Claims

1. A solid dispersion of rifaximin comprising rifaximin and pharmaceutically acceptable carrier, wherein the pharmaceutically acceptable carrier is selected from polyethylene glycol, polymethacrylates, polyvinyl acetate, cellulose derivatives, polaxamer, glyceryl behenate, polyethyleneglycol derivative of a mono-glyceride, vitamin E, polyethylene or polyoxyethylene ester of hydroxyl stearic acid, polyoxylglycerides, polyethoxylated castor oil or combinations thereof,

wherein the solubility of rifaximin is increased relative to an equivalent amount of rifaximin not in solid dispersion.

2. The solid dispersion of claim 1, wherein the gastrointestinal availability of rifaximin is increased relative to an equivalent amount of rifaximin.

3. The solid dispersion of rifaximin of claim 1 wherein the solubility of rifaximin in the solid dispersion is increased relative to an equivalent amount of rifaximin, while maintaining equivalent permeability relative to an equivalent amount of rifaximin.

4. A pharmaceutical composition comprising solid dispersion of claim 1.

5. A pharmaceutical composition comprising the solid dispersion of claim 1 for use in the treatment and/or prevention of a microbial infection.

6. A pharmaceutical composition comprising the solid dispersion of claim 1 for use in the treatment and/or prevention of irritable bowel syndrome or Crohn's disease.

7. The solid dispersion of claim 1, wherein the dispersion provides higher solubility of rifaximin and improved gastrointestinal (GIT) availability relative to an equivalent dose of rifaximin in a commercially available tablet, or to an equivalent dose of rifaximin in a simple solution such as in water or normal saline solution, that is orally ingested.

8. The solid dispersion of claim 1, wherein the solubility of rifaximin is increased by more than 30%.