CLAIMS

1. Use of ondansetron in the manufacture of a medicament for the treatment of either vomiting, nausea, diarrhea, or a combination thereof, wherein the medicament is a solid oral dosage form comprising:

a core comprising a non-ionic polymer matrix, a first amount of the ondansetron dispersed within the matrix, and an ionizable salt dispersed within the matrix, wherein the ionizable salt is present in an amount sufficient to allow it to form a hardened boundary around the periphery of the matrix upon exposure to an aqueous medium so as to limit the rate at which the ondansetron within the matrix is released from the core, wherein the first amount of the ondansetron ranges from 9 mg to 28 mg;

a first non-functional seal coat surrounding the core, wherein the first non-functional seal coat is comprised of a non-ionic polymer matrix; and

an immediate release drug layer surrounding the first seal coat and comprising a non-ionic polymer and a second amount of the ondansetron dispersed therein, wherein the second amount of the ondansetron ranges from 3 mg to 8 mg,

wherein:

a) the first non-functional seal coat does not substantially affect the release profile of the ondansetron from the solid oral dosage form,

b) the solid oral dosage form yields a burst of ondansetron that is immediately followed by a zero-order sustained release of ondansetron, wherein there is no lag in release of ondansetron from the solid oral dosage form, and

c) release of the ondansetron from the solid oral dosage form after it has been ingested, provides exposure to the ondansetron for a minimum period of 16 hours so as to result in a reduction in frequency of either vomiting, nausea, diarrhea, or a combination thereof in a patient.

2. The use of claim 1 wherein the solid oral dosage form comprises a first amount of the ondansetron of 9 mg and a second amount of the ondansetron of 3 mg.

3. The use of claim 1 wherein the solid oral dosage form comprises a first amount of the ondansetron of 18 mg and a second amount of the ondansetron of 6 mg.

4. The use of claim 1 wherein the solid oral dosage form comprises a first amount of the ondansetron of 20 mg and a second amount of the ondansetron of 8 mg.

5. The use of claim 1 wherein the solid oral dosage form comprises a first amount of the ondansetron of 28 mg and a second amount of the ondansetron of 8 mg.

6. The use of claim 1 wherein the patient is at least 12 years old, has presumed acute gastroenteritis or acute gastritis, and the solid oral dosage form comprises a first amount of the ondansetron of 18 mg and a second amount of the ondansetron of 6 mg.

7. The use of claim 1 wherein the patient is at least 12 years old, has diarrhea predominant irritable bowel syndrome, and the solid oral dosage form comprises a first amount of the ondansetron of 18 mg and a second amount of the ondansetron of 6 mg.

8. The use of claim 1 wherein the patient is less than 12 years old, has diarrhea predominant irritable bowel syndrome, and the solid oral dosage form comprises a first amount of the ondansetron of 9 mg and a second amount of the ondansetron of 3 mg.

9. The use of claim 1 wherein upon administration of a single oral administration of the dosage form in adults under fasted conditions provides a median time to maximum plasma concentration (T_{max}) of ondansetron of 4 hours and a mean maximum plasma concentration (C_{max}) which is more than two times the mean plasma level of the ondansetron at 24 hours (C_{24}) after administration of the dosage form, and which dosage form provides effective treatment for at least 24 hours after administration to the patient.

10. The use of claim 1 further comprising a second non-functional seal coat surrounding the immediate release drug layer, wherein the second non-functional seal coat is comprised of a non-ionic polymer matrix, and wherein the second non-functional seal coat does not substantially affect the release profile of the ondansetron from the solid oral dosage form.