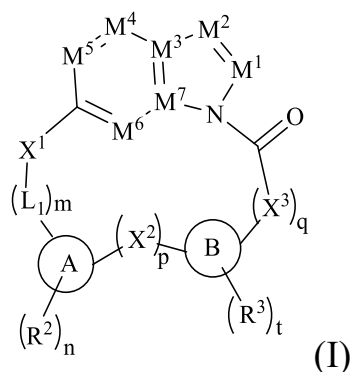


## CLAIMS

1. A compound of general formula (I) or a pharmaceutically acceptable salt, ester or stereoisomer thereof,



wherein:

$M^1$ ,  $M^2$ ,  ~~$M^3$~~ ,  $M^4$ ,  $M^5$  and,  $M^6$  ~~and  $M^7$~~  are each independently selected from C, C( $R^1$ ) and N;

$M^3$  and  $M^7$  are C;

$X^1$  and  $L^1$  are each independently selected from -C( $R^5$ )( $R^6$ )- and -N( $R^4$ )-;

$X^2$  and  $X^3$ , when present, are each independently selected from -C( $R^5$ )( $R^6$ )-, -N( $R^4$ )- and -O-;

~~$X^1$ ,  $X^2$ ,  $X^3$  and  $L^1$ , when present, are each independently selected from -C( $R^5$ )( $R^6$ )-, -N( $R^4$ )-, -O-, -S-, -S(O)- and -S(O)<sub>2</sub>-;~~

ring A is selected from phenyl and 5-6 membered nitrogen-containing heteroaryl;  
~~ring A is selected from 3-10 membered cycloalkyl, 3-10 membered heterocyclyl, 6-8 membered monoaryl, 8-10 membered fused aryl, 5-10 membered monoheteroaryl and 8-10 membered fused heteroaryl;~~

ring B is ~~absent or selected from 3-10 membered cycloalkyl and 3-10 membered heterocyclyl,~~ and when ring B is absent,  $X^2$  and  $X^3$  are directly connected by a chemical bond;

$R^1$ ,  $R^2$ ,  $R^3$ ,  $R^5$  and  $R^6$ , when present, are each independently selected from hydrogen, halogen, ~~nitro, cyano~~ and the following groups optionally substituted with ~~one or more~~ 1-3  $Q^1$ : C<sub>1-6</sub> alkyl, ~~C<sub>2-6</sub> alkenyl, C<sub>2-6</sub> alkynyl,~~ -OR<sup>a</sup>, ~~SR<sup>a</sup>, NR<sup>a</sup>R<sup>b</sup>,~~

~~-C(O)R<sup>a</sup>, -C(O)OR<sup>a</sup>, -OC(O)R<sup>a</sup>, -OC(O)OR<sup>a</sup>, -OC(O)NR<sup>a</sup>R<sup>b</sup>, -C(O)NR<sup>a</sup>R<sup>b</sup>, -NR<sup>a</sup>C(O)R<sup>b</sup>, -NR<sup>a</sup>C(O)OR<sup>b</sup>, -NR<sup>a</sup>C(O)NR<sup>a</sup>R<sup>b</sup>, -S(O)R<sup>a</sup>, -S(O)OR<sup>a</sup>, -OS(O)R<sup>a</sup>, -OS(O)OR<sup>a</sup>, -OS(O)NR<sup>a</sup>R<sup>b</sup>, -S(O)NR<sup>a</sup>R<sup>b</sup>, -NR<sup>a</sup>S(O)R<sup>b</sup>, -NR<sup>a</sup>S(O)OR<sup>b</sup>, -NR<sup>a</sup>S(O)NR<sup>a</sup>R<sup>b</sup>, -S(O)<sub>2</sub>R<sup>a</sup>, -S(O)<sub>2</sub>OR<sup>a</sup>, -OS(O)<sub>2</sub>R<sup>a</sup>, -OS(O)<sub>2</sub>OR<sup>a</sup>, -OS(O)<sub>2</sub>NR<sup>a</sup>R<sup>b</sup>, -S(O)<sub>2</sub>NR<sup>a</sup>R<sup>b</sup>, -NR<sup>a</sup>S(O)<sub>2</sub>R<sup>b</sup>, -NR<sup>a</sup>S(O)<sub>2</sub>OR<sup>b</sup>, -NR<sup>a</sup>S(O)<sub>2</sub>NR<sup>a</sup>R<sup>b</sup>, 3-10 membered cycloalkyl, 3-10 membered heterocyclyl, 6-10 membered aryl and 5-10 membered heteroaryl; Q<sup>1</sup>, when present, is independently selected from hydroxy, amino, halogen, ~~nitro, cyano, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkylamino, di(C<sub>1-6</sub> alkyl)amino, halo C<sub>1-6</sub> alkyl, hydroxy C<sub>1-6</sub> alkyl, amino C<sub>1-6</sub> alkyl, halo C<sub>1-6</sub> alkoxy, 3-10 membered cycloalkyl, 3-10 membered heterocyclyl, 6-10 membered aryl and 5-10 membered heteroaryl;~~~~

R<sup>4</sup>, when present, is independently selected from hydrogen and C<sub>1-6</sub> alkyl optionally substituted with 1 to 3 Q<sup>2</sup>; ~~hydrogen and the following groups optionally substituted with one or more Q<sup>2</sup>: C<sub>1-6</sub> alkyl, C<sub>2-6</sub> alkenyl, C<sub>2-6</sub> alkynyl, -C(O)R<sup>a</sup>, -C(O)OR<sup>a</sup>, -C(O)NR<sup>a</sup>R<sup>b</sup>, -S(O)R<sup>a</sup>, -S(O)OR<sup>a</sup>, -S(O)NR<sup>a</sup>R<sup>b</sup>, -S(O)<sub>2</sub>R<sup>a</sup>, -S(O)<sub>2</sub>OR<sup>a</sup>, -S(O)<sub>2</sub>NR<sup>a</sup>R<sup>b</sup>, 3-10 membered cycloalkyl, 3-10 membered heterocyclyl, 6-10 membered aryl and 5-10 membered heteroaryl;~~ Q<sup>2</sup>, when present, is independently selected from hydroxy, amino, halogen, ~~nitro, cyano, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkylamino, di(C<sub>1-6</sub> alkyl)amino, halo C<sub>1-6</sub> alkyl, hydroxy C<sub>1-6</sub> alkyl, amino C<sub>1-6</sub> alkyl, halo C<sub>1-6</sub> alkoxy, 3-10 membered cycloalkyl, 3-10 membered heterocyclyl, 6-10 membered aryl and 5-10 membered heteroaryl;~~

or X<sup>1</sup>, together with L<sup>1</sup>, forms 3-6 membered monoheterocyclyl ~~3-10 membered cycloalkyl, 3-10 membered heterocyclyl or 5-6 membered monoheteroaryl;~~ and/or L<sup>1</sup>, together with some ring atoms of ring A, forms ~~3-10 membered cycloalkyl or 3-10 membered heterocyclyl;~~ and/or X<sup>2</sup>, together with some ring atoms of ring A, forms ~~3-10 membered cycloalkyl or 3-10 membered heterocyclyl;~~ the ~~3-10 membered cycloalkyl, 3-10 membered heterocyclyl and 5-6 membered monoheteroaryl~~ are optionally each independently substituted with a substituent selected from: R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, halogen, amino, hydroxy, nitro, cyano, C<sub>1-6</sub>

alkyl, C<sub>1-6</sub>-alkoxy, C<sub>1-6</sub>-alkylamino, di(C<sub>1-6</sub>-alkyl)amino, halo C<sub>1-6</sub>-alkyl, hydroxy C<sub>1-6</sub>-alkyl, amino C<sub>1-6</sub>-alkyl and halo C<sub>1-6</sub>-alkoxy;

R<sup>a</sup> and R<sup>b</sup>, when present, are each independently selected from hydrogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub>-alkoxy, C<sub>1-6</sub>-alkylamino, di(C<sub>1-6</sub>-alkyl)amino, halo C<sub>1-6</sub> alkyl, hydroxy C<sub>1-6</sub>-alkyl, amino C<sub>1-6</sub>-alkyl, halo C<sub>1-6</sub> alkoxy, 3-10 membered cycloalkyl, 3-10 membered heterocyclyl, 6-10 membered aryl and 5-10 membered heteroaryl; and

m, n, p, q and t are each independently selected from 0, 1, 2, 3, 4 and 5.

2. The compound or the pharmaceutically acceptable salt, ester or stereoisomer thereof according to claim 1, wherein:

M<sup>1</sup>, M<sup>2</sup>, M<sup>3</sup>, M<sup>4</sup>, M<sup>5</sup>, M<sup>6</sup> and M<sup>7</sup> are each independently selected from C, C(R<sup>1</sup>) and N, at least one of which is N;

X<sup>1</sup>, X<sup>2</sup>, X<sup>3</sup> and L<sup>1</sup>, when present, are each independently selected from C(R<sup>5</sup>)(R<sup>6</sup>), N(R<sup>4</sup>) and O;

ring A is selected from 6-8 membered monoaryl and 5-8 membered monoheteroaryl;

ring B is absent or selected from 3-8 membered cycloalkyl and 3-8 membered heterocyclyl;

R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>5</sup> and R<sup>6</sup>, when present, are each independently selected from hydrogen, halogen, nitro, cyano and the following groups optionally substituted with 1 to 3 Q<sup>1</sup>: C<sub>1-6</sub>-alkyl, OR<sup>a</sup>, NR<sup>a</sup>R<sup>b</sup>, C(O)R<sup>a</sup>, C(O)OR<sup>a</sup>, OC(O)R<sup>a</sup>, OC(O)OR<sup>a</sup>, OC(O)NR<sup>a</sup>R<sup>b</sup>, C(O)NR<sup>a</sup>R<sup>b</sup>, NR<sup>a</sup>C(O)R<sup>b</sup>, NR<sup>a</sup>C(O)OR<sup>b</sup>, NR<sup>a</sup>C(O)NR<sup>a</sup>R<sup>b</sup>, 3-8 membered cycloalkyl, 3-8 membered heterocyclyl, 6-8 membered aryl and 5-8 membered heteroaryl; Q<sup>1</sup>, when present, is independently selected from hydroxy, amino, halogen, nitro, cyano, C<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkoxy, C<sub>1-6</sub>-alkylamino, di(C<sub>1-6</sub>-alkyl)amino, halo C<sub>1-6</sub>-alkyl, hydroxy C<sub>1-6</sub>-alkyl, amino C<sub>1-6</sub>-alkyl and halo C<sub>1-6</sub>-alkoxy;

R<sup>4</sup>, when present, is independently selected from hydrogen and the following groups optionally substituted with 1 to 3 Q<sup>2</sup>: C<sub>1-6</sub>-alkyl, C(O)R<sup>a</sup>, C(O)OR<sup>a</sup>,

~~C(O)NR<sup>a</sup>R<sup>b</sup>, 3-8 membered cycloalkyl and 3-8 membered heterocyclyl; Q<sup>2</sup>, when present, is independently selected from hydroxy, amino, halogen, nitro, cyano, C<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkoxy, C<sub>1-6</sub>-alkylamino, di(C<sub>1-6</sub>-alkyl)amino, halo-C<sub>1-6</sub>-alkyl, hydroxy C<sub>1-6</sub>-alkyl, amino-C<sub>1-6</sub>-alkyl, halo-C<sub>1-6</sub>-alkoxy, 3-8 membered cycloalkyl and 3-8 membered heterocyclyl;~~

~~or X<sup>+</sup>, together with L<sup>+</sup>, forms 3-8 membered cycloalkyl, 3-8 membered heterocyclyl or 5-6 membered monoheteroaryl; and/or L<sup>+</sup>, together with some ring atoms of ring A, forms 3-8 membered cycloalkyl or 3-8 membered heterocyclyl; and/or X<sup>2</sup>, together with some ring atoms of ring A, forms 3-8 membered cycloalkyl or 3-8 membered heterocyclyl; the 3-8 membered cycloalkyl, 3-8 membered heterocyclyl and 5-6 membered monoheteroaryl are optionally each independently substituted with a substituent selected from: R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, halogen, amino, hydroxy, nitro, cyano, C<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkoxy, C<sub>1-6</sub>-alkylamino, di(C<sub>1-6</sub>-alkyl)amino, halo-C<sub>1-6</sub>-alkyl, hydroxy C<sub>1-6</sub>-alkyl, amino-C<sub>1-6</sub>-alkyl and halo-C<sub>1-6</sub>-alkoxy;~~

~~R<sup>a</sup> and R<sup>b</sup>, when present, are each independently selected from hydrogen, C<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkoxy, C<sub>1-6</sub>-alkylamino, di(C<sub>1-6</sub>-alkyl)amino, halo-C<sub>1-6</sub>-alkyl, hydroxy C<sub>1-6</sub>-alkyl, amino-C<sub>1-6</sub>-alkyl, halo-C<sub>1-6</sub>-alkoxy, 3-8 membered cycloalkyl and 3-8 membered heterocyclyl; and~~

~~m, n, p, q and t are each independently selected from 0, 1, 2, 3, 4 and 5.~~

~~3. The compound or the pharmaceutically acceptable salt, ester or stereoisomer thereof according to claim 2, wherein:~~

~~M<sup>1</sup>, M<sup>2</sup>, M<sup>3</sup>, M<sup>4</sup>, M<sup>5</sup>, M<sup>6</sup> and M<sup>7</sup> are each independently selected from C, C(R<sup>1</sup>) and N, at least one of which is N;~~

~~X<sup>1</sup> and L<sup>+</sup> are each independently selected from C(R<sup>5</sup>)(R<sup>6</sup>) and N(R<sup>4</sup>);~~

~~X<sup>2</sup> and X<sup>3</sup>, when present, are each independently selected from C(R<sup>5</sup>)(R<sup>6</sup>), N(R<sup>4</sup>) and O;~~

~~ring A is selected from phenyl and 5-6 membered monoheteroaryl;~~

ring B is absent or selected from 3-6 membered monocycloalkyl and 3-6 membered monoheterocyclyl;

$R^1$ ,  $R^2$ ,  $R^3$ ,  $R^5$  and  $R^6$ , when present, are each independently selected from hydrogen, halogen, nitro, cyano and the following groups optionally substituted with 1 to 3  $Q^1$ :  $C_{1-6}$ -alkyl,  $OR^a$ ,  $NR^aR^b$ ,  $C(O)R^a$ ,  $C(O)OR^a$ ,  $C(O)NR^aR^b$ , 3-6 membered cycloalkyl, 3-6 membered heterocyclyl, phenyl and 5-6 membered heteroaryl;  $Q^1$ , when present, is independently selected from hydroxy, amino, halogen, nitro, cyano,  $C_{1-6}$ -alkyl,  $C_{1-6}$ -alkoxy,  $C_{1-6}$ -alkylamino,  $di(C_{1-6}$ -alkyl)amino, halo  $C_{1-6}$ -alkyl, hydroxy  $C_{1-6}$ -alkyl, amino  $C_{1-6}$ -alkyl and halo  $C_{1-6}$ -alkoxy;

$R^4$ , when present, is independently selected from hydrogen and the following groups optionally substituted with 1 to 3  $Q^2$ :  $C_{1-6}$ -alkyl,  $C(O)R^a$ , 3-6 membered cycloalkyl and 3-6 membered heterocyclyl;  $Q^2$ , when present, is selected from hydroxy, amino, halogen, nitro, cyano,  $C_{1-6}$ -alkyl,  $C_{1-6}$ -alkoxy,  $C_{1-6}$ -alkylamino,  $di(C_{1-6}$ -alkyl)amino, halo  $C_{1-6}$ -alkyl, hydroxy  $C_{1-6}$ -alkyl, amino  $C_{1-6}$ -alkyl, halo  $C_{1-6}$ -alkoxy, 3-6 membered cycloalkyl and 3-6 membered heterocyclyl;

or  $X^1$ , together with  $L^1$ , forms 3-6 membered monoheterocyclyl or 5-6 membered monoheteroaryl; and/or  $L^1$ , together with some ring atoms of ring A, forms 3-6 membered monocycloalkyl or 3-6 membered monoheterocyclyl; and/or  $X^2$ , together with some ring atoms of ring A, forms 3-6 membered monocycloalkyl and 3-6 membered monoheterocyclyl; the 3-6 membered monoheterocyclyl, 5-6 membered monoheteroaryl and 3-6 membered monocycloalkyl are optionally each independently substituted with a substituent selected from:  $R^4$ ,  $R^5$ ,  $R^6$ , halogen, amino, hydroxy,  $C_{1-6}$ -alkyl,  $C_{1-6}$ -alkoxy,  $C_{1-6}$ -alkylamino,  $di(C_{1-6}$ -alkyl)amino, halo  $C_{1-6}$ -alkyl, hydroxy  $C_{1-6}$ -alkyl, amino  $C_{1-6}$ -alkyl and halo  $C_{1-6}$ -alkoxy;

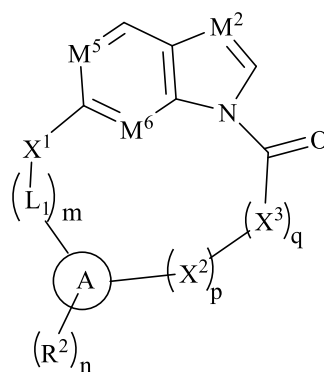
$R^a$  and  $R^b$ , when present, are each independently selected from hydrogen,  $C_{1-6}$ -alkyl,  $C_{1-6}$ -alkoxy,  $C_{1-6}$ -alkylamino,  $di(C_{1-6}$ -alkyl)amino, halo  $C_{1-6}$ -alkyl, hydroxy  $C_{1-6}$ -alkyl, amino  $C_{1-6}$ -alkyl, halo  $C_{1-6}$ -alkoxy, 3-6 membered cycloalkyl and 3-6 membered heterocyclyl;

~~m is 1, 2 or 3;~~

~~n, p and q are each independently selected from 0, 1, 2 and 3; and~~

~~t is 0 or 1.~~

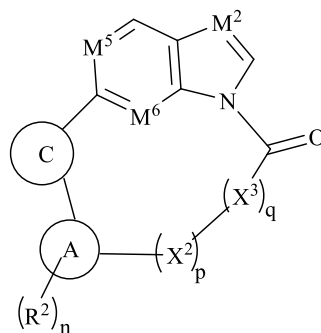
- 5      ~~42.~~ The compound or the pharmaceutically acceptable salt, ester or stereoisomer thereof according to ~~any one of claims 1-3,~~ wherein the compound is of the structure shown as general formula (II),



(II)

- 10      wherein  $M^2$ ,  $M^5$  and  $M^6$  are each independently selected from CH and N.

~~53.~~ The compound or the pharmaceutically acceptable salt, ester or stereoisomer thereof according to ~~any one of claims 1-4~~claim 1, wherein the compound is of the structure shown as general formula (III),



(III)

wherein:

ring C is pyrrolidinyl ~~selected from 3-6 membered saturated monoheterocyclyl and 5-6 membered nitrogen-containing monoheteroaryl,~~

preferably 5-6 membered saturated monoheterocyclyl; the 3-6 membered saturated monoheterocyclyl and 5-6 membered nitrogen-containing monoheteroaryl are optionally each independently substituted with a substituent selected from:  $R^4$ ,  $R^5$ ,  $R^6$ , halogen, amino, hydroxy,  $C_{1-4}$  alkyl,  $C_{1-4}$  alkoxy,  $C_{1-4}$  alkylamino, di( $C_{1-4}$  alkyl)amino, halo  $C_{1-4}$  alkyl, hydroxy  $C_{1-4}$  alkyl, amino  $C_{1-4}$  alkyl and halo  $C_{1-4}$  alkoxy;

$-(X^2)_p-$  is selected from  $-C(R^5)(R^6)-$ ,  $-C(R^5)(R^6)-C(R^5)(R^6)-$ ,  $-N(R^4)-C(R^5)(R^6)-$ ,  $-O-C(R^5)(R^6)-$ ,  $-C(R^5)(R^6)-N(R^4)-$  and  $-C(R^5)(R^6)-O-$ , and the left chemical bond thereof is connected to ring A and the right chemical bond thereof is connected to  $X^3$ ;

$-(X^3)_q-$  is selected from  $-C(R^5)(R^6)-$ ,  $-C(R^5)(R^6)-C(R^5)(R^6)-$ ,  $-N(R^4)-C(R^5)(R^6)-$ ,  $-O-C(R^5)(R^6)-$ ,  $-C(R^5)(R^6)-N(R^4)-$  and  $-C(R^5)(R^6)-O-$ , and the left chemical bond thereof is connected to  $X^2$  and the right chemical bond thereof is connected to carbonyl;

ring A is selected from phenyl and 5-6 membered monoheteroaryl, preferably 5-6 membered nitrogen-containing heteroaryl;

$R^2$ , when present, is independently selected from hydrogen, halogen and the following groups optionally substituted with 1 to 3  $Q^1$ :  $C_{1-4}$  alkyl and  $-OR^a$  and  $NR^aR^b$ ;  $Q^1$ , when present, is independently selected from hydroxy, amino, halogen, nitro, cyano,  $C_{1-4}$  alkyl,  $C_{1-4}$  alkoxy,  $C_{1-4}$  alkylamino, di( $C_{1-4}$  alkyl)amino, halo  $C_{1-4}$  alkyl, hydroxy  $C_{1-4}$  alkyl, amino  $C_{1-4}$  alkyl and halo  $C_{1-4}$  alkoxy;

$R^a$  and  $R^b$ , when present, are each independently selected from hydrogen and  $C_{1-4}$  alkyl;

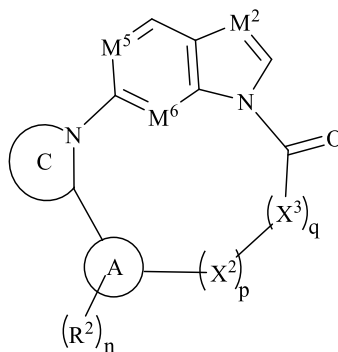
$R^5$  and  $R^6$ , when present, are each independently selected from hydrogen, halogen, hydroxy, amino,  $C_{1-4}$  alkyl and  $C_{1-4}$  alkoxy;

$R^4$ , when present, is independently selected from hydrogen and  $C_{1-4}$  alkyl optionally substituted with 1 to 2  $Q^2$ ;  $Q^2$ , when present, is independently selected from hydroxy, amino, halogen and  $C_{1-4}$  alkoxy;

and

n is 0, 1 or 2.

64. The compound or the pharmaceutically acceptable salt, ester or stereoisomer thereof according to ~~any one of~~ claims 1-53, wherein the compound is of the structure shown as general formula (IV),



(IV)

~~wherein each optional substituent on ring C is independently selected from R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, halogen, amino, hydroxy, nitro, cyano, C<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkoxy, C<sub>1-6</sub>-alkylamino, di(C<sub>1-6</sub>-alkyl)amino, halo-C<sub>1-6</sub>-alkyl, hydroxy-C<sub>1-6</sub>-alkyl, amino-C<sub>1-6</sub>-alkyl and halo-C<sub>1-6</sub>-alkoxy.~~

75. The compound or the pharmaceutically acceptable salt, ester or stereoisomer thereof according to any one of claims 1-63-4, wherein:

ring C is ~~selected from aziridinyl, azetidiny, pyrrolidinyl, imidazolidinyl, pyrazolidinyl, piperidinyl, morpholinyl, piperazinyl, hexahydropyridazinyl, hexahydropyrimidinyl, pyrrolyl, imidazolyl, pyrazolyl, pyridinyl or pyrimidinyl; each of which is optionally substituted with a substituent selected from: fluorine, chlorine, bromine, iodine, hydroxy, amino, methyl, ethyl, propyl, isopropyl, butyl, isobutyl, sec-butyl, methoxy, ethoxy, propoxy, isopropoxy, methylamino, dimethylamino, ethylamino, diethylamino, trifluoromethyl and trifluoromethoxy;~~

ring A is selected from phenyl, pyrrolyl, imidazolyl, ~~pyrazolyl, furyl, thienyl, thiazolyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, 1,2,4-triazolyl, 1,2,3-~~

~~triazolyl, 1,3,4-oxadiazolyl, 1,2,4-oxadiazolyl, 1,3,4-thiadiazolyl, 1,2,4-thiadiazolyl,~~ pyridinyl, pyrimidinyl, pyridazinyl, 1,3,5-triazinyl and tetrazinyl;

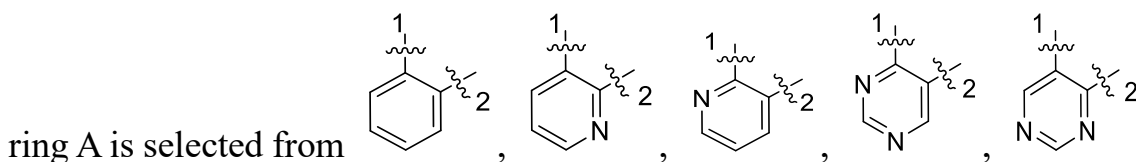
R<sup>2</sup>, when present, is independently selected from hydrogen, fluorine, chlorine, bromine, iodine, hydroxy, amino, methyl, ethyl, propyl, isopropyl, butyl, isobutyl, *sec*-butyl, methylamino, dimethylamino, ethylamino, diethylamino, methoxy, ethoxy, propoxy, isopropoxy, trifluoromethyl and trifluoromethoxy;

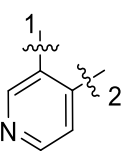
R<sup>5</sup> and R<sup>6</sup>, when present, are each independently selected from hydrogen, fluorine, chlorine, bromine, iodine, hydroxy, amino, methyl, ethyl, propyl, isopropyl, butyl, isobutyl, *sec*-butyl, methoxy, ethoxy, propoxy and isopropoxy; and

R<sup>4</sup>, when present, is independently selected from hydrogen, methyl, ethyl, propyl, isopropyl, butyl, isobutyl and *sec*-butyl.

86. The compound or the pharmaceutically acceptable salt, ester or stereoisomer thereof according to any one of claims 1-75,

wherein:



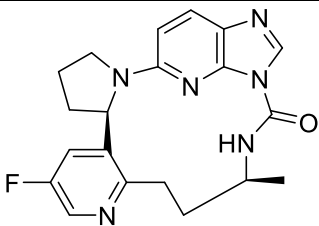
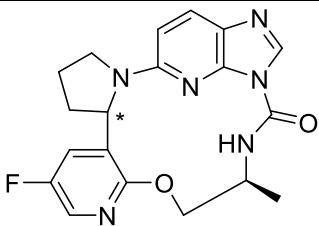
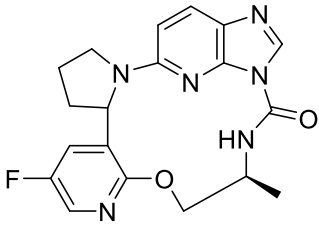
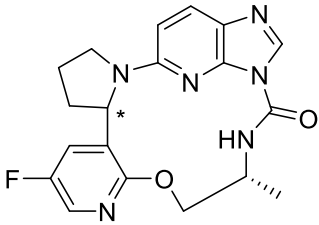
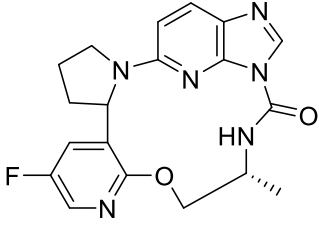
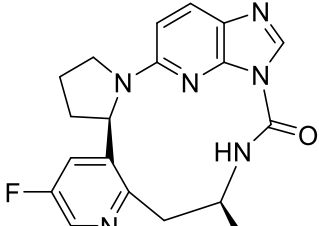
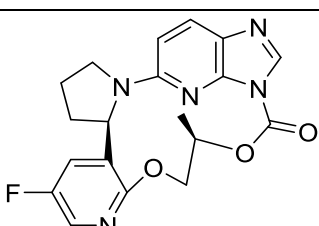
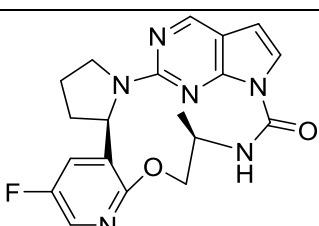
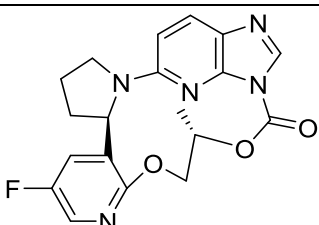
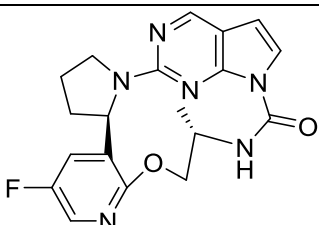
and , and ~~preferably~~ the wavy line marked with "1" represents the connection point of ring A to L<sup>1</sup> and the wavy line marked with "2" represents the connection point of ring A to X<sup>2</sup>;

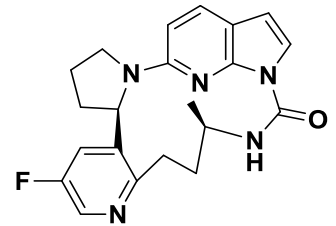
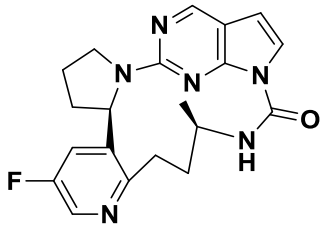
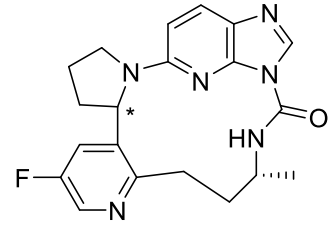
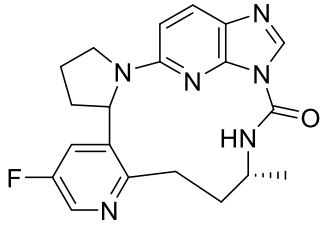
-(X<sup>2</sup>)<sub>p</sub>- is selected from -C(R<sup>5</sup>)(R<sup>6</sup>)-, -C(R<sup>5</sup>)(R<sup>6</sup>)-C(R<sup>5</sup>)(R<sup>6</sup>)-, -N(R<sup>4</sup>)-C(R<sup>5</sup>)(R<sup>6</sup>)- and -O-C(R<sup>5</sup>)(R<sup>6</sup>)-, and ~~preferably~~ the left chemical bond thereof is connected to ring A and the right chemical bond thereof is connected to X<sup>3</sup>; and

-(X<sup>3</sup>)<sub>q</sub>- is selected from -C(R<sup>5</sup>)(R<sup>6</sup>)-, -C(R<sup>5</sup>)(R<sup>6</sup>)-N(R<sup>4</sup>)- and -C(R<sup>5</sup>)(R<sup>6</sup>)-O-, and ~~preferably~~ the left chemical bond thereof is connected to X<sup>2</sup> and the right

chemical bond thereof is connected to carbonyl.

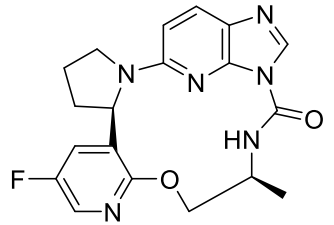
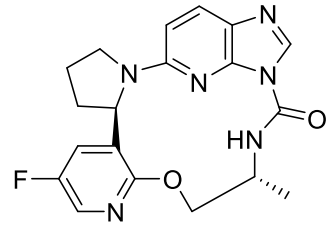
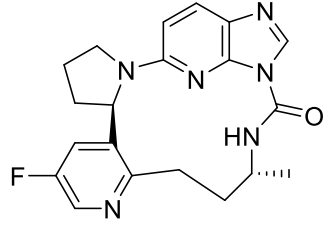
97. The compound or the pharmaceutically acceptable salt, ester or stereoisomer thereof according to any one of claims 1-86, wherein the compound is selected from the following compounds:

| No.          | Compound                                                                            | No.        | Compound                                                                              |
|--------------|-------------------------------------------------------------------------------------|------------|---------------------------------------------------------------------------------------|
| Compound 1   |    | Compound 2 |    |
| Compound 2-1 |   | Compound 3 |   |
| Compound 3-1 |  | Compound 4 |  |
| Compound 5   |  | Compound 6 |  |
| Compound 7   |  | Compound 8 |  |

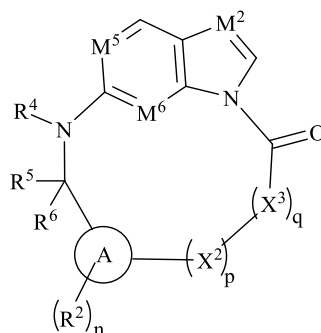
| No.         | Compound                                                                          | No.           | Compound                                                                            |
|-------------|-----------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------|
| Compound 9  |  | Compound 10   |  |
| Compound 11 |  | Compound 11-1 |  |

wherein \* represents that a carbon atom is a chiral carbon atom having a single configuration (R configuration or S configuration).

108. The compound or the pharmaceutically acceptable salt, ester or stereoisomer thereof according to claim 97, wherein the compound is selected from:

| No.          | Compound                                                                            | No.         | Compound                                                                              |
|--------------|-------------------------------------------------------------------------------------|-------------|---------------------------------------------------------------------------------------|
| Compound 2'  |  | Compound 3' |  |
| Compound 11' |  |             |                                                                                       |

109. The compound or the pharmaceutically acceptable salt, ester or stereoisomer thereof according to any one of claims 1-42, wherein the compound is of the structure shown as general formula (V),



(V).

~~42~~10. The compound or the pharmaceutically acceptable salt, ester or stereoisomer thereof according to any one of claims 1-~~42~~4, wherein:

X<sup>1</sup> is -N(R<sup>4</sup>)-;

L<sup>1</sup> is -C(R<sup>5</sup>)(R<sup>6</sup>)-;

ring A is selected from phenyl and 5-6 membered nitrogen-containing heteroaryl;

R<sup>2</sup>, when present, is independently selected from hydrogen, halogen and the following groups optionally substituted with 1 to 3 Q<sup>1</sup>: C<sub>1-4</sub> alkyl ~~and~~5, -OR<sup>a</sup> ~~and~~ ~~NR<sup>a</sup>R<sup>b</sup>~~; Q<sup>1</sup>, when present, is independently selected from hydroxy, amino, halogen, ~~nitro, cyano, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, C<sub>1-4</sub> alkylamino, di(C<sub>1-4</sub> alkyl)amino, halo C<sub>1-4</sub> alkyl, hydroxy C<sub>1-4</sub> alkyl, amino C<sub>1-4</sub> alkyl and halo C<sub>1-4</sub> alkoxy~~;

R<sup>a</sup> ~~and~~ ~~R<sup>b</sup>~~, when present, ~~are~~is each independently selected from hydrogen and C<sub>1-4</sub> alkyl;

R<sup>5</sup> and R<sup>6</sup>, when present, are each independently selected from hydrogen, halogen, ~~hydroxy, amino, C<sub>1-4</sub> alkyl and C<sub>1-4</sub> alkoxy~~;

R<sup>4</sup>, when present, is independently selected from hydrogen and C<sub>1-4</sub> alkyl optionally substituted with 1 to 2 Q<sup>2</sup>; Q<sup>2</sup>, when present, is independently selected from hydroxy, amino, halogen and C<sub>1-4</sub> alkoxy; and

n is 0, 1 or 2.

~~43~~11. The compound or the pharmaceutically acceptable salt, ester or

stereoisomer thereof according to claim ~~12~~10, wherein:

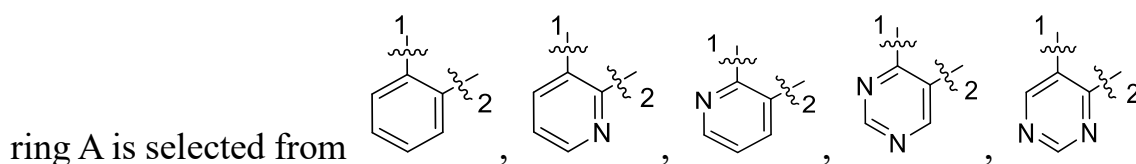
ring A is selected from phenyl, pyrrolyl, imidazolyl, ~~pyrazolyl, thiazolyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, 1,2,4-triazolyl, 1,2,3-triazolyl, 1,3,4-oxadiazolyl, 1,2,4-oxadiazolyl, 1,3,4-thiadiazolyl, 1,2,4-thiadiazolyl,~~ pyridinyl, pyrimidinyl, pyridazinyl, 1,3,5-triazinyl and tetrazinyl;

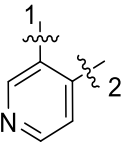
$R^2$ , when present, is independently selected from hydrogen, fluorine, chlorine, bromine, iodine, hydroxy, amino, methyl, ethyl, propyl, isopropyl, butyl, isobutyl, *sec*-butyl, methylamino, dimethylamino, ethylamino, diethylamino, methoxy, ethoxy, propoxy, isopropoxy, trifluoromethyl and trifluoromethoxy;

$R^5$  and  $R^6$ , when present, are each independently selected from hydrogen, fluorine, chlorine, bromine, iodine, hydroxy, amino, methyl, ethyl, propyl, isopropyl, butyl, isobutyl, *sec*-butyl, methoxy, ethoxy, propoxy and isopropoxy; and

$R^4$ , when present, is independently selected from hydrogen, methyl, ethyl, propyl, isopropyl, butyl, isobutyl and *sec*-butyl.

~~14~~12. The compound or the pharmaceutically acceptable salt, ester or stereoisomer thereof according to claim ~~12~~11, wherein:



and , and ~~preferably~~ the wavy line marked with “1” represents the connection point of ring A to  $L^1$  and the wavy line marked with “2” represents the connection point of ring A to  $X^2$ ;

~~$(X^2)_p$  is selected from  $C(R^5)(R^6)$ ,  $C(R^5)(R^6)-C(R^5)(R^6)$ ,  $N(R^4)-C(R^5)(R^6)$  and  $O-C(R^5)(R^6)$ , and preferably the left chemical bond thereof is connected to ring A and the right chemical bond thereof is connected to  $X^3$ ; and~~

~~-(X<sup>3</sup>)<sub>q</sub> is selected from -C(R<sup>5</sup>)(R<sup>6</sup>)-, -C(R<sup>5</sup>)(R<sup>6</sup>)-N(R<sup>4</sup>)- and -C(R<sup>5</sup>)(R<sup>6</sup>)-O-, and preferably the left chemical bond thereof is connected to X<sup>2</sup> and the right chemical bond thereof is connected to carbonyl.~~

- 5      ~~15~~13. The compound or the pharmaceutically acceptable salt, ester or stereoisomer thereof according to any one of claims ~~12-14~~10-12, wherein the compound is selected from:

| No.              | Compound | No.            | Compound |
|------------------|----------|----------------|----------|
| Compound<br>12   |          | Compound<br>13 |          |
| Compound<br>13-1 |          | Compound<br>14 |          |
| Compound<br>15   |          | Compound<br>16 |          |
| Compound<br>17   |          |                | .        |

- 10      ~~16~~14. A pharmaceutical formulation comprising the compound or the pharmaceutically acceptable salt, ester or stereoisomer thereof according to any one of claims 1-~~15~~13, and one or more pharmaceutically acceptable carriers and/or excipients.

1715. A pharmaceutical composition comprising the compound or the pharmaceutically acceptable salt, ester or stereoisomer thereof according to any one of claims 1-1513, and one or more second therapeutically active agents selected from:

a drug for the treatment of pain, which is selected from Nav1.7 channel modulators, opioid analgesics, non-steroidal anti-inflammatory drugs, sedatives, selective/non-selective cyclooxygenase inhibitors, antiepileptics, antidepressants, local anesthetics, 5-HT receptor blockers, 5-HT receptor agonists, ergot alkaloids,  $\beta$ -receptor blockers, M receptor blockers, nitrates and vitamin K;

a drug for the treatment of cancer, which is selected from mitotic inhibitors, alkylating agents, antimetabolites, antisense DNA or RNA, antitumor antibiotics, growth factor inhibitors, signal transduction inhibitors, cell cycle inhibitors, enzyme inhibitors, retinoid receptor modulators, proteasome inhibitors, topoisomerase inhibitors, biological response modifiers, hormones, angiogenesis inhibitors, cell growth inhibitors, targeted antibodies, HMG-CoA reductase inhibitors and prenyl-protein transferase inhibitors;

a drug for the treatment of neurodegenerative diseases, which is selected from dopamine-mimetics, dopamine receptor agonists, agents affecting dopamine metabolism, NMDA receptor antagonists, adenosine  $A_{2A}$  receptor inhibitors, agents affecting DA release and reuptake, central anticholinergics, cholinesterase inhibitors, 5-HT agonists,  $\alpha_2$  adrenergic receptor antagonists, antidepressants, cholinergic receptor agonists,  $\beta/\gamma$  secretase inhibitors, H3 receptor antagonists and antioxidant agents;

a drug for the treatment of autoimmune diseases, which is selected from antirheumatic drugs, non-steroidal anti-inflammatory drugs, glucocorticoid drugs, TNF antagonists, cyclophosphamide, mycophenolate mofetil and cyclosporine, which is used for alleviating the disease; and

a drug for the treatment of inflammation, which is selected from steroidal

anti-inflammatory drugs and non-steroidal anti-inflammatory drugs.

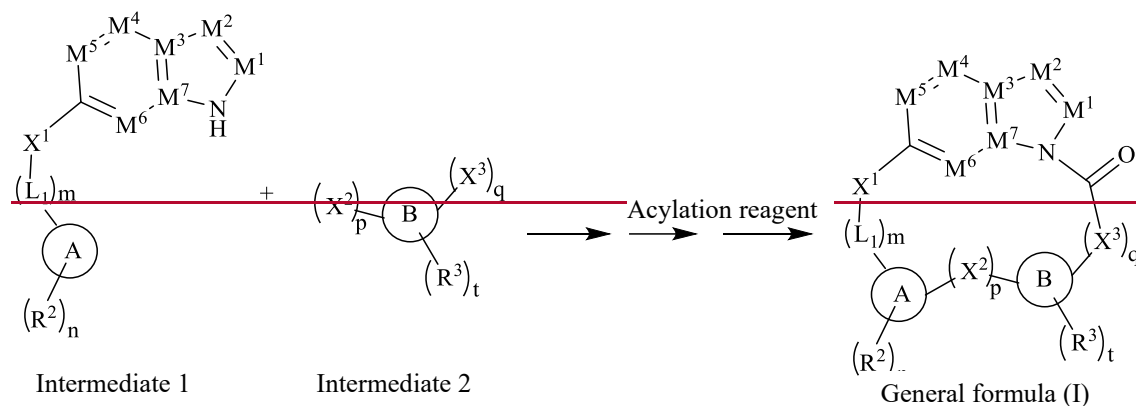
~~18~~16. Use of the compound or the pharmaceutically acceptable salt, ester or stereoisomer thereof according to any one of claims 1-~~15~~13, in the preparation of a medication for the treatment and/or prevention of a disease or related condition mediated by one or more tyrosine kinases of TRK,~~ALK~~ and/or ROS1, wherein the disease or related condition is selected from one or more of pain, cancers, inflammation, neurodegenerative diseases and autoimmune diseases.

~~19~~17. Use of the compound or the pharmaceutically acceptable salt, ester or stereoisomer thereof according to any one of claims 1-~~15~~13, in the preparation of a medication for the treatment and/or prevention of a disease or related a condition mediated by one or more tyrosine kinases of TRK,~~ALK~~ and/or ROS1, wherein the disease is, for example, a cancer that is at least partially resistant to a therapeutically active agent targeting TRK,~~ALK~~ and/or ROS1.

~~20~~18. The use of claim ~~19~~17, wherein the disease mediated by one or more tyrosine kinases of TRK,~~ALK~~ and/or ROS1 is a cancer, wherein the cancer is selected from lung cancer, colon cancer, rectal cancer, prostate cancer, breast cancer, liver cancer, gallbladder cancer, cholangiocarcinoma, leukemia, melanoma, lymphoma, thyroid cancer, multiple myeloma, soft tissue sarcoma, ovarian cancer, cervical cancer, fallopian tube carcinoma, renal cell carcinoma, gastric cancer, gastrointestinal stromal tumor, bone cancer, basal cell carcinoma, peritoneal cancer, dermatofibroma, pancreatic cancer, esophageal cancer, glioblastoma, head and neck cancer, inflammatory myofibroblast tumor, anaplastic large cell lymphoma and neuroblastoma~~;~~.

~~21~~19. The use of claim ~~168~~,~~and preferably~~ the lung cancer is selected from small cell lung cancer and non-small cell lung cancer.

21. A method for preparing the compound of general formula (I) or the pharmaceutically acceptable salt, ester or stereoisomer thereof,—



wherein the substituents and variables are defined as any one of claims 1–15, and the method comprises the steps as follows:

intermediate 1 and intermediate 2 are subjected to a plurality of reactions such as substitution reaction, deprotection reaction, acylation reaction (using an acylation reagent) and the like in the presence of an organic solvent and a catalyst at a proper temperature to obtain the compound of the general formula (I).