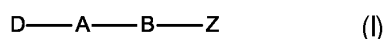


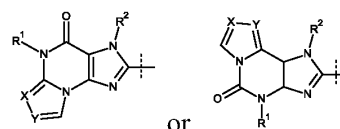
I/We Claim:

- 1) A compound of Formula I, or its stereoisomers, pharmaceutically acceptable salts, complexes, hydrates, solvates, tautomers, polymorphs, prodrugs, racemic mixtures, optically active forms and pharmaceutically active derivatives thereof,



Formula I

wherein



D represents a tricyclic ring system selected from

- 10 wherein R^1 is selected from alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heterocyclyl, heterocyclalkyl, heteroaryl, or heteroarylalkyl;

R^2 is selected from hydrogen, alkyl, alkenyl, alkynyl, alkoxyalkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl, or heteroarylalkyl;

- 15 wherein alkyl, alkenyl, alkynyl, alkoxyalkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl, and heteroarylalkyl are unsubstituted or substituted independently with alkyl, alkenyl, alkynyl, alkoxy, cycloalkyl, cycloalkenyl, acyl, acylamino, acyloxy, amino, monoalkylamino, dialkylamino, arylamino, cycloalkylamino, heteroarylamino, heterocyclalkylamino, aminocarbonyl, alkoxy carbonylamino, azido, cyano, halogen, hydroxy, hydroxyalkyl, keto, thiocarbonyl, carboxy, alkylcarboxy, carboxyalkyl, carboxyalkyloxy, 20 alkylcarboxyalkyloxy, $-\text{SO}_3\text{H}$, aryl, aryloxy, cycloalkyloxy, heteroaryl, aminocarbonylamino, heteroaryloxy, heterocyclyl, heterocyclalkyloxy, hydroxyamino, alkoxyamino, nitro, $\text{S}(\text{O})_2\text{NR}^c$, $-\text{NR}^c\text{S}(\text{O})_2\text{R}^c$ or $-\text{S}(\text{O})_p\text{R}^d$;

- 25 wherein each substituent is unsubstituted or substituted with 1, 2, or 3 substituents independently selected from alkyl, carboxy, carboxyalkyl, aminocarbonyl, hydroxy, alkoxy, halogen, haloalkyl, haloalkoxy, amino, substituted amino, cyano or $-\text{S}(\text{O})_p\text{R}^d$;

X and Y are independently selected from CR' or N, wherein R' is selected from hydrogen, halogen, alkyl and haloalkyl;

A is selected from an optionally substituted arylene or an optionally substituted heteroarylene;

- 5 B is selected from a bond, (C₁-C₆)alkylene, (C₂-C₆)alkenylene or (C₂-C₆)alkynylene group, wherein 1 to 4 methylene groups are optionally replaced by groups independently selected from O, -S(O)_p-, -N(R^b)-, or -C(O)-;
- wherein alkylene, alkenylene, and alkynylene are unsubstituted or substituted independently with alkyl, alkenyl, alkynyl, alkoxy, cycloalkyl, cycloalkenyl, acyl,
- 10 acylamino, acyloxy, amino, monoalkylamino, dialkylamino, arylamino, cycloalkylamino, heteroarylamino, heterocyclylamino, aminocarbonyl, alkoxycarbonylamino, azido, cyano, halogen, hydroxy, hydroxyalkyl, keto, thiocarbonyl, carboxy, alkylcarboxy, carboxyalkyl, carboxyalkyloxy, alkylcarboxyalkyloxy -SO₃H, aryl, aryloxy, cycloalkyloxy, heteroaryl,
- 15 aminocarbonylamino, heteroaryloxy, heterocyclyl, heterocycliloxy, hydroxyamino, alkoxyamino, nitro, S(O)₂NR^cR^c, -NR^cS(O)₂R^c or -S(O)_pR^d;
- Z is selected from hydrogen, heterocyclyl, cycloalkyl, aryl or heteroaryl;
- wherein heterocyclyl, cycloalkyl, aryl and heteroaryl are unsubstituted or substituted independently with alkyl, alkenyl, alkynyl, alkoxy, cycloalkyl, cycloalkylalkyl,
- 20 cycloalkenyl, acyl, acylamino, acyloxy, amino, monoalkylamino, dialkylamino, arylamino, cycloalkylamino, heteroarylamino, heterocyclylamino, aminocarbonyl, alkoxycarbonylamino, azido, cyano, halogen, hydroxy, hydroxyalkyl, keto, thiocarbonyl, carboxy, alkylcarboxy, carboxyalkyl, carboxyalkyloxy, alkylcarboxyalkyloxy -SO₃H, aryl, arylalkyl, aryloxy, cycloalkyloxy, heteroaryl,
- 25 heteroarylalkyl, aminocarbonylamino, heteroaryloxy, heterocyclyl, heterocyclylalkyl, heterocycliloxy, hydroxyamino, alkoxyamino, nitro, -S(O)₂NR^bR^b, -NR^bS(O)₂R^b or -S(O)_pR^d;
- wherein each substituent is unsubstituted or substituted with 1, 2, or 3 substituents independently selected from alkyl, carboxy, carboxyalkyl, aminocarbonyl, hydroxy,
- 30 alkoxy, alkoxyalkoxy, alkoxyalkyl, halogen, haloalkyl, haloalkoxy, amino, substituted amino, cyano or -S(O)_pR^d;

R^a is selected from hydrogen, or alkyl;

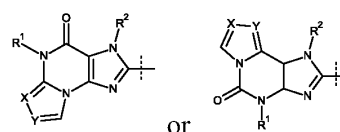
R^b is selected from hydrogen, alkyl, acyl, carboxyalkyl, carbonylamino, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl, heterocyclyl, or heterocyclylalkyl;

5 R^c is selected from hydrogen, alkyl, aryl, heteroaryl, or heterocyclyl;

R^d is selected from alkyl, cycloalkyl, aryl, heterocyclyl, or heteroaryl; and

p is 0, 1, or 2.

2) The compound of Formula I as claimed in claim 1, wherein



D represents a tricyclic ring system selected from

10 wherein R^1 is selected from alkyl, cycloalkyl, aryl, arylalkyl, heterocyclyl, heteroaryl, or heteroarylalkyl;

R^2 is selected from hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, arylalkyl, heteroaryl, or heteroarylalkyl, wherein alkyl, alkenyl, alkynyl, cycloalkyl, aryl, arylalkyl, heteroaryl, and heteroarylalkyl are unsubstituted or substituted

15 independently with alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, acyl, acylamino, amino, monoalkylamino, dialkylamino, arylamino, cycloalkylamino, heteroarylamino, heterocyclylamino, aminocarbonyl, azido, cyano, halogen, hydroxy, hydroxyalkyl, keto, thiocarbonyl, carboxy, alkylcarboxy, carboxyalkyl, -, SO_3H , aryl, cycloalkyloxy, heteroaryl, aminocarbonylamino, heterocyclyl, heterocyclcyloxy, hydroxyamino, nitro, $S(O)_2NR^cR^c$, $-NR^cS(O)_2R^c$ or $-S(O)_pR^d$;

20 wherein each substituent is unsubstituted or substituted with 1, 2, or 3 substituents independently selected from alkyl, carboxy, carboxyalkyl, aminocarbonyl, hydroxyd, alkoxy, halogen, haloalkyl, haloalkoxy, amino, substituted amino, cyano or $-S(O)_pR^d$;

25 X and Y are independently selected from CR' or N, wherein R' is selected from hydrogen, halogen, or alkyl;

A is selected from an optionally substituted arylene or an optionally substituted heteroarylene;

B is selected from a bond, (C₁-C₆)alkylene, or (C₂-C₆)alkynylene group, wherein 1 to 3 methylene groups are optionally replaced by groups independently selected from O, -S(O)_p-, or -C(O)-;

wherein alkylene, and alkynylene are unsubstituted or substituted independently with alkyl, alkenyl, alkynyl, alkoxy, cycloalkyl, cycloalkenyl, acyl, acyloxy, azido, cyano, halogen, hydroxy, hydroxyalkyl, keto, thiocarbonyl, carboxy, alkylcarboxy, carboxyalkyl, carboxyalkyloxy, alkylcarboxyalkyloxy -SO₃H, aryl, aryloxy, cycloalkyloxy, heteroaryl, heteroaryloxy, heterocyclyl, heterocyclyloxy, hydroxyamino, nitro, S(O)₂NR^cR^c, or -S(O)_pR^d;

10 Z is selected from hydrogen, heterocyclyl, cycloalkyl, aryl or heteroaryl; wherein heterocyclyl, cycloalkyl, aryl and heteroaryl are unsubstituted or substituted independently with alkyl, alkenyl, alkynyl, alkoxy, cycloalkyl, cycloalkylalkyl, cycloalkenyl, acyl, acylamino, acyloxy, amino, monoalkylamino, dialkylamino, arylamino, cycloalkylamino, heteroarylamino, heterocyclylamino, aminocarbonyl, 15 alkoxy-carbonylamino, cyano, halogen, hydroxy, hydroxyalkyl, keto, thiocarbonyl, carboxy, alkylcarboxy, carboxyalkyl, carboxyalkyloxy, alkylcarboxyalkyloxy, aryl, arylalkyl, aryloxy, cycloalkyloxy, heteroaryl, heteroarylalkyl, aminocarbonylamino, heteroaryloxy, heterocyclyl, heterocyclylalkyl, heterocyclyloxy, hydroxyamino, alkoxyamino, -S(O)₂NR^bR^b, -NR^bS(O)₂R^b or -S(O)_pR^d;

20 wherein each substituent is unsubstituted or substituted with 1, 2, or 3 substituents independently selected from alkyl, carboxy, carboxyalkyl, aminocarbonyl, hydroxy, alkoxy, alkoxyalkoxy, alkoxyalkyl, halogen, haloalkyl, haloalkoxy, amino, substituted amino;

R^a is selected from hydrogen, or alkyl;

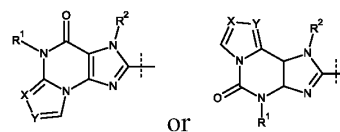
25 R^b is selected from hydrogen, alkyl, acyl, carboxyalkyl, carbonylamino, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl, heterocyclyl, or heterocyclylalkyl;

R^c is selected from hydrogen, alkyl, aryl, heteroaryl, or heterocyclyl;

R^d is selected from alkyl, cycloalkyl, aryl, heterocyclyl, or heteroaryl; and

30 p is 0, 1, or 2.

3) The compound of Formula I as claimed in claim 1, wherein



D represents a tricyclic ring system selected from

wherein R^1 is selected from alkyl, cycloalkyl, aryl, or arylalkyl,

R^2 is selected from hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, or aryl, wherein alkyl, alkenyl, alkynyl, cycloalkyl, aryl, are unsubstituted or substituted

- 5 independently with alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, acyl, acylamino, amino, monoalkylamino, dialkylamino, arylamino, cycloalkylamino, heteroaryl, heterocyclamino, aminocarbonyl, azido, cyano, halogen, hydroxy, hydroxyalkyl, keto, thiocarbonyl, carboxy, alkylcarboxy, carboxyalkyl, , - SO_3H , aryl, cycloalkyloxy, heteroaryl, aminocarbonylamino, heterocycl, heterocycloxy, hydroxyamino, nitro, $S(O)_2NR^cR^c$, $-NR^cS(O)_2R^c$ or $-S(O)_pR^d$;
- 10 wherein each substituent is unsubstituted or substituted with 1, 2, or 3 substituents independently selected from alkyl, carboxy, carboxyalkyl, aminocarbonyl, hydroxy, alkoxy, halogen, haloalkyl, haloalkoxy, amino, substituted amino, cyano or $-S(O)_pR^d$;

- 15 X and Y are independently selected from CR^1 or N, wherein R^1 is selected from hydrogen, halogen, or alkyl;

A is selected from an optionally substituted arylene or an optionally substituted heteroarylene;

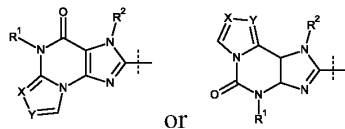
- B is selected from a bond, (C_1-C_6) alkylene, or (C_2-C_6) alkynylene group, wherein 1 to 3 methylene groups are optionally replaced by groups independently selected from O, $-S(O)_p$, or $-C(O)-$;
- 20

- wherein alkylene, and alkynylene are unsubstituted or substituted independently with alkyl, alkenyl, alkynyl, alkoxy, cycloalkyl, cycloalkenyl, acyl, acyloxy, azido, cyano, halogen, hydroxy, hydroxyalkyl, keto, thiocarbonyl, carboxy, alkylcarboxy, carboxyalkyl, carboxyalkyloxy, alkylcarboxyalkyloxy $-SO_3H$, aryl, aryloxy, cycloalkyloxy, heteroaryl, heteroaryloxy, heterocycl, heterocycloxy, hydroxyamino, nitro, $S(O)_2NR^cR^c$, or $-S(O)_pR^d$;
- 25

Z is selected from hydrogen, heterocycl, cycloalkyl, aryl or heteroaryl;

- wherein heterocyclyl, cycloalkyl, aryl and heteroaryl are unsubstituted or substituted independently with alkyl, alkenyl, alkynyl, alkoxy, cycloalkyl, cycloalkylalkyl, cycloalkenyl, acyl, acylamino, acyloxy, amino, monoalkylamino, dialkylamino, arylamino, cycloalkylamino, heteroarylamino, heterocyclylamino, aminocarbonyl, alkoxy carbonylamino, cyano, halogen, hydroxy, hydroxyalkyl, keto, thiocarbonyl, carboxy, alkylcarboxy, carboxyalkyl, carboxyalkyloxy, alkylcarboxyalkyloxy, aryl, arylalkyl, aryloxy, cycloalkyloxy, heteroaryl, heteroarylalkyl, aminocarbonylamino, heteroaryloxy, heterocyclyl, heterocyclylalkyl, heterocycliloxy, hydroxyamino, alkoxyamino, $-S(O)_2NR^bR^b$, $-NR^bS(O)_2R^b$ or $-S(O)_pR^d$;
- wherein each substituent is unsubstituted or substituted with 1, 2, or 3 substituents independently selected from alkyl, carboxy, carboxyalkyl, aminocarbonyl, hydroxy, alkoxy, alkoxyalkoxy, alkoxyalkyl, halogen, haloalkyl, haloalkoxy, amino, substituted amino;
- R^a is selected from hydrogen, or alkyl;
- R^b is selected from hydrogen, alkyl, aryl, arylalkyl, heteroaryl, or heterocyclylalkyl;
- R^c is selected from hydrogen, alkyl, aryl, heteroaryl, or heterocyclyl;
- R^d is selected from alkyl, cycloalkyl, aryl, heterocyclyl, or heteroaryl; and
- p is 1, or 2.

4) The compound of Formula I as claimed in claim 1, wherein

- D represents a tricyclic ring system selected from
- 
- wherein R^1 is selected from alkyl;
- R^2 is selected from hydrogen, or alkyl, wherein alkyl, is unsubstituted or substituted independently with alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, acyl, acylamino, amino, monoalkylamino, dialkylamino, cycloalkylamino, heteroaryl, aminocarbonylamino, heterocyclyl, heterocycliloxy, hydroxyamino, nitro, $S(O)_2NR^cR^c$, $-NR^cS(O)_2R^c$ or $-S(O)_pR^d$;

wherein each substituent is unsubstituted or substituted with 1, 2, or 3 substituents independently selected from alkyl, carboxy, carboxyalkyl, aminocarbonyl,

hydroxyd, alkoxy, halogen, haloalkyl, haloalkoxy, amino, substituted amino, cyano or $-S(O)_pR^d$;

X and Y are independently selected from CR' or N, wherein R' is selected from hydrogen, halogen, or alkyl;

- 5 A is selected from an optionally substituted arylene or an optionally substituted heteroarylene;

B is selected from a bond, (C_1-C_6) alkylene, or (C_2-C_6) alkynylene group, wherein 1 to 3 methylene groups are optionally replaced by groups independently selected from O, $-S(O)_p-$, or $-C(O)-$;

- 10 wherein alkylene, and alkynylene are unsubstituted or substituted independently with alkyl, alkenyl, alkynyl, alkoxy, cycloalkyl, cycloalkenyl, acyl, acyloxy, azido, cyano, halogen, hydroxy, hydroxyalkyl, keto, thiocarbonyl, carboxy, alkylcarboxy, carboxyalkyl, carboxyalkyloxy, alkylcarboxyalkyloxy $-SO_3H$, aryl, aryloxy, cycloalkyloxy, heteroaryl, heteroaryloxy, heterocyclyl, heterocyclyloxy, hydroxyamino, nitro, $S(O)_2NR^cR^c$, or $-S(O)_pR^d$;

Z is selected from hydrogen, heterocyclyl, aryl or heteroaryl;

wherein heterocyclyl, aryl and heteroaryl are unsubstituted or substituted independently with alkyl, alkenyl, alkynyl, alkoxy, cycloalkyl, cycloalkylalkyl, cycloalkenyl, acyl, acylamino, acyloxy, amino, monoalkylamino, dialkylamino, arylamino, cycloalkylamino, heteroarylamino, heterocyclylamino, aminocarbonyl, 20 alkoxy-carbonylamino, halogen, hydroxy, hydroxyalkyl, keto, thiocarbonyl, carboxy, aryl, arylalkyl, aryloxy, cycloalkyloxy, heteroaryl, heteroarylalkyl, heteroaryloxy, heterocyclyl, heterocyclylalkyl, heterocyclyloxy, $-S(O)_2NR^bR^b$, $-NR^bS(O)_2R^b$ or $-S(O)_pR^d$;

- 25 wherein each substituent is unsubstituted or substituted with 1, 2, or 3 substituents independently selected from alkyl, carboxy, carboxyalkyl, aminocarbonyl, hydroxy, alkoxy, alkoxyalkoxy, alkoxyalkyl, halogen, haloalkyl, haloalkoxy, amino, substituted amino;

R^a is selected from hydrogen, or alkyl;

- 30 R^b is selected from hydrogen, alkyl, aryl, arylalkyl, heteroaryl, or heterocyclylalkyl;
 R^c is selected from hydrogen, alkyl, aryl, heteroaryl, or heterocyclyl;

R^d is selected from alkyl, cycloalkyl, aryl, heterocyclyl, or heteroaryl; and
p is 0, 1, or 2.

5. The compound of Formula as claimed in claim 1, wherein the compound of
Formula I is selected from the group consisting of:

- 5 5-propyl-2-[1-[[3-(trifluoromethyl)phenyl]methyl]pyrazol-4-yl]-3H-imidazo[2,1-
b]purin-4-one (**A1**),
2-(1-benzylpyrazol-4-yl)-5-propyl-3H-imidazo[2,1-b]purin-4-one (**A2**),
5-methyl-2-[1-[[3-(trifluoromethyl)phenyl]methyl]pyrazol-4-yl]-3H-imidazo[2,1-
b]purin-4-one (**A3**),
10 5-propyl-2-[1-[2-[3-(trifluoromethyl)phenyl]ethyl]pyrazol-4-yl]-3H-imidazo[2,1-
b]purin-4-one (**A4**),
2-[1-[2-(3-fluorophenyl)ethyl]pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-b]purin-4-
one (**A5**),
2-(1-methylpyrazol-4-yl)-5-propyl-3H-imidazo [2, 1-b] purin-4-one (**A6**),
15 2-[1-(1,1-dimethylpropyl)pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-b]purin-4-one
(**A7**),
N-isopropyl-3-[3-[4-(4-oxo-5-propyl-3H-imidazo[2,1-b]purin-2-yl)pyrazol-1-
yl]prop-1-ynyl]benzamide (**B1**),
Ethyl 3-[3-[4-(4-oxo-5-propyl-3H-imidazo[2,1-b]purin-2-yl)pyrazol-1-yl]prop-1-
20 ynyl]benzoate (**B2**),
5-propyl-2-[1-[3-[3-(trifluoromethoxy)phenyl]prop-2-ynyl]pyrazol-4-yl]-3H-
imidazo[2,1-b]purin-4-one (**B3**),
Ethyl 4-methyl-3-[3-[4-(4-oxo-5-propyl-3H-imidazo[2,1-b]purin-2-yl)pyrazol-1-
yl]prop-1-ynyl]benzoate (**B6**),
25 3-[[4-(4-oxo-5-propyl-3H-imidazo[2,1-b]purin-2-yl)pyrazol-1-
yl]methyl]benzonitrile (**B7**),
2-(1-isopropylpyrazol-4-yl)-5-propyl-3H-imidazo[2,1-b]purin-4-one (**B8**),
2-(1-butylpyrazol-4-yl)-5-propyl-3H-imidazo[2,1-b]purin-4-one (**B9**),
2-(1-ethylpyrazol-4-yl)-5-propyl-3H-imidazo[2,1-b]purin-4-one (**B10**),
30 2-[1-(2-methoxyethyl)pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-b]purin-4-one (**B11**),

- 2-[1-(2-dimethylaminoethyl)pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-b]purin-4-one
(**B12**),
5-propyl-2-(1-propylpyrazol-4-yl)-3H-imidazo[2,1-b]purin-4-one (**B13**),
N,N-dimethyl-2-[4-(4-oxo-5-propyl-3H-imidazo[2,1-b]purin-2-yl)pyrazol-1-
5 yl]acetamide (**B14**),
2-[1-(2-morpholinoethyl)pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-b]purin-4-one
(**B15**),
2-[1-(cyclobutylmethyl)pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-b]purin-4-one
(**B16**),
10 2-(1-isobutylpyrazol-4-yl)-5-propyl-3H-imidazo[2,1-b]purin-4-one (**B17**),
2-[1-(cyclopropylmethyl)pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-b]purin-4-one
(**B18**),
2-[1-(2,2-dimethylpropyl)pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-b]purin-4-one
(**B19**),
15 5-propyl-2-(1-sec-butylpyrazol-4-yl)-3H-imidazo[2,1-b]purin-4-one (**B20**),
5-propyl-2-[1-(tetrahydrofuran-2-ylmethyl)pyrazol-4-yl]-3H-imidazo[2,1-b]purin-
4-one (**B21**),
2-[1-[[5-oxo-1-[2-(trifluoromethyl)-4-pyridyl]pyrrolidin-3-yl]methyl]pyrazol-4-yl]-
5-propyl-3H-imidazo[2,1-b]purin-4-one (**C1**),
20 2-[1-[[5-oxo-1-[5-(trifluoromethyl)-3-pyridyl]pyrrolidin-3-yl]methyl]pyrazol-4-yl]-
5-propyl-3H-imidazo[2,1-b]purin-4-one (**C2**),
2-[1-[[5-oxo-1-[3-(trifluoromethyl)phenyl]pyrrolidin-3-yl]methyl]pyrazol-4-yl]-5-
propyl-3H-imidazo[2,1-b]purin-4-one (**C3**),
2-[1-[2-(1-piperidyl)ethyl]pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-b]purin-4-one
25 (**D1**),
2-[1-[[3-(hydroxymethyl)phenyl]methyl]pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-
b]purin-4-one (**E1**),
2-[1-[[3-(1-hydroxy-1-methyl-ethyl)phenyl]methyl]pyrazol-4-yl]-5-propyl-3H-
imidazo[2,1-b]purin-4-one (**F1**),
30 3-[[4-(4-oxo-5-propyl-3H-imidazo[2,1-b]purin-2-yl)pyrazol-1-yl]methyl]benzoic
acid (**G1**),

- 2-[4-(4-oxo-5-propyl-3H-imidazo[2,1-b]purin-2-yl)pyrazol-1-yl]acetic acid (**H1**),
 2-[1-(2-hydroxy-2-methyl-propyl)pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-b]purin-4-one (**I1**),
 2-[1-(2,3-dihydroxypropyl)pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-b]purin-4-one
 5 (**J1**),
 2-(3,4-dimethoxyphenyl)-5-propyl-3H-imidazo[2,1-b]purin-4-one (**K1**),
 5-propyl-2-[3-(trifluoromethyl)phenyl]-3H-imidazo[2,1-b]purin-4-one (**K2**),
 2-[1-[(3-fluorophenyl)methyl]pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-b]purin-4-one (**K3**),
 10 2-[1-[(3-methoxyphenyl)methyl]pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-b]purin-4-one (**K4**),
 2-[4-[2-(1-piperidyl)ethoxy]phenyl]-5-propyl-3H-imidazo[2,1-b]purin-4-one (**K5**),
 2-(5-methoxy-2-pyridyl)-5-propyl-3H-imidazo[2,1-b]purin-4-one (**K6**),
 2-(4-ethoxyphenyl)-5-propyl-3H-imidazo[2,1-b]purin-4-one (**K7**),
 15 N-isopropyl-2-[4-(4-oxo-5-propyl-3H-imidazo[2,1-b]purin-2-yl)pyrazol-1-yl]acetamide (**L1**),
 N-(oxetan-3-yl)-2-[4-(4-oxo-5-propyl-3H-imidazo[2,1-b]purin-2-yl)pyrazol-1-yl]acetamide (**L2**),
 4-propyl-2-[1-[[3-(trifluoromethyl)phenyl]methyl]pyrazol-4-yl]-1H-imidazo[2,1-b]purin-5-one (**I1**),
 20 f]purin-5-one (**I1**),
 2-[1-(2-furylmethyl)pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-b]purin-4-one (**III**),
 5-propyl-2-[1-(2-thienylmethyl)pyrazol-4-yl]-3H-imidazo[2,1-b]purin-4-one (**IV**),
 2-[1-(oxazol-2-ylmethyl)pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-b]purin-4-one (**V**),
 2-[1-(isoxazol-5-ylmethyl)pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-b]purin-4-one
 25 (**VI**),
 2-[1-[(5-methyl-2-thienyl)methyl]pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-b]purin-4-one (**VII**),
 2-[1-[(3,5-difluorophenyl)methyl]pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-b]purin-4-one (**VIII**),
 5-propyl-2-[1-(4-pyridylmethyl)pyrazol-4-yl]-3H-imidazo[2,1-b]purin-4-one (**IX**),
 30 5-propyl-2-[1-(3-pyridylmethyl)pyrazol-4-yl]-3H-imidazo[2,1-b]purin-4-one (**X**),

- 5-propyl-2-[1-(2-pyridylmethyl)pyrazol-4-yl]-3H-imidazo[2,1-b]purin-4-one (XI),
5-propyl-2-[1-(pyrimidin-5-ylmethyl)pyrazol-4-yl]-3H-imidazo[2,1-b]purin-4-one
(XII),
5-propyl-2-[1-(pyridazin-4-ylmethyl)pyrazol-4-yl]-3H-imidazo[2,1-b]purin-4-one
5 (XIII),
2-[1-[(1-oxoisindolin-5-yl)methyl]pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-
b]purin-4-one (XIV),
2-[1-[(2-methyl-1-oxo-isoindolin-5-yl)methyl]pyrazol-4-yl]-5-propyl-3H-
imidazo[2,1-b]purin-4-one (XV),
10 2-[1-[(1-oxo-3,4-dihydro-2H-isoquinolin-6-yl)methyl]pyrazol-4-yl]-5-propyl-3H-
imidazo[2,1-b]purin-4-one (XVI),
2-[1-[(2-oxo-3,4-dihydro-1H-quinolin-6-yl)methyl]pyrazol-4-yl]-5-propyl-3H-
imidazo[2,1-b]purin-4-one (XVII),
5-propyl-2-[1-(quinoxalin-6-ylmethyl)pyrazol-4-yl]-3H-imidazo[2,1-b]purin-4-one
15 (XVIII),
2-[1-(2-naphthylmethyl)pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-b]purin-4-one
(XIX),
2-[1-[[3-(azetidin-3-yl)phenyl]methyl]pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-
b]purin-4-one (XX),
20 2-[1-[[3-(2-methoxyethoxy)phenyl]methyl]pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-
b]purin-4-one (XXI),
2-[1-[[4-(2-methoxyethoxy)phenyl]methyl]pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-
b]purin-4-one (XXII),
5-propyl-2-[1-[3-[3-(trifluoromethyl)phenyl]prop-2-ynyl]pyrazol-4-yl]-3H-
25 imidazo[2,1-b]purin-4-one (XXIII),
2-[1-[3-(3-fluorophenyl)prop-2-ynyl]pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-
b]purin-4-one (XXIV),
2-[1-[3-(4-fluorophenyl)prop-2-ynyl]pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-
b]purin-4-one (XXV),
30 5-propyl-2-[1-[3-[4-(trifluoromethyl)phenyl]prop-2-ynyl]pyrazol-4-yl]-3H-
imidazo[2,1-b]purin-4-one (XXVI),

- 2-[1-[[1-(3-fluorophenyl)-5-oxo-pyrrolidin-3-yl]methyl]pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-b]purin-4-one (**XXVII**),
2-[1-[[1-(m-tolyl)-5-oxo-pyrrolidin-3-yl]methyl]pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-b]purin-4-one (**XXVIII**),
5 2-[1-[(3-chloro-5-fluoro-phenyl)methyl]pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-b]purin-4-one (**XXIX**),
2-[[4-(4-oxo-5-propyl-3H-imidazo[2,1-b]purin-2-yl)pyrazol-1-yl]methyl]benzonitrile (**XXX**),
2-[1-[(2-fluorophenyl)methyl]pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-b]purin-4-
10 one (**XXXI**),
4-[[4-(4-oxo-5-propyl-3H-imidazo[2,1-b]purin-2-yl)pyrazol-1-yl]methyl]benzonitrile (**XXXII**),
2-[1-[[3-(4-methylpiperazin-1-yl)phenyl]methyl]pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-b]purin-4-one (**XXXIII**),
15 2-[1-[1-(3-fluorophenyl)ethyl]pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-b]purin-4-one (**XXXIV**),
2-[1-[(4-isopropylphenyl)methyl]pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-b]purin-4-one (**XXXV**),
5-propyl-2-[1-(2,2,2-trifluoroethyl)pyrazol-4-yl]-3H-imidazo[2,1-b]purin-4-one
20 (**XXXVI**),
2-[1-(2-aminoethyl)pyrazol-4-yl]-5-propyl-3H-imidazo[2,1-b]purin-4-one (**XXXVII**),
5-propyl-2-(1-tetrahydropyran-4-yl)pyrazol-4-yl)-3H-imidazo[2,1-b]purin-4-one (**XXXVIII**),
25 2-(1-cyclopentylpyrazol-4-yl)-5-propyl-3H-imidazo[2,1-b]purin-4-one (**XXXIX**),
7-methyl-5-propyl-2-[1-[[3-(trifluoromethyl)phenyl]methyl]pyrazol-4-yl]-3H-imidazo[2,1-b]purin-4-one (**XL**),
8-methyl-5-propyl-2-[1-[[3-(trifluoromethyl)phenyl]methyl]pyrazol-4-yl]-3H-imidazo[2,1-b]purin-4-one (**XLI**),
30 7-methyl-5-propyl-2-(1-propylpyrazol-4-yl)-3H-imidazo[2,1-b]purin-4-one (**XLII**),
2-(1-ethylpyrazol-4-yl)-7-methyl-5-propyl-3H-imidazo[2,1-b]purin-4-one (**XLIII**),

7-methyl-2-(1-methylpyrazol-4-yl)-5-propyl-3H-imidazo[2,1-b]purin-4-one
(**XLIV**),

5-propyl-2-(1-propylpyrazol-4-yl)-7-(trifluoromethyl)-3H-imidazo[2,1-b]purin-4-one (**XLV**),

5 5-propyl-7-(trifluoromethyl)-2-[1-[[3-(trifluoromethyl)phenyl]methyl]pyrazol-4-yl]-3H-imidazo[2,1-b]purin-4-one (**XLVI**),

2-[1-(m-tolylmethyl)pyrazol-4-yl]-4-propyl-1H-imidazo[2,1-f]purin-5-one
(**XLVII**),

10 2-[1-[(3-fluorophenyl)methyl]pyrazol-4-yl]-4-propyl-1H-imidazo[2,1-f]purin-5-one (**XLVIII**),

3-[[4-(5-oxo-4-propyl-1H-imidazo[2,1-f]purin-2-yl)pyrazol-1-yl]methyl]benzonitrile (**XLIX**),

3-[[4-(4-ethyl-5-oxo-1H-imidazo[2,1-f]purin-2-yl)pyrazol-1-yl]methyl]benzonitrile
(**L**),

15 3-[1-methyl-1-[4-(4-oxo-5-propyl-3H-imidazo[2,1-b]purin-2-yl)pyrazol-1-yl]ethyl]benzonitrile (**LI**),

5-propyl-2-[3-[[3-(trifluoromethyl)phenyl]methoxy]isoxazol-5-yl]-3H-imidazo[2,1-b]purin-4-one (**LII**).

6. A compound of Formula I as claimed in any one of the claims 1 to 5 or its
20 stereoisomers, pharmaceutically acceptable salts, complexes, hydrates, solvates, tautomers, polymorphs, racemic mixtures, optically active forms and pharmaceutically active derivatives thereof for use as a medicament.

7. A compound of Formula I as claimed in any one of the claims 1 to 5 or its
25 stereoisomers, pharmaceutically acceptable salts, complexes, hydrates, solvates, tautomers, polymorphs, racemic mixtures, optically active forms and pharmaceutically active derivatives thereof, for use in treating conditions and diseases that are mediated by adenosine receptor (AR) activity.

8. A compound of Formula I as claimed in any one of the claims 1 to 5 or its
30 stereoisomers, pharmaceutically acceptable salts, complexes, hydrates, solvates, tautomers, polymorphs, racemic mixtures, optically active forms and pharmaceutically active derivatives thereof, either alone or in combination with other

therapeutic agents for use in methods for treating or lessening the severity of immunotherapies or radiotherapy or chemotherapy.

9. A pharmaceutical composition comprising a compound of Formula I as claimed in any one of the claims 1 to 5 or its stereoisomers, pharmaceutically acceptable salts, complexes, hydrates, solvates, tautomers, polymorphs, racemic mixtures, optically active forms and pharmaceutically active derivative thereof, together with a pharmaceutically acceptable carrier.
10. A pharmaceutical composition comprising a compound of Formula I as claimed in any one of the claims 1 to 5 or its stereoisomers, pharmaceutically acceptable salts, complexes, hydrates, solvates, tautomers, polymorphs, racemic mixtures, optically active forms and pharmaceutically active derivative thereof, together with a pharmaceutically acceptable excipient or a pharmaceutically acceptable diluent.
11. A pharmaceutical composition comprising a compound of Formula I as claimed in any one of the claims 1 to 5, or its stereoisomers, pharmaceutically acceptable salts, complexes, hydrates, solvates, tautomers, polymorphs, racemic mixtures, optically active forms and pharmaceutically active derivative thereof, together with a pharmaceutically acceptable carrier, and in combination with at least one compound and/or compositions having a like therapeutic effect.
12. A pharmaceutical composition comprising a compound of Formula I as claimed in any one of the claims 1 to 5, or its stereoisomers, pharmaceutically acceptable salts, complexes, hydrates, solvates, tautomers, polymorphs, racemic mixtures, optically active forms, and pharmaceutically active derivative thereof, either alone or in combination with other therapeutic agents for use in methods for treating or lessening the severity of immunotherapies or radiotherapy or chemotherapy.
13. Use of compound of Formula I as claimed in any one of the claims 1 to 5, or its stereoisomers, pharmaceutically acceptable salts, complexes, hydrates, solvates, tautomers, polymorphs, racemic mixtures, optically active forms and pharmaceutically active derivative thereof, in killing or inhibiting the diseases that are mediated by adenosine receptor (AR) activity.

14. A method for treatment of cancer in a subject comprising: administering to the subject an effective amount of the compound as claimed in any one of the claims 1 to 5, 9 to 12.
15. A method for treatment of disorder or condition selected from melanoma, triple
5 negative breast cancer, colon cancer, colorectal cancer, lung cancer, prostate cancer, renal cell cancer, non-small cell lung cancer, bladder cancer, cervical, vulvar or anal cancer, esophageal cancer, metastatic head and neck cancer, liver cancer, lymphoma, multiple myeloma, ovarian cancer, pancreatic cancer, acute myeloid leukemia, or
10 Kaposi sarcoma in a subject comprising: administering to the subject an effective amount of the compound as claimed in any one of the claims 1 to 5, 9 to 12.
16. A process of preparation of compound of Formula I as claimed in any one of the claims 1-5.