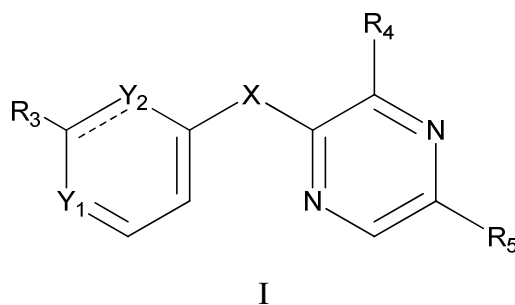


The claims defining the invention are as follows:

1. A compound of Formula I or a pharmaceutically acceptable salt thereof:



X is S;

Y₁ is N or CR₁;

Y₂ is N or CR₂;

R₁ combines with R₃, or R₂ combines with R₃, to form a 5-10 member heteroaryl, 5-10 member carbocyclic ring or 5-10 member heterocyclic ring, wherein each of the ring systems is independently optionally substituted with halogen, -CN, -OH, -NR₈R₉, -N₃, -NO₂, carbonyl, =O, oxo, substituted or unsubstituted C₁₋₆alkyl, substituted or unsubstituted C₁₋₆alkoxy, or C(O)R₈;

when R₁ combines with R₃ to form a 5-10 member heteroaryl, 5-10 member carbocyclic ring or 5-10 member heterocyclic ring, each R₂ is independently -H, halogen, -CN, -OH, -NH₂, -N₃, -NO₂, substituted or unsubstituted C₁₋₆alkoxy, or substituted or unsubstituted C₁₋₆alkyl;

when R₂ combines with R₃ to form a 5-10 member heteroaryl, 5-10 member carbocyclic ring or 5-10 member heterocyclic ring, each R₁ is independently -H, halogen, -CN, -OH, -NH₂, -N₃, -NO₂, substituted or unsubstituted C₁₋₆alkoxy, or substituted or unsubstituted C₁₋₆alkyl;

R₄ is halogen, -CN, -OH, -NR₈R₉, -N₃, -NO₂, substituted or unsubstituted C₁₋₆alkoxy, substituted or unsubstituted C₁₋₆alkyl, C₅₋₁₈heterocyclic ring or C₅₋₁₈carbocyclic ring; wherein each of the ring systems is independently optionally substituted with halogen, -CN, -OH, -NO₂, carbonyl, =O, oxo, substituted or unsubstituted C₁₋₆alkyl, substituted or unsubstituted C₁₋₆alkoxy, -NR₈R₉ or -CH₂NR₈R₉;

R₅ is -H, halogen, -CN, -OH, -NR₈R₉, -N₃, -NO₂, C₁₋₆alkyl, C₁₋₆alkoxy, C₆₋₁₀aryl, C₆₋₁₀arylalkyl, C₆₋₁₀heteroaryl, C₅₋₁₈heterocyclic ring or C₅₋₁₈carbocyclic ring; and each of which

is independently optionally substituted with halogen, -CN, -OH, -N₃, -NO₂, -NH₂, carbonyl, =O, oxo, substituted or unsubstituted C₁₋₆alkyl, substituted or unsubstituted C₁₋₆alkoxy, (CH₂)_kNR₈R₉, (CH₂)_kNHC(O)OR₈ or C(O)R₈; and k is 0, 1 or 2;

each R₈ and R₉ is independently -H, halogen, -CN, -OH, -N₃, -NO₂, C₁₋₆alkyl, C₁₋₆alkoxy, C₂₋₆alkenyl, NH(C₁₋₆alkyl), N(C₁₋₆alkyl)₂, C₅₋₁₀heterocyclic ring or C₅₋₁₀carbocyclic ring; and each of which may be independently optionally substituted with halogen, -CN, -OH, -NH₂, -N₃, -NO₂, -C₁₋₆alkylene-NH₂, -C₁₋₆alkylene-NH-C₁₋₆alkyl, -C₁₋₆alkylene-N(C₁₋₆alkyl)₂, -NHBoc, -CH₂NHBoc, -NH-C₁₋₆alkyl, -N(C₁₋₆alkyl)₂, -NH-C₁₋₆alkoxy, -N(C₁₋₆alkoxy)₂, substituted or unsubstituted C₁₋₆alkyl, or substituted or unsubstituted C₁₋₆alkoxy; and each heterocyclic ring contains 1, 2, 3 or 4 heteroatoms selected from N, O or S;

wherein each substituted or unsubstituted C₁₋₆alkyl is independently C₁₋₆alkyl, or C₁₋₆alkyl substituted with halogen, -OH, -CN, NH₂, -NO₂, carbonyl, =O, oxo, -C₁₋₆alkylene-NH₂, -C₁₋₆alkylene-NH-C₁₋₆alkyl, or -C₁₋₆alkylene-N(C₁₋₆alkyl)₂; each substituted or unsubstituted C₁₋₆alkoxy is independently C₁₋₆alkoxy, or C₁₋₆alkoxy substituted with halogen, -OH, -CN, NH₂, -NO₂, carbonyl, =O, oxo, -C₁₋₆alkylene-NH₂, -C₁₋₆alkylene-NH-C₁₋₃alkyl or -C₁₋₆alkylene-N(C₁₋₆alkyl)₂.

2. The compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein when R₂ combines with R₃ to form a 5-10 membered heteroaryl, 5-10 membered carbocyclic ring or 5-10 membered heterocyclic ring, R₁ is -H, -F, -Cl, -Br, -I, -CN, -OH, -NH₂, substituted or unsubstituted C₁₋₃alkoxy, or substituted or unsubstituted C₁₋₃alkyl;

when R₁ combines with R₃ to form a 5-10 membered heteroaryl, 5-10 membered carbocyclic ring or 5-10 membered heterocyclic ring, R₂ is -H, -F, -Cl, -Br, -I, -CN, -OH, -NH₂, substituted or unsubstituted C₁₋₃alkoxy, or substituted or unsubstituted C₁₋₃alkyl;

wherein each substituted or unsubstituted C₁₋₃alkyl is independently C₁₋₃alkyl, or C₁₋₃alkyl substituted with halogen, -OH, -CN, NH₂, -NO₂, carbonyl, =O, oxo, -C₁₋₃alkylene-NH₂, -C₁₋₃alkylene-NH-C₁₋₃alkyl, or -C₁₋₃alkylene-N(C₁₋₃alkyl)₂; each substituted or unsubstituted C₁₋₃alkoxy is independently C₁₋₃alkoxy, or C₁₋₃alkoxy substituted with halogen, -OH, -CN, NH₂, -NO₂, carbonyl, =O, oxo, -C₁₋₃alkylene-NH₂, -C₁₋₃alkylene-NH-C₁₋₃alkyl, or -C₁₋₃alkylene-N(C₁₋₃alkyl)₂;

R₄ is -F, -Cl, -Br, -CN, -OH, -NR₈R₉, substituted or unsubstituted C₁₋₆alkyl, substituted or unsubstituted C₁₋₆alkoxy, C₅₋₁₈heterocyclic ring or C₅₋₁₀carbocyclic ring, wherein each of the ring systems is optionally substituted with -F, -Cl, -Br, -CN, -OH, -NO₂, carbonyl, =O, oxo, substituted or unsubstituted C₁₋₆alkyl, substituted or unsubstituted C₁₋₆alkoxy, -NH₂, -NH-C₁₋₆alkyl, -NH-C₁₋₆alkoxy, -C₁₋₆alkylene-NH₂ or -C₁₋₆alkylene-NH-C₁₋₆alkyl;

R₅ is -H, -F, -Cl, -Br, -I, -NR₈R₉, C₁₋₃alkyl, C₁₋₃alkoxy, C₆₋₉aryl, C₆₋₉arylalkyl, C₆₋₉heteroaryl, C₆₋₁₇heterocyclic ring or C₆₋₁₇carbocyclic ring, wherein each of which is independently optionally substituted with halogen, -CN, -OH, -N₃, -NO₂, -NH₂, carbonyl, =O, oxo, substituted or unsubstituted C₁₋₆alkyl, substituted or unsubstituted C₁₋₆alkoxy, (CH₂)_kNR₈R₉, (CH₂)_kNHC(O)OR₈ or C(O)R₈; and k is 0, 1 or 2; wherein the C₆₋₉ heteroaryl contains 1, 2, 3 or 4 heteroatoms selected from N, O or S, and the C₆₋₉heteroaryl is 6-membered heteroaryl, 7-membered heteroaryl, 8-membered heteroaryl or 9-membered heteroaryl; the C₆₋₁₇heterocyclic ring contains 1, 2, 3, 4, 5, or 6 heteroatoms selected from N, O, or S, and the C₆₋₁₇heterocyclic ring is 6-membered heterocyclic ring, 7-membered heterocyclic ring, 8-membered heterocyclic ring, 9-membered heterocyclic ring, 10-membered heterocyclic ring, 11-membered heterocyclic ring, 12-membered heterocyclic ring, 13-membered heterocyclic ring, 14-membered heterocyclic ring, 15-membered heterocyclic ring, 16-membered heterocyclic ring or 17-membered heterocyclic ring;

each R₈ and R₉ is independently -H, halogen, CN, -OH, -NO₂, -C₁₋₆alkylene-NH₂, -C₁₋₆alkylene-NH-C₁₋₆alkyl, -C₁₋₆alkylene-N(C₁₋₆alkyl)₂, -CH₂NHBoc, -NH-C₁₋₆alkyl, -N(C₁₋₆alkyl)₂, -NH-C₁₋₆alkoxy, -N(C₁₋₆alkoxy)₂, C₁₋₆alkyl, C₁₋₆alkoxy, C₂₋₆alkenyl, C₅₋₁₀heterocyclic ring or C₅₋₁₀carbocyclic ring; each of which may be optionally substituted with halogen, -CN, -OH, -NH₂, -N₃, -NO₂, -C₁₋₆alkylene-NH₂, -C₁₋₆alkylene-NH-C₁₋₆alkyl, -C₁₋₆alkylene-N(C₁₋₆alkyl)₂, -NHBoc, -CH₂NHBoc, -NH-C₁₋₆alkyl, -N(C₁₋₆alkyl)₂, -NH-C₁₋₆alkoxy, -N(C₁₋₆alkoxy)₂, substituted or unsubstituted C₁₋₆alkyl, or substituted or unsubstituted C₁₋₆alkoxy; and each heterocyclic ring contains 1, 2, 3 or 4 heteroatoms selected from N, O or S;

wherein each substituted or unsubstituted C₁₋₆alkyl is independently C₁₋₆alkyl, or C₁₋₆alkyl substituted with halogen, -OH, -CN, NH₂, -NO₂, carbonyl, =O, oxo, -C₁₋₆alkylene-NH₂, -C₁₋₆alkylene-NH-C₁₋₆alkyl, or -C₁₋₆alkylene-N(C₁₋₆alkyl)₂; each substituted or unsubstituted C₁₋₆alkoxy is independently C₁₋₆alkoxy, or C₁₋₆alkoxy

substituted with halogen, -OH, -CN, NH₂, -NO₂, carbonyl, =O, oxo, -C₁₋₆alkylene-NH₂, -C₁₋₆alkylene-NH-C₁₋₃alkyl or -C₁₋₆alkylene-N(C₁₋₆alkyl)₂.

3. The compound of claim 1 or 2, or a pharmaceutically acceptable salt thereof, wherein when R₂ combines with R₃ to form a 5-10 membered heteroaryl, 5-10 membered carbocyclic ring or 5-10 membered heterocyclic ring, R₁ is -H, -F, -Cl, -NH₂, methyl, ethyl, propyl, isopropyl, methoxy, ethoxy, propoxy or isopropoxy; and each methyl, ethyl, propyl, isopropyl, methoxy, ethoxy, propoxy or isopropoxy is independently optionally substituted with halogen, OH or NH₂;

when R₁ combines with R₃ to form a 5-10 membered heteroaryl, 5-10 membered carbocyclic ring or 5-10 membered heterocyclic ring,

R₂ is -H, -F, -Cl, -NH₂, methyl, ethyl, propyl, isopropyl, methoxy, ethoxy, propoxy or isopropoxy; and each methyl, ethyl, propyl, isopropyl, methoxy, ethoxy, propoxy or isopropoxy is independently optionally substituted with halogen, OH or NH₂;

R₄ is -F, -Cl, -CN, -OH, -NH₂, substituted or unsubstituted C₁₋₃alkyl, substituted or unsubstituted C₁₋₃alkoxy, 5-membered heterocyclic ring containing 1, 2 or 3 heteroatoms selected from N or O, 6-membered heterocyclic ring containing 1, 2 or 3 heteroatoms selected from N or O, 5-membered carbocyclic ring or 6-membered carbocyclic ring; wherein each of the ring systems is optionally substituted with -F, -Cl, -Br, -CN, -OH, carbonyl, =O, oxo, substituted or unsubstituted C₁₋₃alkyl, substituted or unsubstituted C₁₋₃alkoxy, -NH₂, -NH-C₁₋₃alkyl, -NH-C₁₋₃alkoxy, -C₁₋₃alkylene-NH₂ or -C₁₋₃alkylene-NH-C₁₋₃alkyl; and the substituted or unsubstituted C₁₋₃alkyl is independently C₁₋₃alkyl, or C₁₋₃alkyl substituted with halogen, -OH, -CN, NH₂, -NO₂, carbonyl, =O, oxo, -C₁₋₃alkylene-NH₂, -C₁₋₃alkylene-NH-C₁₋₃alkyl, or -C₁₋₃alkylene-N(C₁₋₃alkyl)₂; the substituted or unsubstituted C₁₋₃alkoxy is independently C₁₋₃alkoxy, or C₁₋₃alkoxy substituted with halogen, -OH, -CN, NH₂, -NO₂, carbonyl, =O, oxo, -C₁₋₃alkylene-NH₂, -C₁₋₃alkylene-NH-C₁₋₃alkyl, or -C₁₋₃alkylene-N(C₁₋₃alkyl)₂;

R₅ is -F, -Cl, -Br, -NR₈R₉, methyl, ethyl, propyl, isopropyl, methoxy, ethoxy, propoxy, isopropoxy, 6-membered aryl, 7-membered aryl, 8-membered aryl, 9-membered aryl, 6-membered arylalkyl, 7-membered arylalkyl, 8-membered arylalkyl, 9-membered arylalkyl, 6-membered heteroaryl, 7-membered heteroaryl, 8-membered heteroaryl, 9-membered heteroaryl, 6-membered heterocyclic ring, 7-membered heterocyclic ring, 8-membered heterocyclic ring, 9-membered heterocyclic ring, 10-membered heterocyclic ring, 11-

membered heterocyclic ring, 12-membered heterocyclic ring, 13-membered heterocyclic ring, 14-membered heterocyclic ring, 15-membered heterocyclic ring, 16-membered heterocyclic ring, 6-membered carbocyclic ring, 7-membered carbocyclic ring, 8-membered carbocyclic ring, 9-membered carbocyclic ring, 10-membered carbocyclic ring, 11-membered carbocyclic ring, 12-membered carbocyclic ring, 13-membered carbocyclic ring, 14-membered carbocyclic ring, 15-membered carbocyclic ring or 16-membered carbocyclic ring; and each heteroaryl contains 1, 2 or 3 heteroatoms selected from N, O or S, and each heterocyclic ring contains 1, 2, 3, or 4 heteroatoms selected from N, O or S; wherein each of which is independently optionally substituted with -F, -Cl, -Br, -I, -CN, -OH, -NO₂, -NH₂, carbonyl, =O, oxo, substituted or unsubstituted C₁₋₃alkyl, substituted or unsubstituted C₁₋₃alkoxy, (CH₂)_kNR₈R₉, (CH₂)_kNHC(O)OR₈, or C(O)R₈; and k is 0, 1 or 2; and the substituted or unsubstituted C₁₋₃alkyl is independently C₁₋₃alkyl, or C₁₋₃alkyl substituted with halogen, -OH, -CN, NH₂, -NO₂, carbonyl, =O, oxo, -C₁₋₃alkylene-NH₂, -C₁₋₃alkylene-NH-C₁₋₃alkyl, or -C₁₋₃alkylene-N(C₁₋₃alkyl)₂; substituted or unsubstituted C₁₋₃alkoxy is independently C₁₋₃alkoxy, or C₁₋₃alkoxy substituted with halogen, -OH, -CN, NH₂, -NO₂, carbonyl, =O, oxo, -C₁₋₃alkylene-NH₂, -C₁₋₃alkylene-NH-C₁₋₃alkyl, or -C₁₋₃alkylene-N(C₁₋₃alkyl)₂;

each R₈ and R₉ is independently -H, -F, -Cl, -CN, -OH, -NO₂, -C₁₋₃alkylene-NH₂, -C₁₋₃alkylene-NH-C₁₋₃alkyl, -C₁₋₃alkylene-N(C₁₋₃alkyl)₂, -CH₂NHBoc, -NH-C₁₋₃alkyl, -N(C₁₋₃alkyl)₂, -NH-C₁₋₃alkoxy, -N(C₁₋₃alkoxy)₂, C₁₋₄alkyl, C₁₋₃alkoxy, C₂₋₃alkenyl, 5-membered heterocyclic ring, 6-membered heterocyclic ring, 7-membered heterocyclic ring, 8-membered heterocyclic ring, 9-membered heterocyclic ring, 10-membered heterocyclic ring, 5-membered carbocyclic ring, 6-membered carbocyclic ring, 7-membered carbocyclic ring, 8-membered carbocyclic ring, 9-membered carbocyclic ring, or 10-membered carbocyclic ring; and each of which may be independently optionally substituted with halogen, -CN, -OH, -NH₂, -N₃, -NO₂, -C₁₋₆alkylene-NH₂, -C₁₋₆alkylene-NH-C₁₋₆alkyl, -C₁₋₆alkylene-N(C₁₋₆alkyl)₂, -NHBoc, -CH₂NHBoc, -NH-C₁₋₆alkyl, -N(C₁₋₆alkyl)₂, -NH-C₁₋₆alkoxy, -N(C₁₋₆alkoxy)₂, substituted or unsubstituted C₁₋₆alkyl, or substituted or unsubstituted C₁₋₆alkoxy; and each heterocyclic ring contains 1, 2, 3 or 4 heteroatoms selected from N, O or S; and the substituted or unsubstituted C₁₋₆alkyl is independently C₁₋₆alkyl, or C₁₋₆alkyl substituted with halogen, -OH, -CN, NH₂, -NO₂, carbonyl, =O, oxo, -C₁₋₆alkylene-NH₂, -C₁₋₆alkylene-NH-C₁₋₆alkyl, or -C₁₋₆alkylene-N(C₁₋₆alkyl)₂; the substituted or unsubstituted C₁₋₆alkoxy is independently C₁₋

alkoxy, or C₁₋₆alkoxy substituted with halogen, -OH, -CN, NH₂, -NO₂, carbonyl, =O, oxo, -C₁₋₆alkylene-NH₂, -C₁₋₆alkylene-NH-C₁₋₃alkyl or -C₁₋₆alkylene-N(C₁₋₆alkyl)₂.

4. The compound of any one of claims 1-3, or a pharmaceutically acceptable salt thereof, wherein

p is 0 or 1; and/or

q is 1 or 2.

5. The compound of any one of claims 1-4, or a pharmaceutically acceptable salt thereof, wherein R₁ combines with R₃, or R₂ combines with R₃, to form a 5-membered heteroaryl, 6-membered heteroaryl, 7-membered heteroaryl, 8-membered heteroaryl, 5-membered heterocyclic ring, 6-membered heterocyclic ring, 7-membered heterocyclic ring or 8-membered heterocyclic ring; wherein each of the ring systems contains 1, 2, 3 or 4 heteroatoms selected from N, O or S, and is optionally substituted with -F, -Cl, -Br, -I, -CN, -OH, -NH₂, carbonyl, =O, oxo, substituted or unsubstituted C₁₋₃alkyl, substituted or unsubstituted C₁₋₃alkoxy or C(O)R₈, and the substituted or unsubstituted C₁₋₃alkyl is independently C₁₋₃alkyl, or C₁₋₃alkyl substituted with halogen, -OH, -CN, NH₂, -NO₂, carbonyl, =O, oxo, -C₁₋₃alkylene-NH₂, -C₁₋₃alkylene-NH-C₁₋₃alkyl, or -C₁₋₃alkylene-N(C₁₋₃alkyl)₂; each substituted or unsubstituted C₁₋₃alkoxy is independently C₁₋₃alkoxy, or C₁₋₃alkoxy substituted with halogen, -OH, -CN, NH₂, -NO₂, carbonyl, =O, oxo, -C₁₋₃alkylene-NH₂, -C₁₋₃alkylene-NH-C₁₋₃alkyl, or -C₁₋₃alkylene-N(C₁₋₃alkyl)₂.

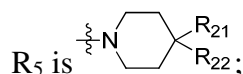
6. The compound of any one of claims 1-5, or a pharmaceutically acceptable salt thereof, wherein R₁ combines with R₃ to form a 5-membered heteroaryl, 6-membered heteroaryl, 5-membered heterocyclic ring or 6-membered heterocyclic ring, wherein each of the ring systems contains 1 or 2 heteroatoms selected from N or O, and is optionally substituted with -F, -Cl, -Br, -OH, -NH₂, carbonyl, =O, oxo, methyl, ethyl, propyl, isopropyl, methoxy, CHF₂, CH₂F, CF₃ or C(O)R₈; and each methyl, ethyl, propyl, isopropyl, methoxy, CHF₂, CH₂F or C(O)R₈ is independently optionally substituted with -F, -Cl, -Br or -I.

7. The compound of any one of claims 1-5, or a pharmaceutically acceptable salt thereof, wherein R₂ combines with R₃ to form a 5-membered heteroaryl, 6-membered heteroaryl, 7-membered heteroaryl, 8-membered heteroaryl, 5-membered heterocyclic ring, 6-membered heterocyclic ring, 7-membered heterocyclic ring or 8-membered heterocyclic ring, wherein each of the ring systems contains 1, 2, 3 or 4 heteroatoms

selected from N, O or S, and is optionally substituted with -F, -Cl, -Br, -I, -CN, -OH, -NH₂, carbonyl, =O, oxo, substituted or unsubstituted C₁₋₃alkyl, substituted or unsubstituted C₁₋₃alkoxy or C(O)R₈; and the substituted or unsubstituted C₁₋₃alkyl is independently C₁₋₃alkyl, or C₁₋₃alkyl substituted with halogen, -OH, -CN, NH₂, -NO₂, carbonyl, =O, oxo, -C₁₋₃alkylene-NH₂, -C₁₋₃alkylene-NH-C₁₋₃alkyl, or -C₁₋₃alkylene-N(C₁₋₃alkyl)₂; the substituted or unsubstituted C₁₋₃alkoxy is independently C₁₋₃alkoxy, or C₁₋₃alkoxy substituted with halogen, -OH, -CN, NH₂, -NO₂, carbonyl, =O, oxo, -C₁₋₃alkylene-NH₂, -C₁₋₃alkylene-NH-C₁₋₃alkyl, or -C₁₋₃alkylene-N(C₁₋₃alkyl)₂; wherein the C₁₋₃alkyl is independently methyl, ethyl, propyl, isopropyl or cyclopropyl; the C₁₋₃alkoxy is independently methoxy, ethoxy, propoxy, isopropoxy or cyclopropyloxy.

8. The compound of any one of claims 1-7, or a pharmaceutically acceptable salt thereof, wherein R₄ is -Cl, -NH₂, methyl or piperidinyl, wherein the piperidinyl is optionally substituted with methyl, -NH₂ or -CH₂NH₂.

9. The compound of any one of claims 1-8, or a pharmaceutically acceptable salt thereof, wherein:



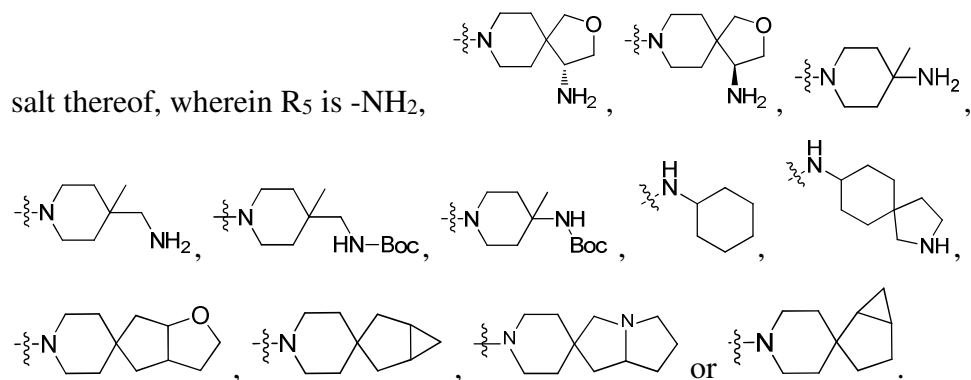
each R₂₁ and R₂₂ is independently halogen, C₁₋₃alkyl, -NH₂, -C₁₋₃alkylene-NH₂, -C₁₋₃alkylene-NH-C₁₋₃alkyl, -C₁₋₃alkylene-N(C₁₋₃alkyl)₂, -NHBoc or -CH₂NHBoc;

or R₂₁ and R₂₂ together with the carbon atom to which they are both attached form a 5-10 member heteroaryl, 5-10 member carbocyclic ring or a 5-10 member heterocyclic ring, wherein each of the ring systems is optionally substituted with halogen, -CN, -OH, carbonyl, =O, oxo, -C₁₋₃alkylene-NH₂, -C₁₋₃alkylene-NH-C₁₋₃alkyl, -C₁₋₃alkylene-N(C₁₋₃alkyl)₂, -NHBoc, -CH₂NHBoc; -NH₂, C₁₋₃alkoxy or C₁₋₃alkyl.

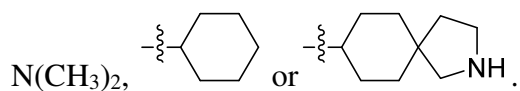
10. The compound of claim 9, or a pharmaceutically acceptable salt thereof, wherein R₂₁ and R₂₂ together with the carbon atom to which they are both attached form a 5-membered heteroaryl, 6-membered heteroaryl, 7-membered heteroaryl, 8-membered heteroaryl, 9-membered heteroaryl, 10-membered heteroaryl, 5-membered heterocyclic ring, 6-membered heterocyclic ring, 7-membered heterocyclic ring, 8-membered heterocyclic ring, 9-membered heterocyclic ring or 10-membered heterocyclic ring; wherein each of the ring systems contains 1, 2 or 3 heteroatoms selected from N, O or S, and is independently optionally substituted with halogen, -CN, -OH, carbonyl, =O, oxo,

-NH₂, C₁₋₃alkoxy or C₁₋₃alkyl; and the C₁₋₃alkoxy is independently methoxy, ethoxy, propoxy, isopropoxy or cyclopropyloxy; the C₁₋₃alkyl is independently methyl, ethyl, propyl, isopropyl or cyclopropyl.

11. The compound of any one of claims 1-10, or a pharmaceutically acceptable



12. The compound of any one of claims 1-11, or a pharmaceutically acceptable salt thereof, wherein R₈ and R₉ is independently -H, methyl, tert-butyl, -CH=CH₂,



13. The compound of any one of claims 1-12, or a pharmaceutically acceptable salt thereof, wherein

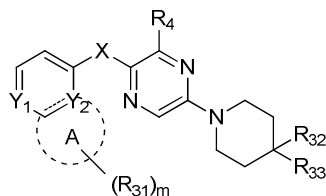
X is S;

Y₁ is N and Y₂ is CR₂;

Y₂ is N and Y₁ is CR₁; and/or

R₄ is NH₂.

14. The compound of any one of claims 1-13, or a pharmaceutically acceptable salt thereof, wherein the compound is of Formula II:



II

wherein,

X is S;

Y₁ is N or CR₂₅;

Y₂ is N or C;

R₂₅ is H, halogen, C₁₋₃alkyl, or C₁₋₃alkoxy;

ring  is 5-8 member heteroaryl containing 1,2,3 or 4 heteroatoms selected from N, O or S, 5-8 member carbocyclic ring or 5-8 member heterocyclic ring containing 1,2,3 or 4 heteroatoms selected from N, O or S;

R₃₁ is -H, halogen, -OH, -NH₂, -(C=O)C₁₋₃alkyl, -CN, -NO₂, carbonyl, =O, oxo, carboxyl, -C₁₋₃alkylene-NH₂, -NH-C₁₋₃alkyl, -N(C₁₋₃alkyl)₂, -NH-C₁₋₃alkoxy, -N(C₁₋₃alkoxy)₂, substituted or unsubstituted C₁₋₃alkyl, or substituted or unsubstituted C₁₋₃alkoxy;

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

R₄ is halogen, -NH₂, substituted or unsubstituted C₁₋₃alkoxy, or substituted or unsubstituted C₁₋₃alkyl;

each R₃₂ and R₃₃ is independently -H, halogen, -OH, -NH₂, -CN, -NO₂, -C₁₋₃alkylene-NH₂, -C₁₋₃alkylene-NH-C₁₋₃alkyl, -C₁₋₃alkylene-N(C₁₋₃alkyl)₂, -NHBoc, -CH₂NHBoc; -NH-C₁₋₃alkyl, -N(C₁₋₃alkyl)₂, -NH-C₁₋₃alkoxy, -N(C₁₋₃alkoxy)₂, substituted or unsubstituted C₁₋₃alkyl, or substituted or unsubstituted C₁₋₃alkoxy;

or R₃₂ and R₃₃ together with the carbon atom to which they are both attached form a 5-8 member heteroaryl containing 1, 2 or 3 heteroatoms selected from N, O or S, or 5-8 member heterocyclic ring containing 1, 2 or 3 heteroatoms selected from N, O or S, wherein each of the ring systems is optionally substituted with halogen, -CN, -OH, -NH₂, carbonyl, =O, oxo, -CH₂NH₂, -C₁₋₃alkylene-NH₂, -C₁₋₃alkylene-NH-C₁₋₃alkyl, -C₁₋₃alkylene-N(C₁₋₃alkyl)₂, -NHBoc, -CH₂NHBoc; -NH-C₁₋₃alkyl, -N(C₁₋₃alkyl)₂, -NH-C₁₋₃alkoxy, -N(C₁₋₃alkoxy)₂, substituted or unsubstituted C₁₋₃alkyl, or substituted or unsubstituted C₁₋₃alkoxy;

wherein each substituted or unsubstituted C₁₋₃alkyl is independently C₁₋₃alkyl, or C₁₋₃alkyl substituted with halogen, -OH, -CN, NH₂, -NO₂, carbonyl, =O, oxo, -C₁₋₃alkylene-NH₂, -C₁₋₃alkylene-NH-C₁₋₃alkyl, or -C₁₋₃alkylene-N(C₁₋₃alkyl)₂; each substituted or unsubstituted C₁₋₃alkoxy is independently C₁₋₃alkoxy, or C₁₋₃alkoxy substituted with halogen, -OH, -CN, NH₂, -NO₂, carbonyl, =O, oxo, -C₁₋₃alkylene-NH₂, -C₁₋₃alkylene-NH-C₁₋₃alkyl, or -C₁₋₃alkylene-N(C₁₋₃alkyl)₂.

15. The compound of claim 14, or a pharmaceutically acceptable salt thereof,

wherein ring  is 5-membered heteroaryl, 6-membered heteroaryl, 7-membered

heteroaryl, 5-membered heterocyclic ring, 6-membered heterocyclic ring, 7-membered heterocyclic ring, 5-membered carbocyclic ring, 6-membered carbocyclic ring, 7-membered carbocyclic ring or 8-membered carbocyclic ring; and each of the ring systems contains 1, 2 or 3 heteroatoms selected from N, O or S;

R₃₁ is -H, -F, -Cl, -Br, -I, -OH, -NH₂, carbonyl, =O, oxo, -(CO)C₁₋₃alkyl, -C₁₋₃alkylene-NH₂, -NH-C₁₋₃alkyl, -N(C₁₋₃alkyl)₂, substituted or unsubstituted C₁₋₃alkyl, or substituted or unsubstituted C₁₋₃alkoxy; and the substituted or unsubstituted C₁₋₃alkyl is independently C₁₋₃alkyl, or C₁₋₃alkyl substituted with halogen, -OH, -CN, NH₂, -NO₂, carbonyl, =O, oxo, -C₁₋₃alkylene-NH₂, -C₁₋₃alkylene-NH-C₁₋₃alkyl, or -C₁₋₃alkylene-N(C₁₋₃alkyl)₂; the substituted or unsubstituted C₁₋₃alkoxy is independently C₁₋₃alkoxy, or C₁₋₃alkoxy substituted with halogen, -OH, -CN, NH₂, -NO₂, carbonyl, =O, oxo, -C₁₋₃alkylene-NH₂, -C₁₋₃alkylene-NH-C₁₋₃alkyl, or -C₁₋₃alkylene-N(C₁₋₃alkyl)₂;

R₃₂ and R₃₃ together with the carbon atom to which they are both attached to form a 5-membered heterocyclic ring, 6-membered heterocyclic ring or 7-membered heterocyclic ring; wherein each of the ring systems contains 1 or 2 heteroatoms independently selected from O or N, and is optionally substituted with halogen, -CN, -OH, -NH₂, carbonyl, =O, oxo, -NO₂, C₁₋₃alkyl or C₁₋₃alkoxy and/or each R₃₂ and R₃₃ is independently -CH₂NH₂, -CH₂NHBoc or methyl.

16. The compound of claim 14 or 15, or a pharmaceutically acceptable salt thereof, wherein

ring  is 5-membered heterocyclic ring containing 1, 2 or 3 heteroatoms selected from N or O, 6-membered heterocyclic ring containing 1 or 2 heteroatoms selected from N or O or 5-membered carbocyclic ring;

R₃₁ is -F, -COCH₃, carbonyl, =O, oxo, -CH₃ or -CF₃; and/or

R₃₂ and R₃₃ together with the carbon atom to which they are both attached form a 5-membered heterocyclic ring; and the heterocyclic ring contains 1 heteroatom selected from O or N, and is optionally substituted with -F, -Cl, -OH, -NH₂, carbonyl, =O, oxo, methyl or methoxy.

17. The compound of any one of claims 14-16, or a pharmaceutically acceptable salt thereof, wherein

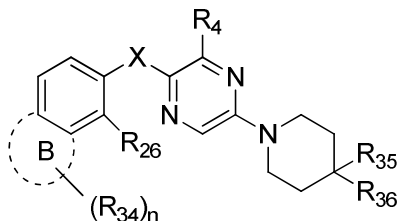
Y₁ is N;

Y_2 is C;

R_{25} is -H or -Cl; and/or

R_4 is -NH₂.

18. The compound of any one of claims 1-13, or a pharmaceutically acceptable salt thereof, wherein the compound is of Formula III:



III

wherein,

X is S;

R_{26} is -H, halogen, substituted or unsubstituted C₁₋₃alkyl, or substituted or unsubstituted C₁₋₃alkoxy;

ring  is 5-8 member heteroaryl or 5-8 member heterocyclic ring; and each of the ring systems independently contains 1, 2, 3 or 4 heteroatoms selected from N, O or S;

R_{34} is -H, halogen, -OH, -NR₃₅R₃₆, -CN, -NO₂, carbonyl, =O, oxo, substituted or unsubstituted C₁₋₃alkyl, or substituted or unsubstituted C₁₋₃alkoxy;

n is 0, 1, 2 or 3;

R_4 is halogen, -NH₂, substituted or unsubstituted C₁₋₆alkoxy, or substituted or unsubstituted C₁₋₆alkyl; and the substituted or unsubstituted C₁₋₆alkyl is independently C₁₋₆alkyl, or C₁₋₆alkyl substituted with halogen, -OH, -CN, NH₂, -NO₂, carbonyl, =O, oxo, -C₁₋₆alkylene-NH₂, -C₁₋₆alkylene-NH-C₁₋₆alkyl, or -C₁₋₆alkylene-N(C₁₋₆alkyl)₂; the substituted or unsubstituted C₁₋₆alkoxy is independently C₁₋₆alkoxy, or C₁₋₆alkoxy substituted with halogen, -OH, -CN, NH₂, -NO₂, carbonyl, =O, oxo, -C₁₋₆alkylene-NH₂, -C₁₋₆alkylene-NH-C₁₋₃alkyl or -C₁₋₆alkylene-N(C₁₋₆alkyl)₂;

each R₃₅ and R₃₆ is independently -H, halogen, -OH, -NH₂, -CN, -NO₂, -CH₂NH₂, substituted or unsubstituted C₁₋₃alkyl, or substituted or unsubstituted C₁₋₃alkoxy;

or R₃₅ and R₃₆ together with the carbon atom to which they are both attached form a 5-8 member heteroaryl or 5-8 member heterocyclic ring, wherein each of the ring systems independently contains 1, 2 or 3 heteroatoms selected from N, O or S, and is optionally

substituted with halogen, -CN, -OH, -NH₂, carbonyl, =O, oxo, -CH₂NH₂, -C₁₋₃alkylene-NH₂, -C₁₋₃alkylene-NH-C₁₋₃alkyl, -C₁₋₃alkylene-N(C₁₋₃alkyl)₂, -NHBoc, -CH₂NHBoc; -NH-C₁₋₃alkyl, -N(C₁₋₃alkyl)₂, -NHC₁₋₃alkoxy, -N(C₁₋₃alkoxy)₂, substituted or unsubstituted C₁₋₃alkyl, or substituted or unsubstituted C₁₋₃alkoxy;

wherein each substituted or unsubstituted C₁₋₃alkyl is independently C₁₋₃alkyl, or C₁₋₃alkyl substituted with halogen, -OH, -CN, NH₂, -NO₂, carbonyl, =O, oxo, -C₁₋₃alkylene-NH₂, -C₁₋₃alkylene-NH-C₁₋₃alkyl, or -C₁₋₃alkylene-N(C₁₋₃alkyl)₂; each substituted or unsubstituted C₁₋₃alkoxy is independently C₁₋₃alkoxy, or C₁₋₃alkoxy substituted with halogen, -OH, -CN, NH₂, -NO₂, carbonyl, =O, oxo, -C₁₋₃alkylene-NH₂, -C₁₋₃alkylene-NH-C₁₋₃alkyl, or -C₁₋₃alkylene-N(C₁₋₃alkyl)₂.

19. The compound of claim 18, or a pharmaceutically acceptable salt thereof,

wherein ring  is 5-membered heteroaryl, 6-membered heteroaryl, 7-membered heteroaryl, 5-membered heterocyclic ring, 6-membered heterocyclic ring or 7-membered heterocyclic ring; and each of the ring systems independently contains 1, 2 or 3 heteroatoms selected from N, O or S; and/or R₃₅ and R₃₆ together with the carbon atom to which they are both attached form a 5-membered heterocyclic ring, 6-membered heterocyclic ring or 7-membered heterocyclic ring; wherein each of the ring systems independently contains 1 or 2 heteroatoms independently selected from O or N, and is optionally substituted with halogen, -CN, -OH, -NH₂, carbonyl, =O, oxo, -NO₂, C₁₋₃alkyl or C₁₋₃alkoxy.

20. The compound of claim 18 or 19, or a pharmaceutically acceptable salt

thereof, wherein ring  is 5-membered heterocyclic ring or 6-membered heterocyclic ring; and each of the ring systems independently contains 1 or 2 heteroatoms selected from N or O; and/or

R₃₅ and R₃₆ together with the carbon atom to which they are both attached form a 5-membered heterocyclic ring; wherein the ring system contains 1 heteroatom independently selected from O or N, and is optionally substituted with -F, -Cl, -OH, -NH₂, carbonyl, =O, oxo, methyl or methoxy.

21. The compound of any one of claims 18-20, or a pharmaceutically acceptable salt thereof, wherein

R₂₆ is -H or -Cl;

R₄ is -NH₂; and/or

R₃₄ is -F, -COCH₃, =O, -CH₃ or -CF₃.

22. The compound of any one of claims 1-21, or a pharmaceutically acceptable salt thereof, wherein each C₁₋₆alkyl is independently methyl, ethyl, propyl, isopropyl, cyclopropyl, n-butyl, isobutyl, tert-butyl, n-pentyl, neopentyl, isopentyl, cyclopentyl, n-hexyl or cyclohexyl;

each C₁₋₃alkoxy is independently methoxy, ethoxy, propoxy, isopropoxy or cyclopropyloxy;

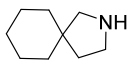
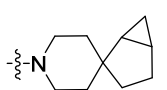
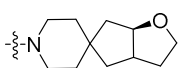
each C₂₋₃alkenyl is independently -CH=CH₂, -CH₂-CH=CH₂ or -CH=CH-CH₃;

each C₂₋₃alkynyl is independently -C≡CH, -CH₂-C≡CH or -C≡C-CH₃; and/or

each halogen is independently -F, -Cl, -Br or -I.

23. The compound of any one of claims 1-22, or a pharmaceutically acceptable salt thereof, wherein each heterocyclic ring group and each carbocyclic ring group include single ring, spiral ring, bridge ring, fused ring and all various combinations of spiral ring, bridge ring, and/or fused ring.

24. The compound of claim 23, or a pharmaceutically acceptable salt thereof,

wherein the said spiral ring includes , ; and the said various combinations of spiral ring, bridge ring, and/or fused ring include , , , .

25. The compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein the compound is

- 1) 6-((3-amino-5-(4-(aminomethyl)-4-methylpiperidin-1-yl)pyrazin-2-yl)thio)-2H-benzo[b][1,4]oxazin-3(4H)-one;
- 2) (S)-1-(4-(((3-amino-5-(4-amino-2-oxa-8-azaspiro[4.5]decan-8-yl)pyrazin-2-yl)thio)-3,3-difluoroindolin-1-yl)ethanone;
- 3) (S)-4-(((3-amino-5-(4-amino-2-oxa-8-azaspiro[4.5]decan-8-yl)pyrazin-2-yl)thio)-3,3-difluoroindolin-2-one;

- 4) 4-((3-amino-5-(4-(aminomethyl)-4-methylpiperidin-1-yl)pyrazin-2-yl)thio)indolin-2-one;
- 5) (S)-4-((3-amino-5-(4-amino-2-oxa-8-azaspiro[4.5]decan-8-yl)pyrazin-2-yl)thio)-3,3-difluoro-1H-pyrrolo[2,3-b]pyridin-2(3H)-one;
- 6) (S)-4-((3-amino-5-(4-amino-2-oxa-8-azaspiro[4.5]decan-8-yl)pyrazin-2-yl)thio)-3,3-difluoro-1-methylindolin-2-one;
- 7) (S)-4-((3-amino-5-(4-amino-2-oxa-8-azaspiro[4.5]decan-8-yl)pyrazin-2-yl)thio)indoline-2,3-dione hydrochloride;
- 8) 1-(4-((3-amino-5-(4-(aminomethyl)-4-methylpiperidin-1-yl)pyrazin-2-yl)thio)-3,3-difluoroindolin-1-yl)ethan-1-one;
- 9) 4-((3-amino-5-(4-(aminomethyl)-4-methylpiperidin-1-yl)pyrazin-2-yl)thio)indoline-2,3-dione;
- 10) 6-(4-(aminomethyl)-4-methylpiperidin-1-yl)-3-((3,4-dihydro-2H-benzo[b][1,4]oxazin-6-yl)thio)pyrazin-2-amine;
- 11) (S)-8-(5-((1H-pyrrolo[2,3-b]pyridin-4-yl)thio)-6-aminopyrazin-2-yl)-2-oxa-8-azaspiro[4.5]decan-4-amine;
- 12) (S)-8-(6-amino-5-((3,3-dimethylindolin-4-yl)thio)pyrazin-2-yl)-2-oxa-8-azaspiro[4.5]decan-4-amine;
- 13) (S)-8-(6-amino-5-((3-fluoro-1H-indol-4-yl)thio)pyrazin-2-yl)-2-oxa-8-azaspiro[4.5]decan-4-amine;
- 14) (S)-8-(5-((1H-indol-4-yl)thio)-6-aminopyrazin-2-yl)-2-oxa-8-azaspiro[4.5]decan-4-amine;
- 15) (S)-1-(4-((3-amino-5-(4-amino-2-oxa-8-azaspiro[4.5]decan-8-yl)pyrazin-2-yl)thio)-1H-indol-1-yl)ethanone;
- 16) (S)-6-((3-amino-5-(4-amino-2-oxa-8-azaspiro[4.5]decan-8-yl)pyrazin-2-yl)thio)-2H-benzo[b][1,4]oxazin-3(4H)-one;
- 17) (S)-4-((3-amino-5-(4-amino-2-oxa-8-azaspiro[4.5]decan-8-yl)pyrazin-2-yl)thio)-1,3,3-trimethylindolin-2-one;
- 18) (4S)-8-(6-amino-5-((3-fluoroindolin-4-yl)thio)pyrazin-2-yl)-2-oxa-8-azaspiro[4.5]decan-4-amine;
- 19) 1-(4-((3-amino-5-((S)-4-amino-2-oxa-8-azaspiro[4.5]decan-8-yl)pyrazin-2-yl)thio)-3-fluoro-3-methylindolin-1-yl)ethanone;

- 20) (S)-8-(6-amino-5-((3,3-difluoroindolin-4-yl)thio)pyrazin-2-yl)-2-oxa-8-azaspiro[4.5]decan-4-amine;
- 21) 1-(4-((3-amino-5-((S)-4-amino-2-oxaspiro[4.5]decan-8-yl)pyrazin-2-yl)thio)-3-methylindolin-1-yl)ethanone;
- 22) (S)-8-(6-amino-5-((8-chloro-4,4-difluoro-1,2,3,4-tetrahydroquinolin-5-yl)thio)pyrazin-2-yl)-2-oxa-8-azaspiro[4.5]decan-4-amine;
- 23) (4S)-8-(6-amino-5-((8-chloro-4-fluoro-1,2,3,4-tetrahydroquinolin-5-yl)thio)pyrazin-2-yl)-2-oxa-8-azaspiro[4.5]decan-4-amine;
- 24) (S)-8-(6-amino-5-((3,3-difluoro-1-methylindolin-4-yl)thio)pyrazin-2-yl)-2-oxa-8-azaspiro[4.5]decan-4-amine;
- 25) (S)-6-((3-amino-5-(4-amino-2-oxa-8-azaspiro[4.5]decan-8-yl)pyrazin-2-yl)thio)-3,3-difluoroindolin-2-one;
- 26) 4-((3-amino-5-((S)-4-amino-2-oxa-8-azaspiro[4.5]decan-8-yl)pyrazin-2-yl)thio)-3-fluoroindolin-2-one;
- 27) (S)-8-(6-amino-5-((3,3-difluoro-2,3-dihydrobenzofuran-4-yl)thio)pyrazin-2-yl)-2-oxa-8-azaspiro[4.5]decan-4-amine;
- 28) (S)-8-(6-amino-5-((4,4-difluorochroman-5-yl)thio)pyrazin-2-yl)-2-oxa-8-azaspiro[4.5]decan-4-amine;
- 29) 4-((3-amino-5-((S)-4-amino-2-oxa-8-azaspiro[4.5]decan-8-yl)pyrazin-2-yl)thio)-3-fluoro-1-methyl-3-(trifluoromethyl)indolin-2-one;
- 30) (S)-6-((3-amino-5-(4-amino-2-oxa-8-azaspiro[4.5]decan-8-yl)pyrazin-2-yl)thio)-7-chloroindolin-2-one;
- 31) (S)-8-(6-amino-5-((5-chloro-3,4-dihydro-2H-benzo[b][1,4]oxazin-6-yl)thio)pyrazin-2-yl)-2-oxa-8-azaspiro[4.5]decan-4-amine;
- 32) (S)-7-((3-amino-5-(4-amino-2-oxa-8-azaspiro[4.5]decan-8-yl)pyrazin-2-yl)thio)-8-chloro-3,4-dihydroquinolin-2(1H)-one;
- 33) (S)-6-((3-amino-5-(4-amino-2-oxa-8-azaspiro[4.5]decan-8-yl)pyrazin-2-yl)thio)-5-chloro-2H-benzo[b][1,4]oxazin-3(4H)-one;
- 34) 4-((3-amino-5-(4-(aminomethyl)-4-methylpiperidin-1-yl)pyrazin-2-yl)thio)-3,3-difluoro-1H-pyrrolo[2,3-b]pyridin-2(3H)-one;
- 35) (S)-4-((3-amino-5-(4-amino-2-oxa-8-azaspiro[4.5]decan-8-yl)pyrazin-2-yl)thio)-1H-benzo[d]imidazol-2(3H)-one;

- 36) (S)-4-((3-amino-5-(4-amino-2-oxa-8-azaspiro[4.5]decan-8-yl)pyrazin-2-yl)thio)-1,3-dimethyl-1H-benzo[d]imidazol-2(3H)-one;
- 37) (S)-8-(6-amino-5-((2,2-difluoro-2,3-dihydro-1H-benzo[d]imidazol-4-yl)thio)pyrazin-2-yl)-2-oxa-8-azaspiro[4.5]decan-4-amine;
- 38) (S)-8-(6-amino-5-((2,2-difluoro-1,3-dimethyl-2,3-dihydro-1H-benzo[d]imidazol-4-yl)thio)pyrazin-2-yl)-2-oxa-8-azaspiro[4.5]decan-4-amine;
- 39) (4S)-8-(6-amino-5-((1-amino-3,3-difluoro-2,3-dihydro-1H-inden-4-yl)thio)pyrazin-2-yl)-2-oxa-8-azaspiro[4.5]decan-4-amine;
- 40) (S)-5-((3-amino-5-(4-amino-2-oxa-8-azaspiro[4.5]decan-8-yl)pyrazin-2-yl)thio)-2-methyl-[1,2,4]triazolo[4,3-a]pyridin-3(2H)-one;
- 41) (S)-8-(6-amino-5-((3,3-difluoro-2-methyl-2,3-dihydro-[1,2,4]triazolo[4,3-a]pyridin-5-yl)thio)pyrazin-2-yl)-2-oxa-8-azaspiro[4.5]decan-4-amine;
- 42) (S)-1-(4-((3-amino-5-(4-amino-2-oxa-8-azaspiro[4.5]decan-8-yl)pyrazin-2-yl)thio)indolin-1-yl)ethanone.
26. A pharmaceutical composition comprising at least one compound as defined in any one of claims 1-25 or a pharmaceutically acceptable salt thereof, and at least one pharmaceutically acceptable excipient.
27. The pharmaceutical composition according to claim 26, wherein the said compound is present in a weight ratio to the said excipient within the range from about 0.0001 to about 10.
28. Use of a pharmaceutical composition as defined in claim 26 or 27 and at least one compound of any one of claims 1-25 for the preparation of a medicament for the treatment or prevention of cancer, or cancer metastasis mediated by the activity of SHP2.
29. Use of a compound as defined in any one of claims 1-25 or a pharmaceutically acceptable salt thereof in the manufacture of a medicament for the treatment of a condition or disease, wherein the compound is to be administered to a patient in a therapeutically effective amount, wherein the condition or disease is cancer.
30. Use of a compound as defined in any one of claims 1-25 or a pharmaceutically acceptable salt thereof in the manufacture of a medicament for the treatment of a condition or disease, wherein the compound is to be administered to a patient in a therapeutically effective amount, wherein the condition or disease is noonan syndrome,

leopard syndrome, juvenile myelomonocytic leukemias, liver cancer, neuroblastoma, melanoma, squamous-cell carcinoma of the head and neck, acute myeloid leukemia, breast cancer, esophageal cancer, lung cancer, colon cancer, head cancer, gastric carcinoma, neuroblastoma, anaplastic large-cell lymphoma or glioblastoma.

31. At least one compound as defined in any one of claims 1-25 or a pharmaceutically acceptable salt thereof for use as a medicament.

32. Use of claim 29 or 30, wherein an effective amount of the compound or the pharmaceutically acceptable salt thereof is to be administered to a mammal in need of such treatment.