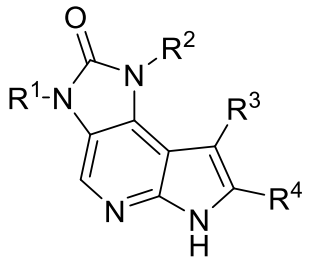
WHAT IS CLAIMED IS:

1. A compound of Formula I:



I

or a pharmaceutically acceptable salt thereof, wherein:

R^1 is selected from H, C_{1-6} alkyl, C_{2-6} alkenyl, and C_{2-6} alkynyl, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, and C_{2-6} alkynyl of R^1 are each optionally substituted with 1, 2, or 3 independently selected R^{1A} substituents;

each R^{1A} is independently selected from halo, oxo, CN, NO_2, OR^{a11}, SR^{a11}, $NHOR^{a11}$, $C(O)R^{b11}$, $C(O)NR^{c11}R^{d11}$, $C(O)NR^{c11}(OR^{a11})$, $C(O)OR^{a11}$, $OC(O)R^{b11}$, $OC(O)NR^{c11}R^{d11}$, $NR^{c11}R^{d11}$, $NR^{c11}NR^{c11}R^{d11}$, $NR^{c11}C(O)R^{b11}$, $NR^{c11}C(O)OR^{a11}$, $NR^{c11}C(O)NR^{c11}R^{d11}$, $C(=NR^{e11})R^{b11}$, $C(=NR^{e11})NR^{c11}R^{d11}$, $NR^{c11}C(=NR^{e11})NR^{c11}R^{d11}$, $NR^{c11}C(=NR^{e11})R^{b11}$, $NR^{c11}S(O)R^{b11}$, $NR^{c11}S(O)NR^{c11}R^{d11}$, $NR^{c11}S(O)_2R^{b11}$, $NR^{c11}S(O)(=NR^{e11})R^{b11}$, $NR^{c11}S(O)_2NR^{c11}R^{d11}$, $S(O)R^{b11}$, $S(O)NR^{c11}R^{d11}$, $S(O)_2R^{b11}$, $S(O)_2NR^{c11}R^{d11}$, $OS(O)(=NR^{e11})R^{b11}$, and $OS(O)_2R^{b11}$;

each R^{a11}, R^{b11}, R^{c11}, and R^{d11} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, and C_{2-6} alkynyl, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, and C_{2-6} alkynyl of R^{a11}, R^{b11}, R^{c11} and R^{d11} are each optionally substituted with 1, 2, 3, 4, 5, 6, 7, or 8 independently selected R^M substituents;

each R^{e11} is independently selected from H, OH, CN, C_{1-6} alkyl, C_{1-6} alkoxy, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, C_{2-6} alkenyl, and C_{2-6} alkynyl;

R^2 is selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10

membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^2 are each optionally substituted with 1, 2, 3, 4, 5, 6, 7, or 8 independently selected R^{2A} substituents;

each R^{2A} is independently selected from halo, oxo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, CN, NO_2, OR^{a21}, SR^{a21}, $NHOR^{a21}$, $C(O)R^{b21}$, $C(O)NR^{c21}R^{d21}$, $C(O)NR^{c21}(OR^{a21})$, $C(O)OR^{a21}$, $OC(O)R^{b21}$, $OC(O)NR^{c21}R^{d21}$, $NR^{c21}R^{d21}$, $NR^{c21}NR^{c21}R^{d21}$, $NR^{c21}C(O)R^{b21}$, $NR^{c21}C(O)OR^{a21}$, $NR^{c21}C(O)NR^{c21}R^{d21}$, $C(=NR^{e21})R^{b21}$, $C(=NR^{e21})NR^{c21}R^{d21}$, $NR^{c21}C(=NR^{e21})NR^{c21}R^{d21}$, $NR^{c21}C(=NR^{e21})R^{b21}$, $NR^{c21}S(O)R^{b21}$, $NR^{c21}S(O)NR^{c21}R^{d21}$, $NR^{c21}S(O)_2R^{b21}$, $NR^{c21}S(O)(=NR^{e21})R^{b21}$, $NR^{c21}S(O)_2NR^{c21}R^{d21}$, $S(O)R^{b21}$, $S(O)NR^{c21}R^{d21}$, $S(O)_2R^{b21}$, $S(O)_2NR^{c21}R^{d21}$, $OS(O)(=NR^{e21})R^{b21}$, $OS(O)_2R^{b21}$, SF_5, $P(O)R^{f21}R^{g21}$, $OP(O)(OR^{h21})(OR^{i21})$, $P(O)(OR^{h21})(OR^{i21})$, and $BR^{j21}R^{k21}$, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{2A} are each optionally substituted with 1, 2, 3, 4, 5, 6, 7, or 8 independently selected R^{2B} substituents;

each R^{a21}, R^{c21}, and R^{d21} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{a21}, R^{c21} and R^{d21} are each optionally substituted with 1, 2, 3, 4, 5, 6, 7, or 8 independently selected R^{2B} substituents;

or, any R^{c21} and R^{d21} attached to the same N atom, together with the N atom to which they are attached, form a 5-10 membered heteroaryl or a 4-10 membered

heterocycloalkyl group, wherein the 5-10 membered heteroaryl or 4-10 membered heterocycloalkyl group is optionally substituted with 1, 2, 3, or 4 independently selected R^{2B} substituents;

each R^{b21} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{b21} are each optionally substituted with 1, 2, 3, 4, 5, 6, 7, or 8 independently selected R^{2B} substituents;

each R^{e21} is independently selected from H, OH, CN, C_{1-6} alkyl, C_{1-6} alkoxy, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-;

each R^{f21} and R^{g21} is independently selected from H, C_{1-6} alkyl, C_{1-6} alkoxy, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-;

each R^{h21} and R^{i21} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-;

each R^{j21} and R^{k21} is independently selected from OH, C_{1-6} alkoxy, and C_{1-6} haloalkoxy;

or any R^{j21} and R^{k21} attached to the same B atom, together with the B atom to which they are attached, form a 5- or 6-membered heterocycloalkyl group optionally substituted with 1, 2, 3, or 4 substituents independently selected from C_{1-6} alkyl and C_{1-6} haloalkyl;

each R^{2B} is independently selected from halo, oxo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, CN, NO_2, OR^{a22}, SR^{a22}, $NHOR^{a22}$, $C(O)R^{b22}$, $C(O)NR^{c22}R^{d22}$, $C(O)NR^{c22}(OR^{a22})$, $C(O)OR^{a22}$, $OC(O)R^{b22}$, $OC(O)NR^{c22}R^{d22}$, $NR^{c22}R^{d22}$, $NR^{c22}NR^{c22}R^{d22}$, $NR^{c22}C(O)R^{b22}$, $NR^{c22}C(O)OR^{a22}$, $NR^{c22}C(O)NR^{c22}R^{d22}$, $C(=NR^{e22})R^{b22}$, $C(=NR^{e22})NR^{c22}R^{d22}$, $NR^{c22}C(=NR^{e22})NR^{c22}R^{d22}$, $NR^{c22}C(=NR^{e22})R^{b22}$, $NR^{c22}S(O)R^{b22}$, $NR^{c22}S(O)NR^{c22}R^{d22}$, $NR^{c22}S(O)_2R^{b22}$, $NR^{c22}S(O)(=NR^{e22})R^{b22}$, $NR^{c22}S(O)_2NR^{c22}R^{d22}$, $S(O)R^{b22}$, $S(O)NR^{c22}R^{d22}$, $S(O)_2R^{b22}$, $S(O)_2NR^{c22}R^{d22}$, $OS(O)(=NR^{e22})R^{b22}$, $OS(O)_2R^{b22}$, SF_5, $P(O)R^{f22}R^{g22}$, $OP(O)(OR^{h22})(OR^{i22})$, $P(O)(OR^{h22})(OR^{i22})$, and $BR^{j22}R^{k22}$, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{2B} are each optionally substituted with 1, 2, 3, 4, 5, 6, 7, or 8 independently selected R^{2C} substituents;

each R^{a22}, R^{c22}, and R^{d22} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{a22}, R^{c22} and R^{d22} are each optionally substituted with 1, 2, 3, 4, 5, 6, 7, or 8 independently selected R^{2C} substituents;

or, any R^{c22} and R^{d22} attached to the same N atom, together with the N atom to which they are attached, form a 5-10 membered heteroaryl or a 4-10 membered heterocycloalkyl group, wherein the 5-10 membered heteroaryl or 4-10 membered heterocycloalkyl group is optionally substituted with 1, 2, 3, or 4 independently selected R^{2C} substituents;

each R^{b22} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{b22} are each optionally substituted with 1, 2, 3, 4, 5, 6, 7, or 8 independently selected R^{2C} substituents;

each R^{e22} is independently selected from H, OH, CN, C_{1-6} alkyl, C_{1-6} alkoxy, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-;

each R^{f22} and R^{g22} is independently selected from H, C_{1-6} alkyl, C_{1-6} alkoxy, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-;

each R^{h22} and R^{i22} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-;

each R^{j22} and R^{k22} is independently selected from OH, C_{1-6} alkoxy, and C_{1-6} haloalkoxy;

or any R^{j22} and R^{k22} attached to the same B atom, together with the B atom to which they are attached, form a 5- or 6-membered heterocycloalkyl group optionally substituted with 1, 2, 3, or 4 substituents independently selected from C_{1-6} alkyl and C_{1-6} haloalkyl;

each R^{2C} is independently selected from halo, oxo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, phenyl, C_{3-7} cycloalkyl, 5-6 membered heteroaryl, 4-7 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, C_{3-7} cycloalkyl-C_{1-6} alkyl-, (5-6

membered heteroaryl)-C_{1-6} alkyl-, (4-7 membered heterocycloalkyl)-C_{1-6} alkyl-, CN, NO_2, OR^{a23}, SR^{a23}, $NHOR^{a23}$, $C(O)R^{b23}$, $C(O)NR^{c23}R^{d23}$, $C(O)NR^{c23}(OR^{a23})$, $C(O)OR^{a23}$, $OC(O)R^{b23}$, $OC(O)NR^{c23}R^{d23}$, $NR^{c23}R^{d23}$, $NR^{c23}NR^{c23}R^{d23}$, $NR^{c23}C(O)R^{b23}$, $NR^{c23}C(O)OR^{a23}$, $NR^{c23}C(O)NR^{c23}R^{d23}$, $C(=NR^{e23})R^{b23}$, $C(=NR^{e23})NR^{c23}R^{d23}$, $NR^{c23}C(=NR^{e23})NR^{c23}R^{d23}$, $NR^{c23}C(=NR^{e23})R^{b23}$, $NR^{c23}S(O)R^{b23}$, $NR^{c23}S(O)NR^{c23}R^{d23}$, $NR^{c23}S(O)_2R^{b23}$, $NR^{c23}S(O)(=NR^{e23})R^{b23}$, $NR^{c23}S(O)_2NR^{c23}R^{d23}$, $S(O)R^{b23}$, $S(O)NR^{c23}R^{d23}$, $S(O)_2R^{b23}$, $S(O)_2NR^{c23}R^{d23}$, $OS(O)(=NR^{e23})R^{b23}$, and $OS(O)_2R^{b23}$, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, phenyl, C_{3-7} cycloalkyl, 5-6 membered heteroaryl, 4-7 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, C_{3-7} cycloalkyl-C_{1-6} alkyl-, (5-6 membered heteroaryl)-C_{1-6} alkyl-, (4-7 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{2C} are each optionally substituted with 1, 2, 3, or 4 independently selected R^M substituents;

each R^{a23}, R^{c23}, and R^{d23} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, phenyl, C_{3-7} cycloalkyl, 5-6 membered heteroaryl, 4-7 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, C_{3-7} cycloalkyl-C_{1-6} alkyl-, (5-6 membered heteroaryl)-C_{1-6} alkyl-, and (4-7 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, phenyl, C_{3-7} cycloalkyl, 5-6 membered heteroaryl, 4-7 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, C_{3-7} cycloalkyl-C_{1-6} alkyl-, (5-6 membered heteroaryl)-C_{1-6} alkyl-, and (4-7 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{a23}, R^{c23} and R^{d23} are each optionally substituted with 1, 2, 3, or 4 independently selected R^M substituents;

or, any R^{c23} and R^{d23} attached to the same N atom, together with the N atom to which they are attached, form a 5-6 membered heteroaryl or a 4-7 membered heterocycloalkyl group, wherein the 5-6 membered heteroaryl or 4-7 membered heterocycloalkyl group is optionally substituted with 1, 2, 3, or 4 independently selected R^M substituents;

each R^{b23} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, phenyl, C_{3-7} cycloalkyl, 5-6 membered heteroaryl, 4-7 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, C_{3-7} cycloalkyl-C_{1-6} alkyl-, (5-6 membered heteroaryl)-C_{1-6} alkyl-, and (4-7 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, phenyl, C_{3-7} cycloalkyl, 5-6 membered heteroaryl, 4-7 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, C_{3-7}

cycloalkyl-C_{1-6} alkyl-, (5-6 membered heteroaryl)-C_{1-6} alkyl-, and (4-7 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{b23} are each optionally substituted with 1, 2, 3, or 4 independently selected R^M substituents;

each R^{e23} is independently selected from H, OH, CN, C_{1-6} alkyl, C_{1-6} alkoxy, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} alkynyl, phenyl, C_{3-7} cycloalkyl, 5-6 membered heteroaryl, 4-7 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, C_{3-7} cycloalkyl-C_{1-6} alkyl-, (5-6 membered heteroaryl)-C_{1-6} alkyl-, and (4-7 membered heterocycloalkyl)-C_{1-6} alkyl-;

R^3 is selected from H, halo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, CN, NO_2, OR^{a3}, SR^{a3}, $NHOR^{a3}$, $C(O)R^{b3}$, $C(O)NR^{c3}R^{d3}$, $C(O)NR^{c3}(OR^{a3})$, $C(O)OR^{a3}$, $OC(O)R^{b3}$, $OC(O)NR^{c3}R^{d3}$, $NR^{c3}R^{d3}$, $NR^{c3}NR^{c3}R^{d3}$, $NR^{c3}C(O)R^{b3}$, $NR^{c3}C(O)OR^{a3}$, $NR^{c3}C(O)NR^{c3}R^{d3}$, $C(=NR^{e3})R^{b3}$, $C(=NR^{e3})NR^{c3}R^{d3}$, $NR^{c3}C(=NR^{e3})NR^{c3}R^{d3}$, $NR^{c3}C(=NR^{e3})R^{b3}$, $NR^{c3}S(O)R^{b3}$, $NR^{c3}S(O)NR^{c3}R^{d3}$, $NR^{c3}S(O)_2R^{b3}$, $NR^{c3}S(O)(=NR^{e3})R^{b3}$, $NR^{c3}S(O)_2NR^{c3}R^{d3}$, $S(O)R^{b3}$, $S(O)NR^{c3}R^{d3}$, $S(O)_2R^{b3}$, $S(O)_2NR^{c3}R^{d3}$, $OS(O)(=NR^{e3})R^{b3}$, $OS(O)_2R^{b3}$, SF_5, $P(O)R^{f3}R^{g3}$, $OP(O)(OR^{h3})(OR^{i3})$, $P(O)(OR^{h3})(OR^{i3})$, and $BR^{j3}R^{k3}$, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^3 are each optionally substituted with 1, 2, 3, 4, 5, 6, 7, or 8 independently selected R^{3A} substituents;

each R^{a3}, R^{c3}, and R^{d3} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{a3}, R^{c3} and R^{d3} are each

optionally substituted with 1, 2, 3, 4, 5, 6, 7, or 8 independently selected R^{3A} substituents;

or, any R^{c3} and R^{d3} attached to the same N atom, together with the N atom to which they are attached, form a 5-10 membered heteroaryl or a 4-10 membered heterocycloalkyl group, wherein the 5-10 membered heteroaryl or 4-10 membered heterocycloalkyl group is optionally substituted with 1, 2, 3, or 4 independently selected R^{3A} substituents;

each R^{b3} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{b3} are each optionally substituted with 1, 2, 3, 4, 5, 6, 7, or 8 independently selected R^{3A} substituents;

each R^{e3} is independently selected from H, OH, CN, C_{1-6} alkyl, C_{1-6} alkoxy, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-;

each R^{f3} and R^{g3} is independently selected from H, C_{1-6} alkyl, C_{1-6} alkoxy, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-;

each R^{h3} and R^{i3} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-;

each R^{j3} and R^{k3} is independently selected from OH, C_{1-6} alkoxy, and C_{1-6} haloalkoxy;

or any R^{j3} and R^{k3} attached to the same B atom, together with the B atom to which they are attached, form a 5- or 6-membered heterocycloalkyl group optionally substituted with 1, 2, 3, or 4 substituents independently selected from C_{1-6} alkyl and C_{1-6} haloalkyl;

each R^{3A} is independently selected from halo, oxo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, CN, NO_2, OR^{a31}, SR^{a31}, $NHOR^{a31}$, $C(O)R^{b31}$, $C(O)NR^{c31}R^{d31}$, $C(O)NR^{c31}(OR^{a31})$, $C(O)OR^{a31}$, $OC(O)R^{b31}$, $OC(O)NR^{c31}R^{d31}$, $NR^{c31}R^{d31}$, $NR^{c31}NR^{c31}R^{d31}$, $NR^{c31}C(O)R^{b31}$, $NR^{c31}C(O)OR^{a31}$, $NR^{c31}C(O)NR^{c31}R^{d31}$, $C(=NR^{e31})R^{b31}$, $C(=NR^{e31})NR^{c31}R^{d31}$, $NR^{c31}C(=NR^{e31})NR^{c31}R^{d31}$, $NR^{c31}C(=NR^{e31})R^{b31}$, $NR^{c31}S(O)R^{b31}$, $NR^{c31}S(O)NR^{c31}R^{d31}$, $NR^{c31}S(O)_2R^{b31}$, $NR^{c31}S(O)(=NR^{e31})R^{b31}$, $NR^{c31}S(O)_2NR^{c31}R^{d31}$, $S(O)R^{b31}$, $S(O)NR^{c31}R^{d31}$, $S(O)_2R^{b31}$, $S(O)_2NR^{c31}R^{d31}$, $OS(O)(=NR^{e31})R^{b31}$, $OS(O)_2R^{b31}$, SF_5, $P(O)R^{f31}R^{g31}$, $OP(O)(OR^{h31})(OR^{i31})$, $P(O)(OR^{h31})(OR^{i31})$, and $BR^{j31}R^{k31}$, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{3A} are each optionally substituted with 1, 2, 3, 4, 5, 6, 7, or 8 independently selected R^{3B} substituents;

each R^{a31}, R^{c31}, and R^{d31} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{a31}, R^{c31} and R^{d31} are each optionally substituted with 1, 2, 3, 4, 5, 6, 7, or 8 independently selected R^{3B} substituents;

or, any R^{c31} and R^{d31} attached to the same N atom, together with the N atom to which they are attached, form a 5-10 membered heteroaryl or a 4-10 membered heterocycloalkyl group, wherein the 5-10 membered heteroaryl or 4-10 membered heterocycloalkyl group is optionally substituted with 1, 2, 3, or 4 independently selected R^{3B} substituents;

each R^{b31} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{b31} are each optionally substituted with 1, 2, 3, 4, 5, 6, 7, or 8 independently selected R^{3B} substituents;

each R^{e31} is independently selected from H, OH, CN, C_{1-6} alkyl, C_{1-6} alkoxy, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-;

each R^{f31} and R^{g31} is independently selected from H, C_{1-6} alkyl, C_{1-6} alkoxy, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-;

each R^{h31} and R^{i31} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-;

each R^{j31} and R^{k31} is independently selected from OH, C_{1-6} alkoxy, and C_{1-6} haloalkoxy;

or any R^{j31} and R^{k31} attached to the same B atom, together with the B atom to which they are attached, form a 5- or 6-membered heterocycloalkyl group optionally

substituted with 1, 2, 3, or 4 substituents independently selected from C_{1-6} alkyl and C_{1-6} haloalkyl;

each R^{3B} is independently selected from halo, oxo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, CN, NO_2, OR^{a32}, SR^{a32}, $NHOR^{a32}$, $C(O)R^{b32}$, $C(O)NR^{c32}R^{d32}$, $C(O)NR^{c32}(OR^{a32})$, $C(O)OR^{a32}$, $OC(O)R^{b32}$, $OC(O)NR^{c32}R^{d32}$, $NR^{c32}R^{d32}$, $NR^{c32}NR^{c32}R^{d32}$, $NR^{c32}C(O)R^{b32}$, $NR^{c32}C(O)OR^{a32}$, $NR^{c32}C(O)NR^{c32}R^{d32}$, $C(=NR^{e32})R^{b32}$, $C(=NR^{e32})NR^{c32}R^{d32}$, $NR^{c32}C(=NR^{e32})NR^{c32}R^{d32}$, $NR^{c32}C(=NR^{e32})R^{b32}$, $NR^{c32}S(O)R^{b32}$, $NR^{c32}S(O)NR^{c32}R^{d32}$, $NR^{c32}S(O)_2R^{b32}$, $NR^{c32}S(O)(=NR^{e32})R^{b32}$, $NR^{c32}S(O)_2NR^{c32}R^{d32}$, $S(O)R^{b32}$, $S(O)NR^{c32}R^{d32}$, $S(O)_2R^{b32}$, $S(O)_2NR^{c32}R^{d32}$, $OS(O)(=NR^{e32})R^{b32}$, $OS(O)_2R^{b32}$, SF_5, $P(O)R^{f32}R^{g32}$, $OP(O)(OR^{h32})(OR^{i32})$, $P(O)(OR^{h32})(OR^{i32})$, and $BR^{j32}R^{k32}$, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{3B} are each optionally substituted with 1, 2, 3, 4, 5, 6, 7, or 8 independently selected R^{3C} substituents;

each R^{a32}, R^{c32}, and R^{d32} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{a32}, R^{c32} and R^{d32} are each optionally substituted with 1, 2, 3, 4, 5, 6, 7, or 8 independently selected R^{3C} substituents;

or, any R^{c32} and R^{d32} attached to the same N atom, together with the N atom to which they are attached, form a 5-10 membered heteroaryl or a 4-10 membered heterocycloalkyl group, wherein the 5-10 membered heteroaryl or 4-10 membered

heterocycloalkyl group is optionally substituted with 1, 2, 3, or 4 independently selected R^{3C} substituents;

each R^{b32} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{b32} are each optionally substituted with 1, 2, 3, 4, 5, 6, 7, or 8 independently selected R^{3C} substituents;

each R^{e32} is independently selected from H, OH, CN, C_{1-6} alkyl, C_{1-6} alkoxy, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-;

each R^{f32} and R^{g32} is independently selected from H, C_{1-6} alkyl, C_{1-6} alkoxy, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-;

each R^{h32} and R^{i32} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-;

each R^{j32} and R^{k32} is independently selected from OH, C_{1-6} alkoxy, and C_{1-6} haloalkoxy;

or any R^{j32} and R^{k32} attached to the same B atom, together with the B atom to which they are attached, form a 5- or 6-membered heterocycloalkyl group optionally substituted with 1, 2, 3, or 4 substituents independently selected from C_{1-6} alkyl and C_{1-6} haloalkyl;

each R^{3C} is independently selected from halo, oxo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, phenyl, C_{3-7} cycloalkyl, 5-6 membered heteroaryl, 4-7 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, C_{3-7} cycloalkyl-C_{1-6} alkyl-, (5-6 membered heteroaryl)-C_{1-6} alkyl-, (4-7 membered heterocycloalkyl)-C_{1-6} alkyl-, CN, NO_2, OR^{a33}, SR^{a33}, $NHOR^{a33}$, $C(O)R^{b33}$, $C(O)NR^{c33}R^{d33}$, $C(O)NR^{c33}(OR^{a33})$, $C(O)OR^{a33}$, $OC(O)R^{b33}$, $OC(O)NR^{c33}R^{d33}$, $NR^{c33}R^{d33}$, $NR^{c33}NR^{c33}R^{d33}$, $NR^{c33}C(O)R^{b33}$, $NR^{c33}C(O)OR^{a33}$, $NR^{c33}C(O)NR^{c33}R^{d33}$, $C(=NR^{e33})R^{b33}$, $C(=NR^{e33})NR^{c33}R^{d33}$, $NR^{c33}C(=NR^{e33})NR^{c33}R^{d33}$, $NR^{c33}C(=NR^{e33})R^{b33}$, $NR^{c33}S(O)R^{b33}$, $NR^{c33}S(O)NR^{c33}R^{d33}$, $NR^{c33}S(O)_2R^{b33}$, $NR^{c33}S(O)(=NR^{e33})R^{b33}$, $NR^{c33}S(O)_2NR^{c33}R^{d33}$, $S(O)R^{b33}$, $S(O)NR^{c33}R^{d33}$, $S(O)_2R^{b33}$, $S(O)_2NR^{c33}R^{d33}$, $OS(O)(=NR^{e33})R^{b33}$, and $OS(O)_2R^{b33}$, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, phenyl, C_{3-7} cycloalkyl, 5-6 membered heteroaryl, 4-7 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, C_{3-7} cycloalkyl-C_{1-6} alkyl-, (5-6 membered heteroaryl)-C_{1-6} alkyl-, (4-7 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{3C} are each optionally substituted with 1, 2, 3, or 4 independently selected R^M substituents;

each R^{a33}, R^{c33}, and R^{d33} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, phenyl, C_{3-7} cycloalkyl, 5-6 membered heteroaryl, 4-7 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, C_{3-7} cycloalkyl-C_{1-6} alkyl-, (5-6 membered heteroaryl)-C_{1-6} alkyl-, and (4-7 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, phenyl, C_{3-7} cycloalkyl, 5-6 membered heteroaryl, 4-7 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, C_{3-7} cycloalkyl-C_{1-6} alkyl-, (5-6 membered heteroaryl)-C_{1-6} alkyl-, and (4-7 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{a33}, R^{c33} and R^{d33} are each optionally substituted with 1, 2, 3, or 4 independently selected R^M substituents;

or, any R^{c33} and R^{d33} attached to the same N atom, together with the N atom to which they are attached, form a 5-6 membered heteroaryl or a 4-7 membered heterocycloalkyl group, wherein the 5-6 membered heteroaryl or 4-7 membered heterocycloalkyl group is optionally substituted with 1, 2, 3, or 4 independently selected R^M substituents;

each R^{b33} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, phenyl, C_{3-7} cycloalkyl, 5-6 membered heteroaryl, 4-7 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, C_{3-7} cycloalkyl-C_{1-6} alkyl-, (5-6

membered heteroaryl)-C_{1-6} alkyl-, and (4-7 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, phenyl, C_{3-7} cycloalkyl, 5-6 membered heteroaryl, 4-7 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, C_{3-7} cycloalkyl-C_{1-6} alkyl-, (5-6 membered heteroaryl)-C_{1-6} alkyl-, and (4-7 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{b33} are each optionally substituted with 1, 2, 3, or 4 independently selected R^M substituents;

each R^{e33} is independently selected from H, OH, CN, C_{1-6} alkyl, C_{1-6} alkoxy, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} alkynyl, phenyl, C_{3-7} cycloalkyl, 5-6 membered heteroaryl, 4-7 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, C_{3-7} cycloalkyl-C_{1-6} alkyl-, (5-6 membered heteroaryl)-C_{1-6} alkyl-, and (4-7 membered heterocycloalkyl)-C_{1-6} alkyl-;

R^4 is selected from halo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, CN, NO_2, OR^{a4}, SR^{a4}, $NHOR^{a4}$, $C(O)R^{b4}$, $C(O)NR^{c4}R^{d4}$, $C(O)NR^{c4}(OR^{a4})$, $C(O)OR^{a4}$, $OC(O)R^{b4}$, $OC(O)NR^{c4}R^{d4}$, $NR^{c4}R^{d4}$, $NR^{c4}NR^{c4}R^{d4}$, $NR^{c4}C(O)R^{b4}$, $NR^{c4}C(O)OR^{a4}$, $NR^{c4}C(O)NR^{c4}R^{d4}$, $C(=NR^{e4})R^{b4}$, $C(=NR^{e4})NR^{c4}R^{d4}$, $NR^{c4}C(=NR^{e4})NR^{c4}R^{d4}$, $NR^{c4}C(=NR^{e4})R^{b4}$, $NR^{c4}S(O)R^{b4}$, $NR^{c4}S(O)NR^{c4}R^{d4}$, $NR^{c4}S(O)_2R^{b4}$, $NR^{c4}S(O)(=NR^{e4})R^{b4}$, $NR^{c4}S(O)_2NR^{c4}R^{d4}$, $S(O)R^{b4}$, $S(O)NR^{c4}R^{d4}$, $S(O)_2R^{b4}$, $S(O)_2NR^{c4}R^{d4}$, $OS(O)(=NR^{e4})R^{b4}$, $OS(O)_2R^{b4}$, SF_5, $P(O)R^{f4}R^{g4}$, $OP(O)(OR^{h4})(OR^{i4})$, $P(O)(OR^{h4})(OR^{i4})$, and $BR^{j4}R^{k4}$, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^4 are each optionally substituted with 1, 2, 3, 4, 5, 6, 7, or 8 independently selected R^{4A} substituents;

each R^{a4}, R^{c4}, and R^{d4} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl,

C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{a4}, R^{c4} and R^{d4} are each optionally substituted with 1, 2, 3, 4, 5, 6, 7, or 8 independently selected R^{4A} substituents;

or, any R^{c4} and R^{d4} attached to the same N atom, together with the N atom to which they are attached, form a 5-10 membered heteroaryl or a 4-10 membered heterocycloalkyl group, wherein the 5-10 membered heteroaryl or 4-10 membered heterocycloalkyl group is optionally substituted with 1, 2, 3, or 4 independently selected R^{4A} substituents;

each R^{b4} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{b4} are each optionally substituted with 1, 2, 3, 4, 5, 6, 7, or 8 independently selected R^{4A} substituents;

each R^{e4} is independently selected from H, OH, CN, C_{1-6} alkyl, C_{1-6} alkoxy, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-;

each R^{f4} and R^{g4} is independently selected from H, C_{1-6} alkyl, C_{1-6} alkoxy, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-;

each R^{h4} and R^{i4} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-;

each R^{j4} and R^{k4} is independently selected from OH, C_{1-6} alkoxy, and C_{1-6} haloalkoxy;

or any R^{j4} and R^{k4} attached to the same B atom, together with the B atom to which they are attached, form a 5- or 6-membered heterocycloalkyl group optionally substituted with 1, 2, 3, or 4 substituents independently selected from C_{1-6} alkyl and C_{1-6} haloalkyl;

each R^{4A} is independently selected from halo, oxo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, CN, NO_2, OR^{a41}, SR^{a41}, $NHOR^{a41}$, $C(O)R^{b41}$, $C(O)NR^{c41}R^{d41}$, $C(O)NR^{c41}(OR^{a41})$, $C(O)OR^{a41}$, $OC(O)R^{b41}$, $OC(O)NR^{c41}R^{d41}$, $NR^{c41}R^{d41}$, $NR^{c41}NR^{c41}R^{d41}$, $NR^{c41}C(O)R^{b41}$, $NR^{c41}C(O)OR^{a41}$, $NR^{c41}C(O)NR^{c41}R^{d41}$, $C(=NR^{e41})R^{b41}$, $C(=NR^{e41})NR^{c41}R^{d41}$, $NR^{c41}C(=NR^{e41})NR^{c41}R^{d41}$, $NR^{c41}C(=NR^{e41})R^{b41}$, $NR^{c41}S(O)R^{b41}$, $NR^{c41}S(O)NR^{c41}R^{d41}$, $NR^{c41}S(O)_2R^{b41}$, $NR^{c41}S(O)(=NR^{e41})R^{b41}$, $NR^{c41}S(O)_2NR^{c41}R^{d41}$, $S(O)R^{b41}$, $S(O)NR^{c41}R^{d41}$, $S(O)_2R^{b41}$, $S(O)_2NR^{c41}R^{d41}$, $OS(O)(=NR^{e41})R^{b41}$, $OS(O)_2R^{b41}$, SF_5, $P(O)R^{f41}R^{g41}$, $OP(O)(OR^{h41})(OR^{i41})$, $P(O)(OR^{h41})(OR^{i41})$, and $BR^{j41}R^{k41}$, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{4A} are each optionally substituted with 1, 2, 3, 4, 5, 6, 7, or 8 independently selected R^{4B} substituents;

each R^{a41}, R^{c41}, and R^{d41} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{a41}, R^{c41} and R^{d41} are

each optionally substituted with 1, 2, 3, 4, 5, 6, 7, or 8 independently selected R^{4B} substituents;

or, any R^{c41} and R^{d41} attached to the same N atom, together with the N atom to which they are attached, form a 5-10 membered heteroaryl or a 4-10 membered heterocycloalkyl group, wherein the 5-10 membered heteroaryl or 4-10 membered heterocycloalkyl group is optionally substituted with 1, 2, 3, or 4 independently selected R^{4B} substituents;

each R^{b41} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{b41} are each optionally substituted with 1, 2, 3, 4, 5, 6, 7, or 8 independently selected R^{4B} substituents;

each R^{e41} is independently selected from H, OH, CN, C_{1-6} alkyl, C_{1-6} alkoxy, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-;

each R^{f41} and R^{g41} is independently selected from H, C_{1-6} alkyl, C_{1-6} alkoxy, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-;

each R^{h41} and R^{i41} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-;

each R^{j41} and R^{k41} is independently selected from OH, C_{1-6} alkoxy, and C_{1-6} haloalkoxy;

or any R^{j41} and R^{k41} attached to the same B atom, together with the B atom to which they are attached, form a 5- or 6-membered heterocycloalkyl group optionally substituted with 1, 2, 3, or 4 substituents independently selected from C_{1-6} alkyl and C_{1-6} haloalkyl;

each R^{4B} is independently selected from halo, oxo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, CN, NO_2, OR^{a42}, SR^{a42}, $NHOR^{a42}$, $C(O)R^{b42}$, $C(O)NR^{c42}R^{d42}$, $C(O)NR^{c42}(OR^{a42})$, $C(O)OR^{a42}$, $OC(O)R^{b42}$, $OC(O)NR^{c42}R^{d42}$, $NR^{c42}R^{d42}$, $NR^{c42}NR^{c42}R^{d42}$, $NR^{c42}C(O)R^{b42}$, $NR^{c42}C(O)OR^{a42}$, $NR^{c42}C(O)NR^{c42}R^{d42}$, $C(=NR^{e42})R^{b42}$, $C(=NR^{e42})NR^{c42}R^{d42}$, $NR^{c42}C(=NR^{e42})NR^{c42}R^{d42}$, $NR^{c42}C(=NR^{e42})R^{b42}$, $NR^{c42}S(O)R^{b42}$, $NR^{c42}S(O)NR^{c42}R^{d42}$, $NR^{c42}S(O)_2R^{b42}$, $NR^{c42}S(O)(=NR^{e42})R^{b42}$, $NR^{c42}S(O)_2NR^{c42}R^{d42}$, $S(O)R^{b42}$, $S(O)NR^{c42}R^{d42}$, $S(O)_2R^{b42}$, $S(O)_2NR^{c42}R^{d42}$, $OS(O)(=NR^{e42})R^{b42}$, $OS(O)_2R^{b42}$, SF_5, $P(O)R^{f42}R^{g42}$, $OP(O)(OR^{h42})(OR^{i42})$, $P(O)(OR^{h42})(OR^{i42})$, and $BR^{j42}R^{k42}$, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{4B} are each optionally substituted with 1, 2, 3, 4, 5, 6, 7, or 8 independently selected R^{4C} substituents;

each R^{a42}, R^{c42}, and R^{d42} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{a42}, R^{c42} and R^{d42} are each optionally substituted with 1, 2, 3, 4, 5, 6, 7, or 8 independently selected R^{4C} substituents;

or, any R^{c42} and R^{d42} attached to the same N atom, together with the N atom to which they are attached, form a 5-10 membered heteroaryl or a 4-10 membered heterocycloalkyl group, wherein the 5-10 membered heteroaryl or 4-10 membered heterocycloalkyl group is optionally substituted with 1, 2, 3, or 4 independently selected R^{4C} substituents;

each R^{b42} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{b42} are each optionally substituted with 1, 2, 3, 4, 5, 6, 7, or 8 independently selected R^{4C} substituents;

each R^{e42} is independently selected from H, OH, CN, C_{1-6} alkyl, C_{1-6} alkoxy, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-;

each R^{f42} and R^{g42} is independently selected from H, C_{1-6} alkyl, C_{1-6} alkoxy, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-;

each R^{h42} and R^{i42} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-;

each R^{j42} and R^{k42} is independently selected from OH, C_{1-6} alkoxy, and C_{1-6} haloalkoxy;

or any R^{j42} and R^{k42} attached to the same B atom, together with the B atom to which they are attached, form a 5- or 6-membered heterocycloalkyl group optionally

substituted with 1, 2, 3, or 4 substituents independently selected from C_{1-6} alkyl and C_{1-6} haloalkyl;

each R^{4C} is independently selected from halo, oxo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, phenyl, C_{3-7} cycloalkyl, 5-6 membered heteroaryl, 4-7 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, C_{3-7} cycloalkyl-C_{1-6} alkyl-, (5-6 membered heteroaryl)-C_{1-6} alkyl-, (4-7 membered heterocycloalkyl)-C_{1-6} alkyl-, CN, NO_2, OR^{a43}, SR^{a43}, $NHOR^{a43}$, $C(O)R^{b43}$, $C(O)NR^{c43}R^{d43}$, $C(O)NR^{c43}(OR^{a43})$, $C(O)OR^{a43}$, $OC(O)R^{b43}$, $OC(O)NR^{c43}R^{d43}$, $NR^{c43}R^{d43}$, $NR^{c43}NR^{c43}R^{d43}$, $NR^{c43}C(O)R^{b43}$, $NR^{c43}C(O)OR^{a43}$, $NR^{c43}C(O)NR^{c43}R^{d43}$, $C(=NR^{e43})R^{b43}$, $C(=NR^{e43})NR^{c43}R^{d43}$, $NR^{c43}C(=NR^{e43})NR^{c43}R^{d43}$, $NR^{c43}C(=NR^{e43})R^{b43}$, $NR^{c43}S(O)R^{b43}$, $NR^{c43}S(O)NR^{c43}R^{d43}$, $NR^{c43}S(O)_2R^{b43}$, $NR^{c43}S(O)(=NR^{e43})R^{b43}$, $NR^{c43}S(O)_2NR^{c43}R^{d43}$, $S(O)R^{b43}$, $S(O)NR^{c43}R^{d43}$, $S(O)_2R^{b43}$, $S(O)_2NR^{c43}R^{d43}$, $OS(O)(=NR^{e43})R^{b43}$, and $OS(O)_2R^{b43}$, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, phenyl, C_{3-7} cycloalkyl, 5-6 membered heteroaryl, 4-7 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, C_{3-7} cycloalkyl-C_{1-6} alkyl-, (5-6 membered heteroaryl)-C_{1-6} alkyl-, and (4-7 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{4C} are each optionally substituted with 1, 2, 3, or 4 independently selected R^M substituents;

each R^{a43}, R^{c43}, and R^{d43} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, phenyl, C_{3-7} cycloalkyl, 5-6 membered heteroaryl, 4-7 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, C_{3-7} cycloalkyl-C_{1-6} alkyl-, (5-6 membered heteroaryl)-C_{1-6} alkyl-, and (4-7 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, phenyl, C_{3-7} cycloalkyl, 5-6 membered heteroaryl, 4-7 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, C_{3-7} cycloalkyl-C_{1-6} alkyl-, (5-6 membered heteroaryl)-C_{1-6} alkyl-, and (4-7 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{a43}, R^{c43} and R^{d43} are each optionally substituted with 1, 2, 3, or 4 independently selected R^M substituents;

or, any R^{c43} and R^{d43} attached to the same N atom, together with the N atom to which they are attached, form a 5-6 membered heteroaryl or a 4-7 membered heterocycloalkyl group, wherein the 5-6 membered heteroaryl or 4-7 membered heterocycloalkyl group is optionally substituted with 1, 2, 3, or 4 independently selected R^M substituents;

each R^{b43} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, phenyl, C_{3-7} cycloalkyl, 5-6 membered heteroaryl, 4-7 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, C_{3-7} cycloalkyl-C_{1-6} alkyl-, (5-6 membered heteroaryl)-C_{1-6} alkyl-, and (4-7 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, phenyl, C_{3-7} cycloalkyl, 5-6 membered heteroaryl, 4-7 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, C_{3-7} cycloalkyl-C_{1-6} alkyl-, (5-6 membered heteroaryl)-C_{1-6} alkyl-, and (4-7 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{b43} are each optionally substituted with 1, 2, 3, or 4 independently selected R^M substituents;

each R^{e43} is independently selected from H, OH, CN, C_{1-6} alkyl, C_{1-6} alkoxy, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} alkynyl, phenyl, C_{3-7} cycloalkyl, 5-6 membered heteroaryl, 4-7 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, C_{3-7} cycloalkyl-C_{1-6} alkyl-, (5-6 membered heteroaryl)-C_{1-6} alkyl-, and (4-7 membered heterocycloalkyl)-C_{1-6} alkyl-;

each R^M is independently selected from H, OH, halo, oxo, CN, C(O)OH, NH_2, NO_2, SF_5, C_{1-6} alkyl, C_{1-6} alkoxy, C_{1-6} haloalkoxy, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-.

2. The compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein R^1 is selected from H and C_{1-6} alkyl, wherein the C_{1-6} alkyl of R^1 is optionally substituted with 1, 2, or 3 independently selected R^{1A} substituents.

3. The compound of claim 1 or 2, or a pharmaceutically acceptable salt thereof, wherein each R^{1A} is independently selected from halo, CN, NO_2, OR^{a11}, and SR^{a11}, wherein each R^{a11} is independently selected from H and C_{1-6} alkyl.

4. The compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein R^1 is selected from H and C_{1-6} alkyl, wherein the C_{1-6} alkyl of R^1 is optionally substituted with OH.

5. The compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein R^1 is selected from H, methyl, ethyl, and hydroxyethyl.

6. The compound of any one of claims 1 to 5, or a pharmaceutically acceptable salt thereof, wherein R^2 is selected from H, C_{1-6} alkyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^2 are each optionally substituted with 1, 2, 3, or 4 independently selected R^{2A} substituents.

7. The compound of any one of claims 1 to 5, or a pharmaceutically acceptable salt thereof, wherein R^2 is selected from H, C_{1-6} alkyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, (5-10 membered heteroaryl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, and (5-10 membered heteroaryl)-C_{1-6} alkyl- of R^2 are each optionally substituted with 1, 2, 3, or 4 independently selected R^{2A} substituents.

8. The compound of any one of claims 1 to 5, or a pharmaceutically acceptable salt thereof, wherein R^2 is selected from H, C_{1-6} alkyl, phenyl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 6-10 membered heterocycloalkyl, and (5-6 membered heteroaryl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, phenyl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 6-10 membered heterocycloalkyl, and (5-6 membered heteroaryl)-C_{1-6} alkyl- of R^2 are each optionally substituted with 1, 2, 3, or 4 independently selected R^{2A} substituents.

9. The compound of any one of claims 1 to 8, or a pharmaceutically acceptable salt thereof, wherein each R^{2A} is independently selected from halo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-10} cycloalkyl, CN, NO_2, OR^{a21}, SR^{a21},

$C(O)R^{b21}$, $C(O)NR^{c21}R^{d21}$, $C(O)OR^{a21}$, $OC(O)R^{b21}$, $OC(O)NR^{c21}R^{d21}$, $NR^{c21}R^{d21}$, $NR^{c21}C(O)R^{b21}$, $NR^{c21}C(O)OR^{a21}$, $S(O)R^{b21}$, $S(O)NR^{c21}R^{d21}$, $S(O)_2R^{b21}$, and $S(O)_2NR^{c21}R^{d21}$, wherein the C_{1-6} alkyl of R^{2A} is optionally substituted with 1, 2, 3, or 4 independently selected R^{2B} substituents.

10. The compound of any one of claims 1 to 8, or a pharmaceutically acceptable salt thereof, wherein each R^{2A} is independently selected from C_{1-6} alkyl, C_{3-10} cycloalkyl, OR^{a21}, $C(O)NR^{c21}R^{d21}$, $C(O)OR^{a21}$, $NR^{c21}C(O)R^{b21}$, $NR^{c21}C(O)OR^{a21}$, and $S(O)R^{b21}$, wherein the C_{1-6} alkyl and C_{3-10} cycloalkyl of R^{2A} are each optionally substituted with 1 or 2 independently selected R^{2B} substituents.

11. The compound of any one of claims 1 to 10, or a pharmaceutically acceptable salt thereof, wherein each R^{a21}, R^{c21}, and R^{d21} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, and C_{2-6} alkynyl of R^{a21}, R^{c21} and R^{d21} are each optionally substituted with 1, 2, 3, or 4 independently selected R^{2B} substituents;

or, any R^{c21} and R^{d21}, together with the N atom to which they are attached, form a 5-6 membered heteroaryl or a 4-6 membered heterocycloalkyl; and

wherein each R^{b21} is independently selected from H and C_{1-6} alkyl, wherein the C_{1-6} alkyl is each optionally substituted with 1, 2, 3, or 4 independently selected R^{2B} substituents.

12. The compound of any one of claims 1 to 11, or a pharmaceutically acceptable salt thereof, wherein each R^{a21}, R^{c21}, and R^{d21} is independently selected from H and C_{1-6} alkyl;

or, any R^{c21} and R^{d21}, together with the N atom to which they are attached, form a 4-6 membered heterocycloalkyl; and

wherein each R^{b21} is independently selected from H and C_{1-6} alkyl, wherein the C_{1-6} alkyl is each optionally substituted with 1, 2, 3, or 4 independently selected R^{2B} substituents.

13. The compound of any one of claims 1 to 8, or a pharmaceutically acceptable salt thereof, wherein each R^{2A} is independently selected from methyl, cyclobutyl, methoxy, ethylamido, methoxyethylamido, piperidinylcarbonyl, cyanomethyl, methoxycarbonyl, methoxycarbonylamino, ethoxycarbonylamino, methylaminocarbonyl, and methylsulfonyl, wherein each cyclobutyl of R^{2A} is optionally substituted by one R^{2B} substituent which is C_{1-6} alkyl, and wherein the C_{1-6} alkyl of R^{2B} is optionally substituted by cyano.

14. The compound of any one of claims 1 to 5, or a pharmaceutically acceptable salt thereof, wherein R^2 is selected from H, methyl, isopropyl, isobutyl, tert-butyl, cyclobutyl, cyclopentyl, cyclohexyl, azabicyclo[3.2.1]octanyl, bicyclo[2.2.1]heptanyl, phenyl, tetrahydropyranyl, piperidinyl, azaspiro[3.5]nonanyl, pyridyl, benzofuranyl, and pyrazolylmethyl, wherein the cyclobutyl, cyclopentyl, cyclohexyl, azabicyclo[3.2.1]octanyl, bicyclo[2.2.1]heptanyl, phenyl, tetrahydropyranyl, piperidinyl, azaspiro[3.5]nonanyl, pyridyl, benzofuranyl, and pyrazolylmethyl are each optionally substituted with 1 or 2 R^{2A} groups independently selected from methyl, cyanomethylcyclobutyl, methoxy, ethylamido, methoxyethylamido, piperidinylcarbonyl, cyanomethyl, methoxycarbonyl, methoxycarbonylamino, ethoxycarbonylamino, methylaminocarbonyl, and methylsulfony.

15. The compound of any one of claims 1 to 14, or a pharmaceutically acceptable salt thereof, wherein R^3 is selected from H, halo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^3 are each optionally substituted with 1, 2, 3, or 4 independently selected R^{3A} substituents.

16. The compound of any one of claims 1 to 14, or a pharmaceutically acceptable salt thereof, wherein R^3 is selected from H, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^3 are each optionally substituted with 1, 2, 3, or 4 independently selected R^{3A} substituents.

17. The compound of any one of claims 1 to 14, or a pharmaceutically acceptable salt thereof, wherein R^3 is selected from H, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, and 4-10 membered heterocycloalkyl, wherein the C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, and 4-10 membered heterocycloalkyl of R^3 are each optionally substituted with 1, 2, 3, or 4 independently selected R^{3A} substituents.

18. The compound of any one of claims 1 to 17, or a pharmaceutically acceptable salt thereof, wherein each R^{3A} is independently selected from halo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, CN, NO_2, OR^{a31}, $C(O)R^{b31}$, SR^{a31}, SO_2R^{b31}, and $NR^{c31}R^{d31}$, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{3A} are each optionally substituted with 1, 2, 3, or 4 independently selected R^{3B} substituents.

19. The compound of any one of claims 1 to 17, or a pharmaceutically acceptable salt thereof, wherein each R^{3A} is independently selected from C_{1-6} alkyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-

C_{1-6} alkyl-, CN, OR^{a31}, $C(O)R^{b31}$, and SO_2R^{b31}, wherein the C_{1-6} alkyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, and C_{6-10} aryl-C_{1-6} alkyl- of R^{3A} are each optionally substituted with 1, 2, 3, or 4 independently selected R^{3B} substituents.

20. The compound of any one of claims 1 to 17, or a pharmaceutically acceptable salt thereof, wherein each R^{3A} is independently selected from C_{1-6} alkyl, phenyl, C_{3-6} cycloalkyl, 5-6 membered heteroaryl, 4-6 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, CN, $C(O)R^{b31}$, SO_2R^{b31}, and OR^{a31}, wherein the C_{1-6} alkyl, phenyl, C_{3-6} cycloalkyl, 5-6 membered heteroaryl, 4-6 membered heterocycloalkyl, and phenyl-C_{1-6} alkyl- of R^{3A} are each optionally substituted with 1 or 2 independently selected R^{3B} substituents, and wherein each R^{a31} and R^{b31} is independently selected from H and C_{1-6} alkyl.

21. The compound of any one of claims 1 to 20, or a pharmaceutically acceptable salt thereof, wherein each R^{3B} is independently selected from halo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, phenyl, 4-6 membered heterocycloalkyl, CN, NO_2, OR^{a32}, SR^{a32}, $C(O)R^{b32}$, $C(O)NR^{c32}R^{d32}$, and $C(O)OR^{a32}$, wherein each phenyl and 4-6 membered heterocycloalkyl of R^{3B} is optionally substituted with $S(O)_2R^{b33}$.

22. The compound of any one of claims 1 to 20, or a pharmaceutically acceptable salt thereof, wherein each R^{3B} is independently selected from phenyl, 4-6 membered heterocycloalkyl, CN, OR^{a32}, $C(O)R^{b32}$, and $C(O)OR^{a32}$, wherein each phenyl of R^{3B} is optionally substituted with $S(O)_2R^{b33}$;

each R^{a32} is independently selected from H, C_{1-6} alkyl, and 4-6 membered heterocycloalkyl; and

each R^{b32} is independently selected from H and C_{1-6} alkyl.

23. The compound of any one of claims 1 to 20, or a pharmaceutically acceptable salt thereof, wherein each R^{3B} is independently selected from phenyl, morpholinyl, CN, tetrahydropyranyloxy, methylcarbonyl, and C(O)OH.

24. The compound of any one of claims 1 to 14, or a pharmaceutically acceptable salt thereof, wherein R^3 is selected from H, ethynyl, phenyl, cyclohexenyl, pyrazolyl, cyclopropyl, dihydropyranyl, azabicyclo[4.1.0]heptanyl, dihydroindenyl, imidazopyridinyl, pyrrolo[1,2-a]pyrazinyl, tetrahydrothieno[3,2-c]pyridinyl, thieno[3,2-c]pyridinyl, isoquinolinyl, benzothiazolyl, chromanyl, thiazolyl, indazolyl, piperidinyl, and pyridyl, wherein the ethynyl, phenyl, cyclohexenyl, pyrazolyl, cyclopropyl, dihydropyranyl, azabicyclo[4.1.0]heptanyl, dihydroindenyl, imidazopyridinyl, pyrrolo[1,2-a]pyrazinyl, tetrahydrothieno[3,2-c]pyridinyl, thieno[3,2-c]pyridinyl, isoquinolinyl, benzothiazolyl, chromanyl, thiazolyl, indazolyl, piperidinyl, and pyridyl are each optionally substituted by one or two R^{3A} groups independently selected from methyl, trideuteromethyl, phenyl, cyano, hydroxy, methoxy, cyclopropyl, cyanocyclopropyl, morpholinyl, morpholinylcyclopropyl, piperazinyl, methylcarbonylpiperazinyl, tetrahydropyranyloxymethyl, benzyl, carboxybenzyl, methylcarbonyl, and methylsulfonyl, wherein the methyl group of the methylcarbonyl is substituted by methylsulfonylphenyl.

25. The compound of any one of claims 1 to 24, or a pharmaceutically acceptable salt thereof, wherein R^4 is selected from halo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, CN, NO_2, OR^{a4}, SR^{a4}, $C(O)R^{b4}$, $C(O)NR^{c4}R^{d4}$, $C(O)OR^{a4}$, $NR^{c4}R^{d4}$, $S(O)R^{b4}$, $S(O)NR^{c4}R^{d4}$, $S(O)_2R^{b4}$, and $S(O)_2NR^{c4}R^{d4}$, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^4 are each optionally substituted with 1, 2, 3, or 4 independently selected R^{4A} substituents.

26. The compound of any one of claims 1 to 24, or a pharmaceutically acceptable salt thereof, wherein R^4 is selected from C_{1-6} alkyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, C_{3-6} cycloalkyl-C_{1-6} alkyl-, $C(O)R^{b4}$, $C(O)NR^{c4}R^{d4}$, and $S(O)_2R^{b4}$, wherein the C_{1-6} alkyl,

C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, C_{3-6} cycloalkyl-C_{1-6} alkyl-, of R^4 are each optionally substituted with 1, 2, 3, or 4 independently selected R^{4A} substituents.

27. The compound of any one of claims 1 to 24, or a pharmaceutically acceptable salt thereof, wherein R^4 is selected from C_{1-6} alkyl, phenyl, C_{3-6} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, C_{3-6} cycloalkyl-C_{1-6} alkyl-, $C(O)R^{b4}$, $C(O)NR^{c4}R^{d4}$, and $S(O)_2R^{b4}$, wherein the C_{1-6} alkyl, phenyl, C_{3-6} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, and C_{3-6} cycloalkyl-C_{1-6} alkyl- of R^4 are each optionally substituted with 1 or 2 independently selected R^{4A} substituents.

28. The compound of any one of claims 1 to 27, or a pharmaceutically acceptable salt thereof, wherein each R^{4A} is independently selected from halo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, CN, OR^{a41}, $C(O)R^{b41}$, $C(O)NR^{c41}R^{d41}$, and $C(O)OR^{a41}$, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{4A} are each optionally substituted with 1, 2, 3, or 4 independently selected R^{4B} substituents.

29. The compound of any one of claims 1 to 27, or a pharmaceutically acceptable salt thereof, wherein each R^{4A} is independently selected from halo, C_{1-6} alkyl, C_{1-6} haloalkyl, 5-6 membered heteroaryl, 4-6 membered heterocycloalkyl, (5-6 membered heteroaryl)-C_{1-6} alkyl-, (4-6 membered heterocycloalkyl)-C_{1-6} alkyl-, CN, OR^{a41}, $C(O)R^{b41}$, and $C(O)NR^{c41}R^{d41}$, wherein the C_{1-6} alkyl, 5-6 membered heteroaryl, 4-6 membered heterocycloalkyl, (5-6 membered heteroaryl)-C_{1-6} alkyl-, and (4-6 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{4A} are each optionally substituted with 1 or 2 independently selected R^{4B} substituents; wherein each R^{a41} is independently

selected from H, C_{1-6} alkyl, 5-6 membered heteroaryl, and 4-6 membered heterocycloalkyl; and wherein each R^{b41} is independently selected from H and C_{1-6} alkyl.

30. The compound of any one of claims 1 to 27, or a pharmaceutically acceptable salt thereof, wherein each R^{4A} is independently selected from fluoro, methyl, cyano, hydroxy, methoxy, N,N-dimethylaminocarbonyl, ethyl, 2-methylpropyl, difluoroethyl, hydroxy, cyano, piperidinyl, piperazinyl, tetrahydrothiophene 1,1-dioxide, isopropylcarbonyl, piperidinylmethyl, pyridyloxy, tetrahydropyranyloxy, isopropoxy, methoxy, and pyridylmethyl, wherein the methyl, ethyl, 2-methylpropyl, piperidinyl, piperazinyl, tetrahydrothiophene 1,1-dioxide, piperidinylmethyl, pyridyloxy, tetrahydropyranoxy, isopropoxy, methoxy, and pyridylmethyl are each optionally substituted by 1 or 2 R^{4B} substituents independently selected from C_{1-6} alkyl, OR^{a42}, C_{1-6} alkylsulfonyl, di(C_{1-6} alkyl)amino, and C_{1-6} alkylcarbonyl, wherein the di(C_{1-6} alkyl)amino is optionally substituted with C_{1-6} alkylsulfonyl.

31. The compound of any one of claims 1 to 24, or a pharmaceutically acceptable salt thereof, wherein R^4 is selected from ethyl, hydroxyethyl, isopropylcarbonyl, phenyl, cyclopropyl, piperidinyl, dihydropyranyl, pyrazolyl, cyclohexenyl, pyridyl, pyrazolo[1,5-a]pyrimidinyl, 5,6-dihydro-4H-pyrrolo[1,2-b]pyrazolyl, cyclopropylmethyl, phenylmethyl, cyclopropylaminocarbonyl, and methylsulfonyl, wherein the phenyl, cyclopropyl, piperidinyl, dihydropyranyl, pyrazolyl, cyclohexenyl, pyridyl, pyrazolo[1,5-a]pyrimidinyl, 5,6-dihydro-4H-pyrrolo[1,2-b]pyrazolyl, cyclopropylmethyl, phenylmethyl, and cyclopropylaminocarbonyl of R^4 are optionally substituted by 1 or 2 R^{4A} substituents independently selected from CN, fluoro, methyl, ethyl, difluoroethyl, 2-methylpropyl, piperidinyl, piperazinyl, hydroxy, cyano, methoxy, N,N-dimethylaminocarbonyl, tetrahydrothiophene 1,1-dioxide, isopropylcarbonyl, piperidinylmethyl, pyridyloxy, tetrahydropyranyloxy, isopropoxy, methoxy, and pyridylmethyl;

wherein the methyl, ethyl, 2-methylpropyl, piperidinyl, piperazinyl, tetrahydrothiophene 1,1-dioxide, piperidinylmethyl, pyridyloxy, tetrahydropyranoxy, isopropoxy, methoxy, and pyridylmethyl of R^{4A} are each optionally substituted by 1

or 2 R^{4B} substituents independently selected from C_{1-6} alkyl, OR^{a42}, C_{1-6} alkylsulfonyl, di(C_{1-6} alkyl)amino, and C_{1-6} alkylcarbonyl, wherein the di(C_{1-6} alkyl)amino is optionally substituted with C_{1-6} alkylsulfonyl, wherein each R^{a42} is independently selected from H, and C_{1-6} alkyl.

32. The compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein:

R^1 is selected from H and C_{1-6} alkyl, wherein the C_{1-6} alkyl of R^1 is optionally substituted with 1, 2, or 3 independently selected R^{1A} substituents;

R^2 is selected from H, C_{1-6} alkyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^2 are each optionally substituted with 1, 2, 3, or 4 independently selected R^{2A} substituents;

each R^{2A} is independently selected from halo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-10} cycloalkyl, CN, NO_2, OR^{a21}, SR^{a21}, $C(O)R^{b21}$, $C(O)NR^{c21}R^{d21}$, $C(O)OR^{a21}$, $OC(O)R^{b21}$, $OC(O)NR^{c21}R^{d21}$, $NR^{c21}R^{d21}$, $NR^{c21}C(O)R^{b21}$, $S(O)R^{b21}$, $S(O)NR^{c21}R^{d21}$, $S(O)_2R^{b21}$, and $S(O)_2NR^{c21}R^{d21}$, wherein the C_{1-6} alkyl of R^{2A} is optionally substituted with 1, 2, 3, or 4 independently selected R^{2B} substituents;

R^3 is selected from H, halo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^3 are each optionally substituted with 1, 2, 3, or 4 independently selected R^{3A} substituents;

each R^{3A} is independently selected from halo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, CN, NO_2, OR^{a31}, SR^{a31}, SO_2R^{b31}, and $NR^{c31}R^{d31}$, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{3A} are each optionally substituted with 1, 2, 3, or 4 independently selected R^{3B} substituents;

each R^{3B} is independently selected from halo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, 4-6 membered heterocycloalkyl, CN, NO_2, OR^{a32}, SR^{a32}, $C(O)R^{b32}$, $C(O)NR^{c32}R^{d32}$, and $C(O)OR^{a32}$;

R^4 is selected from halo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, CN, NO_2, OR^{a4}, SR^{a4}, $C(O)R^{b4}$, $C(O)NR^{c4}R^{d4}$, $C(O)OR^{a4}$, $NR^{c4}R^{d4}$, $S(O)R^{b4}$, $S(O)NR^{c4}R^{d4}$, $S(O)_2R^{b4}$, and $S(O)_2NR^{c4}R^{d4}$, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^4 are each optionally substituted with 1, 2, 3, or 4 independently selected R^{4A} substituents; and

each R^{4A} is independently selected from halo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, CN, OR^{a41}, $C(O)R^{b41}$, $C(O)NR^{c41}R^{d41}$, and $C(O)OR^{a41}$, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{4A} are each optionally substituted with 1, 2, 3, or 4 independently selected R^{4B} substituents.

33. The compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein:

R^1 is selected from H and C_{1-6} alkyl, wherein the C_{1-6} alkyl of R^1 is optionally substituted with 1, 2, or 3 independently selected R^{1A} substituents;

R^2 is selected from H, C_{1-6} alkyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^2 are each optionally substituted with 1, 2, 3, or 4 independently selected R^{2A} substituents;

each R^{2A} is independently selected from halo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-10} cycloalkyl, CN, NO_2, OR^{a21}, SR^{a21}, $C(O)R^{b21}$, $C(O)NR^{c21}R^{d21}$, $C(O)OR^{a21}$, $OC(O)R^{b21}$, $OC(O)NR^{c21}R^{d21}$, $NR^{c21}R^{d21}$, $NR^{c21}C(O)R^{b21}$, $S(O)R^{b21}$, $S(O)NR^{c21}R^{d21}$, $S(O)_2R^{b21}$, and $S(O)_2NR^{c21}R^{d21}$, wherein the C_{1-6} alkyl of R^{2A} is optionally substituted with 1, 2, 3, or 4 independently selected R^{2B} substituents;

each R^{2B} is independently selected from C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, CN, and NO_2, wherein each C_{1-6} alkyl of R^{2B} is optionally substituted by cyano;

R^3 is selected from H, halo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^3 are each optionally substituted with 1, 2, 3, or 4 independently selected R^{3A} substituents;

each R^{3A} is independently selected from halo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10

membered heteroaryl)-C_{1-6} alkyl-, (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, CN, NO_2, OR^{a31}, SR^{a31}, SO_2R^{b31}, and $NR^{c31}R^{d31}$, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{3A} are each optionally substituted with 1, 2, 3, or 4 independently selected R^{3B} substituents;

each R^{a31}, R^{b31}, R^{c31}, and R^{d31} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, and C_{2-6} alkynyl, wherein the C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, and C_{2-6} alkynyl of each R^{a31}, R^{b31}, R^{c31}, and R^{d31} is optionally substituted with 1, 2, 3, or 4 independently selected R^{3B} substituents.

each R^{3B} is independently selected from halo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, phenyl, 4-6 membered heterocycloalkyl, CN, NO_2, OR^{a32}, SR^{a32}, $C(O)R^{b32}$, $C(O)NR^{c32}R^{d32}$, and $C(O)OR^{a32}$, wherein each phenyl and 4-6 membered heterocycloalkyl of R^{3B} is optionally substituted with $S(O)_2R^{b33}$;

R^4 is selected from halo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, CN, NO_2, OR^{a4}, SR^{a4}, $C(O)R^{b4}$, $C(O)NR^{c4}R^{d4}$, $C(O)OR^{a4}$, $NR^{c4}R^{d4}$, $S(O)R^{b4}$, $S(O)NR^{c4}R^{d4}$, $S(O)_2R^{b4}$, and $S(O)_2NR^{c4}R^{d4}$, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^4 are each optionally substituted with 1, 2, 3, or 4 independently selected R^{4A} substituents; and

each R^{4A} is independently selected from halo, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered heteroaryl)-C_{1-6} alkyl-, (4-10 membered heterocycloalkyl)-C_{1-6} alkyl-, CN, OR^{a41}, $C(O)R^{b41}$, $C(O)NR^{c41}R^{d41}$, and $C(O)OR^{a41}$, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, C_{6-10} aryl-C_{1-6} alkyl-, C_{3-10} cycloalkyl-C_{1-6} alkyl-, (5-10 membered

heteroaryl)-C_{1-6} alkyl-, and (4-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{4A} are each optionally substituted with 1, 2, 3, or 4 independently selected R^{4B} substituents;

each R^{a41}, R^{b41}, R^{c41}, and R^{d41} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-6} cycloalkyl, phenyl, 5-6 membered heteroaryl, and 4-6 membered heterocycloalkyl;

each R^{4B} is independently selected from C_{1-6} alkyl, OR^{a42}, C_{1-6} alkylsulfonyl, di(C_{1-6} alkyl)amino, and C_{1-6} alkylcarbonyl, wherein the di(C_{1-6} alkyl)amino is optionally substituted with C_{1-6} alkylsulfonyl; and

each R^{a42} is independently selected from H and C_{1-6} alkyl.

34. The compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein:

R^1 is selected from H and C_{1-6} alkyl, wherein the C_{1-6} alkyl of R^1 is optionally substituted with OH;

R^2 is selected from H, C_{1-6} alkyl, phenyl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-6 membered heterocycloalkyl, and (5-6 membered heteroaryl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, phenyl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 4-6 membered heterocycloalkyl, and (5-6 membered heteroaryl)-C_{1-6} alkyl- of R^2 are each optionally substituted with 1, 2, 3, or 4 independently selected R^{2A} substituents;

each R^{2A} is independently selected from C_{1-6} alkyl, C_{3-10} cycloalkyl, OR^{a21}, $C(O)NR^{c21}R^{d21}$, and $NR^{c21}C(O)R^{b21}$;

each R^{a21}, R^{c21}, and R^{d21} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, and C_{2-6} alkynyl of R^{a21}, R^{c21} and R^{d21} are each optionally substituted with 1, 2, 3, or 4 independently selected R^{2B} substituents;

or, any R^{c21} and R^{d21}, together with the N atom to which they are attached, form a 5-6 membered heteroaryl or a 4-6 membered heterocycloalkyl;

each R^{b21} is independently selected from H and C_{1-6} alkyl, wherein the C_{1-6} alkyl is each optionally substituted with 1, 2, 3, or 4 independently selected R^{2B} substituents;

R^3 is selected from H, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, and 4-10 membered heterocycloalkyl, wherein the C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10

membered heteroaryl, 4-10 membered heterocycloalkyl of R^3 are each optionally substituted with 1, 2, 3, or 4 independently selected R^{3A} substituents;

each R^{3A} is independently selected from C_{1-6} alkyl, C_{3-6} cycloalkyl, 5-6 membered heteroaryl, 4-6 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, CN, OR^{a31}, and SO_2R^{b31}, wherein the C_{1-6} alkyl, C_{3-6} cycloalkyl, 5-6 membered heteroaryl, 4-6 membered heterocycloalkyl, and phenyl-C_{1-6} alkyl- of R^{3A} are each optionally substituted with 1 or 2 independently selected R^{3B} substituents;

each R^{a31} is independently selected from H and C_{1-6} alkyl;

each R^{b31} is independently selected from H and C_{1-6} alkyl;

each R^{3B} is independently selected from 4-6 membered heterocycloalkyl, CN, OR^{a32}, $C(O)R^{b32}$, and $C(O)OR^{a32}$;

each R^{a32} is independently selected from H, C_{1-6} alkyl, and 4-6 membered heterocycloalkyl;

each R^{b32} is independently selected from H and C_{1-6} alkyl;

R^4 is selected from C_{1-6} alkyl, phenyl, C_{3-6} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, $C(O)R^{b4}$, and $S(O)_2R^{b4}$, wherein the C_{1-6} alkyl, phenyl, C_{3-6} cycloalkyl, 5-10 membered heteroaryl, and 4-10 membered heterocycloalkyl of R^4 are each optionally substituted with 1 or 2 independently selected R^{4A} substituents;

each R^{4A} is independently selected from halo, C_{1-6} alkyl, C_{1-6} haloalkyl, 5-6 membered heteroaryl, 4-6 membered heterocycloalkyl, (5-6 membered heteroaryl)-C_{1-6} alkyl-, (4-6 membered heterocycloalkyl)-C_{1-6} alkyl-, CN, OR^{a41}, and $C(O)R^{b41}$, wherein the C_{1-6} alkyl, 5-6 membered heteroaryl, 4-6 membered heterocycloalkyl, (5-6 membered heteroaryl)-C_{1-6} alkyl-, and (4-6 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{4A} are each optionally substituted with 1 or 2 independently selected R^{4B} substituents;

each R^{a41} is independently selected from H, C_{1-6} alkyl, 5-6 membered heteroaryl, and 4-6 membered heterocycloalkyl;

each R^{b41} is independently selected from H and C_{1-6} alkyl;

each R^{4B} is independently selected from C_{1-6} alkyl, OR^{a42}, C_{1-6} alkylsulfonyl, di(C_{1-6} alkyl)amino, and C_{1-6} alkylcarbonyl, wherein the di(C_{1-6} alkyl)amino is optionally substituted with C_{1-6} alkylsulfonyl; and

each R^{a42} is independently selected from H and C_{1-6} alkyl.

35. The compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein:

R^1 is selected from H and C_{1-6} alkyl, wherein the C_{1-6} alkyl of R^1 is optionally substituted with OH;

R^2 is selected from H, C_{1-6} alkyl, phenyl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 6-10 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, C_{3-6} cycloalkyl-C_{1-6} alkyl-, (5-6 membered heteroaryl)-C_{1-6} alkyl-, and (6-10 membered heterocycloalkyl)-C_{1-6} alkyl-, wherein the C_{1-6} alkyl, phenyl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, 6-10 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, C_{3-6} cycloalkyl-C_{1-6} alkyl-, (5-6 membered heteroaryl)-C_{1-6} alkyl-, and (6-10 membered heterocycloalkyl)-C_{1-6} alkyl- of R^2 are each optionally substituted with 1, 2, 3, or 4 independently selected R^{2A} substituents;

each R^{2A} is independently selected from C_{1-6} alkyl, C_{3-10} cycloalkyl, OR^{a21}, $C(O)NR^{c21}R^{d21}$, $C(O)OR^{a21}$, $NR^{c21}C(O)R^{b21}$, $NR^{c21}C(O)OR^{a21}$, and $S(O)R^{b21}$, wherein the C_{1-6} alkyl and C_{3-10} cycloalkyl of R^{2A} are each optionally substituted with 1 or 2 independently selected R^{2B} substituents;

each R^{a21}, R^{c21}, and R^{d21} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, wherein the C_{1-6} alkyl, C_{2-6} alkenyl, and C_{2-6} alkynyl of R^{a21}, R^{c21} and R^{d21} are each optionally substituted with 1, 2, 3, or 4 independently selected R^{2B} substituents;

or, any R^{c21} and R^{d21}, together with the N atom to which they are attached, form a 5-6 membered heteroaryl or a 4-6 membered heterocycloalkyl;

each R^{b21} is independently selected from H and C_{1-6} alkyl, wherein the C_{1-6} alkyl is each optionally substituted with 1, 2, 3, or 4 independently selected R^{2B} substituents;

each R^{2B} is independently selected from C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, CN, and NO_2, wherein each C_{1-6} alkyl of R^{2B} is optionally substituted by cyano;

R^3 is selected from H, C_{2-6} alkynyl, C_{6-10} aryl, C_{3-10} cycloalkyl, 5-10 membered heteroaryl, and 4-10 membered heterocycloalkyl, wherein the C_{2-6} alkynyl, C_{6-10} aryl,

C_{3-10} cycloalkyl, 5-10 membered heteroaryl, and 4-10 membered heterocycloalkyl of R^3 are each optionally substituted with 1, 2, 3, or 4 independently selected R^{3A} substituents;

each R^{3A} is independently selected from C_{1-6} alkyl, phenyl, C_{3-6} cycloalkyl, 5-6 membered heteroaryl, 4-6 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, CN, $C(O)R^{b31}$, SO_2R^{b31}, and OR^{a31}, wherein the C_{1-6} alkyl, phenyl, C_{3-6} cycloalkyl, 5-6 membered heteroaryl, 4-6 membered heterocycloalkyl, and phenyl-C_{1-6} alkyl- of R^{3A} are each optionally substituted with 1 or 2 independently selected R^{3B} substituents;

each R^{a31} and R^{b31} is independently selected from H and C_{1-6} alkyl, wherein the C_{1-6} alkyl of each R^{a31} and R^{b31} is optionally substituted with 1 or 2 independently selected R^{3B} substituents;

each R^{3B} is independently selected from phenyl, 4-6 membered heterocycloalkyl, CN, OR^{a32}, $C(O)R^{b32}$, and $C(O)OR^{a32}$, wherein each phenyl of R^{3B} is optionally substituted with $S(O)_2R^{b33}$;

each R^{a32} is independently selected from H, C_{1-6} alkyl, and 4-6 membered heterocycloalkyl;

each R^{b32} is independently selected from H and C_{1-6} alkyl;

R^4 is selected from C_{1-6} alkyl, phenyl, C_{3-6} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, C_{3-6} cycloalkyl-C_{1-6} alkyl-, $C(O)R^{b4}$, $C(O)NR^{c4}R^{d4}$, and $S(O)_2R^{b4}$, wherein the C_{1-6} alkyl, phenyl, C_{3-6} cycloalkyl, 5-10 membered heteroaryl, 4-10 membered heterocycloalkyl, phenyl-C_{1-6} alkyl-, and C_{3-6} cycloalkyl-C_{1-6} alkyl- of R^4 are each optionally substituted with 1 or 2 independently selected R^{4A} substituents;

each R^{b4}, R^{c4}, and R^{d4} is independently selected from H, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, and C_{3-6} cycloalkyl;

each R^{4A} is independently selected from halo, C_{1-6} alkyl, C_{1-6} haloalkyl, 5-6 membered heteroaryl, 4-6 membered heterocycloalkyl, (5-6 membered heteroaryl)-C_{1-6} alkyl-, (4-6 membered heterocycloalkyl)-C_{1-6} alkyl-, CN, OR^{a41}, $C(O)R^{b41}$, and $C(O)NR^{c41}R^{d41}$, wherein the C_{1-6} alkyl, 5-6 membered heteroaryl, 4-6 membered heterocycloalkyl, (5-6 membered heteroaryl)-C_{1-6} alkyl-, and (4-6 membered heterocycloalkyl)-C_{1-6} alkyl- of R^{4A} are each optionally substituted with 1 or 2 independently selected R^{4B} substituents;

each R^{a41} is independently selected from H, C_{1-6} alkyl, 5-6 membered heteroaryl, and 4-6 membered heterocycloalkyl;

each R^{b41} is independently selected from H and C_{1-6} alkyl;

each R^{c41} and R^{d41} is independently selected from H and C_{3-6} cycloalkyl;

each R^{4B} is independently selected from C_{1-6} alkyl, OR^{a42}, C_{1-6} alkylsulfonyl, di(C_{1-6} alkyl)amino, and C_{1-6} alkylcarbonyl, wherein the di(C_{1-6} alkyl)amino is optionally substituted with C_{1-6} alkylsulfonyl; and

each R^{a42} is independently selected from H and C_{1-6} alkyl.

36. The compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein:

R^1 is selected from H and C_{1-6} alkyl, wherein the C_{1-6} alkyl of R^1 is optionally substituted with OH;

R^2 is selected from H, methyl, isopropyl, isobutyl, tert-butyl, cyclobutyl, cyclopentyl, cyclohexyl, azabicyclo[3.2.1]octanyl, bicyclo[2.2.1]heptanyl, phenyl, tetrahydropyranyl, piperidinyl, azaspiro[3.5]nonanyl, pyridyl, benzofuranyl, and pyrazolylmethyl, wherein the cyclobutyl, cyclopentyl, cyclohexyl, azabicyclo[3.2.1]octanyl, bicyclo[2.2.1]heptanyl, phenyl, tetrahydropyranyl, piperidinyl, azaspiro[3.5]nonanyl, pyridyl, benzofuranyl, and pyrazolylmethyl are each optionally substituted with 1 or 2 R^{2A} groups;

each R^{2A} is independently selected from methyl, cyclobutyl, methoxy, ethylamido, methoxyethylamido, piperidinylcarbonyl, cyanomethyl, methoxycarbonyl, methoxycarbonylamino, ethoxycarbonylamino, methylaminocarbonyl, and methylsulfonyl, wherein each cyclobutyl of R^{2A} is optionally substituted by one R^{2B} substituent which is C_{1-6} alkyl, and wherein the C_{1-6} alkyl of R^{2B} is optionally substituted by cyano;

R^3 is selected from H, ethynyl, phenyl, cyclohexenyl, pyrazolyl, cyclopropyl, dihydropyranyl, azabicyclo[4.1.0]heptanyl, dihydroindenyl, imidazopyridinyl, pyrrolo[1,2-a]pyrazinyl, tetrahydrothieno[3,2-c]pyridinyl, thieno[3,2-c]pyridinyl, isoquinolinyl, benzothiazolyl, chromanyl, thiazolyl, indazolyl, piperidinyl, and pyridyl, wherein the ethynyl, phenyl, cyclohexenyl, pyrazolyl, cyclopropyl, dihydropyranyl, azabicyclo[4.1.0]heptanyl, dihydroindenyl, imidazopyridinyl,

pyrrolo[1,2-a]pyrazinyl, tetrahydrothieno[3,2-c]pyridinyl, thieno[3,2-c]pyridinyl, isoquinolinyl, benzothiazolyl, chromanyl, thiazolyl, indazolyl, piperidinyl, and pyridyl are each optionally substituted by one or two R^{3A} groups;

each R^{3A} is independently selected from methyl, trideuteromethyl, phenyl, cyano, hydroxy, methoxy, cyclopropyl, cyanocyclopropyl, morpholinyl, morpholinylcyclopropyl, piperazinyl, methylcarbonylpiperazinyl, tetrahydropyranyloxymethyl, benzyl, carboxybenzyl, methylcarbonyl, and methylsulfonyl, wherein the methyl group of the methylcarbonyl is substituted by methylsulfonylphenyl;

R^4 is selected from ethyl, hydroxyethyl, isopropylcarbonyl, phenyl, cyclopropyl, piperidinyl, dihydropyranyl, pyrazolyl, cyclohexenyl, pyridyl, pyrazolo[1,5-a]pyrimidinyl, 5,6-dihydro-4H-pyrrolo[1,2-b]pyrazolyl, cyclopropylmethyl, phenylmethyl, cyclopropylaminocarbonyl, and methylsulfonyl, wherein the phenyl, cyclopropyl, piperidinyl, dihydropyranyl, pyrazolyl, cyclohexenyl, pyridyl, pyrazolo[1,5-a]pyrimidinyl, 5,6-dihydro-4H-pyrrolo[1,2-b]pyrazolyl, cyclopropylmethyl, phenylmethyl, and cyclopropylaminocarbonyl of R^4 are optionally substituted by 1 or 2 R^{4A} substituents;

each R^{4A} is independently selected from CN, fluoro, methyl, ethyl, difluoroethyl, 2-methylpropyl, piperidinyl, piperazinyl, hydroxy, cyano, methoxy, N,N-dimethylaminocarbonyl, tetrahydrothiophene 1,1-dioxide, isopropylcarbonyl, piperidinylmethyl, pyridyloxy, tetrahydropyranyloxy, isopropoxy, methoxy, and pyridylmethyl, wherein the methyl, ethyl, 2-methylpropyl, piperidinyl, piperazinyl, tetrahydrothiophene 1,1-dioxide, piperidinylmethyl, pyridyloxy, tetrahydropyranoxy, isopropoxy, methoxy, and pyridylmethyl of R^{4A} are each optionally substituted by 1 or 2 R^{4B} substituents;

each R^{4B} is independently selected from C_{1-6} alkyl, OR^{a42}, C_{1-6} alkylsulfonyl, di(C_{1-6} alkyl)amino, and C_{1-6} alkylcarbonyl, wherein the di(C_{1-6} alkyl)amino is optionally substituted with C_{1-6} alkylsulfonyl; and

each R^{a42} is independently selected from H and C_{1-6} alkyl.

37. The compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein:

R^1 is selected from H and C_{1-6} alkyl, wherein the C_{1-6} alkyl of R^1 is optionally substituted with OH;

R^2 is selected from H, methyl, isopropyl, isobutyl, tert-butyl, cyclobutyl, cyclopentyl, cyclohexyl, bicyclo[2.2.1]heptanyl, phenyl, tetrahydropyranyl, pyridyl, benzofuranyl, and pyrazolylmethyl, wherein the cyclobutyl, cyclopentyl, cyclohexyl, bicyclo[2.2.1]heptanyl, phenyl, tetrahydropyranyl, pyridyl, benzofuranyl, and pyrazolylmethyl are each optionally substituted with 1 or 2 R^{2A} groups;

each R^{2A} is independently selected from methyl, methoxy, ethylamido, methoxyethylamido, and piperidinylcarbonyl;

R^3 is selected from H, phenyl, cyclohexenyl, pyrazolyl, cyclopropyl, dihydropyranyl, azabicyclo[4.1.0]heptanyl, dihydroindenyl, imidazopyridinyl, pyrrolo[1,2-a]pyrazinyl, tetrahydrothieno[3,2-c]pyridinyl, thieno[3,2-c]pyridinyl, isoquinolinyl, benzothiazolyl, chromanyl, thiazoyl, indazolyl, and pyridyl, wherein the phenyl, cyclohexenyl, pyrazolyl, cyclopropyl, dihydropyranyl, azabicyclo[4.1.0]heptanyl, dihydroindenyl, imidazopyridinyl, pyrrolo[1,2-a]pyrazinyl, tetrahydrothieno[3,2-c]pyridinyl, thieno[3,2-c]pyridinyl, isoquinolinyl, benzothiazolyl, chromanyl, thiazolyl, indazolyl, and pyridyl are each optionally substituted by one or two R^{3A} groups;

each R^{3A} is independently selected from methyl, cyano, hydroxy, methoxy, cyclopropyl, cyanocyclopropyl, morpholinyl, morpholinylcyclopropyl, piperazinyl, methylcarbonylpiperazinyl, tetrahydropyranyloxymethyl, benzyl, carboxybenzyl, and methylsulfonyl;

R^4 is selected from hydroxyethyl, isopropylcarbonyl, phenyl, cyclopropyl, piperidinyl, dihydropyranyl, pyrazolyl, cyclohexenyl, and pyridyl, wherein the phenyl, cyclopropyl, piperidinyl, dihydropyranyl, pyrazolyl, cyclohexenyl, and pyridyl of R^4 are optionally substituted by 1 or 2 R^{4A} substituents;

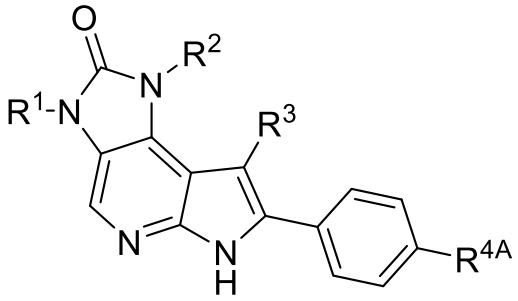
each R^{4A} is independently selected from CN, fluoro, methyl, ethyl, difluoroethyl, 2-methylpropyl, piperidinyl, piperazinyl, tetrahydrothiophene 1,1-dioxide, isopropylcarbonyl, piperidinylmethyl, pyridyloxy, tetrahydropyranyloxy, isopropoxy, methoxy, and pyridylmethyl, wherein the methyl, ethyl, 2-methylpropyl, piperidinyl, piperazinyl, tetrahydrothiophene 1,1-dioxide, piperidinylmethyl,

pyridyloxy, tetrahydropyranoxy, isopropoxy, methoxy, and pyridylmethyl of R^{4A} are each optionally substituted by 1 or 2 R^{4B} substituents; and

each R^{4B} is independently selected from C_{1-6} alkyl, OR^{a42}, C_{1-6} alkylsulfonyl, di(C_{1-6} alkyl)amino, and C_{1-6} alkylcarbonyl, wherein the di(C_{1-6} alkyl)amino is optionally substituted with C_{1-6} alkylsulfonyl; and

each R^{a42} is independently selected from H and C_{1-6} alkyl.

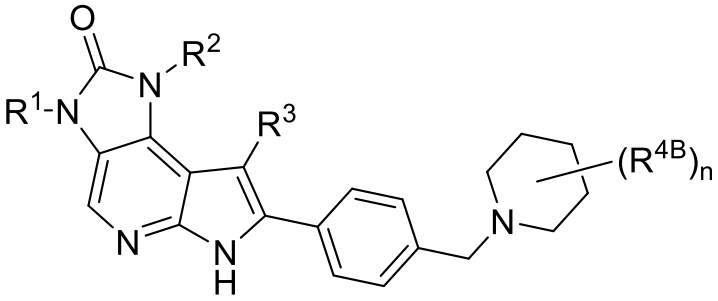
38. The compound of claim 1, wherein the compound of Formula I is a compound of Formula II:



II

or a pharmaceutically acceptable salt thereof.

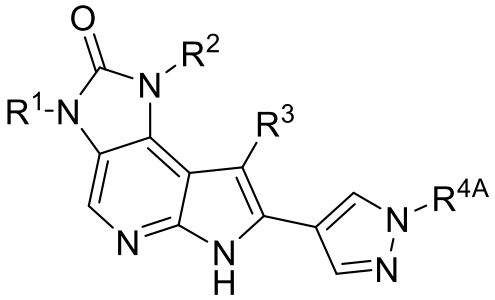
39. The compound of claim 1, wherein the compound of Formula I is a compound of Formula IIa:



IIa

or a pharmaceutically acceptable salt thereof, wherein n is 0, 1, 2, 3, or 4.

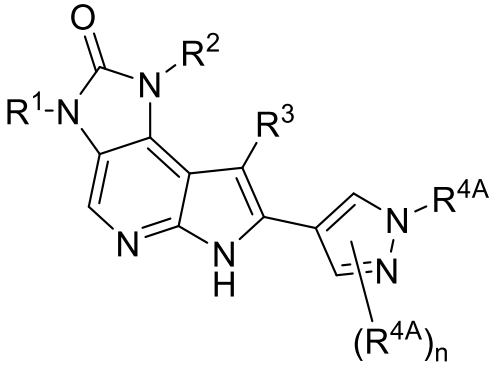
40. The compound of claim 1, wherein the compound of Formula I is a compound of Formula III:



III

or a pharmaceutically acceptable salt thereof.

41. The compound of claim 1, wherein the compound of Formula I is a compound of Formula IV:



IV

or a pharmaceutically acceptable salt thereof, wherein n is 0, 1, or 2.

42. The compound of claim 1, which is selected from:

3-methyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-1-phenyl-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

1-(4-methoxyphenyl)-3-methyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

1-(benzofuran-5-yl)-3-methyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-1-phenyl-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

3-(2-hydroxyethyl)-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-1-phenyl-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

7-(1-(1,1-dioxidotetrahydrothiophen-3-yl)-1H-pyrazol-4-yl)-3-methyl-1-phenyl-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

3-methyl-7-(4-((methyl(3-(methylsulfonyl)propyl)amino)methyl)phenyl)-1-phenyl-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

7-(3-fluoro-4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-3-methyl-1-phenyl-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

7-(4-(4-ethylpiperazin-1-yl)phenyl)-3-methyl-1-(pyridin-2-yl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

1-cyclohexyl-3-methyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

1-(tert-butyl)-3-methyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

1-cyclohexyl-3-methyl-7-(1-((methylsulfonyl)methyl)-1*H*-pyrazol-4-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

1-cyclopentyl-3-ethyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

3-methyl-7-(1-methyl-1H-pyrazol-4-yl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

3-methyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-1-(tetrahydro-2H-pyran-3-yl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

7-(4-(4-ethylpiperazin-1-yl)phenyl)-3-methyl-1-((1-methyl-1H-pyrazol-4-yl)methyl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

7-(4-(4-ethylpiperazin-1-yl)phenyl)-3-methyl-1-(2-oxo-2-(piperidin-1-yl)ethyl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

1-isopropyl-3-methyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-8-phenyl-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

1-cyclohexyl-8-(4-methoxyphenyl)-3-methyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

1-isobutyl-8-(4-methoxyphenyl)-3-methyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

1-cyclobutyl-8-(4-methoxyphenyl)-3-methyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

8-(4-methoxyphenyl)-3-methyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-1-phenyl-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

8-(4-methoxyphenyl)-3-methyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

1-(tert-butyl)-8-(4-methoxycyclohex-1-en-1-yl)-3-methyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

4-(1-isopropyl-3-methyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-2-oxo-1,2,3,6-tetrahydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-8-yl)benzonitrile;

1-(4-(1-isopropyl-3-methyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-2-oxo-1,2,3,6-tetrahydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-8-yl)phenyl)cyclopropane-1-carbonitrile;

4-((4-(1-isopropyl-3-methyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-2-oxo-1,2,3,6-tetrahydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-8-yl)-1H-pyrazol-1-yl)methyl)benzoic acid;

1-cyclopentyl-3-methyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-8-phenyl-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

1-cyclopentyl-3-methyl-7-(1-((methylsulfonyl)methyl)-1H-pyrazol-4-yl)-8-phenyl-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

1-(4-(1-cyclopentyl-3-methyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-2-oxo-1,2,3,6-tetrahydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-8-yl)phenyl)cyclopropane-1-carbonitrile;

1-(4-(1-cyclopentyl-3-methyl-7-(1-((methylsulfonyl)methyl)-1H-pyrazol-4-yl)-2-oxo-1,2,3,6-tetrahydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-8-yl)phenyl)cyclopropane-1-carbonitrile;

1-cyclopentyl-8-(4-methoxycyclohex-1-en-1-yl)-3-methyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

1-cyclopentyl-8-(3,6-dihydro-2H-pyran-4-yl)-3-methyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

8-cyclopropyl-1,3-dimethyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

8-(6-methoxypyridin-3-yl)-1,3-dimethyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

4-(1-isopropyl-3-methyl-2-oxo-7-(1-(pyridin-4-ylmethyl)-1H-pyrazol-4-yl)-1,2,3,6-tetrahydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-8-yl)benzonitrile;

4-(7-(4-(4-acetylpiperazin-1-yl)phenyl)-1-isopropyl-3-methyl-2-oxo-1,2,3,6-tetrahydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-8-yl)benzonitrile;

4-(7-(3,6-dihydro-2H-pyran-4-yl)-1-isopropyl-3-methyl-2-oxo-1,2,3,6-tetrahydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-8-yl)benzonitrile;

4-(7-(3,6-dihydro-2H-pyran-4-yl)-1-isopropyl-3-methyl-2-oxo-1,2,3,6-tetrahydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-8-yl)benzonitrile;

1,3-dimethyl-8-phenyl-7-(pyridin-3-yl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

1,3-dimethyl-8-phenyl-7-(piperidin-4-yl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

7-(2-hydroxyethyl)-1,3-dimethyl-8-phenyl-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

7-isobutyryl-1,3-dimethyl-8-phenyl-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

1-isopropyl-3-methyl-7-(1-((methylsulfonyl)methyl)-1*H*-pyrazol-4-yl)-8-phenyl-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

1-(bicyclo[2.2.1]heptan-2-yl)-3-methyl-7-(1-((methylsulfonyl)methyl)-1*H*-pyrazol-4-yl)-8-phenyl-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one; and

3-methyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-8-phenyl-1-(tetrahydro-2H-pyran-4-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

or a pharmaceutically acceptable salt thereof.

43. The compound of claim 1, which is selected from:

1-cyclopentyl-7-(1-(2-hydroxy-2-methylpropyl)-1H-pyrazol-4-yl)-3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-7-(1-methyl-1*H*-pyrazol-4-yl)-1-(tetrahydro-2*H*-pyran-4-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

1-(4-(3-methyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-2-oxo-1-(tetrahydro-2*H*-pyran-4-yl)-1,2,3,6-tetrahydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-8-yl)phenyl)cyclopropane-1-carbonitrile;

1-(4-(7-(1-(2-hydroxy-2-methylpropyl)-1*H*-pyrazol-4-yl)-1-isopropyl-3-methyl-2-oxo-1,2,3,6-tetrahydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-8-yl)phenyl)cyclopropane-1-carbonitrile;

7-(1-(2-hydroxy-2-methylpropyl)-1*H*-pyrazol-4-yl)-3-methyl-8-(4-(1-morpholinocyclopropyl)phenyl)-1-(tetrahydro-2*H*-pyran-4-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

1-cyclopentyl-3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

1-cyclopentyl-3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-7-(1-(pyridin-4-ylmethyl)-1*H*-pyrazol-4-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

1-cyclopentyl-7-(1-(2-methoxyethyl)-1*H*-pyrazol-4-yl)-3-methyl-8-(1-methyl-1H-indazol-5-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

7-(1-(2-hydroxy-2-methylpropyl)-1*H*-pyrazol-4-yl)-1-isopropyl-3-methyl-8-(1-methyl-1H-indazol-5-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

1-cyclopentyl-7-(1-(2,2-difluoroethyl)-1H-pyrazol-4-yl)-3-methyl-8-(1-methyl-1H-indazol-5-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

1-cyclopentyl-7-(1-(2,2-difluoroethyl)-1*H*-pyrazol-4-yl)-3-methyl-8-(thieno[3,2-*c*]pyridin-2-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

(*S*)-3-methyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-8-phenyl-1-(tetrahydro-2*H*-pyran-3-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

1-cyclopentyl-8-(4-methoxyphenyl)-3-methyl-7-(1-(pyridin-4-ylmethyl)-1*H*-pyrazol-4-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

1-cyclopentyl-3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-7-(pyridin-4-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

1-cyclopentyl-3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-7-(pyridin-3-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

1-isopropyl-7-(6-methoxypyridin-3-yl)-3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

7-(6-methoxypyridin-3-yl)-3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-1-(tetrahydro-2H-pyran-4-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

1-cyclopentyl-7-(6-methoxypyridin-3-yl)-3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

1-cyclopentyl-7-(6-isopropoxypyridin-3-yl)-3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

1-cyclopentyl-3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-7-(6-((tetrahydro-2*H*-pyran-4-yl)oxy)pyridin-3-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

1-cyclopentyl-3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-7-(6-(pyridin-3-yloxy)pyridin-3-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

1-cyclopentyl-7-cyclopropyl-3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

7-(cyclohex-1-en-1-yl)-1-cyclopentyl-3-methyl-8-(1-methyl-1H-indazol-5-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1H)-one;

1-cyclopentyl-7-(2-hydroxyethyl)-3-methyl-8-(1-methyl-1H-indazol-5-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

1-cyclopentyl-7-cyclopropyl-3-methyl-8-(thieno[3,2-c]pyridin-2-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-b]pyridin-2(1*H*)-one;

2-(1-cyclopentyl-3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-2-oxo-1,2,3,6-tetrahydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-7-yl)cyclopropane-1-carbonitrile;

N-(4-(7-(1-(2-hydroxy-2-methylpropyl)-1*H*-pyrazol-4-yl)-3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-2-oxo-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-1(2*H*)-yl)cyclohexyl)-2-methoxyacetamide;

N-(4-(7-(1-(2-hydroxy-2-methylpropyl)-1*H*-pyrazol-4-yl)-3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-2-oxo-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-1(2*H*)-yl)cyclohexyl)acetamide;

7-(1-(2-hydroxy-2-methylpropyl)-1H-pyrazol-4-yl)-1-isopropyl-3-methyl-8-(thieno[3,2-c]pyridin-2-yl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

7-(1-(2-hydroxy-2-methylpropyl)-1H-pyrazol-4-yl)-1-isopropyl-3-methyl-8-(2-morpholinothiazol-5-yl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

7-(1-(2-hydroxy-2-methylpropyl)-1H-pyrazol-4-yl)-1-isopropyl-8-(isoquinolin-6-yl)-3-methyl-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

8-(benzo[d]thiazol-6-yl)-7-(1-(2-hydroxy-2-methylpropyl)-1H-pyrazol-4-yl)-1-isopropyl-3-methyl-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

8-(chroman-6-yl)-7-(1-(2-hydroxy-2-methylpropyl)-1H-pyrazol-4-yl)-1-isopropyl-3-methyl-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

7-(1-(2-hydroxy-2-methylpropyl)-1H-pyrazol-4-yl)-1-isopropyl-3-methyl-8-(6-(piperazin-1-yl)thieno[3,2-c]pyridin-2-yl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

8-(6-(4-acetylpiperazin-1-yl)thieno[3,2-c]pyridin-2-yl)-7-(1-(2-hydroxy-2-methylpropyl)-1H-pyrazol-4-yl)-1-isopropyl-3-methyl-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

7-(1-(2-hydroxy-2-methylpropyl)-1H-pyrazol-4-yl)-1-isopropyl-3-methyl-8-

(4,5,6,7-tetrahydrothieno[3,2-c]pyridin-2-yl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

7-(1-(2-hydroxy-2-methylpropyl)-1H-pyrazol-4-yl)-1-isopropyl-3-methyl-8-(5-(methylsulfonyl)-4,5,6,7-tetrahydrothieno[3,2-c]pyridin-2-yl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

7-(1-(2-hydroxy-2-methylpropyl)-1H-pyrazol-4-yl)-1-isopropyl-3-methyl-8-(3-methylpyrrolo[1,2-a]pyrazin-7-yl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

7-(1-(2-hydroxy-2-methylpropyl)-1H-pyrazol-4-yl)-8-(imidazo[1,5-a]pyridin-7-yl)-1-isopropyl-3-methyl-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

8-(1-hydroxy-2,3-dihydro-1H-inden-5-yl)-7-(1-(2-hydroxy-2-methylpropyl)-1H-pyrazol-4-yl)-1-isopropyl-3-methyl-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

7-(1-(2-hydroxy-2-methylpropyl)-1H-pyrazol-4-yl)-1-isopropyl-3-methyl-8-(4-(((tetrahydro-2H-pyran-4-yl)oxy)methyl)phenyl)-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one; and

8-(3-azabicyclo[4.1.0]heptan-6-yl)-7-(1-(2-hydroxy-2-methylpropyl)-1H-pyrazol-4-yl)-1-isopropyl-3-methyl-3,6-dihydroimidazo[4,5-d]pyrrolo[2,3-b]pyridin-2(1H)-one;

or a pharmaceutically acceptable salt thereof.

44. The compound of claim 1, which is selected from:

4-(1-cyclopentyl-3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-2-oxo-1,2,3,6-tetrahydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-7-yl)-N,N-dimethylbenzamide;

3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-7-(pyrazolo[1,5-*a*]pyrimidin-3-yl)-1-(tetrahydro-2H-pyran-4-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1H)-one;

7-(3-methoxy-1-methyl-1*H*-pyrazol-4-yl)-3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-1-(tetrahydro-2H-pyran-4-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

7-(5,6-dihydro-4*H*-pyrrolo[1,2-*b*]pyrazol-3-yl)-3-methyl-8-(1-methyl-1*H*-

indazol-5-yl)-1-(tetrahydro-2*H*-pyran-4-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

methyl (1*S*)-3-(3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-7-(1-methyl-1*H*-pyrazol-4-yl)-2-oxo-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-1(2*H*)-yl)-8-azabicyclo[3.2.1]octane-8-carboxylate;

(1*S*)-3-(7-(4-methoxyphenyl)-3-methyl-8-(1-methyl-1H-indazol-5-yl)-2-oxo-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-1(2*H*)-yl)-N-methyl-8-azabicyclo[3.2.1]octane-8-carboxamide;

7-(cyclopropyl(hydroxy)methyl)-3-methyl-8-(1-methyl-1H-indazol-5-yl)-1-(tetrahydro-2*H*-pyran-4-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

4-((1-isopropyl-3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-2-oxo-1,2,3,6-tetrahydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-7-yl)methyl)benzonitrile;

1-cyclopentyl-7-ethyl-3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

1-cyclopentyl-N-cyclopropyl-3-methyl-8-(1-methyl-1H-indazol-5-yl)-2-oxo-1,2,3,6-tetrahydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridine-7-carboxamide;

1-cyclopentyl-3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-7-(methylsulfonyl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

1-isopropyl-3-methyl-7-(1-methyl-1*H*-pyrazol-4-yl)-8-(phenylethynyl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-b]pyridin-2(1*H*)-one;

2-((1*S*,3*S*)-3-(3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-7-(1-methyl-1H-pyrazol-4-yl)-2-oxo-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-1(2*H*)-yl)cyclobutyl)acetonitrile;

2-((1*S*,4*S*)-4-(3-methyl-8-(1-methyl-1H-indazol-5-yl)-7-(1-methyl-1*H*-pyrazol-4-yl)-2-oxo-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-1(2*H*)-yl)cyclohexyl)acetonitrile;

2-((1*S*,4*S*)-4-(7-(1-(2-hydroxy-2-methylpropyl)-1*H*-pyrazol-4-yl)-3-methyl-8-(1-methyl-1H-indazol-5-yl)-2-oxo-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-1(2*H*)-yl)cyclohexyl)acetonitrile;

methyl ((1*S*,3*S*)-3-(3-methyl-8-(1-methyl-1H-indazol-5-yl)-7-(1-methyl-1H-pyrazol-4-yl)-2-oxo-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-1(2H)-yl)cyclobutyl)carbamate;

ethyl ((1*S*,3*S*)-3-(8-(4-cyanophenyl)-3-methyl-7-(1-methyl-1*H*-pyrazol-4-yl)-2-oxo-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-1(2*H*)-yl)cyclobutyl)carbamate;

ethyl ((1*S*,3*S*)-3-(8-(4-methoxyphenyl)-3-methyl-7-(1-methyl-1*H*-pyrazol-4-yl)-2-oxo-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-1(2*H*)-yl)cyclobutyl)carbamate;

1-isopropyl-3-methyl-7-(1-methyl-1*H*-pyrazol-4-yl)-8-(1-(2-(4-(methylsulfonyl)phenyl)acetyl)piperidin-4-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

2-((1*S*,4*S*)-4-(7-(3-methoxy-1-methyl-1*H*-pyrazol-4-yl)-3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-2-oxo-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-1(2*H*)-yl)cyclohexyl)acetonitrile;

7-(3-methoxy-1-methyl-1*H*-pyrazol-4-yl)-3-methyl-8-(1-(methyl-*d*3)-1*H*-indazol-5-yl)-1-(tetrahydro-2*H*-pyran-4-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

3-methyl-8-(1-(methyl-*d*3)-1*H*-indazol-5-yl)-7-(pyrazolo[1,5-a]pyrimidin-3-yl)-1-(tetrahydro-2*H*-pyran-4-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one;

2-(1-(4-(3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-7-(1-methyl-1*H*-pyrazol-4-yl)-2-oxo-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-1(2*H*)-yl)piperidin-1-yl)cyclobutyl)acetonitrile; and

4-(3-methyl-7-(1-methyl-1*H*-pyrazol-4-yl)-1-(2-(methylsulfonyl)-2-azaspiro[3.5]nonan-7-yl)-2-oxo-1,2,3,6-tetrahydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-8-yl)benzonitrile;

or a pharmaceutically acceptable salt thereof.

45. The compound of any one of claims 1 to 44, or a pharmaceutically acceptable salt thereof, wherein the compound is deuterated.

46. A compound, which is 7-(3-methoxy-1-methyl-1*H*-pyrazol-4-yl)-3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-1-(tetrahydro-2H-pyran-4-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one, or a pharmaceutically acceptable salt thereof.

47. A compound, which is 2-((1*S*,4*S*)-4-(7-(3-methoxy-1-methyl-1*H*-pyrazol-4-yl)-3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-2-oxo-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-1(2*H*)-yl)cyclohexyl)acetonitrile, or a pharmaceutically acceptable salt thereof.

48. A compound, which is 1-(4-(3-methyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-2-oxo-1-(tetrahydro-2*H*-pyran-4-yl)-1,2,3,6-tetrahydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-8-yl)phenyl)cyclopropane-1-carbonitrile, or a pharmaceutically acceptable salt thereof.

49. The compound of claim 46, which is 7-(3-methoxy-1-methyl-1*H*-pyrazol-4-yl)-3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-1-(tetrahydro-2H-pyran-4-yl)-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-2(1*H*)-one.

50. The compound of claim 47, which is 2-((1*S*,4*S*)-4-(7-(3-methoxy-1-methyl-1*H*-pyrazol-4-yl)-3-methyl-8-(1-methyl-1*H*-indazol-5-yl)-2-oxo-3,6-dihydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-1(2*H*)-yl)cyclohexyl)acetonitrile.

51. The compound of claim 48, which is 1-(4-(3-methyl-7-(4-((4-(methylsulfonyl)piperidin-1-yl)methyl)phenyl)-2-oxo-1-(tetrahydro-2*H*-pyran-4-yl)-1,2,3,6-tetrahydroimidazo[4,5-*d*]pyrrolo[2,3-*b*]pyridin-8-yl)phenyl)cyclopropane-1-carbonitrile.

52. A pharmaceutical composition, comprising a compound of any one of claims 1 to 48, or a pharmaceutically acceptable salt thereof, or a compound of any one of claims 49 to 51, and a pharmaceutically acceptable carrier.

53. An *in vitro* method of inhibiting an activity of the V617F variant of JAK2 kinase, comprising contacting the kinase with a compound of any one of claims 1 to 48, or a pharmaceutically acceptable salt thereof, or a compound of any one of claims 49 to 51.

54. Use of a compound of any one of claims 1 to 48, or a pharmaceutically acceptable salt thereof, or a compound of any one of claims 49 to 51, in the manufacture of a medicament for the treatment of cancer in a patient in need thereof.

55. The use of claim 54, wherein the cancer is selected from bladder cancer, breast cancer, cervical cancer, colorectal cancer, cancer of the small intestine, colon cancer, rectal cancer, cancer of the anus, endometrial cancer, gastric cancer, head and neck cancer, kidney cancer, liver cancer, lung cancer, ovarian cancer, prostate cancer, testicular cancer, uterine cancer, vulvar cancer, esophageal cancer, gall bladder cancer, pancreatic cancer, stomach cancer, thyroid cancer, parathyroid cancer, neuroendocrine cancer, skin cancer, and brain cancer.

56. The use of claim 54, wherein the cancer is a hematological cancer.

57. The use of claim 54, wherein the cancer is selected from leukemia, lymphoma, multiple myeloma, chronic lymphocytic lymphoma, adult T cell leukemia, acute myeloid leukemia, B-cell lymphoma, cutaneous T-cell lymphoma, acute myelogenous leukemia, Hodgkin’s or non-Hodgkin’s lymphoma, a myeloproliferative neoplasm), myelodysplastic syndrome, chronic eosinophilic leukemia, Waldenstrom's Macroglubulinemia, hairy cell lymphoma, chronic myelogenic lymphoma, acute lymphoblastic lymphoma, AIDS-related lymphoma, and Burkitt's lymphoma.

58. Use of a compound of any one of claims 1 to 48, or a pharmaceutically acceptable salt thereof, or a compound of any one of claims 49 to 51, in the manufacture of a medicament for the treatment of a myeloproliferative disorder in a patient in need thereof.

59. The use of claim 58, wherein the myeloproliferative disorder is selected from polycythemia vera, essential thrombocythemia, myelofibrosis with myeloid metaplasia, primary myelofibrosis, post- essential thrombocythemia myelofibrosis, post polycythemia vera myelofibrosis, chronic myelogenous leukemia, chronic myelomonocytic leukemia, hypereosinophilic syndrome, and systemic mast cell disease.

60. The use of claim 58, wherein the myeloproliferative disorder is polycythemia vera.

61. The use of claim 58, wherein the myeloproliferative disorder is essential thrombocythemia.

62. The use of claim 58, wherein the myeloproliferative disorder is myelofibrosis with myeloid metaplasia.

63. The use of claim 58, wherein the myeloproliferative disorder is primary myelofibrosis.

64. The use of claim 58, wherein the myeloproliferative disorder is post-essential thrombocythemia myelofibrosis.

65. The use of claim 58, wherein the myeloproliferative disorder is post polycythemia vera myelofibrosis.

66. Use of a compound of any one of claims 1 to 48, or a pharmaceutically acceptable salt thereof, or a compound of any one of claims 49 to 51, in the manufacture of a medicament for the treatment of myelodysplastic syndrome in a patient in need thereof.