CH_3)_2CO_2H$, $—CH_2CH(CH_2CH_3)CO_2H$, $—CH_2C(CH_2CH_3)_2CO_2H$, $—C(CH_3)_2CH_2CO_2H$, $—CH_2CH_2CH_2CO_2H$, $—CH_2CH(CH_3)CH_2CO_2H$, $—CH_2C(CH_3)_2CH_2CO_2H$, $—CH_2CH_2CH(CH_3)CO_2H$, $—CH_2CH_2C(CH_3)_2CO_2H$, $—CH_2C(—CH_2CH_2—)CO_2H$, $—CH_2CH_2C(—CH_2CH_2—)CO_2H$, or $—CH_2C(—(CH_2)_3—)CO_2H$.

14. The compound of claim 11, or a pharmaceutically acceptable salt thereof, wherein: $-L^2-B-L^3-Q$ is $—CH_2CH_2CO_2H$, or $—CH_2CH_2OH$.

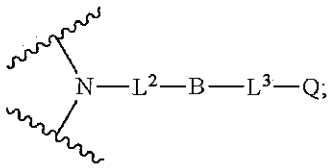
15. The compound of claim 11, or a pharmaceutically acceptable salt thereof, wherein the compound has the following structure:



wherein:

R^1 is H or Cl;

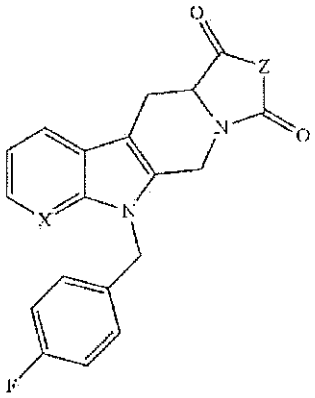
Z is



and

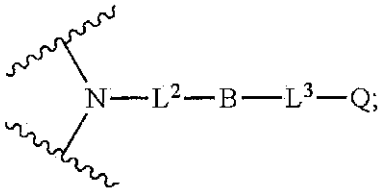
$-L^2-B-L^3-Q$ is $—CH_2CO_2H$, $—CH_2CH_2CO_2H$, or $—CH_2CH_2OH$.

16. The compound of claim 11, or a pharmaceutically acceptable salt thereof, wherein the compound has the following structure:



wherein:

Z is



and

$-L^2-B-L^3-Q$ is $—CH_2CO_2H$, $—CH_2CH_2CO_2H$, or $—CH_2CH_2OH$.

17. A pharmaceutical composition comprising a compound of claim 1, or a pharmaceutically acceptable salt, or solvate thereof, and at least one pharmaceutically acceptable excipient.