

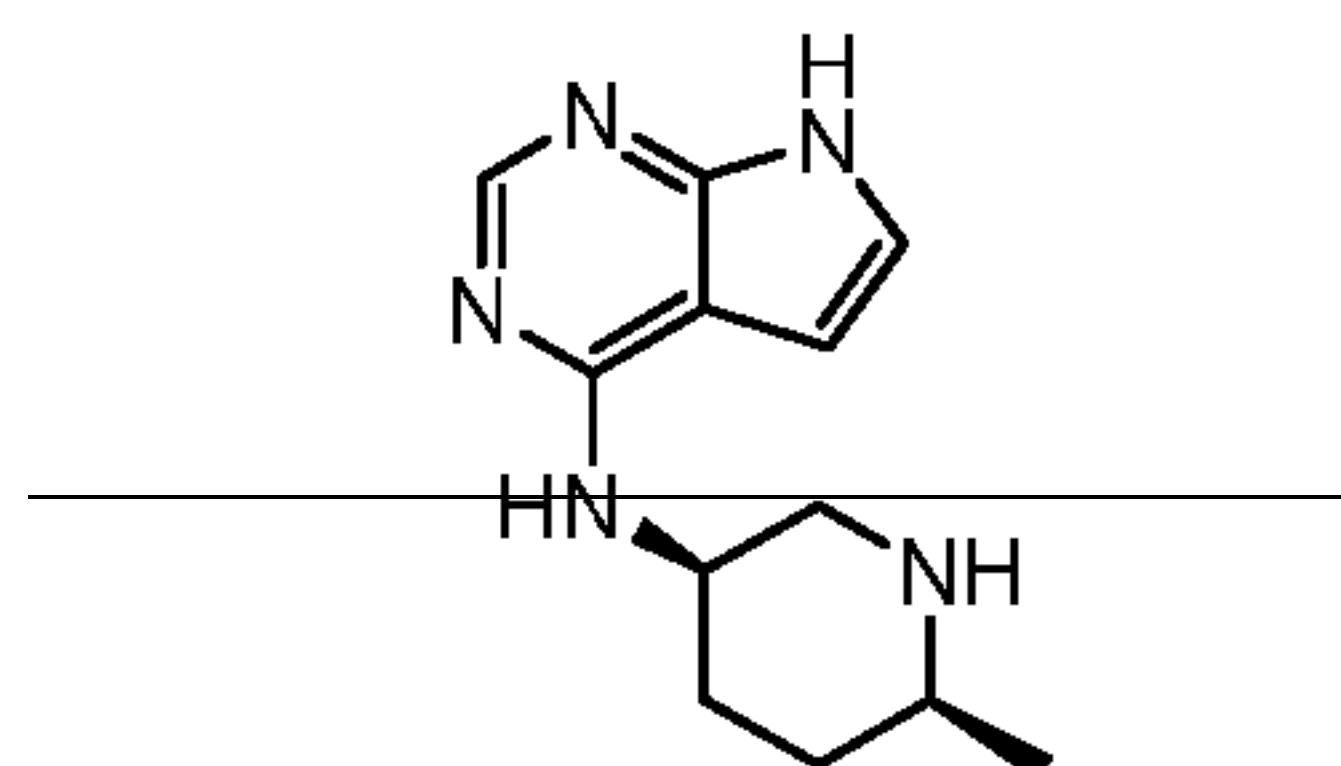
WHAT IS CLAIMED IS:

1. ~~A *p*-toluenesulfonic acid salt of 1-((2*S*,5*R*)-5-((7*H*-pyrrolo[2,3-*d*]pyrimidin-4-yl)amino)-2-methylpiperidin-1-yl)prop-2-en-1-one.~~
- 5 2. ~~A crystalline form of the *p*-toluenesulfonic acid salt of 1-((2*S*,5*R*)-5-((7*H*-pyrrolo[2,3-*d*]pyrimidin-4-yl)amino)-2-methylpiperidin-1-yl)prop-2-en-1-one.~~
3. ~~The crystalline form of claim 2, having a powder X-ray diffraction pattern comprising peaks, in terms of 2θ , at 11.4, 14.1, 16.7, 17.9 and $21.6^\circ 2\theta \pm 0.2^\circ 2\theta$.~~
- 10 4. ~~The crystalline form of claim 2, having solid state ^{13}C nuclear magnetic resonance chemical shifts selected from the group consisting of 17.3, 21.3, 28.7, 131.6, and $147.9 \text{ ppm} \pm 0.2 \text{ ppm}$.~~
5. ~~The crystalline form of claim 2, having a set of Raman bands at 1617, 1601, 1040, 1032, 799 and $766 \text{ cm}^{-1} \pm 2 \text{ cm}^{-1}$.~~
- 15 6. ~~The crystalline form of claim 2, having a powder X-ray diffraction pattern comprising peaks, in terms of 2θ , at 11.4, 16.7, $17.9^\circ 2\theta \pm 0.2^\circ 2\theta$ and solid state ^{13}C nuclear magnetic resonance chemical shifts selected from the group consisting of 131.6, $147.9 \text{ ppm} \pm 0.2 \text{ ppm}$.~~
7. ~~The crystalline form of claim 2 having a powder X-ray diffraction pattern comprising peaks, in terms of 2θ , at 11.4, 16.7, $17.9^\circ 2\theta \pm 0.2^\circ 2\theta$ and a set of Raman bands at 1617, $1601 \text{ cm}^{-1} \pm 2 \text{ cm}^{-1}$.~~
- 20 8. ~~The crystalline form of claim 2 having a powder X-ray diffraction pattern comprising peaks, in terms of 2θ , at 11.4, 16.7, $17.9^\circ 2\theta \pm 0.2^\circ 2\theta$, a set of Raman bands at 1617, $1601 \text{ cm}^{-1} \pm 2 \text{ cm}^{-1}$ and solid state ^{13}C nuclear magnetic resonance chemical shifts selected from the group consisting of 131.6, $147.9 \text{ ppm} \pm 0.2 \text{ ppm}$.~~
- 25 9. ~~A pharmaceutical composition comprising the crystalline form of claim 2.~~
10. ~~A method for treating a disorder or condition selected from rheumatoid arthritis, myositis, vasculitis, pemphigus, bullous pemphigoid, inflammatory bowel disease, Crohn's disease, ulcerative colitis, celiac disease, proctitis, eosinophilic gastroenteritis, mastocytosis, Alzheimer's disease, lupus, nephritis, systemic lupus erythematosus, psoriasis, eczema dermatitis, pruritus or other pruritic conditions, vitiligo, alopecia, autoimmune thyroid disorders, multiple sclerosis, major depression disorder, allergy, asthma, Sjogren's disease, Reiter's syndrome, polymyositis-dermatomyositis, systemic sclerosis, polyarteritis nodosa, Hashimoto's thyroiditis, autoimmune hemolytic anemia, autoimmune atrophic gastritis of pernicious anemia, autoimmune encephalomyelitis, autoimmune orchitis, Goodpasture's disease, autoimmune thrombocytopenia, sympathetic ophthalmia, myasthenia gravis, Graves' disease, primary biliary cirrhosis, chronic aggressive hepatitis, membranous glomerulopathy, organ transplant rejection,~~
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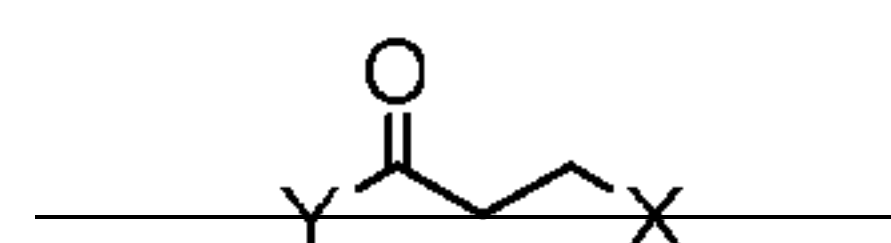
- graft-versus-host disease, organ and cell transplant rejection, xenotransplantation, Cogan's syndrome, ankylosing spondylitis, Wegener's granulomatosis, autoimmune alopecia, Type I or juvenile onset diabetes, complications from diabetes, thyroiditis, chronic pulmonary obstructive disorder, acute respiratory disease, cachexia, cancer, alimentary/gastrointestinal tract cancer, colon cancer, liver cancer, skin cancer, mast cell tumor, squamous cell carcinoma, breast, mammary cancer, ovarian cancer, prostate cancer, leukemia, adult T cell leukemia activated B cell like, diffuse large B cell lymphoma, kidney cancer, lung cancer, muscle cancer, bone cancer, bladder cancer, brain cancer, melanoma, oral or metastatic melanoma, Kaposi's sarcoma septic shock, cardiopulmonary dysfunction, acute myeloid leukemia, T cell acute lymphoblastic leukemia, multiple myeloma, myeloproliferative disorders, proliferative diabetic retinopathy, angiogenic associated disorders, solid tumors, pancreatic cancer, brain tumors, gliomas, astrocytoma, oligodendroglioma, glioblastoma, acute CNS trauma, traumatic brain injury, encephalitis, stroke, spinal cord injury, epilepsy, seizures, chronic neuroinflammation associated with neurodegeneration, Parkinson's disease, Amyotrophic Lateral Sclerosis, Huntington's disease, cerebral ischemia, fronto-temporal lobe dementia, neuropsychiatric disorders, schizophrenia, bipolar disorder, treatment-resistant depression, Post Traumatic Stress Disorder, anxiety, auto-antibodies mediated encephalopathies, eye diseases, autoimmune diseases of the eye, keratoconjunctivitis, vernal conjunctivitis, uveitis, uveitis associated with Behcet's disease and lens induced uveitis, keratitis, herpetic keratitis, conical keratitis, corneal epithelial dystrophy, keratoleukoma, ocular pemphigus, Mooren's ulcer, scleritis, Grave's ophthalmopathy, Vogt-Koyanagi-Harada syndrome, keratoconjunctivitis sicca (dry eye), phlyctenule, iridocyclitis, sarcoidosis, endocrine ophthalmopathy, sympathetic ophthalmitis, allergic conjunctivitis, and ocular neovascularization, comprising administering to a subject suffering from said disease or condition an effective amount of a composition comprising the salt of claim 1.
11. The method of claim 10, wherein the disease is ulcerative colitis.
12. The method of claim 10, wherein the disease is rheumatoid arthritis.
13. The method of claim 10, wherein the disease is alopecia areata.
14. The method of claim 10, wherein the disease is psoriasis.
15. A process of making a *p*-toluenesulfonic acid salt of 1-((2*S*,5*R*)-5-((7*H*-pyrrolo[2,3-*d*]pyrimidin-4-yl)amino)-2-methylpiperidin-1-yl)prop-2-en-1-one, comprising stirring a solution of *p*-toluenesulfonic acid monohydrate and 1-((2*S*,5*R*)-5-((7*H*-pyrrolo[2,3-*d*]pyrimidin-4-yl)amino)-2-methylpiperidin-1-yl)prop-2-en-1-one dissolved in a suitable solvent.

16. The process of claim 15, wherein the suitable solvent is either a mixture of methyl ethyl ketone and water or acetonitrile/ethanol.

17. A process of making 1-((2S,5R)-5-((7H-pyrrolo[2,3-d]pyrimidin-4-yl)amino)-2-methylpiperidin-1-yl)prop-2-en-1-one, comprising reacting a compound have the structure:



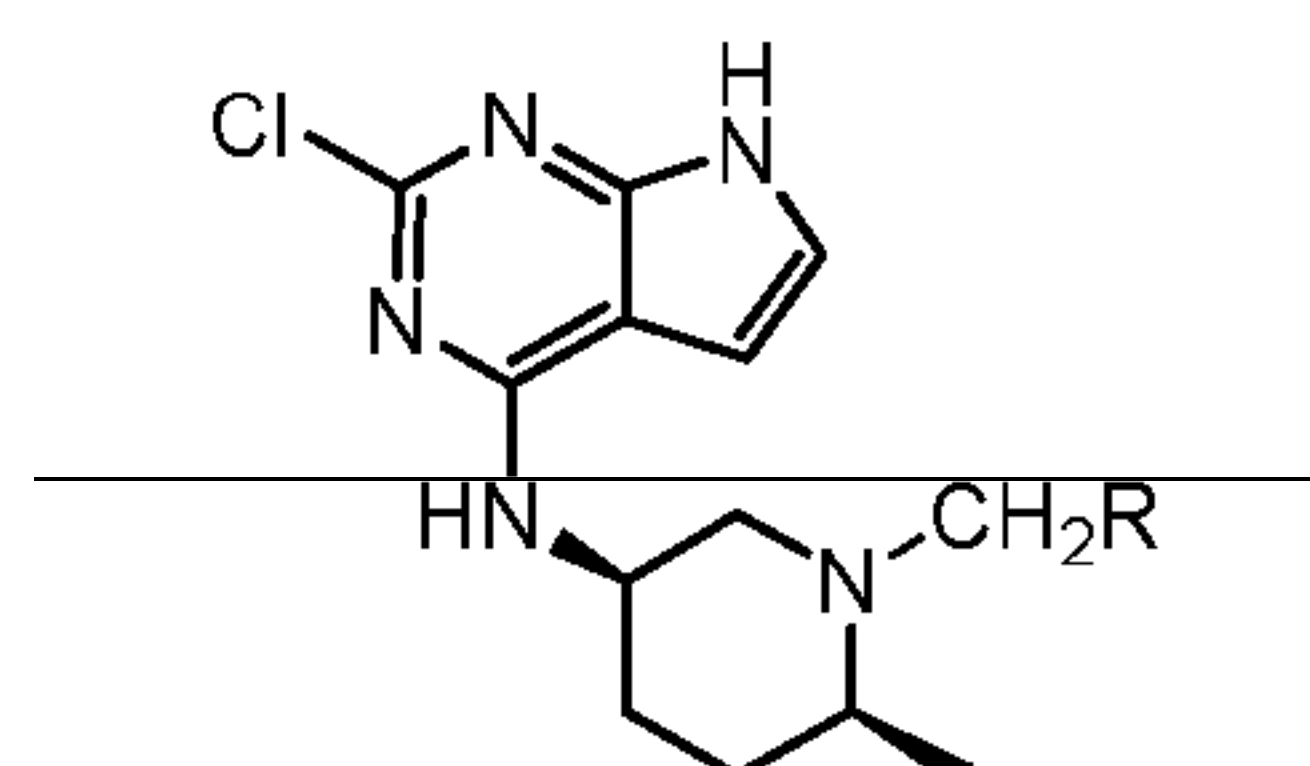
with a compound having the structure:



where X and Y are independently selected from a group consisting of chlorine, bromine and iodine under suitable basic conditions so as to form 1-((2S,5R)-5-((7H-pyrrolo[2,3-d]pyrimidin-4-yl)amino)-2-methylpiperidin-1-yl)prop-2-en-1-one.

18. The process of claim 17, further comprising forming the p-toluenesulfonic acid salt of 1-((2S,5R)-5-((7H-pyrrolo[2,3-d]pyrimidin-4-yl)amino)-2-methylpiperidin-1-yl)prop-2-en-1-one by reaction with p-toluenesulfonic acid under suitable conditions to result in said salt.

19. A compound having the structure:



wherein R is an aryl group selected from phenyl, tolyl, xylyl and pyridyl.

20. The compound of claim 19, wherein R is phenyl.

WHAT IS CLAIMED IS:

1. A crystalline form of the *p*-toluenesulfonic acid salt of 1-((2S,5R)-5-((7H-pyrrolo[2,3-d]pyrimidin-4-yl)amino)-2-methylpiperidin-1-yl)prop-2-en-1-one having a powder X-ray diffraction pattern comprising peaks, in terms of 2θ , at 11.4, 14.1, 16.7, 17.9 and $21.6^\circ 2\theta \pm 0.2^\circ 2\theta$.
2. The crystalline form of claim 1, having solid state ^{13}C nuclear magnetic resonance chemical shifts selected from the group consisting of 17.3, 21.3, 28.7, 131.6, and 147.9 ppm ± 0.2 ppm.
3. The crystalline form of claim 1, having a set of Raman bands at 1617, 1601, 1040, 1032, 799 and $766\text{ cm}^{-1} \pm 2\text{ cm}^{-1}$.
4. The crystalline form of any one of claims 1 to 3, having a powder X-ray diffraction pattern comprising peaks, in terms of 2θ , at 11.4, 16.7, $17.9^\circ 2\theta \pm 0.2^\circ 2\theta$ and solid state ^{13}C nuclear magnetic resonance chemical shifts selected from the group consisting of 131.6, $147.9\text{ ppm} \pm 0.2\text{ ppm}$.
5. The crystalline form of claim 1 or claim 2 having a powder X-ray diffraction pattern comprising peaks, in terms of 2θ , at 11.4, 16.7, $17.9^\circ 2\theta \pm 0.2^\circ 2\theta$ and a set of Raman bands at 1617, $1601\text{ cm}^{-1} \pm 2\text{ cm}^{-1}$.
6. The crystalline form of claim 1 having a powder X-ray diffraction pattern comprising peaks, in terms of 2θ , at 11.4, 16.7, $17.9^\circ 2\theta \pm 0.2^\circ 2\theta$, a set of Raman bands at 1617, $1601\text{ cm}^{-1} \pm 2\text{ cm}^{-1}$ and solid state ^{13}C nuclear magnetic resonance chemical shifts selected from the group consisting of 131.6, $147.9\text{ ppm} \pm 0.2\text{ ppm}$.