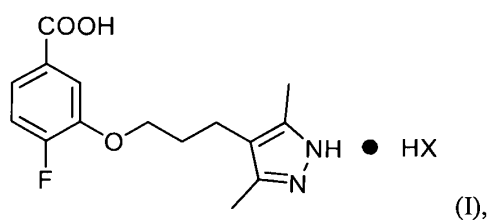


WHAT IS CLAIMED IS:

1. A pharmaceutically acceptable salt represented by Formula I



wherein X is a pharmaceutically acceptable anion of a protic acid.

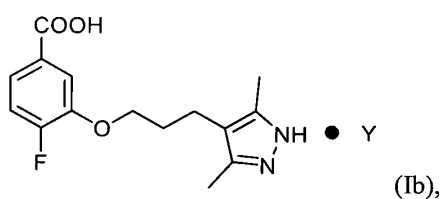
2. The pharmaceutically acceptable salt of claim 1, wherein the pharmaceutically acceptable anion of a protic acid is selected from the group consisting of chloride, bromide, sulfonate, tosylate, mesylate, nitrate and acetate, and combinations thereof.

3. The pharmaceutically acceptable salt of claim 2, wherein the pharmaceutically acceptable anion of a protic acid is mesylate.

4. The pharmaceutically acceptable salt of claim 2, wherein the pharmaceutically acceptable anion of a protic acid is tosylate.

5. The pharmaceutically acceptable salt of claim 2, wherein the pharmaceutically acceptable anion of a protic acid is chloride.

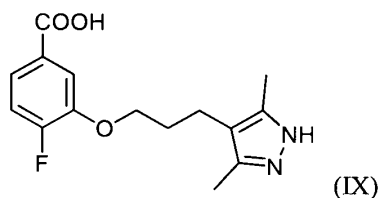
6. A pharmaceutically acceptable salt represented by Formula Ib



wherein Y is a multiprotic acid.

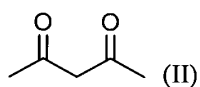
7. The pharmaceutically acceptable salt of claim 2, wherein Y is selected from the group consisting of ethane-1,2,-disulfonic acid, sulfuric acid, citric acid, maleic acid, malic acid, tartaric acid, and oxalic acid.

8. A method for preparing a compound of Formula IX

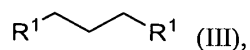


comprising

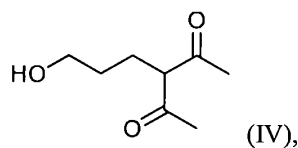
- (a) contacting a compound of Formula II



with a compound of Formula III

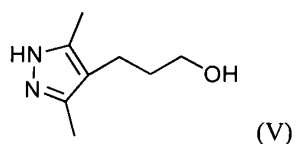


a first base, and a first organic solvent to provide a compound of Formula IV

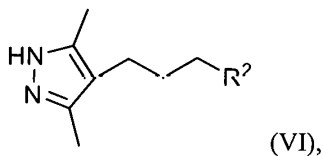


wherein each R¹ is independently a halogen or a sulfonate ester;

- (b) contacting a compound of Formula IV with hydrazine and a second organic solvent to provide a compound of Formula V

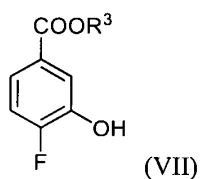


- (c) contacting a compound of Formula V with a sulfonating agent or halogenating agent provide a compound of Formula VI

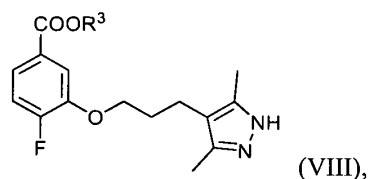


wherein R² is a halogen or a sulfonate ester;

- (d) contacting a compound of Formula VI with a compound of Formula VII



a second base, and an third organic solvent to provide a compound of Formula VIII



wherein R³ is selected from the group consisting of an C₁₋₁₂ alkyl, C₂₋₁₂ alkenyl, C₁₋₁₂ alkynyl, C₃₋₈ cycloalkyl, C₃₋₁₂ heterocycloalkyl, aryl, and heteroaryl, each of which is optionally substituted.

- (e) contacting a compound of Formula VIII with a third base to provide a compound of Formula IX.

9. The method of claim 8, wherein each R¹ is independently selected from the group consisting of chloride, bromide, tosylate, and mesylate.

10. The method of claim 9, wherein each R¹ is bromide.

11. The method of any one of claims 8 to 10, wherein the first base is an alkali metal carbonate, an alkali metal bicarbonate or a combination thereof.

12. The method of claim 9, wherein the alkali metal carbonate is selected from the group consisting of Li₂CO₃, Na₂CO₃, and K₂CO₃, or a combination thereof.

13. The method of claim 12, wherein the alkali metal carbonate is K₂CO₃.

14. The method of claim 11, wherein the alkali metal bicarbonate is selected from the group consisting of LiHCO₃, NaHCO₃, and KHCO₃, or a combination thereof.

15. The method of any one of claims 8 to 14, wherein the first organic solvent is a polar aprotic organic solvent.

16. The method of claim 15, wherein the polar organic solvent is selected from the group consisting of acetone, ethyl acetate, dichloromethane, tetrahydrofuran, dimethylformamide and acetonitrile.
17. The method of claim 16, wherein the polar organic solvent is acetone.
18. The method of any one of claims 8 to 17, wherein the second organic solvent is a polar protic organic solvent.
19. The method of claim 18, wherein the polar protic organic solvent is C₁₋₁₀-OH.
20. The method of claim 19, wherein the polar protic organic solvent is ethanol.
21. The method of any one of claims 8 to 20, wherein the sulfonating agent is mesyl chloride or tosyl chloride.
22. The method of any one of claims 8 to 20, wherein the halogenating agent is selected from the group consisting of PBr₃, PCl₃, PCl₅, SOBr₂, PBr₅, and SOCl₂.
23. The method of claim 22, wherein the halogenating agent is PBr₃.
24. The method of any one of claims 8 to 23, wherein R² is selected from the group consisting of chloride, bromide, tosylate, and mesylate.
25. The method of claim 24, wherein R² is Br.
26. The method of any one of claims 8 to 25, wherein the second base is an alkali metal carbonate, an alkali metal bicarbonate or a combination thereof.
27. The method of claim 25, wherein the alkali metal carbonate is selected from the group consisting of Li₂CO₃, Na₂CO₃, and K₂CO₃, or a combination thereof.
28. The method of claim 27, wherein the alkali metal carbonate is K₂CO₃.

29. The method of claim 25, wherein the alkali metal bicarbonate is selected from the group consisting of LiHCO_3 , NaHCO_3 , and KHCO_3 , or a combination thereof.
30. The method of any one of claims 8 to 29, wherein the third organic solvent is a polar aprotic organic solvent.
31. The method of claim 30, wherein polar organic solvent is selected from the group consisting of acetone, ethyl acetate, dichloromethane, tetrahydrofuran, dimethylformamide, dimethylsulfoxide and acetonitrile.
32. The method of claim 31, wherein polar organic solvent is dimethylformamide.
33. The method of claim 31, wherein polar organic solvent is dimethylsulfoxide.
34. The method of any one of claims 8 to 32, wherein R^3 is C_{1-8} alkyl.
35. The method of claim 34, wherein R^3 is methyl.
36. The method of any one of claims 8 to 35, wherein the third base is a metal hydroxide.
37. The method of claim 36, wherein the metal hydroxide is an alkali metal hydroxide.
38. The method of claim 37, wherein the alkali metal hydroxide is selected from the group consisting of LiOH , NaOH , KOH , RbOH , and CsOH .
39. The method of claim 38, where in the alkali metal hydroxide is LiOH .
40. The method of claim 38, where in the alkali metal hydroxide is NaOH .
41. Crystalline Type A of Formula IX characterized by an X-ray powder diffraction pattern comprising peaks at 12.0, 21.8, 25.9, 26.7, and 27.9 degrees 2θ (± 0.2 degrees 2θ).

42. Crystalline Type A of Formula IX characterized by an X-ray powder diffraction pattern substantially in accordance with **FIG. 31**.
43. Crystalline Type A of Formula IX of claim 41 or 42, which is substantially free of other Formula IX crystalline or amorphous forms.
44. Crystalline Type A of Formula IX according to any one of claims 41 to 42, further characterized by a weight loss ranging from about 0.7% to about 1.9% upon heating to around 150 °C, as measured by thermal gravimetric analysis.
45. Crystalline Type A of Formula IX according to claim 44, wherein the weight loss is about 1.3%.
46. Crystalline Type A of Formula IX characterized by water uptake of about 1.6 % at 25 °C / 80 % relative humidity (RH) after undergoing a dynamic vapor sorption cycle which includes pre-equilibration at 0 % RH.
47. Crystalline Type A of Formula IX characterized by gains of less than 2.5% weight after undergoing a dynamic vapor sorption cycle from about 0 % relative humidity (RH) to about 90% RH.
48. Crystalline Type A of Formula IX having a dynamic vapor sorption profile substantially as shown in **FIG. 37**.
49. Crystalline Type A of Formula IX according to any one of claims 41 to 45, further characterized by a differential scanning calorimetry thermogram comprising endothermic peaks at around 211-214 and 237-239 °C.
50. Crystalline Type A of Formula IX according to claim 49, wherein, said differential scanning calorimetry thermogram comprises endothermic peaks around 11.7, 212.6, and 237.3°C.

51. Crystalline Type B of Formula IX characterized by an X-ray powder diffraction pattern comprising peaks at 12.1, 13.9, 19.8, 23.3, and 24.4 degrees 2θ (± 0.2 degrees 2θ).
52. Crystalline Type B of Formula IX characterized by an X-ray powder diffraction pattern substantially in accordance with **FIG. 40**.
53. Crystalline Type B of Formula IX of claim 51 or 52, which is substantially free of other Formula IX crystalline or amorphous forms.
54. Crystalline Type B of Formula IX according to claims 51 or 52, further characterized by a weight loss ranging from about 0.6% to about 2.0% upon heating to around 150 °C, as measured by thermal gravimetric analysis.
55. Crystalline Type B of Formula IX according to claims 51 or 52, further characterized by a weight loss of about 1.2% upon heating to around 150 °C, as measured by thermal gravimetric analysis.
56. Crystalline Type B of Formula IX according to any one of claims 51 to 54, further characterized by a differential scanning calorimetry thermogram comprising endothermic peaks at around 161.4, 232.2 and 262.3 °C.
57. Crystalline Type E of Formula IX characterized by an X-ray powder diffraction pattern comprising peaks at 11.9, 14.0, 15.1, and 25.8 degrees 2θ (± 0.2 degrees 2θ).
58. Crystalline Type E of Formula IX characterized by an X-ray powder diffraction pattern substantially in accordance with **FIG. 46**.
59. Crystalline Type E of Formula IX of claim 57 or 58, which is substantially free of other Formula IX crystalline or amorphous forms.
60. Crystalline Type E of Formula IX according to claims 57 or 58, further characterized by a weight loss ranging from about 0.5% to about 2.5% upon heating to around 150 °C, as measured by thermal gravimetric analysis.

61. Crystalline Type E of Formula IX according to claims 57 or 58, further characterized by a weight loss of about 1.5% upon heating to around 150 °C, as measured by thermal gravimetric analysis.
62. Crystalline Type E of Formula IX according to any one of claims 57 to 60, further characterized by a differential scanning calorimetry thermogram comprising endothermic peaks at around 182.0 and 242.7 °C.
63. Crystalline Type I of Formula IX characterized by an X-ray powder diffraction pattern comprising peaks at 12.5, 17.3, 23.4, 25.0, and 25.4 degrees 2θ ($\pm$ 0.2 degrees 2θ).
64. Crystalline Type I of Formula IX characterized by an X-ray powder diffraction pattern substantially in accordance with **FIG. 55**.
65. Crystalline Type I of Formula IX of claim 63 or 64, which is substantially free of other Formula IX crystalline or amorphous forms.
66. Crystalline Type I of Formula IX according to claims 63 or 64, further characterized by a weight loss ranging from about 2.5% to 3.5% upon heating to around 120 °C, as measured by thermal gravimetric analysis.
67. Crystalline Type I of Formula IX according to claims 63 or 64, further characterized by a weight loss of about 3.0% upon heating to around 120 °C, as measured by thermal gravimetric analysis.
68. Crystalline Type I of Formula IX according to any one of claims 63 to 66, further characterized by a differential scanning calorimetry thermogram comprising endothermic peaks at around 62.0 and 158.4, 215.7 °C.
69. Crystalline Type H of Formula IX characterized by an X-ray powder diffraction pattern comprising peaks at 11.9, 12.3, 21.7, 23.3, and 25.8 degrees 2θ ($\pm$ 0.2 degrees 2θ).

70. Crystalline Type H of Formula IX characterized by an X-ray powder diffraction pattern substantially in accordance with **FIG. 51**.
71. Crystalline Type H of Formula IX of claim 69 or 70, which is substantially free of other Formula IX crystalline or amorphous forms.
72. Crystalline Type H of Formula IX according to claims 69 or 70, further characterized by a weight loss ranging from about 3.5% to about 5.5% upon heating to around 150 °C, as measured by thermal gravimetric analysis.
73. Crystalline Type H of Formula IX according to claims 69 or 70, further characterized by a weight loss of about 4.6% upon heating to around 150 °C, as measured by thermal gravimetric analysis.
74. Crystalline Type H of Formula IX according to any one of claims 69 to 73, further characterized by a differential scanning calorimetry thermogram comprising endothermic peaks at around 90.4 and 200.5, 232.3 °C.
75. Crystalline Type J of Formula IX characterized by an X-ray powder diffraction pattern comprising peaks at 13.8, 14.7, 22.9, 26.2, and 27.7degrees 2 θ ($\pm$ 0.2 degrees 2 θ).
76. Crystalline Type J of Formula IX characterized by an X-ray powder diffraction pattern substantially in accordance with **FIG. 59**.
77. Crystalline Type J of Formula IX of claim 75 or 76, which is substantially free of other Formula IX crystalline or amorphous forms.
78. Crystalline Type J of Formula IX according to claims 75 or 76, further characterized by a weight loss ranging from about 17.5% to about 24% upon heating to around 120 °C, as measured by thermal gravimetric analysis.

79. Crystalline Type J of Formula IX according to claims 75 or 76, further characterized by a weight loss of about 21.5% upon heating to around 120 °C, as measured by thermal gravimetric analysis.

80. Crystalline Type J of Formula IX according to any one of claims 75 to 79, further characterized by a differential scanning calorimetry thermogram comprising endothermic peaks at around 120.8 and 197.8, 221.5 °C.

81. Crystalline Type K of Formula IX characterized by an X-ray powder diffraction pattern comprising peaks at 7.2, 7.6, 9.9, 14.0, and 19.3 degrees 2 θ ($\pm$ 0.2 degrees 2 θ).

82. Crystalline Type K of Formula IX characterized by an X-ray powder diffraction pattern substantially in accordance with **FIG. 59**.

83. Crystalline Type K of Formula IX of claim 81 or 82, which is substantially free of other Formula IX crystalline or amorphous forms.

84. Crystalline Type K of Formula IX according to claims 81 or 82, further characterized by a weight loss ranging from about 5.0% to about 7.0% upon heating to around 120 °C, as measured by thermal gravimetric analysis.

85. Crystalline Type K of Formula IX according to claims 81 or 82, further characterized by a weight loss ranging from about 6.1% upon heating to around 120 °C, as measured by thermal gravimetric analysis.

86. Crystalline Type K of Formula IX according to any one of claims 81 to 85, further characterized by a differential scanning calorimetry thermogram comprising endothermic peaks at around 159.3 and 176.2, 278.4 °C.

87. Crystalline Type C of Formula IX characterized by an X-ray powder diffraction pattern comprising peaks at 14.6, 16.8, 19.5, 20.7, and 22.5 degrees 2 θ ($\pm$ 0.2 degrees 2 θ).

88. Crystalline Type C of Formula IX characterized by an X-ray powder diffraction pattern substantially in accordance with **FIG. 43**.

89. Crystalline Type C of Formula IX of claim 87 or 88, which is substantially free of other Formula IX crystalline or amorphous forms.

90. Crystalline Type C of Formula IX according to claims 87 or 88, further characterized by a weight loss ranging from about 2.0% to about 4.0% upon heating to around 150 °C, as measured by thermal gravimetric analysis.

91. Crystalline Type C of Formula IX according to claims 87 or 88, further characterized by a weight loss of about 3.1% upon heating to around 150 °C, as measured by thermal gravimetric analysis.

92. Crystalline Type C of Formula IX according to any one of claims 87 to 91, further characterized by a differential scanning calorimetry thermogram comprising endothermic peaks at around 91.2 and 173.0 °C.

93. Crystalline Type G of Formula IX characterized by an X-ray powder diffraction pattern comprising peaks at 12.3, 13.2, 13.4, 17.8, and 26.6 degrees 2 θ ($\pm$ 0.2 degrees 2 θ).

94. Crystalline Type G of Formula IX characterized by an X-ray powder diffraction pattern substantially in accordance with **FIG. 43**.

95. Crystalline Type G of Formula IX of claim 93 or 94, which is substantially free of other Formula IX crystalline or amorphous forms.

96. Crystalline Type G of Formula IX according to claims 93 or 94, further characterized by a weight loss ranging from about 1.7% to about 2.7% upon heating to around 200 °C, as measured by thermal gravimetric analysis.

97. Crystalline Type G of Formula IX according to claims 93 or 94, further characterized by a weight loss of about 3.7% upon heating to around 200 °C, as measured by thermal gravimetric analysis.

98. Crystalline Type G of Formula IX according to any one of claims 93 to 97, further characterized by a differential scanning calorimetry thermogram comprising endothermic peaks at around 231.1 °C.