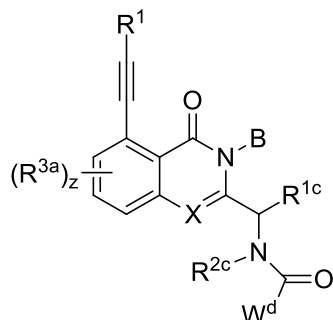
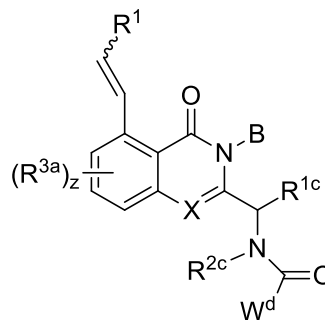


## CLAIMS

1. A compound of Formula (I'') or Formula (A''):



Formula (I'') or



Formula (A''),

wherein:

$R^1$  is hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl,  $-\text{COR}^2$ ,  $-\text{COOR}^3$ , or  $-\text{CONR}^4\text{R}^5$ ;

$z$  is 0, 1, 2, or 3;

each instance of  $R^{3a}$  is independently hydrogen, alkyl, alkenyl, alkynyl, alkoxy, halogen, cyano, amino, cycloalkyl, heterocycloalkyl, aryl, or heteroaryl;

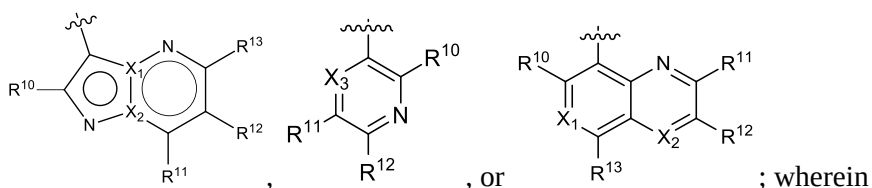
$B$  is hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl,  $-\text{COR}^2$ ,  $-\text{COOR}^3$ ,  $-\text{CONR}^4\text{R}^5$ , or  $-\text{Si}(\text{R}^6)_3$ ;

wherein  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ , and  $R^6$  are each, independently, hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, or heteroaryl;

$R^{1c}$  is hydrogen, alkyl, alkenyl, or alkynyl;

$R^{2c}$  is hydrogen, alkyl, alkenyl, or alkynyl;

$W^d$  is



$X_1$ ,  $X_2$  and  $X_3$  are each independently C,  $\text{CR}^{13}$ , or N; and

$R^{10}$ ,  $R^{11}$ ,  $R^{12}$ , and  $R^{13}$  are each independently hydrogen, alkyl, heteroalkyl, alkenyl, alkynyl, cycloalkyl, heterocyclyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl, alkoxy, heterocycloxy, amido, amino, acyl, acyloxy, alkoxy carbonyl, sulfonamido, halo, cyano, hydroxyl, nitro, phosphate, urea, carbonate, or  $\text{NR}'\text{R}''$  wherein  $\text{R}'$  and  $\text{R}''$  together with the nitrogen to which they are attached form a cyclic moiety;

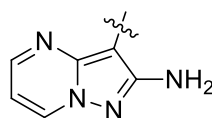
$X$  is  $\text{CR}^{1a}$  or N;

wherein  $R^{1a}$  is hydrogen, halo, alkyl, alkenyl, alkynyl, or CN;

wherein each alkyl, alkenyl, or alkynyl is optionally substituted with one or more halo, OH, alkoxy, NH<sub>2</sub>, NH(alkyl), N(alkyl)<sub>2</sub>, COH, CO(alkyl), COOH, COO(alkyl), CONH<sub>2</sub>, CONH(alkyl), CON(alkyl)<sub>2</sub>, S(O)(alkyl), S(O)<sub>2</sub>(alkyl), cycloalkyl, heterocycloalkyl, aryl or heteroaryl;

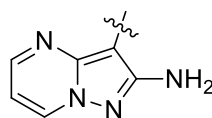
wherein each cycloalkyl, heterocycloalkyl, aryl or heteroaryl is optionally substituted with one or more halo, alkyl, alkenyl, alkynyl, OH, alkoxy, oxo, NH<sub>2</sub>, NH(alkyl), N(alkyl)<sub>2</sub>, COH, CO(alkyl), COOH, COO(alkyl), CONH<sub>2</sub>, CONH(alkyl), CON(alkyl)<sub>2</sub>, S(O)(alkyl), or S(O)<sub>2</sub>(alkyl);

wherein in Formula (I''), when X is CH, B is unsubstituted phenyl, and W<sup>d</sup> is



, then R<sup>1</sup> is not hydrogen, methyl, (CH<sub>2</sub>)NH<sub>2</sub>, or (CH<sub>2</sub>)<sub>2</sub>NH<sub>2</sub>;

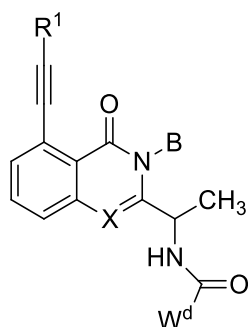
wherein in Formula (A''), when X is CH, B is unsubstituted phenyl, and W<sup>d</sup> is



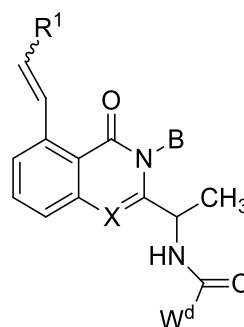
, then R<sup>1</sup> is not phenyl;

or a pharmaceutically acceptable form thereof.

## 2. A compound of Formula (I') or Formula (A'):



Formula (I') or



Formula (A'),

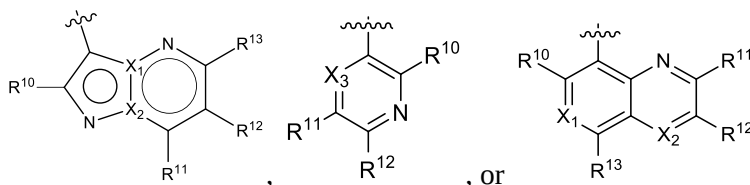
wherein:

R<sup>1</sup> is hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, -COR<sup>2</sup>, -COOR<sup>3</sup>, or -CONR<sup>4</sup>R<sup>5</sup>;

B is hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, -COR<sup>2</sup>, -COOR<sup>3</sup>, -CONR<sup>4</sup>R<sup>5</sup>, or -Si(R<sup>6</sup>)<sub>3</sub>;

wherein R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, and R<sup>6</sup> are each, independently, hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, or heteroaryl;

W<sup>d</sup> is



; wherein

X<sub>1</sub>, X<sub>2</sub> and X<sub>3</sub> are each independently C, CR<sup>13</sup>, or N; and

$R^{10}$ ,  $R^{11}$ ,  $R^{12}$ , and  $R^{13}$  are each independently hydrogen, alkyl, heteroalkyl, alkenyl, alkynyl, cycloalkyl, heterocyclyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl, alkoxy, heterocyclyloxy, amido, amino, acyl, acyloxy, alkoxy carbonyl, sulfonamido, halo, cyano, hydroxyl, nitro, phosphate, urea, carbonate, or  $NR'R''$  wherein  $R'$  and  $R''$  together with the nitrogen to which they are attached form a cyclic moiety;

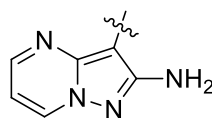
X is  $CR^{1a}$  or N;

wherein  $R^{1a}$  is hydrogen, halo, alkyl, alkenyl, alkynyl, or CN;

wherein each alkyl, alkenyl, or alkynyl is optionally substituted with one or more halo, OH, alkoxy,  $NH_2$ ,  $NH(alkyl)$ ,  $N(alkyl)_2$ , COH,  $CO(alkyl)$ ,  $COOH$ ,  $COO(alkyl)$ ,  $CONH_2$ ,  $CONH(alkyl)$ ,  $CON(alkyl)_2$ ,  $S(O)(alkyl)$ ,  $S(O)_2(alkyl)$ , cycloalkyl, heterocycloalkyl, aryl or heteroaryl;

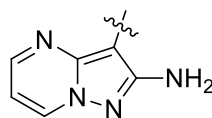
wherein each cycloalkyl, heterocycloalkyl, aryl or heteroaryl is optionally substituted with one or more halo, alkyl, alkenyl, alkynyl, OH, alkoxy, oxo,  $NH_2$ ,  $NH(alkyl)$ ,  $N(alkyl)_2$ , COH,  $CO(alkyl)$ ,  $COOH$ ,  $COO(alkyl)$ ,  $CONH_2$ ,  $CONH(alkyl)$ ,  $CON(alkyl)_2$ ,  $S(O)(alkyl)$ , or  $S(O)_2(alkyl)$ ;

wherein in Formula (I'), when X is CH, B is unsubstituted phenyl, and  $W^d$  is



, then  $R^1$  is not hydrogen, methyl,  $(CH_2)NH_2$ , or  $(CH_2)_2NH_2$ ;

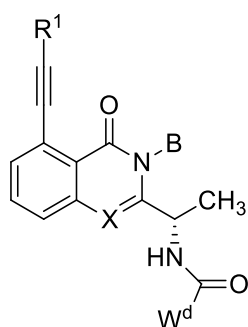
wherein in Formula (A'), when X is CH, B is unsubstituted phenyl, and  $W^d$  is



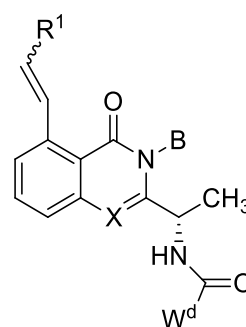
, then  $R^1$  is not phenyl;

or a pharmaceutically acceptable form thereof.

3. A compound of Formula (I) or Formula (A):



Formula (I) or



Formula (A),

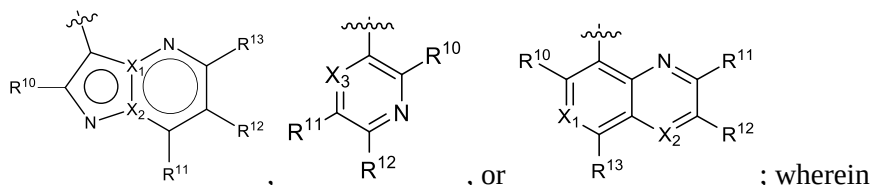
wherein:

$R^1$  is hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl,  $-COR^2$ ,  $-COOR^3$ , or  $-CONR^4R^5$ ;

B is hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl,  $-COR^2$ ,  $-COOR^3$ ,  $-CONR^4R^5$ , or  $-Si(R^6)_3$ ;

wherein  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ , and  $R^6$  are each, independently, hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, or heteroaryl;

$W^d$  is



$X_1$ ,  $X_2$  and  $X_3$  are each independently C,  $CR^{13}$ , or N; and

$R^{10}$ ,  $R^{11}$ ,  $R^{12}$ , and  $R^{13}$  are each independently hydrogen, alkyl, heteroalkyl, alkenyl, alkynyl, cycloalkyl, heterocyclyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl, alkoxy, heterocyclyloxy, amido, amino, acyl, acyloxy, alkoxy carbonyl, sulfonamido, halo, cyano, hydroxyl, nitro, phosphate, urea, carbonate, or  $NR'R''$  wherein  $R'$  and  $R''$  together with the nitrogen to which they are attached form a cyclic moiety;

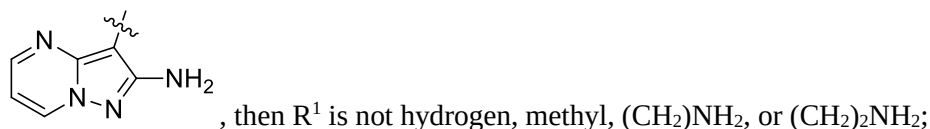
X is  $CR^{1a}$  or N;

wherein  $R^{1a}$  is hydrogen, halo, alkyl, alkenyl, alkynyl, or CN;

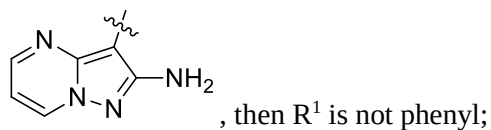
wherein each alkyl, alkenyl, or alkynyl is optionally substituted with one or more halo, OH, alkoxy,  $NH_2$ ,  $NH(alkyl)$ ,  $N(alkyl)_2$ , COH,  $CO(alkyl)$ ,  $COOH$ ,  $COO(alkyl)$ ,  $CONH_2$ ,  $CONH(alkyl)$ ,  $CON(alkyl)_2$ ,  $S(O)(alkyl)$ ,  $S(O)_2(alkyl)$ , cycloalkyl, heterocycloalkyl, aryl or heteroaryl;

wherein each cycloalkyl, heterocycloalkyl, aryl or heteroaryl is optionally substituted with one or more halo, alkyl, alkenyl, alkynyl, OH, alkoxy, oxo,  $NH_2$ ,  $NH(alkyl)$ ,  $N(alkyl)_2$ , COH,  $CO(alkyl)$ ,  $COOH$ ,  $COO(alkyl)$ ,  $CONH_2$ ,  $CONH(alkyl)$ ,  $CON(alkyl)_2$ ,  $S(O)(alkyl)$ , or  $S(O)_2(alkyl)$ ;

wherein in Formula (I), when X is CH, B is unsubstituted phenyl, and  $W^d$  is

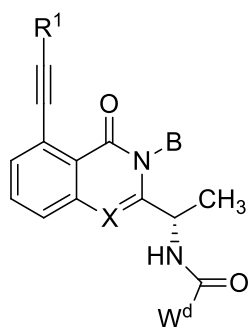


wherein in Formula (A), when X is CH, B is unsubstituted phenyl, and  $W^d$  is



or a pharmaceutically acceptable form thereof.

4. The compound of claim 3, wherein the compound is a compound of Formula (I):



Formula (I),

or a pharmaceutically acceptable form thereof.

5. The compound of any one of claims 1–4, wherein

R<sup>1</sup> is branched alkyl, 5- or 6-membered aryl, 5- or 6-membered heteroaryl, 5- or 6-membered

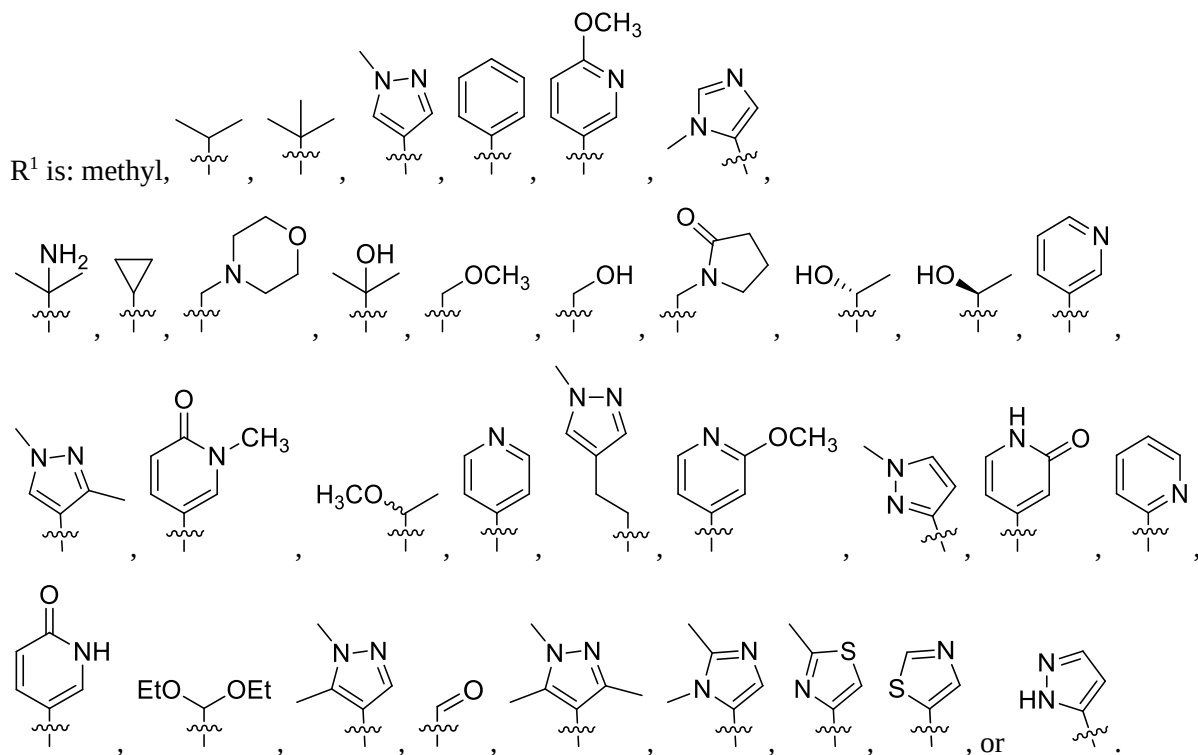
cycloalkyl, or 5- to 6-membered heterocycloalkyl,  $-\frac{5}{x}-(CH_2)_x-R^A$ ,  $\begin{array}{c} R^7 \\ | \\ R^8 \\ | \\ R^9 \end{array}$ ,  $\begin{array}{c} O \\ || \\ \text{---} \end{array} H$ , cyclopropyl, or methyl,

wherein R<sup>A</sup> is OH, alkoxy, cycloalkyl, heterocycloalkyl, aryl, or heteroaryl;

x is 1, 2, 3, 4, 5, or 6; and

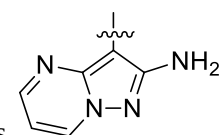
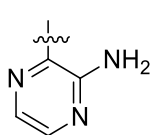
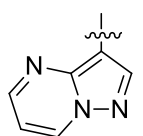
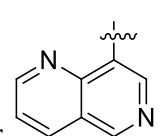
R<sup>7</sup>, R<sup>8</sup>, and R<sup>9</sup> are each, independently, hydrogen, OH, alkoxy, NH<sub>2</sub>, NH(alkyl), N(alkyl)<sub>2</sub>, alkyl, cycloalkyl, heterocycloalkyl, aryl, or heteroaryl.

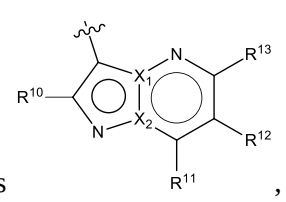
6. The compound of any one of claims 1–4, wherein



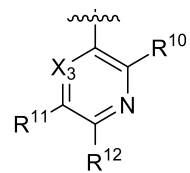
7. The compound of any one of claims 1–4, wherein  $R^1$  is a 5- to 10-membered heteroaryl.
8. The compound of claim 7, wherein  $R^1$  is a 6-membered heteroaryl.
9. The compound of claim 8, wherein  $R^1$  is a pyridinyl or pyrimidinyl.
10. The compound of claim 7, wherein  $R^1$  is a 5-membered heteroaryl.
11. The compound of claim 10, wherein  $R^1$  is a thiazolyl, pyrazolyl, or imidazolyl.
12. The compound of any one of claims 7–11, wherein the heteroaryl is substituted with one or more alkyl.
13. The compound of any one of claims 1–12, wherein B is aryl, heteroaryl, cycloalkyl, or heterocycloalkyl.
14. The compound of claim 13, wherein B is aryl or 3- to 6-membered cycloalkyl.
15. The compound of claim 14, wherein B is phenyl substituted with 0, 1, 2, or 3 occurrence(s) of  $R^Z$ , wherein each instance of  $R^Z$  is independently halo or alkyl.
16. The compound of claim 15, wherein B is unsubstituted phenyl.

17. The compound of claim 14, wherein B is .

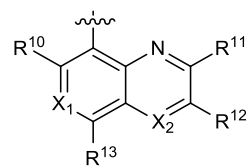
18. The compound of any one of claims 1–17, wherein  $W^d$  is , , , or .

19. The compound of any one of claims 1–17, wherein  $W^d$  is , wherein one of  $X_1$  and  $X_2$  is C and the other is N.

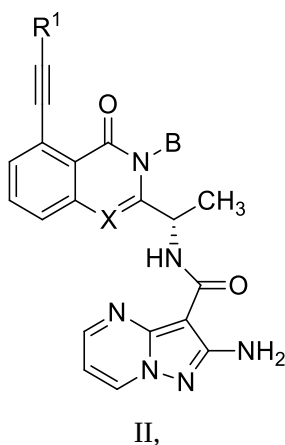
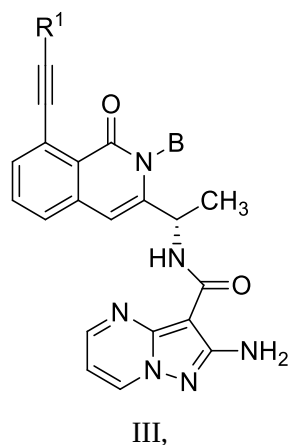
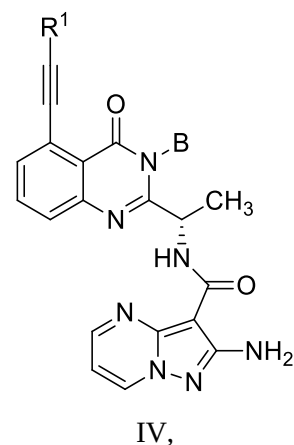
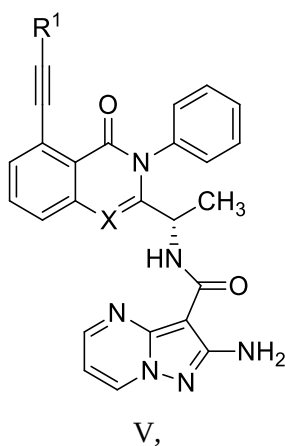
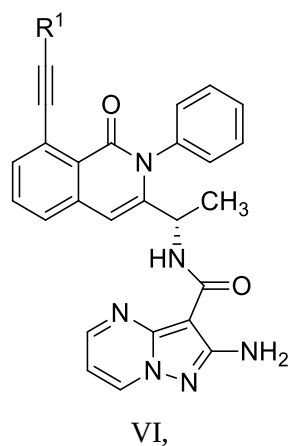
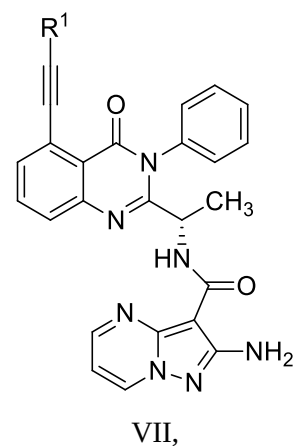
20. The compound of any one of claims 1–17, wherein  $W^d$  is  
wherein  $X_3$  is N or  $CR^{13}$ .

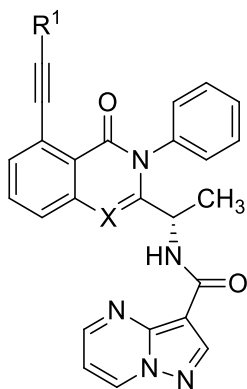


21. The compound of any one of claims 1–17, wherein  $W^d$  is  
wherein one of  $X_1$  and  $X_2$  is N and the other is  $CR^{13}$ .

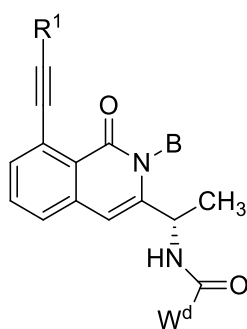


22. The compound of any one of claims 1–2121, wherein X is CH.
23. The compound of any one of claims 1–21, wherein X is N.
24. The compound of claim 4, wherein the compound is a compound of formula II, III, IV, V, VI, VII, VIII, IX, X, XI, or XII:

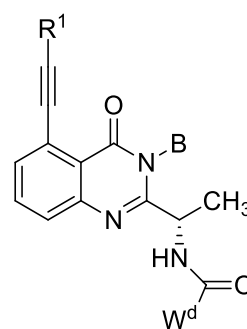




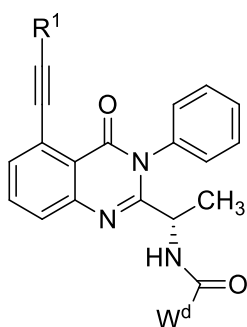
VIII,



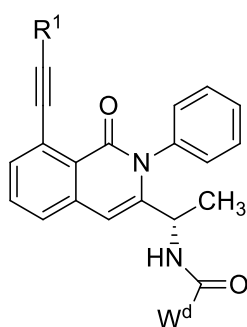
IX,



X,



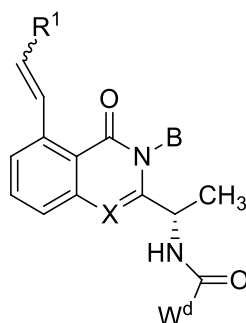
XI, or



XII,

or a pharmaceutically acceptable form thereof.

25. The compound of claim 3, wherein the compound is a compound of Formula (A):

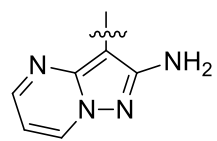


Formula (A),

or a pharmaceutically acceptable form thereof.

26. The compound of claim 25, wherein R<sup>1</sup> is alkyl or heteroaryl.
27. The compound of claim 26, wherein R<sup>1</sup> is heteroaryl.
28. The compound of claim 26, wherein R<sup>1</sup> is alkyl.
29. The compound of any one of claims 25–28, wherein B is phenyl.
30. The compound of any one of claims 25–29, wherein X is CH.

31. The compound of any one of claims 25–29, wherein X is N.

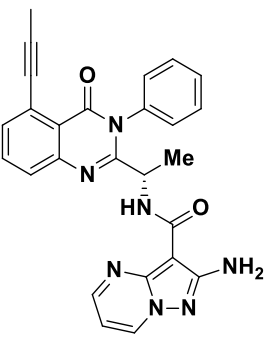
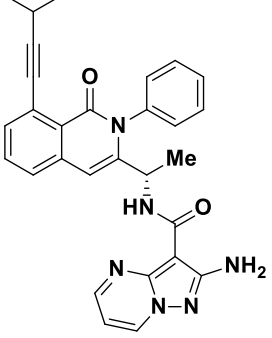
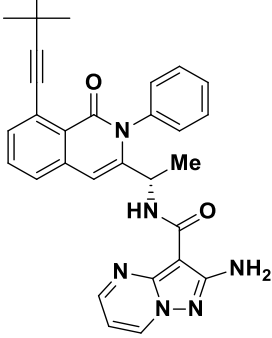
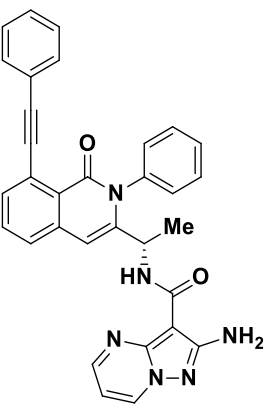
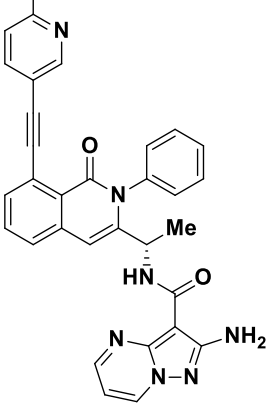
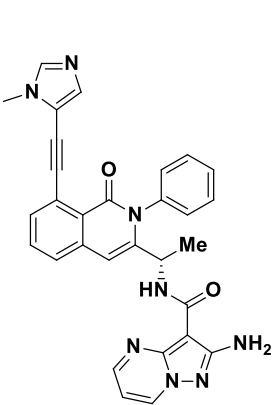
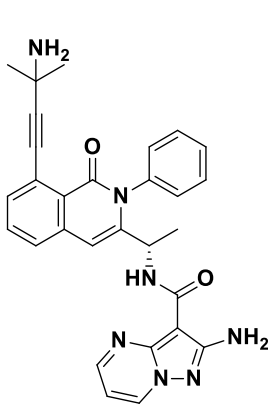
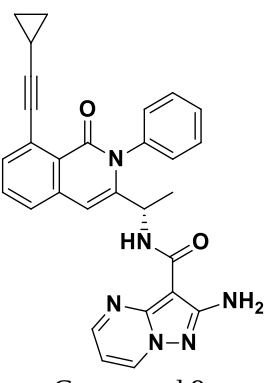
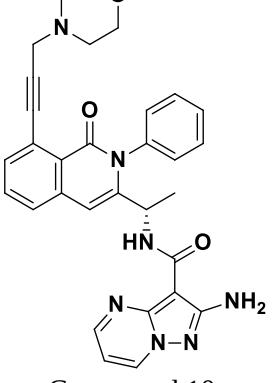
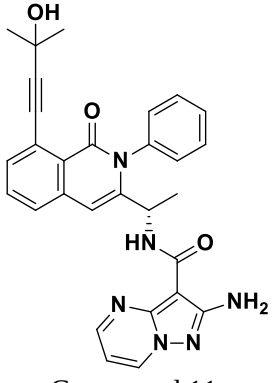
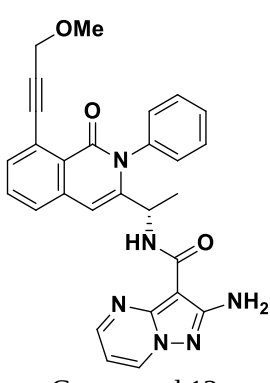
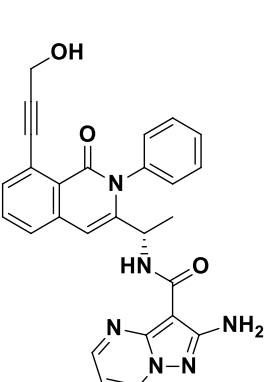
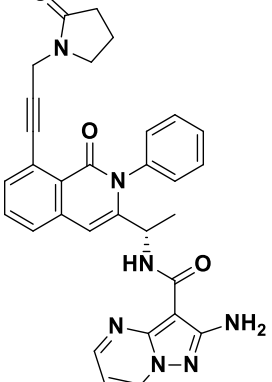
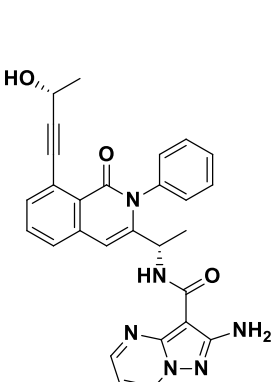
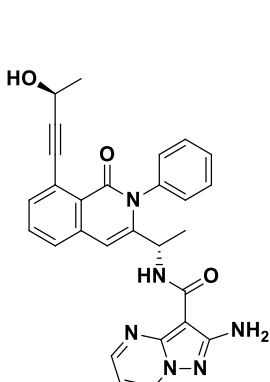


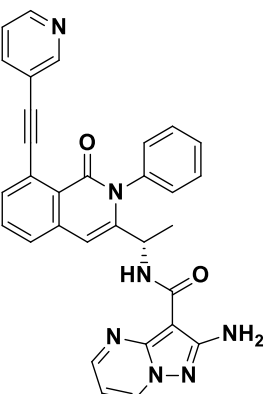
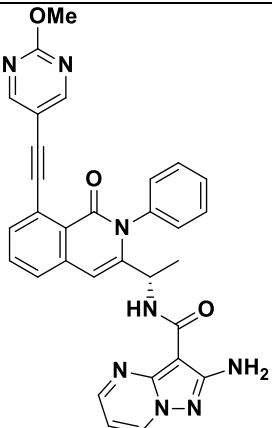
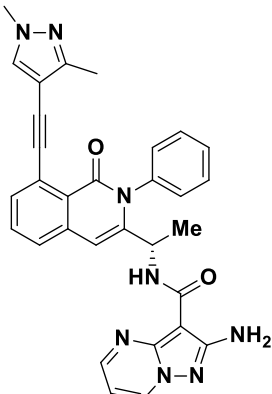
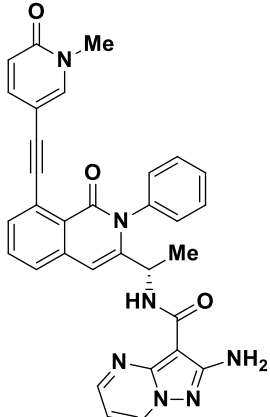
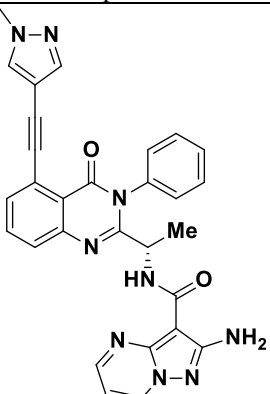
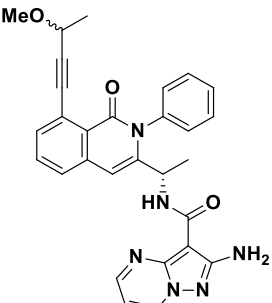
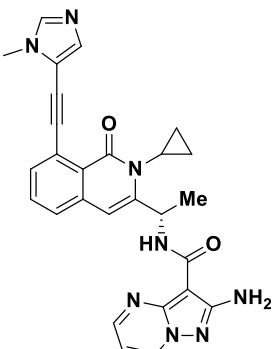
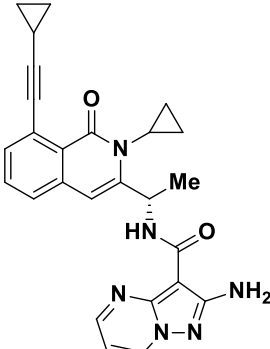
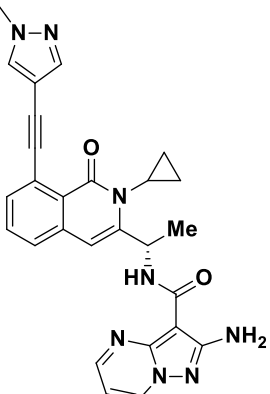
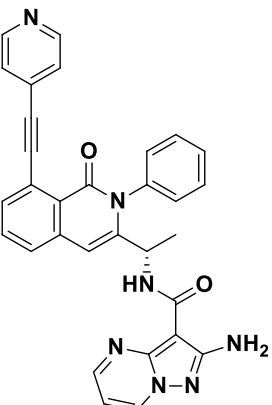
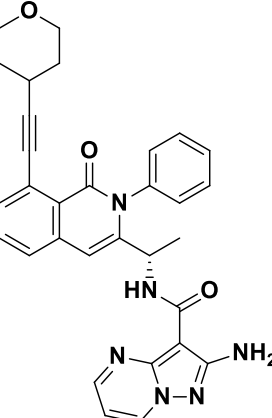
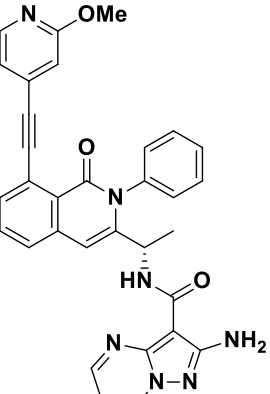
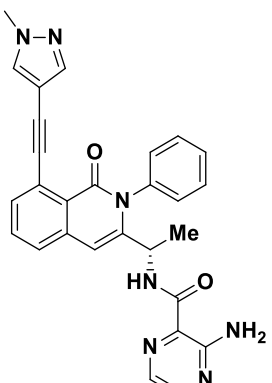
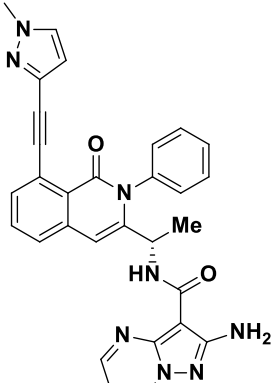
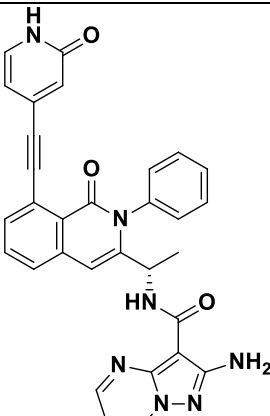
32. The compound of any one of claims 25–31, wherein W<sup>d</sup> is .

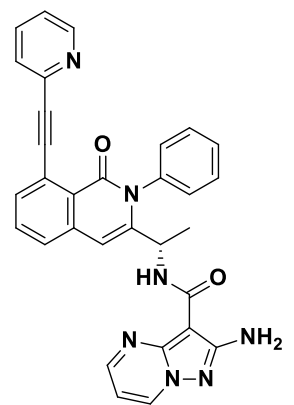
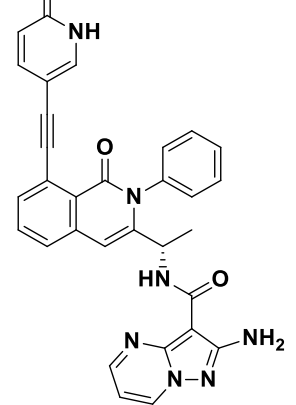
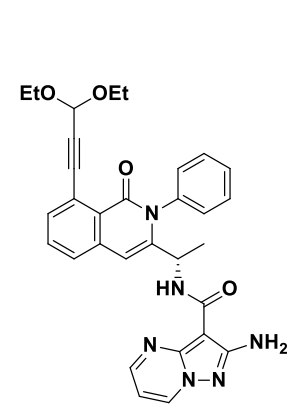
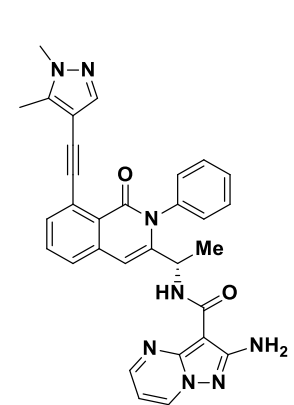
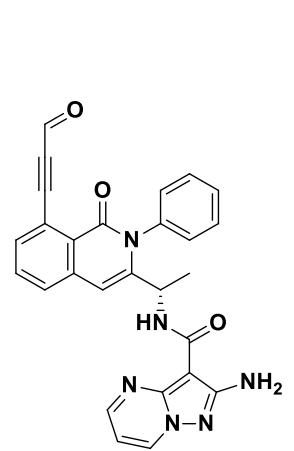
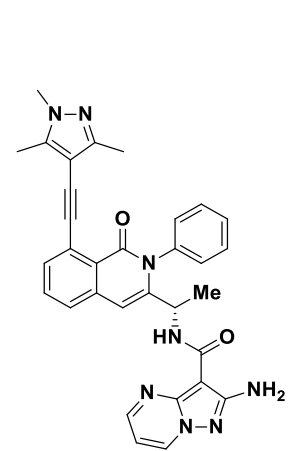
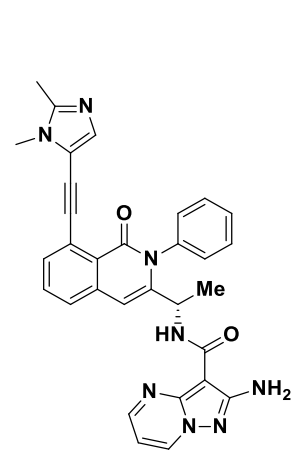
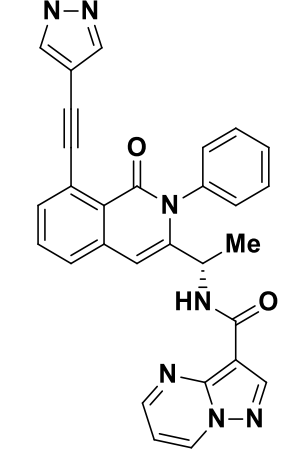
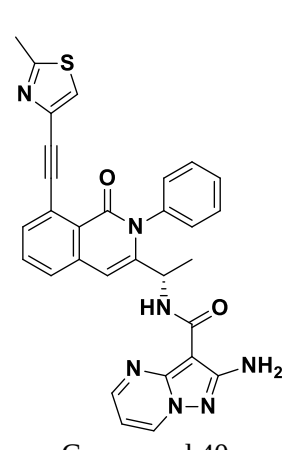
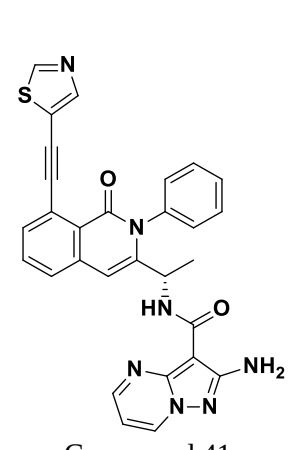
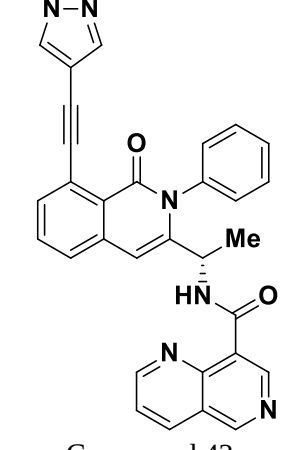
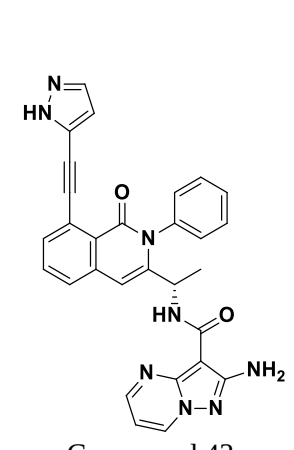
33. The compound of claim 1, wherein the compound is in an (S)-stereochemical configuration.

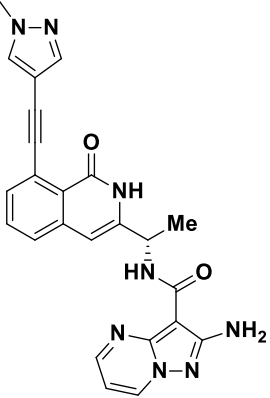
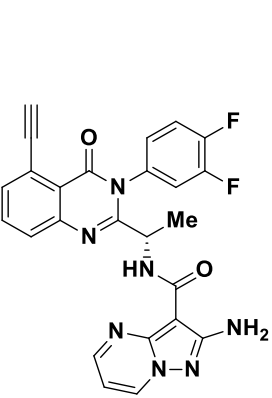
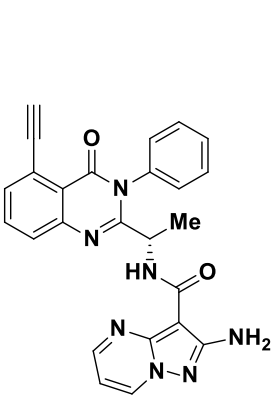
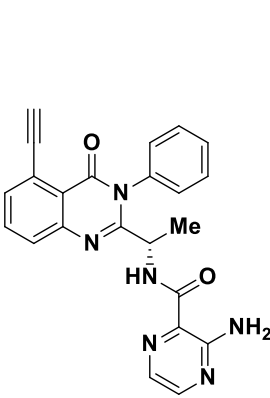
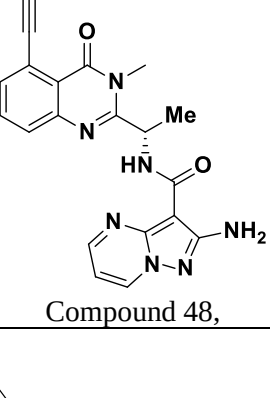
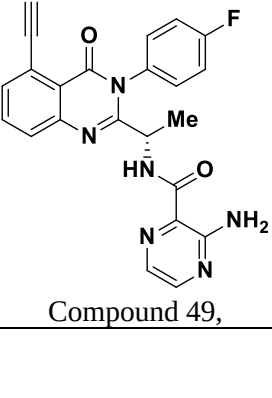
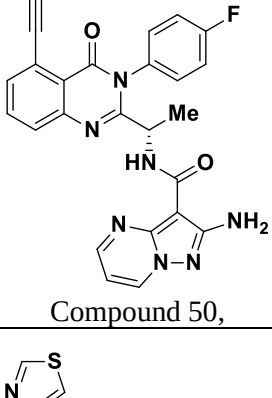
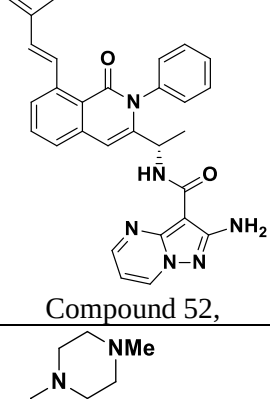
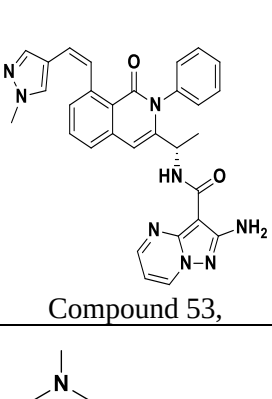
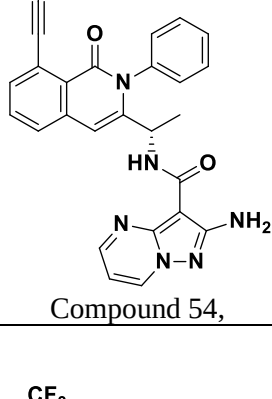
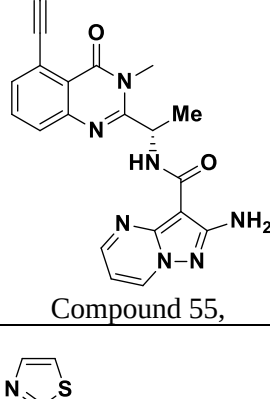
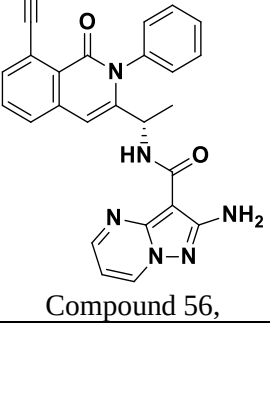
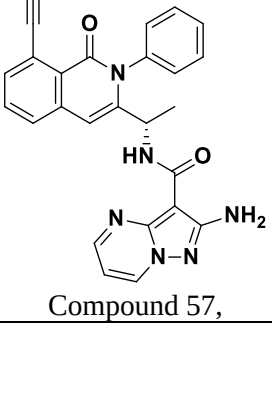
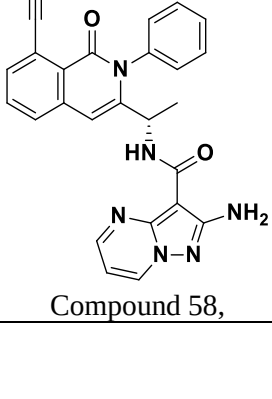
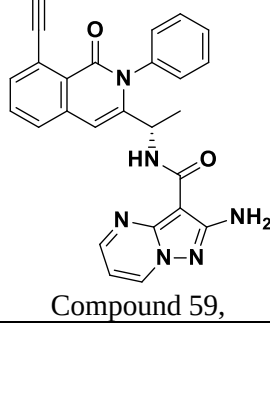
34. The compound of claim 1, wherein the compound is the S-enantiomer having an enantiomeric purity greater than 75%.

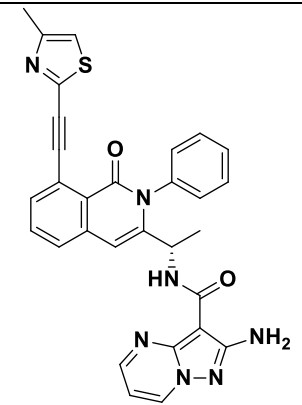
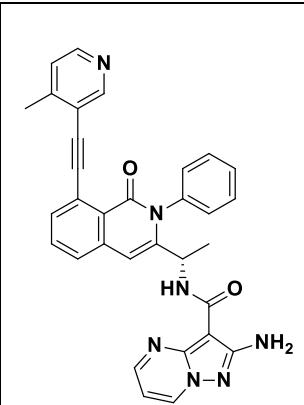
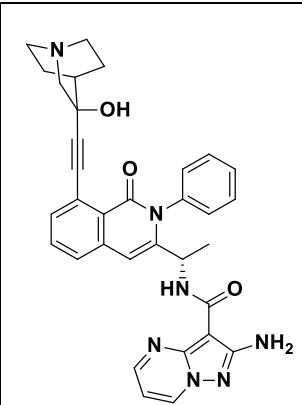
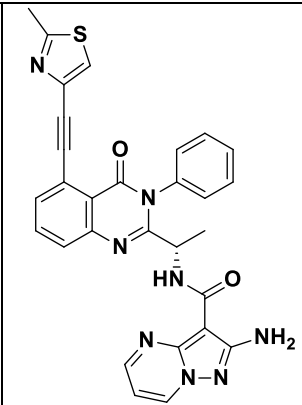
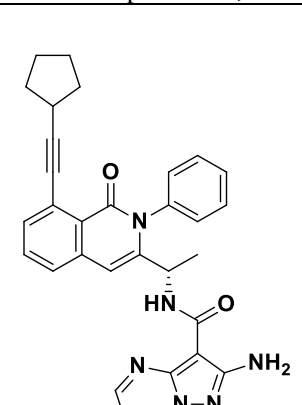
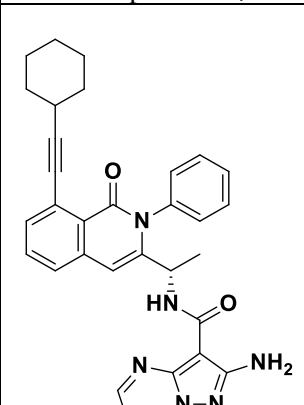
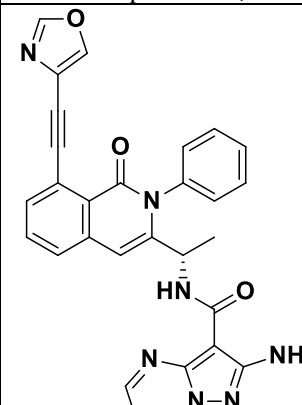
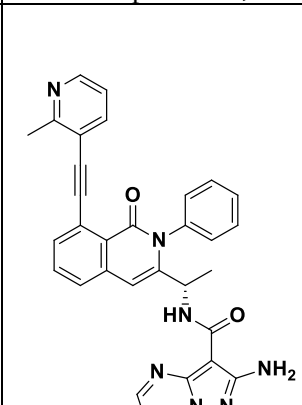
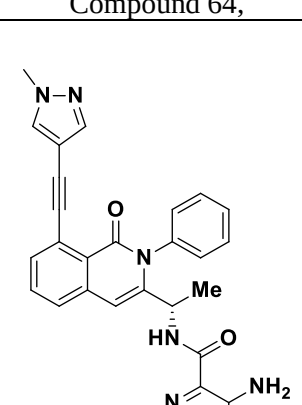
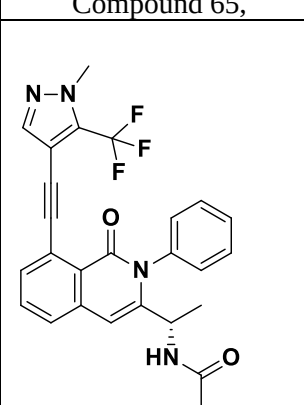
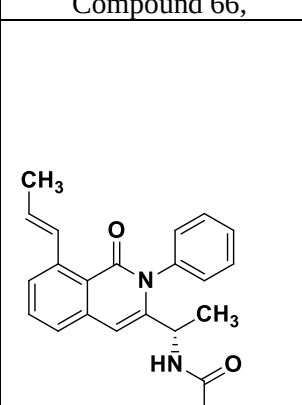
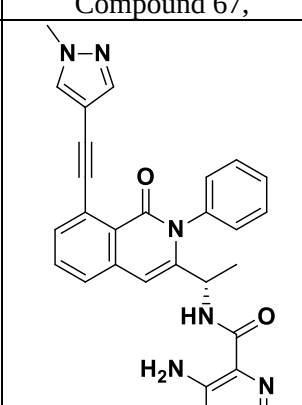
35. A compound, which is:

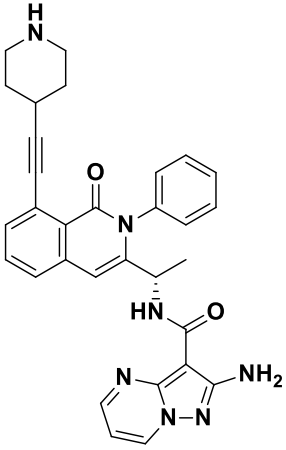
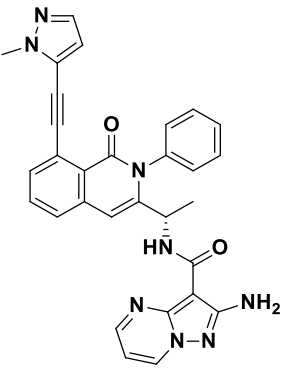
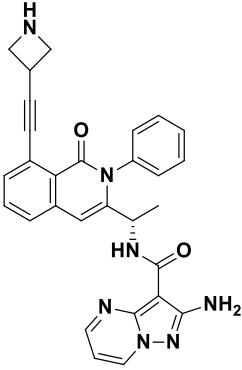
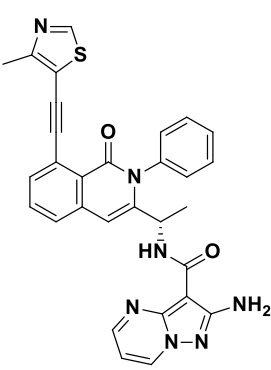
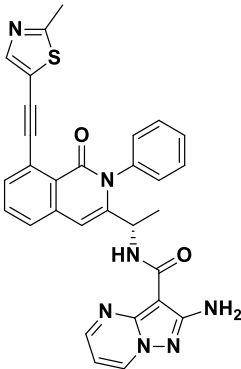
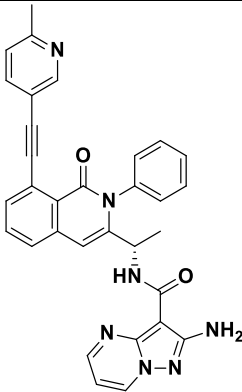
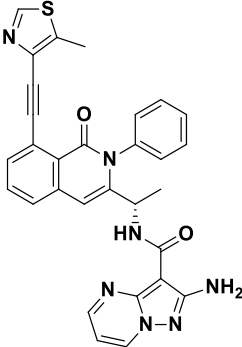
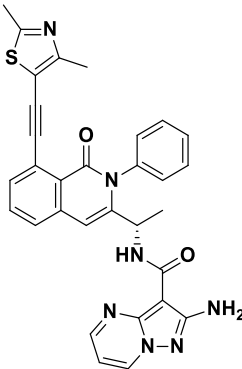
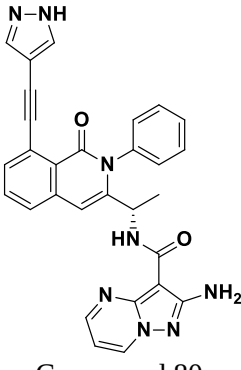
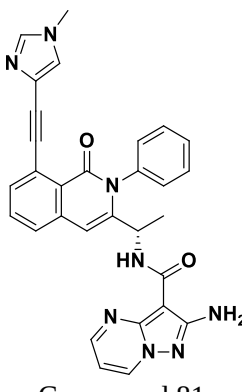
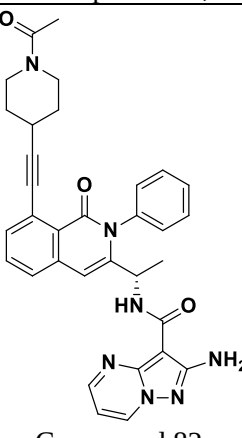
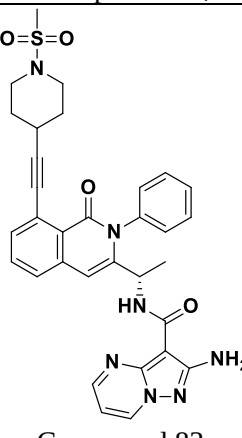
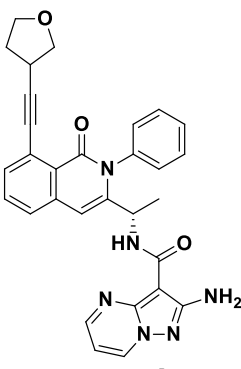
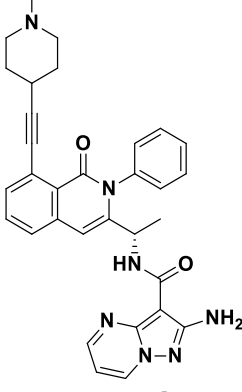
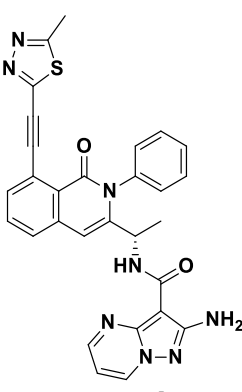
|                                                                                                         |                                                                                                         |                                                                                                          |                                                                                                           |
|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
|  <p>Compound 1,</p>    |  <p>Compound 2,</p>    |  <p>Compound 3,</p>    |                                                                                                           |
|  <p>Compound 5,</p>   |  <p>Compound 6,</p>   |  <p>Compound 7,</p>   |  <p>Compound 8,</p>   |
|  <p>Compound 9,</p>  |  <p>Compound 10,</p> |  <p>Compound 11,</p> |  <p>Compound 12,</p> |
|  <p>Compound 13,</p> |  <p>Compound 14,</p> |  <p>Compound 15,</p> |  <p>Compound 16,</p> |

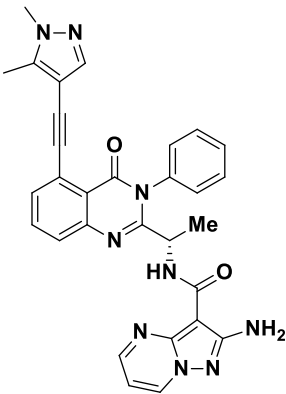
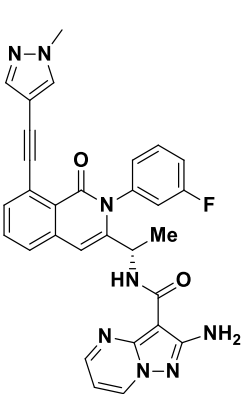
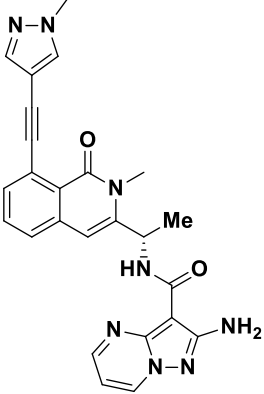
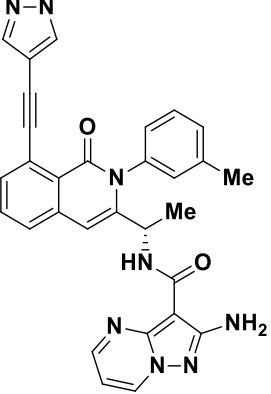
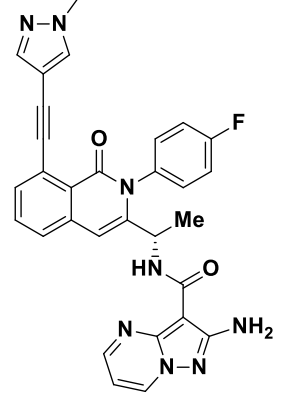
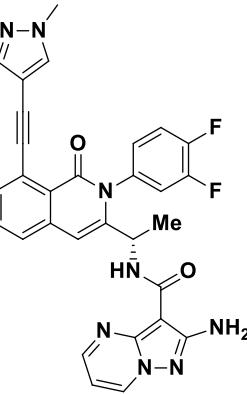
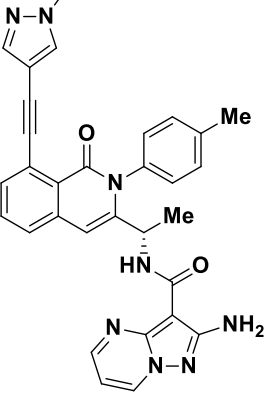
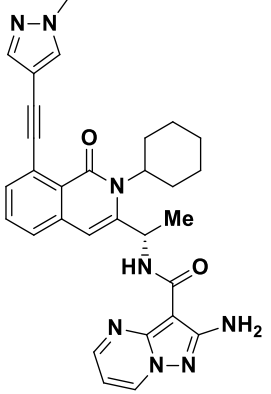
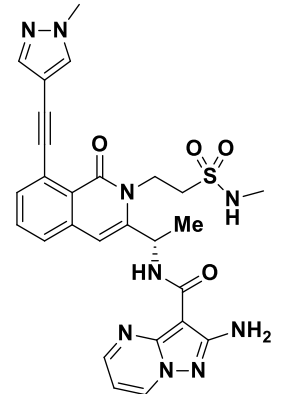
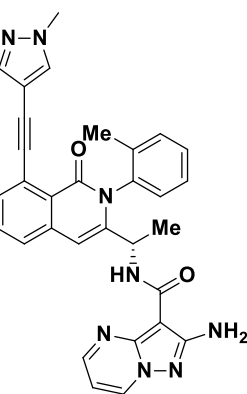
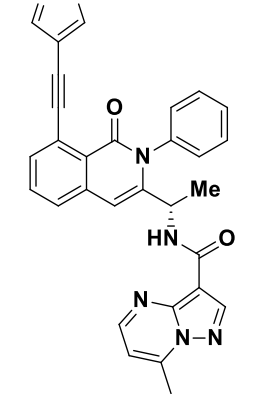
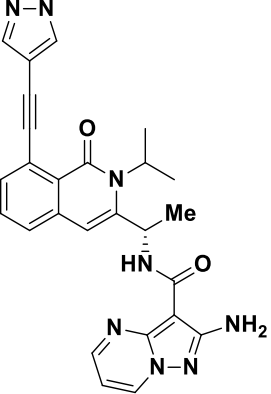
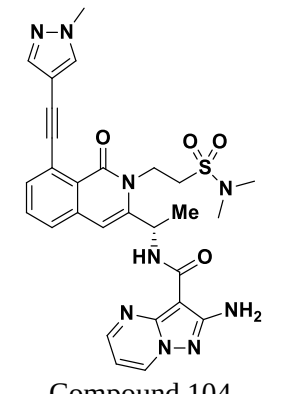
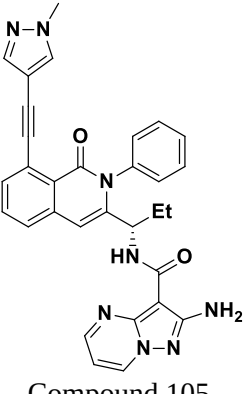
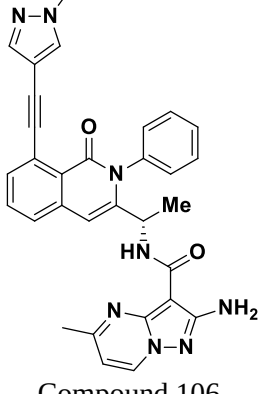
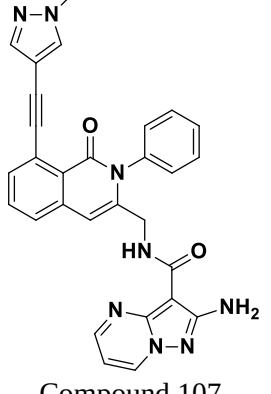
|                                                                                                         |                                                                                                         |                                                                                                          |                                                                                                           |
|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
|  <p>Compound 17,</p>   |  <p>Compound 18,</p>   |  <p>Compound 19,</p>   |  <p>Compound 20,</p>   |
|  <p>Compound 21,</p>  |  <p>Compound 22,</p>  |  <p>Compound 23,</p>  |  <p>Compound 24,</p>  |
|  <p>Compound 25,</p> |  <p>Compound 26,</p> |  <p>Compound 27,</p> |                                                                                                           |
|  <p>Compound 28,</p> |  <p>Compound 29,</p> |  <p>Compound 30,</p> |  <p>Compound 31,</p> |

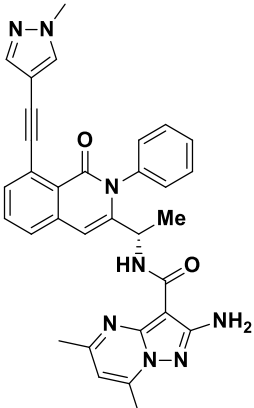
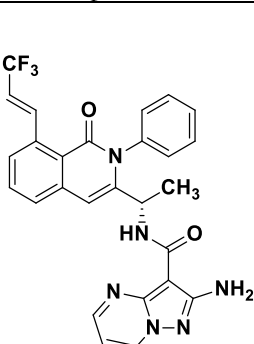
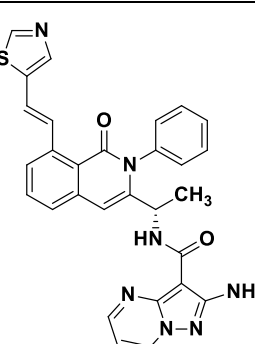
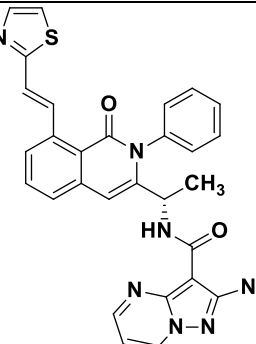
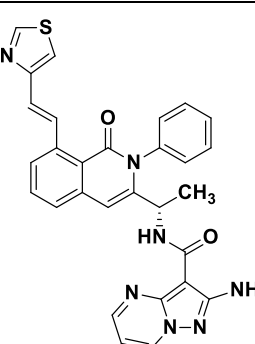
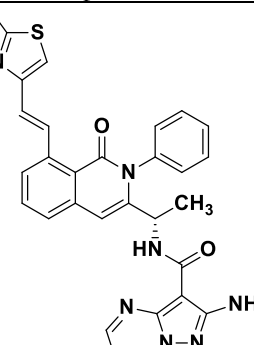
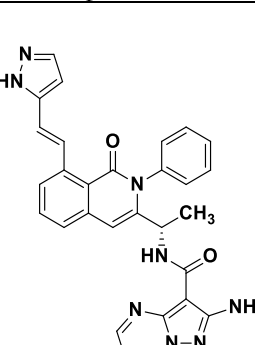
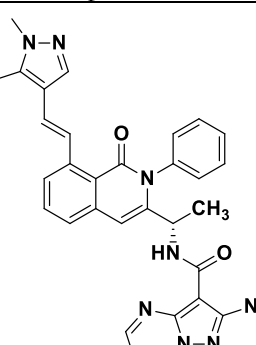
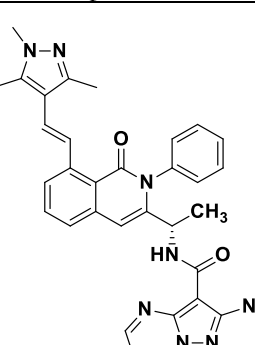
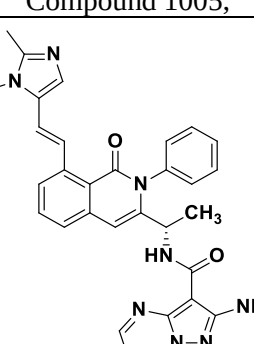
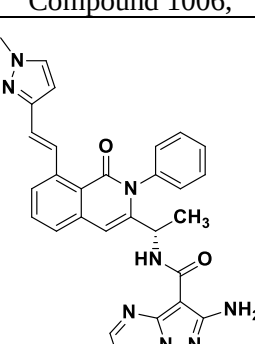
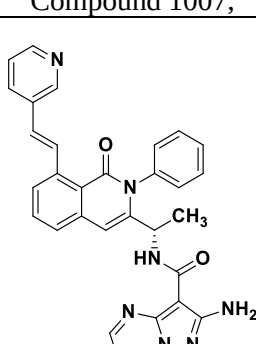
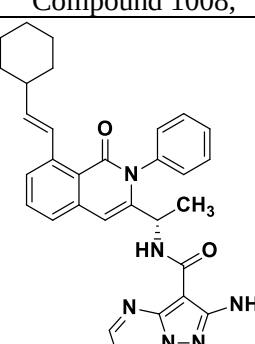
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|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
|  <p>Compound 32,</p>   |  <p>Compound 33,</p>   |  <p>Compound 34,</p>   |  <p>Compound 35,</p>   |
|  <p>Compound 36,</p>  |  <p>Compound 37,</p>  |  <p>Compound 38,</p>  |  <p>Compound 39,</p>  |
|  <p>Compound 40,</p> |  <p>Compound 41,</p> |  <p>Compound 42,</p> |  <p>Compound 43,</p> |

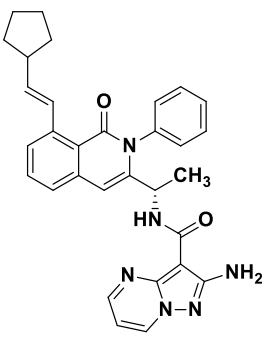
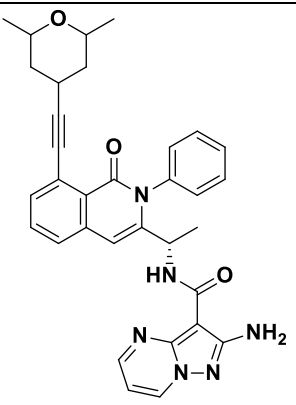
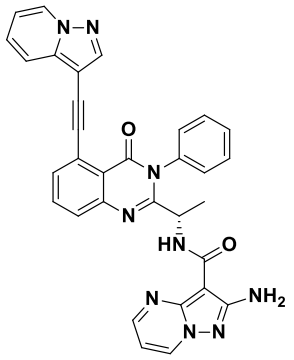
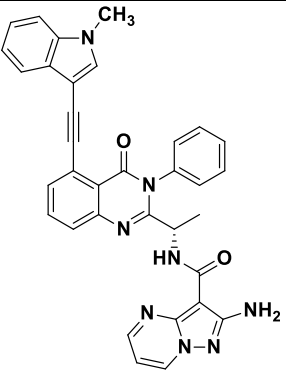
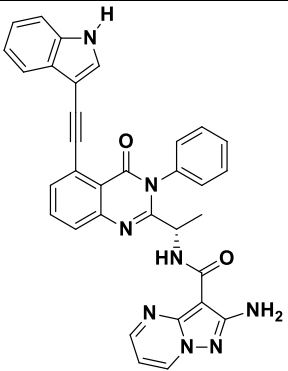
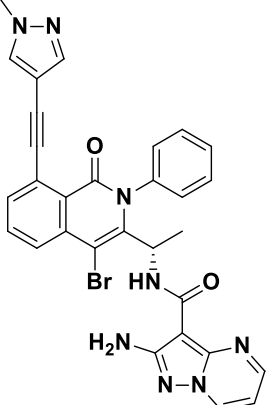
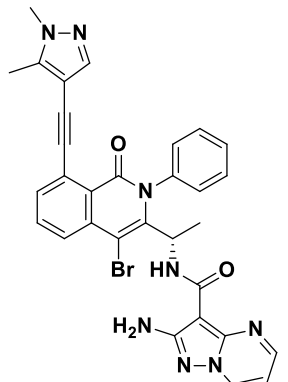
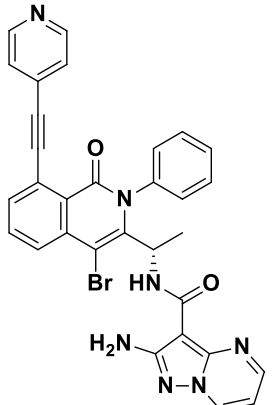
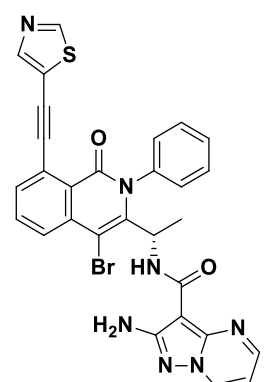
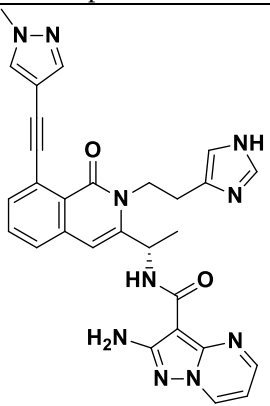
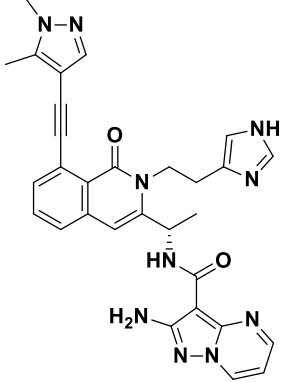
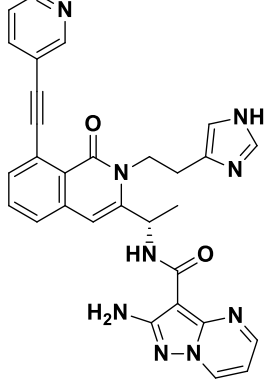
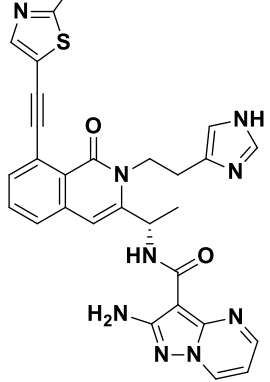
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|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
|  <p>Compound 44,</p>   |  <p>Compound 45,</p>   |  <p>Compound 46,</p>   |  <p>Compound 47,</p>   |
|  <p>Compound 48,</p>  |  <p>Compound 49,</p>  |  <p>Compound 50,</p>  |                                                                                                           |
|  <p>Compound 52,</p> |  <p>Compound 53,</p> |  <p>Compound 54,</p> |  <p>Compound 55,</p> |
|  <p>Compound 56,</p> |  <p>Compound 57,</p> |  <p>Compound 58,</p> |  <p>Compound 59,</p> |

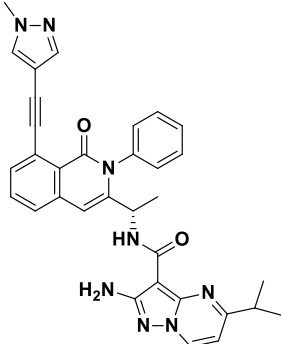
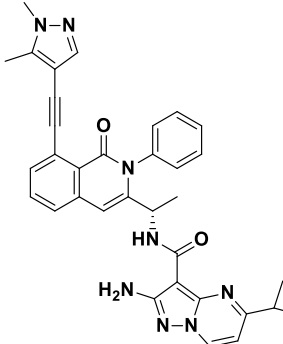
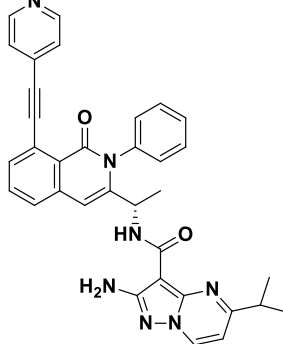
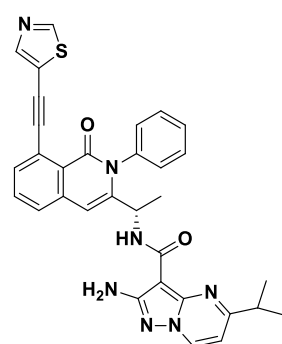
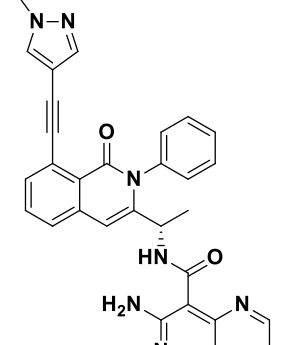
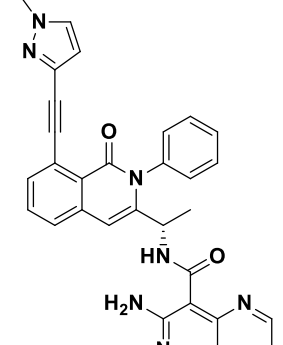
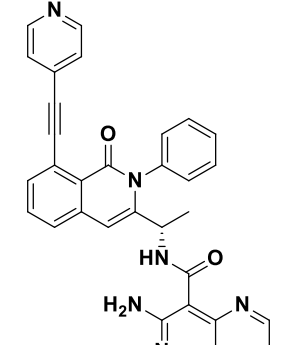
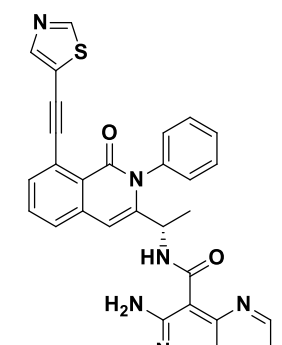
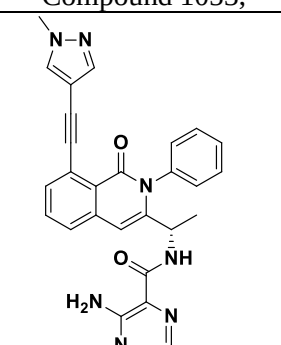
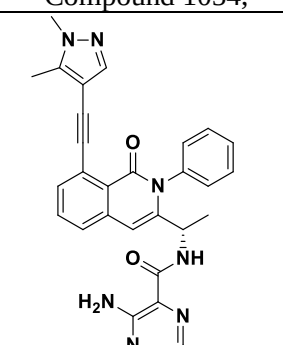
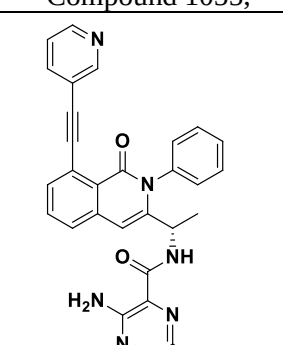
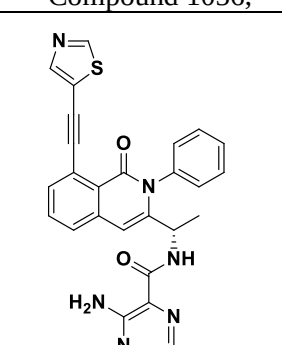
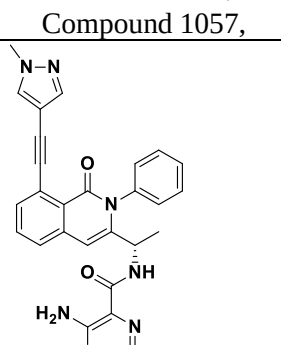
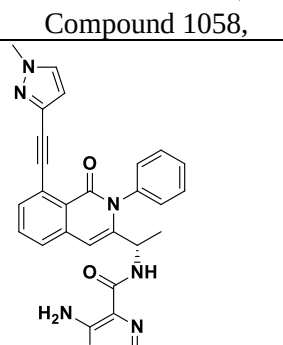
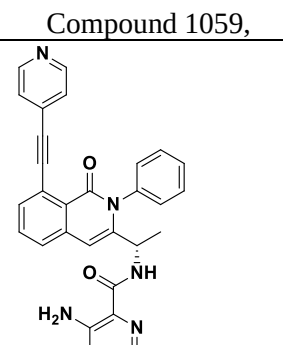
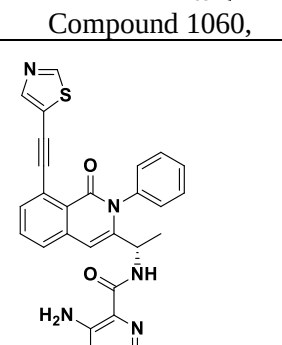
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|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
|  <p>Compound 60,</p>   |  <p>Compound 61,</p>   |  <p>Compound 62,</p>   |  <p>Compound 63,</p>   |
|  <p>Compound 64,</p>  |  <p>Compound 65,</p>  |  <p>Compound 66,</p>  |  <p>Compound 67,</p>  |
|  <p>Compound 68,</p> |  <p>Compound 69,</p> |  <p>Compound 70,</p> |  <p>Compound 71,</p> |

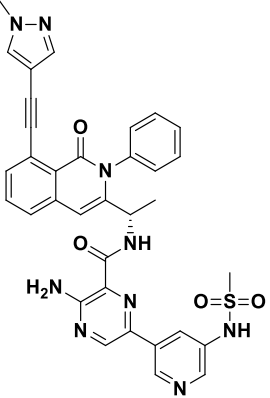
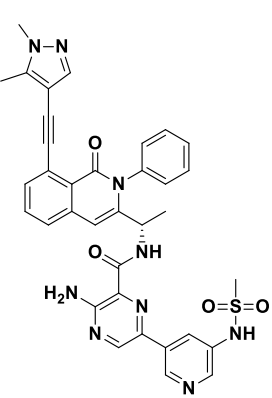
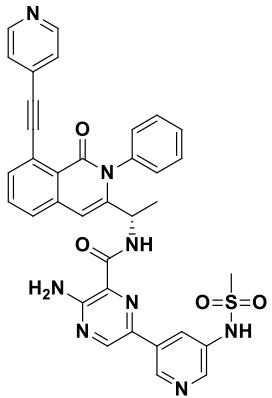
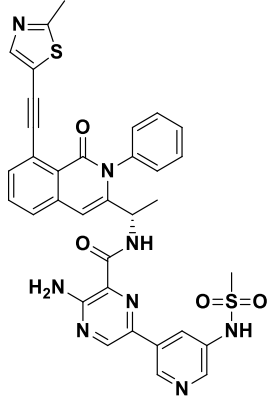
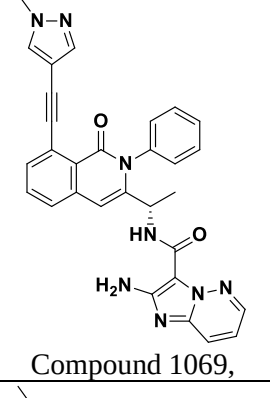
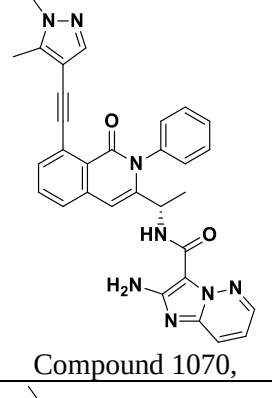
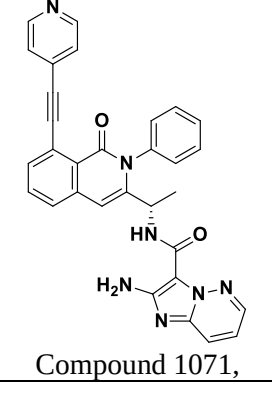
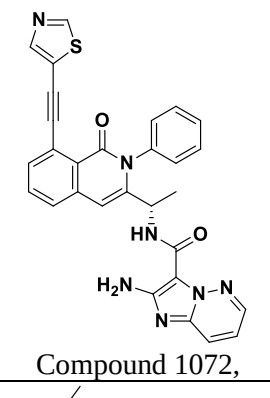
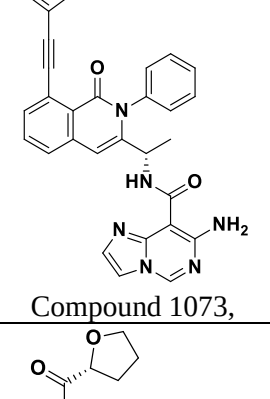
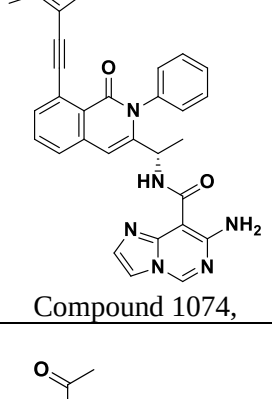
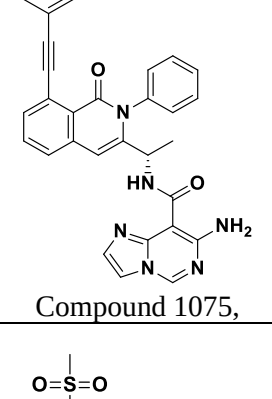
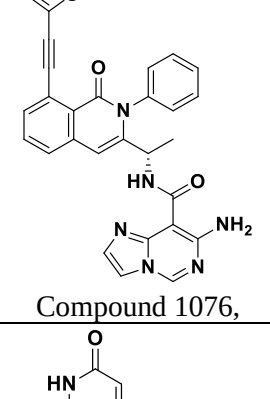
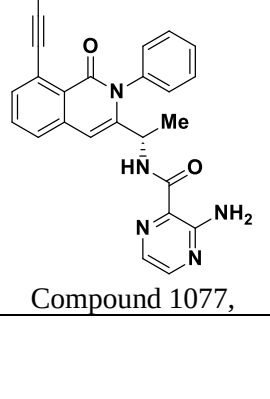
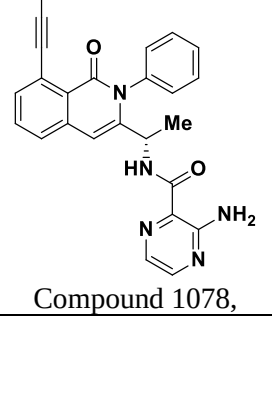
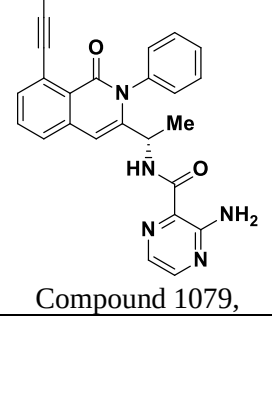
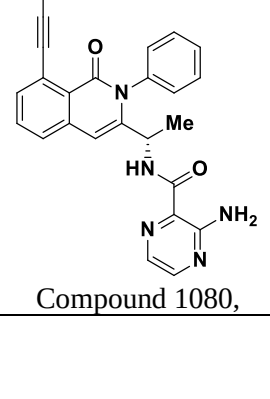
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|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
|  <p>Compound 72,</p>   |  <p>Compound 73,</p>   |  <p>Compound 74,</p>   |  <p>Compound 75,</p>   |
|  <p>Compound 76,</p>  |  <p>Compound 77,</p>  |  <p>Compound 78,</p>  |  <p>Compound 79,</p>  |
|  <p>Compound 80,</p> |  <p>Compound 81,</p> |  <p>Compound 82,</p> |  <p>Compound 83,</p> |
|  <p>Compound 84,</p> |  <p>Compound 85,</p> |  <p>Compound 86,</p> |                                                                                                           |

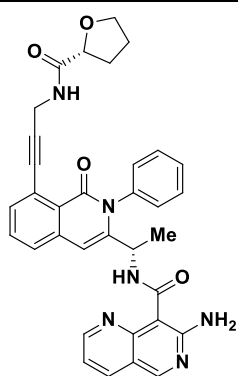
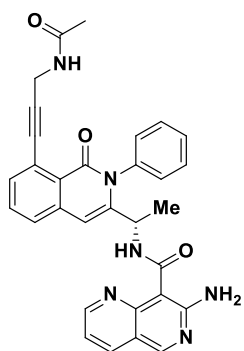
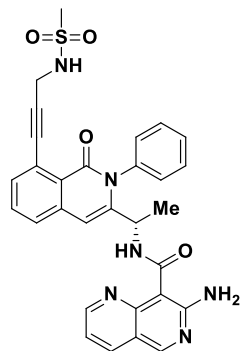
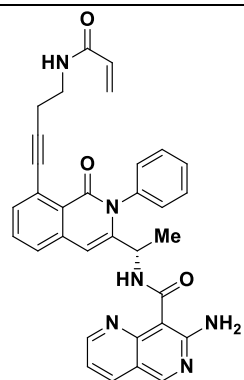
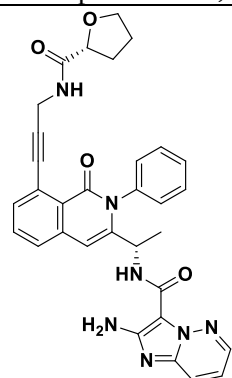
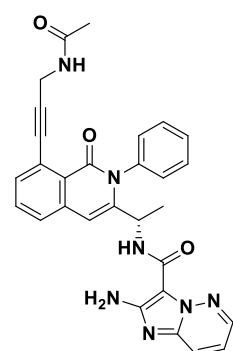
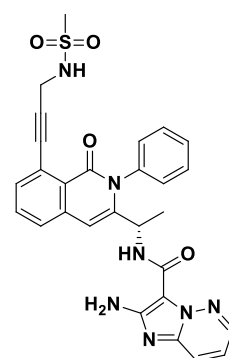
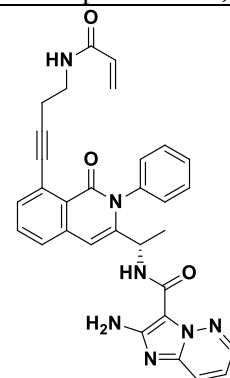
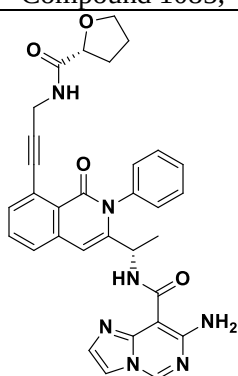
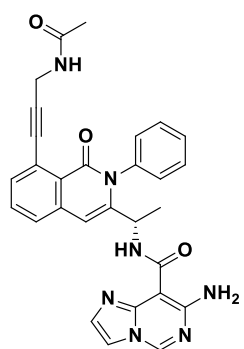
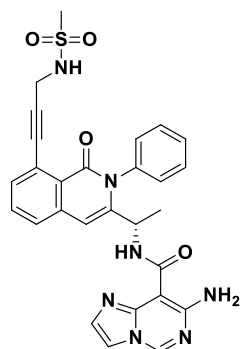
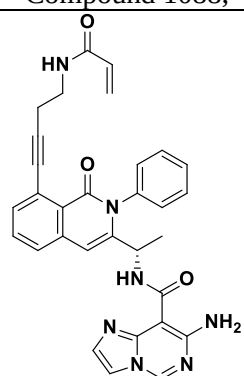
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|  <p>Compound 88,</p>    |  <p>Compound 93,</p>    |  <p>Compound 94,</p>    |  <p>Compound 95,</p>    |
|  <p>Compound 96,</p>   |  <p>Compound 97,</p>   |  <p>Compound 98,</p>   |  <p>Compound 99,</p>   |
|  <p>Compound 100,</p> |  <p>Compound 101,</p> |  <p>Compound 102,</p> |  <p>Compound 103,</p> |
|  <p>Compound 104,</p> |  <p>Compound 105,</p> |  <p>Compound 106,</p> |  <p>Compound 107,</p> |

|                                                                                                           |                                                                                                           |                                                                                                            |                                                                                                             |
|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
|  <p>Compound 108,</p>    |                                                                                                           |                                                                                                            |                                                                                                             |
|  <p>Compound 1001,</p>   |  <p>Compound 1002,</p>   |  <p>Compound 1003,</p>   |  <p>Compound 1004,</p>   |
|  <p>Compound 1005,</p> |  <p>Compound 1006,</p> |  <p>Compound 1007,</p> |  <p>Compound 1008,</p> |
|  <p>Compound 1009,</p> |  <p>Compound 1010,</p> |  <p>Compound 1011,</p> |  <p>Compound 1012,</p> |

|                                                                                                           |                                                                                                           |                                                                                                            |                                                                                                             |
|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
|  <p>Compound 1013,</p>   |  <p>Compound 1014,</p>   |                                                                                                            |  <p>Compound 1016,</p>   |
|  <p>Compound 1017,</p>   |  <p>Compound 1018,</p>   |                                                                                                            |                                                                                                             |
|  <p>Compound 1041,</p> |  <p>Compound 1042,</p> |  <p>Compound 1043,</p> |  <p>Compound 1044,</p> |
|  <p>Compound 1045,</p> |  <p>Compound 1046,</p> |  <p>Compound 1047,</p> |  <p>Compound 1048,</p> |

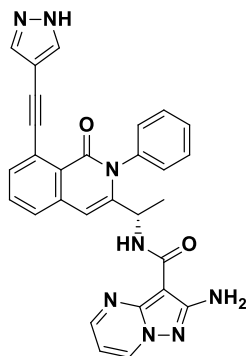
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|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
|  <p>Compound 1049,</p>   |  <p>Compound 1050,</p>   |  <p>Compound 1051,</p>   |  <p>Compound 1052,</p>   |
|  <p>Compound 1053,</p>   |  <p>Compound 1054,</p>   |  <p>Compound 1055,</p>   |  <p>Compound 1056,</p>   |
|  <p>Compound 1057,</p>  |  <p>Compound 1058,</p>  |  <p>Compound 1059,</p>  |  <p>Compound 1060,</p>  |
|  <p>Compound 1061,</p> |  <p>Compound 1062,</p> |  <p>Compound 1063,</p> |  <p>Compound 1064,</p> |

|                                                                                                           |                                                                                                           |                                                                                                            |                                                                                                             |
|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
|  <p>Compound 1065,</p>   |  <p>Compound 1066,</p>   |  <p>Compound 1067,</p>   |  <p>Compound 1068,</p>   |
|  <p>Compound 1069,</p>  |  <p>Compound 1070,</p>  |  <p>Compound 1071,</p>  |  <p>Compound 1072,</p>  |
|  <p>Compound 1073,</p> |  <p>Compound 1074,</p> |  <p>Compound 1075,</p> |  <p>Compound 1076,</p> |
|  <p>Compound 1077,</p> |  <p>Compound 1078,</p> |  <p>Compound 1079,</p> |  <p>Compound 1080,</p> |



or a pharmaceutically acceptable salt thereof.

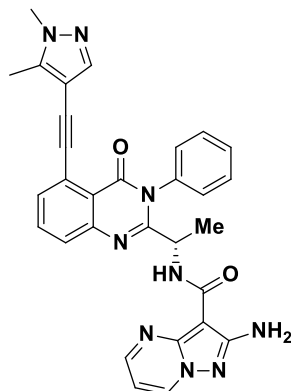
36. A compound, which is:



Compound 80,

or a pharmaceutically acceptable salt thereof.

37. A compound, which is:



Compound 88,

or a pharmaceutically acceptable salt thereof.

38. A pharmaceutical composition comprising a compound of any one of claims 1–37, and a pharmaceutically acceptable excipient, diluent, or carrier.

39. Use of a compound of any one of claims 1–37 or a composition of claim 38 in the manufacture of a medicament for treating a PI3K mediated disorder.

40. The use of claim 39, wherein the PI3K mediated disorder is cancer, bone disorder, a respiratory disease, an inflammatory disease, or an auto-immune disease.

41. The use of claim 39, wherein the PI3K mediated disorder is cancer.

42. The use of claim 41, wherein the cancer is a hematological cancer.

43. The use of claim 42, wherein the hematological cancer is leukemia or lymphoma.

44. The use of claim 42, wherein the hematological cancer is acute lymphocytic leukemia (ALL), chronic lymphocytic leukemia (CLL), prolymphocytic leukemia (PLL), hairy cell leukemia (HLL), Waldenstrom's macroglobulinemia (WM), peripheral T cell lymphomas (PTCL), adult T cell leukemia/lymphoma (ATL), cutaneous T-cell lymphoma (CTCL), large granular lymphocytic leukemia (LGL), acute myelocytic leukemia (AML), Hodgkin lymphoma (HL), non-Hodgkin lymphoma (NHL), follicular lymphoma, diffuse large B-cell lymphoma (DLBCL), mantle cell lymphoma (MCL), mastocytosis, multiple myeloma (MM), myelodysplastic syndrome (MDS), or myeloproliferative disorder (MPD).
45. The use of claim 41, wherein the cancer is a solid tumor.
46. The use of claim 41, wherein the cancer is selected from one or more of: a brain cancer, a skin cancer, head and neck cancer, a neuroendocrine cancer, a pancreatic cancer, a lung cancer, a breast cancer, a prostate cancer, a testicular cancer, an esophageal cancer, a liver cancer, a gastric cancer, a colon cancer, a colorectal cancer, an ovarian cancer, a cervical cancer, a uterine cancer, an endometrial cancer, a bladder cancer, a kidney cancer, and a viral-induced cancer.
47. The use of claim 41, wherein the cancer is selected from one or more of: a medulloblastoma, a basal cell carcinoma, a glioma, a hepatocellular cancer, a gastrointestinal stromal tumor (GIST), a melanoma, a primitive neuroectodermal tumor (PNT), a soft tissue sarcoma, fibrosarcoma, myxosarcoma, liposarcoma, a chondrosarcoma, an osteosarcoma, a chordoma, an angiosarcoma, an endotheliosarcoma, a lymphangiosarcoma, a lymphangioendotheliosarcoma, a synovioma, a mesothelioma, a leiomyosarcoma, a transitional cell carcinoma in urinary bladder, an epithelial carcinoma, a squamous cell carcinoma, an adenocarcinoma, a bronchogenic carcinoma, a renal cell carcinoma, a malignant hepatoma, a carcinoid tumor, and glioblastoma.
48. The use of claim 45, wherein the solid tumor is melanoma, lung cancer, head and neck cancer, renal cell carcinoma, bladder cancer, breast cancer, colon cancer, glioblastoma, adrenal gland cancer, mesothelioma, colorectal cancer, ovarian cancer, endometrial cancer, or urothelial carcinoma.
49. The use of claim 45, wherein the solid tumor is head and neck squamous cell carcinoma.
50. The use of claim 45, wherein the solid tumor is non-small cell lung cancer.
51. The use of any one of claims 41–50, wherein the cancer or solid tumor is metastatic.

52. The use of any one of claims 41–51, wherein the cancer or solid tumor is relapsed after, or refractory to, a prior therapy.
53. The use of claim 39, wherein the PI3K mediated disorder is a bone disorder that results disruption of a function of an osteoclast; a respiratory disease selected from the group consisting of asthma, cystic fibrosis, emphysema, chronic obstructive pulmonary disorder (COPD), chronic bronchitis, bronchiectasis, acute respiratory distress syndrome, respiratory tract diseases, pleural cavity diseases, and pulmonary hypertension; or arthritis.
54. The use of any one of claims 39–53, wherein the medicament is manufactured for administration of the compound at an amount of about 0.1 mg to about 100 mg per day, about 1 mg to 50 mg per day, about 5 mg to 40 mg per day, or about 10 mg to 30 mg per day.
55. The use of any one of claims 39–53, wherein the medicament is manufactured for administration every other day, once per day, or twice per day.
56. The use of any one of claims 39–55, wherein the medicament is manufactured for administration orally.
57. The use of any one of claims 39–56, wherein the medicament is manufactured for administration in combination with one or more second therapeutic agent or therapy.
58. The use of claim 57, wherein the second therapeutic agent is Norvir (ritonavir), GS-1101 (Cal-101), AMG319, an mTOR inhibitor, a costimulatory modulator, an immunostimulant, a CXCL12/CXCR4 inhibitor, a HDAC inhibitor, a proteasome inhibitor, a CD28 antibody, a CD30 antibody, a CD40 antibody, GM-CSF, gemcitabine, cyclophosphamide, docetaxel, paclitaxel, 5-FU, temozolomide, an anti-angiogenesis agent, axitinib, or XL-184; or wherein the second therapeutic therapy is a radiation therapy.
59. A pharmaceutical composition comprising a therapeutically effective amount of a compound of any one of claims 1–37 and a PI3K-delta inhibitor.
60. The composition of claim 59, wherein the PI3K-delta inhibitor is a PI3K-delta selective inhibitor, or the PI3K-delta inhibitor is GS-1101 (Cal-101) or AMG319, or a mixture thereof.