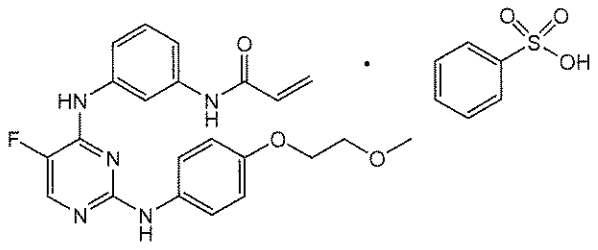
differentiation, secretion of hormones, activation of transcription factors, muscle contraction, glucose metabolism, control of protein synthesis, and regulation of the cell cycle.

[0004] Many diseases are associated with abnormal cellular responses triggered by protein kinase-mediated events as described above. These diseases include, but are not limited to, autoimmune diseases, inflammatory diseases, bone diseases, metabolic diseases, neurological and neurodegenerative diseases, cancer, cardiovascular diseases, allergies and asthma, Alzheimer's disease, and hormone-related diseases. Accordingly, there remains a need to find protein kinase inhibitors useful as therapeutic agents.

SUMMARY ~~OF THE INVENTION~~

[0003] It has now been found that the novel salt form of the present ~~invention~~disclosure, and compositions thereof, is useful as an inhibitor of one or more protein kinases and exhibits desirable characteristics for the same. In general, this salt form, and pharmaceutically acceptable compositions thereof, is useful for treating or lessening the severity of a variety of diseases or disorders as described in detail herein.

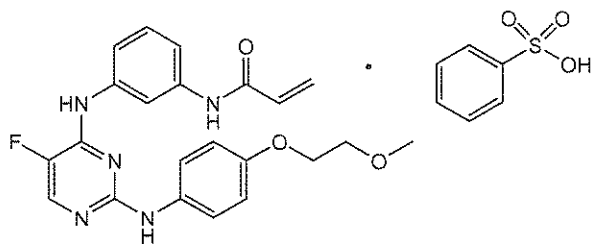
[0003a] In a first aspect of the present disclosure, there is provided a solid form of Compound 2:



2.

having one or more peaks in its PXRD selected from those at about 6.21, about 9.48, and about 13.29 degrees 2-theta.

[0003b] In a second aspect of the present disclosure, there is provided a solid form of Compound 2:



2.

having one or more peaks in its PXRD selected from those at about 7.29, about 8.38, and about 11.12 degrees 2-theta.

[0003c] In a third aspect of the present disclosure, there is provided a composition comprising the solid form according to the first aspect and a pharmaceutically acceptable carrier or excipient.

[0003d] In a fourth aspect of the present disclosure, there is provided a composition comprising the solid form according to the second aspect and a pharmaceutically acceptable carrier or excipient.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] **Figure 1** depicts the FT-Raman spectrum (3400-100 cm^{-1}) of Compound **2** Form P1.

[0005] **Figure 2** depicts the PXRD pattern of Compound **2** Form P1.

[0006] **Figure 3** depicts the TG-FTIR of Compound **2** Form P1.

[0007] **Figure 4** depicts the DSC thermogram of Compound **2** Form P1 showing cooling step 2.

[0008] **Figure 5** depicts the DSC thermogram of Compound **2** Form P1 showing the four-step heating and cooling process.

[0009] **Figure 6** depicts the PXRD pattern of Compound **2** Form P22 compared to the PXRD pattern of Compound **2** Form P1.

[0010] **Figure 7** depicts the FT-Raman spectrum (3400-100 cm^{-1}) of Compound **2** Form P22.

[0011] **Figure 8** depicts the TG-FTIR of Compound **2** Form P22.

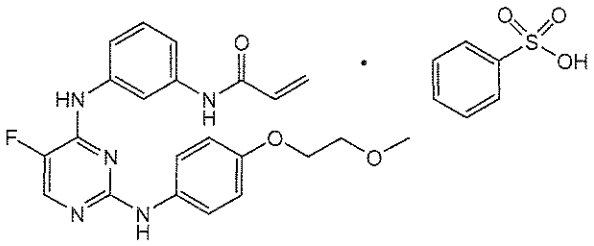
[0012] **Figure 9** depicts the ^{1}H NMR of Compound **2** Form P22 prepared according to Example 3, *infra*..

[0013] **Figure 10** depicts the DSC thermogram of Compound **2** Form P22

CLAIMS

We claim:

1. A solid form of Compound **2**:



2.

having one or more peaks in its PXRD selected from those at about 6.21, about 9.48, and about 13.29 degrees 2-theta.

~~2. The compound according to claim 1, wherein said compound is in solid form.~~

~~3. The compound according to claim 2, wherein said compound is crystalline.~~

~~4. The compound according to claim 3, wherein said compound is a crystalline solid substantially free of amorphous Compound 2.~~

~~5. The compound according to claim 1, wherein said compound is substantially free of impurities.~~

~~6. The solid form according to claim 2, wherein said form is Form P1.~~

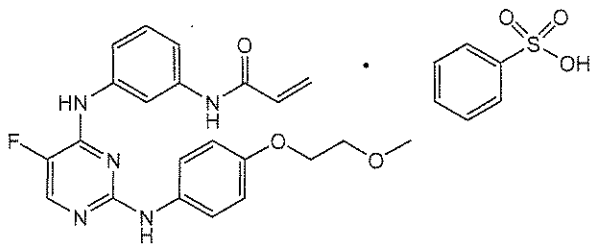
~~7. The solid form according to claim 6, having one or more peaks in its PXRD selected from those at about 6.21, about 9.48, and about 13.29 degrees 2-theta.~~

28. The solid form according to claim ~~7~~1, having at least two peaks in its PXRD selected from those at about 6.21, about 9.48, and about 13.29 degrees 2-theta.

39. The solid form according to claim ~~6~~1, having a PXRD substantially similar to that depicted in **Figure 2**.

~~10. The solid form according to claim 2, wherein said form is Form P22.~~

~~11~~. A ~~The~~ solid form ~~according to claim 10~~, of Compound 2:



2.

having one or more peaks in its PXRD selected from those at about 7.29, about 8.38, and about 11.12 degrees 2-theta.

~~12~~. The solid form according to claim ~~11~~, having at least two peaks in its PXRD selected from those at about 7.29, about 8.38, and about 11.12 degrees 2-theta.

~~13~~. The solid form according to claim ~~10~~, having a PXRD substantially similar to that depicted in **Figure 6**.

~~14~~. A composition comprising the ~~compound~~ solid form according to claim 1 and a pharmaceutically acceptable carrier or excipient.

8. A composition comprising the solid form according to claim 4 and a pharmaceutically acceptable carrier or excipient.

9. The solid form according to claim 1, wherein said form is Form P1.

10. The solid form according to claim 1, wherein said form is substantially free of amorphous Compound 2.

11. The solid form according to claim 1, wherein said form is substantially free of impurities.

12. The solid form according to claim 4, wherein said form is Form P22.

13. The solid form according to claim 4, wherein said form is substantially free of amorphous Compound 2.

14. The solid form according to claim 4, wherein said form is substantially free of impurities.

~~15. A method of inhibiting BTK in a patient comprising administering to said patient a compound according to claim 1 or composition thereof.~~

~~16. A method of treating a BTK-mediated disorder in a patient, comprising administering to said patient a compound according to claim 1, or composition thereof.~~

~~17. The method according to claim 16, wherein the disorder is selected from an autoimmune disease, a heteroimmune disease, an inflammatory disease, a cancer, a disease of the bone and joints, or a thromboembolic disorder.~~

~~18. The method according to claim 17, wherein the disorder is selected from rheumatoid arthritis, multiple sclerosis, diabetes, B-cell chronic lymphocytic leukemia, acute lymphocytic leukemia, hairy cell leukemia, non-Hodgkin's lymphoma, Hodgkin's lymphoma, multiple myeloma, colorectal cancer, pancreatic cancer, bone cancer, bone metastasis, osteoporosis, irritable bowel syndrome, Crohn's disease, systemic lupus erythematosis, or disorders associated with renal transplant.~~