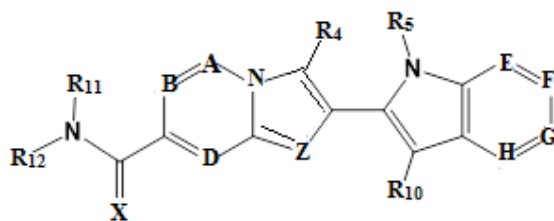


5-10 membered monocyclic or bicyclic aryl, and 5-10 membered monocyclic or bicyclic heteroaryl are optionally substituted with 1-5 substituents selected from hydroxyl, cyano, halogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>3-6</sub> cycloalkyl, C<sub>1-6</sub> haloalkyl, C<sub>1-6</sub> haloalkoxy, C<sub>1-6</sub> acylamino, C<sub>1-6</sub> alkylamino, C<sub>5-10</sub> aryl, C<sub>1-10</sub> heterocyclyl, C<sub>1-10</sub> heteroaryl, C(O)C<sub>1-6</sub> alkyl, C(O)C<sub>1-6</sub> haloalkyl, C(O)NR<sub>15</sub>, C(O)C<sub>1-6</sub> alkylamino, C(O)C<sub>5-6</sub> aryl, C(O)C<sub>1-6</sub> heteroaryl, SO<sub>2</sub>C<sub>1-6</sub> alkyl, SO<sub>2</sub>C<sub>1-6</sub> haloalkyl, SO<sub>2</sub>C<sub>3-6</sub> cycloalkyl, SO<sub>2</sub>NR<sub>15</sub>, SO<sub>2</sub>NC<sub>1-6</sub> alkylamino, SO<sub>2</sub>C<sub>5-6</sub> aryl, or SO<sub>2</sub>C<sub>1-6</sub> heteroaryl, wherein C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>3-6</sub> cycloalkyl, C<sub>5-10</sub> aryl, C<sub>1-10</sub> heterocyclyl, and C<sub>1-10</sub> heteroaryl, is optionally substituted with one or more of the groups selected from hydrogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> haloalkyl, C<sub>1-6</sub> alkoxy, C<sub>3-6</sub> cycloalkyl, C<sub>5-6</sub> aryl, C<sub>1-6</sub> heteroaryl, C<sub>1-6</sub> heterocyclyl, oxo, halogen, hydroxyl, and cyano, wherein C<sub>5-6</sub> aryl, C<sub>1-6</sub> heteroaryl, and C<sub>1-6</sub> heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, oxo, halogen, hydroxyl, -CH<sub>2</sub>OH, and cyano;

and

R<sub>15</sub> is selected from the group consisting of hydrogen, C<sub>1-6</sub> alkyl, and combinations thereof.

[0012b] In another ~~aspect, the present disclosure provides for~~example there is disclosed 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 CR<sub>1</sub>;

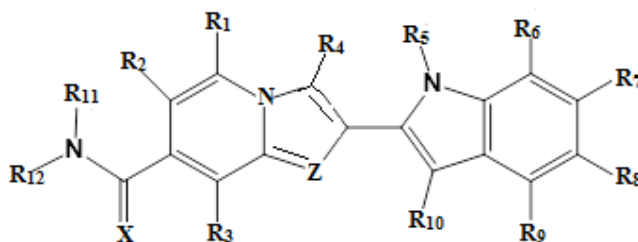
B is selected from N or CR<sub>2</sub>;

D is selected from N or CR<sub>3</sub>;

E is selected from N or CR<sub>6</sub>;

- F is absent or is selected from N, and CR<sub>7</sub>;  
 G is absent or is selected from N, and CR<sub>8</sub>;  
 H is absent or is selected from N, and CR<sub>9</sub>;  
 R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub>, R<sub>9</sub> and R<sub>10</sub> are independently selected from hydrogen,  
 5 hydroxyl, cyano, amino, halogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>3-6</sub> cycloalkyl, C<sub>1-6</sub> haloalkyl, C<sub>1-6</sub> haloalkoxy, C<sub>1-6</sub> acylamino, C<sub>1-6</sub> alkylamino, C<sub>5-10</sub> aryl, C<sub>1-10</sub> heterocyclyl, C<sub>1-10</sub> heteroaryl, C(O)C<sub>1-6</sub> alkyl, C(O)C<sub>1-6</sub> haloalkyl, C(O)NR<sub>15</sub>, C(O)C<sub>1-6</sub> alkylamino, C(O)C<sub>5-6</sub> aryl, C(O)C<sub>1-6</sub> heteroaryl, SO<sub>2</sub>C<sub>1-6</sub> alkyl, SO<sub>2</sub>C<sub>1-6</sub> haloalkyl, SO<sub>2</sub>C<sub>3-6</sub> cycloalkyl, SO<sub>2</sub>NR<sub>15</sub>, SO<sub>2</sub>NC<sub>1-6</sub> alkylamino, SO<sub>2</sub>C<sub>5-6</sub> aryl, or SO<sub>2</sub>C<sub>1-6</sub> heteroaryl,  
 10 wherein  
 C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>1-10</sub> heteroaryl, and C<sub>1-6</sub> haloalkoxy, is optionally substituted with one or more of the groups selected from hydrogen, oxo, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> haloalkyl, C<sub>1-6</sub> alkylhydroxy, C<sub>3-6</sub> cycloalkyl, C<sub>5-9</sub> aryl, C<sub>1-6</sub> heterocyclyl, C<sub>1-6</sub> heteroaryl, cyano, halogen, and hydroxyl, wherein C<sub>5-9</sub> aryl, C<sub>1-6</sub> heteroaryl, and C<sub>1-6</sub>  
 15 heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, oxo, halogen, hydroxyl, -CH<sub>2</sub>OH, and cyano;  
 R<sub>11</sub> and R<sub>12</sub> 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  
 20 the 5-10 membered monocyclic or bicyclic saturated or unsaturated heterocyclic ring is optionally substituted with the substituents selected from amino, C<sub>1-6</sub> alkylamino, C<sub>1-6</sub> acylamino, -NHC(NH)CH<sub>2</sub>Cl, -NH(CO)CH=CH-CH<sub>2</sub>-N(CH<sub>3</sub>)<sub>2</sub>, C<sub>1-6</sub> alkyl, halogen, C<sub>1-6</sub> alkoxy, or hydroxyl;  
 and  
 25 R<sub>15</sub> is selected from the group consisting of hydrogen, C<sub>1-6</sub> alkyl, and combinations thereof.

[0012c] In yet another ~~example there is disclosed aspect, the present disclosure provides for~~ a compound of Formula (III)



Formula (III)

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

wherein

5 X is selected from O or S;

Z is N;

R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub>, R<sub>9</sub> and R<sub>10</sub> are independently selected from hydrogen, hydroxyl, cyano, amino, halogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>3-6</sub> cycloalkyl, C<sub>1-6</sub> haloalkyl, C<sub>1-6</sub> haloalkoxy, C<sub>1-6</sub> acylamino, C<sub>1-6</sub> alkylamino, C<sub>5-10</sub> aryl, C<sub>1-10</sub> heterocyclyl, C<sub>1-10</sub> heteroaryl, C(O)C<sub>1-6</sub> alkyl, C(O)C<sub>1-6</sub> haloalkyl, C(O)NR<sub>15</sub>, C(O)C<sub>1-6</sub> alkylamino, C(O)C<sub>5-6</sub> aryl, C(O)C<sub>1-6</sub> heteroaryl, SO<sub>2</sub>C<sub>1-6</sub> alkyl, SO<sub>2</sub>C<sub>1-6</sub> haloalkyl, SO<sub>2</sub>C<sub>3-6</sub> cycloalkyl, SO<sub>2</sub>NR<sub>15</sub>, SO<sub>2</sub>NC<sub>1-6</sub> alkylamino, SO<sub>2</sub>C<sub>5-6</sub> aryl, or SO<sub>2</sub>C<sub>1-6</sub> heteroaryl, wherein

C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>1-10</sub> heteroaryl, and C<sub>1-6</sub> haloalkoxy, is optionally substituted with one or more of the groups selected from hydrogen, oxo, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> haloalkyl, C<sub>1-6</sub> alkylhydroxy, C<sub>3-6</sub> cycloalkyl, C<sub>5-9</sub> aryl, C<sub>1-6</sub> heterocyclyl, C<sub>1-6</sub> heteroaryl, cyano, halogen, and hydroxyl, wherein C<sub>5-9</sub> aryl, C<sub>1-6</sub> heteroaryl, and C<sub>1-6</sub> heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, oxo, halogen, hydroxyl, -CH<sub>2</sub>OH, and cyano;

20 R<sub>11</sub> and R<sub>12</sub> 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

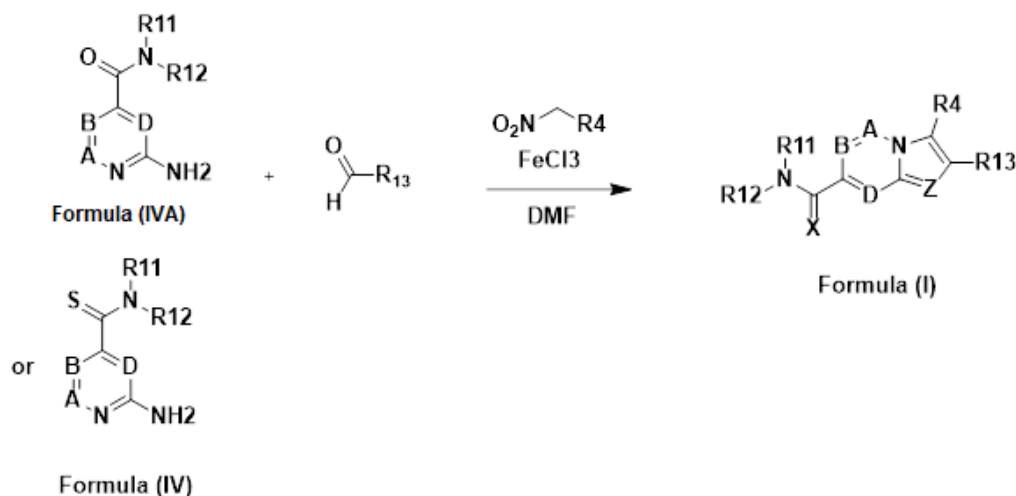
the 5-10 membered monocyclic or bicyclic saturated or unsaturated heterocyclic ring is optionally substituted with the substituents selected from amino, C<sub>1-6</sub> alkylamino, C<sub>1-6</sub>

25 acylamino, -NHC(NH)CH<sub>2</sub>Cl, -NH(CO)CH=CH-CH<sub>2</sub>-N(CH<sub>3</sub>)<sub>2</sub>, C<sub>1-6</sub> alkyl, halogen, C<sub>1-6</sub> alkoxy, or hydroxyl;

and

R<sub>15</sub> is selected from the group consisting of hydrogen, C<sub>1-6</sub> alkyl, and combinations thereof.

30 **[0012d]**In yet another ~~example there is disclosed aspect, the present disclosure provides for a~~ process of preparation of compounds of Formula (I) disclosed herein or its polymorphs, stereoisomers, prodrugs, solvates, co-crystals, intermediates, pharmaceutically acceptable salts, and metabolites thereof, the process comprising reacting R<sub>13</sub>CH(O) and R<sub>4</sub>CH<sub>2</sub>NO<sub>2</sub> with a compound selected from Formula (IVA) or Formula (IV)

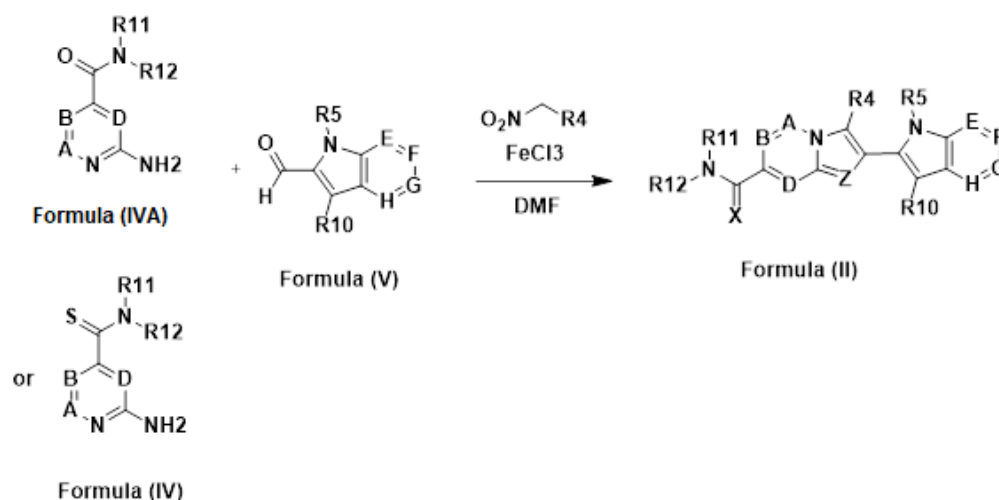


wherein R<sub>13</sub> of R<sub>13</sub>CH(O) is selected from hydrogen, 5-10 membered monocyclic or bicyclic aryl, and 5-10 membered monocyclic or bicyclic heteroaryl with 1-5 heteroatoms selected from N, S or O, wherein 5-10 membered monocyclic or bicyclic aryl, and 5-10 membered monocyclic or bicyclic heteroaryl are optionally substituted with 1-5 substituents selected from the group consisting of hydroxyl, cyano, halogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>3-6</sub> cycloalkyl, C<sub>1-6</sub> haloalkyl, C<sub>1-6</sub> haloalkoxy, C<sub>1-6</sub> acylamino, C<sub>1-6</sub> alkylamino, C<sub>5-10</sub> aryl, C<sub>1-6</sub> heterocyclyl, C<sub>1-6</sub> heteroaryl, C(O)C<sub>1-6</sub> alkyl, C(O)C<sub>1-6</sub> haloalkyl, C(O)NR<sub>15</sub>, C(O)C<sub>1-6</sub> alkylamino, C(O)C<sub>5-6</sub> aryl, C(O)C<sub>1-6</sub> heteroaryl, SO<sub>2</sub>C<sub>1-6</sub> alkyl, SO<sub>2</sub>C<sub>1-6</sub> haloalkyl, SO<sub>2</sub>C<sub>3-6</sub> cycloalkyl, SO<sub>2</sub>NR<sub>15</sub>, SO<sub>2</sub>NC<sub>1-6</sub> alkylamino, SO<sub>2</sub>C<sub>5-6</sub> aryl, or SO<sub>2</sub>C<sub>1-6</sub> heteroaryl, wherein C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>3-6</sub> cycloalkyl, C<sub>5-10</sub> aryl, C<sub>1-6</sub> heterocyclyl, and C<sub>1-6</sub> heteroaryl, is optionally substituted with one or more of the groups selected from hydrogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> haloalkyl, C<sub>1-6</sub> alkoxy, C<sub>3-6</sub> cycloalkyl, C<sub>5-6</sub> aryl, C<sub>1-6</sub> heteroaryl, C<sub>1-6</sub> heterocyclyl, oxo, halogen, hydroxyl, and cyano, wherein C<sub>5-6</sub> aryl, C<sub>1-6</sub> heteroaryl, and C<sub>1-6</sub> heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, oxo, halogen, hydroxyl, -CH<sub>2</sub>OH, and cyano; A of Formula (IVA) and (IV) is selected from N or CR<sub>1</sub>; B is selected from N or CR<sub>2</sub>; D is selected from N or CR<sub>3</sub>; R<sub>11</sub> and R<sub>12</sub> 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, C<sub>1-6</sub> alkylamino, C<sub>1-6</sub> acylamino, -NHC(NH)CH<sub>2</sub>Cl, -NH(CO)CH=CH-CH<sub>2</sub>-N(CH<sub>3</sub>)<sub>2</sub>, C<sub>1-6</sub> alkyl, halogen, C<sub>1-</sub>

<sub>6</sub> alkoxy, or hydroxyl; R<sub>4</sub> of R<sub>4</sub>CH<sub>2</sub>NO<sub>2</sub> is selected from hydrogen, hydroxyl, cyano, amino, halogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>3-6</sub> cycloalkyl, C<sub>1-6</sub> haloalkyl, C<sub>1-6</sub> haloalkoxy, C<sub>1-6</sub> acylamino, C<sub>1-6</sub> alkylamino, C<sub>5-10</sub> aryl, C<sub>1-6</sub> heterocyclyl, C<sub>1-6</sub> heteroaryl, C(O)C<sub>1-6</sub> alkyl, C(O)C<sub>1-6</sub> haloalkyl, C(O)NR<sub>15</sub>, C(O)C<sub>1-6</sub> alkylamino, C(O)C<sub>5-6</sub> aryl, C(O)C<sub>1-6</sub> heteroaryl, SO<sub>2</sub>C<sub>1-6</sub> alkyl, SO<sub>2</sub>C<sub>1-6</sub> haloalkyl, SO<sub>2</sub>C<sub>3-6</sub> cycloalkyl, SO<sub>2</sub>NR<sub>15</sub>, SO<sub>2</sub>NC<sub>1-6</sub> alkylamino, SO<sub>2</sub>C<sub>5-6</sub> aryl, or SO<sub>2</sub>C<sub>1-6</sub> heteroaryl, wherein C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> heteroaryl, and C<sub>1-6</sub> haloalkoxy, is optionally substituted with one or more of the groups selected from hydrogen, oxo, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> haloalkyl, C<sub>1-6</sub> alkylhydroxy, C<sub>3-6</sub> cycloalkyl, C<sub>5-10</sub> aryl, C<sub>1-6</sub> heterocyclyl, C<sub>1-6</sub> heteroaryl, cyano, halogen, and hydroxyl, wherein C<sub>5-10</sub> aryl, C<sub>1-6</sub> heteroaryl, and C<sub>1-6</sub> heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, oxo, halogen, hydroxyl, -CH<sub>2</sub>OH, and cyano; X of Formula (I) is selected from O or S; Z is N; A is selected from N or CR<sub>1</sub>; B is selected from N or CR<sub>2</sub>; D is selected from N or CR<sub>3</sub>; R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, and R<sub>4</sub> are independently selected from hydrogen, hydroxyl, cyano, amino, halogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>3-6</sub> cycloalkyl, C<sub>1-6</sub> haloalkyl, C<sub>1-6</sub> haloalkoxy, C<sub>1-6</sub> acylamino, C<sub>1-6</sub> alkylamino, C<sub>5-10</sub> aryl, C<sub>1-6</sub> heterocyclyl, C<sub>1-6</sub> heteroaryl, C(O)NR<sub>15</sub>, C(O)C<sub>1-6</sub> alkylamino, C(O)C<sub>5-6</sub> aryl, C(O)C<sub>1-6</sub> heteroaryl, C(O)C<sub>1-6</sub> alkyl, C(O)C<sub>1-6</sub> haloalkyl, SO<sub>2</sub>C<sub>1-6</sub> alkyl, SO<sub>2</sub>C<sub>1-6</sub> haloalkyl, SO<sub>2</sub>C<sub>3-6</sub> cycloalkyl, SO<sub>2</sub>NR<sub>15</sub>, SO<sub>2</sub>NC<sub>1-6</sub> alkylamino, SO<sub>2</sub>C<sub>5-6</sub> aryl, or SO<sub>2</sub>C<sub>1-6</sub> heteroaryl, wherein C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> heteroaryl, and C<sub>1-6</sub> haloalkoxy, is optionally substituted with one or more of the groups selected from hydrogen, oxo, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> haloalkyl, C<sub>3-6</sub> cycloalkyl, C<sub>5-10</sub> aryl, C<sub>1-6</sub> heterocyclyl, C<sub>1-6</sub> heteroaryl, cyano, and hydroxyl; R<sub>11</sub> is hydrogen; R<sub>12</sub> is selected from C<sub>1-6</sub> alkylamino, and 5-10 membered monocyclic or bicyclic saturated heterocyclic ring with 1-3 heteroatoms selected from N, S or O, or R<sub>11</sub> and R<sub>12</sub> 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, C<sub>1-6</sub> alkylamino, C<sub>1-6</sub> acylamino, -NHC(NH)CH<sub>2</sub>Cl, -NH(CO)CH=CH-CH<sub>2</sub>-N(CH<sub>3</sub>)<sub>2</sub>, C<sub>1-6</sub> alkyl, halogen, C<sub>1-6</sub> alkoxy, or hydroxyl; R<sub>13</sub> 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, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>3-6</sub> cycloalkyl, C<sub>1-6</sub> haloalkyl, C<sub>1-6</sub> haloalkoxy, C<sub>1-6</sub> acylamino, C<sub>1-6</sub> alkylamino, C<sub>5-10</sub> aryl, C<sub>1-6</sub> heterocyclyl, C<sub>1-6</sub> heteroaryl, C(O)C<sub>1-6</sub> alkyl, C(O)C<sub>1-6</sub> haloalkyl, C(O)NR<sub>15</sub>, C(O)C<sub>1-6</sub> alkylamino, C(O)C<sub>5-6</sub> aryl, C(O)C<sub>1-6</sub> heteroaryl, SO<sub>2</sub>C<sub>1-6</sub> alkyl, SO<sub>2</sub>C<sub>1-6</sub> haloalkyl, SO<sub>2</sub>C<sub>3-6</sub> cycloalkyl, SO<sub>2</sub>NR<sub>15</sub>, SO<sub>2</sub>NC<sub>1-6</sub> alkylamino, SO<sub>2</sub>C<sub>5-6</sub> aryl, or SO<sub>2</sub>C<sub>1-6</sub> heteroaryl, wherein C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>3-6</sub> cycloalkyl, C<sub>5-10</sub> aryl, C<sub>1-6</sub> heterocyclyl, and C<sub>1-6</sub> heteroaryl, is optionally substituted with one or more of the groups selected from hydrogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> haloalkyl, C<sub>1-6</sub> alkoxy, C<sub>3-6</sub> cycloalkyl, C<sub>5-6</sub> aryl, C<sub>1-6</sub> heteroaryl, C<sub>1-6</sub> heterocyclyl, oxo, halogen, hydroxyl, and cyano, wherein C<sub>5-6</sub> aryl, C<sub>1-6</sub> heteroaryl, and C<sub>1-6</sub> heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, oxo, halogen, hydroxyl, -CH<sub>2</sub>OH, and cyano; and R<sub>15</sub> is selected from the group consisting of hydrogen, C<sub>1-6</sub> alkyl, and combinations thereof

**[0012e]** In yet another ~~example there is disclosed aspect, the present disclosure provides for~~ a process of preparation of compounds of Formula (II) as disclosed herein or its polymorphs, stereoisomers, prodrugs, solvates, co-crystals, intermediates, pharmaceutically acceptable salts, and metabolites thereof, the process comprising reacting Formula (V) and R<sub>4</sub>CH<sub>2</sub>NO<sub>2</sub> with a compound selected from Formula (IVA) or Formula (IV)

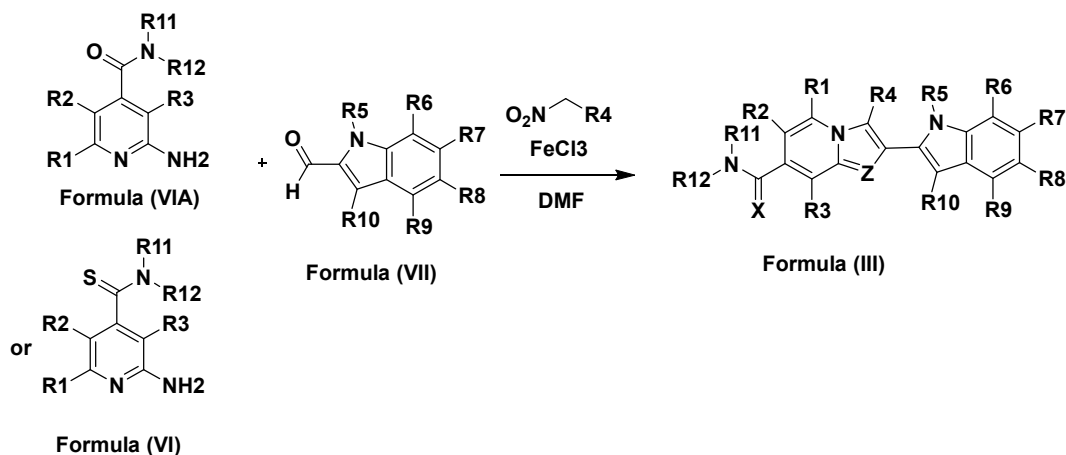


wherein A of Formula (IVA) and (IV) is selected from N or CR<sub>1</sub>; B is selected from N or CR<sub>2</sub>; D is selected from N or CR<sub>3</sub>; R<sub>11</sub> and R<sub>12</sub> are taken together to form a 5-10 membered monocyclic or bicyclic saturated or unsaturated heterocyclic ring optionally 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, C<sub>1-6</sub> alkylamino, C<sub>1-6</sub> acylamino, -NHC(NH)CH<sub>2</sub>Cl, -NH(CO)CH=CH-CH<sub>2</sub>-N(CH<sub>3</sub>)<sub>2</sub>, C<sub>1-6</sub> alkyl, halogen, C<sub>1-6</sub> alkoxy, or hydroxyl; R<sub>4</sub> of R<sub>4</sub>CH<sub>2</sub>NO<sub>2</sub> is selected from hydrogen, hydroxyl, cyano, amino, halogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>3-6</sub> cycloalkyl, C<sub>1-6</sub> haloalkyl, C<sub>1-6</sub> haloalkoxy, C<sub>1-6</sub> acylamino, C<sub>1-6</sub> alkylamino, C<sub>5-10</sub> aryl, C<sub>1-6</sub> heterocyclyl, C<sub>1-6</sub> heteroaryl, C(O)C<sub>1-6</sub> alkyl, C(O)C<sub>1-6</sub> haloalkyl, C(O)NR<sub>15</sub>, C(O)C<sub>1-6</sub> alkylamino, C(O)C<sub>5-6</sub> aryl, C(O)C<sub>1-6</sub> heteroaryl, SO<sub>2</sub>C<sub>1-6</sub> alkyl, SO<sub>2</sub>C<sub>1-6</sub> haloalkyl, SO<sub>2</sub>C<sub>3-6</sub> cycloalkyl, SO<sub>2</sub>NR<sub>15</sub>, SO<sub>2</sub>NC<sub>1-6</sub> alkylamino, SO<sub>2</sub>C<sub>5-6</sub> aryl, or SO<sub>2</sub>C<sub>1-6</sub> heteroaryl, wherein C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> heteroaryl, and C<sub>1-6</sub> haloalkoxy, is optionally substituted with one or more of the groups selected from hydrogen, oxo, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> haloalkyl, C<sub>1-6</sub> alkylhydroxy, C<sub>3-6</sub> cycloalkyl, C<sub>5-10</sub> aryl, C<sub>1-6</sub> heterocyclyl, C<sub>1-6</sub> heteroaryl, cyano, halogen, and hydroxyl, wherein C<sub>5-10</sub> aryl, C<sub>1-6</sub> heteroaryl, and C<sub>1-6</sub> heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, oxo, halogen, hydroxyl, -CH<sub>2</sub>OH, and cyano; E of Formula (V) is selected from N, C<sub>5-6</sub> aryl or CR<sub>6</sub>; F is absent or is selected from N, and CR<sub>7</sub>; G is absent or is selected from N, and CR<sub>8</sub>; H is absent or is selected from N, and CR<sub>9</sub>; R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub>, R<sub>9</sub> and R<sub>10</sub> are independently selected from hydrogen, hydroxyl, cyano, amino, halogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>3-6</sub> cycloalkyl, C<sub>1-6</sub> haloalkyl, C<sub>1-6</sub> haloalkoxy, C<sub>1-6</sub> acylamino, C<sub>1-6</sub> alkylamino, C<sub>5-10</sub> aryl, C<sub>1-6</sub> heterocyclyl, C<sub>1-6</sub> heteroaryl, C(O)C<sub>1-6</sub> alkyl, C(O)C<sub>1-6</sub> haloalkyl, C(O)NR<sub>15</sub>, C(O)C<sub>1-6</sub> alkylamino, C(O)C<sub>5-6</sub> aryl, C(O)C<sub>1-6</sub> heteroaryl, SO<sub>2</sub>C<sub>1-6</sub> alkyl, SO<sub>2</sub>C<sub>1-6</sub> haloalkyl, SO<sub>2</sub>C<sub>3-6</sub> cycloalkyl, SO<sub>2</sub>NR<sub>15</sub>, SO<sub>2</sub>NC<sub>1-6</sub> alkylamino, SO<sub>2</sub>C<sub>5-6</sub> aryl, or SO<sub>2</sub>C<sub>1-6</sub> heteroaryl, wherein C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> heteroaryl, and C<sub>1-6</sub> haloalkoxy, is optionally substituted with one or more of the groups selected from hydrogen, oxo, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> haloalkyl, C<sub>1-6</sub> alkylhydroxy, C<sub>3-6</sub> cycloalkyl, C<sub>5-10</sub> aryl, C<sub>1-6</sub> heterocyclyl, C<sub>1-6</sub> heteroaryl, cyano, halogen, and hydroxyl, wherein C<sub>5-10</sub> aryl, C<sub>1-6</sub> heteroaryl, and C<sub>1-6</sub> heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, oxo, halogen, hydroxyl, -CH<sub>2</sub>OH, and cyano; X of Formula (II) is selected from O or S; Z is N; A is selected from N or CR<sub>1</sub>; B is selected from N or CR<sub>2</sub>; D is selected from N or CR<sub>3</sub>; E is selected from N or CR<sub>6</sub>; F is absent or is selected from N, and CR<sub>7</sub>; G is absent or is selected from N, and CR<sub>8</sub>; H is absent or is selected from N, and CR<sub>9</sub>; R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub>, R<sub>9</sub> and R<sub>10</sub> are independently selected from hydrogen, hydroxyl, cyano, amino, halogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>3-6</sub> cycloalkyl, C<sub>1-6</sub> haloalkyl, C<sub>1-6</sub> haloalkoxy,

C<sub>1-6</sub> acylamino, C<sub>1-6</sub> alkylamino, C<sub>5-10</sub> aryl, C<sub>1-6</sub> heterocyclyl, C<sub>1-6</sub> heteroaryl, C(O)C<sub>1-6</sub> alkyl, C(O)C<sub>1-6</sub> haloalkyl, C(O)NR<sub>15</sub>, C(O)C<sub>1-6</sub> alkylamino, C(O)C<sub>5-6</sub> aryl, C(O)C<sub>1-6</sub> heteroaryl, SO<sub>2</sub>C<sub>1-6</sub> alkyl, SO<sub>2</sub>C<sub>1-6</sub> haloalkyl, SO<sub>2</sub>C<sub>3-6</sub> cycloalkyl, SO<sub>2</sub>NR<sub>15</sub>, SO<sub>2</sub>NC<sub>1-6</sub> alkylamino, SO<sub>2</sub>C<sub>5-6</sub> aryl, or SO<sub>2</sub>C<sub>1-6</sub> heteroaryl, wherein C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> heteroaryl, and C<sub>1-6</sub> haloalkoxy, is optionally substituted with one or more of the groups selected from hydrogen, oxo, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> haloalkyl, C<sub>1-6</sub> alkylhydroxy, C<sub>3-6</sub> cycloalkyl, C<sub>5-10</sub> aryl, C<sub>1-6</sub> heterocyclyl, C<sub>1-6</sub> heteroaryl, cyano, halogen, and hydroxyl, wherein C<sub>5-10</sub> aryl, C<sub>1-6</sub> heteroaryl, and C<sub>1-6</sub> heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, oxo, halogen, hydroxyl, -CH<sub>2</sub>OH, and cyano; R<sub>11</sub> and R<sub>12</sub> 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, C<sub>1-6</sub> alkylamino, C<sub>1-6</sub> acylamino, -NHC(NH)CH<sub>2</sub>Cl, -NH(CO)CH=CH-CH<sub>2</sub>-N(CH<sub>3</sub>)<sub>2</sub>, C<sub>1-6</sub> alkyl, halogen, C<sub>1-6</sub> alkoxy, or hydroxyl; and R<sub>15</sub> is selected from the group consisting of hydrogen, C<sub>1-6</sub> alkyl, and combinations thereof.

**[0012f]** In yet another ~~example there is disclosed aspect, the present disclosure provides for~~ a process of preparation of compounds of Formula (III) as disclosed herein or its polymorphs, stereoisomers, prodrugs, solvates, co-crystals, intermediates, pharmaceutically acceptable salts, and metabolites thereof, the process comprising reacting Formula (VII) R<sub>4</sub>CH<sub>2</sub>NO<sub>2</sub> with a compound selected from Formula (VIA) or Formula (VI)



wherein R<sub>1</sub>, R<sub>2</sub>, and R<sub>3</sub> of Formula (VIA) and Formula (VI) are independently selected from hydrogen, hydroxyl, cyano, amino, halogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>3-6</sub>

cycloalkyl, C<sub>1-6</sub> haloalkyl, C<sub>1-6</sub> haloalkoxy, C<sub>1-6</sub> acylamino, C<sub>1-6</sub> alkylamino, C<sub>5-10</sub> aryl, C<sub>1-6</sub> heterocyclyl, C<sub>1-6</sub> heteroaryl, C(O)C<sub>1-6</sub> alkyl, C(O)C<sub>1-6</sub> haloalkyl, C(O)NR<sub>15</sub>, C(O)C<sub>1-6</sub> alkylamino, C(O)C<sub>5-6</sub> aryl, C(O)C<sub>1-6</sub> heteroaryl, SO<sub>2</sub>C<sub>1-6</sub> alkyl, SO<sub>2</sub>C<sub>1-6</sub> haloalkyl, SO<sub>2</sub>C<sub>3-6</sub> cycloalkyl, SO<sub>2</sub>NR<sub>15</sub>, SO<sub>2</sub>NC<sub>1-6</sub> alkylamino, SO<sub>2</sub>C<sub>5-6</sub> aryl, or SO<sub>2</sub>C<sub>1-6</sub> heteroaryl, wherein C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> heteroaryl, and C<sub>1-6</sub> haloalkoxy, is optionally substituted with one or more of the groups selected from hydrogen, oxo, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> haloalkyl, C<sub>1-6</sub> alkylhydroxy, C<sub>3-6</sub> cycloalkyl, C<sub>5-10</sub> aryl, C<sub>1-6</sub> heterocyclyl, C<sub>1-6</sub> heteroaryl, cyano, halogen, and hydroxyl, wherein C<sub>5-10</sub> aryl, C<sub>1-6</sub> heteroaryl, and C<sub>1-6</sub> heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, oxo, halogen, hydroxyl, -CH<sub>2</sub>OH, and cyano; R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub>, R<sub>9</sub> and R<sub>10</sub> of Formula (VII) and R<sub>4</sub> of R<sub>4</sub>CH<sub>2</sub>NO<sub>2</sub> are independently selected from hydrogen, hydroxyl, cyano, amino, halogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>3-6</sub> cycloalkyl, C<sub>1-6</sub> haloalkyl, C<sub>1-6</sub> haloalkoxy, C<sub>1-6</sub> acylamino, C<sub>1-6</sub> alkylamino, C<sub>5-10</sub> aryl, C<sub>1-6</sub> heterocyclyl, C<sub>1-6</sub> heteroaryl, C(O)C<sub>1-6</sub> alkyl, C(O)C<sub>1-6</sub> haloalkyl, C(O)NR<sub>15</sub>, C(O)C<sub>1-6</sub> alkylamino, C(O)C<sub>5-6</sub> aryl, C(O)C<sub>1-6</sub> heteroaryl, SO<sub>2</sub>C<sub>1-6</sub> alkyl, SO<sub>2</sub>C<sub>1-6</sub> haloalkyl, SO<sub>2</sub>C<sub>3-6</sub> cycloalkyl, SO<sub>2</sub>NR<sub>15</sub>, SO<sub>2</sub>NC<sub>1-6</sub> alkylamino, SO<sub>2</sub>C<sub>5-6</sub> aryl, or SO<sub>2</sub>C<sub>1-6</sub> heteroaryl, wherein C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> heteroaryl, and C<sub>1-6</sub> haloalkoxy, is optionally substituted with one or more of the groups selected from hydrogen, oxo, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> haloalkyl, C<sub>1-6</sub> alkylhydroxy, C<sub>3-6</sub> cycloalkyl, C<sub>5-10</sub> aryl, C<sub>1-6</sub> heterocyclyl, C<sub>1-6</sub> heteroaryl, cyano, halogen, and hydroxyl, wherein C<sub>5-10</sub> aryl, C<sub>1-6</sub> heteroaryl, and C<sub>1-6</sub> heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, oxo, halogen, hydroxyl, -CH<sub>2</sub>OH, and cyano; X of Formula (III) is selected from O or S; Z is N; R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub>, R<sub>9</sub> and R<sub>10</sub> are independently selected from hydrogen, hydroxyl, cyano, amino, halogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>3-6</sub> cycloalkyl, C<sub>1-6</sub> haloalkyl, C<sub>1-6</sub> haloalkoxy, C<sub>1-6</sub> acylamino, C<sub>1-6</sub> alkylamino, C<sub>5-10</sub> aryl, C<sub>1-6</sub> heterocyclyl, C<sub>1-6</sub> heteroaryl, C(O)C<sub>1-6</sub> alkyl, C(O)C<sub>1-6</sub> haloalkyl, C(O)NR<sub>15</sub>, C(O)C<sub>1-6</sub> alkylamino, C(O)C<sub>5-6</sub> aryl, C(O)C<sub>1-6</sub> heteroaryl, SO<sub>2</sub>C<sub>1-6</sub> alkyl, SO<sub>2</sub>C<sub>1-6</sub> haloalkyl, SO<sub>2</sub>C<sub>3-6</sub> cycloalkyl, SO<sub>2</sub>NR<sub>15</sub>, SO<sub>2</sub>NC<sub>1-6</sub> alkylamino, SO<sub>2</sub>C<sub>5-6</sub> aryl, or SO<sub>2</sub>C<sub>1-6</sub> heteroaryl, wherein C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> heteroaryl, and C<sub>1-6</sub> haloalkoxy, is optionally substituted with one or more of the groups selected from hydrogen, oxo, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> haloalkyl, C<sub>1-6</sub> alkylhydroxy, C<sub>3-6</sub> cycloalkyl, C<sub>5-10</sub> aryl, C<sub>1-6</sub> heterocyclyl, C<sub>1-6</sub> heteroaryl, cyano, halogen, and hydroxyl, wherein C<sub>5-10</sub> aryl, C<sub>1-6</sub> heteroaryl, and C<sub>1-6</sub> heterocyclyl, is optionally substituted with one or more of the groups selected from

hydrogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, oxo, halogen, hydroxyl, -CH<sub>2</sub>OH, and cyano; R<sub>11</sub> and R<sub>12</sub> 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, C<sub>1-6</sub> alkylamino, C<sub>1-6</sub> acylamino, -NHC(NH)CH<sub>2</sub>Cl, -NH(CO)CH=CH-CH<sub>2</sub>-N(CH<sub>3</sub>)<sub>2</sub>, C<sub>1-6</sub> alkyl, halogen, C<sub>1-6</sub> alkoxy, or hydroxyl; and R<sub>15</sub> is selected from the group consisting of hydrogen, C<sub>1-6</sub> alkyl, and combinations thereof.

[0012g] In yet another aspect, the present disclosure provides for a pharmaceutical composition comprising a compound ~~of Formula (I), Formula (II), Formula (III)~~ as disclosed herein, or a pharmaceutically acceptable salt thereof, ~~as disclosed herein~~ together with a pharmaceutically acceptable carrier, optionally in combination with one or more other pharmaceutical compositions.

[0012h] In yet another aspect, the present disclosure provides for an in vitro method for inhibiting one or more PAD family in a cell with an effective amount of the compound as disclosed herein.

[0012i] In yet another aspect, the present disclosure provides for ~~use of a therapeutically effective amount of~~ the compound as disclosed herein or ~~the pharmaceutical composition as disclosed herein in the manufacture of a medicament for treating a condition mediated by one or more PAD's~~ a pharmaceutically acceptable salt thereof for use as a medicament.

[0012j] In yet another aspect, the present disclosure provides for ~~use of a compound of Formula (I), Formula (II), and Formula (III)~~ the compound as disclosed herein, ~~used for in the manufacture of a medicament~~ the treatment of rheumatoid arthritis, vasculitis, systemic lupus erythematosus, ulcerative colitis, cancer, cystic fibrosis, asthma, cutaneous lupus erythematosus, and psoriasis.

[0012k] In yet another aspect, the present disclosure provides for use of the compound as disclosed herein or the pharmaceutical composition as disclosed herein 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.

[0012l] In yet another aspect, the present disclosure provides for use of the compound as disclosed herein or the pharmaceutical composition as disclosed herein in the manufacture of a medicament for ~~treatment of a condition mediated by one or more PAD family; or treatment and/or prevention of~~

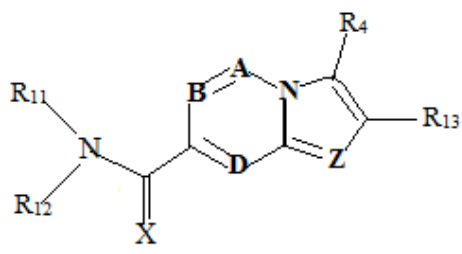
acid-induced lung injury, respiratory distress syndrome, allergen induced asthma, allergic bronchopulmonary, chronic lung disease of prematurity, chronic obstructive pulmonary disease, colitis, cystic fibrosis, gouty arthritis, inflammatory bowel disease, inflammatory lung disease, inflammatory pain, 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, osteoarthritis, 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.

**[0012m]** In ~~yet another aspect one example, the present disclosure provides for there is disclosed~~ use of a therapeutically effective amount of the compound as disclosed herein, or the pharmaceutical composition as disclosed herein in the manufacture of a medicament for the treatment and/or prevention of a condition mediated by one or more PAD family disorder.

**[0012n]** In yet another aspect, the present disclosure provides for use of ~~a combination of~~ the compounds as disclosed herein or the pharmaceutical composition as disclosed herein, with other clinically relevant agents or biological agents in the manufacture of a medicament for a combination therapy for the treatment of rheumatoid arthritis.

**[0012o]** In yet another aspect, the present disclosure provides for use of ~~a combination of~~ the compounds as disclosed herein or the pharmaceutical composition as disclosed herein, with other clinically relevant immune modulators agents in the manufacture of a medicament for a combination therapy for the treatment of cancer.

**[0012p]** In yet another aspect, the present disclosure provides a compound of Formula (I)



Formula (I)

their stereoisomers and pharmaceutically acceptable salts thereof, wherein,

X is selected from O or S;

Z is N;

A is CR<sub>1</sub>;

B is CR<sub>2</sub>;

D is CR<sub>3</sub>;

R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> are independently selected from hydrogen or C<sub>1-2</sub> alkyl;

5 R<sub>4</sub> is selected from hydrogen, C<sub>1-4</sub> alkyl, C<sub>3-5</sub> cycloalkyl, or C<sub>6</sub> aryl, wherein,

C<sub>1-4</sub> alkyl is optionally substituted with C<sub>1-4</sub> alkoxy;

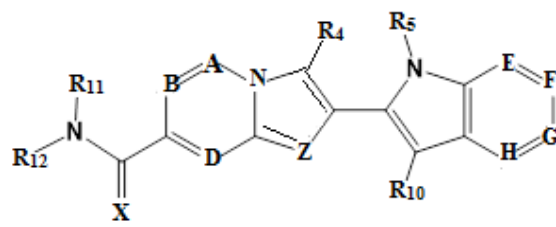
R<sub>11</sub> and R<sub>12</sub> are taken together to form a 5-10 membered monocyclic or bicyclic saturated heterocyclic ring with 1-3 heteroatoms selected from N, S or O, wherein,

10 the 5-10 membered monocyclic or bicyclic saturated heterocyclic ring is optionally substituted with the substituents selected from amino, C<sub>1-2</sub> alkylamino or -NH(CO)CH=CH-CH<sub>2</sub>-N(CH<sub>3</sub>)<sub>2</sub>; and

R<sub>13</sub> is selected from 6 membered monocyclic aryl, and 5-9 membered monocyclic or bicyclic heteroaryl with 1-3 heteroatoms selected from N, S or O, wherein,

15 6 membered monocyclic aryl, and 5-9 membered monocyclic or bicyclic heteroaryl are optionally substituted with 1-5 substituents selected from fluoro, bromo, chloro, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, or C<sub>6</sub> aryl, wherein, C<sub>1-4</sub> alkyl, and C<sub>6</sub> aryl, is optionally substituted with one or more of the groups selected from hydroxyl, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, C<sub>1-4</sub> haloalkyl, C<sub>3-5</sub> cycloalkyl, C<sub>6</sub> aryl, 5-6 membered heteroaryl containing 1-3 heteroatoms selected from N, S and O, 5-6 membered heterocyclyl containing 1 or 2 heteroatoms  
20 selected from N, S and O, oxo, and halogen, wherein, C<sub>6</sub> aryl, heteroaryl, and heterocyclyl, is optionally substituted with one or more of the groups selected from C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, oxo, halogen, -CH<sub>2</sub>OH, and cyano.

[0012q] In yet another aspect, the present disclosure provides a compound of Formula (II)



Formula (II)

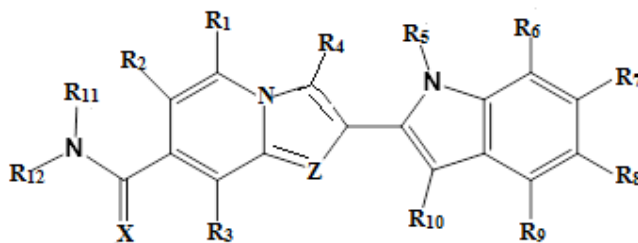
their stereoisomers and pharmaceutically acceptable salts thereof, wherein,

X is selected from O or S;

Z is N;

30 A is CR<sub>1</sub>;

- B is CR<sub>2</sub>;  
D is CR<sub>3</sub>;  
E is selected from N or CR<sub>6</sub>;  
F is CR<sub>7</sub>;  
5 G is CR<sub>8</sub>;  
H is CR<sub>9</sub>;  
R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> are independently selected from hydrogen or C<sub>1-2</sub> alkyl;  
R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub>, R<sub>9</sub> and R<sub>10</sub> are independently selected from hydrogen, halogen, C<sub>1-2</sub> alkyl,  
C<sub>1-2</sub> alkoxy, or C<sub>6</sub> aryl;  
10 R<sub>4</sub> is selected from hydrogen, C<sub>1-4</sub> alkyl, C<sub>3-6</sub> cycloalkyl, or C<sub>6</sub> aryl, wherein,  
C<sub>1-4</sub> alkyl is optionally substituted with C<sub>1-4</sub> alkoxy;  
R<sub>5</sub> is selected from C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, or C<sub>6</sub> aryl, wherein,  
C<sub>1-4</sub> alkyl is optionally substituted with one or more of the groups selected from oxo,  
C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, C<sub>1-4</sub> haloalkyl, C<sub>3-6</sub> cycloalkyl, C<sub>6</sub> aryl, 5-6 membered  
15 heterocyclyl containing 1 or 2 heteroatoms selected from N, S and O, 5-6 membered  
heteroaryl containing 1 -3 heteroatoms selected from N, S and O, halogen, and  
hydroxyl, wherein, C<sub>6</sub> aryl, heteroaryl, and heterocyclyl, is optionally substituted with  
one or more of the groups selected from C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, oxo, halogen, -  
CH<sub>2</sub>OH, and cyano; and  
20 R<sub>11</sub> and R<sub>12</sub> are taken together to form a 5-10 membered monocyclic or bicyclic  
saturated heterocyclic ring with 1-3 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, C<sub>1-2</sub> alkylamino or -  
NH(CO)CH=CH-CH<sub>2</sub>-N(CH<sub>3</sub>)<sub>2</sub>.  
25 [0012r] In yet another aspect, the present disclosure provides a compound of Formula  
(III)



Formula (III)

their stereoisomers, and pharmaceutically acceptable salts thereof, wherein

- X is selected from O or S;
- Z is N;
- R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> are independently selected from hydrogen or C<sub>1-4</sub> alkyl;
- R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub>, R<sub>9</sub> and R<sub>10</sub> are independently selected from hydrogen, halogen, C<sub>1-4</sub> alkyl,
- 5 C<sub>1-4</sub> alkoxy, or C<sub>6</sub> aryl;
- R<sub>4</sub> is selected from hydrogen, C<sub>1-4</sub> alkyl, C<sub>3-6</sub> cycloalkyl, or C<sub>6</sub> aryl, wherein,
- C<sub>1-4</sub> alkyl is optionally substituted with C<sub>1-4</sub> alkoxy;
- R<sub>5</sub> is selected from C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, or C<sub>6</sub> aryl, wherein,
- C<sub>1-4</sub> alkyl is optionally substituted with one or more of the groups selected from oxo,
- 10 C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, C<sub>1-4</sub> haloalkyl, C<sub>3-6</sub> cycloalkyl, C<sub>6</sub> aryl, 5-6 membered
- heterocyclyl containing 1 or 2 heteroatoms selected from N, S and O, 5-6 membered
- heteroaryl containing 1-3 heteroatoms selected from N, S and O, halogen and hydroxyl,
- wherein, C<sub>6</sub> aryl, heteroaryl and heterocyclyl, is optionally substituted with one or
- more of the groups selected from C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, oxo, halogen, -CH<sub>2</sub>OH, and
- 15 cyano; and
- R<sub>11</sub> and R<sub>12</sub> are taken together to form a 5-10 membered monocyclic or bicyclic
- saturated heterocyclic ring with 1-3 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, C<sub>1-4</sub> alkylamino or -
- 20 NH(CO)CH=CH-CH<sub>2</sub>-N(CH<sub>3</sub>)<sub>2</sub>.
- [0012s] In yet another aspect, the present disclosure provides a compound or its
- stereoisomers and pharmaceutically acceptable salts thereof, selected from a group
- consisting of:
- (R)-(3-aminopiperidin-1-yl)(2-(3-bromo-1-(cyclopropylmethyl)-1H-indol-2-yl)-3-
- 25 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),
- 30 (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),

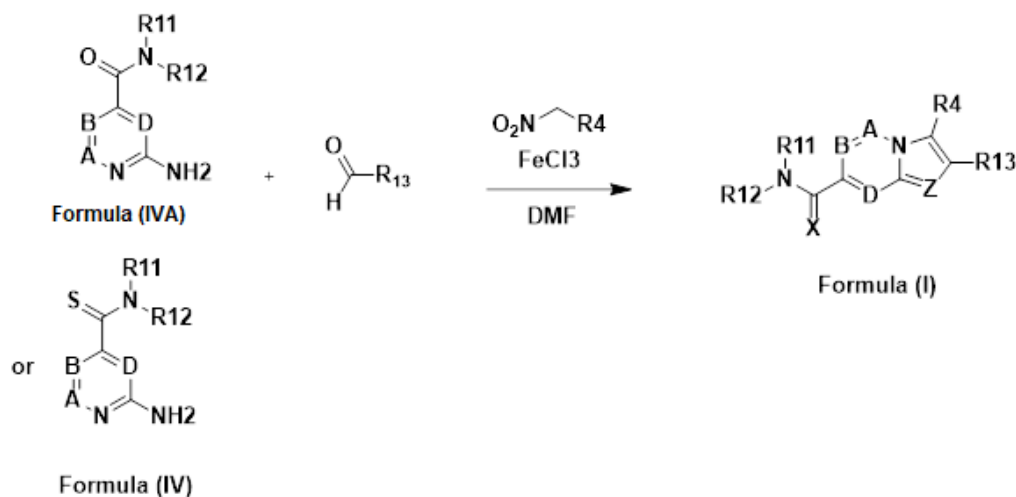
- (R)-(3-aminopyrrolidin-1-yl)(2-(1-ethyl-3-phenyl-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone (6),
- (R)-(3-aminopyrrolidin-1-yl)(2-(1-ethyl-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone (7),
- 5 (R)-(3-aminopyrrolidin-1-yl)(2-(1-(cyclopropylmethyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone (8),  
(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),
- 10 (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),
- 15 (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),
- (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),
- 20 (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),
- 25 (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),
- (R)-(3-aminopiperidin-1-yl)(2-(1-(4-chlorobenzyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone (20),
- 30 (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),

- (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),
- 5 (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),
- 10 (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),
- 15 (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),
- (R)-(3-aminopiperidin-1-yl)(2-(1-(cyclopropylmethyl)-1H-indol-2-yl)-3-phenylimidazo[1,2-a]pyridin-7-yl)methanone (32),
- 20 (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-(methoxymethyl)imidazo[1,2-a]pyridin-7-yl)methanone (34),
- 25 (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),
- (R)-(3-aminopiperidin-1-yl)(2-(1-(furan-3-ylmethyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone (37),
- 30 (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-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),
- 5 (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-methylimidazo[1,2-a]pyridin-7-yl)methanone (44),
- 10 (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),
- 15 (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),
- (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),
- 20 (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),
- 25 (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),
- (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),
- 30 (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),

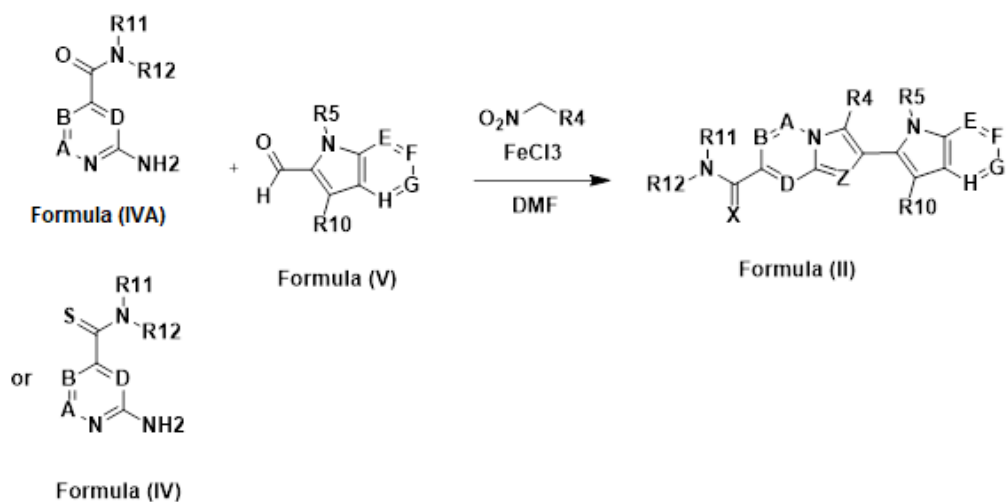
- (R)-(3-aminopiperidin-1-yl)(3-methyl-2-(1-(pyrazin-2-ylmethyl)-1H-indol-2-yl)imidazo[1,2-a]pyridin-7-yl)methanone (57),
- (R)-(3-aminopiperidin-1-yl)(3-methyl-2-(1-(pyrimidin-5-ylmethyl)-1H-indol-2-yl)imidazo[1,2-a]pyridin-7-yl)methanone trifluoroacetic acid salt (58),
- 5 (R)-(3-aminopiperidin-1-yl)(3-methyl-2-(1-(pyridazin-3-ylmethyl)-1H-indol-2-yl)imidazo[1,2-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),
- 10 (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),
- 15 (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),
- (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),
- 20 (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),
- 25 (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),
- (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),
- 30 (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),

- (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),
- 5 (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-
- 10 methylimidazo[1,2-a]pyridin-7-yl)methanone trifluoroacetic acid salt (78),
- (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),
- 15 (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),
- (R)-(3-aminopiperidin-1-yl)(2-(1-(2,2-difluoroethyl)-6-methoxy-1H-indol-2-yl)-3-
- 20 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
- (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).
- 25 [0012t] In yet another aspect, the present disclosure provides a process of preparation of compounds of Formula (I) as disclosed herein, its stereoisomers and pharmaceutically acceptable salts thereof, the process comprising reacting  $R_{13}CH(O)$  and  $R_4CH_2NO_2$  with a compound selected from Formula (IVA) or Formula (IV)



wherein, R<sub>13</sub> of R<sub>13</sub>CH(O) is selected from 6 membered monocyclic aryl, and 5-9 membered monocyclic or bicyclic heteroaryl with 1-3 heteroatoms selected from N, S or O, wherein, 6 membered monocyclic aryl, and 5-9 membered monocyclic or bicyclic heteroaryl are optionally substituted with 1-5 substituents selected from the group consisting of fluoro, bromo, chloro, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, or C<sub>6</sub> aryl, wherein, C<sub>1-4</sub> alkyl, and C<sub>6</sub> aryl, is optionally substituted with one or more of the groups selected from C<sub>1-4</sub> alkyl, C<sub>1-4</sub> haloalkyl, C<sub>1-4</sub> alkoxy, C<sub>3-5</sub> cycloalkyl, C<sub>6</sub> aryl, 5-6 membered heteroaryl containing 1-3 heteroatoms selected from N, S and O, 5-6 membered heterocyclyl containing 1 or 2 heteroatoms selected from N, S and O, oxo, halogen, and hydroxyl, wherein, C<sub>6</sub> aryl, heteroaryl, and heterocyclyl, is optionally substituted with one or more of the groups selected from C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, oxo, halogen, -CH<sub>2</sub>OH, and cyano; A of Formula (IVA) and (IV) is CR<sub>1</sub>; B is CR<sub>2</sub>; D is CR<sub>3</sub>; R<sub>11</sub> and R<sub>12</sub> are taken together to form a 5-10 membered monocyclic or bicyclic saturated heterocyclic ring with 1-3 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, C<sub>1-2</sub> alkylamino or -NH(CO)CH=CH-CH<sub>2</sub>-N(CH<sub>3</sub>)<sub>2</sub>; R<sub>4</sub> of R<sub>4</sub>CH<sub>2</sub>NO<sub>2</sub> is selected from hydrogen, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, C<sub>3-5</sub> cycloalkyl, or C<sub>6</sub> aryl, wherein, C<sub>1-4</sub> alkyl is optionally substituted with C<sub>1-4</sub> alkoxy; X of Formula (I) is selected from O or S; Z is N; A is CR<sub>1</sub>; B is CR<sub>2</sub>; D is CR<sub>3</sub>; R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> are independently selected from hydrogen or C<sub>1-2</sub> alkyl; R<sub>4</sub> is selected from hydrogen, C<sub>1-4</sub> alkyl, C<sub>3-5</sub> cycloalkyl, or C<sub>6</sub> aryl, wherein, C<sub>1-4</sub> alkyl is optionally substituted with C<sub>1-4</sub> alkoxy; R<sub>11</sub> and R<sub>12</sub> are taken together to form a 5-10 membered monocyclic or bicyclic

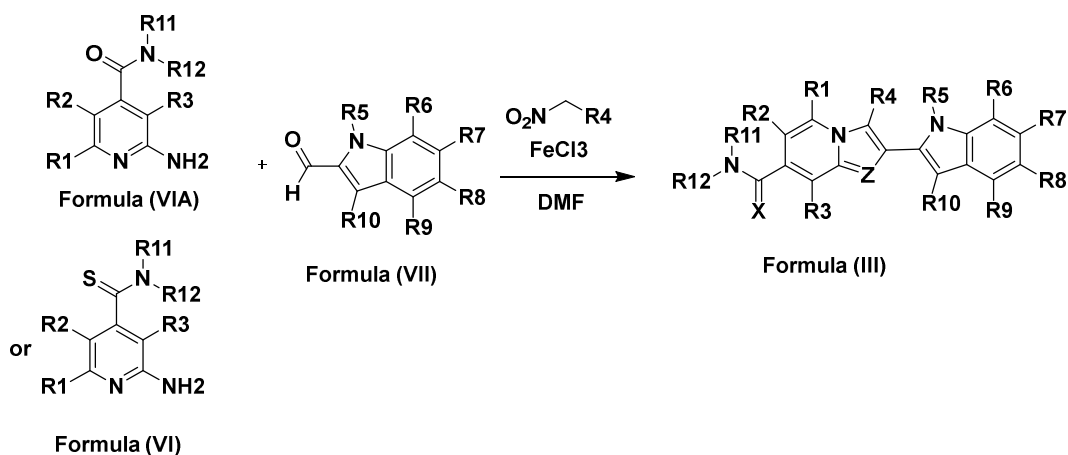
- saturated heterocyclic ring with 1-3 heteroatoms selected from N, S or O, wherein, the 5-10 membered monocyclic or bicyclic saturated heterocyclic ring is optionally substituted with the substituents selected from amino, C<sub>1-2</sub> alkylamino or -NH(CO)CH=CH-CH<sub>2</sub>-N(CH<sub>3</sub>)<sub>2</sub>; R<sub>13</sub> is selected from 6 membered monocyclic aryl, and
- 5 5-9 membered monocyclic or bicyclic heteroaryl with 1-3 heteroatoms selected from N, S or O, wherein, 6 membered monocyclic aryl, and 5-9 membered monocyclic or bicyclic heteroaryl are optionally substituted with 1-5 substituents selected from fluoro, bromo, chloro, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, or C<sub>6</sub> aryl, wherein, C<sub>1-4</sub> alkyl, and C<sub>6</sub> aryl, is optionally substituted with one or more of the groups selected from C<sub>1-4</sub> alkyl, C<sub>1-4</sub>
- 10 haloalkyl, C<sub>1-4</sub> alkoxy, C<sub>3-5</sub> cycloalkyl, C<sub>6</sub> aryl, 5-6 membered heteroaryl containing 1-3 heteroatoms selected from N, S and O, 5-6 membered heterocyclyl containing 1 or 2 heteroatoms selected from N, S and O, oxo, halogen, and hydroxyl, wherein, C<sub>6</sub> aryl, heteroaryl, and heterocyclyl, is optionally substituted with one or more of the groups selected from C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, oxo, halogen, -CH<sub>2</sub>OH, and cyano.
- 15 **[0012u]** In yet another aspect, the present disclosure provides a process of preparation of compounds of Formula (II) as disclosed herein, its stereoisomers and pharmaceutically acceptable salts thereof, the process comprising reacting Formula (V) and R<sub>4</sub>CH<sub>2</sub>NO<sub>2</sub> with a compound selected from Formula (IVA) or Formula (IV)



- 20 wherein, A of Formula (IVA) and (IV) is CR<sub>1</sub>; B is CR<sub>2</sub>; D is CR<sub>3</sub>; R<sub>11</sub> and R<sub>12</sub> are taken together to form a 5-10 membered monocyclic or bicyclic saturated heterocyclic ring with 1-3 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, C<sub>1-2</sub> alkylamino or -NH(CO)CH=CH-CH<sub>2</sub>-N(CH<sub>3</sub>)<sub>2</sub>; R<sub>4</sub> of R<sub>4</sub>CH<sub>2</sub>NO<sub>2</sub> is selected from hydrogen, C<sub>1-4</sub> alkyl, C<sub>3-6</sub> cycloalkyl, or C<sub>6</sub> aryl, wherein, C<sub>1-4</sub> alkyl is optionally substituted with C<sub>1-4</sub> alkoxy; E of Formula (V) is selected from N or CR<sub>6</sub>; F is CR<sub>7</sub>; G is CR<sub>8</sub>; H is CR<sub>9</sub>; R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub>, are independently selected from hydrogen or C<sub>1-2</sub> alkyl; R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub>, R<sub>9</sub> and R<sub>10</sub> are independently selected from hydrogen, halogen, C<sub>1-2</sub> alkyl, C<sub>1-2</sub> alkoxy, or C<sub>6</sub> aryl; R<sub>5</sub> is selected from C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, or C<sub>6</sub> aryl, wherein, C<sub>1-4</sub> alkyl is optionally substituted with one or more of the groups selected from oxo, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, C<sub>1-4</sub> haloalkyl, C<sub>3-6</sub> cycloalkyl, C<sub>6</sub> aryl, 5-6 membered heterocyclyl containing 1 or 2 heteroatoms selected from N, S and O, 5-6 membered heteroaryl containing 1 -3 heteroatoms selected from N, S and O, halogen, and hydroxyl, wherein, C<sub>6</sub> aryl, heteroaryl, and heterocyclyl, is optionally substituted with one or more of the groups selected from C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, oxo, halogen, -CH<sub>2</sub>OH, and cyano; X of Formula (II) is selected from O or S; Z is N; A is CR<sub>1</sub>; B is CR<sub>2</sub>; D is CR<sub>3</sub>; E is selected from N or CR<sub>6</sub>; F is CR<sub>7</sub>; G is CR<sub>8</sub>; H is CR<sub>9</sub>; R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> are independently selected from hydrogen or C<sub>1-2</sub> alkyl; R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub>, R<sub>9</sub> and R<sub>10</sub> are independently selected from hydrogen, halogen, C<sub>1-2</sub> alkyl, C<sub>1-2</sub> alkoxy, or C<sub>6</sub> aryl; R<sub>4</sub> is selected from hydrogen, C<sub>1-4</sub> alkyl, C<sub>3-6</sub> cycloalkyl, or C<sub>6</sub> aryl, wherein, C<sub>1-4</sub> alkyl is optionally substituted with C<sub>1-4</sub> alkoxy; R<sub>5</sub> is selected from C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, or C<sub>6</sub> aryl, wherein, C<sub>1-4</sub> alkyl is optionally substituted with one or more of the groups selected from oxo, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, C<sub>1-4</sub> haloalkyl, C<sub>3-6</sub> cycloalkyl, C<sub>6</sub> aryl, 5-6 membered heterocyclyl containing 1 or 2 heteroatoms selected from N, S and O, 5-6 membered heteroaryl containing 1 -3 heteroatoms selected from N, S and O, halogen, and hydroxyl, wherein, C<sub>6</sub> aryl, heteroaryl, and heterocyclyl, is optionally substituted with one or more of the groups selected from C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, oxo, halogen, -CH<sub>2</sub>OH, and cyano; R<sub>11</sub> and R<sub>12</sub> are taken together to form a 5-10 membered monocyclic or bicyclic saturated heterocyclic ring with 1-3 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, C<sub>1-2</sub> alkylamino, or -NH(CO)CH=CH-CH<sub>2</sub>-N(CH<sub>3</sub>)<sub>2</sub>.

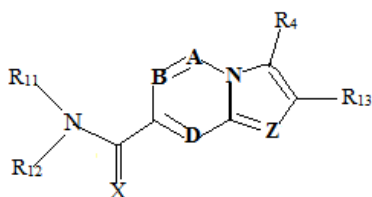
**[0012v]** In yet another aspect, the present disclosure provides a process of preparation of compounds of Formula (III) as disclosed herein or its stereoisomers, and pharmaceutically acceptable salts thereof, the process comprising reacting Formula (VII) R<sub>4</sub>CH<sub>2</sub>NO<sub>2</sub> with a compound selected from Formula (VIA) or Formula (VI)



wherein,  $R_1$ ,  $R_2$  and  $R_3$  of Formula (VIA) and Formula (VI) are independently selected from hydrogen or  $C_{1-4}$  alkyl;  $R_6$ ,  $R_7$ ,  $R_8$ ,  $R_9$  and  $R_{10}$  of Formula (VII) are independently selected from hydrogen, halogen,  $C_{1-4}$  alkyl,  $C_{1-4}$  alkoxy, or  $C_6$  aryl;  $R_4$  of  $R_4\text{CH}_2\text{NO}_2$  is selected from hydrogen,  $C_{1-4}$  alkyl,  $C_{3-6}$  cycloalkyl, or  $C_6$  aryl, wherein,  $C_{1-4}$  alkyl is optionally substituted with  $C_{1-4}$  alkoxy;  $R_5$  of Formula (VII) is selected from  $C_{1-4}$  alkyl,  $C_{1-4}$  alkoxy, or  $C_6$  aryl, wherein,  $C_{1-4}$  alkyl is optionally substituted with one or more of the groups selected from oxo,  $C_{1-4}$  alkyl,  $C_{1-4}$  alkoxy,  $C_{1-4}$  haloalkyl,  $C_{3-6}$  cycloalkyl,  $C_6$  aryl, 5-6 membered heterocyclyl containing 1 or 2 heteroatoms selected from N, S and O, 5-6 membered heteroaryl containing 1-3 heteroatoms selected from N, S and O, halogen and hydroxyl, wherein,  $C_6$  aryl, heteroaryl, and heterocyclyl, is optionally substituted with one or more of the groups selected from  $C_{1-6}$  alkyl,  $C_{1-6}$  alkoxy, oxo, halogen,  $-\text{CH}_2\text{OH}$ , and cyano; X of Formula (III) is selected from O or S; Z is N;  $R_1$ ,  $R_2$  and  $R_3$  are independently selected from from hydrogen or  $C_{1-4}$  alkyl;  $R_6$ ,  $R_7$ ,  $R_8$ ,  $R_9$  and  $R_{10}$  are independently selected from hydrogen, halogen,  $C_{1-4}$  alkyl,  $C_{1-4}$  alkoxy, or  $C_6$  aryl;  $R_4$  is selected from hydrogen,  $C_{1-4}$  alkyl,  $C_{3-6}$  cycloalkyl, or  $C_6$  aryl, wherein,  $C_{1-4}$  alkyl is optionally substituted with  $C_{1-4}$  alkoxy;  $R_5$  is selected from  $C_{1-4}$  alkyl,  $C_{1-4}$  alkoxy, or  $C_6$  aryl, wherein,  $C_{1-4}$  alkyl is optionally substituted with one or more of the groups selected from oxo,  $C_{1-4}$  alkyl,  $C_{1-4}$  alkoxy,  $C_{1-4}$  haloalkyl,  $C_{3-6}$  cycloalkyl,  $C_6$  aryl, 5-6 membered heterocyclyl containing 1 or 2 heteroatoms selected from N, S and O, 5-6 membered heteroaryl containing 1-3 heteroatoms selected from N, S and

5 O, halogen and hydroxyl, wherein, C<sub>6</sub> aryl, heteroaryl, and heterocyclyl, is optionally substituted with one or more of the groups selected from C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, oxo, halogen, -CH<sub>2</sub>OH, and cyano; R<sub>11</sub> and R<sub>12</sub> are taken together to form a 5-10 membered monocyclic or bicyclic saturated heterocyclic ring with 1-3 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, C<sub>1-4</sub> alkylamino or -NH(CO)CH=CH-CH<sub>2</sub>-N(CH<sub>3</sub>)<sub>2</sub>.

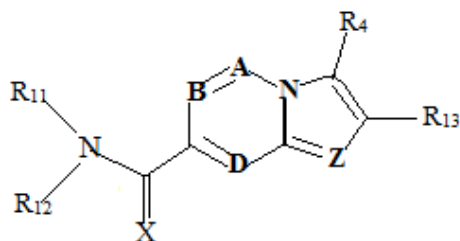
[00013] The present disclosure discloses a compound of Formula I



**Formula (I)**

## Claims:

1. A compound of Formula (I)

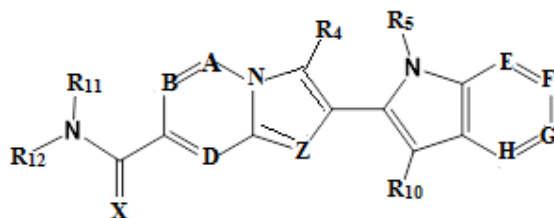


Formula (I)

- 5 their ~~polymorphs~~, stereoisomers, ~~solvates~~, ~~co-crystals~~, and pharmaceutically acceptable salts thereof, wherein,
- X is selected from O or S;
- Z is N;
- 10 A is CR<sub>1</sub>;
- B is CR<sub>2</sub>;
- D is CR<sub>3</sub>;
- R<sub>1</sub>, R<sub>2</sub>, and R<sub>3</sub> are independently selected from hydrogen, or C<sub>1-2</sub> alkyl;
- R<sub>4</sub> is selected from hydrogen, C<sub>1-4</sub> alkyl, ~~C<sub>1-4</sub> alkoxy~~, C<sub>3-5</sub> cycloalkyl, or C<sub>5-6</sub> aryl,
- 15 wherein,
- C<sub>1-4</sub> alkyl, ~~and C<sub>1-4</sub> alkoxy~~, is optionally substituted with ~~one or more of the groups selected from C<sub>1-4</sub> alkyl, and C<sub>1-4</sub> alkoxy~~;
- R<sub>11</sub> and R<sub>12</sub> are taken together to form a 5-10 membered monocyclic or bicyclic saturated heterocyclic ring ~~optionally~~ with 1-~~5~~ 3 heteroatoms selected from N, S or O,
- 20 wherein,
- the 5-10 membered monocyclic or bicyclic saturated heterocyclic ring is optionally substituted with the substituents selected from amino, C<sub>1-2</sub> alkylamino, or -NH(CO)CH=CH-CH<sub>2</sub>-N(CH<sub>3</sub>)<sub>2</sub>; and
- R<sub>13</sub> is selected from ~~hydrogen~~, 5-~~9~~ 6 membered monocyclic ~~or bicyclic~~ aryl, and 5-9 membered monocyclic or bicyclic heteroaryl with 1-~~5~~ 3 heteroatoms selected from N, S or O, wherein,
- 25 ~~5-9~~ 6 membered monocyclic ~~or bicyclic~~ aryl, and 5-9 membered monocyclic or bicyclic heteroaryl are optionally substituted with 1-5 substituents selected from ~~hydroxyl~~, ~~ciano~~, fluoro, bromo, chloro, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, or ~~C<sub>1-4</sub> haloalkyl~~, C<sub>3-5</sub> cycloalkyl, C<sub>5</sub>-C<sub>6-9</sub> aryl, ~~C<sub>1-9</sub> heterocyclyl, or C<sub>1-9</sub> heteroaryl~~, wherein, C<sub>1-4</sub> alkyl, and ~~C<sub>1-4</sub> alkoxy~~,
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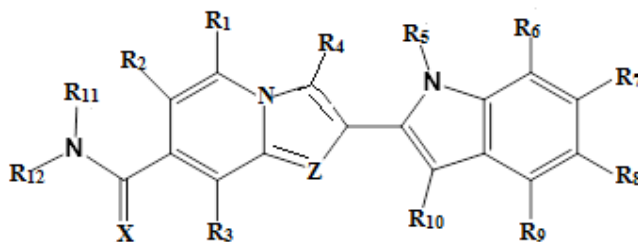
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- C<sub>1-4</sub> alkyl, ~~C<sub>1-4</sub> alkoxy, C<sub>1-9</sub> heteroaryl, and C<sub>1-4</sub> haloalkoxy,~~ is optionally substituted with one or more of the groups selected from ~~hydrogen,~~ oxo, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, C<sub>1-4</sub> haloalkyl, ~~C<sub>1-4</sub> alkylhydroxy,~~ C<sub>3-6</sub> cycloalkyl, C<sub>5-6</sub> aryl, 5-6 membered C<sub>1-6</sub> heterocyclyl containing 1 or 2 heteroatoms selected from N, S and O, 5-6 membered C<sub>1-6</sub> heteroaryl containing 1-3 heteroatoms selected from N, S and O, ~~cyano,~~ halogen, and hydroxyl, wherein, C<sub>5-6</sub> aryl, C<sub>1-6</sub> heteroaryl, and C<sub>1-6</sub> heterocyclyl, is optionally substituted with one or more of the groups selected from ~~hydrogen,~~ C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, oxo, halogen, ~~hydroxyl,~~ -CH<sub>2</sub>OH, and cyano; and
- R<sub>11</sub> and R<sub>12</sub> are taken together to form a 5-10 membered monocyclic or bicyclic saturated heterocyclic ring ~~optionally~~ with 1-5-3 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, C<sub>1-2</sub> alkylamino, or -NH(CO)CH=CH-CH<sub>2</sub>-N(CH<sub>3</sub>)<sub>2</sub>.
3. A compound of Formula (III)



Formula (III)

- their ~~polymorphs,~~ stereoisomers, ~~solvates, co-crystals,~~ and pharmaceutically acceptable salts thereof, wherein
- X is selected from O or S;
- Z is N;
- R<sub>1</sub>, R<sub>2</sub>, and R<sub>3</sub> are independently selected from hydrogen or C<sub>1-4</sub> alkyl;
- R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub>, R<sub>9</sub>, and R<sub>10</sub> are independently selected from hydrogen, halogen, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, or C<sub>5-6</sub> aryl;
- R<sub>4</sub>, is selected from hydrogen, C<sub>1-4</sub> alkyl, C<sub>3-6</sub> cycloalkyl, or C<sub>6</sub> aryl, wherein,
- C<sub>1-4</sub> alkyl is optionally substituted with C<sub>1-4</sub> alkoxy; and
- R<sub>5</sub> ~~are independently~~ is selected from ~~hydrogen, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, C<sub>3-6</sub> cycloalkyl, C<sub>1-4</sub> haloalkyl, C<sub>1-4</sub> haloalkoxy, C<sub>5</sub> or C<sub>6-9</sub> aryl, C<sub>1-9</sub> heterocyclyl, or C<sub>1-9</sub> heteroaryl,~~ wherein,

- C<sub>1-4</sub> alkyl, ~~C<sub>1-4</sub> alkoxy, C<sub>1-6</sub> heteroaryl, and C<sub>1-4</sub> haloalkoxy~~, is optionally substituted with one or more of the groups selected from ~~hydrogen~~, oxo, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, C<sub>1-4</sub> haloalkyl, ~~C<sub>1-4</sub> alkylhydroxy~~, C<sub>3-6</sub> cycloalkyl, C<sub>5-6</sub> aryl, 5-6 membered C<sub>1-6</sub> heterocyclyl containing 1 or 2 heteroatoms selected from N, S and O, 5-6 membered, ~~C<sub>1-6</sub> heteroaryl~~ containing 1-3 heteroatoms selected from N, S and O, ~~cyano~~, halogen, and hydroxyl, wherein, C<sub>5-6</sub> aryl, C<sub>1-6</sub> heteroaryl, and C<sub>1-6</sub> heterocyclyl, is optionally substituted with one or more of the groups selected from ~~hydrogen~~, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, oxo, halogen, ~~hydroxyl~~, -CH<sub>2</sub>OH, and cyano; and
- R<sub>11</sub> and R<sub>12</sub> are taken together to form a 5-10 membered monocyclic or bicyclic saturated heterocyclic ring ~~optionally~~ with 1-5-3 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, C<sub>1-4</sub> alkylamino, or -NH(CO)CH=CH-CH<sub>2</sub>-N(CH<sub>3</sub>)<sub>2</sub>.
4. The A compound of Formula (I) as claimed in claim 1 or its polymorphs, stereoisomers, solvates, co-crystals, and pharmaceutically acceptable salts thereof, ~~which is~~ selected from a group consisting of:
- (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),
- (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),
- (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),

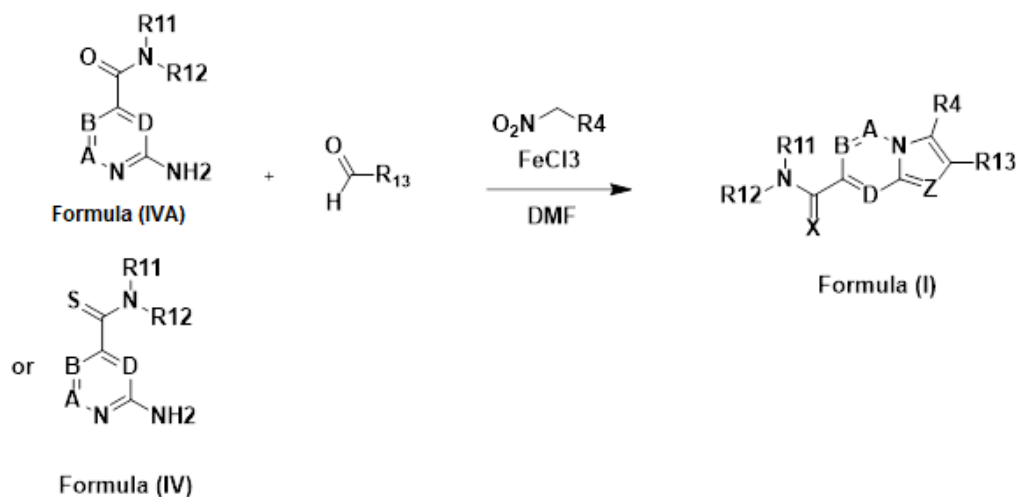
- (2-(1-(cyclopropylmethyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)(hexahydro-2H-pyrido[4,3-b][1,4]oxazin-6(5H)-yl)methanone **(9)**,  
 (R)-(3-aminopiperidin-1-yl)(3-methyl-2-(1-(pyridin-4-ylmethyl)-1H-indol-2-yl)imidazo[1,2-a]pyridin-7-yl)methanone **(10)**,  
 5 (R)-(3-aminopiperidin-1-yl)(3-methyl-2-(1-((tetrahydro-2H-pyran-4-yl)methyl)-1H-indol-2-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)**,  
 10 (R)-4-((2-(7-(3-aminopiperidine-1-carbonyl)-3-methylimidazo[1,2-a]pyridin-2-yl)-1H-indol-1-yl)methyl)benzonitrile **(14)**,  
 (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)**,  
 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)**,  
 (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)**,  
 20 (R)-(3-aminopiperidin-1-yl)(2-(3-ethylbenzo[b]thiophen-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(19)**,  
 (R)-(3-aminopiperidin-1-yl)(2-(1-(4-chlorobenzyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(20)**,  
 25 (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)**,  
 (R)-(3-aminopiperidin-1-yl)(2-(1-(cyclopropylmethyl)-6-methoxy-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone **(23)**,  
 30 (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)**,  
 (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**),
- 5 (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**),
- 10 (R)-(3-aminopiperidin-1-yl)(2-(2-ethylphenyl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone (**31**),
- (R)-(3-aminopiperidin-1-yl)(2-(1-(cyclopropylmethyl)-1H-indol-2-yl)-3-phenylimidazo[1,2-a]pyridin-7-yl)methanone (**32**),
- 15 (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-(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**),
- 20 (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**),
- (R)-(3-aminopiperidin-1-yl)(2-(1-(furan-3-ylmethyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone (**37**),
- 25 (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-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**),
- 30 (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**),
- (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-methylimidazo[1,2-a]pyridin-7-yl)methanone (**44**),
- 5 (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**),
- 10 (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**),
- (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**),
- 15 (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**),
- (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**),
- 20 (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**),
- (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**),
- 25 (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**),
- (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**),
- 30 (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**),
- (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**),
- 5 (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-
- 10 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**),
- (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**),
- 15 (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**),
- (R)-(3-aminopiperidin-1-yl)(2-(6-fluoro-1-(pyridin-3-ylmethyl)-1H-indol-2-yl)-3-
- 20 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**),
- (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**),
- 25 (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**),
- (R)-(3-aminopiperidin-1-yl)(2-(5-fluoro-1-(pyridin-4-ylmethyl)-1H-indol-2-yl)-3-
- 30 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**),
- |(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**),

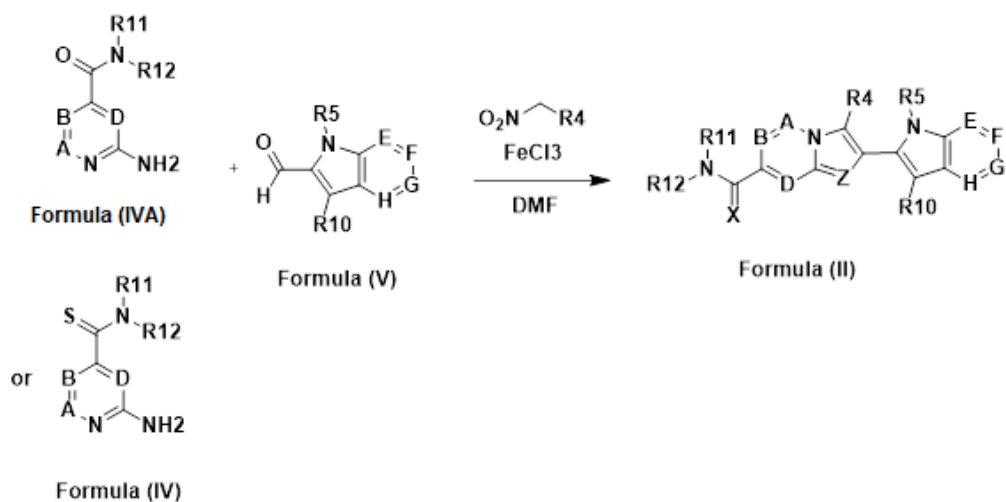
- (R)-(3-aminopiperidin-1-yl)(2-(7-chloro-1-(4-fluorobenzyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone (**77**),
- (R)-(3-aminopiperidin-1-yl)(2-(1-(2,2-difluoroethyl)-1H-indol-2-yl)-3-methylimidazo[1,2-a]pyridin-7-yl)methanone trifluoroacetic acid salt (**78**),
- 5 (R)-(3-aminopiperidin-1-yl)(2-(1-((5-fluoropyridin-2-yl)methyl)-1H-indol-2-yl)-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-
- 10 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**),
- (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**),
- 15 (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
- (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**).
5. A process of preparation of compounds of Formula (I) as claimed in any one of the
- 20 claims 1 or 4, its ~~polymorphs~~, stereoisomers, ~~solvates~~, ~~co-crystals~~, and pharmaceutically acceptable salts thereof, the process comprising reacting  $R_{13}CH(O)$  and  $R_4CH_2NO_2$  with a compound selected from Formula (IVA) or Formula (IV)



wherein,  $\text{R}_{13}$  of  $\text{R}_{13}\text{CH}(\text{O})$  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 the group consisting of hydroxyl, cyano, fluoro, bromo, chloro, halogen,  $\text{C}_{1-4}$  alkyl,  $\text{C}_{1-4}$  alkoxy,  $\text{C}_{3-5}$  cycloalkyl,  $\text{C}_{1-4}$  haloalkyl, or  $\text{C}_{5-6}$  aryl,  $\text{C}_{1-9}$  heterocyclyl,  $\text{C}_{1-9}$  heteroaryl, wherein,  $\text{C}_{1-4}$  alkyl, and  $\text{C}_{1-4}$  alkoxy,  $\text{C}_{3-5}$  cycloalkyl,  $\text{C}_{5-6}$  aryl,  $\text{C}_{1-9}$  heterocyclyl, and  $\text{C}_{1-9}$  heteroaryl, is optionally substituted with one or more of the groups selected from hydrogen,  $\text{C}_{1-4}$  alkyl,  $\text{C}_{1-4}$  haloalkyl,  $\text{C}_{1-4}$  alkoxy,  $\text{C}_{3-5}$  cycloalkyl,  $\text{C}_{5-6}$  aryl, 5-6 membered  $\text{C}_{1-6}$  heteroaryl containing 1-3 heteroatoms selected from N, S and O,  $\text{C}_{1-6}$  5-6 membered heterocyclyl containing 1 or 2 heteroatoms selected from N, S and O, oxo, halogen, and hydroxyl, and cyano, wherein,  $\text{C}_{5-6}$  aryl,  $\text{C}_{1-6}$  heteroaryl, and  $\text{C}_{1-6}$  heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen,  $\text{C}_{1-6}$  alkyl,  $\text{C}_{1-6}$  alkoxy, oxo, halogen, hydroxyl,  $\text{CH}_2\text{OH}$ , and cyano; A of Formula (IVA) and (IV) is  $\text{CR}_1$ ; B is  $\text{CR}_2$ ; D is  $\text{CR}_3$ ;  $\text{R}_{11}$  and  $\text{R}_{12}$  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,  $\text{C}_{1-2}$  alkylamino, or  $\text{NH}(\text{CO})\text{CH}=\text{CH}-\text{CH}_2-\text{N}(\text{CH}_3)_2$ ;  $\text{R}_4$  of  $\text{R}_4\text{CH}_2\text{NO}_2$  is selected from hydrogen,  $\text{C}_{1-4}$  alkyl,  $\text{C}_{1-4}$  alkoxy,  $\text{C}_{3-5}$  cycloalkyl, or  $\text{C}_{5-6}$  aryl, wherein,  $\text{C}_{1-4}$  alkyl, and  $\text{C}_{1-4}$  alkoxy, is optionally substituted with one or more of the groups selected from  $\text{C}_{1-4}$  alkyl, and  $\text{C}_{1-4}$  alkoxy; X of Formula (I) is selected from O or S; Z is N; A is  $\text{CR}_1$ ; B is  $\text{CR}_2$ ; D is  $\text{CR}_3$ ;

R<sub>1</sub>, R<sub>2</sub>, and R<sub>3</sub> are independently selected from hydrogen, or C<sub>1-2</sub> alkyl; R<sub>4</sub> is selected from hydrogen, C<sub>1-4</sub> alkyl, ~~C<sub>1-4</sub> alkoxy~~, C<sub>3-5</sub> cycloalkyl, ~~or C<sub>5-6</sub> aryl~~, wherein, C<sub>1-4</sub> alkyl, ~~and C<sub>1-4</sub> is optionally substituted with one or more of the groups selected from C<sub>1-4</sub> alkyl, and C<sub>1-4</sub> alkoxy~~; R<sub>11</sub> and R<sub>12</sub> are taken together to form a 5-10 membered monocyclic or bicyclic saturated heterocyclic ring with 1-~~5~~3 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, C<sub>1-2</sub> alkylamino, or -NH(CO)CH=CH-CH<sub>2</sub>-N(CH<sub>3</sub>)<sub>2</sub>; R<sub>13</sub> is selected from ~~hydrogen, 5-9-6~~ membered monocyclic ~~or bicyclic~~ aryl, and 5-9 membered monocyclic or bicyclic heteroaryl with 1-~~5~~3 heteroatoms selected from N, S or O, wherein, ~~5-9-6~~ 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~~ halogen, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, or ~~C<sub>3-5</sub> cycloalkyl, C<sub>1-4</sub> haloalkyl, C<sub>5-6</sub> aryl, C<sub>1-9</sub> heterocyclyl, C<sub>1-9</sub> heteroaryl~~, wherein, C<sub>1-4</sub> alkyl, ~~C<sub>1-4</sub> alkoxy, and C<sub>3-5</sub> cycloalkyl, C<sub>5-6</sub> aryl, C<sub>1-9</sub> heterocyclyl, and C<sub>1-9</sub> heteroaryl~~, is optionally substituted with one or more of the groups selected from ~~hydrogen, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> haloalkyl, C<sub>1-4</sub> alkoxy, C<sub>3-5</sub> cycloalkyl, C<sub>5-6</sub> aryl, 5-6 membered C<sub>1-6</sub> heteroaryl containing 1-3 heteroatoms selected from N, S and O, 5-6 membered C<sub>1-6</sub> heterocyclyl containing 1 or 2 heteroatoms selected from N, S and O~~, oxo, halogen, and hydroxyl, ~~and cyano~~, wherein, C<sub>5-6</sub> aryl, C<sub>1-6</sub> heteroaryl, and C<sub>1-6</sub> heterocyclyl, is optionally substituted with one or more of the groups selected from ~~hydrogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, oxo, halogen, hydroxyl, CH<sub>2</sub>OH, and cyano~~.

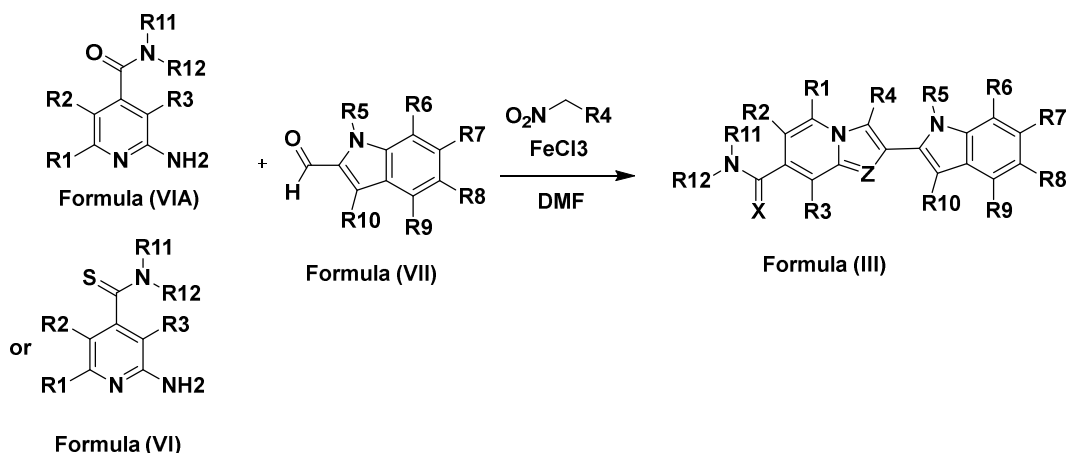
6. A process of preparation of compounds of Formula (II) as claimed in any one of the claims 2 or 4, its ~~polymorphs, stereoisomers, solvates, co-crystals~~, and pharmaceutically acceptable salts thereof, the process comprising reacting Formula (V) and R<sub>4</sub>CH<sub>2</sub>NO<sub>2</sub> with a compound selected from Formula (IVA) or Formula (IV)



wherein, A of Formula (IVA) and (IV) is CR<sub>1</sub>; B is CR<sub>2</sub>; D is CR<sub>3</sub>; R<sub>11</sub> and R<sub>12</sub> are taken together to form a 5-10 membered monocyclic or bicyclic saturated heterocyclic ring optionally with 1-5 3 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, C<sub>1-2</sub> alkylamino, or -NH(CO)CH=CH-CH<sub>2</sub>-N(CH<sub>3</sub>)<sub>2</sub>; R<sub>4</sub> of R<sub>4</sub>CH<sub>2</sub>NO<sub>2</sub> is selected from hydrogen, C<sub>1-4</sub> alkyl, ~~C<sub>1-4</sub> alkoxy~~, C<sub>3-6</sub> cycloalkyl, ~~C<sub>1-4</sub> haloalkyl~~, ~~C<sub>1-4</sub> haloalkoxy~~, or C<sub>5-9</sub> aryl, ~~C<sub>1-9</sub> heterocyclyl~~, ~~C<sub>1-9</sub> heteroaryl~~, wherein, C<sub>1-4</sub> alkyl; ~~C<sub>1-4</sub> alkoxy~~, ~~C<sub>1-9</sub> heteroaryl~~, and ~~C<sub>1-4</sub> haloalkoxy~~, is optionally substituted with one or more of the groups selected from hydrogen, oxo, ~~C<sub>1-4</sub> alkyl~~, ~~C<sub>1-4</sub> alkoxy~~, ~~C<sub>1-4</sub> haloalkyl~~, ~~C<sub>1-4</sub> alkylhydroxy~~, ~~C<sub>3-6</sub> cycloalkyl~~, ~~C<sub>5-6</sub> aryl~~, ~~C<sub>1-6</sub> heterocyclyl~~, ~~C<sub>1-6</sub> heteroaryl~~, cyano, halogen, and hydroxyl, wherein ~~C<sub>5-6</sub> aryl~~, ~~C<sub>1-6</sub> heteroaryl~~, and ~~C<sub>1-6</sub> heterocyclyl~~, is optionally substituted with one or more of the groups selected from hydrogen, ~~C<sub>1-6</sub> alkyl~~, ~~C<sub>1-6</sub> alkoxy~~, oxo, halogen, hydroxyl, ~~CH<sub>2</sub>OH~~, and cyano; E of Formula (V) is selected from N, or CR<sub>6</sub>; F is ~~absent or is~~ CR<sub>7</sub>; G is ~~absent or is~~ CR<sub>8</sub>; H is ~~absent or is~~ CR<sub>9</sub>; R<sub>1</sub>, R<sub>2</sub>, and R<sub>3</sub>, are independently selected from hydrogen or C<sub>1-2</sub> alkyl; R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub>, R<sub>9</sub> and R<sub>10</sub> are independently selected from hydrogen, halogen, C<sub>1-2</sub> alkyl, C<sub>1-2</sub> alkoxy, or C<sub>5-6</sub> aryl; R<sub>5</sub> is selected from ~~hydrogen, halogen~~, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, ~~C<sub>3-6</sub> cycloalkyl~~, ~~C<sub>1-4</sub> haloalkyl~~, ~~C<sub>1-4</sub> haloalkoxy~~, or C<sub>5-9</sub> aryl, ~~C<sub>1-9</sub> heterocyclyl~~, or ~~C<sub>1-9</sub> heteroaryl~~, wherein, C<sub>1-4</sub> alkyl, ~~C<sub>1-4</sub> alkoxy~~, ~~C<sub>1-9</sub> heteroaryl~~, and ~~C<sub>1-4</sub> haloalkoxy~~, is optionally substituted with one or more of the groups selected from ~~hydrogen~~, oxo, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, C<sub>1-4</sub> haloalkyl, ~~C<sub>1-4</sub> alkylhydroxy~~, C<sub>3-6</sub> cycloalkyl, C<sub>5-6</sub> aryl, 5-6 membered C<sub>1-6</sub> heterocyclyl containing 1 or 2 heteroatoms selected from N, S and O, ~~C<sub>1-6</sub> 5-6 membered heteroaryl~~ containing 1-3 heteroatoms selected from N, S and O,

cyano, halogen, and hydroxyl, wherein,  $C_{5-6}$  aryl,  $C_{1-6}$ -heteroaryl, and  $C_{1-6}$ -heterocyclyl, is optionally substituted with one or more of the groups selected from ~~hydrogen~~,  $C_{1-6}$  alkyl,  $C_{1-6}$  alkoxy, oxo, halogen, ~~hydroxyl~~,  $CH_2OH$ , and cyano; X of Formula (II) is selected from O or S; Z is N; A is  $CR_1$ ; B is  $CR_2$ ; D is  $CR_3$ ; E is selected from N or  
5  $CR_6$ ; F is absent or is  $CR_7$ ; G is absent or is  $CR_8$ ; H is absent or is  $CR_9$ ;  $R_1$ ,  $R_2$ , and  $R_3$ , are independently selected from hydrogen or  $C_{1-2}$  alkyl;  $R_6$ ,  $R_7$ ,  $R_8$ ,  $R_9$  and  $R_{10}$  are independently selected from hydrogen, halogen,  $C_{1-2}$  alkyl,  $C_{1-2}$  alkoxy, or  $C_{5-6}$  aryl;  $R_4$  is selected from hydrogen,  $C_{1-4}$  alkyl,  $C_{3-6}$  cycloalkyl, or  $C_6$  aryl, wherein,  $C_{1-4}$  alkyl is optionally substituted with  $C_{1-4}$  alkoxy;  
10 ~~, and  $R_5$  are independently~~ is selected from ~~hydrogen, halogen,  $C_{1-2-4}$  alkyl,  $C_{1-2-4}$  alkoxy, or  $C_{3-6}$  cycloalkyl,  $C_{1-4}$  haloalkyl,  $C_{1-4}$  haloalkoxy,  $C_{5-6}$  aryl,  $C_{1-9}$  heterocyclyl, or  $C_{1-9}$  heteroaryl,~~ wherein,  $C_{1-4}$  alkyl,  $C_{1-4}$  alkoxy,  $C_{1-9}$  heteroaryl, and  $C_{1-4}$  haloalkoxy, is optionally substituted with one or more of the groups selected from ~~hydrogen~~, oxo,  $C_{1-4}$  alkyl,  $C_{1-4}$  alkoxy,  $C_{1-4}$  haloalkyl,  ~~$C_{1-4}$  alkyl~~hydroxy,  $C_{3-6}$  cycloalkyl,  $C_{5-6}$  aryl,  $C_{1-6}$   
15 5-6 membered heterocyclyl containing 1 or 2 heteroatoms selected from N, S and O, 5-6 membered  $C_{1-6}$ -heteroaryl containing 1-3 heteroatoms selected from N, S and O, ~~cyano~~, halogen, and hydroxyl, wherein,  $C_{5-6}$  aryl,  $C_{1-6}$ -heteroaryl, and  $C_{1-6}$ -heterocyclyl, is optionally substituted with one or more of the groups selected from ~~hydrogen~~,  $C_{1-6}$  alkyl,  $C_{1-6}$  alkoxy, oxo, halogen, ~~hydroxyl~~,  $CH_2OH$ , and cyano;  $R_{11}$  and  $R_{12}$  are taken  
20 together to form a 5-10 membered monocyclic or bicyclic saturated heterocyclic ring ~~optionally~~ with 1-5 3 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,  $C_{1-2}$  alkylamino, or  $-NH(CO)CH=CH-CH_2-N(CH_3)_2$ .

7. A process of preparation of compounds of Formula (III) as claimed in any one of  
25 the claims 3-4 or its ~~polymorphs~~, stereoisomers, ~~solvates~~, ~~co-crystals~~, and pharmaceutically acceptable salts thereof, the process comprising reacting Formula (VII)  $R_4CH_2NO_2$  with a compound selected from Formula (VIA) or Formula (VI)



- wherein,  $R_1$ ,  $R_2$ , and  $R_3$  of Formula (VIA) and Formula (VI) are independently selected from hydrogen, halogen, or  $C_{1-4}$  alkyl,  $C_{1-4}$  alkoxy,  $C_{5-6}$  aryl;  $R_6$ ,  $R_7$ ,  $R_8$ ,  $R_9$  and  $R_{10}$  of Formula (VII) are independently selected from hydrogen, halogen,  $C_{1-4}$  alkyl,  $C_{1-4}$  alkoxy, or  $C_{5-6}$  aryl;  $R_5$  of Formula (VII) and  $R_4$  of  $R_4CH_2NO_2$  is selected from hydrogen,  $C_{1-4}$  alkyl,  $C_{3-6}$  cycloalkyl, or  $C_6$  aryl, wherein,  $C_{1-4}$  alkyl is optionally substituted with  $C_{1-4}$  alkoxy;  $R_5$  of Formula (VII) are independently is selected from hydrogen,  $C_{1-4}$  alkyl,  $C_{1-4}$  alkoxy, or  $C_{3-6}$  cycloalkyl,  $C_{1-4}$  haloalkyl,  $C_{1-4}$  haloalkoxy,  $C_{5-6}$  aryl,  $C_{1-9}$  heterocyclyl,  $C_{1-9}$  heteroaryl wherein,  $C_{1-4}$  alkyl,  $C_{1-4}$  alkoxy,  $C_{1-6}$  heteroaryl, and  $C_{1-4}$  haloalkoxy, is optionally substituted with one or more of the groups selected from hydrogen, oxo,  $C_{1-4}$  alkyl,  $C_{1-4}$  alkoxy,  $C_{1-4}$  haloalkyl,  $C_{1-4}$  alkylhydroxy,  $C_{3-6}$  cycloalkyl,  $C_{5-6}$  aryl, 5-6 membered  $C_{1-6}$  heterocyclyl containing 1 or 2 heteroatoms selected from N, S and O, 5-6 membered  $C_{1-6}$  heteroaryl containing 1-3 heteroatoms selected from N, S and O, cyano, halogen, and hydroxyl, wherein,  $C_{5-6}$  aryl,  $C_{1-6}$  heteroaryl, and  $C_{1-6}$  heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen,  $C_{1-6}$  alkyl,  $C_{1-6}$  alkoxy, oxo, halogen, hydroxyl,  $CH_2OH$ , and cyano; X of Formula (III) is selected from O or S; Z is N;  $R_1$ ,  $R_2$ , and  $R_3$  are independently selected from from hydrogen or  $C_{1-4}$  alkyl;  $R_6$ ,  $R_7$ ,  $R_8$ ,  $R_9$  and  $R_{10}$  are independently selected from hydrogen, halogen,  $C_{1-4}$  alkyl,  $C_{1-4}$  alkoxy, or  $C_{5-6}$  aryl;  $R_4$  is selected from hydrogen,  $C_{1-4}$  alkyl,  $C_{3-6}$  cycloalkyl, or  $C_6$  aryl, wherein,  $C_{1-4}$  alkyl is optionally substituted with  $C_{1-4}$  alkoxy; and  $R_5$  are independently is selected from hydrogen,  $C_{1-4}$  alkyl,  $C_{1-4}$  alkoxy,  $C_{3-6}$  cycloalkyl,  $C_{1-4}$  haloalkyl,  $C_{1-4}$  haloalkoxy, or  $C_{5-6}$  aryl,  $C_{1-9}$  heterocyclyl,  $C_{1-9}$  heteroaryl, wherein,  $C_{1-4}$  alkyl,  $C_{1-4}$  alkoxy,  $C_{1-9}$  heteroaryl, and  $C_{1-4}$  haloalkoxy, is optionally substituted with one or more of the groups selected from hydrogen, oxo,  $C_{1-4}$  alkyl,  $C_{1-4}$  alkoxy,  $C_{1-4}$  haloalkyl,  $C_{1-4}$  alkylhydroxy,  $C_{3-6}$  cycloalkyl,  $C_{5-6}$  aryl, 5-6 membered  $C_{1-6}$  heterocyclyl containing 1 or 2 heteroatoms

- selected from N, S and O, 5-6 membered C<sub>1-6</sub>-heteroaryl containing 1-3 heteroatoms selected from N, S and O, cyano, halogen, and hydroxyl, wherein, C<sub>5-6</sub> aryl, C<sub>1-6</sub> heteroaryl, and C<sub>1-6</sub>-heterocyclyl, is optionally substituted with one or more of the groups selected from hydrogen, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, oxo, halogen, hydroxyl, CH<sub>2</sub>OH, and cyano; R<sub>11</sub> and R<sub>12</sub> are taken together to form a 5-10 membered monocyclic or bicyclic saturated heterocyclic ring optionally with 1-5-3 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, C<sub>1-4</sub> alkylamino; or -NH(CO)CH=CH-CH<sub>2</sub>-N(CH<sub>3</sub>)<sub>2</sub>.
- 5
- 10 8. A pharmaceutical composition comprising a compound ~~of Formula (I), Formula (II), Formula (III)~~as claimed in any one of the claims 1-4, or a pharmaceutically acceptable salt thereof, ~~as claimed in any one of the claims 1-4~~ together with a pharmaceutically acceptable carrier, optionally in combination with one or more other pharmaceutical compositions.
- 15 9. The pharmaceutical composition as claimed in claim 8, wherein the composition is in a form selected from a tablet, capsule, powder, syrup, solution, aerosol, and suspension.
10. The compound as claimed in any one of the claims 1-4 or a pharmaceutically acceptable salt thereof for use ~~in the manufacture of aas a medicament, for inhibiting one or more PADs in a cell~~
- 20 11. An in vitro 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 1-4.
12. Use of the compound of ~~Formula (I), Formula (II), and Formula (III)~~ as claimed in any one of the claims 1-4, in the manufacture of medicament for the treatment of
- 25 rheumatoid arthritis, vasculitis, systemic lupus erythematosus, ulcerative colitis, cancer, cystic fibrosis, asthma, cutaneous lupus erythematosis, and psoriasis.
13. Use of the compound as claimed in any one of the claims 1-4 or the pharmaceutical composition as claimed in claim 8, or 9 in the manufacture of medicament for treatment and/or prevention of rheumatoid arthritis, vasculitis, systemic
- 30 lupus erythematosus, ulcerative colitis, cancer, cystic fibrosis, asthma, cutaneous lupus erythematosis, and psoriasis together with other clinically relevant agents or biological agents.
14. Use of the compound as claimed in any one of the claims 1-4 or the pharmaceutical composition as claimed in claim 8, or 9 in the manufacture of

medicament for 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  
5 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, ~~osteoarthritis~~osteoarthritis, periodontitis, peritoneal endometriosis, psoriasis, pulmonary disease, pulmonary fibrosis, pyogenic sterile arthritis, renal disease, rheumatic disease,  
10 rheumatoid arthritis, sepsis, severe pain and ulcerative colitis, together with other clinically relevant agents or biological agents.

15. Use of ~~a combination of~~ the compounds as claimed in any one of the claims 1-4 or the pharmaceutical composition as claimed in claim 8 or 9, with other clinically relevant agents or biological agents in the manufacture of a medicament for ~~the a~~  
15 combination therapy for the treatment of rheumatoid arthritis.

16. Use of ~~a combination of~~ the compounds as claimed in any one of the claims 1-4 or the pharmaceutical composition as claimed in claim 8 or 9, with other clinically relevant immune modulators agents in the manufacture of a medicament for a  
20 combination therapy for the treatment of cancer.