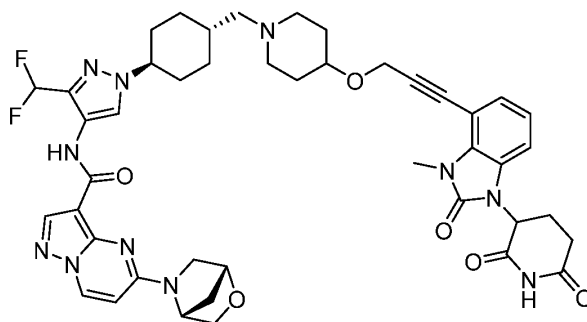


CLAIMS

What is claimed is:

1. A crystalline solid form of Compound 1:



1

selected from Form A and Form B.

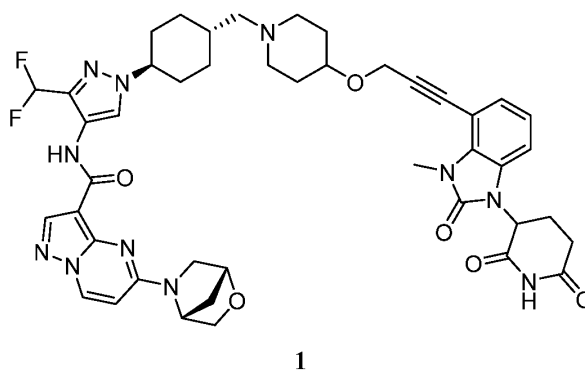
2. The crystalline solid form according to claim 1, wherein said compound is a crystalline solid substantially free of amorphous compound 1.
3. The crystalline solid form according to claim 1, wherein said compound is substantially free of impurities.
4. The crystalline solid form according to any one of claims 1-3, wherein the crystalline solid form is Form A of Compound 1.
5. The crystalline solid form according to claim 4, having one or more peaks in its X-ray powder diffraction pattern selected from those at about 6.0, about 16.5, about 17.2, about 23.0, and about 23.9 degrees 2-theta.
6. The crystalline solid form according to claim 4, having two or more peaks in its X-ray powder diffraction pattern selected from those at about 6.0, about 16.5, about 17.2, about 23.0, and about 23.9 degrees 2-theta.
7. The crystalline solid form according to claim 4, having three or more peaks in its X-ray powder diffraction pattern selected from those at about 6.0, about 16.5, about 17.2, about 23.0, and about 23.9 degrees 2-theta.

8. The crystalline solid form according to claim 4, having four or more peaks in its X-ray powder diffraction pattern selected from those at about 6.0, about 16.5, about 17.2, about 23.0, and about 23.9 degrees 2-theta.
9. The crystalline solid form according to claim 4, having five peaks in its X-ray powder diffraction pattern selected from those at about 6.0, about 16.5, about 17.2, about 23.0, and about 23.9 degrees 2-theta.
10. The crystalline solid form according to claim 4, having an X-ray powder diffraction pattern substantially as shown in **FIG. 1A**.
11. The crystalline solid form according to any one of claims 1-3, wherein the crystalline solid form is Form B.
12. The crystalline solid form according to claim 11, having one or more peaks in its X-ray powder diffraction pattern selected from those at about 3.2, about 16.2, about 16.5, about 17.1, and about 18.2 degrees 2-theta.
13. The crystalline solid form according to claim 11, having two or more peaks in its X-ray powder diffraction pattern selected from those at about 3.2, about 16.2, about 16.5, about 17.1, and about 18.2 degrees 2-theta.
14. The crystalline solid form according to claim 11, having three or more peaks in its X-ray powder diffraction pattern selected from those at about 3.2, about 16.2, about 16.5, about 17.1, and about 18.2 degrees 2-theta.
15. The crystalline solid form according to claim 11, having four or more peaks in its X-ray powder diffraction pattern selected from those at about 3.2, about 16.2, about 16.5, about 17.1, and about 18.2 degrees 2-theta.

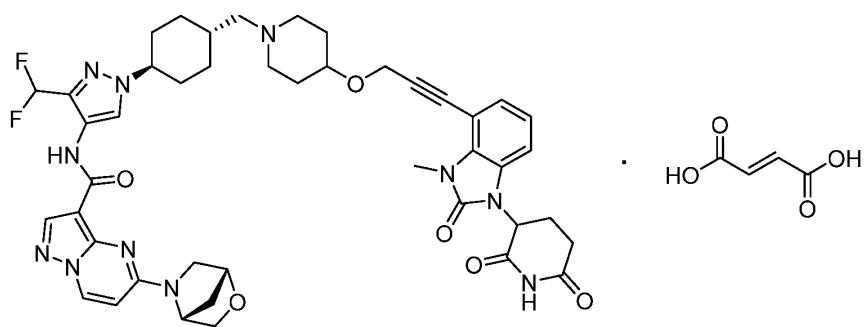
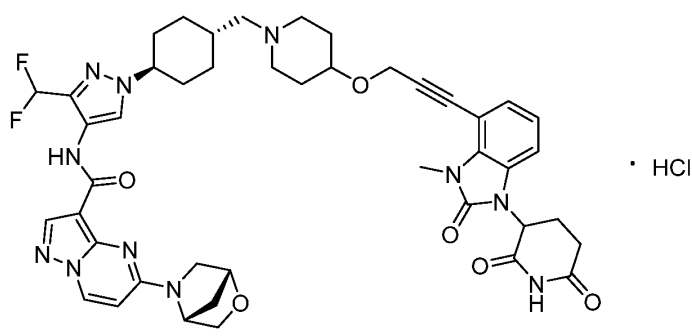
16. The crystalline solid form according to claim 11, having five peaks in its X-ray powder diffraction pattern selected from those at about 3.2, about 16.2, about 16.5, about 17.1, and about 18.2 degrees 2-theta.

17. The crystalline solid form according to claim 11, having an X-ray powder diffraction pattern substantially as shown in **FIG. 2A**.

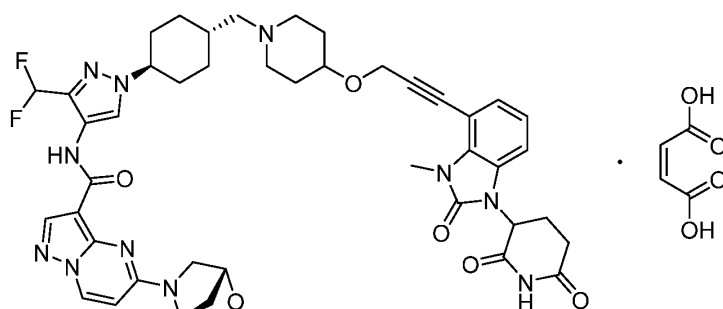
18. A salt form of compound 1:



selected from:

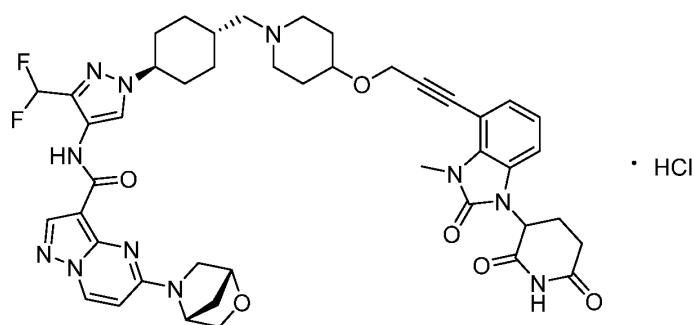


; and



Compound 4:

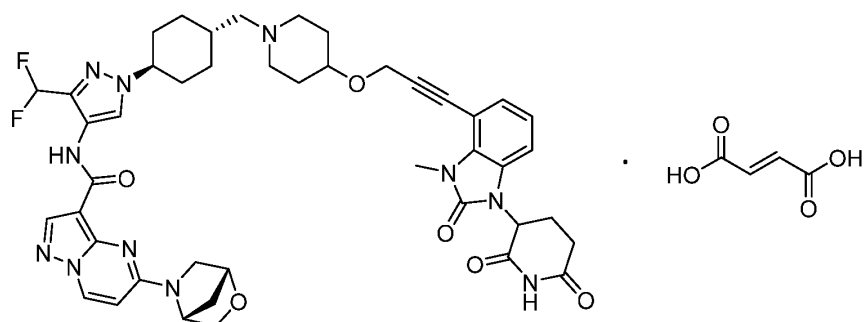
19. The salt form of claim 18, wherein the salt form of Compound 1 is Compound 2:



2.

20. The salt form according to claim 19, wherein said salt form is crystalline.
21. The salt form according to claim 19, wherein said salt form is a crystalline solid substantially free of amorphous compound 2.
22. The salt form according to any one of claims 19-21, wherein said salt form is substantially free of impurities.
23. The salt form according to any one of claims 19-22, wherein said salt form is Form A of Compound 2.
24. The salt form according to claim 23, having one or more peaks in its X-ray powder diffraction pattern selected from those at about 14.1, about 17.0, about 17.3, about 19.0, about 21.0, about 21.2 and about 23.3 degrees 2-theta.

25. The salt form according to claim 23, having two or more peaks in its X-ray powder diffraction pattern selected from those at about 14.1, about 17.0, about 17.3, about 19.0, about 21.0, about 21.2 and about 23.3 degrees 2-theta.
26. The salt form according to claim 23, having three or more peaks in its X-ray powder diffraction pattern selected from those at about 14.1, about 17.0, about 17.3, about 19.0, about 21.0, about 21.2 and about 23.3 degrees 2-theta.
27. The salt form according to claim 23, having four or more peaks in its X-ray powder diffraction pattern selected from those at about 14.1, about 17.0, about 17.3, about 19.0, about 21.0, about 21.2 and about 23.3 degrees 2-theta.
28. The salt form according to claim 23, having five or more peaks in its X-ray powder diffraction pattern selected from those at about 14.1, about 17.0, about 17.3, about 19.0, about 21.0, about 21.2 and about 23.3 degrees 2-theta.
29. The salt form according to claim 23, having six or more peaks in its X-ray powder diffraction pattern at about 14.1, about 17.0, about 17.3, about 19.0, about 21.0, about 21.2 and about 23.3 degrees 2-theta.
30. The salt form according to claim 23, having seven peaks in its X-ray powder diffraction pattern at about 14.1, about 17.0, about 17.3, about 19.0, about 21.0, about 21.2 and about 23.3 degrees 2-theta.
31. The salt form according to claim 23, having an XRPD substantially as shown in **FIG. 3A**.
32. The salt form of claim 18, wherein the salt form of Compound **1** is Compound **3**:



3.

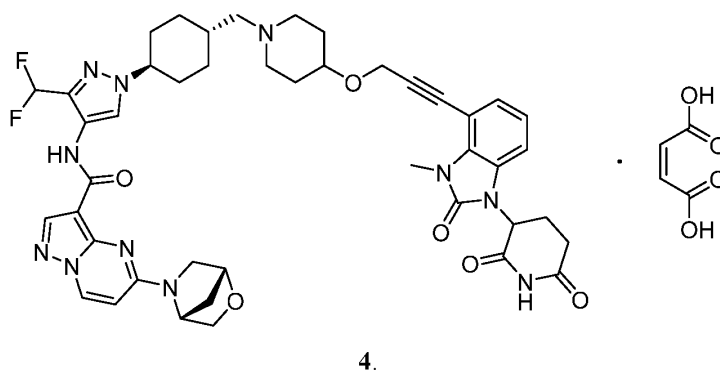
33. The salt form according to claim 32, wherein said salt form is crystalline.
34. The salt form according to claim 32, wherein said salt form is a crystalline solid substantially free of amorphous compound 3.
35. The salt form according to any one of claims 32-34, wherein said salt form is substantially free of impurities.
36. The salt form according to any one of claims 32-35, wherein said salt form is Form A of Compound 3.
37. The salt form according to claim 36, having one or more peaks in its X-ray powder diffraction pattern selected from those at about 6.4, about 11.9, about 16.2, about 17.2, and about 20.9 degrees 2-theta.
38. The salt form according to claim 36, having two or more peaks in its X-ray powder diffraction pattern selected from those at about 6.4, about 11.9, about 16.2, about 17.2, and about 20.9 degrees 2-theta.
39. The salt form according to claim 36, having three or more peaks in its X-ray powder diffraction pattern selected from those at about 6.4, about 11.9, about 16.2, about 17.2, and about 20.9 degrees 2-theta.

40. The salt form according to claim 36, having four or more peaks in its X-ray powder diffraction pattern selected from those at about 6.4, about 11.9, about 16.2, about 17.2, and about 20.9 degrees 2-theta.

41. The salt form according to claim 36, having five peaks in in its X-ray powder diffraction pattern selected from those at about 6.4, about 11.9, about 16.2, about 17.2, and about 20.9 degrees 2-theta.

42. The salt form according to claim 36, having an XRPD substantially as shown in FIG. 4A.

43. The salt form of claim 18, wherein the salt form of Compound 1 is Compound 4:



44. The salt form according to claim 43, wherein said salt form is crystalline.

45. The salt form according to claim 43, wherein said salt form is a crystalline solid substantially free of amorphous compound 4.

46. The salt form according to any one of claims 43-45, wherein said salt form is substantially free of impurities.

47. The salt form according to any one of claims 43-46, wherein said salt form is Form A of Compound 4.

48. The salt form according to claim 47, having one or more peaks in its X-ray powder diffraction pattern selected from those at about 3.3, about 6.4, and about 16.7 degrees 2-theta.

49. The salt form according to claim 47, having two or more peaks in its X-ray powder diffraction pattern selected from those at about 3.3, about 6.4, and about 16.7 degrees 2-theta.
50. The salt form according to claim 47, having three peaks in its X-ray powder diffraction pattern selected from those at about 3.3, about 6.4, and about 16.7 degrees 2-theta.
51. The salt form according to claim 47, having an XRPD substantially as shown in **FIG. 5A**.
52. A composition comprising a crystalline solid form or salt form according to any one of claims 1-51 and a pharmaceutically acceptable carrier or excipient.
53. The pharmaceutical composition according to claim 52, further comprising an additional therapeutic agent.
54. A method of degrading IRAK1, IRAK2 and/or IRAK4 protein kinase in a patient or biological sample comprising administering to said patient, or contacting said biological sample with a crystalline solid form or salt form according any of one of claims 1-51, or a pharmaceutical composition thereof.
55. A method of treating an IRAK1-mediated, IRAK2-mediated and/or IRAK4-mediated disorder, disease, or condition in a patient comprising administering to said patient a crystalline solid form or salt form according any of one of claims 1-51, or a pharmaceutical composition thereof.
56. The method according to claim 55, further comprising administration of an additional therapeutic agent.
57. The method according to claim 55, wherein the IRAK1-mediated, IRAK2-mediated and/or IRAK4-mediated disorder, disease or condition is an inflammatory disorder.
58. The method according to claim 57, wherein the inflammatory disorder is selected from the group consisting of ocular allergy, conjunctivitis, keratoconjunctivitis sicca, vernal conjunctivitis; allergic rhinitis, hemolytic anemia, aplastic anemia, pure red cell anemia, idiopathic thrombocytopenia or another inflammatory disease in which autoimmune reactions are implicated or which have an autoimmune component or etiology, systemic lupus erythematosus, rheumatoid arthritis,

polychondritis, scleroderma, Wegener granulomatosis, dermatomyositis, chronic active hepatitis, myasthenia gravis, Steven-Johnson syndrome, idiopathic sprue, ulcerative colitis, Crohn's disease or another autoimmune inflammatory bowel disease, irritable bowel syndrome, celiac disease, periodontitis, hyaline membrane disease, kidney disease, glomerular disease, alcoholic liver disease, endocrine ophthalmopathy, Grave's disease, sarcoidosis, alveolitis, chronic hypersensitivity pneumonitis, multiple sclerosis, primary biliary cirrhosis, uveitis (anterior and posterior), Sjogren's syndrome, vernal keratoconjunctivitis, interstitial lung fibrosis, psoriatic arthritis, systemic juvenile idiopathic arthritis, nephritis, diverticulitis, interstitial cystitis, glomerulonephritis (with and without nephrotic syndrome, optionally including idiopathic nephrotic syndrome or minimal change nephropathy), chronic granulomatous disease, endometriosis, leptospirosis renal disease, glaucoma, retinal disease, aging, headache, pain, complex regional pain syndrome, cardiac hypertrophy, muscle wasting, catabolic disorders, obesity, fetal growth retardation, hypercholesterolemia, heart disease, chronic heart failure, mesothelioma, anhidrotic ectodermal dysplasia, Behcet's disease, incontinentia pigmenti, Paget's disease, pancreatitis, hereditary periodic fever syndrome, asthma (allergic, non-allergic, mild, moderate, severe, bronchitic, or exercise-induced), acute lung injury, acute respiratory distress syndrome, eosinophilia, hypersensitivities, anaphylaxis, nasal sinusitis, silica induced diseases, COPD (reduction of damage, airways inflammation, bronchial hyperreactivity, remodeling or disease progression), pulmonary disease, cystic fibrosis, acid-induced lung injury, pulmonary hypertension, polyneuropathy, cataracts, muscle inflammation in conjunction with systemic sclerosis, inclusion body myositis, myasthenia gravis, thyroiditis, Addison's disease, lichen planus, Type 1 diabetes, Type 2 diabetes, appendicitis, atopic dermatitis, allergy, blepharitis, bronchiolitis, bronchitis, bursitis, cervicitis, cholangitis, cholecystitis, chronic graft rejection, colitis, conjunctivitis, cystitis, dacryoadenitis, dermatitis, dermatomyositis, encephalitis, endocarditis, endometritis, enteritis, enterocolitis, epicondylitis, epididymitis, fasciitis, fibrositis, gastritis, gastroenteritis, Henoch-Schonlein purpura, hepatitis, hidradenitis suppurativa, immunoglobulin A nephropathy, interstitial lung disease, laryngitis, mastitis, meningitis, myelitis myocarditis, myositis, nephritis, oophoritis, orchitis, osteitis, otitis, pancreatitis, parotitis, pericarditis, peritonitis, pharyngitis, pleuritis, phlebitis, pneumonia, polymyositis, proctitis, prostatitis, pyelonephritis, rhinitis, salpingitis, sinusitis, stomatitis, synovitis, tendonitis, tonsillitis, vaginitis, vasculitis, vulvitis, alopecia areata, erythema multiforme, dermatitis herpetiformis, scleroderma, vitiligo, hypersensitivity angiitis, urticaria, bullous pemphigoid, pemphigus vulgaris, pemphigus foliaceus, paraneoplastic pemphigus, epidermolysis bullosa acquisita, acute and chronic gout, chronic gouty arthritis, psoriasis, psoriatic

arthritis, rheumatoid arthritis, Juvenile rheumatoid arthritis, Cryopyrin Associated Periodic Syndrome (CAPS), and osteoarthritis.