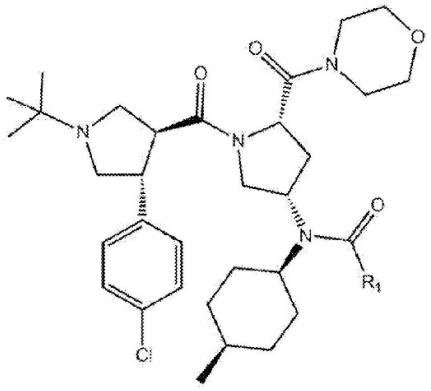
CLAIMS

1. A crystalline form I of a compound of the following formula 1, a pharmaceutically acceptable salt thereof, or a solvate thereof,

wherein the X-ray powder diffraction pattern has 3 or more characteristic peaks selected from among peaks with the following diffraction angles (2θ values) of: 7.19±0.2°, 9.58±0.2°, 10.87±0.2°, 12.50±0.2°, 14.73±0.2°, 17.38±0.2°, 18.22±0.2°, 18.59±0.2°, 19.03±0.2°, 20.61±0.2°, 21.14±0.2°, 21.82±0.2°, 22.42±0.2°, 23.18±0.2°, 24.15±0.2°, 24.92±0.2°, 25.55±0.2°, 27.04±0.2°, 28.75±0.2°, and 29.85±0.2°:

[Formula 1]



wherein R_1 is C_2-C_5 alkyl.

2. The crystalline form I of claim 1, wherein the pharmaceutically acceptable salt of the compound of formula 1 is selected from the group consisting of: hydrochloric acid,

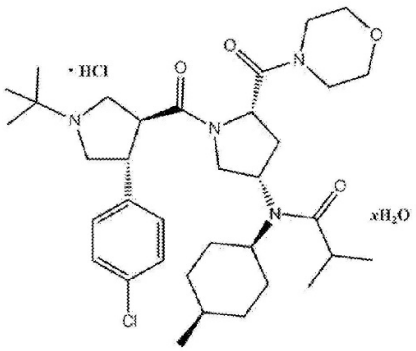
sulfuric acid, nitric acid, phosphoric acid, hydrobromic acid, and hydroiodic acid, of the compound.

3. The crystalline form I of claim 1, which is a crystalline form of a solvate of the compound of formula 1.

4. The crystalline form I of claim 3, wherein the solvate is a hydrate.

5. The crystalline form I of claim 4, which is a crystalline form of a compound of the following formula 4:

[Formula 4]



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6. A method for preparing the crystalline form I described in any one of claims 1-5, the method comprising the steps of:

preparing a mixed solution by dissolving the compound of formula 1 in a crystallization solvent;

adding an acid to the mixed solution dropwise; and

obtaining crystals from the mixed solution to which the

acid has been added dropwise.

7. The method for preparing the crystalline form I of claim 6, wherein the crystallization solvent includes water and a polar aprotic organic solvent.

8. The method for preparing the crystalline form I of claim 7, wherein the polar aprotic organic solvent includes ethyl acetate, methyl isobutyl ketone, dimethyl sulfoxide, tetrahydrofuran, acetone, dimethylformamide, acetonitrile, or a mixture thereof.

9. The method for preparing the crystalline form I of claim 7, wherein the crystallization solvent is a mixed solvent in which water and the polar aprotic solvent are mixed in a volume ratio of 15:1 to 1:15.

10. The method for preparing the crystalline form I of claim 6, further comprising a step for adding a non-polar organic solvent to the mixed solution before, after, or simultaneously with adding the acid dropwise.

11. A pharmaceutical composition comprising the crystalline form I according to any one of claims 1-5 and a pharmaceutically acceptable carrier.

12. A pharmaceutical composition for use in agonizing the function of a melanocortin-4 receptor, the composition comprising the crystalline form I according to any one of claims 1-5 and a pharmaceutically acceptable carrier.

13. The pharmaceutical composition of claim 12~~, which is~~ for use in preventing or treating obesity, diabetes, inflammation, or erectile dysfunction.

14. Use of the pharmaceutical composition of claim 12 in the manufacture of a medicament for preventing or treating obesity, diabetes, inflammation, or erectile dysfunction.

15. The crystalline form I according to any one of claims 1-5 for use in preventing or treating obesity, diabetes, inflammation, or erectile dysfunction.

16. Use of the crystalline form I according to any one of claims 1-5 in the manufacture of a medicament for preventing or treating obesity, diabetes, inflammation, or erectile dysfunction.