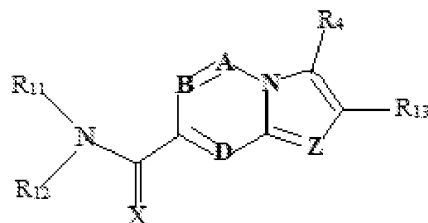


I/We claim:

1. A compound of Formula (I)



- 5 Formula (I)

their polymorphs, stereoisomers, prodrugs, solvates, co-crystals, intermediates, pharmaceutically acceptable salts, and metabolites thereof,

wherein

X is selected from O or S;

- 10 Z is N;

A is selected from N or CR₁;

B is selected from N or CR₂;

D is selected from N or CR₃;

- 15 R₁, R₂, R₃, and R₄ are independently selected from hydrogen, hydroxyl, cyano, amino, halogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₃₋₆ cycloalkyl, C₁₋₆ haloalkyl, C₁₋₆ haloalkoxy, C₁₋₆ acylamino, C₁₋₆ alkylamino, C₅₋₁₀ aryl, C₁₋₆ heterocyclyl, or C₁₋₆ heteroaryl, wherein C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₆ heteroaryl, and C₁₋₆ haloalkoxy, is optionally substituted with one or more of the groups selected from hydrogen, oxo, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₆ haloalkyl, C₃₋₆ cycloalkyl, C₅₋₁₀ aryl, C₁₋₆ heterocyclyl, C₁₋₆ heteroaryl, cyano, and hydroxyl;

- 20 R₁₁ is hydrogen; R₁₂ is selected from C₁₋₆ alkylamino, and 5-10 membered monocyclic or bicyclic saturated heterocyclic ring with 1-3 heteroatoms selected from N, S or O, or R₁₁ and R₁₂ can be taken together to form a 5-10 membered monocyclic or bicyclic saturated or unsaturated heterocyclic ring optionally with 1-5 heteroatoms selected from N, S or O, wherein

the 5-10 membered monocyclic or bicyclic saturated or unsaturated heterocyclic ring is optionally substituted with the substituents selected from amino, C₁₋₆ alkylamino, C₁₋₆ acylamino, -NHC(NH)CH₂Cl, -NH(CO)CH=CH-CH₂-N(CH₃)₂, C₁₋₆ alkyl, halogen, C₁₋₆ alkoxy, or hydroxyl;

R₁₃ is selected from hydrogen, 5-10 membered monocyclic or bicyclic aryl, and 5-10 membered monocyclic or bicyclic heteroaryl with 1-5 heteroatoms selected from N, S or O, wherein

5-10 membered monocyclic or bicyclic aryl, and 5-10 membered monocyclic or bicyclic heteroaryl are optionally substituted with 1-5 substituents selected from hydroxyl, cyano, halogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₃₋₆ cycloalkyl, C₁₋₆ haloalkyl, C₁₋₆ haloalkoxy, C₁₋₆ acylamino, C₁₋₆ alkylamino, C₅₋₁₀ aryl, C₁₋₁₀ heterocyclyl, C₁₋₁₀ heteroaryl, C(O)C₁₋₆ alkyl, C(O)C₁₋₆ haloalkyl, C(O)NR₁₅, C(O)C₁₋₆ alkylamino, C(O)C₅₋₆ aryl, C(O)C₁₋₆ heteroaryl, SO₂C₁₋₆ alkyl, SO₂C₁₋₆ haloalkyl, SO₂C₃₋₆ cycloalkyl, SO₂NR₁₅, SO₂NC₁₋₆ alkylamino, SO₂C₅₋₆ aryl, or SO₂C₁₋₆ heteroaryl, wherein C₁₋₆ alkyl, C₁₋₆ alkoxy, C₃₋₆ cycloalkyl, C₅₋₁₀ aryl, C₁₋₁₀ heterocyclyl, and C₁₋₁₀ heteroaryl, is optionally substituted with one or more of the groups selected from hydrogen, C₁₋₆ alkyl, C₁₋₆ haloalkyl, C₁₋₆ alkoxy, C₃₋₆ cycloalkyl, C₅₋₆ aryl, C₁₋₆ heteroaryl, C₁₋₆ heterocyclyl, oxo, halogen, hydroxyl, and cyano, wherein C₅₋₆ aryl, C₁₋₆ heteroaryl, and C₁₋₆ heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, oxo, halogen, hydroxyl, -CH₂OH, and cyano;

and

R₁₅ is selected from the group consisting of hydrogen, C₁₋₆ alkyl, and combinations thereof.

2. The compound of Formula (I) as claimed in claim 1, their polymorphs, stereoisomers, prodrugs, solvates, co-crystals, intermediates, pharmaceutically acceptable salts, and metabolites thereof, wherein

X is selected from O or S;

25 Z is N;

A is selected from N or CR₁;

B is selected from N or CR₂;

D is selected from N or CR₃;

30 R₁, R₂, and R₃ are independently selected from hydrogen, hydroxyl, cyano, amino, halogen, C₁₋₄ alkyl, C₁₋₄ alkoxy, C₃₋₅ cycloalkyl, C₁₋₄ haloalkyl, C₁₋₄ haloalkoxy, C₅₋₆ aryl, C₁₋₆ heterocyclyl, or C₁₋₆ heteroaryl;

R₄ is selected from hydrogen, hydroxyl, cyano, amino, halogen, C₁₋₄ alkyl, C₁₋₄ alkoxy, C₃₋₅ cycloalkyl, C₁₋₄ haloalkyl, C₁₋₄ haloalkoxy, C₅₋₆ aryl, C₁₋₄ heterocyclyl, C₁₋₄ heteroaryl, C(O)C₁₋₄ alkyl, C(O)C₁₋₄ haloalkyl, C(O)NR₁₅, C(O)C₁₋₄ alkylamino,

C(O)C₅₋₆ aryl, C(O)C₁₋₄ heteroaryl, SO₂C₁₋₄ alkyl, SO₂C₁₋₄ haloalkyl, SO₂C₃₋₆ cycloalkyl, SO₂NR₁₅, SO₂NC₁₋₄ alkylamino, SO₂C₅₋₆ aryl, SO₂C₁₋₄ heteroaryl, C₁₋₄ acylamino, or C₁₋₄ alkylamino, wherein

C₁₋₄ alkyl, C₁₋₄ alkoxy, C₁₋₄ heteroaryl, and C₁₋₄ haloalkoxy, is optionally substituted
5 with one or more of the groups selected from hydrogen, oxo, C₁₋₄ alkyl, C₁₋₄ alkoxy, C₁₋₄ haloalkyl, C₃₋₅ cycloalkyl, C₅₋₆ aryl, C₁₋₄ heterocyclyl, C₁₋₄ heteroaryl, cyano, and hydroxyl;

R₁₁ is hydrogen;

R₁₂ is selected from C₁₋₄ alkylamino, and 5-10 membered monocyclic or bicyclic
10 saturated heterocyclic ring with 1-3 heteroatoms selected from N, S or O, or

R₁₁ and R₁₂ can be taken together to form a 5-10 membered monocyclic or bicyclic saturated or unsaturated heterocyclic ring optionally with 1-5 heteroatoms selected from N, S or O, wherein

the 5-10 membered monocyclic or bicyclic saturated or unsaturated heterocyclic ring is
15 optionally substituted with the substituents selected from amino, C₁₋₆ alkylamino, C₁₋₆ acylamino, -NHC(NH)CH₂Cl, -NH(CO)CH=CH-CH₂-N(CH₃)₂, C₁₋₆ alkyl, halogen, C₁₋₆ alkoxy, or hydroxyl;

R₁₃ is selected from hydrogen, 5-10 membered monocyclic or bicyclic aryl, and 5-10 membered monocyclic or bicyclic heteroaryl with 1-5 heteroatoms selected from N, S
20 or O, wherein

5-10 membered monocyclic or bicyclic aryl, and 5-10 membered monocyclic or bicyclic heteroaryl are optionally substituted with 1-5 substituents selected from hydroxyl, cyano, halogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₃₋₆ cycloalkyl, C₁₋₆ haloalkyl, C₁₋₆ haloalkoxy, C₁₋₆ acylamino, C₁₋₆ alkylamino, C₅₋₁₀ aryl, C₁₋₁₀ heterocyclyl, C₁₋₁₀
25 heteroaryl, C(O)C₁₋₆ alkyl, C(O)C₁₋₆ haloalkyl, C(O)NR₁₅, C(O)C₁₋₆ alkylamino, C(O)C₅₋₆ aryl, or C(O)C₁₋₆ heteroaryl, wherein C₁₋₆ alkyl, C₁₋₆ alkoxy, C₃₋₆ cycloalkyl, C₅₋₁₀ aryl, C₁₋₁₀ heterocyclyl, and C₁₋₁₀ heteroaryl, is optionally substituted with one or more of the groups selected from hydrogen, C₁₋₆ alkyl, C₁₋₆ haloalkyl, C₁₋₆ alkoxy, C₃₋₆ cycloalkyl, C₅₋₆ aryl, C₁₋₆ heteroaryl, C₁₋₆ heterocyclyl, oxo, halogen, hydroxyl, and
30 cyano, wherein C₅₋₆ aryl, C₁₋₆ heteroaryl, and C₁₋₆ heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, oxo, halogen, hydroxyl, -CH₂OH, and cyano;

and

R₁₅ is selected from the group consisting of hydrogen, C₁₋₆ alkyl, and combinations thereof.

3. The compound of Formula (I) as claimed in claim 1, their polymorphs, stereoisomers, prodrugs, solvates, co-crystals, intermediates, pharmaceutically acceptable salts, and metabolites thereof, wherein

X is selected from O or S;

Z is N;

A is selected from N or CR₁;

B is selected from N or CR₂;

- 10 D is selected from N or CR₃;

R₁, R₂, and R₃ are independently selected from hydrogen, hydroxyl, cyano, amino, halogen, C₁₋₄ alkyl, C₁₋₄ alkoxy, C₃₋₅ cycloalkyl, C₁₋₄ haloalkyl, C₁₋₄ haloalkoxy, C₅₋₆ aryl, C₁₋₆ heterocyclyl, or C₁₋₆ heteroaryl;

- 15 R₄ is selected from hydrogen, hydroxyl, cyano, amino, halogen, C₁₋₄ alkyl, C₁₋₄ alkoxy, C₃₋₅ cycloalkyl, C₁₋₄ haloalkyl, C₁₋₄ haloalkoxy, C₅₋₆ aryl, C₁₋₆ heterocyclyl, C₁₋₆ heteroaryl, C(O)C₁₋₄ alkyl, C(O)C₁₋₄ haloalkyl, C(O)NR₁₅, C(O)C₁₋₄ alkylamino, C(O)C₅₋₆ aryl, C(O)C₁₋₆ heteroaryl, SO₂C₁₋₄ alkyl, SO₂C₁₋₄ haloalkyl, SO₂C₃₋₆ cycloalkyl, SO₂NR₁₅, SO₂NC₁₋₄ alkylamino, SO₂C₅₋₆ aryl, SO₂C₁₋₆ heteroaryl, C₁₋₄ acylamino, or C₁₋₄ alkylamino, wherein

- 20 C₁₋₄ alkyl, C₁₋₄ alkoxy, C₁₋₆ heteroaryl, and C₁₋₄ haloalkoxy, is optionally substituted with one or more of the groups selected from hydrogen, oxo, C₁₋₄ alkyl, C₁₋₄ alkoxy, C₁₋₄ haloalkyl, C₃₋₅ cycloalkyl, C₅₋₆ aryl, C₁₋₆ heterocyclyl, C₁₋₆ heteroaryl, cyano, and hydroxyl;

- 25 R₁₁ and R₁₂ are taken together to form a 5-10 membered monocyclic or bicyclic saturated or unsaturated heterocyclic ring optionally with 1-5 heteroatoms selected from N or O, wherein

the 5-10 membered monocyclic or bicyclic saturated or unsaturated heterocyclic ring is optionally substituted with the substituents selected from amino, C₁₋₄ alkylamino, C₁₋₄ acylamino, -NHC(NH)CH₂Cl, -NH(CO)CH=CH-CH₂-N(CH₃)₂, C₁₋₄ alkyl, halogen, C₁₋₄ alkoxy, or hydroxyl;

- 30 R₁₃ is selected from hydrogen, 5-10 membered monocyclic or bicyclic aryl, and 5-10 membered monocyclic or bicyclic heteroaryl with 1-5 heteroatoms selected from N, S or O, wherein

5-10 membered monocyclic or bicyclic aryl, and 5-10 membered monocyclic or bicyclic heteroaryl are optionally substituted with 1-5 substituents selected from halogen, C₁₋₄ alkyl, C₁₋₄ alkoxy, C₃₋₆ cycloalkyl, C₁₋₄ haloalkyl, C₁₋₄ haloalkoxy, C₁₋₄ acylamino, C₁₋₄ alkylamino, C₅₋₉ aryl, C₁₋₉ heterocyclyl, or C₁₋₉ heteroaryl, wherein C₁₋₄ alkyl, C₁₋₄ alkoxy, C₃₋₆ cycloalkyl, C₅₋₉ aryl, C₁₋₉ heterocyclyl, and C₁₋₉ heteroaryl, is optionally substituted with one or more of the groups selected from hydrogen, C₁₋₄ alkyl, C₁₋₄ haloalkyl, C₁₋₄ alkoxy, C₃₋₆ cycloalkyl, C₅₋₆ aryl, C₁₋₆ heteroaryl, C₁₋₆ heterocyclyl, oxo, halogen, hydroxyl, and cyano, wherein C₅₋₆ aryl, C₁₋₆ heteroaryl, and C₁₋₆ heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, oxo, halogen, hydroxyl, -CH₂OH, and cyano; and R₁₅ is selected from the group consisting of hydrogen, C₁₋₆ alkyl, and combinations thereof.

4. The compound of Formula (I) as claimed in claim 1, their polymorphs, stereoisomers, prodrugs, solvates, co-crystals, intermediates, pharmaceutically acceptable salts, and metabolites thereof, wherein

X is selected from O or S;

Z is N;

A is CR₁;

B is CR₂;

20 D is CR₃;

R₁, R₂, and R₃ are independently selected from hydrogen, or C₁₋₂ alkyl;

R₄ is selected from hydrogen, C₁₋₄ alkyl, C₁₋₄ alkoxy, C₃₋₅ cycloalkyl, or C₅₋₆ aryl, wherein

25 C₁₋₄ alkyl, and C₁₋₄ alkoxy, is optionally substituted with one or more of the groups selected from C₁₋₄ alkyl, and C₁₋₄ alkoxy;

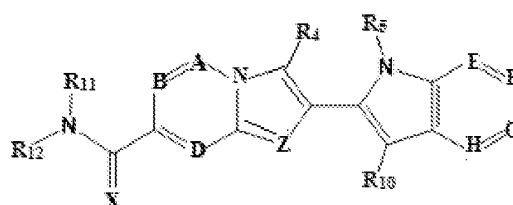
R₁₁ and R₁₂ are taken together to form a 5-10 membered monocyclic or bicyclic saturated heterocyclic ring optionally with 1-5 heteroatoms selected from N, S or O, wherein

30 the 5-10 membered monocyclic or bicyclic saturated heterocyclic ring is optionally substituted with the substituents selected from amino, C₁₋₂ alkylamino, or -NH(CO)CH=CH-CH₂-N(CH₃)₂; and

R₁₃ is selected from hydrogen, 5-9 membered monocyclic or bicyclic aryl, and 5-9 membered monocyclic or bicyclic heteroaryl with 1-5 heteroatoms selected from N, S or O, wherein

5-9 membered monocyclic or bicyclic aryl, and 5-9 membered monocyclic or bicyclic heteroaryl are optionally substituted with 1-5 substituents selected from hydroxyl, cyano, fluoro, bromo, chloro, C₁₋₄ alkyl, C₁₋₄ alkoxy, C₁₋₄ haloalkyl, C₃₋₅ cycloalkyl, C₅₋₉ aryl, C₁₋₉ heterocyclyl, or C₁₋₉ heteroaryl, wherein C₁₋₄ alkyl, C₁₋₄ alkoxy, C₃₋₅ cycloalkyl, C₅₋₉ aryl, C₁₋₉ heterocyclyl, and C₁₋₉ heteroaryl, is optionally substituted with one or more of the groups selected from hydrogen, hydroxyl, C₁₋₄ alkyl, C₁₋₄ alkoxy, C₁₋₄ haloalkyl, C₃₋₅ cycloalkyl, C₅₋₆ aryl, C₁₋₆ heteroaryl, C₁₋₆ heterocyclyl, oxo, halogen, and cyano, wherein C₅₋₆ aryl, C₁₋₆ heteroaryl, and C₁₋₆ heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, oxo, halogen, hydroxyl, -CH₂OH, and cyano.

5. A compound of Formula (II)



Formula (II)

their polymorphs, stereoisomers, prodrugs, solvates, co-crystals, intermediates, pharmaceutically acceptable salts, and metabolites thereof, wherein

X is selected from O or S;

Z is N;

A is selected from N or CR₁;

20 B is selected from N or CR₂;

D is selected from N or CR₃;

E is selected from N or CR₆;

F is absent or is selected from N, and CR₇;

G is absent or is selected from N, and CR₈;

25 H is absent or is selected from N, and CR₉;

R₁, R₂, R₃, R₄, R₅, R₆, R₇, R₈, R₉ and R₁₀ are independently selected from hydrogen, hydroxyl, cyano, amino, halogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₃₋₆ cycloalkyl, C₁₋₆ haloalkyl, C₁₋₆ haloalkoxy, C₁₋₆ acylamino, C₁₋₆ alkylamino, C₅₋₁₀ aryl, C₁₋₁₀ heterocyclyl, C₁₋₁₀ heteroaryl, C(O)C₁₋₆ alkyl, C(O)C₁₋₆ haloalkyl, C(O)NR₁₅, C(O)C₁₋₆ alkylamino,

30 C(O)C₅₋₆ aryl, C(O)C₁₋₆ heteroaryl, SO₂C₁₋₆ alkyl, SO₂C₁₋₆ haloalkyl, SO₂C₃₋₆

cycloalkyl, SO₂NR₁₅, SO₂NC₁₋₆ alkylamino, SO₂C₅₋₆ aryl, or SO₂C₁₋₆ heteroaryl, wherein

C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₁₀ heteroaryl, and C₁₋₆ haloalkoxy, is optionally substituted with one or more of the groups selected from hydrogen, oxo, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₆ haloalkyl, C₁₋₆ alkylhydroxy, C₃₋₆ cycloalkyl, C₅₋₉ aryl, C₁₋₆ heterocyclyl, C₁₋₆ heteroaryl, cyano, halogen, and hydroxyl, wherein C₅₋₉ aryl, C₁₋₆ heteroaryl, and C₁₋₆ heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, oxo, halogen, hydroxyl, -CH₂OH, and cyano;

R₁₁ and R₁₂ are taken together to form a 5-10 membered monocyclic or bicyclic saturated or unsaturated heterocyclic ring optionally with 1-5 heteroatoms selected from N, S or O, wherein

the 5-10 membered monocyclic or bicyclic saturated or unsaturated heterocyclic ring is optionally substituted with the substituents selected from amino, C₁₋₆ alkylamino, C₁₋₆ acylamino, -NHC(NH)CH₂Cl, -NH(CO)CH=CH-CH₂-N(CH₃)₂, C₁₋₆ alkyl, halogen, C₁₋₆ alkoxy, or hydroxyl;

and

R₁₅ is selected from the group consisting of hydrogen, C₁₋₆ alkyl, and combinations thereof.

6. The compound of Formula (II) as claimed in claim 5, their polymorphs, stereoisomers, prodrugs, solvates, co-crystals, intermediates, pharmaceutically acceptable salts, and metabolites thereof, wherein

X is selected from O or S;

Z is N;

A is selected from N or CR₁;

25 B is selected from N or CR₂;

D is selected from N or CR₃;

E is selected from N or CR₆;

F is absent or is selected from N, and CR₇;

G is absent or is selected from N, and CR₈;

30 H is absent or is selected from N, and CR₉;

R₁, R₂, R₃, R₆, R₇, R₈, R₉, and R₁₀ are independently selected from hydrogen, hydroxyl, halogen, C₁₋₄ alkyl, C₁₋₄ alkoxy, C₁₋₄ haloalkyl, C₁₋₄ haloalkoxy, C₃₋₅ cycloalkyl, or C₅₋₆ aryl;

R₄, and R₅ are independently selected from hydrogen, hydroxyl, cyano, amino, halogen, C₁₋₄ alkyl, C₁₋₄ alkoxy, C₃₋₆ cycloalkyl, C₁₋₄ haloalkyl, C₁₋₄ haloalkoxy, C₁₋₄ acylamino, C₁₋₄ alkylamino, C₅₋₉ aryl, C₁₋₉ heterocyclyl, C₁₋₉ heteroaryl, C(O)C₁₋₄ alkyl, C(O)C₁₋₄ haloalkyl, C(O)NR₁₅, C(O)C₁₋₄ alkylamino, C(O)C₅₋₆ aryl, C(O)C₁₋₆ heteroaryl, SO₂C₁₋₄ alkyl, SO₂C₁₋₄ haloalkyl, SO₂C₃₋₆ cycloalkyl, SO₂NR₁₅, SO₂NC₁₋₄ alkylamino, SO₂C₅₋₆ aryl, or SO₂C₁₋₆ heteroaryl, wherein

C₁₋₄ alkyl, C₁₋₄ alkoxy, C₁₋₉ heteroaryl, and C₁₋₄ haloalkoxy, is optionally substituted with one or more of the groups selected from hydrogen, oxo, C₁₋₄ alkyl, C₁₋₄ alkoxy, C₁₋₄ haloalkyl, C₁₋₄ alkylhydroxy, C₃₋₆ cycloalkyl, C₅₋₆ aryl, C₁₋₆ heterocyclyl, C₁₋₆ heteroaryl, cyano, halogen, and hydroxyl, wherein C₅₋₆ aryl, C₁₋₆ heteroaryl, and C₁₋₆ heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, oxo, halogen, hydroxyl, -CH₂OH, and cyano;

R₁₁ and R₁₂ are taken together to form a 5-10 membered monocyclic or bicyclic saturated or unsaturated heterocyclic ring optionally with 1-5 heteroatoms selected from N, S or O, wherein

the 5-10 membered monocyclic or bicyclic saturated or unsaturated heterocyclic ring is optionally substituted with the substituents selected from amino, C₁₋₆ alkylamino, C₁₋₆ acylamino, -NHC(NH)CH₂Cl, -NH(CO)CH=CH-CH₂-N(CH₃)₂, C₁₋₆ alkyl, halogen, C₁₋₆ alkoxy, or hydroxyl;

and

R₁₅ is selected from the group consisting of hydrogen, C₁₋₆ alkyl, and combinations thereof.

7. The compound of Formula (II) as claimed in claim 5, their polymorphs, stereoisomers, prodrugs, solvates, co-crystals, intermediates, pharmaceutically acceptable salts, and metabolites thereof, wherein

X is selected from O or S;

Z is N;

A is CR₁;

B is CR₂;

30 D is CR₃;

E is selected from N or CR₆;

F is absent or is CR₇;

G is absent or is CR₈;

H is absent or is CR₉;

R₁, R₂, R₃, R₆, R₇, R₈, R₉, and R₁₀ are independently selected from hydrogen, halogen, C₁₋₂ alkyl, C₁₋₂ alkoxy, or C₅₋₆ aryl;

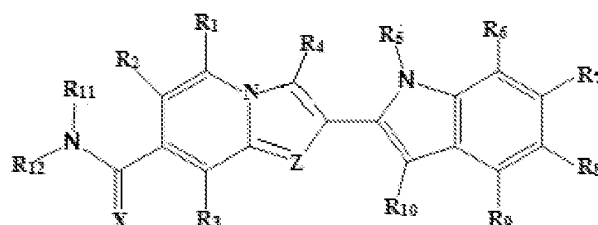
R₄, and R₅ are independently selected from hydrogen, C₁₋₄ alkyl, C₁₋₄ alkoxy, C₃₋₆ cycloalkyl, C₁₋₄ haloalkyl, C₁₋₄ haloalkoxy, C₅₋₉ aryl, C₁₋₉ heterocyclyl, or C₁₋₉ heteroaryl, wherein

C₁₋₄ alkyl, C₁₋₄ alkoxy, C₁₋₉ heteroaryl, and C₁₋₄ haloalkoxy, is optionally substituted with one or more of the groups selected from hydrogen, oxo, C₁₋₄ alkyl, C₁₋₄ alkoxy, C₁₋₄ haloalkyl, C₁₋₄ alkylhydroxy, C₃₋₆ cycloalkyl, C₅₋₆ aryl, C₁₋₆ heterocyclyl, C₁₋₆ heteroaryl, cyano, halogen, and hydroxyl, wherein C₅₋₆ aryl, C₁₋₆ heteroaryl, and C₁₋₆ heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, oxo, halogen, hydroxyl, -CH₂OH, and cyano;

R₁₁ and R₁₂ are taken together to form a 5-10 membered monocyclic or bicyclic saturated heterocyclic ring optionally with 1-5 heteroatoms selected from N, S or O, wherein

the 5-10 membered monocyclic or bicyclic saturated heterocyclic ring is optionally substituted with the substituents selected from amino, C₁₋₂ alkylamino, or -NH(CO)CH=CH-CH₂-N(CH₃)₂.

8. A compound of Formula (III)



Formula (III)

their polymorphs, stereoisomers, prodrugs, solvates, co-crystals, intermediates, pharmaceutically acceptable salts, and metabolites thereof,

wherein

X is selected from O or S;

Z is N;

R₁, R₂, R₃, R₄, R₅, R₆, R₇, R₈, R₉ and R₁₀ are independently selected from hydrogen, hydroxyl, cyano, amino, halogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₃₋₆ cycloalkyl, C₁₋₆ haloalkyl, C₁₋₆ haloalkoxy, C₁₋₆ acylamino, C₁₋₆ alkylamino, C₅₋₁₀ aryl, C₁₋₁₀ heterocyclyl, C₁₋₁₀ heteroaryl, C(O)C₁₋₆ alkyl, C(O)C₁₋₆ haloalkyl, C(O)NR₁₅, C(O)C₁₋₆ alkylamino,

C(O)C₅₋₆ aryl, C(O)C₁₋₆ heteroaryl, SO₂C₁₋₆ alkyl, SO₂C₁₋₆ haloalkyl, SO₂C₃₋₆ cycloalkyl, SO₂NR₁₅, SO₂NC₁₋₆ alkylamino, SO₂C₅₋₆ aryl, or SO₂C₁₋₆ heteroaryl, wherein

C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₁₀ heteroaryl, and C₁₋₆ haloalkoxy, is optionally substituted
5 with one or more of the groups selected from hydrogen, oxo, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₆ haloalkyl, C₁₋₆ alkylhydroxy, C₃₋₆ cycloalkyl, C₅₋₉ aryl, C₁₋₆ heterocyclyl, C₁₋₆ heteroaryl, cyano, halogen, and hydroxyl, wherein C₅₋₉ aryl, C₁₋₆ heteroaryl, and C₁₋₆ heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, oxo, halogen, hydroxyl, -CH₂OH, and cyano;

10 R₁₁ and R₁₂ are taken together to form a 5-10 membered monocyclic or bicyclic saturated or unsaturated heterocyclic ring optionally with 1-5 heteroatoms selected from N, S or O, wherein

the 5-10 membered monocyclic or bicyclic saturated or unsaturated heterocyclic ring is optionally substituted with the substituents selected from amino, C₁₋₆ alkylamino, C₁₋₆
15 acylamino, -NHC(NH)CH₂Cl, -NH(CO)CH=CH-CH₂-N(CH₃)₂, C₁₋₆ alkyl, halogen, C₁₋₆ alkoxy, or hydroxyl;

and

R₁₅ is selected from the group consisting of hydrogen, C₁₋₆ alkyl, and combinations thereof.

20 9. The compound of Formula (III) as claimed in claim 8, their polymorphs, stereoisomers, prodrugs, solvates, co-crystals, intermediates, pharmaceutically acceptable salts, and metabolites thereof, wherein

X is selected from O or S;

Z is N;

25 R₁, R₂, R₃, R₆, R₇, R₈, R₉, and R₁₀ are independently selected from hydrogen, hydroxyl, halogen, C₁₋₄ alkyl, C₁₋₄ alkoxy, C₁₋₄ haloalkyl, C₁₋₄ haloalkoxy, C₃₋₅ cycloalkyl, or C₅₋₆ aryl;

R₄, and R₅ are independently selected from the hydrogen, hydroxyl, cyano, amino, halogen, C₁₋₄ alkyl, C₁₋₄ alkoxy, C₃₋₆ cycloalkyl, C₁₋₄ haloalkyl, C₁₋₄ haloalkoxy, C₁₋₄

30 acylamino, C₁₋₄ alkylamino, C₅₋₉ aryl, C₁₋₉ heterocyclyl, C₁₋₉ heteroaryl, C(O)C₁₋₄ alkyl, C(O)C₁₋₄ haloalkyl, C(O)NR₁₅, C(O)C₁₋₄ alkylamino, C(O)C₅₋₆ aryl, C(O)C₁₋₆ heteroaryl, SO₂C₁₋₄ alkyl, SO₂C₁₋₄ haloalkyl, SO₂C₃₋₆ cycloalkyl, SO₂NR₁₅, SO₂NC₁₋₄ alkylamino, SO₂C₅₋₆ aryl, or SO₂C₁₋₆ heteroaryl, wherein

C₁₋₄ alkyl, C₁₋₄ alkoxy, C₁₋₉ heteroaryl, and C₁₋₄ haloalkoxy, is optionally substituted with one or more of the groups selected from hydrogen, oxo, C₁₋₄ alkyl, C₁₋₄ alkoxy, C₁₋₄ haloalkyl, C₁₋₄ alkylhydroxy, C₃₋₆ cycloalkyl, C₅₋₆ aryl, C₁₋₆ heterocyclyl, C₁₋₆ heteroaryl, cyano, halogen, and hydroxyl, wherein C₅₋₆ aryl, C₁₋₆ heteroaryl, and C₁₋₆ heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, oxo, halogen, hydroxyl, -CH₂OH, and cyano;

R₁₁ and R₁₂ are taken together to form a 5-10 membered monocyclic or bicyclic saturated or unsaturated heterocyclic ring optionally with 1-5 heteroatoms selected from N, S or O, wherein

the 5-10 membered monocyclic or bicyclic saturated or unsaturated heterocyclic ring is optionally substituted with the substituents selected from amino, C₁₋₆ alkylamino, C₁₋₆ acylamino, -NHC(NH)CH₂Cl, -NH(CO)CH=CH-CH₂-N(CH₃)₂, C₁₋₆ alkyl, halogen, C₁₋₆ alkoxy, or hydroxyl;

and

R₁₅ is selected from the group consisting of hydrogen, C₁₋₆ alkyl, and combinations thereof.

10. The compound of Formula (III) as claimed in claim 8, their polymorphs, stereoisomers, prodrugs, solvates, co-crystals, intermediates, pharmaceutically acceptable salts, and metabolites thereof, wherein

X is selected from O or S;

Z is N;

R₁, R₂, R₃, R₆, R₇, R₈, R₉, and R₁₀ are independently selected from hydrogen, halogen, C₁₋₄ alkyl, C₁₋₄ alkoxy, or C₅₋₆ aryl;

R₄, and R₅ are independently selected from hydrogen, C₁₋₄ alkyl, C₁₋₄ alkoxy, C₃₋₆ cycloalkyl, C₁₋₄ haloalkyl, C₁₋₄ haloalkoxy, C₅₋₉ aryl, C₁₋₉ heterocyclyl, or C₁₋₉ heteroaryl, wherein

C₁₋₄ alkyl, C₁₋₄ alkoxy, C₁₋₆ heteroaryl, and C₁₋₄ haloalkoxy, is optionally substituted with one or more of the groups selected from hydrogen, oxo, C₁₋₄ alkyl, C₁₋₄ alkoxy, C₁₋₄ haloalkyl, C₁₋₄ alkylhydroxy, C₃₋₆ cycloalkyl, C₅₋₆ aryl, C₁₋₆ heterocyclyl, C₁₋₆ heteroaryl, cyano, halogen, and hydroxyl, wherein C₅₋₆ aryl, C₁₋₆ heteroaryl, and C₁₋₆ heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, oxo, halogen, hydroxyl, -CH₂OH, and cyano; and

R₁₁ and R₁₂ are taken together to form a 5-10 membered monocyclic or bicyclic saturated heterocyclic ring optionally with 1-5 heteroatoms selected from N, S or O, wherein

the 5-10 membered monocyclic or bicyclic saturated heterocyclic ring is optionally substituted with the substituents selected from amino, C₁₋₄ alkylamino, or -NH(CO)CH=CH-CH₂-N(CH₃)₂.

11. The compound of Formula (I) as claimed in claim 1 or its polymorphs, stereoisomers, prodrugs, solvates, co-crystals, intermediates, pharmaceutically acceptable salts, and metabolites thereof, which is selected from a group consisting of:

- 10 (R)-(3-aminopiperidin-1-yl)(2-(3-bromo-1-(cyclopropylmethyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone (**1**),
(R)-(3-aminopiperidin-1-yl)(2-(1-(cyclopropylmethyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone (**2**),
(R)-(3-aminopiperidin-1-yl)(2-(1-benzyl-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone (**3**),
15 (R)-(3-aminopiperidin-1-yl)(2-(1-ethyl-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone (**4**),
(R)-(3-aminopiperidin-1-yl)(2-(1-ethyl-3-phenyl-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone (**5**),
20 (R)-(3-aminopyrrolidin-1-yl)(2-(1-ethyl-3-phenyl-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone (**6**),
(R)-(3-aminopyrrolidin-1-yl)(2-(1-ethyl-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone (**7**),
(R)-(3-aminopyrrolidin-1-yl)(2-(1-(cyclopropylmethyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone (**8**),
25 (2-(1-(cyclopropylmethyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)(hexahydro-2H-pyrido[4,3-b][1,4]oxazin-6(5H)-yl)methanone (**9**),
(R)-(3-aminopiperidin-1-yl)(3-methyl-2-(1-(pyridin-4-ylmethyl)-1H-indol-2-yl)imidazo[1,2-a]pyridin-7-yl)methanone (**10**),
30 (R)-(3-aminopiperidin-1-yl)(3-methyl-2-(1-((tetrahydro-2H-pyran-4-yl)methyl)-1H-indol-2-yl)imidazo[1,2-a]pyridin-7-yl)methanone (**11**),
(R)-(3-aminopiperidin-1-yl)(2-(1-(4-methoxybenzyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone (**12**),

- (R)-(3-aminopiperidin-1-yl)(2-(1-(4-fluorobenzyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(13)**,
- (R)-4-((2-(7-(3-aminopiperidine-1-carbonyl)-3-methylimidazo[1,2-a]pyridin-2-yl)-1H-indol-1-yl)methyl)benzonitrile **(14)**,
- 5 (R)-(3-aminopiperidin-1-yl)(3-methyl-2-(1-(pyridin-3-ylmethyl)-1H-indol-2-yl)imidazo[1,2-a]pyridin-7-yl)methanone **(15)**,
- (R)-(3-aminopiperidin-1-yl)(3-methyl-2-(1-(pyridin-2-ylmethyl)-1H-indol-2-yl)imidazo[1,2-a]pyridin-7-yl)methanone **(16)**,
- (R)-(3-aminopiperidin-1-yl)(3-methyl-2-(1-(2,2,2-trifluoroethyl)-1H-indol-2-yl)imidazo[1,2-a]pyridin-7-yl)methanone **(17)**,
- 10 (R)-4-((2-(7-(3-aminopiperidine-1-carbonyl)-3-methylimidazo[1,2-a]pyridin-2-yl)-1H-indol-1-yl)methyl)-1-methylpyridin-2(1H)-one **(18)**,
- (R)-(3-aminopiperidin-1-yl)(2-(3-ethylbenzo[b]thiophen-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(19)**,
- 15 (R)-(3-aminopiperidin-1-yl)(2-(1-(4-chlorobenzyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(20)**,
- (R)-(3-aminopiperidin-1-yl)(2-(1-(2-fluorobenzyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(21)**,
- (R)-(3-aminopiperidin-1-yl)(2-(1-ethyl-5-phenyl-1H-pyrrol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(22)**,
- 20 (R)-(3-aminopiperidin-1-yl)(2-(1-(cyclopropylmethyl)-6-methoxy-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(23)**,
- (R)-(3-aminopiperidin-1-yl)(2-(1-ethyl-1H-pyrrolo[2,3-b]pyridin-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(24)**,
- 25 (R)-(3-aminopiperidin-1-yl)(2-(1-(cyclopropylmethyl)-1H-indol-2-yl)-3,5-dimethylimidazo[1,2-a]pyridin-7-yl)methanone **(25)**,
- (R)-(3-aminopiperidin-1-yl)(2-(1-benzyl-1H-indol-2-yl)-3,5-dimethylimidazo[1,2-a]pyridin-7-yl)methanone **(26)**,
- (R)-(3-aminopiperidin-1-yl)(3,5-dimethyl-2-(1-(pyridin-2-ylmethyl)-1H-indol-2-yl)imidazo[1,2-a]pyridin-7-yl)methanone **(27)**,
- 30 (R)-(3-aminopiperidin-1-yl)(2-(1-(cyclopropylmethyl)-6-fluoro-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(28)**,
- (R)-(3-aminopiperidin-1-yl)(2-(1-(cyclopropylmethyl)-5-fluoro-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(29)**,

- (R)-(3-aminopiperidin-1-yl)(2-(1-(cyclopropylmethyl)-7-methyl-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(30)**,
(R)-(3-aminopiperidin-1-yl)(2-(2-ethylphenyl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(31)**,
5 (R)-(3-aminopiperidin-1-yl)(2-(1-(cyclopropylmethyl)-1H-indol-2-yl)-3-phenylimidazo[1,2-a]pyridin-7-yl)methanone **(32)**,
(R)-(3-aminopiperidin-1-yl)(3-cyclopropyl-2-(1-(cyclopropylmethyl)-1H-indol-2-yl)imidazo[1,2-a]pyridin-7-yl)methanone **(33)**,
(R)-(3-aminopiperidin-1-yl)(2-(1-(cyclopropylmethyl)-1H-indol-2-yl)-3-
10 (methoxymethyl)imidazo[1,2-a]pyridin-7-yl)methanone **(34)**,
(R)-(3-aminopiperidin-1-yl)(2-(1-(3-fluorobenzyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(35)**,
(R)-(3-aminopiperidin-1-yl)(3-methyl-2-(1-(thiophen-3-ylmethyl)-1H-indol-2-yl)imidazo[1,2-a]pyridin-7-yl)methanone **(36)**,
15 (R)-(3-aminopiperidin-1-yl)(2-(1-(furan-3-ylmethyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(37)**,
(R)-(3-aminopiperidin-1-yl)(2-(1-(1-(4-fluorophenyl)ethyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(38)**,
(R)-(3-aminopiperidin-1-yl)(2-(1-ethyl-5-fluoro-1H-indol-2-yl)-3-methylimidazo[1,2-
20 a]pyridin-7-yl)methanone **(39)**,
(R)-(3-aminopiperidin-1-yl)(2-(1-(cyclopropylmethyl)-4-fluoro-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(40)**,
(R)-(3-aminopiperidin-1-yl)(3-methyl-2-(1-((4-methylthiazol-2-yl)methyl)-1H-indol-2-yl)imidazo[1,2-a]pyridin-7-yl)methanone **(41)**,
25 (R)-(3-aminopiperidin-1-yl)(2-(1-(3-methoxybenzyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(42)**,
(R)-(3-aminopiperidin-1-yl)(2-(5-bromo-1-(cyclopropylmethyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(43)**,
(R)-(3-aminopiperidin-1-yl)(2-(7-chloro-1-(cyclopropylmethyl)-1H-indol-2-yl)-3-
30 methylimidazo[1,2-a]pyridin-7-yl)methanone **(44)**,
(R)-(3-aminopiperidin-1-yl)(2-(1-(4-fluorobenzyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanethione **(45)**,
(R)-(3-aminopiperidin-1-yl)(3-methyl-2-(1-methyl-1H-indol-2-yl)imidazo[1,2-a]pyridin-7-yl)methanone **(46)**,

- (R)-(3-aminopiperidin-1-yl)(2-(1-(cyclopropylmethyl)-7-methoxy-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(47)**,
- (R)-(3-aminopiperidin-1-yl)(2-(1-((2,4-dimethylthiazol-5-yl)methyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(48)**,
- 5 (R)-(3-aminopiperidin-1-yl)(3-methyl-2-(1-((2-methylthiazol-5-yl)methyl)-1H-indol-2-yl)imidazo[1,2-a]pyridin-7-yl)methanone **(49)**,
- (R)-(3-aminopiperidin-1-yl) (2-(1-(3-methoxybenzyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone trifluoroacetic acid salt **(50)**,
- (R)-(3-aminopiperidin-1-yl)(2-(6-methoxy-1-(pyridin-3-ylmethyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(51)**,
- 10 (R)-(3-aminopiperidin-1-yl)(2-(1-(cyclopropylmethyl)-6-fluoro-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone trifluoroacetic acid salt **(52)**,
- (R)-(3-aminopiperidin-1-yl)(2-(5-fluoro-1-(3-methoxybenzyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(53)**,
- 15 (R)-(3-aminopiperidin-1-yl)(2-(6-fluoro-1-(4-fluorobenzyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(54)**,
- (R)-(3-aminopiperidin-1-yl)(2-(5,6-difluoro-1-(3-methoxybenzyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(55)**,
- (R,E)-4-(dimethylamino)-N-(1-(2-(1-(4-fluorobenzyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridine-7-carbonyl)piperidin-3-yl)but-2-enamide **(56)**,
- 20 (R)-(3-aminopiperidin-1-yl)(3-methyl-2-(1-(pyrazin-2-ylmethyl)-1H-indol-2-yl)imidazo[1,2-a]pyridin-7-yl)methanone **(57)**,
- (R)-(3-aminopiperidin-1-yl)(3-methyl-2-(1-(pyrimidin-5-ylmethyl)-1H-indol-2-yl)imidazo[1,2-a]pyridin-7-yl)methanone trifluoroacetic acid salt **(58)**,
- 25 (R)-(3-aminopiperidin-1-yl)(3-methyl-2-(1-(pyridazin-3-ylmethyl)-1H-indol-2-yl)imidazo[1,2-a]pyridin-7-yl)methanone **(59)**,
- (R)-(3-aminopiperidin-1-yl)(2-(1-isobutyl-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(60)**,
- (R)-(3-aminopiperidin-1-yl)(2-(1-(cyclobutylmethyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(61)**,
- 30 (R)-(3-aminopiperidin-1-yl)(2-(1-((3-fluoropyridin-2-yl)methyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(62)**,
- (R)-(3-aminopiperidin-1-yl)(2-(1-((5-methoxypyridin-2-yl)methyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(63)**,

- (R)-(3-aminopiperidin-1-yl)(2-(1-(2-methoxyethyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(64)**,
- (R)-(3-aminopiperidin-1-yl)(2-(1-(2-hydroxyethyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(65)**,
- 5 (R)-(3-aminopiperidin-1-yl)(2-(6-methoxy-1-(pyridin-4-ylmethyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(66)**,
- (R)-(3-aminopiperidin-1-yl)(2-(1-ethyl-6-methoxy-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(67)**,
- (R)-(3-aminopiperidin-1-yl)(2-(6-fluoro-1-(pyridin-4-ylmethyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(68)**,
- 10 (R)-(3-aminopiperidin-1-yl)(2-(6-fluoro-1-(pyridin-3-ylmethyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(69)**,
- (R)-(3-aminopiperidin-1-yl)(2-(6-fluoro-1-(3-methoxybenzyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(70)**,
- 15 (R)-(3-aminopiperidin-1-yl)(2-(6-fluoro-1-(4-methoxybenzyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(71)**,
- (R)-(3-aminopiperidin-1-yl)(2-(1-ethyl-6-fluoro-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(72)**,
- (R)-(3-aminopiperidin-1-yl)(2-(6-fluoro-1-isobutyl-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(73)**,
- 20 (R)-(3-aminopiperidin-1-yl)(2-(5-fluoro-1-(pyridin-4-ylmethyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(74)**,
- (R)-(3-aminopiperidin-1-yl)(2-(5-fluoro-1-(4-methoxybenzyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(75)**,
- 25 (R)-(3-aminopiperidin-1-yl)(2-(5-fluoro-1-(4-fluorobenzyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(76)**,
- (R)-(3-aminopiperidin-1-yl)(2-(7-chloro-1-(4-fluorobenzyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(77)**,
- (R)-(3-aminopiperidin-1-yl)(2-(1-(2,2-difluoroethyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone trifluoroacetic acid salt **(78)**,
- 30 (R)-(3-aminopiperidin-1-yl)(2-(1-((5-fluoropyridin-2-yl)methyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(79)**,
- (R)-(3-aminopiperidin-1-yl)(2-(1-(4-fluorobenzyl)-6-methoxy-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(80)**,

(R)-(3-aminopiperidin-1-yl)(2-(1-(4-(hydroxymethyl)benzyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone (**81**),

(R)-(3-aminopiperidin-1-yl)(2-(1-isobutyl-6-methoxy-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone (**82**),

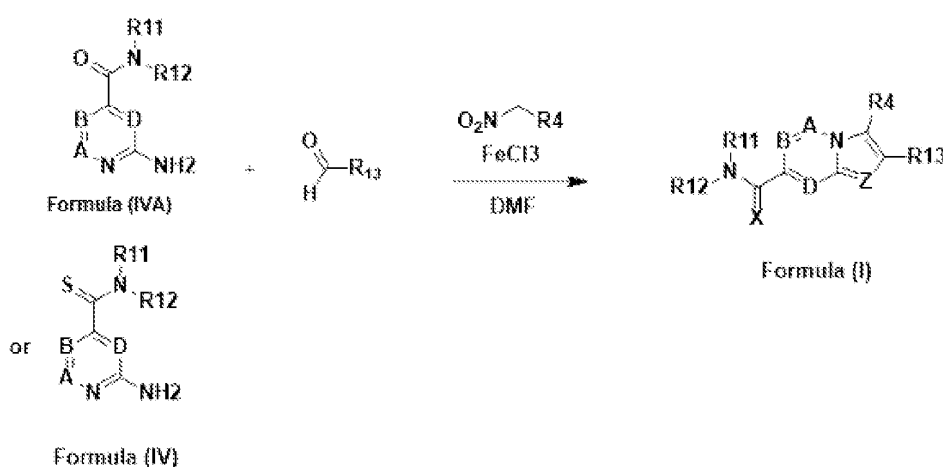
5 (R)-(3-aminopiperidin-1-yl)(2-(1-(2,2-difluoroethyl)-6-methoxy-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone (**83**),

(R)-(3-aminopiperidin-1-yl)(2-(5-fluoro-1-isobutyl-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone (**84**), and

10 (R)-(3-aminopiperidin-1-yl)(2-(1-(4-fluoro-3-methoxybenzyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone (**85**).

12. A process of preparation of compounds of Formula (I) as claimed in any one of claims 1-5, 11 or its polymorphs, stereoisomers, prodrugs, solvates, co-crystals, intermediates, pharmaceutically acceptable salts, and metabolites thereof, the process comprising reacting $R_{13}CH(O)$ and $R_4CH_2NO_2$ with a compound selected from

15 Formula (IVA) or Formula (IV)

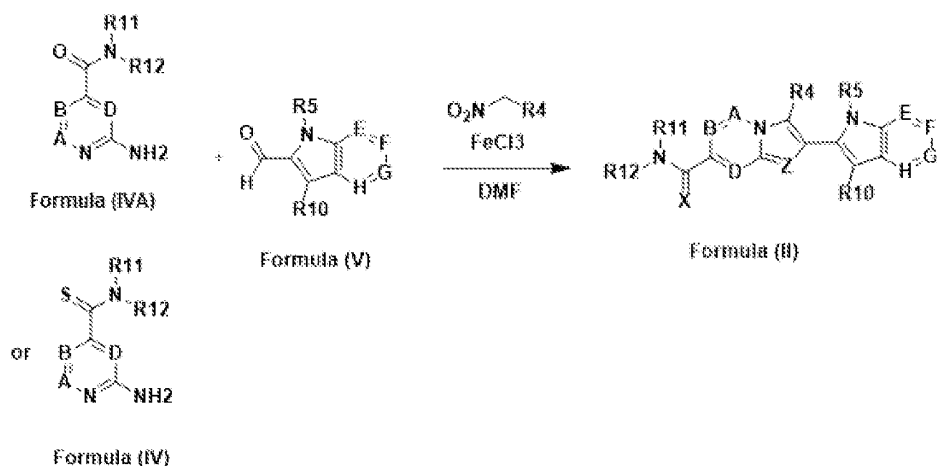


wherein R_{13} of $R_{13}CH(O)$ is selected from hydrogen, 5-10 membered monocyclic or bicyclic aryl, and 5-10 membered monocyclic or bicyclic heteroaryl with 1-5
 20 heteroatoms selected from N, S or O, wherein 5-10 membered monocyclic or bicyclic aryl, and 5-10 membered monocyclic or bicyclic heteroaryl are optionally substituted with 1-5 substituents selected from the group consisting of hydroxyl, cyano, halogen, C_{1-6} alkyl, C_{1-6} alkoxy, C_{3-6} cycloalkyl, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, C_{1-6} acylamino,

C₁₋₆ alkylamino, C₅₋₁₀ aryl, C₁₋₆ heterocyclyl, C₁₋₆ heteroaryl, C(O)C₁₋₆ alkyl, C(O)C₁₋₆ haloalkyl, C(O)NR₁₅, C(O)C₁₋₆ alkylamino, C(O)C₅₋₆ aryl, C(O)C₁₋₆ heteroaryl, SO₂C₁₋₆ alkyl, SO₂C₁₋₆ haloalkyl, SO₂C₃₋₆ cycloalkyl, SO₂NR₁₅, SO₂NC₁₋₆ alkylamino, SO₂C₅₋₆ aryl, or SO₂C₁₋₆ heteroaryl, wherein C₁₋₆ alkyl, C₁₋₆ alkoxy, C₃₋₆ cycloalkyl, C₅₋₁₀ aryl, C₁₋₆ heterocyclyl, and C₁₋₆ heteroaryl, is optionally substituted with one or more of the groups selected from hydrogen, C₁₋₆ alkyl, C₁₋₆ haloalkyl, C₁₋₆ alkoxy, C₃₋₆ cycloalkyl, C₅₋₆ aryl, C₁₋₆ heteroaryl, C₁₋₆ heterocyclyl, oxo, halogen, hydroxyl, and cyano, wherein C₅₋₆ aryl, C₁₋₆ heteroaryl, and C₁₋₆ heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, oxo, halogen, hydroxyl, -CH₂OH, and cyano; A of Formula (IVA) and (IV) is selected from N or CR₁; B is selected from N or CR₂; D is selected from N or CR₃; R₁₁ and R₁₂ are taken together to form a 5-10 membered monocyclic or bicyclic saturated or unsaturated heterocyclic ring optionally with 1-5 heteroatoms selected from N, S or O, wherein the 5-10 membered monocyclic or bicyclic saturated or unsaturated heterocyclic ring is optionally substituted with the substituents selected from amino, C₁₋₆ alkylamino, C₁₋₆ acylamino, -NHC(NH)CH₂Cl, -NH(CO)CH=CH-CH₂-N(CH₃)₂, C₁₋₆ alkyl, halogen, C₁₋₆ alkoxy, or hydroxyl; R₄ of R₄CH₂NO₂ is selected from hydrogen, hydroxyl, cyano, amino, halogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₃₋₆ cycloalkyl, C₁₋₆ haloalkyl, C₁₋₆ haloalkoxy, C₁₋₆ acylamino, C₁₋₆ alkylamino, C₅₋₁₀ aryl, C₁₋₆ heterocyclyl, C₁₋₆ heteroaryl, C(O)C₁₋₆ alkyl, C(O)C₁₋₆ haloalkyl, C(O)NR₁₅, C(O)C₁₋₆ alkylamino, C(O)C₅₋₆ aryl, C(O)C₁₋₆ heteroaryl, SO₂C₁₋₆ alkyl, SO₂C₁₋₆ haloalkyl, SO₂C₃₋₆ cycloalkyl, SO₂NR₁₅, SO₂NC₁₋₆ alkylamino, SO₂C₅₋₆ aryl, or SO₂C₁₋₆ heteroaryl, wherein C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₆ heteroaryl, and C₁₋₆ haloalkoxy, is optionally substituted with one or more of the groups selected from hydrogen, oxo, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₆ haloalkyl, C₁₋₆ alkylhydroxy, C₃₋₆ cycloalkyl, C₅₋₁₀ aryl, C₁₋₆ heterocyclyl, C₁₋₆ heteroaryl, cyano, halogen, and hydroxyl, wherein C₅₋₁₀ aryl, C₁₋₆ heteroaryl, and C₁₋₆ heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, oxo, halogen, hydroxyl, -CH₂OH, and cyano; X of Formula (I) is selected from O or S; Z is N; A is selected from N or CR₁; B is selected from N or CR₂; D is selected from N or CR₃; R₁, R₂, R₃, and R₄ are independently selected from hydrogen, hydroxyl, cyano, amino, halogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₃₋₆ cycloalkyl, C₁₋₆ haloalkyl, C₁₋₆ haloalkoxy, C₁₋₆ acylamino, C₁₋₆ alkylamino, C₅₋₁₀ aryl, C₁₋₆ heterocyclyl, C₁₋₆ heteroaryl, C(O)NR₁₅, C(O)C₁₋₆ alkylamino, C(O)C₅₋₆ aryl, C(O)C₁₋₆ heteroaryl, C(O)C₁₋₆ alkyl, C(O)C₁₋₆ haloalkyl, SO₂C₁₋₆ alkyl, SO₂C₁₋₆ haloalkyl, SO₂C₃₋₆

cycloalkyl, SO₂NR₁₅, SO₂NC₁₋₆ alkylamino, SO₂C₅₋₆ aryl, or SO₂C₁₋₆ heteroaryl, wherein C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₆ heteroaryl, and C₁₋₆ haloalkoxy, is optionally substituted with one or more of the groups selected from hydrogen, oxo, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₆ haloalkyl, C₃₋₆ cycloalkyl, C₅₋₁₀ aryl, C₁₋₆ heterocyclyl, C₁₋₆ heteroaryl, cyano, and hydroxyl; R₁₁ is hydrogen; R₁₂ is selected from C₁₋₆ alkylamino, and 5-10 membered monocyclic or bicyclic saturated heterocyclic ring with 1-3 heteroatoms selected from N, S or O, or R₁₁ and R₁₂ can be taken together to form a 5-10 membered monocyclic or bicyclic saturated or unsaturated heterocyclic ring with 1-5 heteroatoms selected from N, S or O, wherein the 5-10 membered monocyclic or bicyclic saturated or unsaturated heterocyclic ring is optionally substituted with the substituents selected from amino, C₁₋₆ alkylamino, C₁₋₆ acylamino, -NHC(NH)CH₂Cl, -NH(CO)CH=CH-CH₂-N(CH₃)₂, C₁₋₆ alkyl, halogen, C₁₋₆ alkoxy, or hydroxyl; R₁₃ is selected from hydrogen, 5-10 membered monocyclic or bicyclic aryl, and 5-10 membered monocyclic or bicyclic heteroaryl with 1-5 heteroatoms selected from N, S or O, wherein 5-10 membered monocyclic or bicyclic aryl, and 5-10 membered monocyclic or bicyclic heteroaryl are optionally substituted with 1-5 substituents selected from hydroxyl, cyano, halogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₃₋₆ cycloalkyl, C₁₋₆ haloalkyl, C₁₋₆ haloalkoxy, C₁₋₆ acylamino, C₁₋₆ alkylamino, C₅₋₁₀ aryl, C₁₋₆ heterocyclyl, C₁₋₆ heteroaryl, C(O)C₁₋₆ alkyl, C(O)C₁₋₆ haloalkyl, C(O)NR₁₅, C(O)C₁₋₆ alkylamino, C(O)C₅₋₆ aryl, C(O)C₁₋₆ heteroaryl, SO₂C₁₋₆ alkyl, SO₂C₁₋₆ haloalkyl, SO₂C₃₋₆ cycloalkyl, SO₂NR₁₅, SO₂NC₁₋₆ alkylamino, SO₂C₅₋₆ aryl, or SO₂C₁₋₆ heteroaryl, wherein C₁₋₆ alkyl, C₁₋₆ alkoxy, C₃₋₆ cycloalkyl, C₅₋₁₀ aryl, C₁₋₆ heterocyclyl, and C₁₋₆ heteroaryl, is optionally substituted with one or more of the groups selected from hydrogen, C₁₋₆ alkyl, C₁₋₆ haloalkyl, C₁₋₆ alkoxy, C₃₋₆ cycloalkyl, C₅₋₆ aryl, C₁₋₆ heteroaryl, C₁₋₆ heterocyclyl, oxo, halogen, hydroxyl, and cyano, wherein C₅₋₆ aryl, C₁₋₆ heteroaryl, and C₁₋₆ heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, oxo, halogen, hydroxyl, -CH₂OH, and cyano; and R₁₅ is selected from the group consisting of hydrogen, C₁₋₆ alkyl, and combinations thereof.

13. A process of preparation of compounds of Formula (II) as claimed in any one of claims 5-7, 11 or its polymorphs, stereoisomers, prodrugs, solvates, co-crystals, intermediates, pharmaceutically acceptable salts, and metabolites thereof, the process comprising reacting Formula (V) and R₄CH₂NO₂ with a compound selected from Formula (IVA) or Formula (IV)

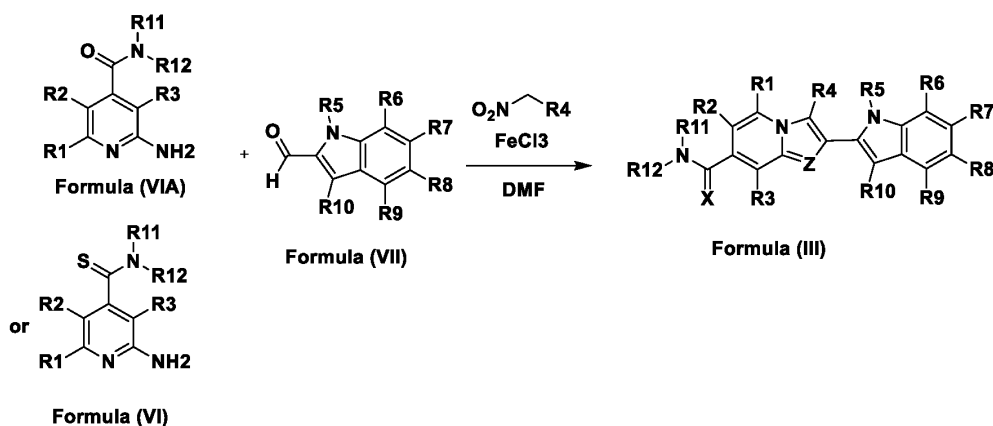


- wherein A of Formula (IVA) and (IV) is selected from N or CR₁; B is selected from N or CR₂; D is selected from N or CR₃; R₁₁ and R₁₂ are taken together to form a 5-10 membered monocyclic or bicyclic saturated or unsaturated heterocyclic ring optionally
- 5 with 1-5 heteroatoms selected from N, S or O, wherein the 5-10 membered monocyclic or bicyclic saturated or unsaturated heterocyclic ring is optionally substituted with the substituents selected from amino, C₁₋₆ alkylamino, C₁₋₆ acylamino, -NHC(NH)CH₂Cl, -NH(CO)CH=CH-CH₂-N(CH₃)₂, C₁₋₆ alkyl, halogen, C₁₋₆ alkoxy, or hydroxyl; R₄ of R₄CH₂NO₂ is selected from hydrogen, hydroxyl, cyano, amino, halogen, C₁₋₆ alkyl, C₁₋₆
- 10 alkoxy, C₃₋₆ cycloalkyl, C₁₋₆ haloalkyl, C₁₋₆ haloalkoxy, C₁₋₆ acylamino, C₁₋₆ alkylamino, C₅₋₁₀ aryl, C₁₋₆ heterocyclyl, C₁₋₆ heteroaryl, C(O)C₁₋₆ alkyl, C(O)C₁₋₆ haloalkyl, C(O)NR₁₅, C(O)C₁₋₆ alkylamino, C(O)C₅₋₆ aryl, C(O)C₁₋₆ heteroaryl, SO₂C₁₋₆ alkyl, SO₂C₁₋₆ haloalkyl, SO₂C₃₋₆ cycloalkyl, SO₂NR₁₅, SO₂NC₁₋₆ alkylamino, SO₂C₅₋₆ aryl, or SO₂C₁₋₆ heteroaryl, wherein C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₆ heteroaryl, and C₁₋₆
- 15 haloalkoxy, is optionally substituted with one or more of the groups selected from hydrogen, oxo, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₆ haloalkyl, C₁₋₆ alkylhydroxy, C₃₋₆ cycloalkyl, C₅₋₁₀ aryl, C₁₋₆ heterocyclyl, C₁₋₆ heteroaryl, cyano, halogen, and hydroxyl, wherein C₅₋₁₀ aryl, C₁₋₆ heteroaryl, and C₁₋₆ heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, oxo, halogen,
- 20 hydroxyl, -CH₂OH, and cyano; E of Formula (V) is selected from N, C₅₋₆ aryl or CR₆; F is absent or is selected from N, and CR₇; G is absent or is selected from N, and CR₈; H is absent or is selected from N, and CR₉; R₁, R₂, R₃, R₅, R₆, R₇, R₈, R₉ and R₁₀ are independently selected from hydrogen, hydroxyl, cyano, amino, halogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₃₋₆ cycloalkyl, C₁₋₆ haloalkyl, C₁₋₆ haloalkoxy, C₁₋₆ acylamino, C₁₋₆

alkylamino, C₅₋₁₀ aryl, C₁₋₆ heterocyclyl, C₁₋₆ heteroaryl, C(O)C₁₋₆ alkyl, C(O)C₁₋₆ haloalkyl, C(O)NR₁₅, C(O)C₁₋₆ alkylamino, C(O)C₅₋₆ aryl, C(O)C₁₋₆ heteroaryl, SO₂C₁₋₆ alkyl, SO₂C₁₋₆ haloalkyl, SO₂C₃₋₆ cycloalkyl, SO₂NR₁₅, SO₂NC₁₋₆ alkylamino, SO₂C₅₋₆ aryl, or SO₂C₁₋₆ heteroaryl, wherein C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₆ heteroaryl, and C₁₋₆ haloalkoxy, is optionally substituted with one or more of the groups selected from hydrogen, oxo, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₆ haloalkyl, C₁₋₆ alkylhydroxy, C₃₋₆ cycloalkyl, C₅₋₁₀ aryl, C₁₋₆ heterocyclyl, C₁₋₆ heteroaryl, cyano, halogen, and hydroxyl, wherein C₅₋₁₀ aryl, C₁₋₆ heteroaryl, and C₁₋₆ heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, oxo, halogen, hydroxyl, -CH₂OH, and cyano; X of Formula (II) is selected from O or S; Z is N; A is selected from N or CR₁; B is selected from N or CR₂; D is selected from N or CR₃; E is selected from N or CR₆; F is absent or is selected from N, and CR₇; G is absent or is selected from N, and CR₈; H is absent or is selected from N, and CR₉; R₁, R₂, R₃, R₄, R₅, R₆, R₇, R₈, R₉ and R₁₀ are independently selected from hydrogen, hydroxyl, cyano, amino, halogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₃₋₆ cycloalkyl, C₁₋₆ haloalkyl, C₁₋₆ haloalkoxy, C₁₋₆ acylamino, C₁₋₆ alkylamino, C₅₋₁₀ aryl, C₁₋₆ heterocyclyl, C₁₋₆ heteroaryl, C(O)C₁₋₆ alkyl, C(O)C₁₋₆ haloalkyl, C(O)NR₁₅, C(O)C₁₋₆ alkylamino, C(O)C₅₋₆ aryl, C(O)C₁₋₆ heteroaryl, SO₂C₁₋₆ alkyl, SO₂C₁₋₆ haloalkyl, SO₂C₃₋₆ cycloalkyl, SO₂NR₁₅, SO₂NC₁₋₆ alkylamino, SO₂C₅₋₆ aryl, or SO₂C₁₋₆ heteroaryl, wherein C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₆ heteroaryl, and C₁₋₆ haloalkoxy, is optionally substituted with one or more of the groups selected from hydrogen, oxo, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₆ haloalkyl, C₁₋₆ alkylhydroxy, C₃₋₆ cycloalkyl, C₅₋₁₀ aryl, C₁₋₆ heterocyclyl, C₁₋₆ heteroaryl, cyano, halogen, and hydroxyl, wherein C₅₋₁₀ aryl, C₁₋₆ heteroaryl, and C₁₋₆ heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, oxo, halogen, hydroxyl, -CH₂OH, and cyano; R₁₁ and R₁₂ are taken together to form a 5-10 membered monocyclic or bicyclic saturated or unsaturated heterocyclic ring optionally with 1-5 heteroatoms selected from N, S or O, wherein the 5-10 membered monocyclic or bicyclic saturated or unsaturated heterocyclic ring is optionally substituted with the substituents selected from amino, C₁₋₆ alkylamino, C₁₋₆ acylamino, -NHC(NH)CH₂Cl, -NH(CO)CH=CH-CH₂-N(CH₃)₂, C₁₋₆ alkyl, halogen, C₁₋₆ alkoxy, or hydroxyl; and R₁₅ is selected from the group consisting of hydrogen, C₁₋₆ alkyl, and combinations thereof.

14. A process of preparation of compounds of Formula (III) as claimed in any one of claims 8-11 or its polymorphs, stereoisomers, prodrugs, solvates, co-crystals,

intermediates, pharmaceutically acceptable salts, and metabolites thereof, the process comprising reacting Formula (VII) $R_4CH_2NO_2$ with a compound selected from Formula (VIA) or Formula (VI)



5

wherein R₁, R₂, and R₃ of Formula (VIA) and Formula (VI) are independently selected from hydrogen, hydroxyl, cyano, amino, halogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₃₋₆ cycloalkyl, C₁₋₆ haloalkyl, C₁₋₆ haloalkoxy, C₁₋₆ acylamino, C₁₋₆ alkylamino, C₅₋₁₀ aryl, C₁₋₆ heterocyclyl, C₁₋₆ heteroaryl, C(O)C₁₋₆ alkyl, C(O)C₁₋₆ haloalkyl, C(O)NR₁₅,
 10 C(O)C₁₋₆ alkylamino, C(O)C₅₋₆ aryl, C(O)C₁₋₆ heteroaryl, SO₂C₁₋₆ alkyl, SO₂C₁₋₆ haloalkyl, SO₂C₃₋₆ cycloalkyl, SO₂NR₁₅, SO₂NC₁₋₆ alkylamino, SO₂C₅₋₆ aryl, or SO₂C₁₋₆ heteroaryl, wherein C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₆ heteroaryl, and C₁₋₆ haloalkoxy, is optionally substituted with one or more of the groups selected from hydrogen, oxo, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₆ haloalkyl, C₁₋₆ alkylhydroxy, C₃₋₆ cycloalkyl, C₅₋₁₀ aryl, C₁₋₆
 15 heterocyclyl, C₁₋₆ heteroaryl, cyano, halogen, and hydroxyl, wherein C₅₋₁₀ aryl, C₁₋₆ heteroaryl, and C₁₋₆ heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, oxo, halogen, hydroxyl, -CH₂OH, and cyano; R₅, R₆, R₇, R₈, R₉ and R₁₀ of Formula (VII) and R₄ of R₄CH₂NO₂ are independently selected from hydrogen, hydroxyl, cyano, amino, halogen, C₁₋₆ alkyl,
 20 C₁₋₆ alkoxy, C₃₋₆ cycloalkyl, C₁₋₆ haloalkyl, C₁₋₆ haloalkoxy, C₁₋₆ acylamino, C₁₋₆ alkylamino, C₅₋₁₀ aryl, C₁₋₆ heterocyclyl, C₁₋₆ heteroaryl, C(O)C₁₋₆ alkyl, C(O)C₁₋₆ haloalkyl, C(O)NR₁₅, C(O)C₁₋₆ alkylamino, C(O)C₅₋₆ aryl, C(O)C₁₋₆ heteroaryl, SO₂C₁₋₆ alkyl, SO₂C₁₋₆ haloalkyl, SO₂C₃₋₆ cycloalkyl, SO₂NR₁₅, SO₂NC₁₋₆ alkylamino, SO₂C₅₋₆ aryl, or SO₂C₁₋₆ heteroaryl, wherein C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₆ heteroaryl, and C₁₋₆
 25 haloalkoxy, is optionally substituted with one or more of the groups selected from hydrogen, oxo, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₆ haloalkyl, C₁₋₆ alkylhydroxy, C₃₋₆

- cycloalkyl, C₅₋₁₀ aryl, C₁₋₆ heterocyclyl, C₁₋₆ heteroaryl, cyano, halogen, and hydroxyl, wherein C₅₋₁₀ aryl, C₁₋₆ heteroaryl, and C₁₋₆ heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, oxo, halogen, hydroxyl, -CH₂OH, and cyano; X of Formula (III) is selected from O or S; Z is N; R₁, R₂, R₃, R₄, R₅, R₆, R₇, R₈, R₉ and R₁₀ are independently selected from hydrogen, hydroxyl, cyano, amino, halogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₃₋₆ cycloalkyl, C₁₋₆ haloalkyl, C₁₋₆ haloalkoxy, C₁₋₆ acylamino, C₁₋₆ alkylamino, C₅₋₁₀ aryl, C₁₋₆ heterocyclyl, C₁₋₆ heteroaryl, C(O)C₁₋₆ alkyl, C(O)C₁₋₆ haloalkyl, C(O)NR₁₅, C(O)C₁₋₆ alkylamino, C(O)C₅₋₆ aryl, C(O)C₁₋₆ heteroaryl, SO₂C₁₋₆ alkyl, SO₂C₁₋₆ haloalkyl, SO₂C₃₋₆ cycloalkyl, SO₂NR₁₅, SO₂NC₁₋₆ alkylamino, SO₂C₅₋₆ aryl, or SO₂C₁₋₆ heteroaryl, wherein C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₆ heteroaryl, and C₁₋₆ haloalkoxy, is optionally substituted with one or more of the groups selected from hydrogen, oxo, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₆ haloalkyl, C₁₋₆ alkylhydroxy, C₃₋₆ cycloalkyl, C₅₋₁₀ aryl, C₁₋₆ heterocyclyl, C₁₋₆ heteroaryl, cyano, halogen, and hydroxyl, wherein C₅₋₁₀ aryl, C₁₋₆ heteroaryl, and C₁₋₆ heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, oxo, halogen, hydroxyl, -CH₂OH, and cyano; R₁₁ and R₁₂ are taken together to form a 5-10 membered monocyclic or bicyclic saturated or unsaturated heterocyclic ring optionally with 1-5 heteroatoms selected from N, S or O, wherein the 5-10 membered monocyclic or bicyclic saturated or unsaturated heterocyclic ring is optionally substituted with the substituents selected from amino, C₁₋₆ alkylamino, C₁₋₆ acylamino, -NHC(NH)CH₂Cl, -NH(CO)CH=CH-CH₂-N(CH₃)₂, C₁₋₆ alkyl, halogen, C₁₋₆ alkoxy, or hydroxyl; and R₁₅ is selected from the group consisting of hydrogen, C₁₋₆ alkyl, and combinations thereof.
15. A pharmaceutical composition comprising a compound of Formula (I), Formula (II), Formula (III), or a pharmaceutically acceptable salt thereof as claimed in any one of the claims 1-11 together with a pharmaceutically acceptable carrier, optionally in combination with one or more other pharmaceutical compositions.
16. The pharmaceutical composition as claimed in claim 15, wherein the composition is in a form selected from a tablet, capsule, powder, syrup, solution, aerosol, and suspension.
17. The compounds as claimed in any one of the claims 1-11 or a pharmaceutically acceptable salt thereof for use in the manufacture of a medicament for inhibiting one or more PADs in a cell.

18. A method for inhibiting one or more PAD family in a cell with an effective amount of the compound as claimed in any one of the claims 1-11.

19. A method of treating a condition mediated by one or more PAD's, the method comprising administering to a subject suffering from a condition mediated by one or more PAD family, a therapeutically effective amount of the compound as claimed in any one of claims 1-11 or the pharmaceutical composition as claimed in claim 15, or 16.

20. A compound of Formula (I), Formula (II), and Formula (III) as claimed in any one of the claims 1-11, used for the treatment of rheumatoid arthritis, vasculitis, systemic lupus erythematosus, ulcerative colitis, cancer, cystic fibrosis, asthma, cutaneous lupus erythematosus, and psoriasis.

21. Use of the compound as claimed in any one of the claim 1-11 or the pharmaceutical composition as claimed in claim 15, or 16 for the treatment of a condition mediated by one or more PAD family; or treatment and/or prevention of treatment of rheumatoid arthritis, vasculitis, systemic lupus erythematosus, ulcerative colitis, cancer, cystic fibrosis, asthma, cutaneous lupus erythematosus, and psoriasis together with other clinically relevant agents or biological agents.

22. Use of the compound as claimed in any one of the claim 1-11 or the pharmaceutical composition as claimed in claim 15, or 16 for treatment of a condition mediated by one or more PAD family; or treatment and/or prevention of acid-induced lung injury, respiratory distress syndrome, allergen induced asthma, allergic bronchopulmonary, chronic lung disease of prematurity, chronic obstructive pulmonary disease, colitis, cystic fibrosis, gouty arthritis, inflammatory bowel disease, inflammatory lung disease, inflammatory pain, juvenile rheumatoid arthritis, kidney disease, kidney injury caused by parasitic infections, kidney transplant rejection prophylaxis, lung injury, lupus, lupus nephritis, multiple sclerosis, muscular dystrophy, non-allergen induced asthma, osterarthritis, periodontitis, peritoneal endometriosis, psoriasis, pulmonary disease, pulmonary fibrosis, pyogenic sterile arthritis, renal disease, rheumatic disease, rheumatoid arthritis, sepsis, severe pain and ulcerative colitis, together with other clinically relevant agents or biological agents.

23. A method for the treatment and/or prevention of a condition mediated by one or more PAD family disorder, comprising administering to a subject suffering from the condition mediated by one or more PAD family a therapeutically effective amount of

the compound as claimed in any one of the claims 1-11, or the pharmaceutical composition as claimed in claim 15 or 16.

24. A method for the treatment of rheumatoid arthritis, said method comprising administering a combination of the compounds as claimed in any one of the claims 1-11
5 or the pharmaceutical composition as claimed in claim 15 or 16, with other clinically relevant agents or biological agents to a subject in need thereof.

25. A method of treatment of cancer, said method comprising administering a combination of the compounds as claimed in any one of the claims 1-11 or the pharmaceutical composition as claimed in claim 15 or 16, with other clinically relevant
10 immune modulators agents to a subject in need of thereof.