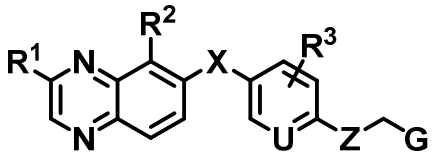
[0010a] A first aspect of the present disclosure relates to a compound of Formula I



Formula I

or a stereoisomer, a tautomer, a pharmaceutically acceptable salt thereof;

wherein:

X is selected from the group consisting of CR^4R^5, NR^6, O and S;

Z is selected from the group consisting of $-NR^7-$ and $-O-$;

U is N or CR^8;

G is selected from the group consisting of aryl, heteroaryl, cycloalkyl, heterocycle and alkyne.

R^1 is selected from the group consisting of hydrogen, deuterium, halogen, amino, hydroxyl, C_1-C_6 alkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, C_3-C_6 cycloalkyl, C_5-C_6 cycloalkenyl, C_1-C_6 alkylamino, C_1-C_6 dialkylamino, C_3-C_6 cycloalkylamino, C_1-C_6 alkoxy, C_3-C_6 cycloalkoxy, aryl, a 3-to-6 membered heterocyclyl, and a 5-to-6 membered heteroaryl, wherein the alkylamino, dialkylamino, alkoxy, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, cycloalkylamino, cycloalkoxy, heterocyclyl, aryl and heteroaryl are optionally substituted with halogen, amino, hydroxyl, cyano, nitro, acyl, acyloxy, C_1-C_4 alkyl, hydroxyl C_1-C_4 alkyl, alkoxy C_1-C_4 alkyl, acyloxy C_1-C_4 alkyl, C_1-C_4 alkoxy, C_1-C_4 dialkylamino, C_3-C_6 cycloalkyl, a 3-to-6 membered heterocyclyl, aryl, and a 5-to-6 membered heteroaryl;

R^2 is selected from the group consisting of hydrogen, deuterium, halogen, nitro, cyano, trifluoromethyl, C_1-C_6 alkylamino, C_1-C_6 dialkylamino, C_1-C_6 alkoxy, carboxylic acid, C_1-C_6 alkyl carbonyl, C_2-C_6 alkenyl carbonyl, C_1-C_6 alkoxy carbonyl, amino carbonyl, C_1-C_6 alkylamino carbonyl and C_1-C_6 dialkylamino carbonyl;

R^3 is selected from the group consisting of hydrogen, deuterium, halogen, hydroxyl, amino, cyano, trifluoromethyl, C_1-C_6 alkyl, C_1-C_6 alkoxy, C_1-C_6 alkylamino and C_1-C_6 dialkylamino;

R^4 is selected from the group consisting of hydrogen, deuterium, halogen, hydroxyl, amino, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 alkoxy and aryl;

R^5 is selected from the group consisting of hydrogen, deuterium, C_1-C_6 alkyl and C_1-C_6 haloalkyl;

R^6 is selected from the group consisting of hydrogen, C_1-C_6 alkyl and C_1-C_6 haloalkyl;

R^7 is selected from the group consisting of hydrogen, C_1-C_6 alkyl and C_1-C_6 haloalkyl; and

R^8 is selected from the group consisting of hydrogen, deuterium, halogen, hydroxyl, amino, cyano, trifluoromethyl, C_1-C_6 alkyl, C_1-C_6 alkoxy, C_1-C_6 alkylamino and C_1-C_6 dialkylamino.

[0011] One aspect of the disclosure relates to pharmaceutical compositions comprising compounds of Formula I and a carrier, diluent or excipient.

[0011a] Another aspect of the disclosure relates to a pharmaceutical composition as described herein for use in treating a cancer, autoimmune disease, or bone resorptive disease mediated by CSF-1R, FLT3, c-KIT, and/or PDGFR kinase, or mediated by a mutant kinase of CSF-1R, FLT3, c-KIT, or PDGFR.

[0012] Another aspect of the disclosure relates to a method of inhibiting type III receptor tyrosine kinases, such as PDGFR, CSF-1R, FLT-3 and/or c-KIT, in a mammal. A method in accordance with embodiments of the invention comprises: administering to said mammal in need thereof a therapeutically effective amount of a compound of Formula I or a pharmaceutically acceptable salt thereof.

[0012a] Another aspect of the disclosure relates to the use of the pharmaceutical composition as described herein, in the manufacture of a medicament for treating a cancer, autoimmune disease, or bone resorptive disease mediated by CSF-1R, FLT3, c-KIT, and/or PDGFR kinase, wherein a therapeutically effective amount of the pharmaceutical composition is to be administered to a subject in need thereof.

[0013] Another aspect of the disclosure relates to a method for treating a disease or disorder selected from fibrosis, bone-related diseases, cancer, autoimmune disorders, inflammatory diseases, cardiovascular diseases, pain and bums in a mammal. A method in accordance with embodiments of the invention comprises administering to said mammal in need thereof a therapeutically effective amount of a compound of Formula I or a pharmaceutically acceptable salt thereof.

[0014] Another aspect of the disclosure relates to use of a compound of Formula I in the manufacture of a medicament for the treatment of a disease or disorder selected from fibrosis, bone-related diseases, cancer, autoimmune disorders, inflammatory diseases, cardiovascular diseases, pain and bums in a mammal.

[0015] Another aspect of the disclosure relates to a compound of Formula I, or a pharmaceutical composition thereof, for use in the treatment of a disease or disorder selected from fibrosis, bone-related diseases, cancer, autoimmune disorders, inflammatory diseases, cardiovascular diseases, pain and burns in a mammal.

[0016] Another aspect of the present disclosure relates to a pharmaceutical composition comprising a compound of this invention, a stereoisomer, tautomer, solvate, prodrug or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier or excipient.

[0017] Other aspects and advantages of the disclosure will be apparent from the following description and the appended claims.

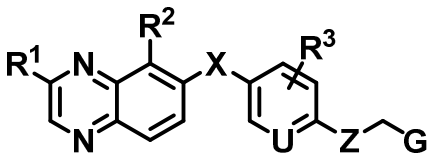
DETAILED DESCRIPTION

[0018] While enumerated embodiments will be described, it will be understood that they are not intended to limit the invention to those embodiments. On the contrary, the

CLAIMS

What is claimed is:

1. A compound of formula (I):



formula (I)

or a stereoisomer, a tautomer, a pharmaceutically acceptable salt thereof,

wherein:

X is selected from the group consisting of CR^4R^5, NR^6, O and S;

Z is selected from the group consisting of $-NR^7-$ and $-O-$;

U is N or CR^8;

G is selected from the group consisting of aryl, heteroaryl, cycloalkyl, heterocycle and alkyne.

R^1 is selected from the group consisting of hydrogen, deuterium, halogen, amino, hydroxyl, C_1-C_6 alkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, C_3-C_6 cycloalkyl, C_5-C_6 cycloalkenyl, C_1-C_6 alkylamino, C_1-C_6 dialkylamino, C_3-C_6 cycloalkylamino, C_1-C_6 alkoxy, C_3-C_6 cycloalkoxy, aryl, a 3-to-6 membered heterocyclyl, and a 5-to-6 membered heteroaryl, wherein the alkylamino, dialkylamino, alkoxy, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, cycloalkylamino, cycloalkoxy, heterocyclyl, aryl and heteroaryl are optionally substituted with halogen, amino, hydroxyl, cyano, nitro, acyl, acyloxy, C_1-C_4 alkyl, hydroxyl C_1-C_4 alkyl, alkoxy C_1-C_4 alkyl, acyloxy C_1-C_4 alkyl, C_1-C_4 alkoxy, C_1-C_4 dialkylamino, C_3-C_6 cycloalkyl, a 3-to-6 membered heterocyclyl, aryl, and a 5-to-6 membered heteroaryl;

R^2 is selected from the group consisting of hydrogen, deuterium, halogen, nitro, cyano, trifluoromethyl, C_1-C_6 alkylamino, C_1-C_6 dialkylamino, C_1-C_6 alkoxy, carboxylic acid, C_1-C_6 alkyl carbonyl, C_2-C_6 alkenyl carbonyl, C_1-C_6 alkoxy carbonyl, amino carbonyl, C_1-C_6 alkylamino carbonyl and C_1-C_6 dialkylamino carbonyl;

R^3 is selected from the group consisting of hydrogen, deuterium, halogen, hydroxyl, amino, cyano, trifluoromethyl, C_1-C_6 alkyl, C_1-C_6 alkoxy, C_1-C_6 alkylamino and

C_1-C_6 dialkylamino;

R^4 is selected from the group consisting of hydrogen, deuterium, halogen, hydroxyl, amino, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 alkoxy and aryl;

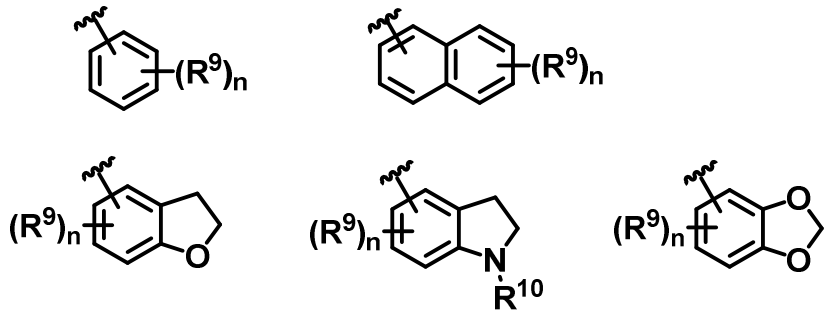
R^5 is selected from the group consisting of hydrogen, deuterium, C_1-C_6 alkyl and C_1-C_6 haloalkyl;

R^6 is selected from the group consisting of hydrogen, C_1-C_6 alkyl and C_1-C_6 haloalkyl;

R^7 is selected from the group consisting of hydrogen, C_1-C_6 alkyl and C_1-C_6 haloalkyl; and

R^8 is selected from the group consisting of hydrogen, deuterium, halogen, hydroxyl, amino, cyano, trifluoromethyl, C_1-C_6 alkyl, C_1-C_6 alkoxy, C_1-C_6 alkylamino and C_1-C_6 dialkylamino.

2. The compound of Claim 1, wherein G is selected from:



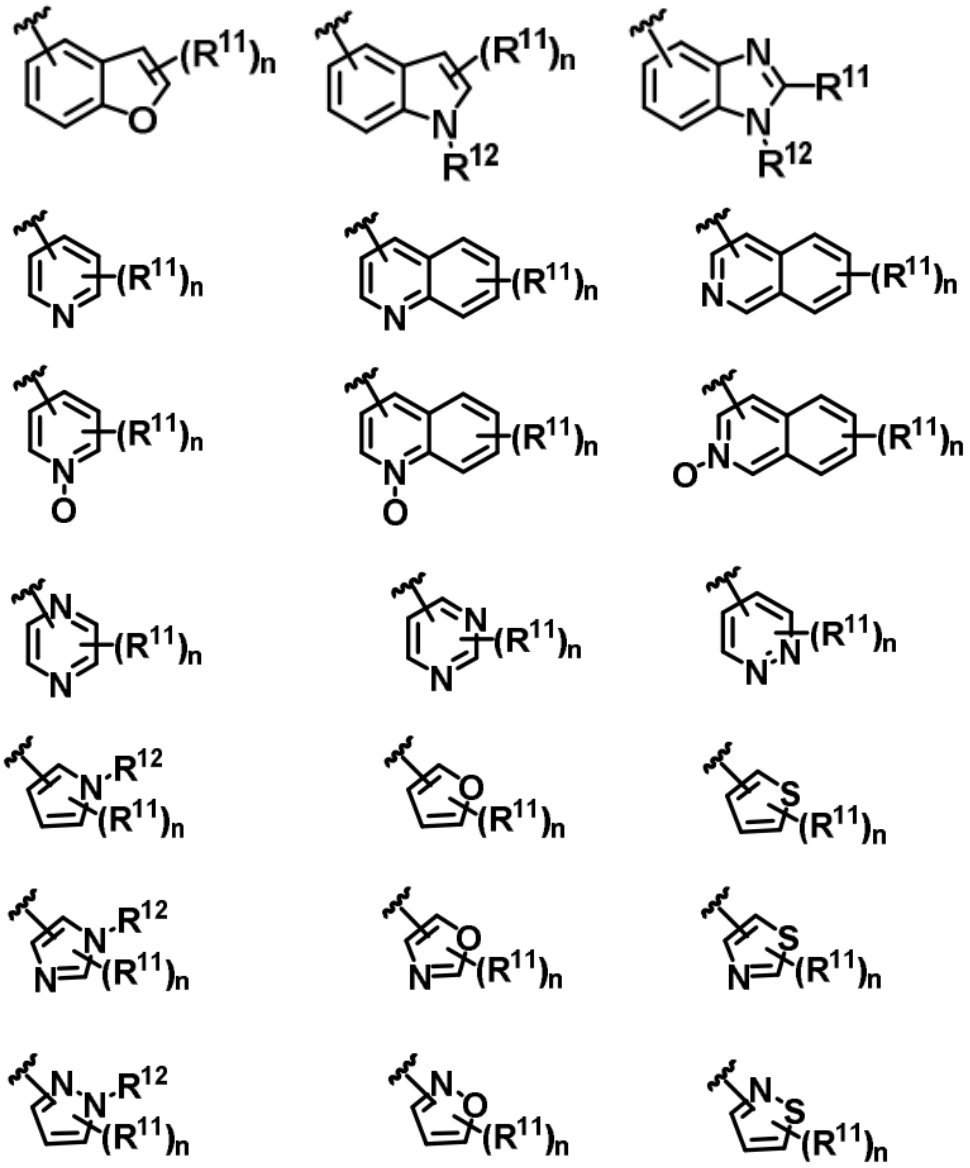
wherein

R^9 is selected from the group consisting of hydrogen, deuterium, halogen, nitro, cyano, trifluoromethyl, trifluoromethoxy, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 alkylaminoC_1-C_6 alkyl, C_1-C_6 dialkylaminoC_1-C_6 alkyl, C_1-C_6 alkylamino, C_1-C_6 - alkoxyC_1-C_6 alkyl, C_1-C_6 dialkylamino, C_1-C_6 alkoxy, carboxylic acid, carbonyl C_1-C_6 alkoxy, carbonyl C_1-C_6 alkylamino, and carbonyl C_1-C_6 dialkylamino;

R^{10} is selected from the group consisting of hydrogen, C_1-C_6 alkyl and C_1-C_6 haloalkyl; and

each n is individually and independently 0, 1, 2, or 3.

3. The compound of Claim 1, wherein G is selected from:



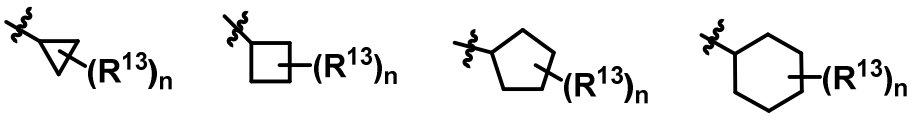
wherein

R^{11} is selected from the group consisting of hydrogen, deuterium, halogen, nitro, cyano, trifluoromethyl, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_3-C_6 cycloalkyl, C_3-C_6 cycloalkyl C_1-C_6 alkyl, C_1-C_6 alkylamino, C_1-C_6 dialkylamino, C_1-C_6 alkoxy, C_1-C_6 alkoxy C_1-C_6 alkyl, carboxylic acid, carbonyl C_1-C_6 alkoxy, carbonyl C_1-C_6 alkylamino and carbonyl C_1-C_6 dialkylamino;

R^{12} is selected from the group consisting of hydrogen, C_1-C_6 alkyl and C_1-C_6 haloalkyl; and

each n is individually and independently 0, 1, 2, or 3.

4. The compound of Claim 1, wherein G is selected from:



wherein

R^{13} is selected from the group consisting of hydrogen, deuterium, halogen, nitro, cyano, trifluoromethyl, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 alkylamino, C_1-C_6 dialkylamino, C_1-C_6 alkoxy, carboxylic acid, C_1-C_6 alkoxycarbonyl, C_1-C_6 alkylaminocarbonyl and C_1-C_6 dialkylaminocarbonyl; and

each n is individually and independently 0, 1, 2, or 3.

5. The compound of Claim 1, wherein G is selected from:



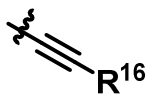
wherein

R^{14} is selected from the group consisting of hydrogen, deuterium, halogen, nitro, cyano, trifluoromethyl, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 alkylamino, C_1-C_6 dialkylamino, C_1-C_6 alkoxy, carboxylic acid, C_1-C_6 alkoxycarbonyl, C_1-C_6 alkylaminocarbonyl and C_1-C_6 dialkylaminocarbonyl;

Q is selected from NR^{15}, O, and S, wherein R^{15} is selected from the group consisting of hydrogen, C_1-C_6 alkyl and C_1-C_6 haloalkyl; and

each n is individually and independently 0, 1, 2, or 3.

6. The compound of Claim 1, wherein G is:



wherein R^{16} is selected from the group consisting of hydrogen, deuterium, C_1-C_6 alkyl, C_1-C_6 haloalkyl, 3-to-6 membered heterocyclyl, 5-to-6 membered heteroaryl, C_1-C_6 alkoxycarbonyl, C_1-C_6 alkylaminocarbonyl and C_1-C_6 dialkylaminocarbonyl.

7. The compound of any one of claims 1-6, wherein X is NH.

8. The compound of any one of claims 1-7, wherein Z is –O–.

9. The compound of claim 1, where the compound is:

3-methoxy-6-((6-(((6-(trifluoromethyl)pyridin-3-yl)methyl)amino)pyridin-3-yl)amino)quinoxaline-5-carbonitrile;

N^5-(3-methoxyquinoxalin-6-yl)-N^2-((6-(trifluoromethyl)pyridin-3-yl)methyl)pyridine-2,5-diamine;

3-methoxy-6-((3-methoxy-4-((4-methoxybenzyl)oxy)phenyl)amino)quinoxaline-5-carbonitrile;

3-methoxy-6-((6-((4-(trifluoromethyl)benzyl)amino)pyridin-3-yl)amino)quinoxaline-5-carbonitrile;

3-methoxy-N-(3-methoxy-4-((4-methoxybenzyl)oxy)phenyl)quinoxalin-6-amine;

3-methoxy-6-((6-(pyridin-3-ylmethoxy)pyridin-3-yl)amino)quinoxaline-5-carbonitrile;

3-(dimethylamino)-6-((3-methoxy-4-((4-methoxybenzyl)oxy)phenyl)amino)quinoxaline-5-carbonitrile;

3-methoxy-6-((3-methoxy-4-(pyridin-3-ylmethoxy)phenyl)amino)quinoxaline-5-carbonitrile;

3-methoxy-6-((6-((4-methoxybenzyl)oxy)pyridin-3-yl)amino)quinoxaline-5-carbonitrile;

3-methoxy-6-(3-methoxy-4-((4-methoxybenzyl)oxy)phenoxy)quinoxaline-5-carbonitrile;

6-(3-methoxy-4-(4-methoxybenzyloxy)phenylamino)-3-(methylamino)quinoxaline-5-carbonitrile;

3-(2-(dimethylamino)ethoxy)-6-(3-methoxy-4-(4-methoxybenzyloxy)phenylamino)-quinoxaline-5-carbonitrile;

3-methoxy-6-(3-methoxy-4-(4-methoxybenzylamino)phenylamino)quinoxaline-5-carbonitrile;

3-methoxy-6-(4-(4-methoxybenzyloxy)phenylamino)quinoxaline-5-carbonitrile;

6-(3-methoxy-4-(4-methoxybenzyloxy)phenylamino)-3-morpholinoquinoxaline-5-carbonitrile;

3-(isopropylamino)-6-(3-methoxy-4-(4-methoxybenzyloxy)phenylamino)quinoxaline-5-carbonitrile;

6-(2-fluoro-4-(4-methoxybenzyloxy)phenylamino)-3-methoxyquinoxaline-5-carbonitrile;

3-(dimethylamino)-6-(3-methoxy-4-(4-methoxybenzyloxy)phenoxy)quinoxaline-

5-carbonitrile;

6-(4-(4-ethoxybenzyloxy)-3-methoxyphenylamino)-3-methoxyquinoxaline-5-carbonitrile;

3-methoxy-6-(3-methoxy-4-(4-(trifluoromethoxy)benzyloxy)phenylamino)quinoxaline- 5-carbonitrile;

6-(3-fluoro-4-(4-methoxybenzyloxy)phenylamino)-3-methoxyquinoxaline-5-carbonitrile;

6-(4-(benzyloxy)-3-methoxyphenylamino)-3-methoxyquinoxaline-5-carbonitrile;

N-(3-methoxy-4-(4-methoxybenzyloxy)phenyl)-3-morpholinoquinoxalin-6-amine;

N^7-(3-methoxy-4-(4-methoxybenzyloxy)phenyl)-N^2-methylquinoxaline-2,7-diamine;

3-methoxy-6-(3-methoxy-4-(4-methoxybenzyloxy)phenoxy)quinoxaline-5-carbonitrile;

6-(3-methoxy-4-(4-methoxybenzyloxy)phenoxy)-3-morpholinoquinoxaline-5-carbonitrile;

6-(4-(4-chlorobenzyloxy)-3-methoxyphenoxy)-3-methoxyquinoxaline-5-carbonitrile;

6-(4-(4-isopropylbenzylamino)-3-methoxyphenylamino)-3-methoxyquinoxaline-5-carbonitrile;

6-(3-ethoxy-4-(4-methoxybenzyloxy)phenoxy)-3-methoxyquinoxaline-5-carbonitrile;

6-(3-methoxy-4-(4-methoxybenzyloxy)phenylamino)-3-(4-methylpiperazin-1-yl) quinoxaline-5-carbonitrile

6-(3-methoxy-4-(4-(trifluoromethoxy)benzyloxy)phenylamino)-3-morpholinoquinoxaline-5-carbonitrile;

6-(4-(4-ethylbenzyloxy)-3-methoxyphenylamino)-3-morpholinoquinoxaline-5-carbonitrile;

6-(4-(4-fluorobenzyloxy)-3-methoxyphenylamino)-3-methoxyquinoxaline-5-carbonitrile;

6-(4-(4-ethoxybenzyloxy)-3-methoxyphenylamino)-3-morpholinoquinoxaline-5-carbonitrile;

6-(4-(cyclopropylmethoxy)-3-methoxyphenylamino)-3-morpholinoquinoxaline-5-carbonitrile;

6-(5-methoxy-6-(4-methoxybenzyloxy)pyridin-3-ylamino)-3-morpholinoquinoxaline-5-carbonitrile;

6-(4-(4-methoxybenzyloxy)phenylamino)-3-morpholinoquinoxaline-5-carbonitrile;

6-(3-methoxy-4-(4-methoxybenzylamino)phenylamino)-3-morpholinoquinoxaline-

5-carbonitrile;

6-(4-(4-fluorobenzyloxy)-3-methoxyphenylamino)-3-morpholinoquinoxaline-5-carbonitrile;

6-(3-methoxy-4-((3-methyloxetan-3-yl)methoxy)phenylamino)-3-morpholinoquinoxaline-5-carbonitrile;

6-(3-methoxy-4-((1-methylpiperidin-4-yl)methoxy)phenylamino)-3-morpholino-quinoxaline-5-carbonitrile;

6-(3-methoxy-4-(pyridin-3-ylmethoxy)phenylamino)-3-morpholinoquinoxaline-5-carbonitrile;

6-(4-(cyclopentylmethoxy)-3-methoxyphenylamino)-3-morpholinoquinoxaline-5-carbonitrile;

6-(4-((2,3-dihydrobenzofuran-5-yl)methoxy)-3-methoxyphenylamino)-3-morpholino-quinoxaline-5-carbonitrile;

6-(3-methoxy-4-(pyridin-4-ylmethoxy)phenylamino)-3-morpholinoquinoxaline-5-carbonitrile;

6-(3-ethoxy-4-(pyridin-4-ylmethoxy)phenylamino)-3-morpholinoquinoxaline-5-carbonitrile;

6-(3-methoxy-4-((1-methyl-1H-imidazol-2-yl)methoxy)phenylamino)-3-morpholino-quinoxaline-5-carbonitrile;

6-(4-(4-chlorobenzyloxy)-3-methoxyphenylamino)-3-morpholinoquinoxaline-5-carbonitrile;

6-(3-methoxy-4-((6-methoxypyridin-3-yl)methoxy)phenylamino)-3-morpholino-quinoxaline-5-carbonitrile;

6-(3-methoxy-4-(pyrazin-2-ylmethoxy)phenylamino)-3-morpholinoquinoxaline-5-carbonitrile;

6-(6-(4-methoxybenzyloxy)pyridin-3-ylamino)-3-morpholinoquinoxaline-5-carbonitrile;

6-(2-fluoro-4-(4-methoxybenzyloxy)phenylamino)-3-morpholinoquinoxaline-5-carbonitrile;

6-(3-methoxy-4-((6-methylpyridin-3-yl)methoxy)phenylamino)-3-morpholino-quinoxaline-5-carbonitrile;

6-(3-methoxy-4-((1-methyl-1H-imidazol-5-yl)methoxy)phenylamino)-3-morpholino-quinoxaline-5-carbonitrile;

6-(3-fluoro-4-(4-methoxybenzyloxy)phenylamino)-3-morpholinoquinoxaline-

5-carbonitrile;

6-(3-methoxy-4-(pyridin-2-ylmethoxy)phenylamino)-3-morpholinoquinoxaline-5-carbonitrile;

6-(4-(3,4-dimethoxybenzyloxy)-3-methoxyphenylamino)-3-morpholinoquinoxaline-5-carbonitrile;

6-(3-methoxy-4-((6-methoxypyridin-3-yl)methoxy)phenylamino)-3-(piperazin-1-yl) quinoxaline-5-carbonitrile;

6-((3-methoxy-4-((4-methoxybenzyl)oxy)phenyl)(methyl)amino)-3-morpholino-quinoxaline-5-carbonitrile;

6-((3-methoxy-4-((5-methylisoxazol-3-yl)methoxy)phenyl)amino)-3-morpholino-quinoxaline-5-carbonitrile;

6-((3-methoxy-4-((4-methoxybenzyl)oxy)phenyl)amino)-3-(pyrrolidin-1-yl)quinoxaline-5-carbonitrile;

6-((3-chloro-4-((4-methoxybenzyl)oxy)phenyl)amino)-3-morpholinoquinoxaline-5-carbonitrile;

6-((4-((4-cyanobenzyl)oxy)-3-methoxyphenyl)amino)-3-morpholinoquinoxaline-5-carbonitrile;

6-((4-((3-cyanobenzyl)oxy)-3-methoxyphenyl)amino)-3-morpholinoquinoxaline-5-carbonitrile;

3-(4-(2-hydroxyethyl)piperazin-1-yl)-6-((3-methoxy-4-((4-methoxybenzyl)oxy)phenyl) amino)quinoxaline-5-carbonitrile;

6-((3-methoxy-4-((6-methylpyridin-3-yl)methoxy)phenyl)amino)-3-(piperazin-1-yl) quinoxaline-5-carbonitrile;

1-(8-cyano-7-((3-methoxy-4-((4-methoxybenzyl)oxy)phenyl)amino)quinoxalin-2-yl) piperidin-4-yl acetate;

6-((3-methoxy-4-((6-methoxypyridin-3-yl)methoxy)phenyl)amino)-3-(4-methylpiperidin-1-yl)quinoxaline-5-carbonitrile;

3-(1H-imidazol-1-yl)-6-((3-methoxy-4-((6-methoxypyridin-3-yl)methoxy)phenyl)amino)quinoxaline-5-carbonitrile;

(1-(8-cyano-7-((3-methoxy-4-((4-methoxybenzyl)oxy)phenyl)amino)quinoxalin-2-yl) piperidin-4-yl)methyl acetate;

3-(4-acetylpiperazin-1-yl)-6-((3-methoxy-4-((4-methoxybenzyl)oxy)phenyl)amino) quinoxaline-5-carbonitrile;

6-((3-methoxy-4-((6-(trifluoromethyl)pyridin-3-yl)methoxy)phenyl)amino)-3-morpho

linoquinoxaline-5-carbonitrile;

2-(4-(8-cyano-7-((3-methoxy-4-((6-methoxypyridin-3-yl)methoxy)phenyl)amino) quinoxalin-2-yl)piperazin-1-yl)ethyl acetate;

3-(4-(2-hydroxyethyl)piperazin-1-yl)-6-((3-methoxy-4-((6-methoxypyridin-3-yl) methoxy)phenyl)amino)quinoxaline-5-carbonitrile;

6-((3-methoxy-4-((4-methoxybenzyl)oxy)phenyl)amino)-3-((2-morpholinoethyl)amin o) quinoxaline-5-carbonitrile;

3-((1-benzylpiperidin-4-yl)amino)-6-((3-methoxy-4-((4-methoxybenzyl)oxy)phenyl) amino)quinoxaline-5-carbonitrile;

6-((4-((3-cyanobenzyl)oxy)-3-methoxyphenyl)amino)-3-(4-methylpiperazin-1-yl) quinoxaline-5-carbonitrile;

6-((3-methoxy-4-((6-methoxypyridin-3-yl)methoxy)phenyl)amino)-3-(pyrrolidin-1-yl) quinoxaline-5-carbonitrile;

3-(4-isopropylpiperazin-1-yl)-6-((3-methoxy-4-((4-methoxybenzyl)oxy)phenyl)amino) quinoxaline-5-carbonitrile;

6-((4-(benzo[d][1,3]dioxol-5-ylmethoxy)-3-methoxyphenyl)amino)-3-morpholino-quinoxaline-5-carbonitrile;

3-(4-(dimethylamino)piperidin-1-yl)-6-((3-methoxy-4-((6-methoxypyridin-3-yl)metho xy)phenyl)amino)quinoxaline-5-carbonitrile;

3-(azetidin-1-yl)-6-((3-methoxy-4-((4-methoxybenzyl)oxy)phenyl)amino)quinoxaline - 5-carbonitrile;

6-((4-((3-cyanobenzyl)oxy)-3-methoxyphenyl)amino)-3-(4-(dimethylamino) piperidin-1-yl)quinoxaline-5-carbonitrile;

3-(4-(dimethylamino)piperidin-1-yl)-6-((4-((3-fluoro-4-methoxybenzyl)oxy)-3-methoxyphenyl)amino)quinoxaline-5-carbonitrile;

3-(azetidin-1-yl)-6-((3-methoxy-4-((6-methoxypyridin-3-yl)methoxy)phenyl)amino) quinoxaline-5-carbonitrile;

3-(azetidin-1-yl)-6-((4-((3-cyanobenzyl)oxy)-3-methoxyphenyl)amino)quinoxaline-5-carbonitrile;

6-((4-(benzyloxy)-3-methoxyphenyl)amino)-3-morpholinoquinoxaline-5-carbonitrile;

3-(4-(dimethylamino)piperidin-1-yl)-6-((4-((3-fluorobenzyl)oxy)-3-methoxyphenyl) amino)quinoxaline-5-carbonitrile;

6-((3-methoxy-4-((4-methoxybenzyl)oxy)phenyl)amino)-3-(piperazin-1-yl)quinoxalin e- 5-carbonitrile;

6-((4-((3-fluorobenzyl)oxy)-3-methoxyphenyl)amino)-3-morpholinoquinoxaline-5-carbonitrile;

6-((3-methoxy-4-(prop-2-yn-1-yloxy)phenyl)amino)-3-morpholinoquinoxaline-5-carbonitrile;

6-((4-((3-fluoro-4-methoxybenzyl)oxy)-3-methoxyphenyl)amino)-3-morpholino-quinoxaline-5-carbonitrile;

6-((4-((2-fluoro-4-methoxybenzyl)oxy)-3-methoxyphenyl)amino)-3-morpholino-quinoxaline-5-carbonitrile;

6-((3-methoxy-4-((6-methoxypyridin-3-yl)methoxy)phenyl)amino)-3-(4-methyl-piperazin-1-yl)quinoxaline-5-carbonitrile;

6-((4-((3-cyano-4-methoxybenzyl)oxy)-3-methoxyphenyl)amino)-3-morpholino-quinoxaline-5-carbonitrile;

6-((3-methoxy-4-((6-methoxypyridin-3-yl)methoxy)phenyl)amino)-3-(4-(2-methoxyethyl)piperazin-1-yl)quinoxaline-5-carbonitrile;

6-((3-methoxy-4-((6-propylpyridin-3-yl)methoxy)phenyl)amino)-3-morpholino-quinoxaline-5-carbonitrile;

6-((4-((3,4-difluorobenzyl)oxy)-3-methoxyphenyl)amino)-3-morpholinoquinoxaline-5-carbonitrile;

6-((3-methoxy-4-((6-methylpyridin-3-yl)methoxy)phenyl)amino)-3-(4-(2-methoxyethyl) piperazin-1-yl)quinoxaline-5-carbonitrile;

6-((4-((6-ethylpyridin-3-yl)methoxy)-3-methoxyphenyl)amino)-3-morpholino-quinoxaline-5-carbonitrile;

6-((3-methoxy-4-((6-methoxypyridin-3-yl)methoxy)phenyl)amino)-3-(4-morpholino-piperidin-1-yl)quinoxaline-5-carbonitrile;

6-((4-((6-isopropylpyridin-3-yl)methoxy)-3-methoxyphenyl)amino)-3-morpholino-quinoxaline-5-carbonitrile;

6-((4-((6-(dimethylamino)pyridin-3-yl)methoxy)-3-methoxyphenyl)amino)-3-morpholinoquinoxaline-5-carbonitrile;

6-((3-methoxy-4-((1-methyl-1H-pyrazol-4-yl)methoxy)phenyl)amino)-3-morpholino-quinoxaline-5-carbonitrile;

N-(3-methoxy-4-((4-methoxybenzyl)oxy)phenyl)-3-(prop-1-en-2-yl)quinoxalin-6-amine;

6-((3-methoxy-4-((6-(methoxymethyl)pyridin-3-yl)methoxy)phenyl)amino)-3-morpholinoquinoxaline-5-carbonitrile;

6-((3-methoxy-4-((4-methoxybenzyl)oxy)phenyl)amino)-3-(prop-1-en-2-yl)quinoxaline- 5-carbonitrile;

3-isopropyl-6-((3-methoxy-4-((4-methoxybenzyl)oxy)phenyl)amino)quinoxaline-5-carbonitrile;

6-((4-((6-(fluoromethyl)pyridin-3-yl)methoxy)-3-methoxyphenyl)amino)-3-morpholino- quinoxaline-5-carbonitrile;

6-((4-((6-(difluoromethyl)pyridin-3-yl)methoxy)-3-methoxyphenyl)amino)-3-morpholinoquinoxaline-5-carbonitrile;

6-((4-((6-ethoxypyridin-3-yl)methoxy)-3-methoxyphenyl)amino)-3-morpholino-quinoxaline-5-carbonitrile;

3-(3,6-dihydro-2H-pyran-4-yl)-6-((3-methoxy-4-((6-methylpyridin-3-yl)methoxy)phenyl)amino)quinoxaline-5-carbonitrile;

6-((3-methoxy-4-((6-methylpyridin-3-yl)methoxy)phenyl)amino)-3-(tetrahydro-2H-pyran-4-yl)quinoxaline-5-carbonitrile;

6-((4-((6-((dimethylamino)methyl)pyridin-3-yl)methoxy)-3-methoxyphenyl)amino)-3-morpholinoquinoxaline-5-carbonitrile;

6-((3-methoxy-4-((1-ethyl-1H-pyrazol-4-yl)methoxy)phenyl)amino)-3-morpholino-quinoxaline-5-carbonitrile;

6-((3-methoxy-4-((1-propyl-1H-pyrazol-4-yl)methoxy)phenyl)amino)-3-morpholino-quinoxaline-5-carbonitrile;

3-(4-cyclopropylpiperazin-1-yl)-6-((3-methoxy-4-((6-methoxypyridin-3-yl)methoxy)phenyl)amino)quinoxaline-5-carbonitrile;

3-isopropoxy-6-((3-methoxy-4-((6-methoxypyridin-3-yl)methoxy)phenyl)amino) quinoxaline-5-carbonitrile;

6-((4-((6-cyclopropylpyridin-3-yl)methoxy)-3-methoxyphenyl)amino)-3-morpholino-quinoxaline-5-carbonitrile;

6-((4-(furan-3-ylmethoxy)-3-methoxyphenyl)amino)-3-morpholinoquinoxaline-5-carbonitrile;

6-((4-(furan-2-ylmethoxy)-3-methoxyphenyl)amino)-3-morpholinoquinoxaline-5-carbonitrile;

6-((3-methoxy-4-((tetrahydrofuran-2-yl)methoxy)phenyl)amino)-3-morpholino-quinoxaline-5-carbonitrile;

6-((3-methoxy-4-((5-methylthiophen-2-yl)methoxy)phenyl)amino)-3-morpholino-quinoxaline-5-carbonitrile;

6-((3-methoxy-4-((5-(methoxymethyl)pyridin-2-yl)methoxy)phenyl)amino)-3-morpholinoquinoxaline-5-carbonitrile;

6-((3-methoxy-4-(thiophen-3-ylmethoxy)phenyl)amino)-3-morpholinoquinoxaline-5-carbonitrile;

6-((3-methoxy-4-(thiophen-2-ylmethoxy)phenyl)amino)-3-morpholinoquinoxaline-5-carbonitrile;

6-((3-methoxy-4-((2-methylpyrimidin-5-yl)methoxy)phenyl)amino)-3-morpholino-quinoxaline-5-carbonitrile;

6-((3-methoxy-4-((6-methylpyridin-3-yl)methoxy)phenyl)(methyl)amino)-3-morpholi no- quinoxaline-5-carbonitrile;

6-((4-((6-cyclopropylpyridin-3-yl)methoxy)-3-methoxyphenyl)(methyl)amino)-3-morpholinoquinoxaline-5-carbonitrile;

6-((4-((1-(2-fluoroethyl)-1H-pyrazol-4-yl)methoxy)-3-methoxyphenyl)amino)-3-morpholinoquinoxaline-5-carbonitrile;

6-((3-methoxy-4-((5-methoxypyridin-2-yl)methoxy)phenyl)amino)-3-morpholino-quinoxaline-5-carbonitrile;

3-(dimethylamino)-6-((3-methoxy-4-((6-methylpyridin-3-yl)methoxy)phenyl)amino) quinoxaline-5-carbonitrile;

6-((4-((1-cyclopropyl-1H-pyrazol-4-yl)methoxy)-3-methoxyphenyl)amino)-3-morpholinoquinoxaline-5-carbonitrile;

6-((3-methoxy-4-((6-methylpyridin-3-yl)methoxy)phenyl)amino)-3-morpholinoquinoxaline-5-carboxamide;

3-(3-(dimethylamino)azetidin-1-yl)-6-((3-methoxy-4-((6-methylpyridin-3-yl)methoxy) phenyl)amino)quinoxaline-5-carbonitrile;

3-(dimethylamino)-6-((3-methoxy-4-((6-methoxypyridin-3-yl)methoxy)phenyl)amino) quinoxaline-5-carbonitrile;

3-(3-methoxy-3-methylazetidin-1-yl)-6-((3-methoxy-4-((6-methylpyridin-3-yl)metho xy) phenyl)amino)quinoxaline-5-carbonitrile;

6-((4-((3-cyano-4-methoxybenzyl)oxy)-3-methoxyphenyl)amino)-3-(dimethylamino) quinoxaline-5-carbonitrile;

6-((4-((3-cyano-4-methoxybenzyl)oxy)-3-methoxyphenyl)amino)-3-methoxyquinoxal ine-5-carbonitrile;

6-((4-((1-(cyclopropylmethyl)-1H-pyrazol-4-yl)methoxy)-3-methoxyphenyl)amino)-3-morpholinoquinoxaline-5-carbonitrile;

3-morpholino-6-((6-((4-(trifluoromethyl)benzyl)amino)pyridin-3-yl)amino)quinoxaline- 5-carbonitrile;

6-((5-methoxy-6-((6-methylpyridin-3-yl)methoxy)pyridin-3-yl)amino)-3-morpholinoquinoxaline-5-carbonitrile;

6-((5-methoxy-6-((6-methoxypyridin-3-yl)methoxy)pyridin-3-yl)amino)-3-morpholinoquinoxaline-5-carbonitrile;

3-((2S,6R)-2,6-dimethylmorpholino)-6-((3-methoxy-4-((6-methylpyridin-3-yl)methoxy) phenyl)amino)quinoxaline-5-carbonitrile; or

6-((3-methoxy-4-((6-methyl-1-(λ^1-oxidaneyl)-1λ^4-pyridin-3-yl)methoxy)phenyl)amino)- 3-morpholinoquinoxaline-5-carbonitrile.

10. A pharmaceutical composition comprising the compound according to any one of claims 1-9, a stereoisomer thereof, or a prodrug thereof, or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable diluent or carrier.

11. The pharmaceutical composition of claim 10 for use in treating a cancer, autoimmune disease, or bone resorptive disease mediated by CSF-1R, FLT3, c-KIT, and/or PDGFR kinase, or mediated by a mutant kinase of CSF-1R, FLT3, c-KIT, or PDGFR.

12. Use of the pharmaceutical composition of claim 10 in the manufacture of a medicament for treating a cancer, autoimmune disease, or bone resorptive disease mediated by CSF-1R, FLT3, c-KIT, and/or PDGFR kinase, wherein a therapeutically effective amount of the pharmaceutical composition is to be administered to a subject in need thereof.

13. The pharmaceutical composition for use according to claim 11, or the use according to claim 12, wherein the bone resorptive disease is osteoporosis, inflammatory arthritis, or inflammatory bone erosion.

14. The pharmaceutical composition for use according to claim 11, or the use according to claim 12, wherein the cancer is selected from the group consisting of multiple myeloma, acute myeloid leukemia (AML), chronic myeloid leukemia (CML), prostate cancer, breast cancer, ovarian cancer, melanoma, glioblastoma multiforme, giant cell tumor of bone, non-small-cell lung cancers, giant cell tumor of the tendon sheath, metastasis of tumors to other tissues, myelofibrosis, pigmented villonodular synovitis, and gastrointestinal stromal tumor.