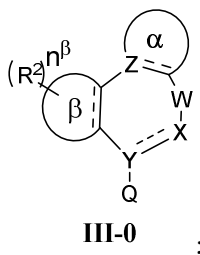


What is claimed is:

1. A nitrogenous macrocyclic compound represented by formula **III-0**, a tautomer thereof, an optical isomer thereof, a hydrate thereof, a solvate thereof, or a pharmaceutically acceptable salt thereof;



wherein, W is $-\text{C}(\text{R}^1)(\text{R}^3)-$ or $-\text{N}(\text{R}^4)-$;

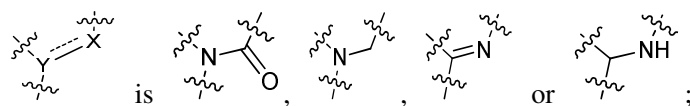
each of R^1 and R^4 is independently $-\text{H}$, $\text{C}_1\text{-C}_5$ alkyl, $\text{C}_3\text{-C}_7$ cycloalkyl, $\text{C}_1\text{-C}_5$ haloalkyl, $\text{C}_1\text{-C}_5$ alkyl substituted by one or more of $\text{R}^{\text{R}15}$, or, $-(\text{CH}_2)_{n_0}\text{C}(=\text{O})\text{N}(\text{R}^{\text{R}1})(\text{R}^{\text{R}2})$; R^3 is $-\text{H}$;

each of $\text{R}^{\text{R}15}$ is independently $\text{C}_1\text{-C}_5$ alkoxy, $-\text{COOH}$ or $-\text{OH}$;

each of $\text{R}^{\text{R}1}$ and $\text{R}^{\text{R}2}$ is independently $-\text{H}$, 4-hydroxyphenyl or $\text{C}_1\text{-C}_5$ alkyl;

n_0 is 0 or 1;

or, R_1 , R_3 and the carbon atom they are attached to together form $\text{C}_3\text{-C}_7$ cycloalkyl;



Q is phenyl substituted by one or more of $\text{R}^{\text{Q}1}$, 3-6 membered cyclohydrocarbyl substituted by one or more of $\text{R}^{\text{Q}2}$, or, 3-6 membered heterocyclohydrocarbyl substituted by one or more of $\text{R}^{\text{Q}3}$;

each of $\text{R}^{\text{Q}1}$, $\text{R}^{\text{Q}2}$ and $\text{R}^{\text{Q}3}$ is each independently $-\text{H}$, $-\text{OH}$, $-\text{CN}$, halogen, halogenated or unsubstituted $\text{C}_1\text{-C}_5$ alkyl, $\text{C}_3\text{-C}_7$ cycloalkyl, or $\text{C}_1\text{-C}_5$ alkoxy;

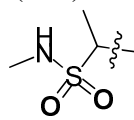
the "β" in "β ring and 7-membered ring fused by is a double bond;

β ring is benzene ring;

n^β is 1 or 2; when n^β is 1, R^2 is located at the para or meta position of Y;

when n^β is 1, R^2 is $-(\text{CH}_2)_{n^{\beta 2}}\text{N}(\text{R}^{2k})\text{S}(=\text{O})_2(\text{R}^{2d})$, $-(\text{CH}_2)_{n^{\beta 2}}\text{N}(\text{R}^{2k})\text{S}(=\text{O})_2\text{NH}(\text{R}^{2e})$, $-(\text{CH}_2)_{n^{\beta 2}}\text{S}(=\text{O})_2\text{N}(\text{R}^{2f})(\text{R}^{2g})$, $-(\text{CR}^{2x}\text{R}^{2y})\text{S}(=\text{O})_2\text{N}(\text{R}^{2f})(\text{R}^{2g})$, or $-\text{C}_1\text{-C}_6$ alkyl- $\text{S}(=\text{O})_2(\text{R}^{2i})$;

when n^β is 2, one of the R^2 is located at the para position of Y, which is $-(\text{CH}_2)_{n^{\beta 2}}\text{N}(\text{R}^{2k})\text{S}(=\text{O})_2(\text{R}^{2d})$, $-(\text{CH}_2)_{n^{\beta 2}}\text{N}(\text{R}^{2k})\text{S}(=\text{O})_2\text{NH}(\text{R}^{2e})$, $-(\text{CH}_2)_{n^{\beta 2}}\text{S}(=\text{O})_2\text{N}(\text{R}^{2f})(\text{R}^{2g})$, $-(\text{CR}^{2x}\text{R}^{2y})\text{S}(=\text{O})_2\text{N}(\text{R}^{2f})(\text{R}^{2g})$, or $-\text{C}_1\text{-C}_6$ alkyl- $\text{S}(=\text{O})_2(\text{R}^{2i})$; the other R^2 is located at the meta position of Y, which is



hydroxyl, halogenated or unsubstituted C₁-C₅ alkyl, C₃-C₇ cycloalkyl, halogen or C₁-C₅ alkoxy;
each of n^{B2} is independently 0, 1 or 2;

each of R^{2d}, R^{2e}, R^{2f}, R^{2g}, R²ⁱ and R^{2k} is independently -H, C₁-C₆ alkyl, C₁-C₃ haloalkyl or 3-7 membered cycloalkyl; each of R^{2x} and R^{2y} is independently C₁-C₆ alkyl;

"||" in "Z" in "α" α ring and 7-membered ring fused by is a double bond;

Z is $\begin{array}{c} \text{Z} \\ \text{---} \end{array}$;

α ring is 5-10 membered heteroaromatic ring substituted by one or more of R^α;

each of R^α is independently -H, -CN, C₁-C₅ alkyl, C₁-C₅ alkoxy, C₁-C₅ haloalkyl, C₃-C₇ cycloalkyl or -C(=O)N(R^{α1})(R^{α2}), each of R^{α1} and R^{α2} is independently -H or C₁-C₅ haloalkyl.

2. The nitrogenous macrocyclic compound represented by formula **III-0**, the tautomer thereof, the optical isomer thereof, the hydrate thereof, the solvate thereof, or the pharmaceutically acceptable salt thereof as defined in claim 1, wherein, when each of R¹ and R⁴ is independently C₁-C₅ alkyl, the C₁-C₅ alkyl is C₁-C₃ alkyl;

and/or, when each of R¹ and R⁴ is independently C₃-C₇ cycloalkyl, the C₃-C₇ cycloalkyl is cyclopropyl;

and/or, when each of R¹ and R⁴ is independently C₁-C₅ haloalkyl, the number of the halogen is one or more, when more than one halogen exists, the halogens are the same or different;

and/or, when each of R¹ and R⁴ is independently C₁-C₅ haloalkyl, the halogen is fluorine, chlorine, bromine or iodine;

and/or, when each of R¹ and R⁴ is independently C₁-C₅ haloalkyl, the C₁-C₅ haloalkyl is C₁-C₃ haloalkyl;

and/or, when each of R¹ and R⁴ is independently C₁-C₅ alkyl substituted by one or more of R^{R15}, the more refers to 2, 3 or 4;

and/or, when each of R¹ and R⁴ is independently C₁-C₅ alkyl substituted by one or more of R^{R15}, the "C₁-C₅ alkyl" is methyl or ethyl;

and/or, when each of R^{R15} is independently C₁-C₅ alkoxy, the C₁-C₅ alkoxy is each independently methoxy;

and/or, when each of R^{R1} and R^{R2} is independently C₁-C₅ alkyl, the C₁-C₅ alkyl is C₁-C₃ alkyl;

and/or, when R¹, R³ and the carbon atom they are attached to together form a C₃-C₇ cycloalkyl, the C₃-C₇ cycloalkyl is cyclopropyl;

and/or, when Q is phenyl substituted by one or more of R^{Q1}, the more is 2, 3 or 4;

and/or, when Q is phenyl substituted by one or more of R^{Q1}, each R^{Q1} is independently attached to the meta, para or ortho position of phenyl;

and/or, when Q is 3-6 membered cyclohydrocarbyl substituted by one or more of R^{Q2} , the more is 2, 3 or 4;

and/or, when Q is 3-6 membered cyclohydrocarbyl substituted by one or more of R^{Q2} , the 3-6 membered cyclohydrocarbyl is 3-6 membered cycloalkyl;

and/or, when Q is 3-6 membered heterocyclohydrocarbyl substituted by one or more of R^{Q3} , the more is 2, 3 or 4;

and/or, when Q is 3-6 membered heterocyclohydrocarbyl substituted by one or more of R^{Q3} , the heteroatom in the heterocyclohydrocarbyl is N and/or O;

and/or, when Q is 3-6 membered heterocyclohydrocarbyl substituted by one or more of R^{Q3} , the number of the heteroatom in the heterocyclohydrocarbyl is 1-3;

and/or, when Q is 3-6 membered heterocyclohydrocarbyl substituted by one or more of R^{Q3} , the 3-6 membered heterocyclohydrocarbyl is 5-6 membered heteroaryl or 3-6 membered heterocycloalkyl;

and/or, when each of R^{Q1} , R^{Q2} and R^{Q3} is independently halogen, the halogen is fluorine or chlorine;

and/or, when each of R^{Q1} , R^{Q2} and R^{Q3} is independently halogenated or unsubstituted C_1 - C_5 alkyl, the number of the halogen is one or more, when more than one halogen exists, the halogens are the same or different;

and/or, when each of R^{Q1} , R^{Q2} and R^{Q3} is independently halogenated or unsubstituted C_1 - C_5 alkyl, the "halogen" is independently fluorine, chlorine or bromine;

and/or, when each of R^{Q1} , R^{Q2} and R^{Q3} is independently halogenated or unsubstituted C_1 - C_5 alkyl, the " C_1 - C_5 alkyl" is independently C_1 - C_3 alkyl;

and/or, when each of R^{Q1} , R^{Q2} and R^{Q3} is independently C_1 - C_5 alkoxy, the C_1 - C_5 alkoxy is C_1 - C_3 alkoxy;

and/or, when each of R^{Q1} , R^{Q2} and R^{Q3} is independently C_3 - C_7 cycloalkyl, the C_3 - C_7 cycloalkyl is cyclopropyl;

and/or, when each R^2 is independently halogenated or unsubstituted C_1 - C_5 alkyl, the number of the halogen is one or more, when more than one halogen exists, the halogens are the same or different;

and/or, when each R^2 is independently halogenated or unsubstituted C_1 - C_5 alkyl, the "halogen" is independently fluorine, chlorine or bromine;

and/or, when each R^2 is independently halogenated or unsubstituted C_1 - C_5 alkyl, the " C_1 - C_5 alkyl" is independently C_1 - C_3 alkyl;

and/or, when each R^2 is independently C_3 - C_7 cycloalkyl, the C_3 - C_7 cycloalkyl is cyclopropyl;

and/or, when each R^2 is independently halogen, the halogen is fluorine or chlorine;

and/or, when each R^2 is independently C_1 - C_5 alkoxy, the C_1 - C_5 alkoxy is C_1 - C_3 alkoxy;

and/or, when each of R^{2d} , R^{2e} , R^{2f} , R^{2g} , R^{2i} and R^{2k} is independently C_1 - C_6 alkyl, the C_1 - C_6 alkyl is

C₁-C₃ alkyl;

and/or, when each of R^{2d}, R^{2e}, R^{2f}, R^{2g}, R²ⁱ and R^{2k} is independently C₁-C₃ haloalkyl, the number of the "halogen" is one or more, when more than one halogen exists, the halogens are the same or different;

and/or, when each of R^{2d}, R^{2e}, R^{2f}, R^{2g}, R²ⁱ and R^{2k} is independently C₁-C₃ haloalkyl, the "halogen" is independently fluorine, chlorine or bromine;

and/or, when each of R^{2d}, R^{2e}, R^{2f}, R^{2g}, R²ⁱ and R^{2k} is independently C₁-C₃ haloalkyl, the "C₁-C₃ alkyl" is independently methyl, ethyl, n-propyl or isopropyl;

and/or, when each of R^{2d}, R^{2e}, R^{2f}, R^{2g}, R²ⁱ and R^{2k} is independently 3-7 membered cycloalkyl, the 3-7 membered cycloalkyl is cyclopropyl, cyclobutyl, cyclopentyl or cyclohexyl;

and/or, when each of R^{2x} and R^{2y} is independently C₁-C₆ alkyl, the C₁-C₆ alkyl is C₁-C₃ alkyl;

and/or, when α ring is 5-10 membered heteroaromatic ring substituted by one or more of R^a, the more refers to 2, 3 or 4;

and/or, when α ring is a 5-10 membered heteroaromatic ring substituted by one or more of R^a, the "5-10 membered heteroaromatic ring" is "5-10 membered heteroaromatic ring containing 1-6 heteroatoms selected from the group consisting of N, O or S";

and/or, when α ring is a 5-10 membered heteroaromatic ring substituted by one or more of R^a, the "5-10 membered heteroaromatic ring" is 5-6 membered heteroaromatic ring, or, fused ring formed by two 5-6 membered heteroaromatic ring;

and/or, when each R^a is independently C₁-C₅ alkyl, the C₁-C₅ alkyl is C₁-C₃ alkyl;

and/or, when each R^a is independently C₃-C₇ cycloalkyl, the C₃-C₇ cycloalkyl is cyclopropyl;

and/or, when each R^a is independently C₁-C₅ alkoxy, the C₁-C₅ alkoxy is C₁-C₃ alkoxy;

and/or, each R^a is independently located at the ortho, para or meta position of Z;

and/or, when α ring contains -NH-, the R^a is attached to the -NH-;

and/or, when each of R^{a1} and R^{a2} is independently C₁-C₅ haloalkyl, the halogen number is one or more, when more than one halogen exists, the halogens are the same or different;

and/or, when each of R^{a1} and R^{a2} is independently C₁-C₅ haloalkyl, the halogen is independently fluorine, chlorine, bromine or iodine;

and/or, when each of R^{a1} and R^{a2} is independently C₁-C₅ haloalkyl, the C₁-C₅ haloalkyl is C₁-C₃ haloalkyl.

3. The nitrogenous macrocyclic compound represented by formula **III-0**, the tautomer thereof, the optical isomer thereof, the hydrate thereof, the solvate thereof, or the pharmaceutically acceptable salt thereof as defined in claim 2, wherein, when each of R¹ and R⁴ is independently C₁-C₅ alkyl, the C₁-C₅ alkyl is methyl, ethyl, n-propyl or isopropyl;

and/or, when each of R¹ and R⁴ is independently C₁-C₅ haloalkyl, the C₁-C₅ haloalkyl is trifluoromethyl, difluoromethyl or 1, 2-difluoroethyl;

and/or, when each of R¹ and R⁴ is independently C₁-C₅ alkyl substituted by one or more of R^{R15}, the C₁-C₅ alkyl substituted by one or more of R^{R15} is 2-hydroxyethyl, carboxymethyl, hydroxymethyl or methoxymethyl;

and/or, when each of R^{R1} and R^{R2} is independently C₁-C₅ alkyl, the C₁-C₅ alkyl is methyl, ethyl, n-propyl or isopropyl;

and/or, when Q is phenyl substituted by one or more of R^{Q1}, the "phenyl substituted by one or more of R^{Q1}" is 4-fluorophenyl, 4-hydroxyphenyl, 3-hydroxy-4-fluorophenyl, 4-methoxyphenyl, 4-chlorophenyl, 4-cyanophenyl, 3-chlorophenyl, 3-fluorophenyl, 4-cyanophenyl, 2, 4-difluorophenyl, 2, 4-dichlorophenyl, 2-fluoro-4-chlorophenyl, 2-chloro-4-fluoro-5-methoxyphenyl, 3-methoxy-4-fluorophenyl, 4-methoxy-3-fluorophenyl, 2-methoxy-4-fluorophenyl, 2-chloro-4-fluorophenyl, or, 2-fluoro-4-cyanophenyl;

and/or, when Q is 3-6 membered cyclohydrocarbyl substituted by one or more of R^{Q2}, the 3-6 membered cyclohydrocarbyl is cyclohexyl;

and/or, when Q is 3-6 membered heterocyclohydrocarbyl substituted by one or more of R^{Q3}, the 3-6 membered heterocyclohydrocarbyl is 5-6 membered heteroaryl, the "5-6 membered heteroaryl" is pyridyl or pyrimidinyl;

and/or, when Q is 3-6 membered heterocyclohydrocarbyl substituted by one or more of R^{Q3}, the 3-6 membered heterocyclohydrocarbyl is 3-6 membered heterocycloalkyl, the 3-6 membered heterocycloalkyl is 2-pyranyl, 3-pyranyl or 2-tetrahydrofuranyl;

and/or, when each of R^{Q1}, R^{Q2} and R^{Q3} is independently halogenated or unsubstituted C₁-C₅ alkyl, the "C₁-C₅ alkyl" is independently methyl, ethyl, n-propyl or isopropyl;

and/or, when each of R^{Q1}, R^{Q2} and R^{Q3} is independently C₁-C₅ alkoxy, the C₁-C₅ alkoxy is methoxy, ethoxy, n-propoxy or isopropoxy;

and/or, when R² is independently halogenated or unsubstituted C₁-C₅ alkyl, the "C₁-C₅ alkyl" is independently methyl, ethyl, n-propyl or isopropyl;

and/or, when R² is independently C₁-C₅ alkoxy, the C₁-C₅ alkoxy is methoxy;

and/or, when each of R^{2d}, R^{2e}, R^{2f}, R^{2g}, R²ⁱ and R^{2k} is independently C₁-C₆ alkyl, the C₁-C₆ alkyl is methyl, ethyl, n-propyl or isopropyl;

and/or, when each of R^{2d}, R^{2e}, R^{2f}, R^{2g}, R²ⁱ and R^{2k} is independently C₁-C₃ haloalkyl, the C₁-C₃ haloalkyl is trifluoromethyl;

and/or, when each of R^{2d}, R^{2e}, R^{2f}, R^{2g}, R²ⁱ and R^{2k} is independently 3-7 membered cycloalkyl, the 3-7 membered cycloalkyl is cyclopropyl;

and/or, when each of R^{2x} and R^{2y} is independently C_1-C_6 alkyl, the C_1-C_6 alkyl is methyl, ethyl, n-propyl or isopropyl;

and/or, when α ring is 5-10 membered heteroaromatic ring substituted by one or more of R^a , the "5-10 membered heteroaromatic ring" is 5-6 membered heteroaromatic ring, the "5-6 membered heteroaromatic ring" is "5-6 membered heteroaromatic ring substituted by 1-4 heteroatoms selected from the group consisting of N, O or S";

and/or, when α ring is 5-10 membered heteroaromatic ring substituted by one or more of R^a , the "5-10 membered heteroaromatic ring" is fused ring formed by two 5-6 membered heteroaromatic rings, the "fused ring formed by two 5-6 membered heteroaromatic rings" is "fused ring formed by two 5-6 membered heteroaromatic rings containing 1-6 heteroatoms selected from the group consisting of N, O or S";

and/or, when R^a is independently C_1-C_5 alkyl, the C_1-C_5 alkyl is methyl, ethyl, n-propyl or isopropyl;

and/or, when the R^a is independently C_1-C_5 alkoxy, the C_1-C_5 alkoxy is methoxy, ethoxy, n-propoxy or isopropoxy;

and/or, when each of R^{a1} and R^{a2} is independently C_1-C_5 haloalkyl, the C_1-C_5 haloalkyl is trifluoromethyl.

4. The nitrogenous macrocyclic compound represented by formula **III-0**, the tautomer thereof, the optical isomer thereof, the hydrate thereof, the solvate thereof, or the pharmaceutically acceptable salt thereof as defined in claim 3, wherein, when each of R^1 and R^4 is independently C_1-C_5 alkyl, the C_1-C_5 alkyl is methyl, ethyl, or isopropyl;

and/or, when each of R^1 and R^4 is independently C_1-C_5 haloalkyl, the C_1-C_5 haloalkyl is trifluoromethyl;

and/or, when each of R^1 and R^4 is independently C_1-C_5 alkyl substituted by one or more of R^{R15} , the C_1-C_5 alkyl substituted by one or more of R^{R15} is 2-hydroxyethyl, carboxymethyl, or hydroxymethyl;

and/or, when R^{R1} and R^{R2} are each independently C_1-C_5 alkyl, the C_1-C_5 alkyl is methyl, ethyl, or isopropyl;

and/or, when Q is 3-6 membered heterocyclohydrocarbyl substituted by one or more of R^{Q3} , the 3-6 membered heterocyclohydrocarbyl is 5-6 membered heteroaryl, the "5-6 membered heteroaryl" is pyridyl-2-yl or pyridyl-4-yl;

and/or, when each of R^{Q1} , R^{Q2} and R^{Q3} is independently C_1-C_5 alkoxy, the C_1-C_5 alkoxy is methoxy;

and/or, when each of R^{2d} , R^{2e} , R^{2f} , R^{2g} , R^{2i} and R^{2k} is independently C_1-C_6 alkyl, the C_1-C_6 alkyl is methyl, ethyl or isopropyl;

and/or, when R^{2x} and R^{2y} are each independently C_1-C_6 alkyl, the C_1-C_6 alkyl is methyl;

and/or, when α ring is a 5-10 membered heteroaromatic ring substituted by one or more of R^a , the "5-10 membered heteroaromatic ring" is 5-6 membered heteroaromatic ring, the "5-6 membered heteroaromatic ring" is pyridine, pyridazine, pyrimidine, pyrazine, furan, thiophene, pyrrole, pyrazole, imidazole, oxazole, thiazole, pyrimidinone, oxadiazole, pyridone or triazole;

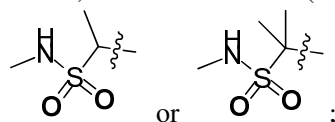
and/or, when α ring is a 5-10 membered heteroaromatic ring substituted by one or more of R^a , the "5-10 membered heteroaromatic ring" is fused ring formed by two 5-6 membered heteroaromatic rings, the "fused ring formed by two 5-6 membered heteroaromatic rings" is fused ring formed by any two heteroaromatic rings selected from the group consisting of pyridine, pyridazine, pyrimidine, pyrazine, furan, thiophene, pyrrole, pyrazole, imidazole, oxazole, thiazole, pyrimidinone, oxadiazole, pyridone or triazole.

5. The nitrogenous macrocyclic compound represented by formula **III-0**, the tautomer thereof, the optical isomer thereof, the hydrate thereof, the solvate thereof, or the pharmaceutically acceptable salt thereof as defined in claim 4, wherein when R^2 is $-(CH_2)_n\beta^2N(R^{2k})S(=O)_2(R^{2d})$, the $-(CH_2)_n\beta^2N(R^{2k})S(=O)_2(R^{2d})$ is $-N(R^{2k})S(=O)_2(R^{2d})$;

and/or, when R^2 is $-(CH_2)_n\beta^2N(R^{2k})S(=O)_2NH(R^{2e})$, the $-(CH_2)_n\beta^2N(R^{2k})S(=O)_2NH(R^{2e})$ is $-N(R^{2k})S(=O)_2NH(R^{2e})$;

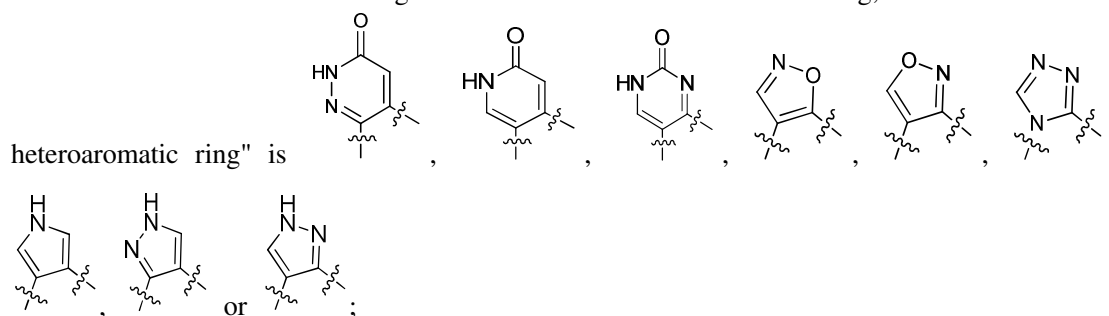
and/or, when R^2 is $-(CH_2)_n\beta^2-S(=O)_2N(R^{2f})(R^{2g})$, the $-(CH_2)_n\beta^2-S(=O)_2N(R^{2f})(R^{2g})$ is $-S(=O)_2N(R^{2f})(R^{2g})$ or $-CH_2-S(=O)_2N(R^{2f})(R^{2g})$;

and/or, when R^2 is $-(CR^{2x}R^{2y})-S(=O)_2N(R^{2f})(R^{2g})$, the $-(CR^{2x}R^{2y})-S(=O)_2N(R^{2f})(R^{2g})$ is



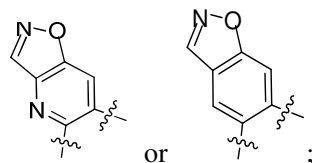
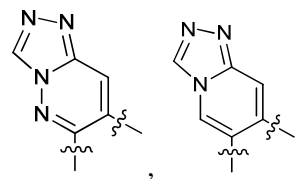
and/or, when R^2 is $-C_1-C_6$ alkyl- $S(=O)_2(R^{2i})$, the $-C_1-C_6$ alkyl- $S(=O)_2(R^{2i})$ is $-(CH_2)_n\beta^2-S(=O)_2(R^{2i})$;

and/or, when α ring is 5-10 membered heteroaromatic ring substituted by one or more of R^a , the "5-10 membered heteroaromatic ring" is 5-6 membered heteroaromatic ring, the "5-6 membered



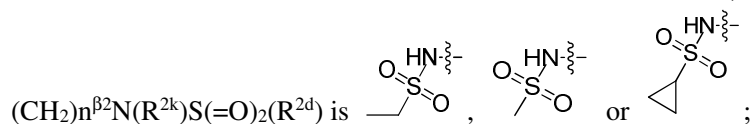
and/or, when α ring is 5-10 membered heteroaromatic ring substituted by one or more of R^a , the "5-10 membered heteroaromatic ring" is fused ring formed by two 5-6 membered heteroaromatic rings,

the "fused ring formed by two 5-6 membered heteroaromatic rings" is



and/or, when each of R^a is independently C_1 - C_5 alkyl, the C_1 - C_5 alkyl is methyl.

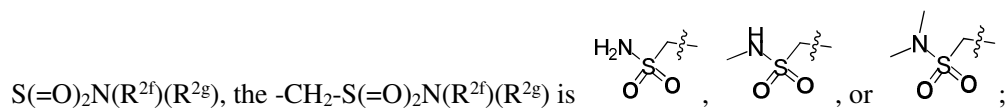
6. The nitrogenous macrocyclic compound represented by formula **III-0**, the tautomer thereof, the optical isomer thereof, the hydrate thereof, the solvate thereof, or the pharmaceutically acceptable salt thereof as defined in claim 5, wherein, when R^2 is $-(CH_2)_n\beta^2N(R^{2k})S(=O)_2(R^{2d})$, the $-(CH_2)_n\beta^2N(R^{2k})S(=O)_2(R^{2d})$ is



and/or, when R^2 is $-(CH_2)_n\beta^2N(R^{2k})S(=O)_2NH(R^{2e})$, the $-(CH_2)_n\beta^2N(R^{2k})S(=O)_2NH(R^{2e})$ is $-NHS(=O)_2NH(R^{2e})$;

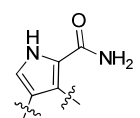
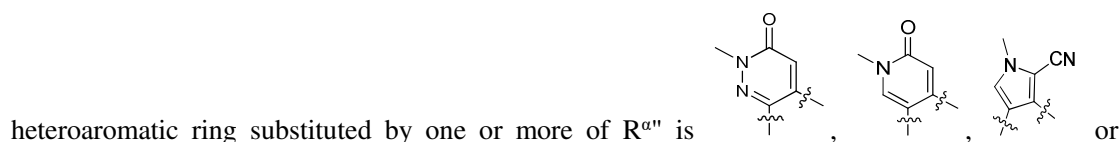
and/or, when R^2 is $-(CH_2)_n\beta^2-S(=O)_2N(R^{2f})(R^{2g})$, the $-(CH_2)_n\beta^2-S(=O)_2N(R^{2f})(R^{2g})$ is $-S(=O)_2N(R^{2f})(R^{2g})$, the $-S(=O)_2N(R^{2f})(R^{2g})$ is $-S(=O)_2N(R^{2g})H$;

and/or, when R^2 is $-(CH_2)_n\beta^2-S(=O)_2N(R^{2f})(R^{2g})$, the $-(CH_2)_n\beta^2-S(=O)_2N(R^{2f})(R^{2g})$ is $-CH_2-$

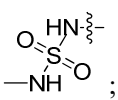


and/or, when R^2 is independently $-C_1$ - C_6 alkyl- $S(=O)_2(R^{2i})$, the $-C_1$ - C_6 alkyl- $S(=O)_2(R^{2i})$ is $-CH_2-S(=O)_2(R^{2i})$;

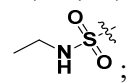
and/or, when α ring is 5-10 membered heteroaromatic ring substituted by one or more of R^a , the "5-10 membered heteroaromatic ring" is 5-6 membered heteroaromatic ring, the "5-10 membered



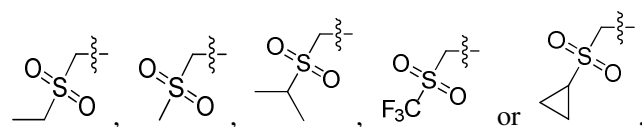
7. The nitrogenous macrocyclic compound represented by formula **III-0**, the tautomer thereof, the optical isomer thereof, the hydrate thereof, the solvate thereof, or the pharmaceutically acceptable salt thereof as defined in claim 6, wherein, when R^2 is independently -

$(\text{CH}_2)_{n^{\beta 2}}\text{N}(\text{R}^{2k})\text{S}(=\text{O})_2\text{NH}(\text{R}^{2e})$, the $-(\text{CH}_2)_{n^{\beta 2}}\text{N}(\text{R}^{2k})\text{S}(=\text{O})_2\text{NH}(\text{R}^{2e})$ is  ;

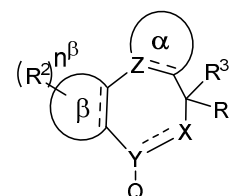
and/or, when R^2 is independently $-(\text{CH}_2)_{n^{\beta 2}}-\text{S}(=\text{O})_2\text{N}(\text{R}^{2f})(\text{R}^{2g})$, the $-(\text{CH}_2)_{n^{\beta 2}}-\text{S}(=\text{O})_2\text{N}(\text{R}^{2f})(\text{R}^{2g})$ is

$-\text{S}(=\text{O})_2\text{N}(\text{R}^{2f})(\text{R}^{2g})$, the $-\text{S}(=\text{O})_2\text{N}(\text{R}^{2f})(\text{R}^{2g})$ is  ;

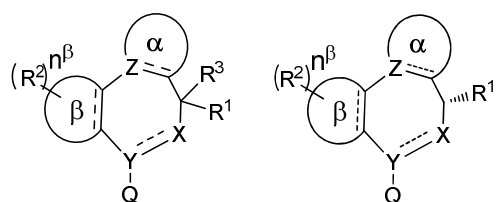
and/or, when R^2 is independently $-\text{C}_1-\text{C}_6$ alkyl- $\text{S}(=\text{O})_2(\text{R}^{2i})$, the $-\text{C}_1-\text{C}_6$ alkyl- $\text{S}(=\text{O})_2(\text{R}^{2i})$ is



8. The nitrogenous macrocyclic compound represented by formula **III-0**, the tautomer thereof, the optical isomer thereof, the hydrate thereof, the solvate thereof, or the pharmaceutically acceptable



salt thereof as defined in claim 1, wherein, when the compound **III-0** is **III-2**, and



R^3 is H, the **III-2** is **III-2-1** ;

and/or, Q is phenyl substituted by one or more of R^{Q1} ;

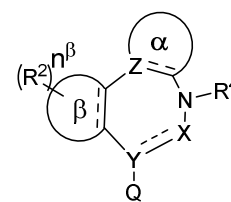
and/or, each of R^{Q1} , R^{Q2} and R^{Q3} is independently -H, -OH, -CN, halogen or C_1-C_5 alkoxy;

and/or, each of $n^{\beta 2}$ is independently 0, or 1;

and/or, each of R^a is independently -H, -CN, C_1-C_5 alkyl or $-\text{C}(=\text{O})\text{N}(\text{R}^{a1})(\text{R}^{a2})$.

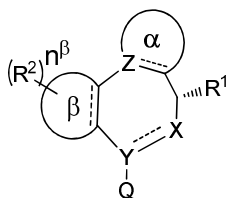
9. The nitrogenous macrocyclic compound represented by formula **III-0**, the tautomer thereof, the optical isomer thereof, the hydrate thereof, the solvate thereof, or the pharmaceutically acceptable salt thereof as defined in claim 8, wherein, each of R^a are each independently -H or C_1-C_5 alkyl.

10. The nitrogenous macrocyclic compound represented by formula **III-0**, the tautomer thereof, the optical isomer thereof, the hydrate thereof, the solvate thereof, or the pharmaceutically



III-1

acceptable salt thereof as defined in claim 1, wherein, the compound **III-0** is



III-2-1

or ;

each of R^{R1} and R^{R2} is independently -H or C_1 - C_5 alkyl;

Q is phenyl substituted by one or more of R^{Q1} ;

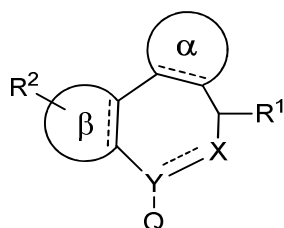
each of R^{Q1} is independently -H, -OH, -CN, halogen or C_1 - C_5 alkoxyl;

each of R^2 is independently $-(CH_2)n^{\beta 2}N(R^{2k})S(=O)_2(R^{2d})$, $-(CH_2)n^{\beta 2}N(R^{2k})S(=O)_2NH(R^{2e})$, $-(CH_2)n^{\beta 2}-S(=O)_2N(R^{2f})(R^{2g})$, or, $-C_1$ - C_6 alkyl- $S(=O)_2(R^{2i})$;

each of $n^{\beta 2}$ is independently 0 or 1;

each of R^a is independently -H, -CN, C_1 - C_5 alkyl or $-C(=O)N(R^{\alpha 1})(R^{\alpha 2})$.

11. The nitrogenous macrocyclic compound represented by formula **III-0**, the tautomer thereof, the optical isomer thereof, the hydrate thereof, the solvate thereof, or the pharmaceutically acceptable salt thereof as defined in claim 1, wherein, the compound **III-0** is



III

;

R^1 is selected from -H, C_1 - C_5 linear or branched alkyl, C_1 - C_5 linear or branched haloalkyl or $-(CH_2)n_0C(=O)N(R^{R1})(R^{R2})$;

wherein, each of R^{R1} and R^{R2} is independently -H, or C_1 - C_5 linear or branched alkyl;

Q is selected from phenyl substituted by R^{Q1} , 3-6 membered cyclohydrocarbyl substituted by R^{Q2} , or 3-6 membered heterocyclohydrocarbyl substituted by R^{Q3} ; each of R^{Q1} , R^{Q2} and R^{Q3} is independently selected from -H, -CN or halogen; the substitution is mono- or poly- substitution; each of the heteroatom in the heterocyclohydrocarbyl and the heteroaryl is independently selected

from N or O, each of the number of the heteroatom is independently 1-3;

R^2 is selected from $-N(R^{2k})S(=O)_2(R^{2d})$, $-NHS(=O)_2NH(R^{2e})$, $-S(=O)_2N(R^{2g})H$, $-S(=O)_2(R^{2h})$, or $-CH_2S(=O)_2(R^{2i})$;

wherein, each of R^{2d} , R^{2e} , R^{2f} , R^{2g} , R^{2h} , R^{2i} and R^{2k} is independently selected from $-H$, C_1 - C_3 linear or branched alkyl, and 3-7 membered cycloalkyl;

α ring is 5-6 membered heteroaromatic ring or fused ring formed by two 5-6 membered heteroaromatic ring, each of the 5-6 membered heteroaromatic ring and the fused ring formed by two 5-6 membered heteroaromatic ring is independently substituted by R^a ; the substitution is mono- or poly- substitution;

wherein, each of R^a is selected from $-H$, $-CN$, C_1 - C_5 linear or branched alkyl, C_1 - C_5 linear or branched alkoxy, C_1 - C_5 linear or branched haloalkyl, or $-C(=O)N(R^{a1})(R^{a2})$; wherein, each of R^{a1} and R^{a2} is independently $-H$, or C_1 - C_5 linear or branched haloalkyl;

wherein, when α ring is 5-6 membered heteroaromatic ring, the 5-6 membered heteroaromatic ring is not isoxazole ring.

12. The nitrogenous macrocyclic compound represented by formula **III-0**, the tautomer thereof, the optical isomer thereof, the hydrate thereof, the solvate thereof, or the pharmaceutically acceptable salt thereof as defined in claim 11, wherein

when R^1 is not $-H$, the cyclocarbon atom which is directly attached to the R^1 directly is in the configuration of S;

when R^1 is C_1 - C_5 linear or branched alkyl, the C_1 - C_5 linear or branched alkyl is methyl, ethyl, propyl or isopropyl;

when R^1 is C_1 - C_5 linear or branched haloalkyl, the C_1 - C_5 linear or branched haloalkyl is C_1 - C_5 linear or branched alkyl that substituted by one or more same or different halogen atom, the halogenation is on the same of different carbon atom; the C_1 - C_5 linear or branched haloalkyl is C_1 - C_3 linear or branched haloalkyl;

when each of R^{R1} and R^{R2} is independently C_1 - C_5 linear or branched alkyl, the C_1 - C_5 linear or branched alkyl is methyl, ethyl, propyl or isopropyl;

when Q is phenyl substituted by R^{Q1} , the substitution is mono- or di- substitution; R^{Q1} is halogen;

when Q is 3-6 membered cyclohydrocarbyl substituted by R^{Q2} , the 3-6 membered cyclohydrocarbyl is 3-6 membered cycloalkyl; the substitution is mono- or di- substitution; R^{Q2} is $-H$ or halogen;

when Q is 3-6 membered heterocyclohydrocarbyl substituted by R^{Q3} , the 3-6 membered heterocyclohydrocarbyl is 3-6 membered heterocycloalkyl; the heteroatom is O; the number of heteroatom is 1, R^{Q3} is $-H$; the 3-6 membered heterocycloalkyl is attached to the rest moiety of the general formula **III** by the carbon on the ring; the 3-6 membered heterocycloalkyl is 2-pyranyl, 3-

pyranyl, 2-tetrahydrofuranyl;

when each of R^{2d} , R^{2e} , R^{2f} , R^{2g} , R^{2h} , R^{2i} and R^{2k} is independently C_1 - C_3 linear or branched alkyl, the C_1 - C_3 linear or branched alkyl is methyl, ethyl, propyl or isopropyl;

when each of R^{2d} , R^{2e} , R^{2f} , R^{2g} , R^{2h} , R^{2i} and R^{2k} is independently 3-7 membered cycloalkyl, the 3-7 membered cycloalkyl is cyclopropyl, cyclobutyl, cyclopentyl or cyclohexyl;

when α ring is 5-6 membered heteroaromatic ring substituted by R^a , the 5-6 membered heteroaromatic ring is pyridine, pyridazine, pyrimidine, pyrazine, furan, thiophene, pyrrole, pyrazole, imidazole, oxazole, thiazole, pyrimidinone, oxadiazole, pyridone, triazole; the substitution is mono- or di- substitution;

when α ring is R^a substituted fused ring formed by two 5-6 membered heteroaromatic rings, the fused ring formed by two 5-6 membered heteroaromatic rings is formed by any two selected from the group consisting of pyridine, pyridazine, pyrimidine, pyrazine, furan, thiophene, pyrrole, pyrazole, imidazole, oxazole, thiazole, pyrimidinone, oxadiazole, pyridone, triazole; the substitution is mono- or di- substitution;

when R^a is C_1 - C_5 linear or branched alkyl, the C_1 - C_5 linear or branched alkyl is methyl, ethyl, propyl or isopropyl;

when R^a is C_1 - C_5 linear or branched alkoxy, the C_1 - C_5 linear or branched alkoxy is methoxy, ethoxy, n-propoxy or isopropoxy;

when R^a is C_1 - C_5 linear or branched haloalkyl, the C_1 - C_5 linear or branched haloalkyl is C_1 - C_5 linear or branched alkyl substituted by one or more same or different halogen atom, the halogenation is on the same or different carbon atom; the C_1 - C_5 linear or branched haloalkyl is C_1 - C_3 linear or branched haloalkyl;

when R^a is halogen, the halogen is fluorine or chlorine;

when R^a is $C(=O)N(R^{a1})(R^{a2})$, each of the R^{a1} and R^{a2} is -H, C_1 - C_5 linear or branched alkyl.

13. The nitrogenous macrocyclic compound represented by formula **III-0**, the tautomer thereof, the optical isomer thereof, the hydrate thereof, the solvate thereof, or the pharmaceutically acceptable salt thereof as defined in claim 12, wherein, when R^1 is C_1 - C_5 linear or branched haloalkyl, the C_1 - C_5 linear or branched haloalkyl is trifluoromethyl, difluoromethyl or 1, 2-difluoroethyl;

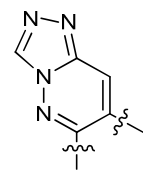
and/or, when Q is phenyl substituted by R^{Q1} , the substitution is para-substitution or 2,4-disubstitution; R^{Q1} is fluorine or chlorine;

and/or, when Q is 3-6 membered cyclohydrocarbyl substituted by R^{Q2} , the 3-6 membered cyclohydrocarbyl is 3-6 membered cycloalkyl; the substitution is on the same carbon atom; R^{Q2} is -H, fluorine or chlorine;

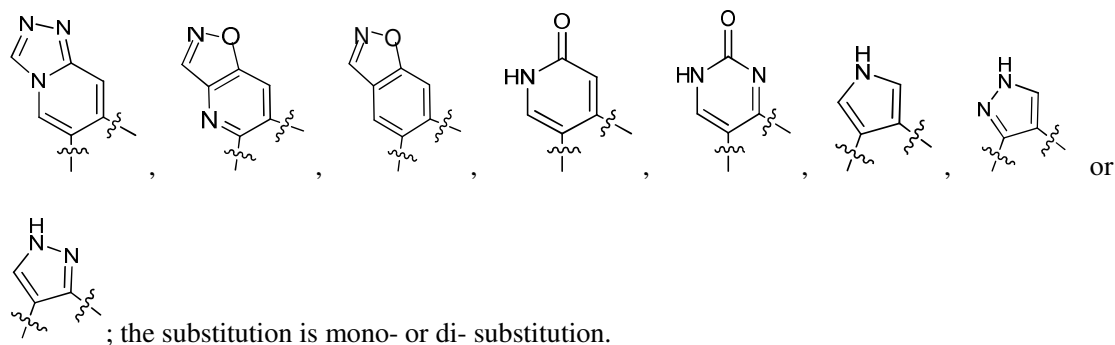
and/or, when R^a is C_1 - C_5 linear or branched haloalkyl, the C_1 - C_5 linear or branched haloalkyl is trifluoromethyl, difluoromethyl or 1, 2-difluoroethyl;

and/or, when R^a is $C(=O)N(R^{a1})(R^{a2})$, each of the R^{a1} and R^{a2} is methyl, ethyl, propyl or isopropyl.

14. The nitrogenous macrocyclic compound represented by formula **III-0**, the tautomer thereof, the optical isomer thereof, the hydrate thereof, the solvate thereof, or the pharmaceutically



acceptable salt thereof as defined in claim 1, wherein, α ring is R^a substituted



15. The nitrogenous macrocyclic compound represented by formula **III-0**, the tautomer thereof, the optical isomer thereof, the hydrate thereof, the solvate thereof, or the pharmaceutically acceptable salt thereof as defined in claim 14, wherein, R^a is methyl, methoxyl, ethylamino, carbamoyl or cyano.

16. The nitrogenous macrocyclic compound represented by formula **III-0**, the tautomer thereof, the optical isomer thereof, the hydrate thereof, the solvate thereof, or the pharmaceutically acceptable salt thereof as defined in claim 1, wherein the compound **III-0** is any compound as followed:

6-(4-fluorophenyl)-2-methyl-9-(methylsulfonylmethyl)-5-oxo-2,4,5,6-tetrahydrobenzo[*b*]pyrrolo[3,4-*d*]azepin-3-nitrile

6-(4-fluorophenyl)-2-methyl-9-(methylsulfonylmethyl)-5-oxo-2,4,5,6-tetrahydrobenzo[*b*]pyrrolo[3,4-*d*]azepin-3-carboxamide

6-(4-fluorophenyl)-2-methyl-9-(methylsulfonylmethyl)-2,4,5,6-tetrahydrobenzo[*b*]pyrrolo[3,4-*d*]azepin-3-nitrile

6-(4-fluorophenyl)-2-methyl-9-(methylsulfonylmethyl)-2,4,5,6-tetrahydrobenzo[*b*]pyrrolo[3,4-*d*]azepin-3-carboxamide

7-(4-fluorophenyl)-2-methyl-10-(methylsulfonylmethyl)-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3(5*H*)-one

7-(4-fluorophenyl)-2-methyl-10-(methylsulfonylmethyl)-6,7-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3(5*H*)-one formate;

7-(4-Fluorophenyl)-2-methyl-10-(methylsulfonylmethyl)-6,7-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3(5*H*)-one;

7-(4-Fluorophenyl)-2-methyl-10-(ethylsulfonylmethyl)-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3(5*H*)-ketone;

7-(4-Chlorophenyl)-10-(ethylsulfonylmethyl)-2-methyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

7-(2,4-Difluorophenyl)-2-methyl-10-(ethylsulfonylmethyl)-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3(5*H*)-one;

7-(4-Chloro-2-fluorophenyl)-10-(ethylsulfonylmethyl)-2-methyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

(*S*)-2-(7-(4-fluorophenyl)-2-methyl-10-(methylsulfonylmethyl)-3-oxo-3,5-dihydro-2*H*-benzo[*c*]Pyrido[3,4-*e*]azepin-5-yl)acetamide;

(*S*)-*N*-ethyl-2-(7-(4-fluorophenyl)-2-methyl-10-(methylsulfonylmethyl)-3-oxo-3,5-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-5-yl)acetamide;

N-(7-(4-fluorophenyl)-2-methyl-3-oxo-3,5-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-10-yl)ethanesulfonamide;

10-((Ethylsulfonylmethyl)-7-(4-fluorophenyl)-2-methyl-2,5-dihydro-3*H*-dipyrido[2,3-*c*:3',4'-*e*]azepin-3-one;

N-(7-(4-chlorophenyl)-2-methyl-3-oxo-3,5-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-10-yl)ethanesulfonamide;

(*S*)-10-(ethylsulfonylmethyl)-7-(4-fluorophenyl)-2,5-dimethyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

(*R*)-10-(ethylsulfonylmethyl)-7-(4-fluorophenyl)-2,5-dimethyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

7-(4-Chlorophenyl)-10-(ethylsulfonylmethyl)-2-methyl-2,5-dihydro-3*H*-dipyrido[3,4-*c*:3',4'-*e*]azepin-3-one;

7-(2-Chloro-4-fluorophenyl)-10-(ethylsulfonylmethyl)-2-methyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

N-(9-chloro-7-(4-fluorophenyl)-2-methyl-3-oxo-3,5-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-10-yl)ethanesulfonamide;

(*S*)-10-(ethylsulfonylmethyl)-7-(4-chlorophenyl)-2,5-dimethyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

(S)-5-ethyl-10-(ethylsulfonylmethyl)-7-(4-fluorophenyl)-2-methyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

9-((Ethylsulfonyl)methyl)-7-(4-fluorophenyl)-2-methyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

(R)-10-(ethylsulfonylmethyl)-7-(4-fluorophenyl)-2-methyl-5-(trifluoromethyl)-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

10-((Ethylsulfonyl)methyl)-7-(4-fluorophenyl)-2-methylspiro[benzo[*c*]pyrido[3,4-*e*]azepin-5,1'-cyclopropane]-3(2*H*)-one;

(S)-5-cyclopropyl-10-(ethylsulfonylmethyl)-7-(4-fluorophenyl)-2-methyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

(S)-7-(4-fluorophenyl)-2,5-dimethyl-10-(trifluoromethylsulfonylmethyl)-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

(S)-10-(isopropylsulfonylmethyl)-7-(4-fluorophenyl)-2,5-dimethyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

(S)-7-(4-fluorophenyl)-2,5-dimethyl-10-(cyclopropylsulfonylmethyl)-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

(S)-7-(2,4-difluorophenyl)-10-(ethylsulfonylmethyl)-2,5-dimethyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

(S)-5-ethyl-10-(ethylsulfonylmethyl)-7-(4-chlorophenyl)-2-methyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

(S)-*N*-(7-(4-fluorophenyl)-2,5-dimethyl-3-oxo-3,5-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-10-yl)ethanesulfonamide;

(S)-*N*-(7-(4-fluorophenyl)-2,5-dimethyl-3-oxo-3,5-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-10-yl)methylaminosulfonamide;

(S)-*N*-ethyl-7-(4-fluorophenyl)-2,5-dimethyl-3-oxo-3,5-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-10-sulfonamide;

(S)-10-((ethylsulfonyl)methyl)-7-(4-methoxyphenyl)-2,5-dimethyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

(S)-10-((ethylsulfonyl)methyl)-7-(4-hydroxyphenyl)-2,5-dimethyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

(S)-10-((ethylsulfonyl)methyl)-7-(4-fluoro-3-methoxyphenyl)-2,5-dimethyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

(S)-10-((ethylsulfonyl)methyl)-7-(4-fluoro-3-hydroxyphenyl)-2,5-dimethyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

(S)-*N*-(9-fluoro-7-(4-fluorophenyl)-2,5-dimethyl-3-oxo-3,5-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-10-yl)ethanesulfonamide;

(S)-*N*-ethyl-2-(10-((ethylsulfonyl)methyl)-7-(4-fluorophenyl)-2-methyl-3-oxo-3,5-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-5-yl)acetamide;

(S)-2-(10-((ethylsulfonyl)methyl)-7-(4-fluorophenyl)-2-methyl-3-oxo-3,5-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-5-yl)acetic acid;

(S)-2-(10-((ethylsulfonyl)methyl)-7-(4-fluorophenyl)-2-methyl-3-oxo-3,5-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-5-yl)acetamide;

(S)-10-((ethylsulfonyl)methyl)-7-(4-fluorophenyl)-9-methoxy-2,5-dimethyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

(S)-10-((ethylsulfonyl)methyl)-7-(4-fluorophenyl)-9-hydroxy-2,5-dimethyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

(S)-*N*-(9-chloro-7-(4-fluorophenyl)-2,5-dimethyl-3-oxo-3,5-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-10-yl)ethylsulfonamide;

(S)-7-(4-fluorophenyl)-2,5-dimethyl-10-((methylsulfonyl)methyl)-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

(S)-10-((ethylsulfonyl)methyl)-7-(4-fluorophenyl)-5-isopropyl-2-methyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

(S)-*N*-(7-(4-chlorophenyl)-9-fluoro-2,5-dimethyl-3-oxo-3,5-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-10-yl)ethanesulfonamide;

(S)-*N*-(9-chloro-5-ethyl-7-(4-fluorophenyl)-2-methyl-3-oxo-3,5-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-10-yl)ethanesulfonamide;

(S)-*N*-(5-ethyl-9-fluoro-7-(4-fluorophenyl)-2-methyl-3-oxo-3,5-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-10-yl)ethanesulfonamide;

(S)-*N*-(9-chloro-7-(4-chlorophenyl)-2,5-dimethyl-3-oxo-3,5-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-10-yl)ethanesulfonamide;

(S)-(7-(4-fluorophenyl)-2,5-dimethyl-3-oxo-3,5-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-10-yl)methanesulfonamide;

(S)-1-(7-(4-fluorophenyl)-2,5-dimethyl-3-oxo-3,5-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-10-yl)-*N*-methylmethanesulfonamide;

(S)-1-(7-(4-fluorophenyl)-2,5-dimethyl-3-oxo-3,5-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-10-yl)-*N,N*-dimethylmethanesulfonamide;

(S)-*N*-(9-fluoro-7-(4-fluorophenyl)-2,5-dimethyl-3-oxo-3,5-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-10-yl)methanesulfonamide;

(S)-4-(10-((ethylsulfonyl)methyl)-2,5-dimethyl-3-oxo-3,5-dihydro-2*H*-benzo[*c*]pyrazolo[3,4-*e*]azepin-7-yl)benzonitrile;

(S)-*N*-(9-chloro-5-cyclopropyl-7-(4-fluorophenyl)-2-methyl-3-oxo-3,5-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-10-yl)ethanesulfonamide;

10-((Ethylsulfonyl)methyl)-7-(4-fluorophenyl)-2,5-dimethyl-2,5-dihydro-3*H*-benzo[*e*]pyrido[4,3-*c*][1,2]diazepin-3-one;

(S)-*N*-(9-chloro-7-(4-fluorophenyl)-2,5-dimethyl-3-oxo-3,5-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-10-yl)methanesulfonamide;

(S)-*N*-(9-chloro-7-(4-fluorophenyl)-2,5-dimethyl-3-oxo-3,5-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-10-yl)cyclopropylsulfonamide;

10-((Ethylsulfonyl)methyl)-7-(4-fluorophenyl)-2,5-dimethyl-2,5-dihydro-3*H*-benzo[*c*]pyridazino[3,4-*e*]azepin-3-one;

10-((Ethylsulfonyl)methyl)-7-(4-fluorophenyl)-5-(methoxymethyl)-2-methyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

(S)-10-((ethylsulfonyl)methyl)-9-fluoro-7-(4-fluorophenyl)-2,5-dimethyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

(S)-9-chloro-10-((ethylsulfonyl)methyl)-7-(4-fluorophenyl)-2,5-dimethyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

(S)-10-((ethylsulfonyl)methyl)-7-(4-fluoro-2-methoxyphenyl)-2,5-dimethyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

(S)-10-((ethylsulfonyl)methyl)-7-(4-fluorophenyl)-5-(2-hydroxyethyl)-2-methyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

10-((Ethylsulfonyl)methyl)-7-(4-fluoro-3-methoxyphenyl)-2-methyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

(S)-2-(7-(4-fluorophenyl)-2,5-dimethyl-3-oxo-3,5-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-10-yl)-*N*-methylpropane-2-sulfonamide;

1-((*S*)-7-(4-fluorophenyl)-2,5-dimethyl-3-oxo-3,5-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-10-yl)-*N*-methylethane-1-sulfonamide;

N-(9-fluoro-7-(4-fluorophenyl)-2,5-dimethyl-3-oxo-3,5-dihydro-2*H*-benzo[*e*]pyrido[4,3-*c*][1,2]diazepin-10-yl)ethanesulfonamide;

7-(2-Chloro-4-fluorophenyl)-10-((ethylsulfonyl)methyl)-2,5-dimethyl-2,5-dihydro-3*H*-benzo[*e*]pyrido[4,3-*c*][1,2]diazepin-3-one;

10-((ethylsulfonyl)methyl)-7-(4-fluorophenyl)-9-methoxy-2-methyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

N-(9-fluoro-7-(4-fluorophenyl)-2,5-dimethyl-3-oxo-3,5-dihydropyrido-2*H*-benzo[*c*]pyridazino[3,4-*e*]azepin-10-yl)ethanesulfonamide;

7-(2-Chloro-4-fluoro-5-methoxyphenyl)-10-((ethylsulfonyl)methyl)-2-methyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

7-(2-Chloro-4-fluorophenyl)-10-((ethylsulfonyl)methyl)-2,5-dimethyl-2,5-dihydro-3*H*-benzo[*c*]pyridazino[3,4-*e*]azepin-3-one;

7-(2-Chloro-4-fluorophenyl)-2-methyl-10-((methylsulfonyl)methyl)-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

1-(7-(4-fluorophenyl)-2,5-dimethyl-3-oxo-3,5-dihydro-2*H*-benzo[*e*]pyrido[4,3-*c*][1,2]diazepin-10-yl)-*N*-methylmethanesulfonamide;

10-((Ethylsulfonyl)methyl)-7-(4-fluoro-3-methoxyphenyl)-2,5-dimethyl-2,5-dihydro-3*H*-benzo[*c*]pyridazino[3,4-*e*]azepin-3-one;

(*S*)-7-(2-chloro-4-fluorophenyl)-10-((ethylsulfonyl)methyl)-2,5-dimethyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

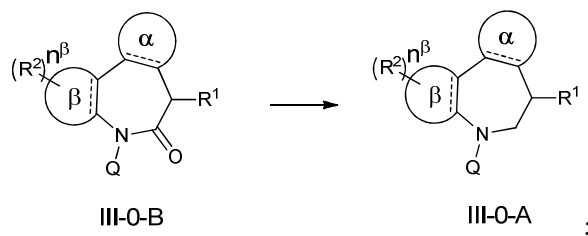
(*S*)-7-(2-chloro-4-fluoro-5-methoxyphenyl)-10-((ethylsulfonyl)methyl)-2,5-dimethyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

(*S*)-1-(7-(4-fluoro-3-methoxyphenyl)-2,5-dimethyl-3-oxo-3,5-dihydro-2*H*-benzo[*c*]pyrido[3,4-*e*]azepin-10-yl)-*N*-methylmethanesulfonamide;

(*S*)-10-((ethylsulfonyl)methyl)-7-(3-fluoro-4-methoxyphenyl)-2,5-dimethyl-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one;

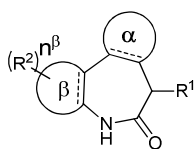
(*S*)-10-((ethylsulfonyl)methyl)-2,5-dimethyl-7-(pyrido-4-yl)-2,5-dihydro-3*H*-benzo[*c*]pyrido[3,4-*e*]azepin-3-one.

17. A preparation method for the nitrogenous macrocycle compound represented by the formula (III-0-A), comprising: carrying out an amide reduction on the intermediate compound represented by formula (III-0-B):



wherein, the definitions of the substituents are as defined in at least one of claims 1-16.

18. A compound represented by the formula III-0-C,



III-0-C

wherein, the definitions of the substituents are as defined in at least one of claims 1-16.

19. Use of the nitrogenous macrocyclic compound represented by formula **III-0**, the tautomer thereof, the optical isomer thereof, the hydrate thereof, the solvate thereof, or the pharmaceutically acceptable salt thereof as defined in at least one of claims 1-16 in manufacturing a bromodomain inhibitor, or in manufacturing a medicament for treating tumor, pulmonary disease, inflammatory disease or autoimmune disease, acoustic neuroma, acute leukemia, acute lymphocytic leukemia, acute myeloid leukemia, acute t-cell leukemia, basal cell carcinoma, cholangiocarcinoma, bladder cancer, brain cancer, breast cancer, bronchial cancer, cervical cancer, chondrosarcoma, chordoma, choriocarcinoma, chronic leukemia, chronic lymphocytic leukemia, chronic myeloid leukemia, chronic myelogenous leukemia, colon cancer, colorectal cancer, craniopharyngioma, cystadenocarcinoma, diffuse large B-cell lymphoma, dysproliferative changes, embryonic cancer, endometrial cancer, endothelial sarcoma, ependymoma, epithelial cancer, erythroleukemia, esophageal cancer, estrogen receptor-positive breast cancer, essential thrombocytosis, Ewing's sarcoma, fibrosarcoma, follicular lymphoma, germ cell testicular cancer, glioma, glioblastoma, glioma, heavy chain disease, hemangioblasts, liver cancer, hepatocellular carcinoma, hormone-insensitive prostate cancer, leiomyosarcoma, leukemia, liposarcoma, lung carcinoma, lymphangioendotheliosarcoma, lymphatic sarcoma, lymphoblastic leukemia, lymphoma, bladder, breast, colon, lung, ovary, pancreas, prostate, skin and uterus malignant tumors and hyperproliferative disorders, T-Cell or B-cell derived lymphoid malignancy, leukemia, lymphoma, medullary carcinoma, medulloblastoma, melanoma, meningioma, mesothelioma, multiple myeloma, myeloid leukemia, myeloma, myxosarcoma, neuroblastoma, NUT midline cancer, non-small cell lung cancer, oligodendroglioma, oral cancer, osteogenic sarcoma, ovarian cancer, pancreatic cancer, papillary adenocarcinoma, papillary carcinoma, pineal gland tumor, polycythemia vera, prostate cancer, rectal cancer, renal cell carcinoma, retinoblastoma, rhabdomyosarcoma, sarcoma, sebaceous gland cancer, seminoma, skin cancer, small cell lung cancer, solid tumor, small cell lung cancer, gastric cancer, squamous cell carcinoma, synovial tumor, sweat adenoma, thyroid cancer, primary macroglobulinemia, testicular tumor, uterine cancer, and nephroblastoma.

20. A pharmaceutical composition, comprising the nitrogenous macrocyclic compound represented by the formula **III-0**, a tautomer thereof, an optical isomer thereof, a hydrate thereof, a solvate thereof, or a pharmaceutically acceptable salt thereof as defined in at least one of claims 1-16, and at least

one pharmaceutically acceptable excipient.