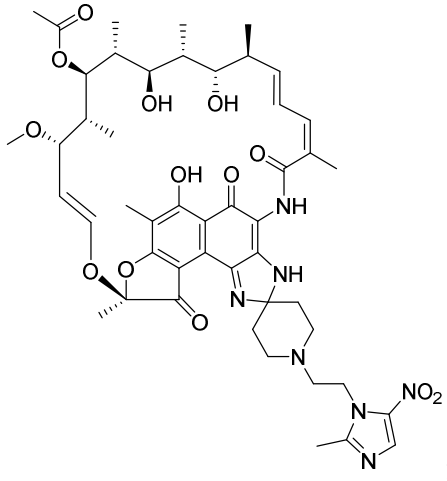
CLAIMS

1. A crystal form A of free base of a 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. A pharmaceutical composition, comprising the crystal form A according to claim 1 and optionally a pharmaceutically acceptable carrier.

3. The pharmaceutical composition according to claim 2, further comprising a second therapeutic agent.

4. The pharmaceutical composition according to claim 3, wherein the second therapeutic agent is selected from: a proton pump inhibitor, an acid suppressant, an efflux pump inhibitor, an anesthetic, an antifungal agent, an antiviral agent, an antibacterial agent, an antiprotozoal agent, an anti-inflammatory agent, an anticoagulant, a platelet aggregation inhibitor, an antipyretic, a lipid-lowering agent, and a zinc salt.

5. Use of a pharmaceutical composition comprising an effective amount of the crystal form A according to claim 1 in the manufacture of a medicament for treating or ameliorating a disease or related disorders thereof.

6. The use according to claim 5, wherein the patient in need is infected with bacteria.

7. The use according to claim 6, 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*.

8. The use according to claim 5, 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.
9. A method for preparing the crystal form A according to claim 1, comprising crystallizing the compound represented by formula (I) in a solvent comprising methanol, ethanol or a combination thereof.
10. The method according to claim 9, wherein the crystallization in the solvent is further crystallized in methanol, ethanol or a combination thereof.