

CLAIMS

1. 6-Amino-9-[(3R)-1-(2-butynoyl)-3-pyrrolidinyl]-7-(4-phenoxyphenyl)-7,9-dihydro-8H-purin-8-one hydrochloride.

5 2. A crystal of 6-amino-9-[(3R)-1-(2-butynoyl)-3-pyrrolidinyl]-7-(4-phenoxyphenyl)-7,9-dihydro-8H-purin-8-one hydrochloride.

3. The crystal according to claim 2, having at least 2 or more peaks at angle 2θ selected from
10 approximately 8.11, 8.43, 11.57, 12.73, 13.85, 14.20, 14.67, 14.91, 15.94, 16.64, 18.06, 19.74, 20.42, 21.05, 22.57, 23.21, 23.85, and 24.70 degrees in a powder x-ray diffraction spectrum.

4. The crystal according to claim 2 or 3, having
15 peaks at angle 2θ of approximately 8.11, 8.43, 14.20, 14.67, 14.91 and 23.21 degrees in a powder x-ray diffraction spectrum.

5. The crystal according to any one of claims 2 to 4, having peaks at angle 2θ selected from approximately
20 8.11, 8.43, 11.57, 12.73, 13.85, 14.20, 14.67, 14.91, 15.94, 16.64, 18.06, 19.74, 20.42, 21.05, 22.57, 23.21, 23.85, and 24.70 degrees in a powder x-ray diffraction spectrum.

6. The crystal according to any one of claims 2 to 5, which is characterized by the powder x-ray diffraction spectral chart in FIG. 3.

7. The crystal according to any one of claims 2 to 6, having an endothermic peak at a peak temperature of 216°C in differential scanning calorimetry.

30 8. The crystal according to any one of claims 2 to 7, which is characterized by the differential scanning calorimetry chart in FIG. 4.

9. A pharmaceutical composition comprising 6-amino-9-[(3R)-1-(2-butynoyl)-3-pyrrolidinyl]-7-(4-phenoxyphenyl)-7,9-dihydro-8H-purin-8-one hydrochloride.
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10. The pharmaceutical composition according to

claim 9, which is a Btk inhibitor.

11. The pharmaceutical composition according to claim 10, which is an agent for the prevention and/or treatment of a Btk-related disease.

5 12. The pharmaceutical composition according to claim 11, wherein the Btk-related disease is an allergic disease, an autoimmune disease, an inflammatory disease, a thromboembolic disease, a bone-related disease, or cancer.

10 13. The pharmaceutical composition according to claim 12, wherein the cancer is non-Hodgkin's lymphoma.

CLAIMS

1. 6-amino-9-[(3R)-1-(2-butynoyl)-3-pyrrolidinyl]-7-(4-phenoxyphenyl)-7,9-dihydro-8H-purin-8-one hydrochloride.
2. A crystal of 6-amino-9-[(3R)-1-(2-butynoyl)-3-pyrrolidinyl]-7-(4-phenoxyphenyl)-7,9-dihydro-8H-purin-8-one hydrochloride.
3. A pharmaceutical composition comprising 6-amino-9-[(3R)-1-(2-butynoyl)-3-pyrrolidinyl]-7-(4-phenoxyphenyl)-7,9-dihydro-8H-purin-8-one hydrochloride.
4. The pharmaceutical composition according to claim 3, which is a Btk inhibitor.
5. The pharmaceutical composition according to claim 4, which is an agent for the prevention and/or treatment of a Btk-related disease selected from an allergic disease, an autoimmune disease, an inflammatory disease, a thromboembolic disease, or cancer.
6. The pharmaceutical composition according to claim 5, wherein the cancer is non-Hodgkin's lymphoma.