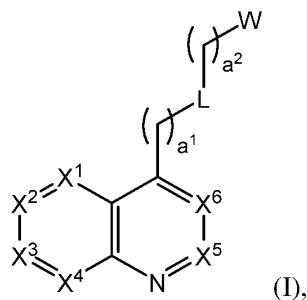


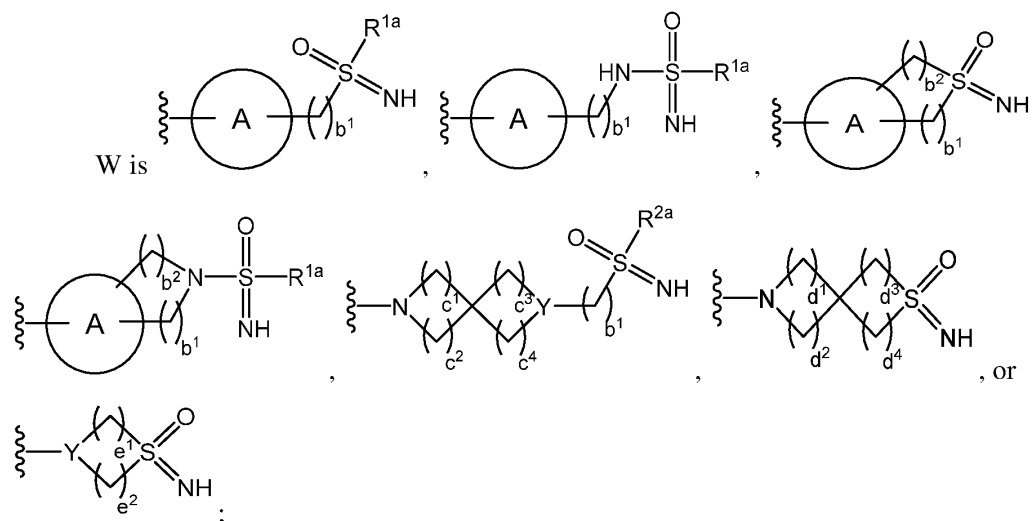
CLAIMS

What is claimed is:

1. A compound of Formula (I)



or a pharmaceutically acceptable salt thereof, wherein:



ring A is aryl, heteroaryl, cycloalkyl, cycloalkenyl, heterocycloalkyl or heterocycloalkenyl, each of which is substituted or unsubstituted;

R^{1a} and R^{2a} are each independently hydrogen, optionally substituted C_{1-6} alkyl, optionally substituted C_{3-6} cycloalkyl, optionally substituted 3-6 membered heterocycloalkyl, or optionally substituted C_{1-6} haloalkyl;

Y is -N- or -CH-;

X^1 is - CR^{1b} - or -N-;

X^2 is - CR^{2b} - or -N-;

X^3 is - CR^{3b} - or -N-;

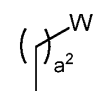
X^4 is - CR^{4b} - or -N-;

X^5 is $-CR^{5b}-$ or $-N-$;

X^6 is $-CR^{6b}-$ or $-N-$;

R^{1b} - R^{6b} are each independently hydrogen, halogen, hydroxyl, C_{1-4} alkoxy optionally substituted with one or more halo substituents, cyano, C_{1-3} alkyl, C_{1-3} haloalkyl, nitro, $-NR^{1c}R^{2c}$, $-NHC(O)R^{3c}$, or $-C(O)NR^{4c}R^{5c}$;

L is a bond, $-O-$, $-C(O)-$, $-NR^{6c}-$, or $-OCR^{7c}-$, wherein * represents the point of

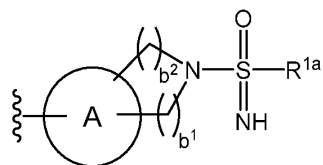
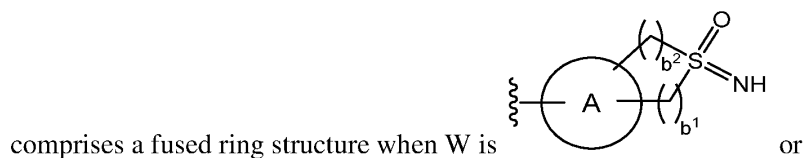
attachment to  ;

R^{1c} - R^{7c} are each independently hydrogen or C_{1-3} alkyl;

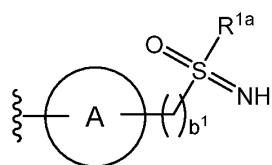
a^1 , a^2 , b^1 , and c^4 are each independently 0, 1, 2, or 3; and

b^2 , c^1 - c^3 , d^1 - d^4 , e^1 , and e^2 are each independently 1, 2, or 3.

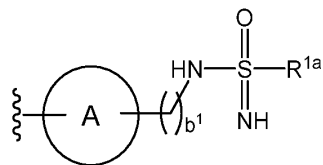
2. The compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein W is



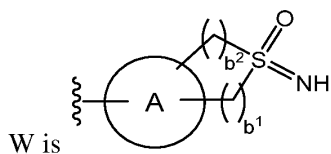
3. The compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein W is



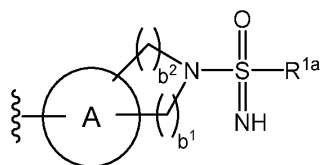
4. The compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein W is



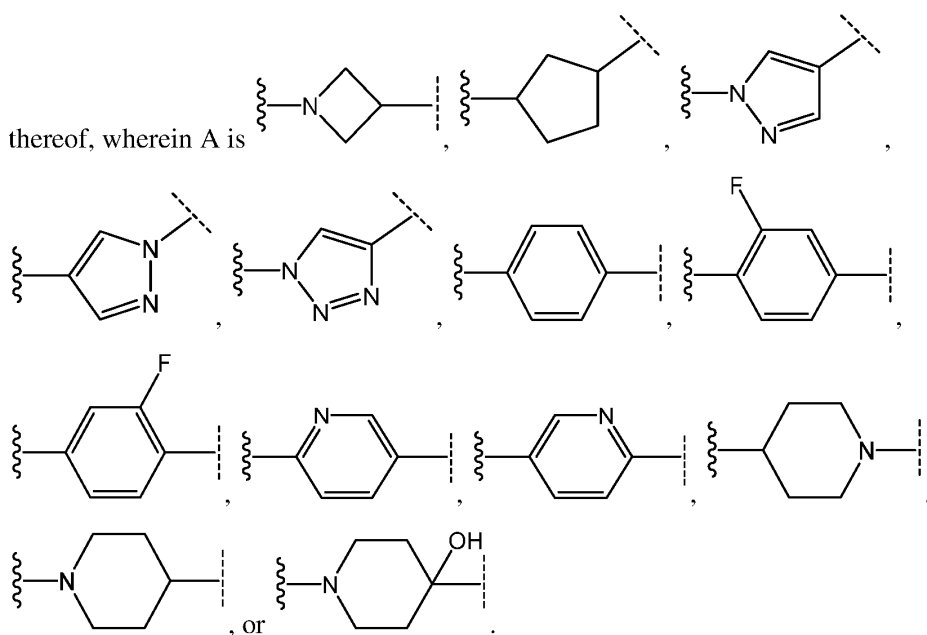
5. The compound of claim 1 or 2, or a pharmaceutically acceptable salt thereof, wherein



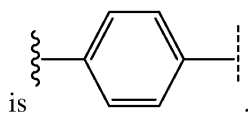
6. The compound of claim 1 or 2, or a pharmaceutically acceptable salt thereof, wherein W is



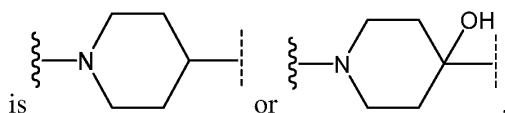
7. The compound of any one of claims 1-6, or a pharmaceutically acceptable salt thereof, wherein A is aryl.
8. The compound of any one of claims 1-6, or a pharmaceutically acceptable salt thereof, wherein A is heteroaryl.
9. The compound of any one of claims 1-6, or a pharmaceutically acceptable salt thereof, wherein A is heterocycloalkyl.
10. The compound of any one of claims 1-6, or a pharmaceutically acceptable salt thereof,



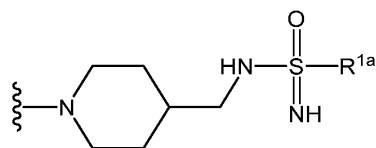
11. The compound of claim 10, or a pharmaceutically acceptable salt thereof, wherein A



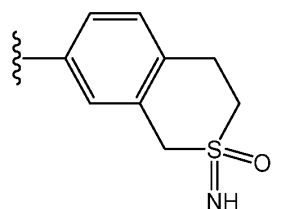
12. The compound of claim 10, or a pharmaceutically acceptable salt thereof, wherein A



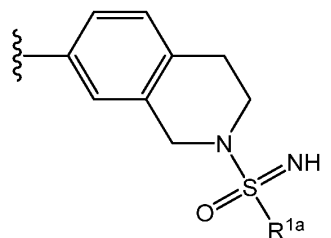
13. The compound of any one of claims 1-12, or a pharmaceutically acceptable salt thereof, wherein R^{1a} is C_{1-6} alkyl or C_{3-6} cycloalkyl.
14. The compound of claim 13, or a pharmaceutically acceptable salt thereof, wherein R^{1a} is methyl or cyclopropyl.
15. The compound of any one of claims 1-14, or a pharmaceutically acceptable salt thereof, wherein b^1 is 0.
16. The compound of any one of claims 1-14, or a pharmaceutically acceptable salt thereof, wherein b^1 is 1.
17. The compound of claim 4, or a pharmaceutically acceptable salt thereof, wherein W is



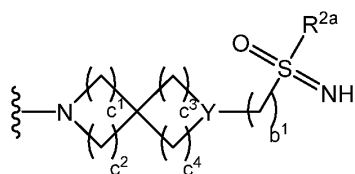
18. The compound of claim 5, or a pharmaceutically acceptable salt thereof, wherein W is



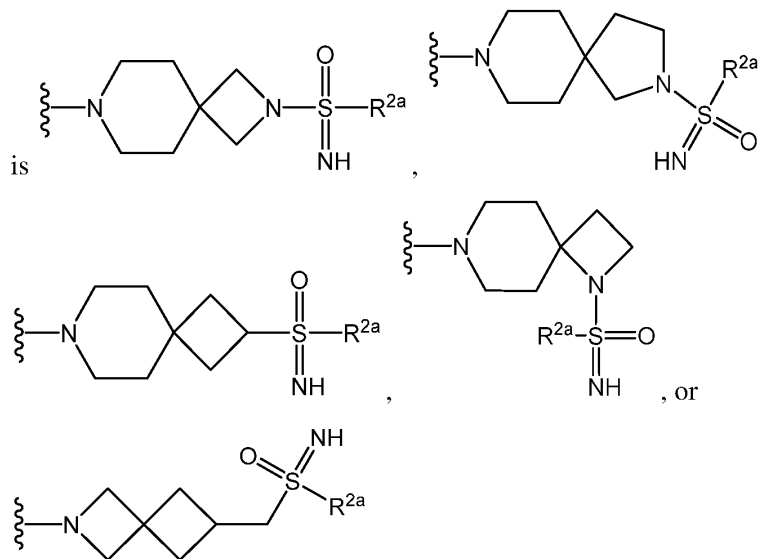
19. The compound of claim 6, or a pharmaceutically acceptable salt thereof, wherein W is



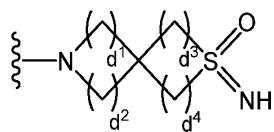
20. The compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein W is



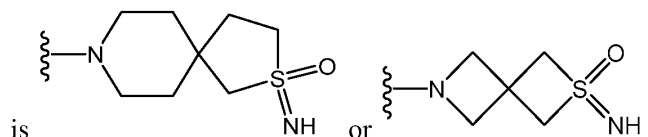
21. The compound of claim 20, or a pharmaceutically acceptable salt thereof, wherein W



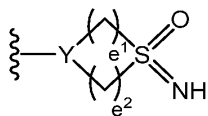
22. The compound of claim 20 or 21, or a pharmaceutically acceptable salt thereof, wherein R^{2a} is C_{1-6} alkyl.
23. The compound of claim 22, or a pharmaceutically acceptable salt thereof, wherein R^{2a} is methyl.
24. The compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein W is



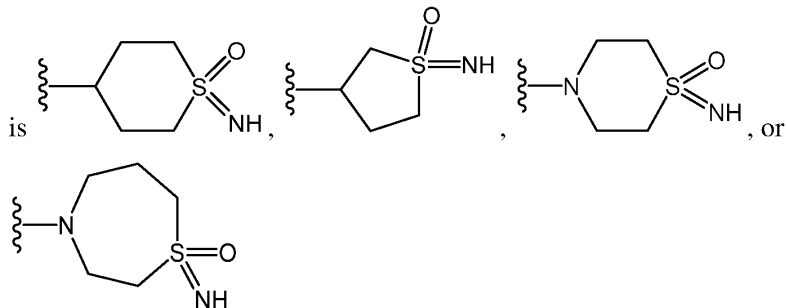
25. The compound of claim 24, or a pharmaceutically acceptable salt thereof, wherein W



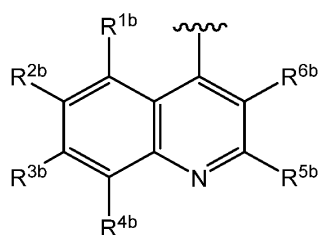
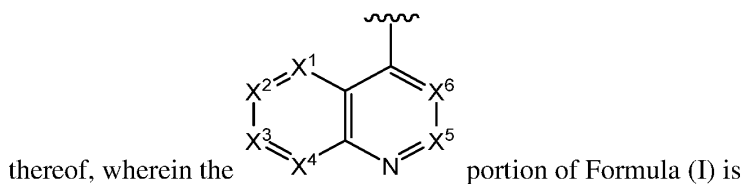
26. The compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein W is



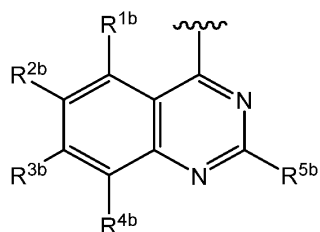
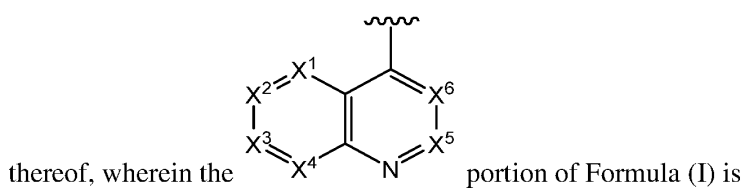
27. The compound of claim 26, or a pharmaceutically acceptable salt thereof, wherein W is



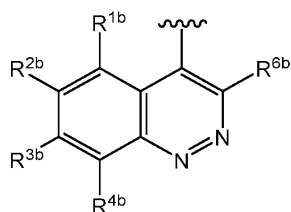
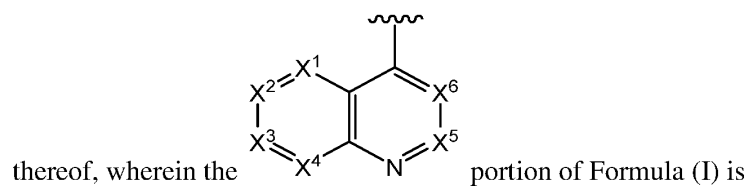
28. The compound of any one of claims 1-27, or a pharmaceutically acceptable salt thereof, wherein the



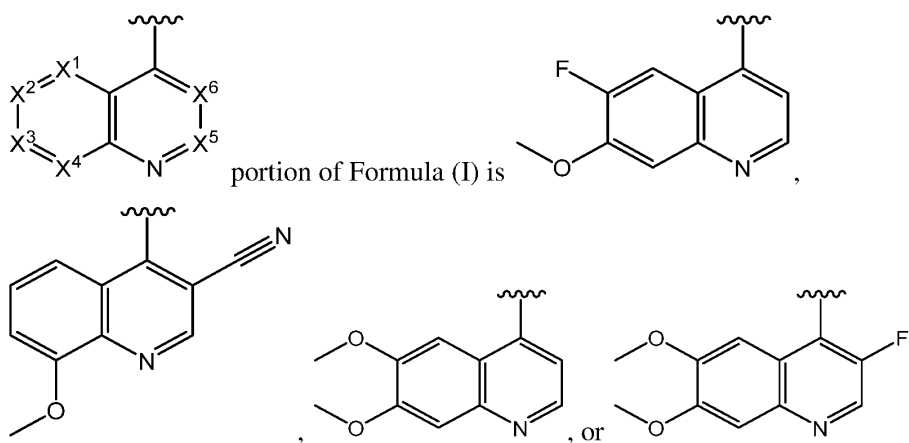
29. The compound of any one of claims 1-27, or a pharmaceutically acceptable salt thereof, wherein the



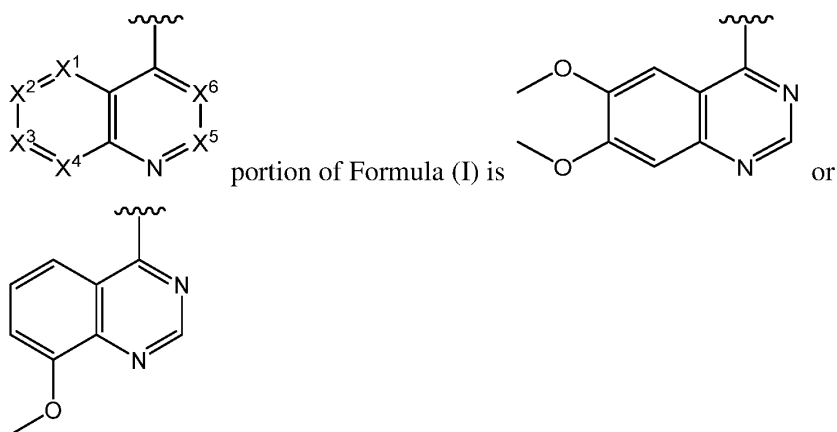
30. The compound of any one of claims 1-27, or a pharmaceutically acceptable salt



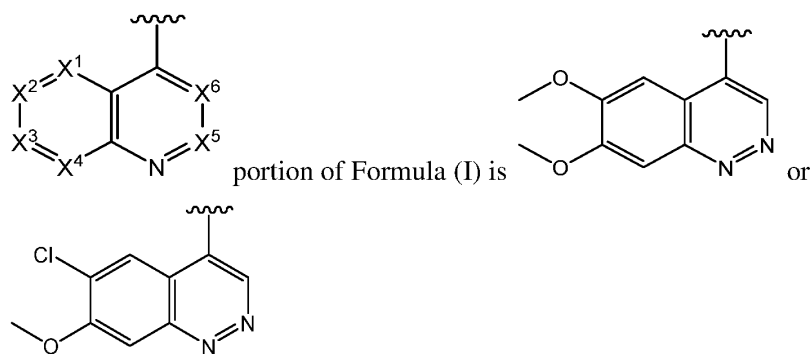
31. The compound of claim 28, or a pharmaceutically acceptable salt thereof, wherein the



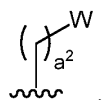
32. The compound of claim 29, or a pharmaceutically acceptable salt thereof, wherein the



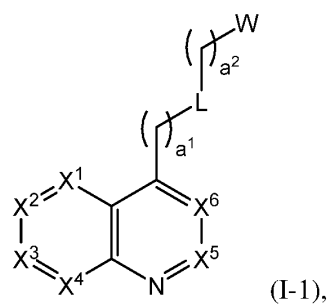
33. The compound of claim 30, or a pharmaceutically acceptable salt thereof, wherein the



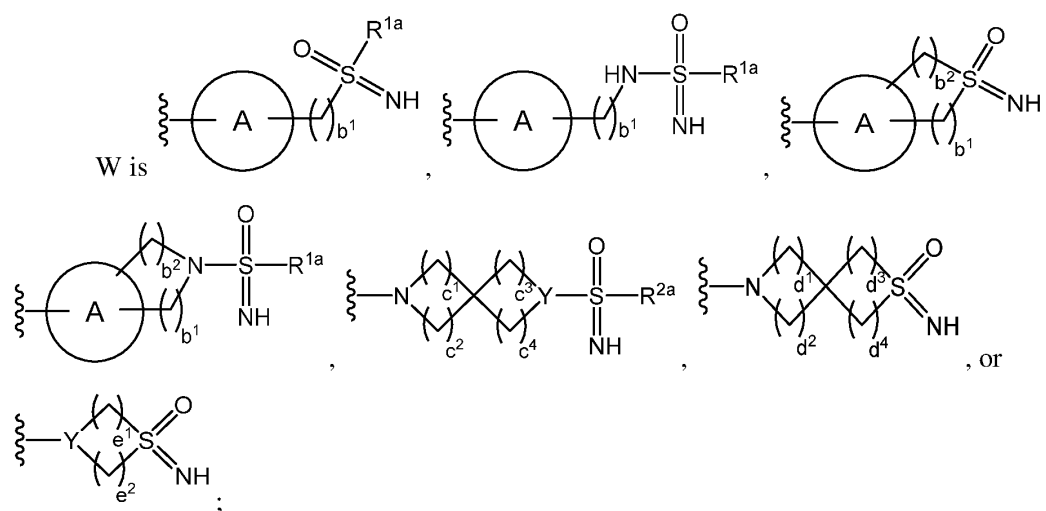
34. The compound of any one of claims 1-33, or a pharmaceutically acceptable salt thereof, wherein L is a bond.
35. The compound of any one of claims 1-33, or a pharmaceutically acceptable salt thereof, wherein L is -O-.
36. The compound of any one of claims 1-33, or a pharmaceutically acceptable salt thereof, wherein L is -C(O)-.
37. The compound of any one of claims 1-33, or a pharmaceutically acceptable salt thereof, wherein L is -NR^{6c}-.
38. The compound of any one of claims 1-33, or a pharmaceutically acceptable salt thereof, wherein L is -OCR^{7c}-, wherein * represents the point of attachment to



39. The compound of any one of claims 1-38, or a pharmaceutically acceptable salt thereof, wherein a¹ is 0.
40. The compound of any one of claims 1-38, or a pharmaceutically acceptable salt thereof, wherein a¹ is 1.
41. The compound of any one of claims 1-40, or a pharmaceutically acceptable salt thereof, wherein a² is 0.
42. The compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein the compound is selected from the group consisting of compounds of Table 1.
43. A compound of Formula (I-1):



or a pharmaceutically acceptable salt thereof, wherein:



ring A is aryl, heteroaryl, cycloalkyl, cycloalkenyl, heterocycloalkyl or heterocycloalkenyl, each of which is substituted or unsubstituted;

R^{1a} and R^{2a} are each independently hydrogen, C_{1-6} alkyl, C_{3-6} cycloalkyl, 3-6 membered heterocycloalkyl, or C_{1-6} haloalkyl;

Y is -N- or -CH-;

X^1 is $-CR^{1b}-$ or -N-;

X^2 is $-CR^{2b}-$ or -N-;

X^3 is $-CR^{3b}-$ or -N-;

X^4 is $-CR^{4b}-$ or -N-;

X^5 is $-CR^{5b}-$ or -N-;

X^6 is $-CR^{6b}-$ or -N-;

R^{1b} - R^{6b} are each independently hydrogen, halogen, hydroxyl, C_{1-4} alkoxy optionally substituted with one or more halo substituents, cyano, C_{1-3} alkyl, C_{1-3} haloalkyl, nitro, - $NR^{1c}R^{2c}$, $-NHC(O)R^{3c}$, or $-C(O)NR^{4c}R^{5c}$;

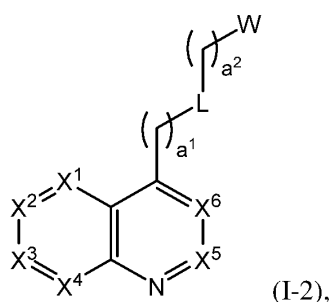
L is a bond, -O-, -C(O)-, or -NR^{6c}-;

R^{1c}-R^{6c} are each independently hydrogen or C₁₋₃ alkyl;

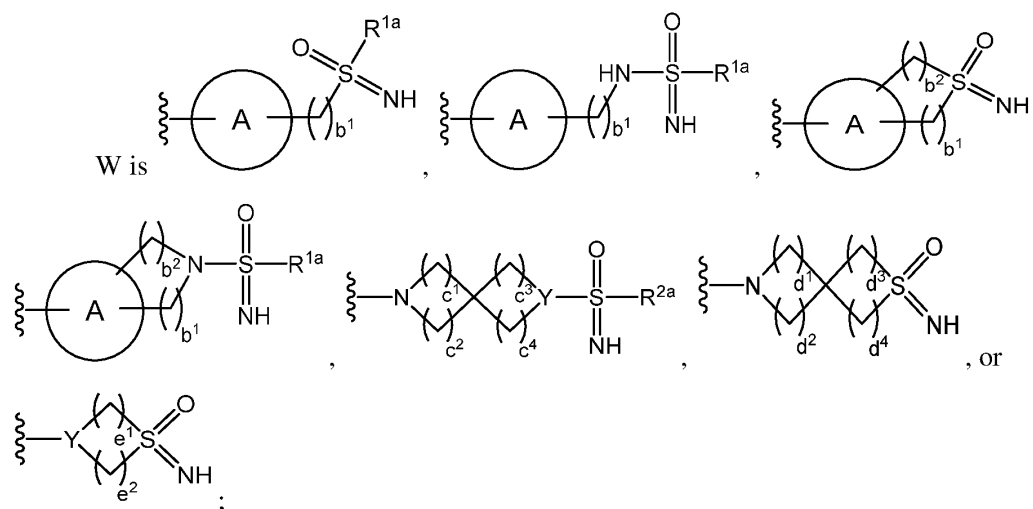
a¹, a², and b¹ are each independently 0, 1, or 2; and

b², c¹-c⁴, d¹-d⁴, e¹, and e² are each independently 1, 2, or 3.

44. The compound of claim 43, or a pharmaceutically acceptable salt thereof, wherein the compound is selected from the group consisting of compounds 1, 2-37, 38-44, 45-52, 53, 54, 55, 56-60, 61-75, 76-80, 81-94, 95-103, and 104-113 of Table 1.
45. A compound of Formula (I-2):



or a pharmaceutically acceptable salt thereof, wherein:



ring A is aryl, heteroaryl, cycloalkyl, cycloalkenyl, heterocycloalkyl or heterocycloalkenyl, each of which is substituted or unsubstituted;

R^{1a} and R^{2a} are each independently hydrogen, C₁₋₆ alkyl, C₃₋₆ cycloalkyl, 3-6 membered heterocycloalkyl, or C₁₋₆ haloalkyl, wherein the C₁₋₆ alkyl is optionally substituted by hydroxyl, C₁₋₃ alkoxy, or C₃₋₆ cycloalkyl;

Y is -N- or -CH-;

X^1 is $-CR^{1b}-$ or $-N-$;

X^2 is $-CR^{2b}-$ or $-N-$;

X^3 is $-CR^{3b}-$ or $-N-$;

X^4 is $-CR^{4b}-$ or $-N-$;

X^5 is $-CR^{5b}-$ or $-N-$;

X^6 is $-CR^{6b}-$ or $-N-$;

$R^{1b}-R^{6b}$ are each independently hydrogen, halogen, hydroxyl, C_{1-4} alkoxy optionally substituted with one or more halo substituents, cyano, C_{1-3} alkyl, C_{1-3} haloalkyl, nitro, $-NR^{1c}R^{2c}$, $-NHC(O)R^{3c}$, or $-C(O)NR^{4c}R^{5c}$;

L is a bond, $-O-$, $-C(O)-$, or $-NR^{6c}-$;

$R^{1c}-R^{6c}$ are each independently hydrogen or C_{1-3} alkyl;

a^1 , a^2 , and b^1 are each independently 0, 1, 2, or 3; and

b^2 , c^1-c^4 , d^1-d^4 , e^1 , and e^2 are each independently 1, 2, or 3.

46. The compound of claim 45, or a pharmaceutically acceptable salt thereof, wherein the compound is selected from the group consisting of compounds 1-165 of Table 1.
47. A pharmaceutical composition comprising a compound of any one of claims 1-46, or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier or excipient.
48. A method of inhibiting ENPP1 comprising contacting a cell with an effective amount of a compound of any one of claims 1-46, or a pharmaceutically acceptable salt thereof.
49. A method of treating cancer in a subject in need thereof, comprising administering to the subject a therapeutically effective amount of a compound of any one of claims 1-46, or a pharmaceutically acceptable salt thereof.
50. A method of treating a bacterial and/or viral infection in a subject in need thereof, comprising administering to the subject a therapeutically effective amount of a compound of any one of claims 1-46, or a pharmaceutically acceptable salt thereof.
51. A method of treating insulin resistance in a subject in need thereof, comprising administering to the subject a therapeutically effective amount of a compound of any one of claims 1-46, or a pharmaceutically acceptable salt thereof.
52. A method of treating type II diabetes in a subject in need thereof, comprising administering to the subject a therapeutically effective amount of a compound of any one of claims 1-46, or a pharmaceutically acceptable salt thereof.

53. A method of treating chondrocalcinosis in a subject in need thereof, comprising administering to the subject a therapeutically effective amount of a compound of any one of claims 1-46, or a pharmaceutically acceptable salt thereof.
54. A method of treating osteoarthritis in a subject in need thereof, comprising administering to the subject a therapeutically effective amount of a compound of any one of claims 1-46, or a pharmaceutically acceptable salt thereof.
55. A method of treating a soft-tissue calcification disorder in a subject in need thereof, comprising administering to the subject a therapeutically effective amount of a compound of any one of claims 1-46, or a pharmaceutically acceptable salt thereof.
56. The method of claim 55, wherein the soft-tissue calcification disorder is cardiac calcification after heart injury.
57. A method of treating calcium pyrophosphate deposition disorder in a subject in need thereof, comprising administering to the subject a therapeutically effective amount of a compound of any one of claims 1-46, or a pharmaceutically acceptable salt thereof.
58. A method of treating hypophosphatasia in a subject in need thereof, comprising administering to the subject a therapeutically effective amount of a compound of any one of claims 1-46, or a pharmaceutically acceptable salt thereof.