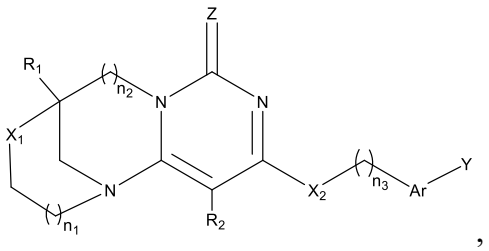
What is claimed is:

1. A compound of Formula (I) or a pharmaceutically acceptable salt thereof,



(I)

wherein

n_1, and n_2 are 1;

n_3 is 0, 1, or 2;

R_1 and R_2 are each independently selected from -H, halogen, alkyl, deuterated alkyl, deuterated alkoxy, haloalkyl, haloalkoxy, alkoxy;

X_1 is selected from $-CH_2$, -O-, or -S-,

X_2 is selected from -O-, or -S-,

Ar is arylene, wherein hydrogens in the arylene are each optionally substituted with one or more substituents, and the substituents are each independently selected from halogen, alkyl, deuteroalkyl, haloalkyl, alkoxy, deuteroalkoxy, haloalkoxy;

Y is -H, halogen, or -OAr';

Ar' is selected from phenyl, pyridyl, or pyrimidinyl, wherein hydrogens in the phenyl, pyridyl, or pyrimidinyl are optionally substituted with one or more substituents, the substituents are each independently selected from halogen, alkyl, haloalkyl, alkoxy, haloalkoxy, deuterated alkyl, deuterated alkoxy;

Z is O or S.

halogens in the "halogen" "haloalkyl" and "haloalkoxy " are each independently selected from F, Cl, Br, or I;

alkyls in the "alkyl" "deuterated alkyl" "deuterated alkoxy" "hydroxyalkyl" "haloalkyl", "haloalkoxy" "alkoxy" and "mono- or di-alkyl substituted amino" are each independently C_1-C_{10} linear or branched alkyl; optionally each independently C_1-C_7

linear or branched alkyl; optionally each independently C_1-C_4 linear or branched alkyl; and optionally selected from methyl, ethyl, n-propyl, isopropyl, n-butyl, isobutyl, tert-butyl, sec-butyl, n-pentyl, 1-methylbutyl, 2-methylbutyl, 3-methylbutyl, isopentyl, 1-ethylpropyl, neopentyl, n-hexyl, 1-methylpentyl, 2-methylpentyl, 3-methylpentyl, isohexyl, 1,1-dimethylbutyl, 2,2-dimethylbutyl, 3,3-dimethylbutyl, 1,2-dimethylbutyl, 1,3-dimethylbutyl, 2,3-dimethylbutyl, 2-ethylbutyl, n-heptyl, 2-methylhexyl, 3-methylhexyl, 2,2-dimethylpentyl, 3,3-dimethylpentyl, 2,3-dimethylpentyl, 2,4-dimethylpentyl, 3-ethylpentyl, or 2,2,3-trimethylbutyl;

"arylene" is 6- to 10-membered arylene; and optionally phenylene or naphthylene;

the compound of Formula (I) is in the form of a tautomer, meso isomer, racemate, enantiomer, diastereomer, or mixture thereof.

2. The compound or a salt thereof according to claim 1, wherein

n_1 is 1; n_2 is 1; n_3 is 1;

R_1 and R_2 are each independently selected from -H, fluorine, chlorine, bromine, iodine, methyl, ethyl, n-propyl, isopropyl, n-butyl, isobutyl, tert-butyl, sec-butyl, n-pentyl, 1-methylbutyl, 2-methylbutyl, 3-methylbutyl, isopentyl, 1-ethylpropyl, neopentyl, n-hexyl, 1-methylpentyl, 2-methylpentyl, 3-methylpentyl, isohexyl, 1,1-dimethylbutyl, 2,2-dimethylbutyl, 3,3-dimethylbutyl, 1,2-dimethylbutyl, 1,3-dimethylbutyl, 2,3-dimethylbutyl, 2-ethylbutyl, n-heptyl, 2-methylhexyl, 3-methylhexyl, 2,2-dimethylpentyl, 3,3-dimethylpentyl, 2,3-dimethylpentyl, 2,4-dimethylpentyl, 3-ethylpentyl, or 2,2,3-trimethylbutyl, $-CD_3$, $-C_2D_5$, or $-C_3D_7$, $-OCD_3$, $-OC_2D_5$, or $-OC_3D_7$, $-CF_3$, $-CHF_2$, $-CH_2F$, $-C_2F_5$, or $-C_3F_7$, C_1-C_7 haloalkoxy, C_1-C_7 alkoxy; optionally, R_1 is -H; and optionally, R_2 is-H;

X_1 is $-CH_2-$ or -O-;

X_2 is -O-;

Ar is phenylene, wherein hydrogen atoms in the phenylene are optionally substituted with one or two substituents, the substituents are halogen, and optionally F;

Y is H, -F, or -OAr';

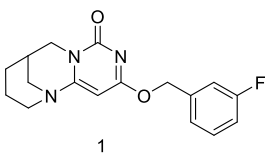
Ar' is selected from phenyl, pyridyl, or pyrimidinyl, wherein hydrogen atoms in

the phenyl, pyridyl, pyrimidinyl are each independently optionally substituted with 1, 2, or 3 substituents, the substituents are each independently selected from F, Cl, Br, methyl, ethyl, n-propyl, isopropyl, n-butyl, isobutyl, tert-butyl, sec-butyl, n-pentyl, 1-methylbutyl, 2-methylbutyl, 3-methylbutyl, isopentyl, 1-ethylpropyl, neopentyl, n-hexyl, 1-methylpentyl, 2-methylpentyl, 3-methylpentyl, isohexyl, 1,1-dimethylbutyl, 2,2-dimethylbutyl, 3,3-dimethylbutyl, 1,2-dimethylbutyl, 1,3-dimethylbutyl, 2,3-dimethylbutyl, 2-ethylbutyl, n-heptyl, 2-methylhexyl, 3-methylhexyl, 2,2-dimethylpentyl, 3,3-dimethylpentyl, 2,3-dimethylpentyl, 2,4-dimethylpentyl, 3-ethylpentyl, or 2,2,3-trimethylbutyl, $-CD_3$, $-OCD_3$, C_1-C_6 haloalkyl, $-OCH_3$, $-OC_2H_7$, $-OC_3H_7$, C_1-C_6 haloalkoxy;

optionally, Ar' is selected from phenyl, pyridin-3-yl, pyridin-4-yl, or pyrimidin-5-yl, and is optionally substituted with 1 or 2 substituents, the substituents is selected from halogen, alkyl, haloalkyl, or haloalkoxy, and optionally selected from F, Cl, $-CH_3$, $-CF_3$, or-OCF_3;

Z is O.

3. The compound of Formula (I) or a pharmaceutically acceptable salt thereof according to claim 1 or 2, wherein the compound of Formula (I) is selected from the following compounds: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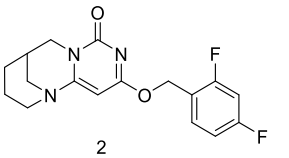
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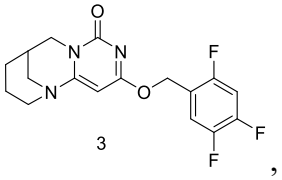
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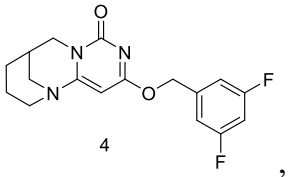
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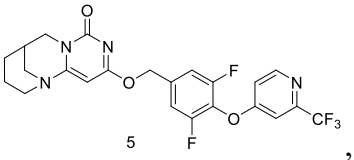
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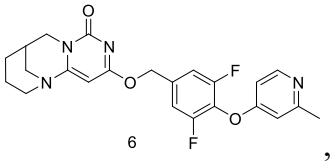
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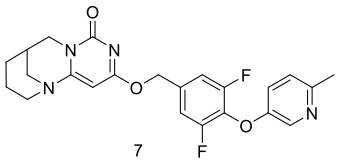
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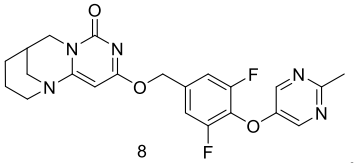
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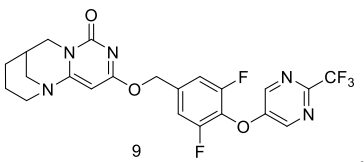
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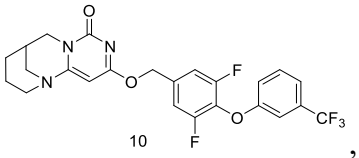
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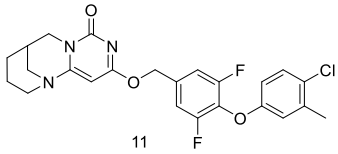
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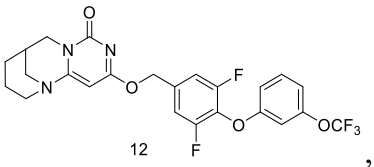
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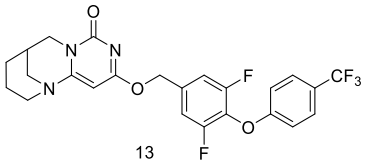
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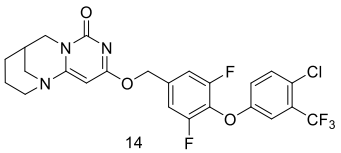
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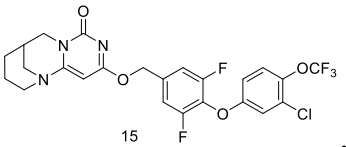
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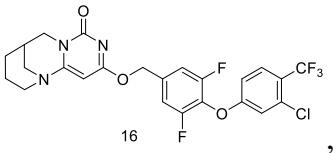
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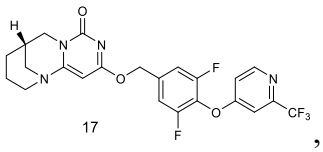
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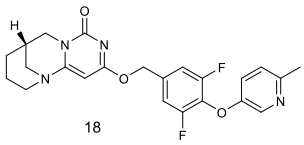
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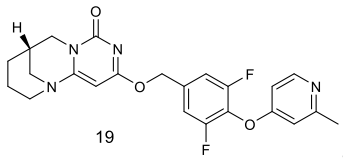
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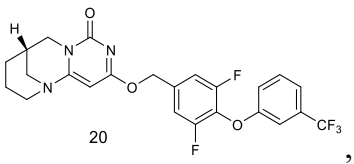
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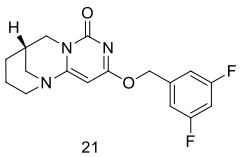
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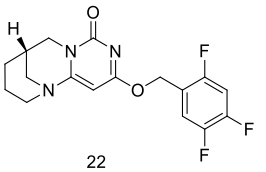
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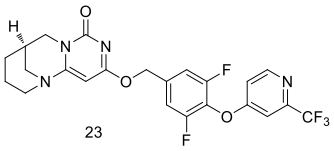
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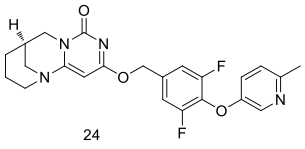
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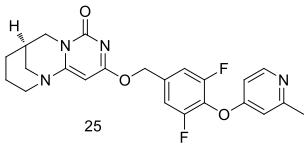
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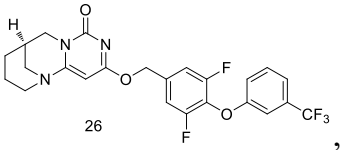
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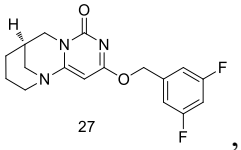
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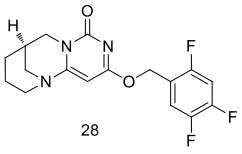
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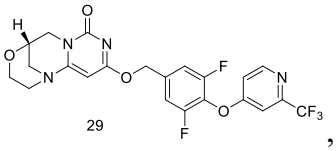
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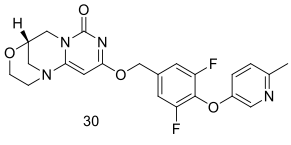
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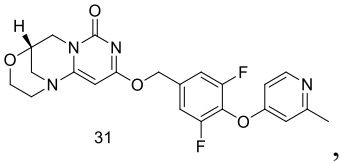
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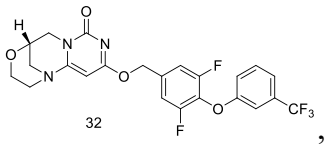
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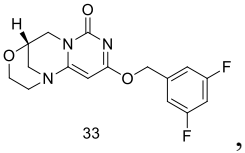
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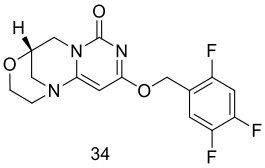
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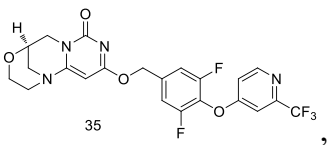
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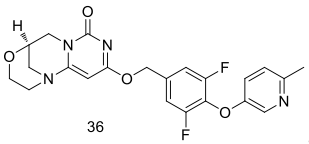
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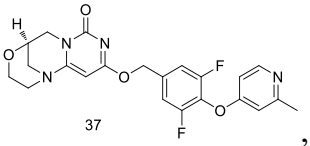
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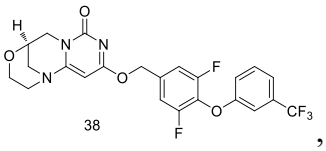
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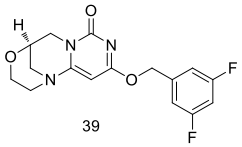
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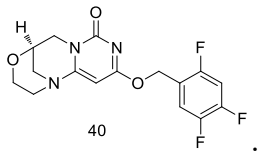

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4. The compound of Formula (I) or a pharmaceutically acceptable salt thereof according to any one of claims 1-3, wherein the pharmaceutically acceptable salt includes an anionic salt or cationic salt of the compound of Formula (I);

optionally, the pharmaceutically acceptable salt includes alkali metal salt, alkaline earth metal salt, or ammonium salt of the compound of Formula (I); optionally, the alkali metal includes sodium, potassium, lithium, or cesium, and the alkaline earth metal includes magnesium, calcium, or strontium;

optionally, the pharmaceutically acceptable salt includes salt formed by the compound of Formula (I) and an organic base;

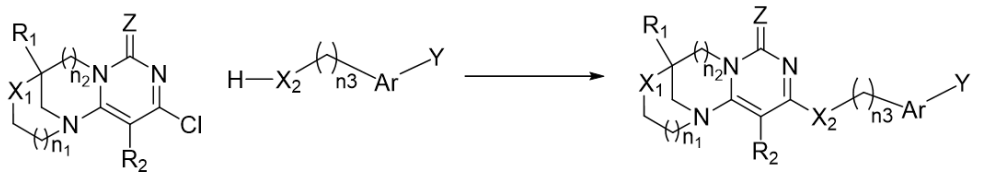
optionally, the organic base includes trialkylamine, pyridine, quinoline, piperidine, imidazole, picoline, dimethylaminopyridine, dimethylaniline, N-alkylmorpholine, 1,5-diazabicyclo[4.3.0]nonene-5, 1,8-diazabicyclo[5.4.0]undecene-7, 1,4-diazabicyclo[2.2.2] octane; optionally, the trialkylamine includes trimethylamine, triethylamine, or N-ethyldiisopropylamine; and optionally, the N-alkyl morpholine includes N-methylmorpholine;

optionally, the pharmaceutically acceptable salt includes salt formed by the compound of Formula (I) and an acid;

optionally, the acid includes inorganic acid, or organic acid; optionally, the inorganic acid includes hydrochloric acid, hydrobromic acid, hydroiodic acid, sulfuric acid, nitric acid, phosphoric acid, or carbonic acid; optionally, the organic acid includes formic acid, acetic acid, propionic acid, oxalic acid, malonic acid, succinic acid, fumaric acid, maleic acid, lactic acid, malic acid, citric acid, citric acid, tartaric acid, carbonic acid, picric acid, methanesulfonic acid, ethanesulfonic acid, p-toluenesulfonic acid, glutamic acid, or pamoic acid.

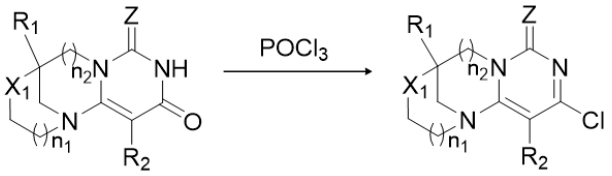
5. A preparation method of the compound of Formula (I) or a pharmaceutically acceptable salt thereof according to any one of claims 1-4, comprising the step of

reacting a compound of Formula (II) with a compound of Formula (III) to produce the compound of Formula (I):



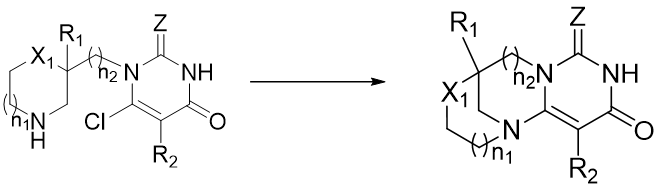
II III I ;

optionally, the preparation method comprises the step of reacting a compound of Formula (IV) with phosphorus oxychloride to produce the compound of Formula (II):



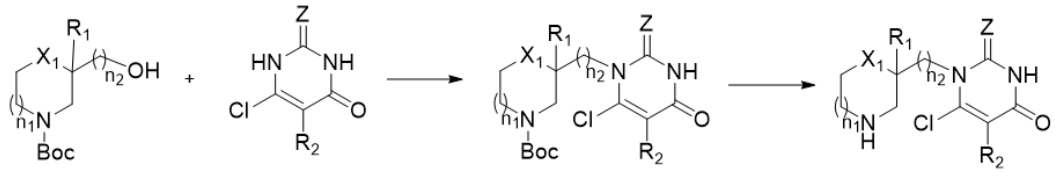
IV II ;

optionally, the preparation method comprises the step of subjecting a compound of Formula (V) to cyclization reaction to produce the compound of Formula (IV):



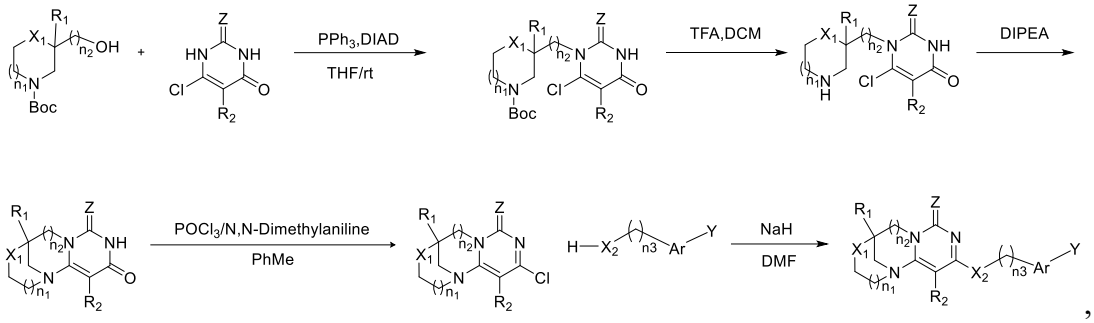
V IV ;

optionally, the preparation method comprises the step of reacting a compound of Formula (VII) with a compound of Formula (VIII) to produce a compound of Formula (VI), and further removing the protective group from the compound of Formula (VI) to produce the compound of Formula (V):



VII VIII VI V ;

optionally, the preparation method includes the following reaction scheme:



,

wherein in each of the formulas, n_1, n_2, n_3, R_1, R_2, X_1, X_2, Z, Ar, and Y are defined as in any one of claims 1-4.

6. A pharmaceutical composition, comprising a therapeutically effective amount of one or more of the compound of Formula (I) or a pharmaceutically acceptable salt thereof according to any one of claims 1-4, and optionally, pharmaceutically acceptable excipient(s).

7. The pharmaceutical composition according to claim 6, wherein the dosage form of the pharmaceutical composition includes oral, rectal, or parenteral formulation;

optionally, the oral formulation includes solid or liquid formulation;

optionally, the solid formulation includes tablet, powder, granule, or capsule;

optionally, the liquid formulation includes aqueous or oily suspension, or syrup;

optionally, the parenteral formulation includes solution for injection, or aqueous or oily suspension.

8. Use of the compound of Formula (I) or a pharmaceutically acceptable salt thereof according to any one of claims 1-4, or the pharmaceutical composition according to claim 6 or 7, in the preparation of an Lp-PLA2 inhibitor.

9. Use of the compound of Formula (I) or a pharmaceutically acceptable salt thereof according to any one of claims 1-4, or the pharmaceutical composition according to claim 6 or 7, in the preparation of a medicament for treatment of neurodegeneration-related diseases;

optionally, the neurodegeneration-related diseases include Alzheimer's disease (AD), glaucoma, and age-related macular degeneration (AMD).

10. Use of the compound of Formula (I) or a pharmaceutically acceptable salt thereof according to any one of claims 1-4, or the pharmaceutical composition according to claim 6 or 7, in the preparation of a medicament for the treatment of cardiovascular diseases, diabetic macular edema (DME), or prostate diseases;

optionally, the cardiovascular diseases include atherosclerosis.