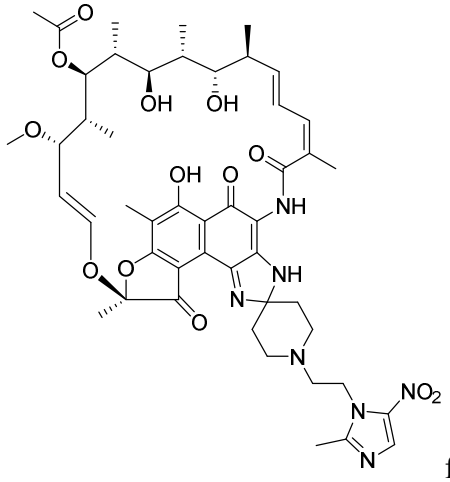
CLAIMS

1. Crystal form A of free base of compound represented by formula (I),



formula (I),

wherein the crystal form A exhibits an X-ray powder diffraction pattern having characteristic peaks at diffraction angles 2θ of 5.28°±0.2°, 7.17°±0.2°, 8.50°±0.2°, 10.66°±0.2°, 14.33°±0.2°, 15.84°±0.2°, and 18.60°±0.2°.

2. The crystal form A according to claim 1, wherein the crystal form A has characteristic peaks at one or more of diffraction angles 2θ of 12.61°±0.2°, 14.83°±0.2°, 15.26°±0.2°, 16.57°±0.2°, 19.97°±0.2°, and 21.97°±0.2°.

3. The crystal form A according to any one of claims 1-2, wherein the crystal form A has characteristic peaks at diffraction angles 2θ of 12.61°±0.2°, 14.83°±0.2°, 15.26°±0.2°, 16.57°±0.2°, 19.97°±0.2°, and 21.97°±0.2°.

4. The crystal form A according to any one of claims 1-3, wherein the crystal form A exhibits an X-ray powder diffraction (XRPD) pattern substantially consistent with FIG. 1.

5. The crystal form A according to anyone of claims 1-4, wherein the differential scanning calorimetry curve of the crystal form A has an endothermic peak at about 169.3 °C.

6. The crystal form A according to claim 5, wherein the differential scanning calorimetry (DSC) plot of the crystal form A is substantially consistent with FIG. 2B.

7. The crystal form A according to any one of claims 1-6, wherein the crystal form A is an anhydrate and/or a non-solvate.

8. A pharmaceutical composition, comprising the crystal form A according to any one of claims 1-7 and optionally a pharmaceutically acceptable carrier.

9. Use of the crystal form A according to any one of claims 1-7 and/or the pharmaceutical composition according to claim 8 in the manufacture of a medicament for treating, or

ameliorating a disease caused by bacterial infections or related disorders thereof.

10. The use according to claim 9, wherein the bacteria are selected from: *Helicobacter pylori*, *Mycobacterium tuberculosis*, Nontuberculous mycobacteria, *Acinetobacter baumannii*, *Bacteroides fragilis*, *Bifidobacterium longum*, *Ruminococcus*, *Prevotella*, *Clostridium perfringens*, *Clostridium difficile*, *Lactobacillus acidophilus*, *Eggerthella lenta*, *Fusobacterium nucleatum*, *Gardnerella vaginalis*, *Mobiluncus mulieris*, *Peptostreptococcus*, *Porphyromonas asaccharolytica*, *Prevotella bivia*, *Propionibacterium acnes*, and *Veillonella parvula*.
11. The use according to claim 9 or 10, wherein the disease or the related disorders thereof are selected from: gastritis, gastric ulcer, bacterial vaginosis, diarrhea, pneumonia, appendicitis, cholecystitis, otitis media, endocarditis, endometritis, brain abscess, myocardial necrosis, osteomyelitis, peritonitis, empyema, salpingitis, septic arthritis, liver abscess, sinusitis, pelvic inflammatory disease, and bacteremia; and upper respiratory tract infections, lower respiratory tract infections, skin and soft tissue infections, bone and joint infections, lung infections, intra-abdominal infections, eye infections, ear infections, oral infections, and surgical infections.
12. A method for preparing the crystal form A according to any one of claims 1-7, comprising crystallizing the compound represented by formula (I) in a solvent comprising an alcohol solvent.
13. The method according to claim 12, wherein the alcohol solvent is selected from one of or a combination of more than one of methanol, ethanol, n-propanol, isopropanol, n-butanol, isobutanol, and tert-butanol.
14. The method according to claim 12 or 13, wherein the alcohol solvent is methanol, ethanol, or a combination thereof.
15. The method according to any one of claims 12-14, wherein the crystallization in a solvent comprising an alcohol solvent is further crystallization in an alcohol solvent.