CLAIMS

1. An oral formulation comprising of an iodinated imaging agent and at least one taste masking agent, in which the iodinated imaging agent is encapsulated in the taste masking agent into solid particles, in which the iodinated imaging agent is a water-soluble organic or polymeric compound that contains one or more of iodine substituents, and in which the taste masking agent is selected from one or more polymer, surfactant, sugar, and flavoring agent.

2. An oral formulation according to Claim 1, in which the imaging agent is iopamidol, iohexol, or iodixanol.

3. An oral formulation according to Claim 1 or 2, in which the imaging agent is present up to 90% by weight.

4. An oral formulation according to Claim 1, 2 or 3, in which one or more of taste masking agents is selected from a surfactant and a polymer.

5. An oral formulation according to Claim 4, in which one or more of taste masking agents is selected from hydroxypropylmethylcellulose acetate succinate, poly(methacrylic acid-co-methyl methacrylate), and glyceryl palmitostearate.

6. An oral formulation according to Claim 4, in which the taste masking agents is hydroxypropylmethylcellulose acetate succinate.

7. An oral formulation according to Claim 4, in which the taste masking agents is poly(methacrylic acid-co-methyl methacrylate).

8. An oral formulation according to any preceding claim, further additionally comprising one or more of excipients, in which the excipient is selected from the group consisting of polymers, surfactants, lipids or waxes, fatty acids, sugars, and flavoring agents.

9. An oral formulation according to any preceding claim, in which the particles are between 1 and 500 μm in diameter.

10. An oral formulation according to any preceding claim, in which the particles have a surface area between 0.5 and 100 m2/g as measured using the Brunauer-Emmett-Teller (BET) Surface Area method.

11. An oral formulation according to any preceding claim, in which the particles have a particle to particle cohesion and peak bioadhesive strength of up to 500 kPa as measured using a powder rheometer.

12. An oral formulation according to any preceding claim, in which the formulation is iso-osmotic or hypo-osmotic.

13. A method for preparing a formulation according to any preceding claim, the method comprising:

(a) feeding a molten mixture comprising an iodinated imaging agent and one or more of taste masking agents to a nozzle;

(b) atomizing said molten mixture to droplets; and

(c) cooling said droplets to particles.

14. A method according to Claim 13, comprising melting one or more of iodinated imaging agents optionally comprising one or more of excipients prior to step (a).

15. A method according to Claim 14, in which the melting is done at a temperature of between 20 to 250 ºC.

16. A method according to Claim 13, 14 or 15, in which the nozzle is of rotary, pressure, fluid, or ultrasonic configuration.

17. A method according to any of Claims 13 to 16, in which cooling is promoted by a stream of gas or liquid.

18. A method according to Claim 17, in which the stream of gas or liquid is at an initial temperature of between–40 and 100 °C.

19. A method according to Claim 17, in which the stream of gas or liquid is co-current or counter-current with respect to the melt spray direction.

20. A method according to Claim 17, in which the stream of gas or liquid is a stream of gas comprising nitrogen, air, carbon dioxide, or mixtures thereof.

21. A method according to Claim 17, in which the stream of gas or liquid is a stream of gas combined with a stream of liquid comprising liquid carbon dioxide or liquid nitrogen.

22. A method for preparing a formulation according to any of Claims 1 to 12, the method comprising:

(a) mixing an iodinated agent and one or more of taste masking agents in a solvent or mixture of solvents to obtain a solution or a suspension;

(b) feeding and atomizing said solution or suspension into a drying chamber to obtain droplets; and

(c) drying said droplets to particles.

23. A method according to Claim 22, in which drying is promoted by a stream of gas.

24. A method according to Claim 22 or 23, in which drying is done at a temperature of between 20 and 300 °C.

25. A method according to Claim 22, 23 or 24, in which feeding is to a nozzle, which is of rotary, pressure, fluid, or ultrasonic configuration.

26. A method according to any of Claims 22 to 25, in which a controlled drying is promoted by a stream of gas or liquid.

27. A method according to Claim 26, in which the stream of gas or liquid is co-current with respect to the melt spray direction.

28. A method according to Claim 26, in which the stream of gas comprises nitrogen, air, carbon dioxide, or mixtures thereof.

29. A method according to Claim 28, in which the stream of gas is hot nitrogen.

30. Use of an oral formulation according to any of Claims 1 to 12 for imaging of the gastrointestinal tract.

31. Use according to Claim 30, in which the gastrointestinal tract is the upper track.

32. A method for imaging gastrointestinal tract in a patient, comprising administering to the patient an oral formulation according to any of Claims 1 to 12.

33. A method according to Claim 32, in which the gastrointestinal tract is upper gastrointestinal tract.