WHAT IS CLAIMED IS:

1. A crystalline form of the compound 2-(3-(8-amino-6-(trifluoromethyl)imidazo[1,2-a]pyrazin-3-yl)-4-methylphenyl)-3,3,3-trifluoro-2-hydroxypropanamide.

2. The crystalline form of claim 1, which is anhydrous and non-solvated.

3. The crystalline form of claim 1 or 2, which is Form IA, having an X-ray powder diffraction pattern comprising:

(i) at least one peak, in terms of 2θ, at 8.6º ± 0.2º;

(ii) at least one peak, in terms of 2θ, at 9.5º ± 0.2º;

(iii) the following peaks, in terms of 2θ: 8.6º ± 0.2º; 9.5º ± 0.2º; 10.3º ± 0.2º; 13.0º ± 0.2º; 13.6º ± 0.2º; 14.2º ± 0.2º; and 14.9º ± 0.2º; and/or

(iv) 4 or more of the following peaks, in terms of 2θ: 8.6º ± 0.2º; 9.5º ± 0.2º; 10.3º ± 0.2º; 13.0º ± 0.2º; 13.6º ± 0.2º; 14.2º ± 0.2º; 14.9º ± 0.2º; 17.3º ± 0.2º; 19.2º ± 0.2º; 20.6º ± 0.2º; 24.0º ± 0.2º; and 28.7º ± 0.2º.

4. The crystalline form of any one of claims 1 to 3, having:

(i) an X-ray powder diffraction pattern as shown in Figure 1;

(ii) a DSC thermogram comprising an endothermic peak having a maximum at about 193 °C;

(iii) a differential scanning calorimetry thermogram (DSC) as shown in Figure 2; and/or

(iv) a thermogravimetric analysis (TGA) as shown in Figure 3.

5. The crystalline form of claim 1 or 2, which is Form IIA, having an X-ray powder diffraction pattern comprising:

(i) at least one peak, in terms of 2θ, at 9.1º ± 0.2º;

(ii) at least one peak, in terms of 2θ, at 11.1º ± 0.2º;

(iii) at least two peaks, in terms of 2θ, at 9.1º ± 0.2º and 12.6º ± 0.2º;

(iv) at least two peaks, in terms of 2θ, at 9.1º ± 0.2º and 13.5º ± 0.2º;

(v) the following peaks, in terms of 2θ: 9.1º ± 0.2º; 11.1º ± 0.2º; 12.6º ± 0.2º; and 13.5º ± 0.2º; and/or

(vi) 4 or more of the following peaks, in terms of 2θ: 9.1º ± 0.2º; 11.1º ± 0.2º; 12.6º ± 0.2º; 13.5º ± 0.2º; 18.0º ± 0.2º; 19.0º ± 0.2º; 20.5º ± 0.2º; and 21.9º ± 0.2º.

6. The crystalline form of any one of claims 1, 2, and 5, having:

(i) an X-ray powder diffraction pattern as shown in Figure 4;

(ii) a DSC thermogram comprising an endothermic peak having a maximum at about 180 °C;

(iii) a differential scanning calorimetry thermogram (DSC) as shown in Figure 5; and/or

(iv) having a thermogravimetric analysis (TGA) as shown in Figure 6.

7. The crystalline form of claim 1 or 2, which is Form IIIA, having an X-ray powder diffraction pattern comprising:

(i) the following peaks, in terms of 2θ: 8.1º ± 0.2º; 10.6º ± 0.2º; 13.5º ± 0.2º; and 14.2º ± 0.2º; and/or

(ii) 4 or more of the following peaks, in terms of 2θ: 8.1º ± 0.2º; 10.6º ± 0.2º; 13.5º ± 0.2º; 14.2º ± 0.2º; 16.4º ± 0.2º; 17.1º ± 0.2º; 17.9º ± 0.2º; 20.3º ± 0.2º; and 24.1º ± 0.2º.

8. The crystalline form of any one of claims 1, 2, and 7, having:

(i) an X-ray powder diffraction pattern as shown in Figure 7;

(ii) a DSC thermogram comprising an endothermic peak having a maximum at about 143 °C;

(iii) a differential scanning calorimetry thermogram (DSC) as shown in Figure 8; and/or

(iv) a thermogravimetric analysis (TGA) as shown in Figure 9.

9. A salt which is 2-(3-(8-amino-6-(trifluoromethyl)imidazo[1,2-a]pyrazin-3-yl)-4-methylphenyl)-3,3,3-trifluoro-2-hydroxypropanamide hydrobromic acid salt.

10. The salt of claim 9, which is a 1:1 stoichiometric ratio of 2-(3-(8-amino-6-(trifluoromethyl)imidazo[1,2-a]pyrazin-3-yl)-4-methylphenyl)-3,3,3-trifluoro-2-hydroxypropanamide to hydrobromic acid.

11. The salt of claim 9 or 10, which is a crystalline form.

12. The crystalline form of claim 11, which is a solvated crystalline form, optionally a methanol solvate crystalline form.

13. A composition comprising the crystalline form of any one of claims 1 to 8 and 12 or the salt of any one of claims 9 to 11; optionally wherein said composition further comprises at least one pharmaceutically acceptable carrier.

14. A method of inhibiting an activity of PI3Kγ kinase, comprising contacting *ex vivo* the kinase with a crystalline form of any one of claims 1 to 8 and 12, or the salt of any one of claims 9 to 11; optionally wherein said a crystalline form is a selective inhibitor for PI3Kγ over one or more of PI3Kα, PI3Kβ, and PI3Kδ.

15. Use of the crystalline form of any one of claims 1 to 8 and 12 or the salt of any one of claims 9 to 11, in the manufacture of a medicament for the treatment of a disease or disorder in a patient, wherein said disease or disorder is associated with abnormal expression or activity of PI3Kγ kinase, wherein the disease or disorder is:

(i) an autoimmune disease or disorder, cancer, cardiovascular disease, or neurodegenerative disease;

(ii) lung cancer, melanoma, pancreatic cancer, breast cancer, prostate cancer, liver cancer, colon cancer, endometrial cancer, bladder cancer, skin cancer, cancer of the uterus, renal cancer, gastric cancer, seminoma, teratocarcinoma, astrocytoma, neuroblastoma, glioma, or sarcoma; optionally wherein the sarcoma is Askin's tumor, sarcoma botryoides, chondrosarcoma, Ewing's sarcoma, malignant hemangioendothelioma, malignant schwannoma, osteosarcoma, alveolar soft part sarcoma, angiosarcoma, cystosarcoma phyllodes, dermatofibrosarcoma protuberans, desmoid tumor, desmoplastic small round cell tumor, epithelioid sarcoma, extraskeletal chondrosarcoma, extraskeletal osteosarcoma, fibrosarcoma, gastrointestinal stromal tumor (GIST), hemangiopericytoma, hemangiosarcoma, Kaposi's sarcoma, leiomyosarcoma, liposarcoma, lymphangiosarcoma, lymphosarcoma, malignant peripheral nerve sheath tumor (MPNST), neurofibrosarcoma, rhabdomyosarcoma, synovial sarcoma, or undifferentiated pleomorphic sarcoma;

(iii) acute myeloid leukemia, acute monocytic leukemia, small lymphocytic lymphoma, chronic lymphocytic leukemia (CLL), chronic myelogenous leukemia (CML), multiple myeloma, T-cell acute lymphoblastic leukemia (T-ALL), cutaneous T-cell lymphoma, large granular lymphocytic leukemia,

mature (peripheral) t-cell neoplasm (PTCL), anaplastic large cell lymphoma (ALCL), or lymphoblastic lymphoma; optionally wherein the mature (peripheral) t-cell neoplasm (PTCL) is T-cell prolymphocytic leukemia, T-cell granular lymphocytic leukemia, aggressive NK-cell leukemia, mycosis fungoides/Sezary syndrome, anaplastic large cell lymphoma (T-cell type), enteropathy type T-cell lymphoma, adult T-cell leukemia/lymphoma, or angioimmunoblastic T-cell lymphoma; optionally wherein the anaplastic large cell lymphoma (ALCL) is systemic ALCL or primary cutaneous ALCL;

(iv) Burkitt's lymphoma, acute myeloblastic leukemia, chronic myeloid leukemia, non-Hodgkin's lymphoma, Hodgkin's lymphoma, hairy cell leukemia, Mantle cell lymphoma, small lymphocytic lymphoma, follicular lymphoma, xeroderoma pigmentosum, keratoacanthoma, lymphoplasmacytic lymphoma, extranodal marginal zone lymphoma, Waldenstrom's macroglobulinemia, prolymphocytic leukemia, acute lymphoblastic leukemia, myelofibrosis, mucosa-associated lymphatic tissue (MALT) lymphoma, mediastinal (thymic) large B-cell lymphoma, lymphomatoid granulomatosis, splenic marginal zone lymphoma, primary effusion lymphoma, intravascular large B-cell lymphoma, plasma cell leukemia, extramedullary plasmacytoma, smoldering myeloma (aka asymptomatic myeloma), monoclonal gammopathy of undetermined significance (MGUS), or diffuse large B cell lymphoma; optionally wherein:

(a) the non-Hodgkin's lymphoma (NHL) is relapsed NHL, refractory NHL, recurrent follicular NHL, indolent NHL (iNHL), or aggressive NHL (aNHL);

(b) the diffuse large B cell lymphoma is activated B-cell like (ABC) diffuse large B cell lymphoma, or germinal center B cell (GCB) diffuse large B cell lymphoma; or

(c) the Burkitt's lymphoma is endemic Burkitt's lymphoma, sporadic Burkitt's lymphoma, or Burkitt's-like lymphoma;

(v) rheumatoid arthritis, multiple sclerosis, systemic lupus erythematous, asthma, allergy, allergic rhinitis, pancreatitis, psoriasis, anaphylaxis, glomerulonephritis, inflammatory bowel disease, thrombosis, meningitis, encephalitis, diabetic retinopathy, benign prostatic hypertrophy, myasthenia gravis, Sjögren's syndrome, osteoarthritis, restenosis, or atherosclerosis; or

(vi) heart hypertrophy, cardiac myocyte dysfunction, acute coronary syndrome, chronic obstructive pulmonary disease (COPD), chronic bronchitis, elevated blood pressure, ischemia, ischemia-reperfusion, vasoconstriction, anemia, bacterial infection, viral infection, graft rejection, kidney disease, anaphylactic shock fibrosis, skeletal muscle atrophy, skeletal muscle hypertrophy, angiogenesis, sepsis, graft-versus-host disease, allogeneic or xenogeneic transplantation, glomerulosclerosis, progressive renal fibrosis, idiopathic thrombocytopenic purpura (ITP), autoimmune hemolytic anemia, vasculitis, systemic lupus erythematosus, lupus nephritis, pemphigus, or membranous nephropathy; optionally wherein

(a) the idiopathic thrombocytopenic purpura (ITP) is relapsed ITP or refractory ITP;

(b) the vasculitis is Behçet's disease, Cogan's syndrome, giant cell arteritis, polymyalgia rheumatica (PMR), Takayasu's arteritis, Buerger's disease (thromboangiitis obliterans), central nervous system vasculitis, Kawasaki disease, polyarteritis nodosa, Churg-Strauss syndrome, mixed cryoglobulinemia vasculitis (essential or hepatitis C virus (HCV)-induced), Henoch-Schönlein purpura (HSP), hypersensitivity vasculitis, microscopic polyangiitis, Wegener's granulomatosis, or anti-neutrophil cytoplasm antibody associated (ANCA) systemic vasculitis (AASV); or

(c) the disease or disorder is Alzheimer's disease, central nervous system trauma, or stroke.

16. A process of preparing a crystalline form of the compound 2-(3-(8-amino-6-(trifluoromethyl)imidazo[1,2-a]pyrazin-3-yl)-4-methylphenyl)-3,3,3-trifluoro-2-hydroxypropanamide, comprising dissolving the compound in a solvent to form a mixture and crystallizing the compound from the mixture.

17. The process of claim 16, wherein the solvent comprises isopropyl acetate; optionally wherein the solvent further comprises heptane.

18. The process of any one of claims 16 or 17, wherein the process further comprises heating the mixture to a temperature of from about 70ºC to about 90ºC; optionally wherein the process further comprises cooling the mixture to room temperature.

19. The process of claim 16, wherein the solvent comprises methanol.

20. The process of claim 16, wherein the process further comprises heating the mixture to a temperature of from about 50°C to about 70°C; optionally wherein the process further comprises cooling the mixture to room temperature.

21. A process of preparing a hydrobromic acid salt of the compound 2-(3-(8-amino-6-(trifluoromethyl)imidazo[1,2-a]pyrazin-3-yl)-4-methylphenyl)-3,3,3-trifluoro-2-hydroxypropanamide, comprising dissolving the compound in a solvent to form a mixture and adding hydrobromic acid to the mixture.

22. The process of claim 21, wherein the solvent comprises methanol.

23. The process of claim 21 or 22, wherein:

(i) the hydrobromic acid is added to the mixture as an aqueous solution of hydrobromic acid;
(ii) an excess amount of hydrobromic acid is added to the mixture based on 1 equivalent of 2-(3-(8-amino-6-(trifluoromethyl)imidazo[1,2-a]pyrazin-3-yl)-4-methylphenyl)-3,3,3-trifluoro-2-hydroxypropanamide; and/or
(iii) about 1.1 to about 1.5 equivalents of hydrobromic acid are added to the mixture based on 1 equivalent of the 2-(3-(8-amino-6-(trifluoromethyl)imidazo[1,2-a]pyrazin-3-yl)-4-methylphenyl)-3,3,3-trifluoro-2-hydroxypropanamide.

24. The process of any one of claims 21 to 23, further comprising substantially isolating the 2-(3-(8-amino-6-(trifluoromethyl)imidazo[1,2-a]pyrazin-3-yl)-4-methylphenyl)-3,3,3-trifluoro-2-hydroxypropanamide hydrobromic acid salt.

25. The process of claim 24, wherein the 2-(3-(8-amino-6-(trifluoromethyl)imidazo[1,2-a]pyrazin-3-yl)-4-methylphenyl)-3,3,3-trifluoro-2-hydroxypropanamide hydrobromic acid salt is isolated as a crystalline form; optionally a methanol solvate crystalline form.