CLAIMS

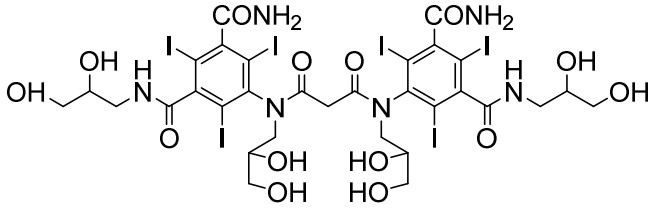
1. A crystal of iosimenol characterized by a powder x-ray diffraction pattern having four or more 2θ ± 0.2 peaks and selected from about 8.1°, 9.6°, 9.9°, 10.0°, 10.7°, 15.4°, 16.9°, 18.0°, 18.6°, 18.9°, 20.1°, 20.4°, 21.9°, 22.2°, 22.5°, 24.8°, 26.1°, 26.8°, 27.5°, 28.9°, 29.4°, 29.7°, 30.5°, 34.1° and 34.6°, wherein measurement of said crystal is at a temperature of about 293 K.

2. The crystal of iosimenol of claim 1 characterized by a powder x-ray diffraction pattern having four or more 2θ ± 0.2 peaks and selected from about 8.1°, 20.4°, 21.9°, 22.2°, 22.5°, 26.8° and 30.5°, wherein measurement of said crystal is at a temperature of about 293 K.

3. A crystal of iosimenol characterized by unit cell parameters at T=293K substantially equal to the following: a = 21.8919(16) Å, b = 9.8210(9) Å, c = 20.0233(12) Å, α = 90°, β = 94.955(1)°, γ = 90°, volume 4289(6) Å³ and a monoclinic P21/a space group.

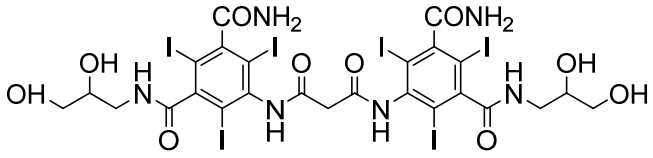
4. A process for preparing iosimenol of formula:

[Chem. 3]



comprising reacting CVI of formula:

[Chem. 4]



with an alkylating agent introducing 2,3-dihydroxypropyl group in the presence of an inorganic base in a solvent comprising 2-methoxyethanol.

5. The process of claim 4, wherein the alkylating agent introducing 2,3-dihydroxypropyl group is selected from the group consisting of 3-halo-1,2-propanediol and glycidol.

6. The process of claim 4, wherein the alkylating agent introducing 2,3-dihydroxypropyl group is 3-halo-1,2-propanediol.

7. The process of claim 4, wherein the inorganic base is selected from the group consisting of an alkali metal hydroxide and an alkaline earth metal hydroxide.

8. The process of claim 4, wherein the inorganic base is lithium hydroxide, calcium hydroxide, sodium hydroxide, potassium hydroxide or mixture thereof.

9. The process of claim 4, wherein the reaction to prepare iosimenol is done in the presence of a metal halide besides an inorganic base.

10. The process of claim 9, wherein the metal halide is selected from the group consisting of $CaCl_2$, $ZnCl_2$ and $MgCl_2$.

11. A process for preparation of the crystalline iosimenol of claim 1 from a saturated or supersaturated solution of iosimenol, comprising:

Step 1: suspending deionized iosimenol in a solvent mixture comprising water and one or more organic solvents selected from the group consisting of C_1-C_6 linear or branched alkanols, alkoxyalkanols, C_2-C_8 aliphatic ethers, and C_4-C_6 cyclic ethers,

Step 2: subjecting the mixture to heat and/or ultrasonic to completely dissolve the iosimenol in the mixture,

Step 3: continuing to subject the solution to the same or different heat and/or ultrasonic to deposit the crystalline ioseminol of claim 1, and

Step 4: collecting the resulting crystalline ioseminol of claim 1 on a filter.

12. The process of claim 11, wherein the heating in Step 2 and/or Step 3 is done with microwave.

13. The process of claim 11, wherein the organic solvent in Step 1 is selected from the group consisting of methanol, ethanol, n-propanol, 2-propanol, n-butanol, butanol, sec-butanol, tert-butanol, pentanols including isoamylalcohols, hexanols and 2-methoxyethanol, 2-ethoxyethanol, 1-methoxy-2-propanol and 2-isopropoxyethanol.

14. The process of claim 11, wherein the solvent mixture in Step 1 contains up to 20% water.

15. The process of claim 11, wherein the crystallization process in Step 3 may be initiated by adding a seed of iosimenol crystal while or after the temperature is raised.

16. The process of claim 11, wherein trometamol is used to buffer pH during crystallization process.

17. The process of claim 11, wherein Steps 2 and 3 are done at 70°C - 140°C.

18. The process of claim 11, wherein the concentration of iosimenol as the starting material in Step 1 is 10 w/v %-60 w/v %.