

Claims

1. A Form II crystal of 3-ethyl-4-{3-isopropyl-4-(4-(1-methyl-1H-pyrazol-4-yl)-1H-imidazol-1-yl)-1H-pyrazolo[3,4-
5 b]pyridin-1-yl}benzamide showing an X-ray powder diffraction spectrum having at least three characteristic diffraction peaks at angles ($2\theta \pm 0.2^\circ$) selected from the group consisting of 7.7° , 8.0° , 11.1° , 12.5° , 12.9° , 15.2° , 15.8° , 17.2° , 19.0° , 22.5° , 26.1° , and 27.4° .

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2. The Form II crystal according to claim 1, wherein the crystal shows an X-ray powder diffraction spectrum having at least five characteristic diffraction peaks at angles ($2\theta \pm 0.2^\circ$) selected from the group consisting of 7.7° , 8.0° , 11.1° ,
15 12.5° , 12.9° , 15.2° , 15.8° , 17.2° , 19.0° , 22.5° , 26.1° , and 27.4° .

3. The Form II crystal according to claim 1 or claim 2, wherein the endothermic peak determined by differential scanning calorimetry is around 270°C .

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4. A pharmaceutical composition comprising the Form II crystal according to any one of claims 1 to 3.

5. A pharmaceutical composition for oral administration
25 comprising the Form II crystal according to any one of claims 1 to 3.

6. An antitumor agent comprising the Form II crystal according to any one of claims 1 to 3.

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7. Use of the Form II crystal according to any one of claims 1 to 3, for the production of a pharmaceutical composition.

8. The use according to claim 7, wherein the pharmaceutical composition is a pharmaceutical composition for oral administration.

5 9. Use of the Form II crystal according to any one of claims 1 to 3, for the production of an antitumor agent.

10. The Form II crystal according to any one of claims 1 to 3, for use as a medicament.

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11. The Form II crystal according to any one of claims 1 to 3, for use in treating a tumor.

12. A method of treating a tumor, wherein the tumor is
15 associated with HSP90, comprising administering an effective amount of the Form II crystal according to any one of claims 1 to 3 to a subject in need thereof.

13. A method of manufacturing the Form II crystal according to
20 any one of claims 1 to 3, comprising the steps of:

(1) suspending the 3-ethyl-4-{3-isopropyl-4-(4-(1-methyl-1H-pyrazol-4-yl)-1H-imidazol-1-yl)-1H-pyrazolo[3,4-b]pyridin-1-yl}benzamide in an organic solvent with heating to obtain a suspension, and

25 (2) obtaining solid-state 3-ethyl-4-{3-isopropyl-4-(4-(1-methyl-1H-pyrazol-4-yl)-1H-imidazol-1-yl)-1H-pyrazolo[3,4-b]pyridin-1-yl}benzamide from the suspension obtained in the above step (1).

30 14. The method of manufacturing the Form II crystal according to claim 13, wherein the organic solvent is 2-propanol, methyl acetate, ethyl acetate, propyl acetate, butyl acetate, cyclopentyl methyl ether, methyl ethyl ketone, methyl isobutyl ketone, acetone, acetonitrile or a mixed solvent thereof.

15. A method of manufacturing the Form II crystal according to any one of claims 1 to 3, comprising the steps of:

- 5 (1) suspending the 3-ethyl-4-{3-isopropyl-4-(4-(1-methyl-1H-pyrazol-4-yl)-1H-imidazol-1-yl)-1H-pyrazolo[3,4-b]pyridin-1-yl}benzamide in an organic solvent selected from the group consisting of 2-propanol, methyl acetate, ethyl acetate, propyl acetate, butyl acetate, cyclopentyl methyl ether, methyl ethyl ketone, methyl isobutyl ketone, acetone, acetonitrile and a
10 mixed solvent thereof to obtain a suspension, and
- (2) obtaining solid-state 3-ethyl-4-{3-isopropyl-4-(4-(1-methyl-1H-pyrazol-4-yl)-1H-imidazol-1-yl)-1H-pyrazolo[3,4-b]pyridin-1-yl}benzamide from the suspension obtained in the above step (1).