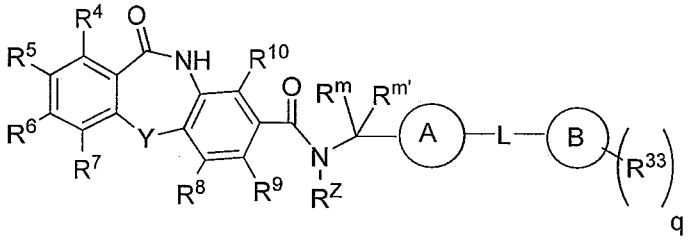
[0007a] In one aspect of the present disclosure, there is provided a compound represented by:



wherein

Y is selected from the group consisting of $S(O)_y$, C=O, $C(R^{11})_2$, NR_Y and O wherein y is 0, 1, or 2; R^{11} is H or C_{1-6}alkyl, R_Y is selected from the group consisting of H, methyl, ethyl, propyl, proprenyl, phenyl and benzyl, wherein R_Y when not H may be optionally substituted by hydroxyl;

R^Z is selected from the group consisting of H, methyl, ethyl, propyl, phenyl and benzyl;

$R^{m'}$ and R^m are each independently selected from the group consisting of H and C_{1-6}alkyl (optionally substituted by one, two or three substituents each independently selected from halogen and hydroxyl);

L is a bond or C_{1-2}alkylene (optionally substituted by halogen or C_{1-2}alkyl);

A is a 5-7 membered monocyclic heterocyclic or 5-6 membered monocyclic heteroaryl ring optionally substituted by one or two substituents selected from the group consisting of halogen, hydroxyl, cyano, C_{1-6}alkyl, C_{2-6}alkenyl, C_{2-6}alkynyl, C_{1-6}alkoxy, and NR'R'';

B is selected from the group consisting of phenyl (optionally substituted by one, two or three substituents represented by R^{33}), 5-6 membered monocyclic heteroaryl optionally substituted by one, two or three substituents represented by R^{33}), and 9-10 membered bicyclic heteroaryl (optionally substituted by one, two or three substituents represented by R^{33});

R' is selected, independently for each occurrence, from H, methyl, ethyl, and propyl;

R'' is selected, independently for each occurrence, from H, methyl, ethyl, , propyl, (optionally substituted by hydroxyl), butyl (optionally substituted by hydroxyl), –C(O)-methyl and –C(O)-ethyl, or R' and R'' taken together with the nitrogen to which they are attached may form a 4-7 membered heterocycle optionally substituted by one, two or more substituents selected from the group consisting of halogen, hydroxyl, NH_2, -C(O)-O-C_{1-3}alkyl, -C(O)-C_{1-3}alkyl, carboxy, oxo, and C_{1-3}alkyl;

each of moieties R^4, R^5, R^6, R^7, R^8, R^9, and R^{10} is independently selected for each occurrence from the group consisting of hydrogen, C_{1-6}alkyl, C_{2-6}alkynyl, C_{2-6}alkenyl, halogen, hydroxyl, nitro, cyano, and NR'R'';

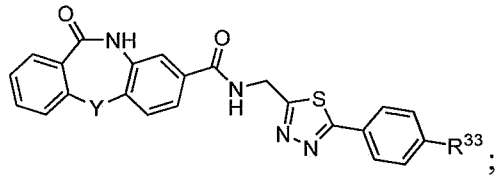
R^{33} is independently selected for each occurrence from the group consisting of H, halogen, hydroxyl, nitro, cyano, C_{1-6}alkyl, -C(O)-O-C_{1-6}alkyl, -C(O)-NR'R'', -C (=NH)-NR'R'', C_{2-6}alkenyl, C_{2-6}alkynyl, C_{1-6}alkoxy, carboxy, -CHO, NR'R'', -C(O)-C_{1-6}alkyl, -C(O)-C_{1-6}alkoxy, C_{3-6}cycloalkyl, -$S(O)_w$-C_{1-6}alkyl (where w is 0, 1 or 2), -$S(O)_w$-NR'R'' (where w is 0, 1 or 2), and -NR'-$S(O)_w$- C_{1-6}alkyl (where w is 0, 1 or 2);

q is 0, 1, 2 or 3;

wherein for each occurrence, C_{1-6}alkyl may be optionally substituted with one, two, three or more substituents selected from the group consisting of halogen, hydroxyl, nitro, cyano, carboxy, C_{2-6}alkenyl, C_{2-6}alkynyl, C_{1-6}alkoxy, NR'R'', -NR'-$S(O)_w$- C_{1-6}alkyl (where w is 0, 1 or 2), and $S(O)_w$-NR'R'' (where w is 0, 1 or 2); C_{1-6}alkoxy may be optionally substituted with one, two, three or more substituents selected from the group consisting of halogen, hydroxyl, nitro, cyano, carboxy, C_{1-6}alkyl, NR'R'', -NR'-$S(O)_w$- C_{1-6}alkyl (where w is 0, 1 or 2), and $S(O)_w$-NR'R''(where w is 0, 1 or 2); and

pharmaceutically acceptable salts and N-oxides thereof.

[0007b] In another aspect of the present disclosure, there is provided a compound represented by:



and pharmaceutically acceptable salts or N-oxides thereof; wherein

Y is selected from the group consisting of $S(O)_y$, C=O, $C(R^{11})_2$, NR_Y and O wherein y is 0, 1, or 2; R^{11} is H or C_{1-6}alkyl, R_Y is selected from the group consisting of H, methyl, ethyl, propyl, phenyl and benzyl;

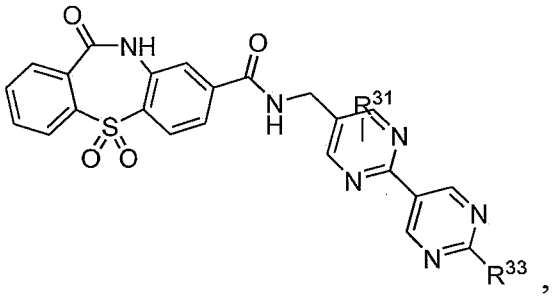
R^{33} is selected from the group consisting of H, halogen, hydroxyl, nitro, cyano, C_{1-6}alkyl, -C(O)-O-C_{1-6}alkyl, -C(O)-NR'R'', -C (=NH)-NR'R'', C_{2-6}alkenyl, C_{2-6}alkynyl, C_{1-6}alkoxy, carboxy, -CHO, NR'R'', -C(O)-C_{1-6}alkyl, -C(O)-C_{1-6}alkoxy, C_{3-6}cycloalkyl, -$S(O)_w$-C_{1-6}alkyl (where w is 0, 1, or 2), -$S(O)_w$-NR'R'' (where w is 0,1, or 2), and -NR'-$S(O)_w$- C_{1-6}alkyl (where w is 0, 1 or 2);

R' is selected, independently for each occurrence, from H, methyl, ethyl, and propyl;

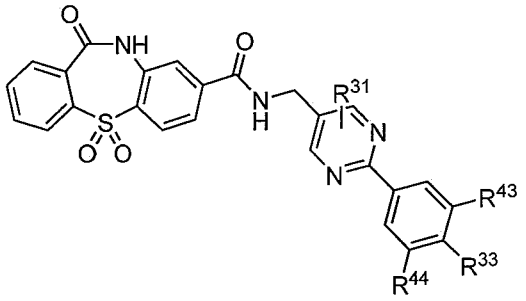
R'' is selected, independently for each occurrence, from H, methyl, ethyl, propyl, butyl, –C(O)-methyl and –C(O)-ethyl, or R' and R'' taken together with the nitrogen to which they are attached may form a 4-7 membered heterocycle;

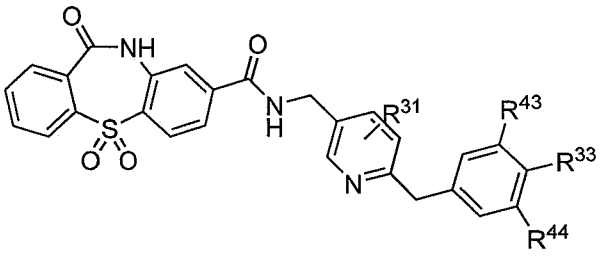
wherein for each occurrence, C_{1-6}alkyl may be optionally substituted with one, two, three or more substituents selected from the group consisting of halogen, hydroxyl, nitro, cyano, carboxy, C_{2-6}alkenyl, C_{2-6}alkynyl, C_{1-6}alkoxy, NR'R'', -NR'-$S(O)_w$- C_{1-6}alkyl (where w is 0, 1 or 2), and $S(O)_w$-NR'R'' (where w is 0, 1 or 2); C_{1-6}alkoxy may be optionally substituted with one, two, three or more substituents selected from the group consisting of halogen, hydroxyl, nitro, cyano, carboxy, C_{1-6}alkyl, NR'R'', -NR'-$S(O)_w$- C_{1-6}alkyl (where w is 0, 1 or 2), and $S(O)_w$-NR'R''(where w is 0, 1 or 2).

[0007c] In a further aspect of the present disclosure, there is provided a compound represented by:

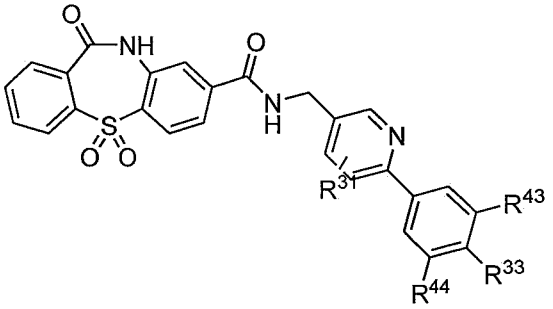


,





; and



and pharmaceutically acceptable salts and N-oxides thereof, wherein

R^{33} is selected from the group consisting of H, halogen, hydroxyl, nitro, cyano, C_{1-6}alkyl, -C(O)-O-C_{1-6}alkyl, -C(O)-NR'R'', -C (=NH)-NR'R'', C_{2-6}alkenyl, C_{2-6}alkynyl, C_{1-6}alkoxy, carboxy, -CHO, NR'R'', -C(O)-C_{1-6}alkyl, -C(O)-C_{1-6}alkoxy, C_{3-6}cycloalkyl, -$S(O)_w$-C_{1-6}alkyl (where w is 0,1 or 2), -$S(O)_w$-NR'R'' (where w is 0, 1 or 2), and -NR'-$S(O)_w$- C_{1-6}alkyl (where w is 0, 1 or 2);

R^{43} is selected from the group consisting of H, halogen, hydroxyl, nitro, cyano, C_{1-6}alkyl, -C(O)-O-C_{1-6}alkyl, -C(O)-NR'R'', -C (=NH)-NR'R'', C_{2-6}alkenyl, C_{2-6}alkynyl, C_{1-6}alkoxy, carboxy, -CHO, NR'R'', -C(O)-C_{1-6}alkyl, -C(O)-C_{1-6}alkoxy, C_{3-6}cycloalkyl, -$S(O)_w$-C_{1-6}alkyl (where w is 0, 1 or 2), -$S(O)_w$-NR'R'' (where w is 0, 1 or 2), and -NR'-$S(O)_w$- C_{1-6}alkyl (where w is 0, 1 or 2);

R^{31} is optional, and may be selected from the group consisting of halogen, hydroxyl, nitro, cyano, C_{1-6}alkyl, -C(O)-O-C_{1-6}alkyl, -C(O)-NR'R'', -C (=NH)-NR'R'', C_{2-6}alkenyl, C_{2-6}alkynyl, C_{1-6}alkoxy, carboxy, -CHO, NR'R'', -C(O)-C_{1-6}alkyl, -C(O)-C_{1-6}alkoxy, C_{3-6}cycloalkyl, -$S(O)_w$-C_{1-6}alkyl (where w is 0, 1 or 2), -$S(O)_w$-NR'R'' (where w is 0, 1 or 2), and -NR'-$S(O)_w$- C_{1-6}alkyl (where w is 0, 1 or 2); and

R^{44} is selected from the group consisting of H, halogen, hydroxyl, nitro, cyano, C_{1-6}alkyl, -C(O)-O-C_{1-6}alkyl, -C(O)-NR'R'', -C (=NH)-NR'R'', C_{2-6}alkenyl, C_{2-6}alkynyl, C_{1-6}alkoxy, carboxy, -CHO, NR'R'', -C(O)-C_{1-6}alkyl, -C(O)-C_{1-6}alkoxy, C_{3-6}cycloalkyl, -$S(O)_w$-C_{1-6}alkyl (where w is 0, 1 or 2), -$S(O)_w$-NR'R'' (where w is 0, 1 or 2), and -NR'-$S(O)_w$- C_{1-6}alkyl (where w is 0, 1 or 2); wherein for each occurrence, C_{1-6}alkyl may be optionally substituted with one, two, three or more substituents selected from the group consisting of halogen, hydroxyl, nitro, cyano, carboxy, C_{2-6}alkenyl, C_{2-6}alkynyl, C_{1-6}alkoxy, NR'R'', -NR'-$S(O)_w$- C_{1-6}alkyl (where w is 0, 1 or 2), and $S(O)_w$-NR'R'' (where w is 0, 1 or 2); C_{1-6}alkoxy may be optionally substituted with one, two, three or more substituents selected from the group consisting of halogen, hydroxyl, nitro, cyano, carboxy, C_{1-6}alkyl, NR'R'', -NR'-$S(O)_w$- C_{1-6}alkyl (where w is 0, 1 or 2), and $S(O)_w$-NR'R''(where w is 0, 1 or 2);

R' is selected, independently for each occurrence, from H, methyl, ethyl, and propyl;

R'' is selected, independently for each occurrence, from H, methyl, ethyl, propyl, butyl, –C(O)-methyl and –C(O)-ethyl, or R' and R'' taken together with the nitrogen to which they are attached may form a 4-7 membered heterocycle;

wherein for each occurrence, C_{1-6}alkyl may be optionally substituted with one, two, three or more substituents selected from the group consisting of halogen, hydroxyl, nitro, cyano, carboxy, C_{2-6}alkenyl, C_{2-6}alkynyl, C_{1-6}alkoxy, NR'R'', -NR'-$S(O)_w$- C_{1-6}alkyl (where w is 0, 1 or 2), and $S(O)_w$-NR'R'' (where w is 0, 1 or 2); C_{1-6}alkoxy may be optionally substituted with one, two, three or more substituents selected from the group consisting of halogen, hydroxyl, nitro, cyano, carboxy, C_{1-6}alkyl, NR'R'', -NR'-$S(O)_w$- C_{1-6}alkyl (where w is 0, 1 or 2), and $S(O)_w$-NR'R''(where w is 0, 1 or 2).

[0007d] In another aspect of the present disclosure, there is provided a compound selected from the group consisting of

N-((5-(4-hydroxyphenyl)-1,3,4-thiadiazol-2-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((6-(4-methoxybenzyl)pyridin-3-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((5-(4-hydroxyphenyl)-1,3,4-thiadiazol-2-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]oxazepine-8-carboxamide,

N-((6-(4-methoxybenzyl)pyridin-3-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]oxazepine-8-carboxamide,

N-((6-(4-hydroxyphenyl)pyridin-3-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((6-(1H-indol-5-yl)pyridin-3-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((6-(1H-indazol-5-yl)pyridin-3-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((6-(1H-benzo[d]imidazol-5-yl)pyridin-3-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((6-(2-aminopyrimidin-5-yl)pyridin-3-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((6-(2-chloro-4-hydroxyphenyl)pyridin-3-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((6-(3-chloro-4-hydroxyphenyl)pyridin-3-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((6-(2-fluoro-4-hydroxyphenyl)pyridin-3-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((6-(3-fluoro-4-hydroxyphenyl)pyridin-3-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((6-(3,5-difluoro-4-hydroxyphenyl)pyridin-3-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((6-(2-(hydroxymethyl)phenyl)pyridin-3-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((6-(4-cyanophenyl)pyridin-3-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((2-(4-hydroxyphenyl)pyrimidin-5-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((2-(1H-indol-5-yl)pyrimidin-5-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((2-(1H-indazol-5-yl)pyrimidin-5-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((2-(1H-benzo[d]imidazol-5-yl)pyrimidin-5-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((2'-amino-[2,5'-bipyrimidin]-5-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((2-(2-chloro-4-hydroxyphenyl)pyrimidin-5-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((2-(3-chloro-4-hydroxyphenyl)pyrimidin-5-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((2-(2-fluoro-4-hydroxyphenyl)pyrimidin-5-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((2-(3-fluoro-4-hydroxyphenyl)pyrimidin-5-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((2-(2-(hydroxymethyl)phenyl)pyrimidin-5-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((2-(4-cyanophenyl)pyrimidin-5-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((6-(4-carbamoylphenyl)pyridin-3-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((5-(4-cyanophenyl)pyridin-2-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((5-(4-carbamoylphenyl)pyridin-2-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((2-(4-carbamoylphenyl)pyrimidin-5-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((6-(4-hydroxybenzyl)pyridin-3-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide, and

N-((6-(4-hydroxybenzyl)pyridin-3-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]oxazepine-8-carboxamide;

and pharmaceutically acceptable salts thereof.

[0007e] In a further aspect of the present disclosure, there is provided a pharmaceutically acceptable composition comprising a compound disclosed herein, and a pharmaceutically acceptable excipient.

[0007f] In another aspect of the present disclosure, there is provided a use of a compound disclosed herein in the manufacture of a medicament for treating a hepatitis B infection.

[0007g] In a further aspect of the present disclosure, there is provided a use of a compound disclosed herein and optionally one or more additional compounds, in the manufacture of a medicament for treating a hepatitis B infection.

[0007h] In another aspect of the present disclosure, there is provided a use of a compound disclosed herein and another HBV capsid assembly promoter, in the manufacture of a medicament for treating a hepatitis B infection.

[0007i] In a further aspect of the present disclosure, there is provided a use of a compound disclosed herein and one or more other HBV agents each selected from the group consisting of HBV capsid assembly promoters, HBF viral polymerase interfering nucleosides, viral entry inhibitors, HBsAg secretion inhibitors, disruptors of nucleocapsid formation, cccDNA formation inhibitors, antiviral core protein mutant, HBc directed transbodies, RNAi targeting HBV RNA, immunostimulants, TLR-7/9 agonists, cyclophilin inhibitors, HBV vaccines, SMAC mimetics, epigenetic modulators, kinase inhibitors, and STING agonists, in the manufacture of a medicament for treating a hepatitis B infection.

[0007j] In another aspect of the present disclosure, there is provided a compound disclosed herein for use in treating a hepatitis B infection.

N-((6-(4-carbamoylphenyl)pyridin-3-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((5-(4-cyanophenyl)pyridin-2-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((5-(4-carbamoylphenyl)pyridin-2-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((2-(4-carbamoylphenyl)pyrimidin-5-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide,

N-((6-(4-hydroxybenzyl)pyridin-3-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]thiazepine-8-carboxamide 5,5-dioxide, and

N-((6-(4-hydroxybenzyl)pyridin-3-yl)methyl)-11-oxo-10,11-dihydrodibenzo[b,f][1,4]oxazepine-8-carboxamide;

and pharmaceutically acceptable salts thereof.

23. A pharmaceutically acceptable composition comprising a compound of any one of claims 1-22, and a pharmaceutically acceptable excipient.

24. Use of a compound of any one of claims 1-22 in the manufacture of a medicament for treating a hepatitis B infection.

25. Use of a compound of any one of claims 1-22 and optionally one or more additional compounds, in the manufacture of a medicament for treating a hepatitis B infection.

26. Use of a compound of any one of claims 1-22 and another HBV capsid assembly promoter, in the manufacture of a medicament for treating a hepatitis B infection.

27. Use of a compound of any one of claims 1-22 and one or more other HBV agents each selected from the group consisting of HBV capsid assembly promoters, HBF viral polymerase interfering nucleosides, viral entry inhibitors, HBsAg secretion inhibitors, disruptors of nucleocapsid formation, cccDNA formation inhibitors, antiviral core protein mutant, HBc directed transbodies, RNAi targeting HBV RNA, immunostimulants, TLR-7/9 agonists, cyclophilin inhibitors, HBV vaccines, SMAC mimetics, epigenetic modulators, kinase inhibitors, and STING agonists, in the manufacture of a medicament for treating a hepatitis B infection.

28. A compound of any one of claims 1-22 for use in treating a hepatitis B infection.