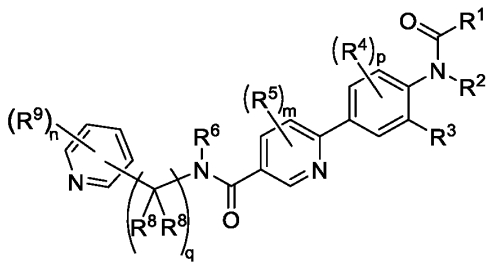
CLAIMS

What is claimed is:

1. A compound of Formula (**0**):



(**0**),

or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, wherein:

R^1 is substituted or unsubstituted, C_{1-12} alkyl or substituted or unsubstituted, C_{1-12} heteroalkyl;

R^2 is hydrogen, substituted or unsubstituted, C_{1-12} alkyl, substituted or unsubstituted, C_{1-12} heteroalkyl, substituted or unsubstituted, 3-to 13-membered heterocyclyl-C_{1-12}-alkyl, substituted or unsubstituted, 3- to 13-membered carbocyclyl-C_{1-12}-alkyl, or a nitrogen protecting group;

when R^2 is unsubstituted methyl, R^1 is not unsubstituted ethyl;

R^3 is hydrogen, halogen, substituted or unsubstituted, C_{1-6} alkyl, $-OR^a$, $-COOR^a$, $-COR^a$, $-N(R^a)_2$, –CN, or $-(C=O)N(R^a)_2$;

each instance of R^a is independently hydrogen, substituted or unsubstituted, C_{1-6} alkyl, an oxygen protecting group when attached to an oxygen atom, or a nitrogen protecting group when attached to a nitrogen atom;

each instance of R^4 is independently hydrogen, halogen, substituted or unsubstituted, C_{1-6} alkyl, $-OR^a$, $-COOR^a$, $-COR^a$, $-N(R^a)_2$, –CN, or $-(C=O)N(R^a)_2$;

each instance of R^5 is independently hydrogen, halogen, substituted or unsubstituted, C_{1-6} alkyl, $-OR^a$, $-COOR^a$, $-COR^a$, $-N(R^a)_2$, –CN, or $-(C=O)N(R^a)_2$;

R^6 is hydrogen, substituted or unsubstituted, C_{1-6} alkyl, or a nitrogen protecting group;

each instance of R^8 is independently hydrogen, halogen, or substituted or unsubstituted, C_{1-6} alkyl;

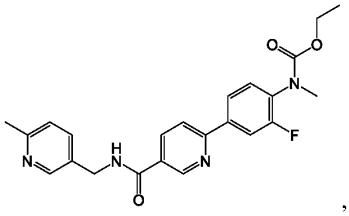
each instance of R^9 is independently hydrogen, halogen, substituted or unsubstituted, C_{1-6} alkyl, $-OR^a$, $-COOR^a$, $-COR^a$, $-N(R^a)_2$, –CN, or $-(C=O)N(R^a)_2$, or two instances of R^9 are joined to form a 3-to 13 membered heterocyclyl, 3-to 13 membered heterocyclyl, 6-to 12 membered aryl ring, or 5-to 14 membered heteroaryl ring;

n is an integer from 0 to 4, inclusive;

m is an integer from 0 to 3, inclusive;

p is an integer from 0 to 3, inclusive; and

q is an integer selected from 0 and 1; provided that the compound is not of the formula: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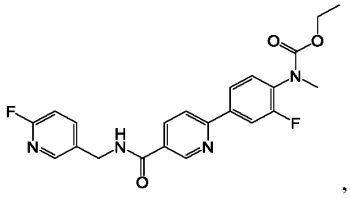
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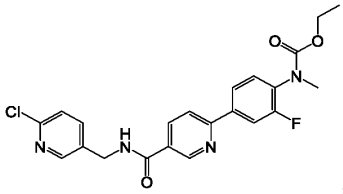
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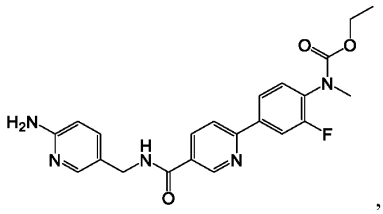
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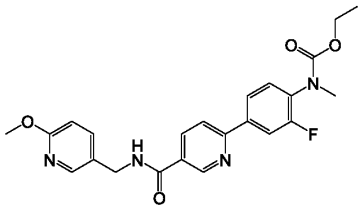
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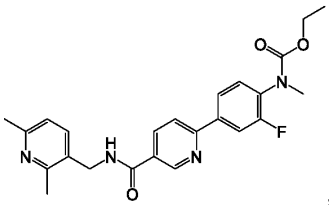
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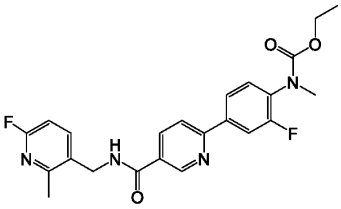
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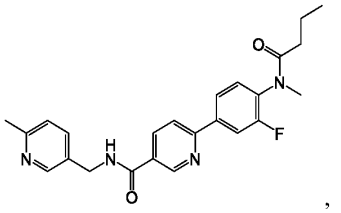
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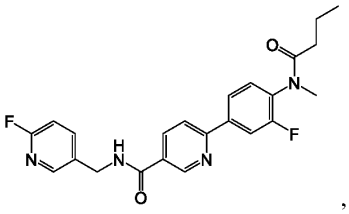
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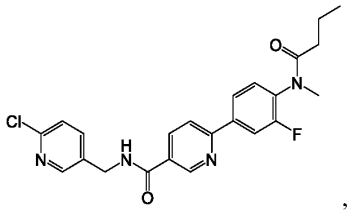
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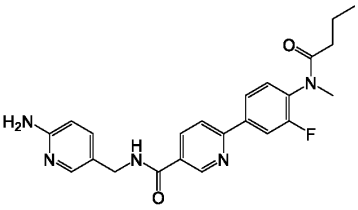
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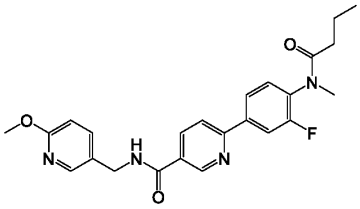
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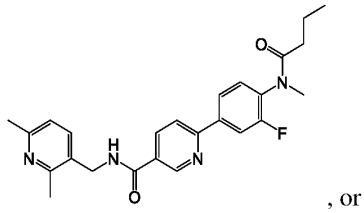
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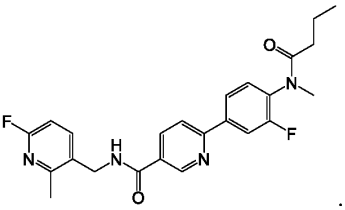
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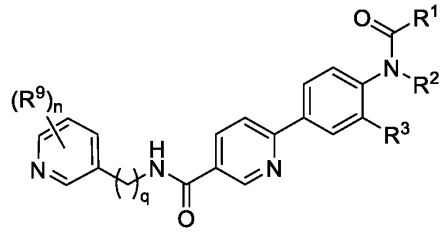
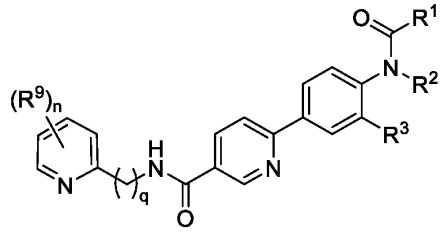
2. The compound of claim 1, wherein the compound is of Formula (**0a**):



(**0a**),

or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof.

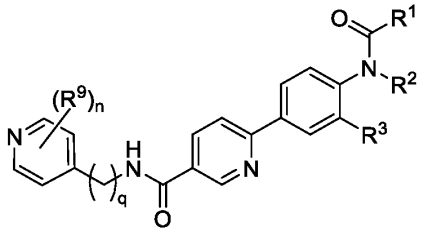
3. The compound of claim 1, wherein the compound is of Formula (**0b**):



(**0b**),

or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof.

4. The compound of claim 1, wherein the compound is of Formula (**0c**):



(**0c**),

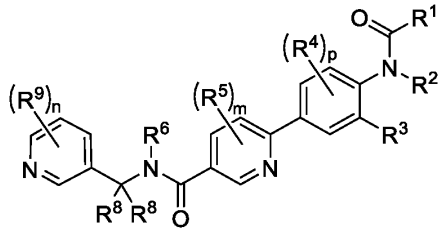
or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof.

5. The compound of any one of claims 1-4, wherein q is 0.

6. The compound of any one of claims 1-4, wherein q is 1.

7. The compound of any one of claims 1-6, wherein two instances of R^9 are joined to form a 5-membered heteroaryl ring or 5-membered heterocyclyl ring.

8. A compound of Formula (**I**):



(**I**),

or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, wherein:

R^1 is substituted or unsubstituted, C_{1-12} alkyl or substituted or unsubstituted, C_{1-12} heteroalkyl;

R^2 is hydrogen, substituted or unsubstituted, C_{1-12} alkyl, substituted or unsubstituted, C_{1-12} heteroalkyl, substituted or unsubstituted, 3-to 13-membered heterocyclyl-C_{1-12}-alkyl, substituted or unsubstituted, 3- to 13-membered carbocyclyl-C_{1-12}-alkyl, or a nitrogen protecting group;

when R^2 is unsubstituted methyl, R^1 is not unsubstituted ethyl;

R^3 is hydrogen, halogen, substituted or unsubstituted, C_{1-6} alkyl, $-OR^a$, $-COOR^a$, $-COR^a$, $-N(R^a)_2$, $-CN$, or $-(C=O)N(R^a)_2$;

each instance of R^a is independently hydrogen, substituted or unsubstituted, C_{1-6} alkyl, an oxygen protecting group when attached to an oxygen atom, or a nitrogen protecting group when attached to a nitrogen atom;

each instance of R^4 is independently hydrogen, halogen, substituted or unsubstituted, C_{1-6} alkyl, $-OR^a$, $-COOR^a$, $-COR^a$, $-N(R^a)_2$, $-CN$, or $-(C=O)N(R^a)_2$;

each instance of R^5 is independently hydrogen, halogen, substituted or unsubstituted, C_{1-6} alkyl, $-OR^a$, $-COOR^a$, $-COR^a$, $-N(R^a)_2$, $-CN$, or $-(C=O)N(R^a)_2$;

R^6 is hydrogen, substituted or unsubstituted, C_{1-6} alkyl, or a nitrogen protecting group;

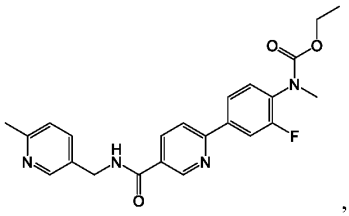
each instance of R^8 is independently hydrogen, halogen, or substituted or unsubstituted, C_{1-6} alkyl;

each instance of R^9 is independently hydrogen, halogen, substituted or unsubstituted, C_{1-6} alkyl, $-OR^a$, $-COOR^a$, $-COR^a$, $-N(R^a)_2$, $-CN$, or $-(C=O)N(R^a)_2$;

n is an integer from 0 to 4, inclusive;

m is an integer from 0 to 3, inclusive; and

p is an integer from 0 to 3, inclusive; provided that the compound is not of the formula: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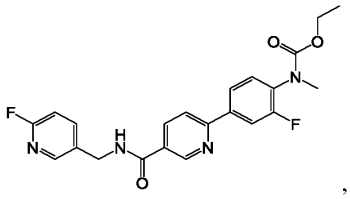
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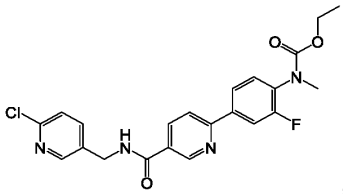
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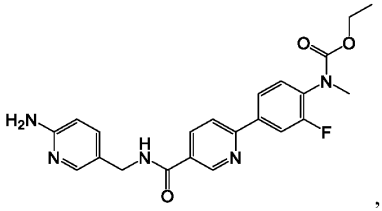
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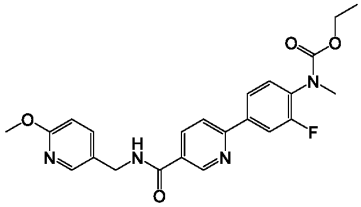
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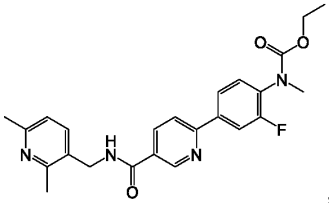
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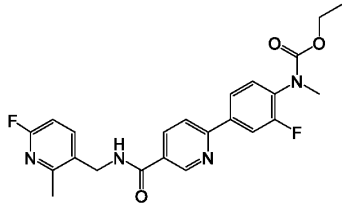
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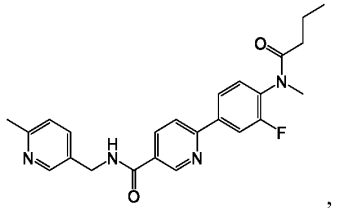
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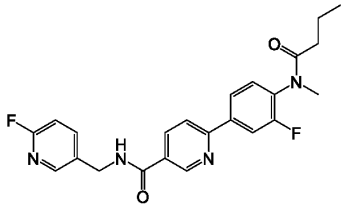
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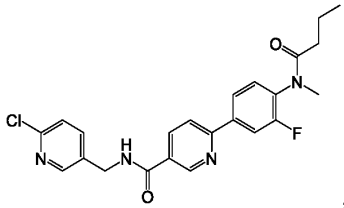
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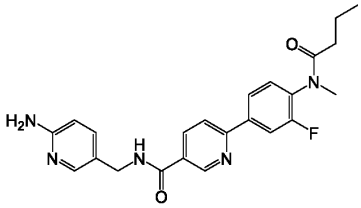
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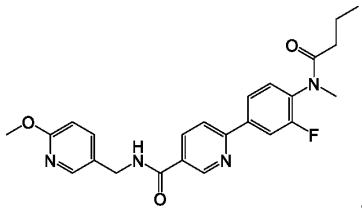
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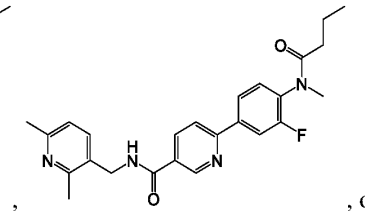
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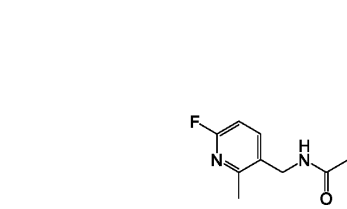
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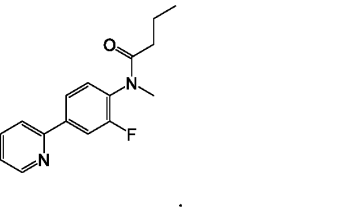
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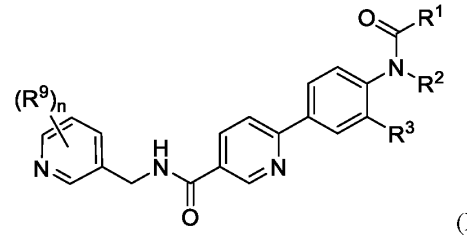
9. The compound of claim 1 or 8, wherein the compound is of Formula (**Iz**):



(**Iz**),

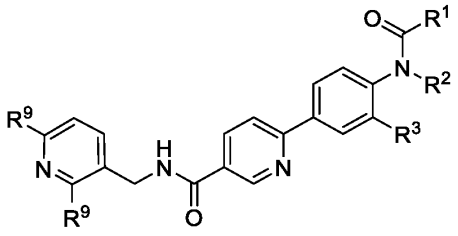
or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof.

10. The compound of any one of claims 1 and 8-9, wherein n is 0.

11. The compound of any one of claims 1 and 8-9, wherein n is 1.

12. The compound of any one of claims 1 and 8-9, wherein n is 2.

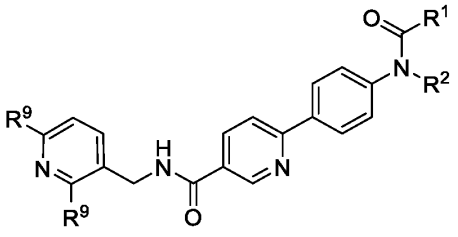
13. The compound of claim 1 or 8, wherein the compound is of Formula (**Ia**):



(**Ia**),

or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof.

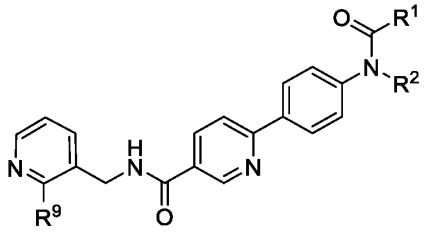
14. The compound of claim 1 or 8, wherein the compound is of Formula (**Ib**):



(**Ib**),

or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof.

15. The compound of claim 1 or 8, wherein the compound is of Formula (**Ic**):



(**Ic**),

or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof.

16. The compound of any one of claims 1-15, wherein each R^9 is independently hydrogen, substituted or unsubstituted methyl, chloro, fluoro, methoxy, or $-NH_2$.

17. The compound of any one of claims 1-16, wherein each R^9 is independently substituted or unsubstituted methyl, chloro, fluoro, methoxy, or $-NH_2$.

18. The compound of any one of claims 1-17, wherein R^9 is methyl.

19. The compound of any one of claims 1-13 and 16-18, wherein R^3 is hydrogen, substituted or unsubstituted methyl, fluoro, chloro, -CN, or $-COOR^a$.

20. The compound of any one of claims 1-13 and 16-18, wherein R^3 is hydrogen, substituted or unsubstituted methyl, chloro, bromo, iodo, -CN, or $-COOR^a$.

21. The compound of any one of claims 1-13 and 16-18, wherein R^3 is hydrogen, substituted or unsubstituted methyl, -CN, or $-COOR^a$.

22. The compound of any one of claims 1-13 and 16-18, wherein R^3 is methyl or chloro.

23. The compound of any one of claims 1-22, wherein R^1 is substituted or unsubstituted, C_{1-3} alkyl.

24. The compound of any one of claims 1-22, wherein R^1 is substituted or unsubstituted, C_{1-3} heteroalkyl.

25. The compound of any one of claims 1-22, wherein R^1 is methyl or ethyl.

26. The compound of any one of claims 1-25, wherein R^2 is substituted or unsubstituted, C_{1-6} alkyl or substituted or unsubstituted, C_{1-6} heteroalkyl.

27. The compound of any one of claims 1-25, wherein R^2 is substituted or unsubstituted, 3-to 6-membered heterocyclyl-C_{1-6}-alkyl, or substituted or unsubstituted, 3- to 6-membered carbocyclyl-C_{1-6}-alkyl.

28. The compound of any one of claims 1-25, wherein R^2 is substituted or unsubstituted propyl, substituted or unsubstituted isopropyl, substituted or unsubstituted butyl, or substituted or unsubstituted isobutyl.

29. The compound of any one of claims 1-25, wherein R^2 is substituted or unsubstituted 3-to 6-membered heterocyclyl-C_1-alkyl, or substituted or unsubstituted, 3- to 6-membered carbocyclyl-C_1-alkyl.

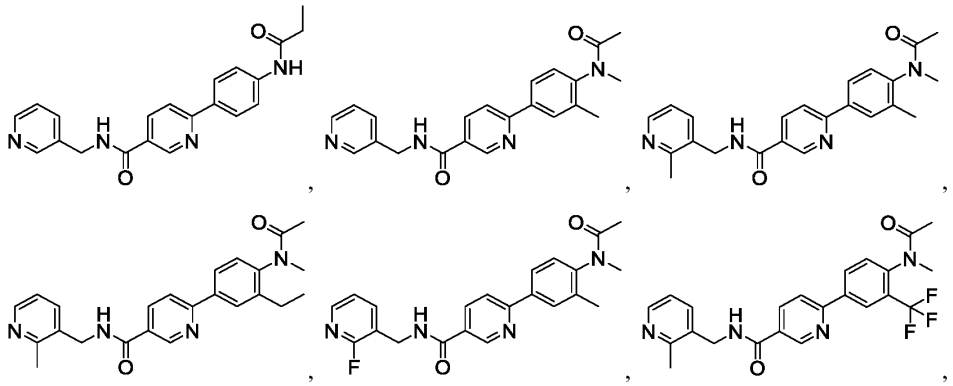
30. The compound of any one of claims 1-25, wherein R^2 is substituted or unsubstituted, 3- to 6-membered carbocyclyl-C_{1-6}-alkyl or substituted or unsubstituted, C_{1-6} alkyl.

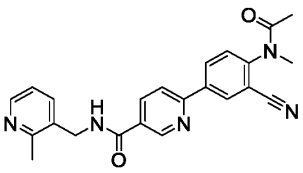
31. The compound of any one of claims 1-25, wherein R^2 is unsubstituted, 3- to 6-membered carbocyclyl-C_{1-2}-alkyl or substituted C_{1-6} alkyl.

32. The compound of any one of claims 1-31, wherein R^1 and R^2 comprise a combined number of carbon atoms greater than or equal to 4.

33. The compound of any one of claims 1-31, wherein R^1 and R^2 comprise a combined number of non-hydrogen atoms greater than or equal to 4.

34. The compound of claim 8, wherein the compound is selected from the group consisting of:

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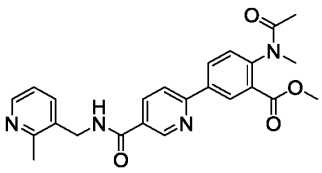
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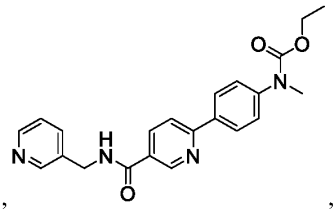
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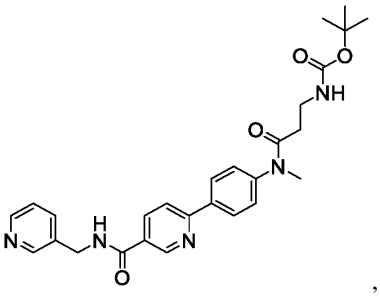
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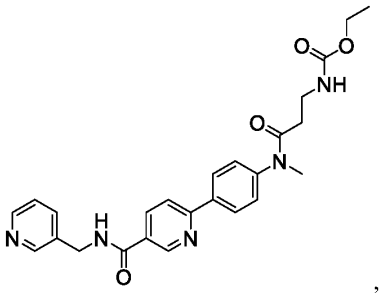
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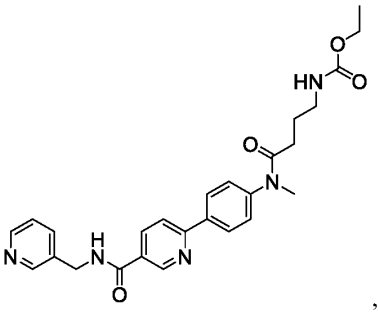
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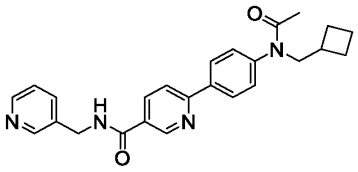
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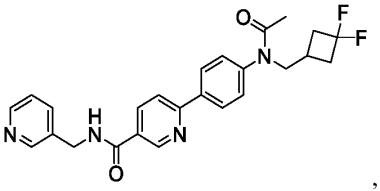
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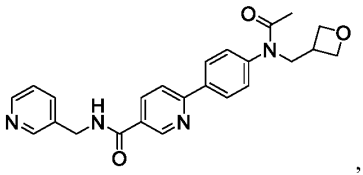
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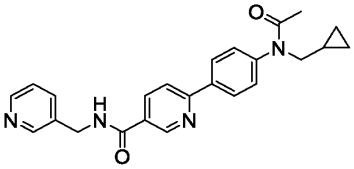
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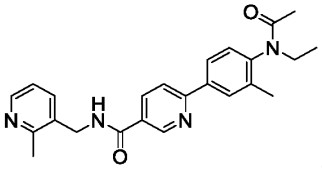
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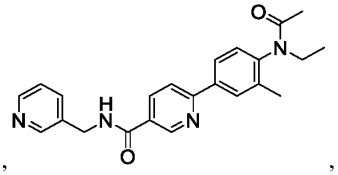
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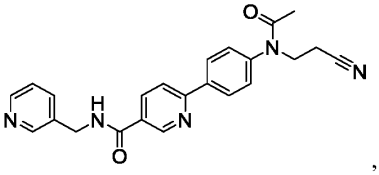
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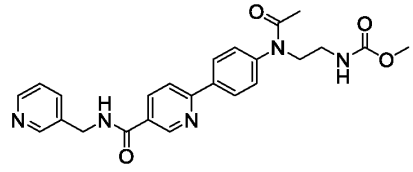
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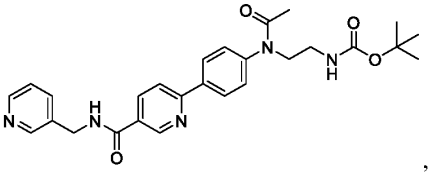
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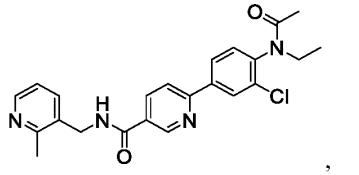
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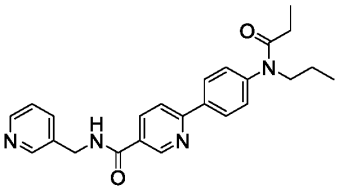
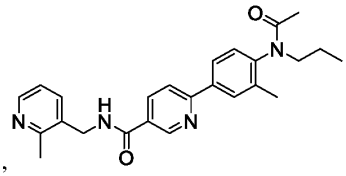
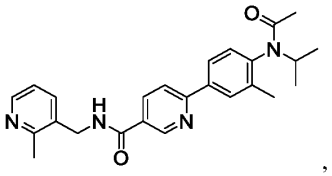
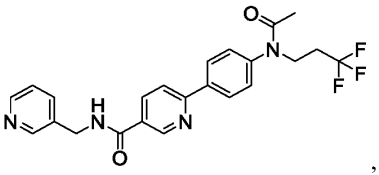
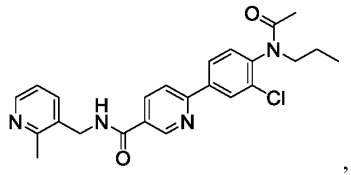
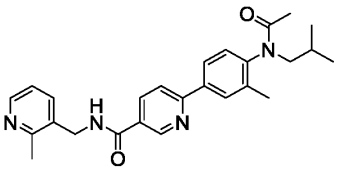
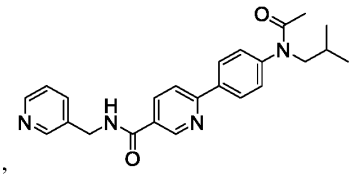
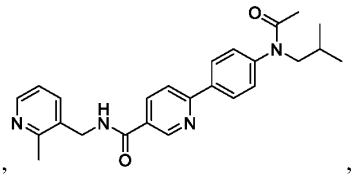
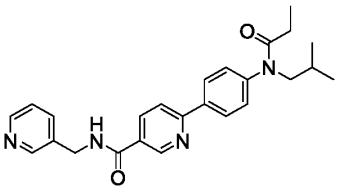
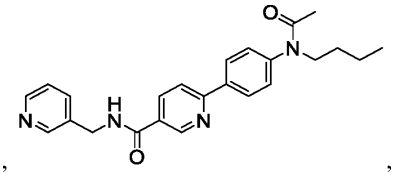
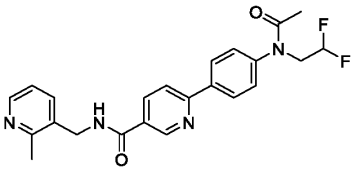
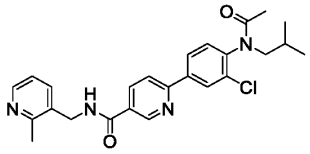
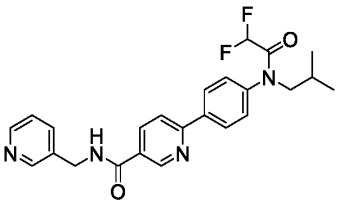
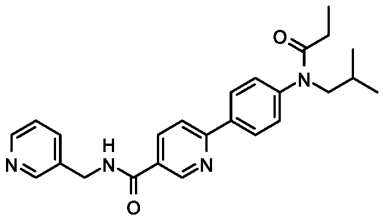
 ,  ,  ,
 ,  ,
 ,  ,  ,
 ,  ,
 ,  , and
 ,or a pharmaceutically acceptable salt, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof.

35. The compound of claim 1 or 8, wherein the compound is selected from the group consisting of: I-466, I-467, I-468, I-482, I-483, I-484, I-485, I-486, I-487, I-488, I-489, I-491, I-492, I-495, I-497, I-499, I-500, I-501, I-502, I-503, I-510, I-512, I-517, I-593, I-594, I-595, I-596, I-599, I-600, I-601, I-602, I-603, I-604, I-605, I-606, I-608, I-609, I-610, I-611, I-619, I-620, I-626, I-629, I-631, I-639, I-652, I-658, I-662, I-663, I-677, I-685, I-689, I-690, I-T2106, I-T2107, I-T2120, I-696, I-T2162, I-T2163, I-697, I-T2165, I-T2166, I-T2167, I-T2168, I-T2169, I-T2170, I-T2171, I-T2172, I-T2174, I-T2175, I-T2176, I-T2177, I-T2178, I-T2179, I-T2180, I-T2181, I-T2182, I-T2183, I-T2184, I-T2185, I-T2186, I-T2187, I-T2188, I-T2206, I-T2211, I-T2212, I-T2213, I-T2217, I-T2218, I-T2219, I-

T2223, I-T2224, I-T2225, I-T2241, I-T2242, I-T2243, I-T2244, I-T2245, I-T2246, I-T2247, I-T2248, I-T2249, I-T2250, I-T2251, I-T2252, I-T2253, I-T2254, I-T2255, I-T2256, I-T2257, and I-T2258, or a pharmaceutically acceptable salt, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof.

36. The compound of claim 1, wherein the compound is selected from the group consisting of: I-674, I-676, I-679, I-681, I-683, I-684, I-687, I-T2101, I-T2102, I-T2109, I-T2135, I-T2136, I-693, I-T2157, I-T2158, I-T2159, I-T2160, I-T2173, I-T2189, I-T2190, I-T2191, I-T2192, I-T2193, I-T2194, I-T2195, I-T2196, I-T2197, I-T2198, I-T2199, I-T2200, I-T2208, I-T2209, I-T2210, I-T2214, I-T2215, I-T2216, I-T2220, I-T2221, I-T2222, I-T2226, I-T2227, I-T2228, I-698, I-T2230, I-T2231, I-T2232, I-T2233, I-T2234, I-T2235, I-T2236, I-T2237, I-T2238, I-T2239, and I-T2240, or a pharmaceutically acceptable salt, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof.

37. The compound of claim 1, wherein the compound is selected from the group consisting of:



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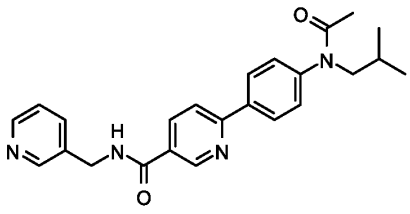

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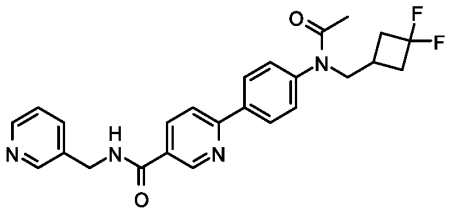

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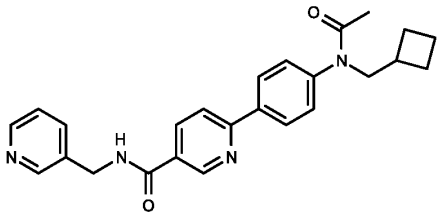

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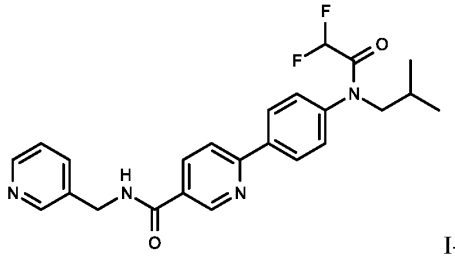

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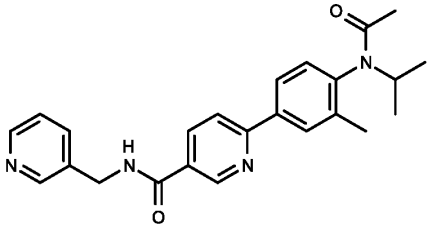

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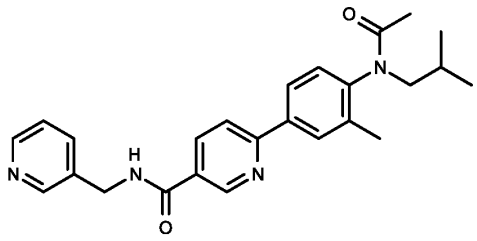

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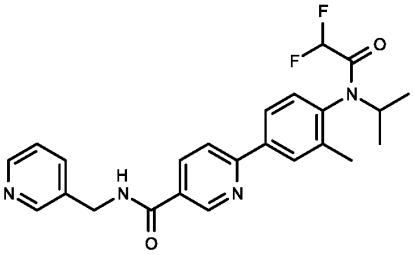

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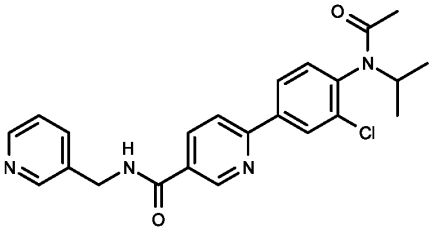

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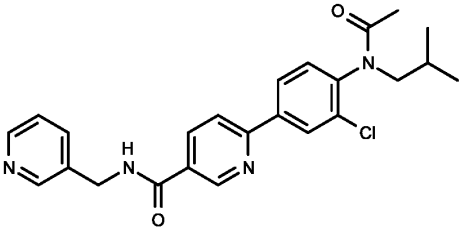

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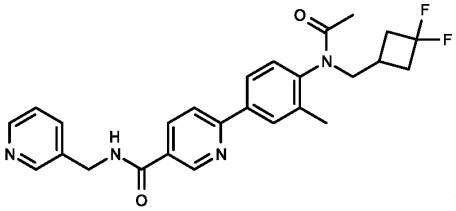

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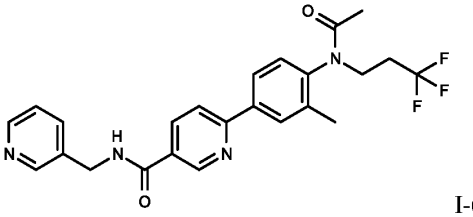

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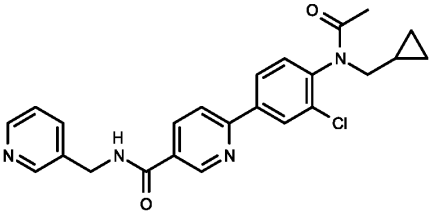

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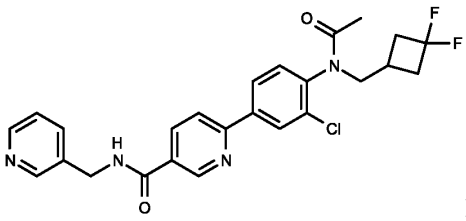

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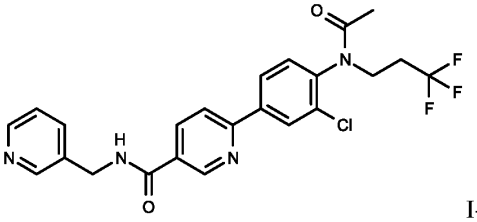

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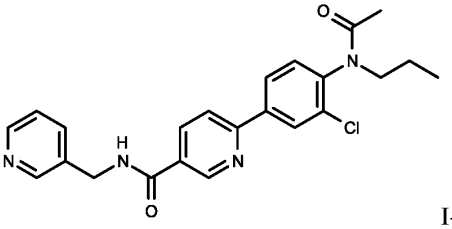
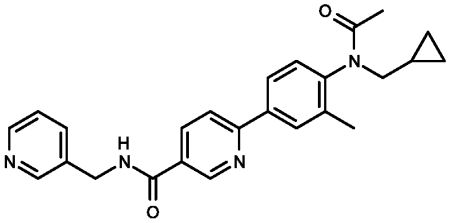
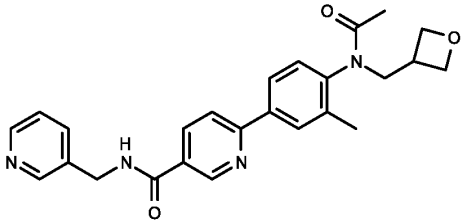


I-606,



I-609,



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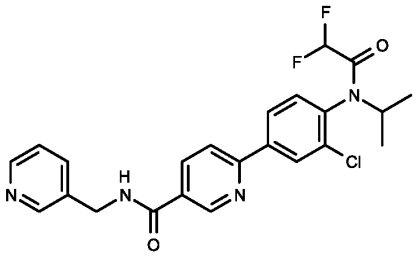

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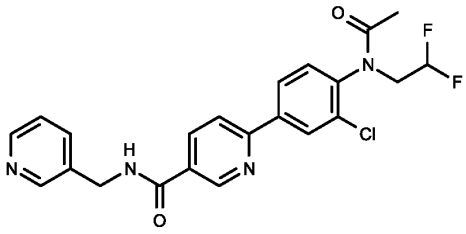

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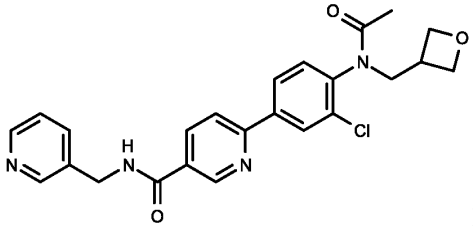

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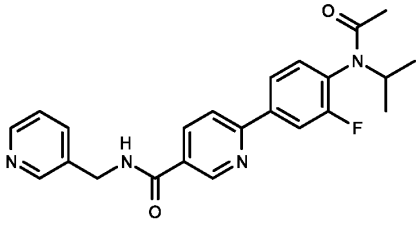

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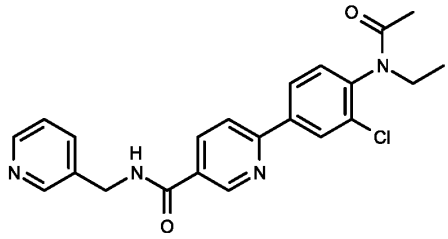

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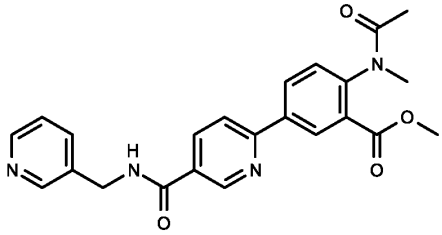

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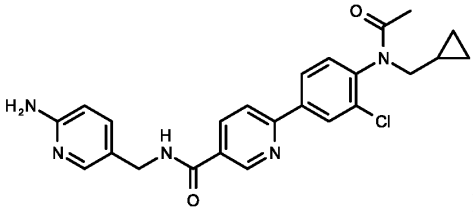

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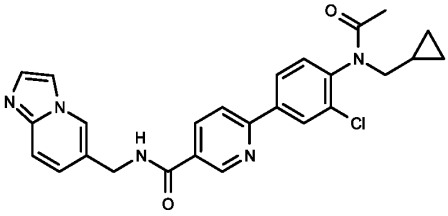

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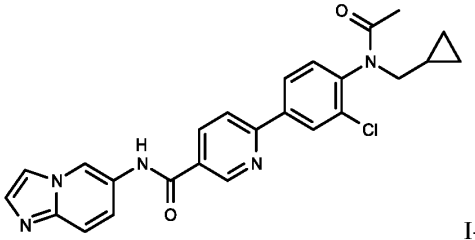

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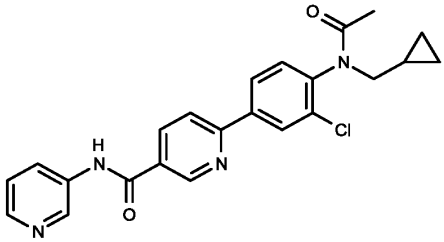

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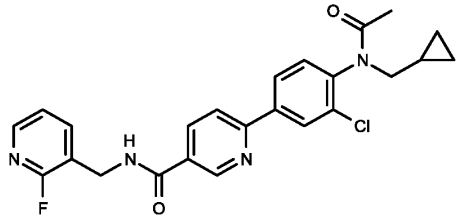

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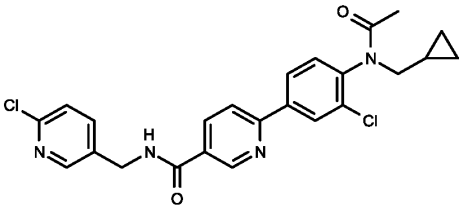

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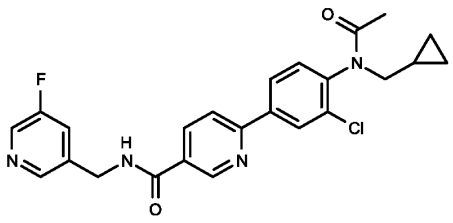

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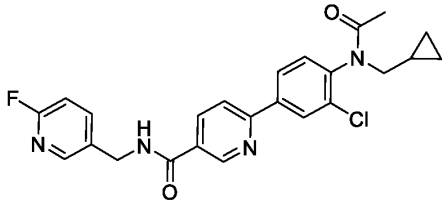
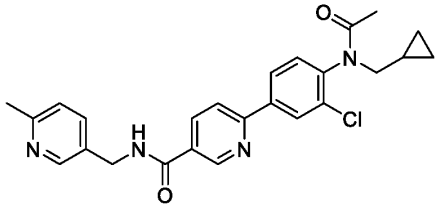
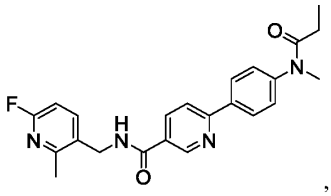


I-696,



and I-697, or a pharmaceutically acceptable salt, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof.

38. A compound selected from the group consisting of:



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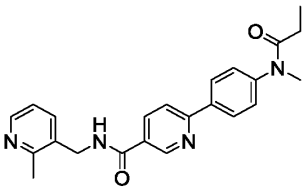

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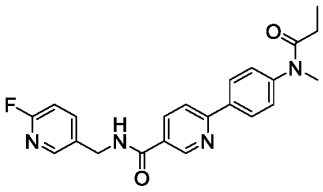

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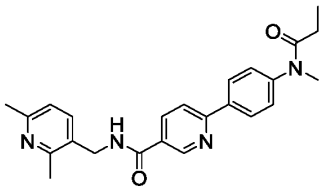

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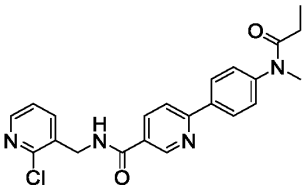

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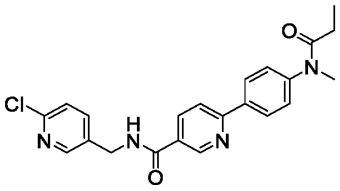

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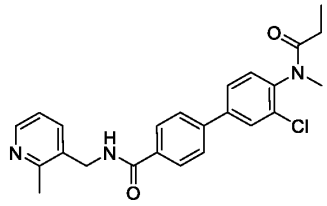

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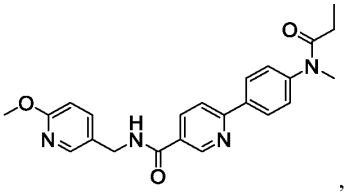
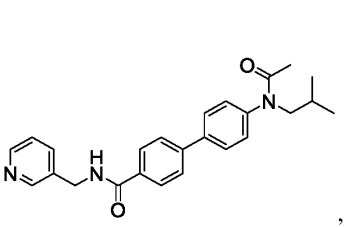


, a pharmaceutically acceptable salt, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof.

39. A compound selected from the group consisting of: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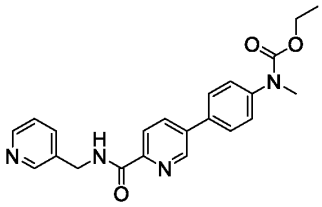
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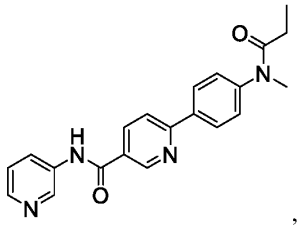
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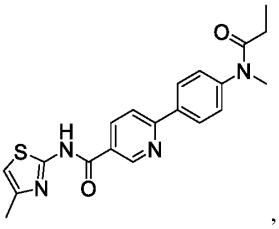
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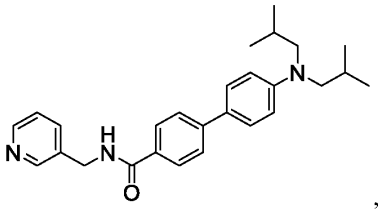
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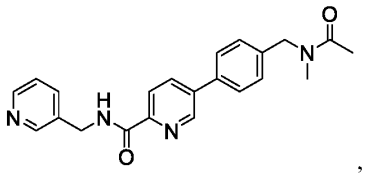
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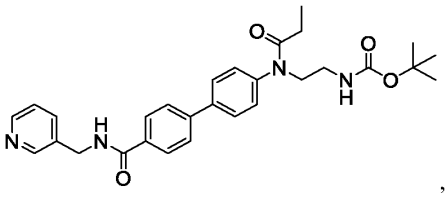
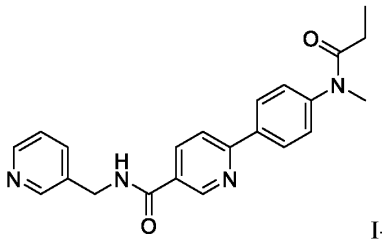
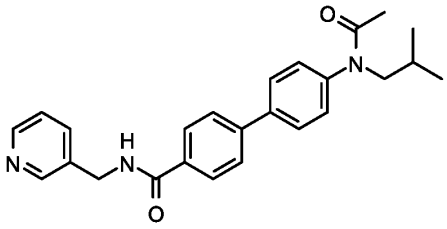
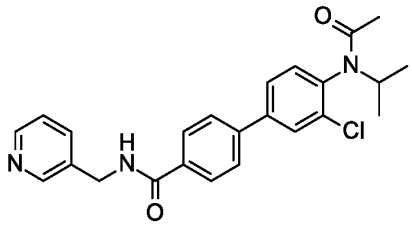
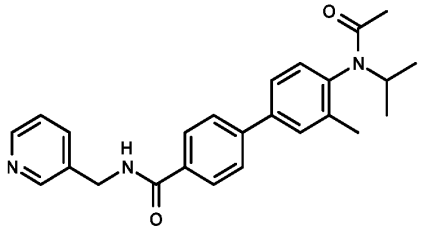
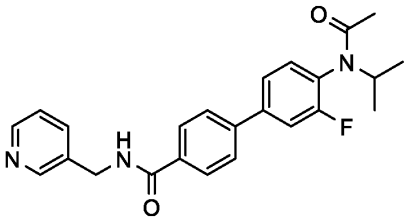

and , or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof.

40. A compound selected from the group consisting of: I-481, I-597, I-624, I-630, and I-675, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof.

41. A compound selected from the group consisting of: I-331, I-496, I-511, I-450, and I-527, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof.

42. A compound selected from the group consisting of:  I-331,

 I-402,  I-597,

 I-624, and  I-630, or

a pharmaceutically acceptable salt, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof.

43. A pharmaceutical composition comprising a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof; and optionally, a pharmaceutically acceptable excipient.

44. The pharmaceutical composition of claim 43 further comprising an additional pharmaceutical agent.

45. The pharmaceutical composition of claim 44, wherein the additional pharmaceutical agent is a chemotherapeutic agent.

46. The pharmaceutical composition of claim 44, wherein the additional pharmaceutical agent is a differentiation agent.

47. A method of inhibiting NAMPT in a subject, the method comprising administering to the subject a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate,

polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

48. A method of treating a disease or disorder in a subject by inhibiting NAMPT in a subject, the method comprising administering to the subject a therapeutically effective amount of a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

49. A method of treating a disease or disorder in a subject comprising administering to the subject a therapeutically effective amount of a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

50. The method of claim 49, wherein the disease or disorder is heart failure, dilated cardiomyopathy, pain, inflammation, acute respiratory distress syndrome, ventilator-induced lung injury, graft-versus-host disease (GCDH), pneumonia, pneumonitis, severe acute respiratory distress syndrome, arthritis, acute lung injury, colitis, inflammatory bowel disease (IBD), diabetes, obesity, axon degeneration, a tissue repair disorder, asthma, chronic obstructive pulmonary disease (COPD), osteoarthritis, osteoporosis, fibrotic diseases, dermatosis, psoriasis, atopic dermatitis, ultra-violet induced skin damage, an autoimmune disease, Alzheimer's disease, stroke, atherosclerosis, restenosis, glomerulonephritis, cachexia, inflammation associated with infection, vascular inflammation, an atherothrombotic disease, Acquired Immune Deficiency Syndrome (AIDS), adult respiratory distress syndrome, ataxia telangiectasia, atherogenic inflammatory disease, a cardiovascular disorder, a cerebrovascular disorder, acute coronary syndrome, polycystic ovary syndrome, preeclampsia, sepsis, septic shock, an intrauterine infection, Crohn's disease (CD), ulcerative colitis (UC), a neurodegenerative disorder, COVID-19, pulmonary inflammation, a coronavirus infection, or a tumor.

51. 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 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

52. The method of claim 51, wherein the cancer comprises cancer stem cells.

53. The method of any one of claims 51-52, wherein the cancer is gastric cancer, gastrointestinal stromal tumor, ovarian cancer, lung cancer, breast cancer, pancreatic cancer, or prostate cancer.

54. The method of any one of claims 51-53, wherein the cancer is gastric cancer subtype GS or gastric cancer subtype CIN.

55. The method of any one of claims 51-53, wherein the cancer is colorectal cancer.

56. The method of claim 55, wherein the cancer is colorectal cancer subtype CMS2 or colorectal cancer subtype CMS4.

57. The method of any one of claims 51-52, wherein the cancer is testicular cancer.

58. The method of any one of claims 51-52, wherein the cancer is liver cancer.

59. The method of any one of claims 51-52, wherein the cancer is endometrial cancer.

60. The method of claim 59, wherein the cancer is uterine cancer.

61. The method of any one of claims 51-52, wherein the cancer is small cell lung cancer.

62. The method of any one of claims 51-52, wherein the cancer is lymphoma.

63. The method of claim 62, wherein the cancer is non-Hodgkin's lymphoma, B-cell lymphoma, large B-cell lymphoma, Burkitt's lymphoma, Burkitt's B-cell lymphoma, or large cell immunoblastic lymphoma.

64. The method of any one of claims 51-52, wherein the cancer is leukemia.

65. The method of claim 64, wherein the cancer is acute myeloid leukemia.

66. The method of claim 65, wherein the cancer is undifferentiated acute myeloblastic leukemia (M0), acute myeloblastic leukemia with minimal maturation (M1), acute myeloblastic leukemia with maturation (M2), acute promyelocytic leukemia (APL) (M3), acute myelomonocytic leukemia (M4), acute myelomonocytic leukemia with eosinophilia (M4 eos), acute monocytic leukemia (M5), acute erythroid leukemia (M6), or acute megakaryoblastic leukemia (M7).

67. The method of claim 64, wherein the cancer is acute monocytic leukemia, acute lymphocytic leukemia, or B-cell acute lymphocytic leukemia.

68. The method of claim 64, wherein the cancer is chronic myelocytic leukemia (CML) or chronic lymphocytic leukemia.

69. The method of claim 64, wherein the cancer is acute lymphoblastic leukemia, B-cell acute lymphoblastic leukemia, or T-cell acute lymphoblastic leukemia.

70. The method of any one of claims 51-52, wherein the cancer is multiple myeloma.

71. The method of claim 70, wherein the cancer is B-cell myeloma.

72. The method of any one of claims 51-71, wherein the subject has or is undergoing one or more additional cancer therapies.

73. The method of any one of claims 51-72, wherein the subject is in need of a regenerative medicine.

74. A method comprising contacting a cell, tissue, or biological sample with an effective amount of a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

75. The method of claim 74, wherein the cell is characterized by one or more embryonic, pluripotent, or adult stem cell properties.

76. The method of claim 74 or 75, wherein the cell is a cancer stem cell, an embryonic stem cell, an induced pluripotent stem cell, a neural stem cell, a differentiated cancer cell, or an adult stem cell.

77. The method of any one of claims 74-76, wherein the contacting reduces one or more embryonic properties or adult stem cell properties of the cell.

78. The method of any one of claims 74-77, wherein the contacting is in vitro or ex vivo.

79. The method of any one of claims 74-78, wherein the contacting reduces cell viability and/or prevents cell proliferation.

80. The method of any one of claims 74-79, wherein the contacting kills the cell.

81. The method of any one of claims 74-80, wherein the contacting inhibits tumor growth.

82. The method of any one of claims 74-81, wherein the contacting prevents metastasis.

83. The method of any one of claims 74-82, wherein the contacting differentiates one or more cells.

84. The method of any one of claims 74-83, wherein the contacting regenerates one or more cells.

85. A method comprising killing a cell with an effective amount of a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

86. The method of claim 85, wherein the cell is characterized by one or more embryonic properties or adult stem cell properties.

87. The method of any one of claims claim 85 or 86, wherein the cell is a cancer stem cell, an embryonic stem cell, an induced pluripotent stem cell, a neural stem cell, an adult stem cell, or a differentiated cancer cell.

88. The method of any one of claims 85-87, wherein the contacting reduces one or more embryonic properties or adult stem cell properties of the cell.

89. The method of any one of claims 85-88, wherein the contacting is in vitro or ex vivo.

90. A method of inhibiting production of nicotinamide adenine dinucleotide in a subject, the method comprising administering to the subject a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

91. A method of treating a disease or disorder in a subject by inhibiting the production of nicotinamide adenine dinucleotide in the subject, the method comprising administering to the subject a therapeutically effective amount of a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

92. A method of inhibiting production of nicotinamide mononucleotide in a subject, the method comprising administering to the subject a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

93. A method of treating a disease or disorder in a subject by inhibiting the production of nicotinamide mononucleotide in the subject, the method comprising administering to the subject a therapeutically effective amount of a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

94. A method of reducing inflammatory cell infiltration in a subject, the method comprising administering to the subject a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

95. A method of treating a disease or disorder in a subject by reducing inflammatory cell infiltration in the subject, the method comprising administering to the subject a therapeutically effective amount of a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

96. A method of reducing cell proliferation in a subject, the method comprising administering to the subject a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

97. A method of treating a disease or disorder in a subject by reducing cell proliferation in the subject, the method comprising administering to the subject a therapeutically effective amount of a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

98. A method of reducing cellular metabolic activity or state in a subject, the method comprising administering to the subject a compound of any one of claims 1-42, or a pharmaceutically acceptable

salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

99. A method of treating a disease or disorder in a subject by reducing cellular metabolic activity or state in the subject, the method comprising administering to the subject a therapeutically effective amount of a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

100. A method of decreasing inflammatory activity in a subject, the method comprising administering to the subject a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

101. A method of treating a disease or disorder in a subject by decreasing inflammatory activity in the subject, the method comprising administering to the subject a therapeutically effective amount of a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

102. A method of decreasing NAMPT signaling in a subject, the method comprising administering to the subject a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

103. A method of treating a disease or disorder in a subject by decreasing NAMPT signaling in the subject, the method comprising administering to the subject a therapeutically effective amount of a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

104. A method of inhibiting a NAMPT pathway in a subject, the method comprising administering to the subject a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

105. A method of treating a disease or disorder in a subject by inhibiting a NAMPT pathway in the subject, the method comprising administering to the subject a therapeutically effective amount of a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

106. A method of inhibiting a NAMPT pathway in a cell, tissue, or biological sample, the method comprising contacting the cell, tissue, or biological sample with a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

107. A method of decreasing NAMPT signaling in a cell, tissue, or biological sample, the method comprising contacting the cell, tissue, or biological sample with a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

108. A method of decreasing inflammatory activity in a cell, tissue, or biological sample, the method comprising contacting the cell, tissue, or biological sample with a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

109. A method of reducing cellular metabolic activity or state in a cell, tissue, or biological sample, the method comprising contacting the cell, tissue, or biological sample with a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

110. A method of reducing cell proliferation in a cell, tissue, or biological sample, the method comprising contacting the cell, tissue, or biological sample with a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

111. A method of reducing inflammatory cell infiltration in a cell, tissue, or biological sample, the method comprising contacting the cell, tissue, or biological sample with a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

112. A method of inhibiting production of nicotinamide adenine dinucleotide in a cell, tissue, or biological sample, the method comprising contacting the cell, tissue, or biological sample with a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

113. A method of inhibiting production of nicotinamide mononucleotide in a cell, tissue, or biological sample, the method comprising contacting the cell, tissue, or biological sample with a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

114. A method of inhibiting NAMPT in a cell, tissue, or biological sample, the method comprising contacting the cell, tissue, or biological sample with a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

115. The method of any one of claims 106-114, wherein the contacting is in vitro or ex vivo.

116. A method of treating a disease or disorder in a subject in need thereof comprising administering to the subject a therapeutically effective amount of a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46, and an additional pharmaceutical agent.

117. The method of claim 116, wherein the additional pharmaceutical agent is administered, before, concurrently with, or after the compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof, or composition of any one of claims 43-46.

118. The method of any one of claims 48, 91, 93, 95, 97, 99, 101, 103, 105, and 116-117, wherein the disease or disorder is heart failure, dilated cardiomyopathy, pain, inflammation, acute respiratory distress syndrome, ventilator-induced lung injury, graft-versus-host disease (GCDH), pneumonia, pneumonitis, severe acute respiratory distress syndrome, arthritis, acute lung injury, colitis, inflammatory bowel disease (IBD), diabetes, obesity, axon degeneration, a tissue repair disorder, asthma, chronic obstructive pulmonary disease (COPD), osteoarthritis, osteoporosis, fibrotic diseases, dermatosis, psoriasis, atopic dermatitis, ultra-violet induced skin damage, an autoimmune disease, Alzheimer's disease, stroke, atherosclerosis, restenosis, glomerulonephritis, cachexia, inflammation associated with infection, vascular inflammation, an atherothrombotic disease, Acquired Immune Deficiency Syndrome (AIDS), adult respiratory distress syndrome, ataxia telangiectasia, atherogenic inflammatory disease, a cardiovascular disorder, a cerebrovascular disorder, acute coronary syndrome, polycystic ovary syndrome, preeclampsia, sepsis, septic shock, an intrauterine infection, Crohn's disease (CD), ulcerative colitis (UC), a neurodegenerative disorder, COVID-19, pulmonary inflammation, a coronavirus infection, or a tumor.

119. A kit comprising:

a compound of any one of claims 1-42, or a pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, or prodrug thereof; or a pharmaceutical composition of claim 43-46; and

instructions for using the compound, pharmaceutically acceptable salt, solvate, hydrate, polymorph, co-crystal, tautomer, stereoisomer, isotopically labeled derivative, prodrug, or pharmaceutical composition.