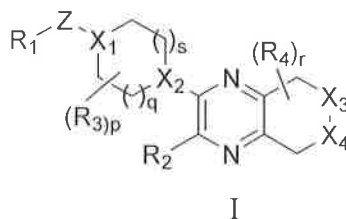


CLAIMS

1. The compound of formula I



or a pharmaceutically acceptable salt thereof, wherein

R₁ is selected from the group consisting of

C₃₋₈ cycloalkyl optionally substituted with 1 to 3 substituents independently selected from the group consisting of C₁₋₄ alkoxy, halo, hydroxy, and C₁₋₄ alkyl optionally substituted with C₁₋₄ alkoxy, halo, and hydroxy;

C₃₋₆ heterocyclyl optionally substituted on the ring carbons with 1 to 4 substituents independently selected from the group consisting of C₁₋₄ alkyl, C₁₋₄ alkoxy, halo, and hydroxyl, and optionally substituted on any ring nitrogen with a C₁₋₄ alkyl;

C₆₋₁₀ aryl optionally substituted with 1 to 5 substituents independently selected from the group consisting of C₁₋₄ alkyl, C₁₋₄ alkoxy, cyano, halo, hydroxy, amino, trifluoromethyl, and trifluoromethoxy; and

C₁₋₁₀ heteroaryl optionally substituted with 1 to 3 substituents on carbon independently selected from the group consisting of amino, C₁₋₈ alkylamino, C₁₋₉ amide, C₁₋₄ alkyl, C₁₋₄ alkoxy, cyano, halo, hydroxyl, oxo, trifluoromethyl and trifluoromethoxy, and optionally substituted on a ring nitrogen with a C₁₋₄ alkyl;

X₁ is N and X₂ is CH; or

X₁ is CH and X₂ is N; or

X₁ is N and X₂ is N;

when X₁ is N, Z is selected from the group consisting of C₁₋₆ alkylene, C₁₋₆ haloalkylene, -C(O)-, and -S(O)₂-;

when X₁ is CH, Z is selected from the group consisting of C₁₋₆ alkylene, C₁₋₆ haloalkylene, -O-, -C(O)-, -NH-, -S-, -S(O)-, and -S(O)₂-;

q is 0, 1, or 2;

s is 0, 1, or 2;

R₂ is -OR₅ or -NR₆R₇;

R₃, each time taken, is independently selected from the group consisting of C₁₋₆ alkyl, C₃₋₈ cycloalkyl, and trifluoromethyl;

p is 0, 1, or 2;

R₄, each time taken, is independently selected from the group consisting of C₁₋₆ alkyl, hydroxy, and halo;

r is 0 or 1;

R₅ is selected from the group consisting of C₁₋₆ alkyl and C₃₋₈ cycloalkyl;

R₆ is selected from the group consisting of hydrogen and C₁₋₆ alkyl;

R₇ is selected from the group consisting of C₁₋₆ alkyl optionally substituted with 1 to 7 substituents independently selected from the group consisting of C₁₋₄ alkoxy, C₁₋₉ amide, amino, C₁₋₈ alkylamino, C₁₋₅ oxycarbonyl, cyano, C₃₋₈ cycloalkyl, halo, hydroxy, and C₃₋₆ heterocyclyl optionally substituted on any ring nitrogen by C₁₋₄ alkyl; C₁₋₁₀ heteroaryl; and phenyl optionally substituted with 1 to 5 substituents independently selected from the group consisting of C₁₋₄ alkyl, C₁₋₄ alkoxy, C₁₋₉ amide, amino, C₁₋₈ alkylamino, C₁₋₅ oxycarbonyl, cyano, halo, hydroxyl, nitro, C₁₋₈ sulfonyl, and trifluoromethyl;

C₃₋₈ cycloalkyl;

C₆₋₁₀ aryl optionally substituted with 1 to 5 substituents independently selected from the group consisting of C₁₋₄ alkyl, C₁₋₄ alkoxy, cyano, halo, hydroxy, amino, trifluoromethyl, and trifluoromethoxy;

C₁₋₁₀ heteroaryl optionally substituted with 1 to 3 substituents on carbon independently selected from the group consisting of amino, C₁₋₈ alkylamino, C₁₋₉ amide, C₁₋₄ alkyl, C₁₋₄ alkoxy, cyano, halo, hydroxyl, oxo, trifluoromethyl and trifluoromethoxy, and optionally substituted on a ring nitrogen with a C₁₋₄ alkyl; and C₃₋₆ heterocyclyl optionally substituted on the ring carbons with 1 to 4 substituents independently selected from the group consisting of C₁₋₄ alkyl, C₁₋₄ alkoxy, halo and hydroxyl, and optionally substituted on any ring nitrogen with a C₁₋₄ alkyl;

X₃ is selected from the group consisting of CH₂ and CHR₄ and X₄ is NR₈; or

X₃ is NR₈ and X₄ is selected from the group consisting of CH₂ and CHR₄;

R₈ is selected from the group consisting of C₁₋₆ alkyl, C₁₋₆ haloalkyl, C₃₋₈ cycloalkyl, -S(O)₂-R₉, -C(O)-R₁₀, -C(O)-N(R₁₁)(R₁₂), and -C(O)-OR₁₃;

R₉ is selected from the group consisting of C₁₋₆ alkyl, C₃₋₈ cycloalkyl, and phenyl optionally substituted with 1 to 5 substituents independently selected from the group consisting of C₁₋₄ alkyl, C₁₋₄ alkoxy, C₁₋₉ amide, amino, C₁₋₈ alkylamino, C₁₋₅ oxycarbonyl, cyano, halo, hydroxyl, nitro, C₁₋₈ sulfonyl, and trifluoromethyl;

R₁₀ is selected from the group consisting of hydrogen; C₁₋₆ alkyl optionally substituted with 1 to 7 substituents independently selected from the group consisting of C₁₋₄ alkoxy, C₁₋₉ amide,

amino, C₁₋₈ alkylamino, C₁₋₅ oxycarbonyl, cyano, C₃₋₈ cycloalkyl, halo, hydroxy, and C₃₋₆ heterocyclyl optionally substituted on any ring nitrogen by C₁₋₄ alkyl; C₁₋₁₀ heteroaryl; and phenyl optionally substituted with 1 to 5 substituents independently selected from the group consisting of C₁₋₄ alkyl, C₁₋₄ alkoxy, C₁₋₉ amide, amino, C₁₋₈ alkylamino, C₁₋₅ oxycarbonyl, cyano, halo, hydroxyl, nitro, C₁₋₈ sulfonyl, and trifluoromethyl;

C₃₋₈ cycloalkyl;

C₆₋₁₀ aryl optionally substituted with 1 to 5 substituents independently selected from the group consisting of C₁₋₄ alkyl, C₁₋₄ alkoxy, cyano, halo, hydroxy, amino, trifluoromethyl, and trifluoromethoxy;

C₁₋₁₀ heteroaryl optionally substituted with 1 to 3 substituents on carbon independently selected from the group consisting of amino, C₁₋₈ alkylamino, C₁₋₉ amide, C₁₋₄ alkyl, C₁₋₄ alkoxy, cyano, halo, hydroxyl, oxo, trifluoromethyl and trifluoromethoxy, and optionally substituted on a ring nitrogen with a C₁₋₄ alkyl; and

C₃₋₆ heterocyclyl optionally substituted on the ring carbons with 1 to 4 substituents independently selected from the group consisting of C₁₋₄ alkyl, C₁₋₄ alkoxy, halo and hydroxy and optionally substituted on any ring nitrogen with a C₁₋₄ alkyl;

R₁₁ is selected from the group consisting of hydrogen and C₁₋₆ alkyl;

R₁₂ is selected from the group consisting of hydrogen, C₁₋₆ alkyl and C₃₋₈ cycloalkyl; or

R₁₁ and R₁₂ are taken together with the nitrogen to which they are attached form a 4 to 7 membered saturated ring optionally having 1 additional ring heteroatom selected from the group N, O, and S; wherein the 4 to 7 membered saturated ring is optionally substituted on any of the ring carbon atoms with 1 to 5 substituents independently selected from the group consisting of cyano, halo, hydroxy and amino;

C₃₋₆ heterocyclyl optionally substituted on the ring carbons with 1 to 4 substituents independently selected from the group consisting of C₁₋₄ alkyl, C₁₋₄ alkoxy, halo and hydroxy and optionally substituted on any ring nitrogen with a C₁₋₄ alkyl;

C₁₋₉ amide,

C₁₋₆ alkyl optionally substituted with 1 to 7 substituents independently selected from the group consisting of C₁₋₄ alkoxy, C₁₋₉ amide, amino, C₁₋₈ alkylamino, C₁₋₅ oxycarbonyl, cyano, C₃₋₈ cycloalkyl, halo, hydroxy, and C₃₋₆ heterocyclyl optionally substituted on any ring nitrogen by C₁₋₄ alkyl; C₁₋₁₀ heteroaryl; and phenyl optionally substituted with 1 to 5 substituents independently selected from the group consisting of C₁₋₄ alkyl, C₁₋₄ alkoxy, C₁₋₉ amide, amino, C₁₋₈ alkylamino, C₁₋₅ oxycarbonyl, cyano, halo, hydroxyl, nitro, C₁₋₈ sulfonyl, and trifluoromethyl;

and C₁₋₄ alkoxy; and

wherein the 4 to 7 membered saturated ring is substituted on any additional ring nitrogen by a substituent selected from the group consisting of hydrogen, C₃₋₈ cycloalkyl, and C₁₋₆ alkyl optionally substituted with 1 to 7 substituents independently selected from the group consisting of C₁₋₄ alkoxy, C₁₋₉ amide, amino, C₁₋₈ alkylamino, C₁₋₅ oxycarbonyl, cyano, C₃₋₈ cycloalkyl, halo, hydroxy, and C₃₋₆ heterocyclyl optionally substituted on any ring nitrogen by C₁₋₄ alkyl; C₁₋₁₀ heteroaryl; and phenyl optionally substituted with 1 to 5 substituents independently selected from the group consisting of C₁₋₄ alkyl, C₁₋₄ alkoxy, C₁₋₉ amide, amino, C₁₋₈ alkylamino, C₁₋₅ oxycarbonyl, cyano, halo, hydroxyl, nitro, C₁₋₈ sulfonyl, and trifluoromethyl; and

R₁₃ is selected from the group consisting of C₁₋₆ alkyl and C₃₋₈ cycloalkyl.

2. The compound or a pharmaceutically acceptable salt thereof according to claim 1 wherein X₁ is CH and X₂ is N.

3. The compound or a pharmaceutically acceptable salt thereof according to claim 1 wherein X₁ is N and X₂ is N.

4. The compound or a pharmaceutically acceptable salt thereof according to claim 3 wherein X₃ is selected from the group consisting of CH and CR₄ and X₄ is NR₈.

5. The compound or a pharmaceutically acceptable salt thereof according to any one of claims 1 to 4, wherein R₁ is C₆₋₁₀ aryl optionally substituted with 1 to 5 substituents independently selected from the group consisting of C₁₋₄ alkyl, C₁₋₄ alkoxy, cyano, halo, hydroxy, amino, trifluoromethyl, and trifluoromethoxy.

6. The compound or a pharmaceutically acceptable salt thereof according to any one of claims 1 to 5, wherein Z is C₁₋₆ alkylene.

7. The compound or a pharmaceutically acceptable salt thereof according to any one of claims 1 to 5, wherein Z is -O-.

8. The compound or a pharmaceutically acceptable salt thereof according to any one of claims 1 to 5 wherein Z is -C(O)-.

9. The compound or a pharmaceutically acceptable salt thereof according to any one of claims 1 to 8, wherein R₂ is -NR₆R₇.

10. The compound or a pharmaceutically acceptable salt thereof according to claim 1, which is selected from the group consisting of:

cyclopropyl(2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-3-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)methanone;

1-(2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-3-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)-2-methoxyethan-1-one;

2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-*N*-isopropyl-6-(methylsulfonyl)-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-3-amine;

2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-3-(isopropylamino)-*N*-(2-methoxyethyl)-7,8-dihydropyrido[3,4-*b*]pyrazine-6(5*H*)-carboxamide;

2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-3-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)(tetrahydrofuran-2-yl)methanone;

3-(2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-3-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)-3-oxopropanenitrile;

4-((1-(6-acetyl-3-(isopropylamino)-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-2-yl)piperidin-4-yl)oxy)-3-fluorobenzonitrile;

1-(2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-3-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)-2-methoxypropan-1-one;

cyclopropyl(3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-2-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)methanone;

1-(3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-2-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)-2-methoxyethan-1-one;

3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-*N*-isopropyl-6-(methylsulfonyl)-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-2-amine;

2-(4-(4-cyano-2-fluorophenoxy)piperidin-1-yl)-3-(isopropylamino)-*N,N*-dimethyl-7,8-dihydropyrido[3,4-*b*]pyrazine-6(5*H*)-carboxamide;

3-fluoro-4-((1-(3-(isopropylamino)-6-methyl-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-2-yl)piperidin-4-yl)oxy)benzonitrile;

(2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-3-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)(morpholino)methanone;

3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-2-(isopropylamino)-*N*-(2-methoxyethyl)-7,8-dihydropyrido[3,4-*b*]pyrazine-6(5*H*)-carboxamide;

3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-2-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)(tetrahydrofuran-2-yl)methanone;

3-(3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-2-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)-3-oxopropanenitrile;

(2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-3-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)(isoxazol-5-yl)methanone;

4-((1-(6-acetyl-2-(isopropylamino)-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-3-yl)piperidin-4-yl)oxy)-3-fluorobenzonitrile;

4-((1-(6-(cyclopropanecarbonyl)-2-(isopropylamino)-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-3-yl)piperidin-4-yl)oxy)-3-fluorobenzonitrile;

2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-*N*-isopropyl-6-(isopropylsulfonyl)-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-3-amine;

2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-3-(isopropylamino)-6-(methyl-L-prolyl)-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazine;

(2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-3-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)(pyrrolidin-1-yl)methanone;

1-(2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-3-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)-2,2-difluoroethan-1-one;

3-fluoro-4-((1-(2-(isopropylamino)-6-(methylsulfonyl)-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-3-yl)piperidin-4-yl)oxy)benzonitrile;

3-fluoro-4-((1-(2-(isopropylamino)-6-(2-methoxyacetyl)-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-3-yl)piperidin-4-yl)oxy)benzonitrile;

3-fluoro-4-((1-(2-(isopropylamino)-6-methyl-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-3-yl)piperidin-4-yl)oxy)benzonitrile;

3-(4-(4-cyano-2-fluorophenoxy)piperidin-1-yl)-2-(isopropylamino)-*N,N*-dimethyl-7,8-dihydropyrido[3,4-*b*]pyrazine-6(5*H*)-carboxamide;

1-(3-(2,2-difluoroethylamino)-2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-5-methyl-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone;

N-(2,2-difluoroethyl)-2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-5-methyl-6-(methylsulfonyl)-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-3-amine;

1-(3-(2,2-difluoroethylamino)-2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-5-methyl-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)-2-methoxyethanone;

1-(2-(2,2-difluoroethylamino)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-5-methyl-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone;

N-(2,2-difluoroethyl)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-5-methyl-6-(methylsulfonyl)-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-2-amine;

1-(2-(2,2-difluoroethylamino)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-5-methyl-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)-2-methoxyethanone;

1-(3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-2-(isopropylamino)-5-methyl-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone;

3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-*N*-isopropyl-5-methyl-6-(methylsulfonyl)-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-2-amine;

1-(3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-2-(isopropylamino)-5-methyl-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)-2-methoxyethanone;

cyclopropyl(3-(2,2-difluoroethylamino)-2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-5-methyl-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)methanone;

cyclopropyl(2-(2,2-difluoroethylamino)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-5-methyl-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)methanone;

cyclopropyl(3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-2-(isopropylamino)-5-methyl-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)methanone;

1-(3-(2,2-difluoroethylamino)-2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-5-methyl-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)-2,2-difluoroethanone;

1-(2-(2,2-difluoroethylamino)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-5-methyl-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)-2,2-difluoroethanone;

1-(2-(2,2-difluoroethylamino)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-5-methyl-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)-2,2-difluoroethanone;

1-(3-(4-(2-fluoro-4-methoxyphenoxy)piperidin-1-yl)-2-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone;

1-(2-(4-(2-fluoro-4-methoxyphenoxy)piperidin-1-yl)-3-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone;

2-(4-(2-fluoro-4-methoxyphenoxy)piperidin-1-yl)-3-(isopropylamino)-*N,N*-dimethyl-7,8-dihydropyrido[3,4-*b*]pyrazine-6(5*H*)-carboxamide;

1-(2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-3-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone;

2-(2,2-difluoroethylamino)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-*N,N*-dimethyl-7,8-dihydropyrido[3,4-*b*]pyrazine-6(5*H*)-carboxamide;

1-(2-((2,2-difluoroethyl)amino)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)-2-methoxyethanone;

(*R*)-1-(2-(2,2-difluoroethylamino)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)-2-methoxypropan-1-one;

1-(2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-3-(isopropylamino)-5-methyl-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone;

1-(2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-3-(isopropylamino)-5-methyl-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)-2,2-difluoroethanone;

2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-*N*-isopropyl-5-methyl-6-(methylsulfonyl)-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-3-amine;

2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-3-(isopropylamino)-*N,N*,5-trimethyl-7,8-dihydropyrido[3,4-*b*]pyrazine-6(5*H*)-carboxamide;

3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-2-(isopropylamino)-*N,N*,5-trimethyl-7,8-dihydropyrido[3,4-*b*]pyrazine-6(5*H*)-carboxamide;

2-(2,2-difluoroethylamino)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-*N,N*,5-trimethyl-7,8-dihydropyrido[3,4-*b*]pyrazine-6(5*H*)-carboxamide;

3-(4-(2-fluoro-4-methoxyphenoxy)piperidin-1-yl)-*N*-isopropyl-6-methyl-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-2-amine;

1-(3-((2,2-difluoroethyl)amino)-2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethan-1-one;

N-(2,2-difluoroethyl)-2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-6-methyl-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-3-amine;

methyl 3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-2-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazine-6(5*H*)-carboxylate;

3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-6-(2-fluoroethyl)-*N*-isopropyl-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-2-amine;

(*R*)-1-(2-(4-((2,4-difluorophenyl)fluoromethyl)piperidin-1-yl)-3-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethan-1-one;

1-(3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-2-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone;

N-cyclopropyl-2-(4-(2-fluoro-4-methoxyphenoxy)piperidin-1-yl)-6-methyl-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-3-amine;

N-cyclopropyl-3-(4-(2-fluoro-4-methoxyphenoxy)piperidin-1-yl)-6-methyl-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-2-amine;

N-cyclopropyl-3-(4-((2,4-difluorophenyl)fluoromethyl)piperidin-1-yl)-6-methyl-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-2-amine;

(*S*)-*N*-cyclopropyl-3-(4-((2,4-difluorophenyl)fluoromethyl)piperidin-1-yl)-6-methyl-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-2-amine;

(*R*)-*N*-cyclopropyl-3-(4-((2,4-difluorophenyl)fluoromethyl)piperidin-1-yl)-6-methyl-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-2-amine;

3-(4-((2,4-difluorophenyl)fluoromethyl)piperidin-1-yl)-*N*-isopropyl-6-methyl-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-2-amine;

1-(3-(4-((2,4-difluorophenyl)fluoromethyl)piperidin-1-yl)-2-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone;

3-(4-((2,4-difluorophenyl)fluoromethyl)piperidin-1-yl)-2-(isopropylamino)-*N,N*-dimethyl-7,8-dihydropyrido[3,4-*b*]pyrazine-6(5*H*)-carboxamide;

3-(4-(2-fluoro-4-methoxyphenoxy)piperidin-1-yl)-2-(isopropylamino)-*N,N*-dimethyl-7,8-dihydropyrido[3,4-*b*]pyrazine-6(5*H*)-carboxamide;

2-(4-(2-fluoro-4-methoxyphenoxy)piperidin-1-yl)-*N*-isopropyl-6-methyl-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-3-amine;

2-(4-((2,4-difluorophenyl)fluoromethyl)piperidin-1-yl)-*N*-isopropyl-6-methyl-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-3-amine;

1-(2-(4-((2,4-difluorophenyl)fluoromethyl)piperidin-1-yl)-3-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone;

2-(4-((2,4-difluorophenyl)fluoromethyl)piperidin-1-yl)-3-(isopropylamino)-*N,N*-dimethyl-7,8-dihydropyrido[3,4-*b*]pyrazine-6(5*H*)-carboxamide;

(5-chloro-2-fluorophenyl)(1-(2-(isopropylamino)-6-methyl-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-3-yl)piperidin-4-yl)methanone;

1-(3-(4-(5-chloro-2-fluorobenzoyl)piperidin-1-yl)-2-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone;

3-(4-(5-chloro-2-fluorobenzoyl)piperidin-1-yl)-2-(isopropylamino)-*N,N*-dimethyl-7,8-dihydropyrido[3,4-*b*]pyrazine-6(5*H*)-carboxamide;

3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-*N*-isopropyl-6-methyl-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-2-amine;

1-(3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-2-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone;

3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-2-(isopropylamino)-*N,N*-dimethyl-7,8-dihydropyrido[3,4-*b*]pyrazine-6(5*H*)-carboxamide;

2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-*N*-isopropyl-6-methyl-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-3-amine;

2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-3-(isopropylamino)-*N,N*-dimethyl-7,8-dihydropyrido[3,4-*b*]pyrazine-6(5*H*)-carboxamide;

(5-chloro-2-fluorophenyl)(1-(3-(isopropylamino)-6-methyl-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-2-yl)piperidin-4-yl)methanone;

1-(2-(4-(5-chloro-2-fluorobenzoyl)piperidin-1-yl)-3-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone;

2-(4-(5-chloro-2-fluorobenzoyl)piperidin-1-yl)-3-(isopropylamino)-*N,N*-dimethyl-7,8-dihydropyrido[3,4-*b*]pyrazine-6(5*H*)-carboxamide;

1-(2-(*tert*-butylamino)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone;

2-(*tert*-butylamino)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-*N,N*-dimethyl-7,8-dihydropyrido[3,4-*b*]pyrazine-6(5*H*)-carboxamide;

1-(2-((2,2-difluoroethyl)amino)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone;

1-(2-(cyclobutylamino)-3-(4-(2-fluoro-4-methoxyphenoxy)piperidin-1-yl)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone;

2-(cyclobutylamino)-3-(4-(2-fluoro-4-methoxyphenoxy)piperidin-1-yl)-*N,N*-dimethyl-7,8-dihydropyrido[3,4-*b*]pyrazine-6(5*H*)-carboxamide;

1-(3-(cyclobutylamino)-2-(4-(2-fluoro-4-methoxyphenoxy)piperidin-1-yl)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone;

3-(cyclobutylamino)-2-(4-(2-fluoro-4-methoxyphenoxy)piperidin-1-yl)-*N,N*-dimethyl-7,8-dihydropyrido[3,4-*b*]pyrazine-6(5*H*)-carboxamide;

3-(2,2-difluoroethylamino)-2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-*N,N*-dimethyl-7,8-dihydropyrido[3,4-*b*]pyrazine-6(5*H*)-carboxamide;

N-(2,2-difluoroethyl)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-6-(methylsulfonyl)-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-2-amine;

1-(2-(2,2-difluoroethylamino)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)-2,2-difluoroethanone;

(*S*)-1-(2-(2,2-difluoroethylamino)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)-2-methoxypropan-1-one;

1-(3-(2,2-difluoroethylamino)-2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)-2,2-difluoroethanone;

1-(3-(2,2-difluoroethylamino)-2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)-2,2-difluoroethanone;

(*S*)-1-(3-(2,2-difluoroethylamino)-2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)-2-methoxypropan-1-one ;

(*R*)-1-(3-(2,2-difluoroethylamino)-2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)-2-methoxypropan-1-one;

1-(2-(cyclopropylamino)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-5-methyl-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone;

2-(cyclopropylamino)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-*N,N*,5-trimethyl-7,8-dihydropyrido[3,4-*b*]pyrazine-6(5*H*)-carboxamide;

N-cyclopropyl-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-5,6-dimethyl-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-2-amine;

1-(2-(2,2-difluoroethylamino)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-7-methyl-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone;

2-(2,2-difluoroethylamino)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-*N,N*,7-trimethyl-7,8-dihydropyrido[3,4-*b*]pyrazine-6(5*H*)-carboxamide;

N-(2,2-difluoroethyl)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-6,7-dimethyl-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-2-amine;

1-(2-(2,2-difluoroethylamino)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-7-methyl-7,8-dihydropyrido[4,3-*b*]pyrazin-6(5*H*)-yl)-2,2-difluoroethanone;

1-(2-(2,2-difluoroethylamino)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-7-methyl-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)-2-methoxyethanone;

N-(2,2-difluoroethyl)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-7-methyl-6-(methylsulfonyl)-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-2-amine;

(2*S*)-1-(2-(2,2-difluoroethylamino)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-7-methyl-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)-2-methoxypropan-1-one ;

(2*R*)-1-(2-(2,2-difluoroethylamino)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-7-methyl-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)-2-methoxypropan-1-one;

cyclopropyl(2-(2,2-difluoroethylamino)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-7-methyl-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)methanone;

6-(2,2-difluoroethyl)-3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-*N*-isopropyl-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-2-amine;

(*S*)-1-(2-(4-((2,4-difluorophenyl)fluoromethyl)piperidin-1-yl)-3-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethan-1-one;

(*S*)-2-(4-((2,4-difluorophenyl)fluoromethyl)piperidin-1-yl)-3-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazine-6(5*H*)-carbaldehyde;

(*R*)-2-(4-((2,4-difluorophenyl)fluoromethyl)piperidin-1-yl)-3-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazine-6(5*H*)-carbaldehyde;

1-(3-(4-(3-fluorophenylsulfonyl)piperidin-1-yl)-2-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone;

1-(2-(isopropylamino)-3-(4-(3-methoxyphenylsulfonyl)piperidin-1-yl)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone;

1-(3-(4-((2-fluorophenyl)sulfonyl)piperidin-1-yl)-2-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethan-1-one;

1-(3-(4-(4-fluorophenylsulfonyl)piperidin-1-yl)-2-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone;

3-(4-(2,4-difluorophenoxy)piperidin-1-yl)-2-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazine-6(5*H*)-carbaldehyde;

1-(3-(4-(2-fluoro-4-methoxyphenylsulfonyl)piperidin-1-yl)-2-(isopropylamino)-7,8-dihydropyrido[4,3-*b*]pyrazin-6(5*H*)-yl)ethanone;

(*S*)-1-(2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-3-((1-methoxypropan-2-yl)amino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethan-1-one;

(*R*)-1-(2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-3-((1-methoxypropan-2-yl)amino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethan-1-one;

1-(3-(cyclobutylamino)-2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethan-1-one;

(*S*)-1-(3-(*sec*-butylamino)-2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethan-1-one;

(*R*)-1-(3-(*sec*-butylamino)-2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethan-1-one;

1-(2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-3-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)propan-1-one;

methyl 2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-3-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazine-6(5*H*)-carboxylate;

2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-6-(2-fluoroethyl)-*N*-isopropyl-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-3-amine;

1-(2-(4-(2,4-difluorobenzyl)piperazin-1-yl)-3-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethan-1-one;

1-(3-(cyclobutylamino)-2-(4-(2,4-difluorobenzyl)piperazin-1-yl)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethan-1-one;

2-(4-(2,4-difluorobenzyl)piperazin-1-yl)-*N*-isopropyl-6-(methylsulfonyl)-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-3-amine;

1-(2-(4-(2,4-difluorobenzyl)piperazin-1-yl)-3-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)propan-1-one;

tert-butyl 4-(6-acetyl-3-(isopropylamino)-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-2-yl)piperazine-1-carboxylate;

(1*s*,3*s*)-3-((6-acetyl-2-(4-(2,4-difluorobenzyl)piperazin-1-yl)-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-3-yl)amino)cyclobutyl acetate;

1-(2-(4-(2,4-difluorobenzyl)piperazin-1-yl)-3-(((1*s*,3*s*)-3-hydroxycyclobutyl)amino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethan-1-one;

1-(2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-3-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)-2-*d*3-ethan-1-one;

(1*s*,3*s*)-3-((6-acetyl-2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-3-yl)amino)cyclobutyl acetate;

1-(2-(4-(2,4-difluorobenzyl)piperazin-1-yl)-3-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)-2-methylpropan-1-one;

1-(2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-3-(((1*s*,3*s*)-3-hydroxycyclobutyl)amino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethan-1-one;

1-(2-(4-(2,4-difluorobenzyl)piperazin-1-yl)-3-(((1*r*,3*r*)-3-fluorocyclobutyl)amino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethan-1-one;

4-((4-(6-acetyl-3-(isopropylamino)-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-2-yl)piperazin-1-yl)methyl)-3-fluorobenzonitrile;

(1*r*,3*r*)-3-((6-acetyl-2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-3-yl)amino)cyclobutyl acetate;

1-(2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-3-(((1*r*,3*r*)-3-hydroxycyclobutyl)amino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethan-1-one;

(*S*)-1-(2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-3-(tetrahydrofuran-3-ylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone;

(*S*)-1-(2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-3-(tetrahydrofuran-3-ylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)propan-1-one;

1-(3-((3,3-difluorocyclobutyl)amino)-2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethan-1-one;

N-cyclobutyl-2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-6-(methylsulfonyl)-5,6,7,8-tetrahydropyrido[3,4-*b*]pyrazin-3-amine;

(*R*)-1-(2-(4-(2,4-difluorobenzyl)piperazin-1-yl)-3-(tetrahydrofuran-3-ylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone;

(*S*)-1-(2-(4-(2,4-difluorobenzyl)piperazin-1-yl)-3-(tetrahydrofuran-3-ylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone; and

(*S*)-1-(2-(4-(2,4-difluorobenzyl)piperazin-1-yl)-3-(tetrahydrofuran-3-ylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)propan-1-one;

of the above-mentioned compounds.

11. The compound or pharmaceutically acceptable salt thereof according to claim 1, which is 1-(2-(4-(2,4-difluorophenoxy)piperidin-1-yl)-3-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone.

12. The compound or pharmaceutically acceptable salt thereof according to claim 1, which is 1-(2-(4-(2-fluoro-4-methoxyphenoxy)piperidin-1-yl)-3-(isopropylamino)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone.

13. The compound or pharmaceutically acceptable salt thereof according to claim 1, which is 1-(3-(cyclobutylamino)-2-(4-(2-fluoro-4-methoxyphenoxy)piperidin-1-yl)-7,8-dihydropyrido[3,4-*b*]pyrazin-6(5*H*)-yl)ethanone.

14. A pharmaceutical composition comprising a compound or pharmaceutically acceptable salt thereof as defined in any one of claims 1 to 13 and a pharmaceutically acceptable excipient.

15. A compound or pharmaceutically acceptable salt thereof as defined in any one of claims 1 to 13, for use as a medicament.

16. A compound or pharmaceutically acceptable salt thereof as defined in any one of claims 1 to 13, for use in the treatment of a disorder selected from Parkinson's disease, levodopa induced dyskinesias, Huntington's disease, drug addiction, eating disorders, cognitive disorders, schizophrenia, bipolar disorders, and depression.