

Claims

- [Claim 1] A benzoic acid salt of
4-[5-[(3S)-3-aminopyrrolidine-1-carbonyl]-2-[2-fluoro-4-(2-hydroxy-2-methyl-propyl)phenyl]phenyl]-2-fluoro-benzonitrile.
- [Claim 2] The benzoic acid salt according to claim 1 wherein the salt comprises a crystal.
- [Claim 3] The benzoic acid salt according to claim 2 wherein the crystal has a powder X-ray diffraction spectrum having at least two peaks of diffraction angles ($2\theta \pm 0.2^\circ$) selected from the group consisting of 15.3° , 16.2° , 17.8° , 21.4° and 25.5° .
- [Claim 4] The benzoic acid salt according to claim 2 or 3 wherein the crystal has a peak temperature in a differential scanning calorimetry (DSC) curve with an endothermic peak in the vicinity of 193°C .
- [Claim 5] The benzoic acid salt according to claim 2 or 3 wherein the crystal has a peak temperature in a differential scanning calorimetry (DSC) curve with an endothermic peak in the range from 188°C to 198°C .
- [Claim 6] The benzoic acid salt according to any one of claims 2 to 5 wherein the crystal has a powder X-ray diffraction spectrum of FIG. 1.
- [Claim 7] A sorbic acid salt of
4-[5-[(3S)-3-aminopyrrolidine-1-carbonyl]-2-[2-fluoro-4-(2-hydroxy-2-methyl-propyl)phenyl]phenyl]-2-fluoro-benzonitrile.
- [Claim 8] The sorbic acid salt according to claim 7 wherein the salt comprises a crystal.
- [Claim 9] The sorbic acid salt according to claim 8 wherein the crystal has a powder X-ray diffraction spectrum having at least two peaks of diffraction angles ($2\theta \pm 0.2^\circ$) selected from the group consisting of 5.5° , 10.9° , 16.2° , 17.2° , 20.3° and 24.4° .
- [Claim 10] The sorbic acid salt according to claim 8 or 9 wherein the crystal has a peak temperature in a differential scanning calorimetry (DSC) curve with an endothermic peak in the vicinity of 147°C .
- [Claim 11] The sorbic acid salt according to claim 8 or 9 wherein the crystal has a peak temperature in a differential scanning calorimetry (DSC) curve with an endothermic peak in the range from 142°C to 152°C .
- [Claim 12] The sorbic acid salt according to any one of claims 8 to 11 wherein the crystal fumarate has a powder X-ray diffraction spectrum of FIG. 13.
- [Claim 13] An LSD1 inhibitor comprising the salt according to any one of claims 1 to 12, as an active ingredient.

- [Claim 14] A pharmaceutical composition comprising the salt according to any one of claims 1 to 12.
- [Claim 15] The pharmaceutical composition according to claim 14 wherein the composition is a pharmaceutical composition for preventing or treating an LSD1-related disease or disorder.
- [Claim 16] The pharmaceutical composition according to claim 14 or 15 which is an orally administered composition.
- [Claim 17] An antitumor agent comprising the salt according to any one of claims 1 to 12, as an active ingredient.
- [Claim 18] A method of treating an LSD1-related disease or disorder in a patient in need, the method comprising administering an effective amount of any one of claims 1 to 12 to the patient.
- [Claim 19] The salt compound according to any one of claims 1 to 12 for use in preventing and/or treating an LSD1-related disease or disorder.
- [Claim 20] Use of the salt according to any one of claims 1 to 12 in the manufacture of an antitumor agent.
- [Claim 21] A production method of a benzoic acid salt of
4-[5-[(3S)-3-aminopyrrolidine-1-carbonyl]-2-[2-fluoro-4-(2-hydroxy-2-methyl-propyl)phenyl]phenyl]-2-fluoro-benzonitrile, the method comprising:
reacting
4-[5-[(3S)-3-aminopyrrolidine-1-carbonyl]-2-[2-fluoro-4-(2-hydroxy-2-methyl-propyl)phenyl]phenyl]-2-fluoro-benzonitrile with a benzoic acid.
- [Claim 22] A production method of a sorbic acid salt of
4-[5-[(3S)-3-aminopyrrolidine-1-carbonyl]-2-[2-fluoro-4-(2-hydroxy-2-methyl-propyl)phenyl]phenyl]-2-fluoro-benzonitrile, the method comprising:
reacting
4-[5-[(3S)-3-aminopyrrolidine-1-carbonyl]-2-[2-fluoro-4-(2-hydroxy-2-methyl-propyl)phenyl]phenyl]-2-fluoro-benzonitrile with a sorbic acid.