

What is claimed is:

1. A salt, which is 4,4'-((((2,2'-dichloro-[1,1'-biphenyl]-3,3'-diyl)bis(azanediyl))bis(carbonyl))bis(1-methyl-1,4,6,7-tetrahydro-5H-imidazo[4,5-c]pyridine-2,5-diyl))bis(ethane-2,1-diyl))bis(bicyclo[2.2.1]heptane-1-carboxylic acid) dihydrochloric acid salt.
2. The salt of claim 1, having Form I.
3. The salt of claim 2, having an X-ray powder diffraction pattern as substantially shown in Figure 7.
4. The salt of claim 2, having a DSC thermogram substantially as depicted in Figure 8.
5. The salt of claim 2, having a thermogravimetric analysis (TGA) thermogram substantially as depicted in Figure 9.
6. The salt of claim 2, having at least one X-ray powder diffraction (XRPD) peak, in terms of 2-theta (± 0.2 degrees), selected from 5.7, 8.5, 9.6, 9.9, 11.8, 12.3, 13.1, 13.4, 13.8, 14.2, 14.5, 15.4, 15.8, 16.8, 17.3 and 17.6 degrees.
7. The salt of claim 2, having at least two X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 5.7, 8.5, 9.6, 9.9, 11.8, 12.3, 13.1, 13.4, 13.8, 14.2, 14.5, 15.4, 15.8, 16.8, 17.3 and 17.6 degrees.
8. The salt of claim 2, having at least three X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 5.7, 8.5, 9.6, 9.9, 11.8, 12.3, 13.1, 13.4, 13.8, 14.2, 14.5, 15.4, 15.8, 16.8, 17.3 and 17.6 degrees.
9. The salt of claim 2, having at least four X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 5.7, 8.5, 9.6, 9.9, 11.8, 12.3, 13.1, 13.4, 13.8, 14.2, 14.5, 15.4, 15.8, 16.8, 17.3 and 17.6 degrees.
10. The salt of claim 2, having characteristic X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), at 5.7, 8.5, 9.6, 9.9, 11.8, 12.3, 13.1, 13.4, 13.8, 14.2, 14.5, 15.4, 15.8, 16.8, 17.3 and 17.6 degrees.
11. The salt of claim 2, having a first endothermic peak with an onset temperature at 31.1 °C and a maximum at 91.4 °C, and a second endothermic peak with an onset temperature at 231.0 °C and a maximum at 236.4 °C in a differential scanning calorimetry (DSC) thermogram.

12. The salt of claim 1, having Form II.
13. The salt of claim 12, having an X-ray powder diffraction pattern as substantially shown in Figure 11.
14. The salt of claim 12, having a DSC thermogram substantially as depicted in Figure 12.
15. The salt of claim 12, having a thermogravimetric analysis (TGA) thermogram substantially as depicted in Figure 13.
16. The salt of claim 12, having at least one X-ray powder diffraction (XRPD) peak, in terms of 2-theta (± 0.2 degrees), selected from 4.6, 6.9, 8.9, 11.2, 11.7, 13.2, 13.9, 14.3, 14.8, 16.0, 16.7, 17.2, 17.9, 25.3 and 25.6 degrees.
17. The salt of claim 12, having at least two X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 4.6, 6.9, 8.9, 11.2, 11.7, 13.2, 13.9, 14.3, 14.8, 16.0, 16.7, 17.2, 17.9, 25.3 and 25.6 degrees.
18. The salt of claim 12, having at least three X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 4.6, 6.9, 8.9, 11.2, 11.7, 13.2, 13.9, 14.3, 14.8, 16.0, 16.7, 17.2, 17.9, 25.3 and 25.6 degrees.
19. The salt of claim 12, having at least four X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 4.6, 6.9, 8.9, 11.2, 11.7, 13.2, 13.9, 14.3, 14.8, 16.0, 16.7, 17.2, 17.9, 25.3 and 25.6 degrees.
20. The salt of claim 12, having characteristic X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), at 4.6, 6.9, 8.9, 11.2, 11.7, 13.2, 13.9, 14.3, 14.8, 16.0, 16.7, 17.2, 17.9, 25.3 and 25.6 degrees.
21. The salt of claim 12, having a first endothermic peak with an onset temperature at 22.2 °C and a maximum at 89.7 °C, and a second endothermic peak with an onset temperature at 251.7 °C and a maximum at 258.3 °C in a differential scanning calorimetry (DSC) thermogram.
22. The salt of claim 1, having Form III.
23. The salt of claim 22, having an X-ray powder diffraction pattern as substantially shown in Figure 14.

24. The salt of claim 22, having a DSC thermogram substantially as depicted in Figure 15.
25. The salt of claim 22, having a thermogravimetric analysis (TGA) thermogram substantially as depicted in Figure 16.
26. The salt of claim 22, having at least one X-ray powder diffraction (XRPD) peak, in terms of 2-theta (± 0.2 degrees), selected from 9.2, 11.2, 14.9, 17.0, 17.8, 19.7, 24.4 and 25.9 degrees.
27. The salt of claim 22, having at least two X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 9.2, 11.2, 14.9, 17.0, 17.8, 19.7, 24.4 and 25.9 degrees.
28. The salt of claim 22, having at least three X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 9.2, 11.2, 14.9, 17.0, 17.8, 19.7, 24.4 and 25.9 degrees.
29. The salt of claim 22, having at least four X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 9.2, 11.2, 14.9, 17.0, 17.8, 19.7, 24.4 and 25.9 degrees.
30. The salt of claim 22, having characteristic X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), at 9.2, 11.2, 14.9, 17.0, 17.8, 19.7, 24.4 and 25.9 degrees.
31. The salt of claim 22, having an endothermic peak with an onset temperature of 247 ± 3 °C and a maximum at 258 ± 3 °C in a differential scanning calorimetry (DSC) thermogram.
32. The salt of claim 1, having Form IV.
33. The salt of claim 32, having an X-ray powder diffraction pattern as substantially shown in Figure 17.
34. The salt of claim 32, having a DSC thermogram substantially as depicted in Figure 18.
35. The salt of claim 32, having a thermogravimetric analysis (TGA) thermogram substantially as depicted in Figure 19.
36. The salt of claim 32, having at least one X-ray powder diffraction (XRPD) peak, in terms of 2-theta (± 0.2 degrees), selected from 5.4, 8.8, 10.9, 13.0, 15.1, 16.2, 17.5, 21.9 and 26.3 degrees.

37. The salt of claim 32, having at least two X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 5.4, 8.8, 10.9, 13.0, 15.1, 16.2, 17.5, 21.9 and 26.3 degrees.
38. The salt of claim 32, having at least three X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 5.4, 8.8, 10.9, 13.0, 15.1, 16.2, 17.5, 21.9 and 26.3 degrees.
39. The salt of claim 32, having at least four X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 5.4, 8.8, 10.9, 13.0, 15.1, 16.2, 17.5, 21.9 and 26.3 degrees.
40. The salt of claim 32, having characteristic X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), at 5.4, 8.8, 10.9, 13.0, 15.1, 16.2, 17.5, 21.9 and 26.3 degrees.
41. The salt of claim 32, having an endothermic peak with an onset temperature of 268 ± 3 °C and a maximum at 273 ± 3 °C in a differential scanning calorimetry (DSC) thermogram.
42. The salt of claim 1, having Form V.
43. The salt of claim 42, having an X-ray powder diffraction pattern as substantially shown in Figure 21.
44. The salt of claim 42, having a DSC thermogram substantially as depicted in Figure 22.
45. The salt of claim 42, having a thermogravimetric analysis (TGA) thermogram substantially as depicted in Figure 23.
46. The salt of claim 42, having at least one X-ray powder diffraction (XRPD) peak, in terms of 2-theta (± 0.2 degrees), selected from 5.8, 9.1, 13.4, 14.8, 16.6, 17.1, 18.1 and 19.3 degrees.
47. The salt of claim 42, having at least two X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 5.8, 9.1, 13.4, 14.8, 16.6, 17.1, 18.1 and 19.3 degrees.
48. The salt of claim 42, having at least three X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 5.8, 9.1, 13.4, 14.8, 16.6, 17.1, 18.1 and 19.3 degrees.

49. The salt of claim 42, having at least four X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 5.8, 9.1, 13.4, 14.8, 16.6, 17.1, 18.1 and 19.3 degrees.
50. The salt of claim 42, having characteristic X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), at 5.8, 9.1, 13.4, 14.8, 16.6, 17.1, 18.1 and 19.3 degrees.
51. The salt of claim 42, having an endothermic peak with an onset temperature of 241 ± 3 °C and a maximum at 249 ± 3 °C in a differential scanning calorimetry (DSC) thermogram.
52. The salt of claim 1, having Form VII.
53. The salt of claim 52, having an X-ray powder diffraction pattern as substantially shown in Figure 29.
54. The salt of claim 52, having a DSC thermogram substantially as depicted in Figure 30.
55. The salt of claim 52, having a thermogravimetric analysis (TGA) thermogram substantially as depicted in Figure 31.
56. The salt of claim 52, having at least one X-ray powder diffraction (XRPD) peak, in terms of 2-theta (± 0.2 degrees), selected from 5.7, 9.9, 11.5, 14.1, 14.9, 17.0 and 24.4 degrees.
57. The salt of claim 52, having at least two X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 5.7, 9.9, 11.5, 14.1, 14.9, 17.0 and 24.4 degrees.
58. The salt of claim 52, having at least three X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 5.7, 9.9, 11.5, 14.1, 14.9, 17.0 and 24.4 degrees.
59. The salt of claim 52, having at least four X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 5.7, 9.9, 11.5, 14.1, 14.9, 17.0 and 24.4 degrees.
60. The salt of claim 52, having characteristic X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), at 5.7, 9.9, 11.5, 14.1, 14.9, 17.0 and 24.4 degrees.
61. The salt of claim 52, having a first endothermic peak with an onset temperature at 44 ± 3 °C and a maximum at 85 ± 3 °C, and a second endothermic peak with an onset

temperature at 260 ± 3 °C and a maximum at 274 ± 3 °C in a differential scanning calorimetry (DSC) thermogram.

62. The salt of claim 1, having Form VIII.
63. The salt of claim 62, having an X-ray powder diffraction pattern as substantially shown in Figure 33.
64. The salt of claim 62, having a DSC thermogram substantially as depicted in Figure 34.
65. The salt of claim 62, having a thermogravimetric analysis (TGA) thermogram substantially as depicted in Figure 35.
66. The salt of claim 62, having at least one X-ray powder diffraction (XRPD) peak, in terms of 2-theta (± 0.2 degrees), selected from 6.6, 11.2, 13.1, 14.7, 16.7, 19.0 and 24.1 degrees.
67. The salt of claim 62, having at least two X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 6.6, 11.2, 13.1, 14.7, 16.7, 19.0 and 24.1 degrees.
68. The salt of claim 62, having at least three X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 6.6, 11.2, 13.1, 14.7, 16.7, 19.0 and 24.1 degrees.
69. The salt of claim 62, having at least four X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 6.6, 11.2, 13.1, 14.7, 16.7, 19.0 and 24.1 degrees.
70. The salt of claim 62, having characteristic X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), at 6.6, 11.2, 13.1, 14.7, 16.7, 19.0 and 24.1 degrees.
71. The salt of claim 62, having a first endothermic peak with an onset temperature at 44 ± 3 °C and a maximum at 78 ± 3 °C, and a second endothermic peak with an onset temperature at 246 ± 3 °C and a maximum at 253 ± 3 °C in a differential scanning calorimetry (DSC) thermogram.
72. The salt of claim 1, having Form IX.
73. The salt of claim 72, having an X-ray powder diffraction pattern as substantially shown in Figure 37.

74. The salt of claim 72, having a DSC thermogram substantially as depicted in Figure 38.
75. The salt of claim 72, having a thermogravimetric analysis (TGA) thermogram substantially as depicted in Figure 39.
76. The salt of claim 72, having at least one X-ray powder diffraction (XRPD) peak, in terms of 2-theta (± 0.2 degrees), selected from 3.8, 6.6, 10.7, 13.1, 15.3, 16.3, 17.5 and 19.1 degrees.
77. The salt of claim 72, having at least two X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 3.8, 6.6, 10.7, 13.1, 15.3, 16.3, 17.5 and 19.1 degrees.
78. The salt of claim 72, having at least three X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 3.8, 6.6, 10.7, 13.1, 15.3, 16.3, 17.5 and 19.1 degrees.
79. The salt of claim 72, having at least four X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 3.8, 6.6, 10.7, 13.1, 15.3, 16.3, 17.5 and 19.1 degrees.
80. The salt of claim 72, having characteristic X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), at 3.8, 6.6, 10.7, 13.1, 15.3, 16.3, 17.5 and 19.1 degrees.
81. The salt of claim 72, having a first endothermic peak with an onset temperature at 43 ± 3 °C and a maximum at 64 ± 3 °C, and a second endothermic peak at 116 ± 3 °C and a maximum at 132 ± 3 °C, and a third endothermic peak at 266 ± 3 °C and a maximum at 276 ± 3 °C in a differential scanning calorimetry (DSC) thermogram.
82. A salt, which is 4,4'-((((2,2'-dichloro-[1,1'-biphenyl]-3,3'-diyl)bis(azanediyl))bis(carbonyl))bis(1-methyl-1,4,6,7-tetrahydro-5H-imidazo[4,5-c]pyridine-2,5-diyl))bis(ethane-2,1-diyl))bis(bicyclo[2.2.1]heptane-1-carboxylic acid) mono-hydrochloric acid salt.
83. The salt of claim 82, having Form VI.
84. The salt of claim 83, having an X-ray powder diffraction pattern as substantially shown in Figure 25.

- 85.** The salt of claim 83, having a DSC thermogram substantially as depicted in Figure 26.
- 86.** The salt of claim 83, having a thermogravimetric analysis (TGA) thermogram substantially as depicted in Figure 27.
- 87.** The salt of claim 83, having at least one X-ray powder diffraction (XRPD) peak, in terms of 2-theta (± 0.2 degrees), selected from 6.4, 11.1, 12.6, 13.8, 14.6, 15.7, 16.9, 17.6, 19.0 and 19.5 degrees.
- 88.** The salt of claim 83, having at least two X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 6.4, 11.1, 12.6, 13.8, 14.6, 15.7, 16.9, 17.6, 19.0 and 19.5 degrees.
- 89.** The salt of claim 83, having at least three X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 6.4, 11.1, 12.6, 13.8, 14.6, 15.7, 16.9, 17.6, 19.0 and 19.5 degrees.
- 90.** The salt of claim 83, having at least four X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 6.4, 11.1, 12.6, 13.8, 14.6, 15.7, 16.9, 17.6, 19.0 and 19.5 degrees.
- 91.** The salt of claim 83, having characteristic X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), at 6.4, 11.1, 12.6, 13.8, 14.6, 15.7, 16.9, 17.6, 19.0 and 19.5 degrees.
- 92.** The salt of claim 83, having a first endothermic peak with an onset temperature at 44 ± 3 °C and a maximum at 77 ± 3 °C, and a second endothermic peak with an onset temperature at 244 ± 3 °C and a maximum at 251 ± 3 °C in a differential scanning calorimetry (DSC) thermogram.
- 93.** A salt, which is 4,4'-((((2,2'-dichloro-[1,1'-biphenyl]-3,3'-diyl)bis(azanediyl))bis(carbonyl))bis(1-methyl-1,4,6,7-tetrahydro-5H-imidazo[4,5-c]pyridine-2,5-diyl))bis(ethane-2,1-diyl))bis(bicyclo[2.2.1]heptane-1-carboxylic acid) di-sodium salt.
- 94.** The salt of claim 93, having an X-ray powder diffraction pattern as substantially shown in Figure 4.
- 95.** The salt of claim 93, having a DSC thermogram substantially as depicted in Figure 5.

- 96.** The salt of claim 93, having a thermogravimetric analysis (TGA) thermogram substantially as depicted in Figure 6.
- 97.** The salt of claim 93, having at least one X-ray powder diffraction (XRPD) peak, in terms of 2-theta (± 0.2 degrees), selected from 5.3, 7.1, 10.6, 13.9, 14.3, 16.1 and 17.4 degrees.
- 98.** The salt of claim 93, having at least two X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 5.3, 7.1, 10.6, 13.9, 14.3, 16.1 and 17.4 degrees.
- 99.** The salt of claim 93, having at least three X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 5.3, 7.1, 10.6, 13.9, 14.3, 16.1 and 17.4 degrees.
- 100.** The salt of claim 93, having at least four X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 5.3, 7.1, 10.6, 13.9, 14.3, 16.1 and 17.4 degrees.
- 101.** The salt of claim 93, having characteristic X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), at 5.3, 7.1, 10.6, 13.9, 14.3, 16.1 and 17.4 degrees.
- 102.** The salt of claim 93, having a first endothermic peak with an onset temperature of 47 ± 3 °C and a maximum at 108 ± 3 °C and a second endothermic peak with an onset temperature of 258 ± 3 °C and a maximum at 280 ± 3 °C in a differential scanning calorimetry (DSC) thermogram.
- 103.** A solid form of 4,4'-((((2,2'-dichloro-[1,1'-biphenyl]-3,3'-diyl)bis(azanediyl))bis(carbonyl))bis(1-methyl-1,4,6,7-tetrahydro-5H-imidazo[4,5-c]pyridine-2,5-diyl))bis(ethane-2,1-diyl))bis(bicyclo[2.2.1]heptane-1-carboxylic acid), wherein the solid form is crystalline.
- 104.** The solid form of claim 103, having an X-ray powder diffraction pattern as substantially shown in Figure 1.
- 105.** The solid form of claim 103, having a DSC thermogram substantially as depicted in Figure 2.
- 106.** The solid form of claim 103, having a thermogravimetric analysis (TGA) thermogram substantially as depicted in Figure 3.

- 107.** The solid form of claim 103, having at least one X-ray powder diffraction (XRPD) peak, in terms of 2-theta (± 0.2 degrees), selected from 6.2, 10.9, 11.3, 12.4, 13.7, 14.5, 15.5, 17.5, and 18.8 degrees.
- 108.** The solid form of claim 103, having at least two X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 6.2, 10.9, 11.3, 12.4, 13.7, 14.5, 15.5, 17.5, and 18.8 degrees.
- 109.** The solid form of claim 103, having at least three X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 6.2, 10.9, 11.3, 12.4, 13.7, 14.5, 15.5, 17.5, and 18.8 degrees.
- 110.** The solid form of claim 103, having at least four X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), selected from 6.2, 10.9, 11.3, 12.4, 13.7, 14.5, 15.5, 17.5, and 18.8 degrees.
- 111.** The solid form of claim 103, having characteristic X-ray powder diffraction (XRPD) peaks, in terms of 2-theta (± 0.2 degrees), at 6.2, 10.9, 11.3, 12.4, 13.7, 14.5, 15.5, 17.5, and 18.8 degrees.
- 112.** The solid form of claim 103, having a first endothermic peak with an onset temperature of 33 ± 3 °C and a maximum at 70 ± 3 °C and a second endothermic peak with an onset temperature of 244 ± 3 °C and a maximum at 250 ± 3 °C in a differential scanning calorimetry (DSC) thermogram.
- 113.** A pharmaceutical composition comprising a salt of any one of claims 1-102 or a solid form of any one of claims 103-112, and a pharmaceutically acceptable carrier or excipient.
- 114.** A solid oral dosage form comprising the pharmaceutical composition of claim 113.
- 115.** A method of inhibiting PD-1/PD-L1 interaction, said method comprising administering to a patient a salt of any one of claims 1-102 or a solid form of any one of claims 103-112.
- 116.** A method of treating a disease or disorder associated with inhibition of PD-1/PD-L1 interaction, said method comprising administering to a patient in need thereof a therapeutically effective amount of a salt of any one of claims 1-102 or a solid form of any one of claims 103-112.
- 117.** A method of enhancing, stimulating and/or increasing the immune response in a patient, said method comprising administering to the patient in need thereof a therapeutically

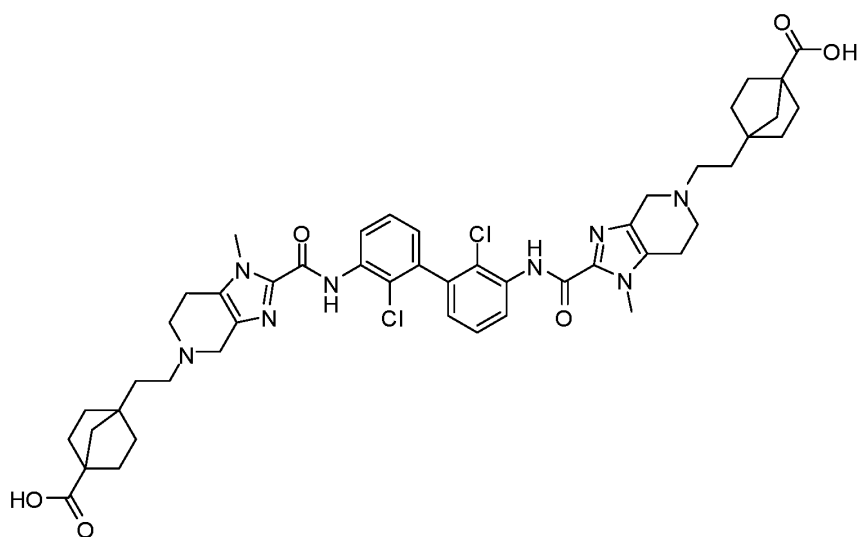
effective amount of a salt of any one of claims 1-102 or a solid form of any one of claims 103-112.

118. A process of preparing the salt of claim 1, comprising reacting said Compound 1 with at least two equivalents of hydrochloric acid.

119. A process of preparing the salt of any one of claims 2-11, comprising:

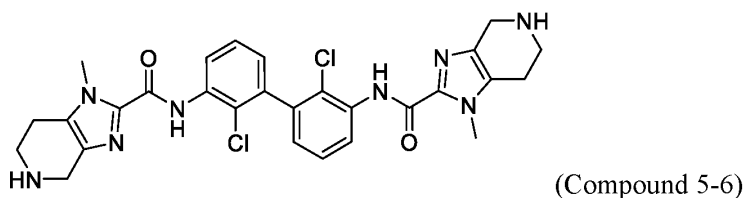
- a) preparing a suspension of Compound 1 and at least 2 equivalents of hydrochloric acid in a solvent comprising acetone;
- b) heating the suspension of a) to above room temperature to form a clear solution;
- c) cooling the clear solution of b) to about room temperature;
- d) adding a solvent comprising acetone to the mixture of c) to form a cloudy solution; and
- e) filtering the cloudy solution of d) to provide said Form I as a solid.

120. A process of preparing Compound 1:

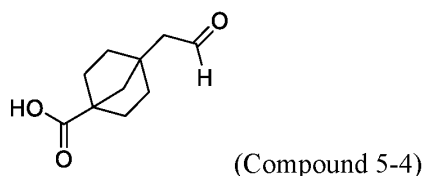


or a salt thereof, comprising:

reacting Compound 5-6:



with 4-(2-oxoethyl)bicyclo[2.2.1]heptane-1-carboxylic acid (Compound 5-4):



in the presence of a reducing agent to form said Compound 1, or a salt thereof.

121. The process of claim 120, wherein the reducing agent is sodium triacetoxyborohydride.

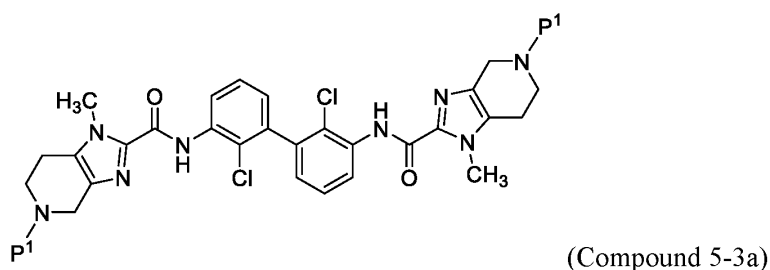
122. The process of any one of claims 120-121, wherein the reacting is performed in a solvent that comprises dichloromethane.

123. The process of any one of claims 120-121, wherein the reacting is performed in a solvent that does not comprise dichloromethane.

124. The process of any one of claims 120-121, wherein the reacting is performed in a solvent that comprises acetonitrile.

125. The process of any one of claims 120-124, wherein said Compound 5-6 is prepared by a process comprising:

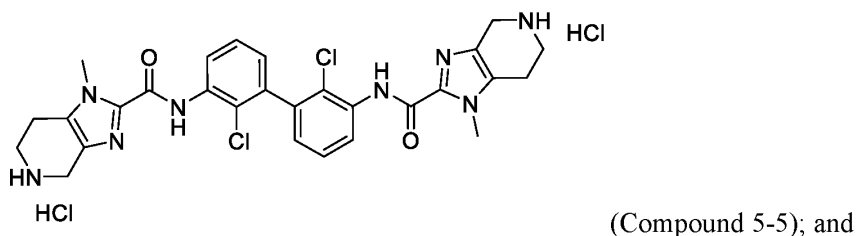
deprotecting Compound 5-3a:



to form said Compound 5-6, wherein P¹ is an amine protecting group.

126. The process of claim 125, wherein the deprotecting comprises:

reacting said Compound 5-3a with hydrochloric acid in a solvent to form Compound 5-5:

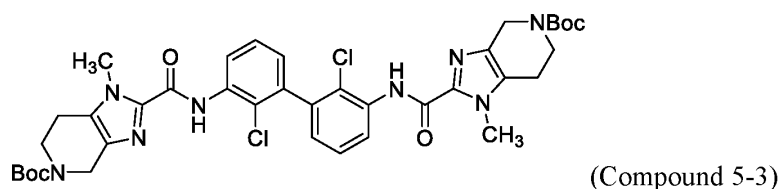


neutralizing said Compound 5-5 with base to form said Compound 5-6.

127. The process of claim 126, wherein the base is sodium bicarbonate.

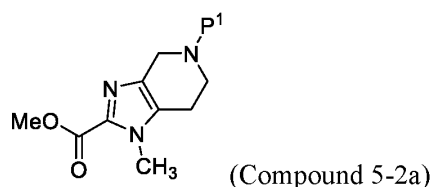
128. The process of claim 125, wherein the deprotecting comprises reacting Compound 5-3a with hydrochloric acid in a solvent comprising methanol, followed by reaction with sodium bicarbonate in a solvent comprising water and THF to form said Compound 5-6.

129. The process of any one of claims 125-128, wherein said Compound 5-3a is Compound 5-3:

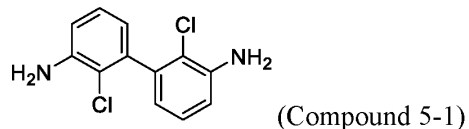


130. The process of any one of claims 125-128, wherein said Compound 5-3a is prepared by a process comprising:

reacting Compound 5-2a:



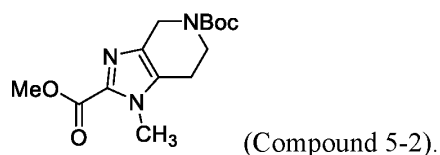
with Compound 5-1:



in the presence of a base in a solvent to form said Compound 5-3a, wherein P¹ is an amine protecting group.

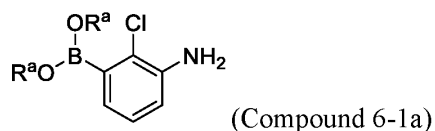
131. The process of claim 130, wherein the reacting of said Compound 5-2a with said Compound 5-1 is conducted in the presence of potassium 2-methylpropan-2-olate in a solvent comprising THF.

132. The process of any one of claims 130-131, wherein said Compound 5-2a is Compound 5-2:

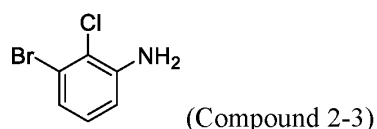


133. The process of any one of claims 130-132, wherein said Compound 5-1 is prepared by a process comprising:

reacting Compound 6-1a:



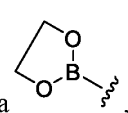
with Compound 2-3:



in the presence of a Suzuki catalyst and a base in a solvent to form said Compound 5-1, wherein:

each R^a is independently selected from H and C₁₋₆ alkyl; or

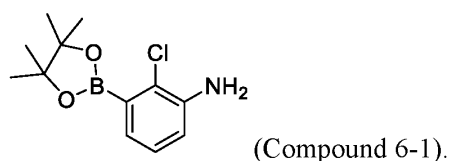
each R^a, together with the oxygen atoms to which they are attached and the boron

atom to which the oxygen atoms are attached, form a ring of formula , which is optionally substituted with 1, 2, 3, or 4 C₁₋₄ alkyl groups.

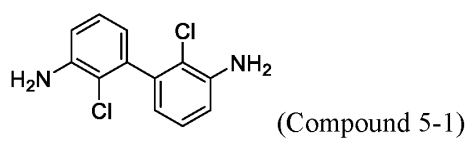
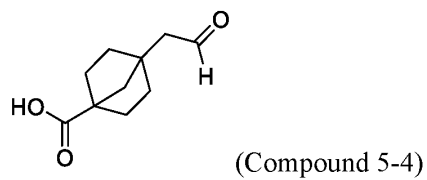
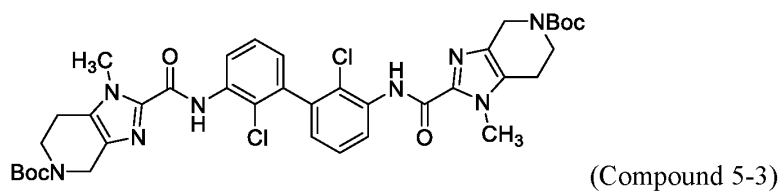
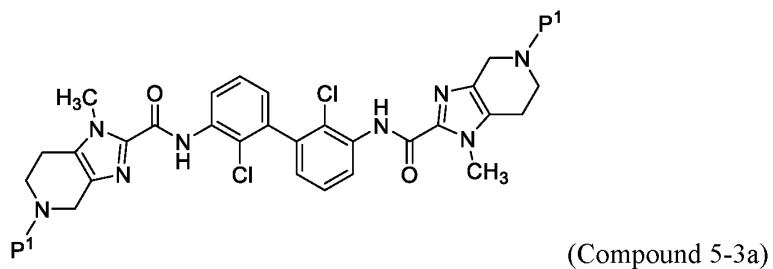
134. The process of claim 133, wherein the catalyst is dichlorobis[di-tert-butyl(p-dimethylaminophenyl)phosphino]palladium.

135. The process of claim 133, wherein the reacting of Compound 6-1a and Compound 2-3 are carried out in the presence of dichlorobis[di-tert-butyl(p-dimethylaminophenyl)phosphino]palladium and potassium acetate in a solvent comprising dioxane and water.

136. The process of any one of claims 133-135, wherein said Compound 6-1a is Compound 6-1:



137. A compound selected from Compound 5-3a, Compound 5-3, Compound 5-4, and Compound 5-1:



or a salt thereof.