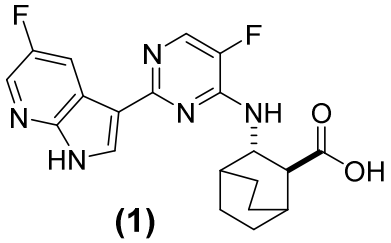
Claims

1. A polymorphic form of Compound (**1**) or a pharmaceutically acceptable salt thereof, wherein Compound (**1**) is represented by the following structural formula:



(1),

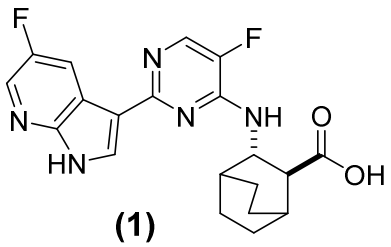
and wherein the polymorphic form is a crystalline HCl salt of Compound (**1**) • ½ H_2O.

2. A pharmaceutical composition comprising a polymorphic form of Compound (**1**) according to claim 1 and at least one pharmaceutically acceptable carrier or excipient.

3. A method of reducing the amount or inhibiting the replication of influenza viruses in an *in vitro* biological sample, comprising administering to the sample an effective amount of a polymorphic form of Compound (**1**) according to claim 1.

4. The method of claim 3, further comprising co-administering one or more additional therapeutic agents to the sample.

5. A crystalline HCl salt of Compound (1) • ½ H_2O, wherein Compound (1) is represented by the following structural formula:



(1),

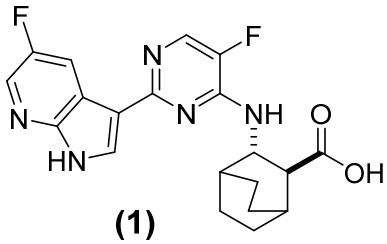
and wherein said crystalline HCl salt is characterized by one or more peaks corresponding to 2-theta values measured in degrees of 10.5 ± 0.2, 5.2 ± 0.2, 7.4 ± 0.2, and 18.9 ± 0.2 in an X-ray powder diffraction pattern.

6. A pharmaceutical composition comprising a crystalline HCl salt of Compound (1) • ½ H_2O according to claim 5 and at least one pharmaceutically acceptable carrier or excipient.

7. A method of reducing the amount or inhibiting the replication of influenza viruses in an in vitro biological sample, comprising administering to the sample an effective amount of a crystalline HCl salt of Compound (1) • ½ H_2O according to claim 5.

8. The method of claim 7, further comprising co-administering one or more additional therapeutic agents to the sample.

9. A crystalline HCl salt of Compound (1) • ½ H_2O, wherein Compound (1) is represented by the following structural formula:



(1)

, and

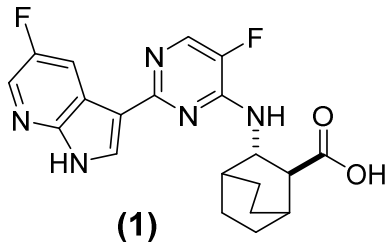
wherein said crystalline HCl salt is characterized by one or more peaks corresponding to 2-theta values measured in degrees of 25.2 ± 0.2, 16.5 ± 0.2, 18.1 ± 0.2, and 23.0 ± 0.2 in an X-ray powder diffraction pattern.

10. A pharmaceutical composition comprising a crystalline HCl salt of Compound (1) • ½ H_2O according to claim 9 and at least one pharmaceutically acceptable carrier or excipient.

11. A method of reducing the amount or inhibiting the replication of influenza viruses in an in vitro biological sample, comprising administering to the sample an effective amount of a crystalline HCl salt of Compound (1) • ½ H_2O according to claim 9.

12. The method of claim 11, further comprising co-administering one or more additional therapeutic agents to the subject.

13. A crystalline HCl salt of Compound (1) • ½ H_2O, wherein Compound (1) is represented by the following structural formula:



(1)

, and

wherein said crystalline HCl salt is characterized by one or more peaks corresponding to 22.1 ± 0.3 ppm, 24.6 ± 0.3 ppm, 47.7 ± 0.3 ppm, and 54.8 ± 0.3 ppm in a C13 SSNMR spectrum.

14. A pharmaceutical composition comprising a crystalline HCl salt of Compound (1) • ½ H_2O according to claim 13 and at least one pharmaceutically acceptable carrier or excipient.

15. A method of reducing the amount or inhibiting the replication of influenza viruses in an in vitro biological sample, comprising administering to the sample an effective amount of a crystalline HCl salt of Compound (1) • ½ H_2O according to claim 13.

16. A method of preparing a polymorphic form of Compound (**1**) according to claim 1 comprising:

mixing HCl with Compound (**1**) in a solvent system comprising water and one or more organic solvents, wherein the solvent system has a water activity of 0.05-0.85.

17. The method of claim 16, wherein the solvent system comprises one or more organic solvents selected from chlorobenzene, cyclohexane, 1,2-dichloroethane, dichloromethane, 1,2-dimethoxyethane, formamide, hexane, 2-methoxyethanol, methylbutyl ketone, methylcyclohexane, nitromethane, tetralin, xylene, toluene, 1,1,2-trichloroethane, acetone, anisole, 1-butanol, 2-butanol, butyl acetate, tert-butylmethyl ether, cumene, ethanol, ethyl acetate, ethyl ether, ethyl formate, heptane, isobutyl acetate, isopropyl acetate, methyl acetate, 3-methyl-1-butanol, methylethyl ketone, 2-methy-1-propanol, pentane, 1-propanol, 1-pentanol, 2-propanol, propyl acetate, tetrahydrofuran, methyl tetrahydrofuran, or any combination thereof.

18. The method of claim 16, wherein solvent system comprises one or more organic solvents selected from 2-ethoxyethanol, ethyleneglycol, methanol, 2-methoxyethanol, 1-butanol, 2-butanol, 3-methyl-1-butanol, 2-methyl-1-propanol, ethanol, 1-pentanol, 1-propanol, 2-propanol, methylbutyl ketone, acetone, methylethyl ketone, methylisobutyl ketone, butyl acetate, isobutyl acetate, isopropyl acetate, methyl acetate, ethyl acetate, propyl acetate, pyridine, toluene, xylene, or any combination thereof.

19. The method of claim 16, wherein solvent system comprises one or more organic solvents selected from acetone, n-propanol, isopropanol, iso-butylacetate, acetic acid, or any combination thereof.

20. The method of claim 16, wherein the solvent system comprises one or more organic solvents selected from acetone or isopropanol.