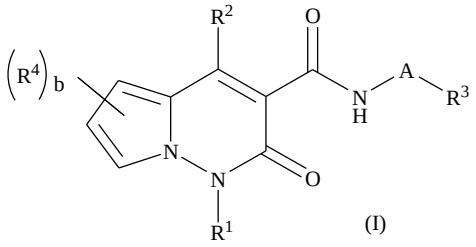
We claim:

1. A compound of formula (I),



(I)

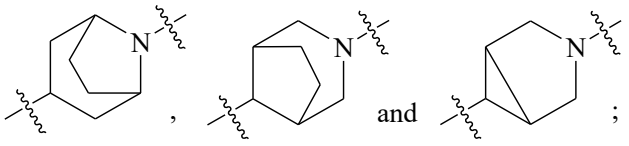
or an isotopic form, a stereoisomer or a pharmaceutically acceptable salt thereof,

wherein:

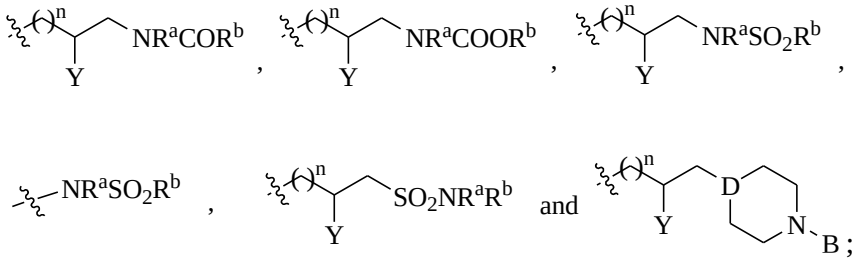
R^1 represents hydrogen, alkyl or cycloalkyl;

R^2 represents hydrogen, hydroxy, halogen, alkyl or cycloalkyl;

A is heterocyclic ring selected from the group consisting of:



R^3 is hydrogen or selected from the group consisting of:



B is selected from hydrogen, alkyl, cycloalkyl, haloalkyl, hydroxyalkyl, $-SO_2-$alkyl, $-COCH_3$, $-COO-$alkyl, or $-CO-(CH_2)_m-OH$; wherein, m is an integer from 0 to 5;

Y at each occurrence is independently selected from hydrogen, hydroxy, halogen, haloalkyl, hydroxyalkyl, $-COOH$, $-COO-$alkyl, $-O-$alkyl, $-S-$alkyl or $-NR^aR^b$;

D represents CH or N;

n is an integer from 0 to 5;

R^a at each occurrence is independently selected from hydrogen, alkyl, cycloalkyl or alkoxy;

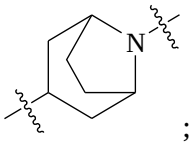
R^b at each occurrence is independently selected from hydrogen, alkyl, cycloalkyl or alkoxy;

R^4 represents hydrogen, hydroxy, halogen, alkyl or cycloalkyl; and

b represents 1 to 3.

2. The compound of formula (I) or an isotopic form, a stereoisomer or a pharmaceutically acceptable salt thereof as claimed in claim 1, wherein,

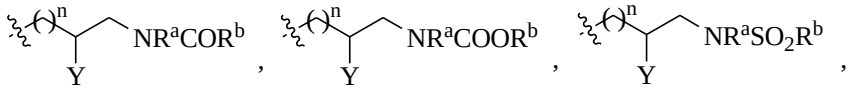
A is

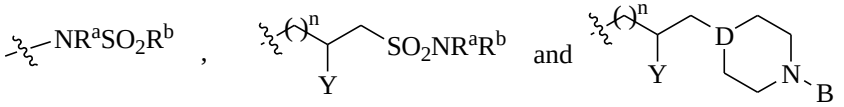


;

R^2 is hydrogen or hydroxy;

R^3 is selected from the group consisting of:





B is selected from $-SO_2-$alkyl, $-COCH_3$, $-COO-$alkyl, alkyl, cycloalkyl, haloalkyl, hydroxyalkyl or $-CO-(CH_2)_m-OH$; wherein m is an integer from 0 to 5;

Y at each occurrence is independently selected from hydrogen or hydroxy;

D represents CH or N;

n is an integer from 0 to 5;

R^a at each occurrence is independently selected from hydrogen or alkyl;

R^b at each occurrence is independently selected from hydrogen, alkyl, cycloalkyl or alkoxy; and

R^4 represents hydrogen.

3. The compound of formula (I) or an isotopic form, a stereoisomer or a pharmaceutically acceptable salt thereof as claimed in claim 1, wherein the compound is selected from the group consisting of:

(R)-*N*-{8-[2-Hydroxy-3-[(*N*-methyl) methanesulfonamido] propyl]-8-azabicyclo[3.2.1] oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazine]-3-carboxamide;

(R)-*N*-{8-[2-Hydroxy-3-[(*N*-methyl) methanesulfonamido] propyl]-8-azabicyclo[3.2.1] oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazine]-3-carboxamide L-(+)-tartrate;

(S)-*N*-{8-[2-Hydroxy-3-[(*N*-methyl) methanesulfonamido] propyl]-8-azabicyclo[3.2.1] oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazine]-3-carboxamide;

(S)-*N*-{8-[2-Hydroxy-3-[(*N*-methyl) methanesulfonamido] propyl]-8-azabicyclo[3.2.1] oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazine]-3-carboxamide L(+)-tartarate;

Racemic-N-{8-[2-Hydroxy-3-[(*N*-methyl) methanesulfonamido] propyl]-8-azabicyclo[3.2.1] oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazine]-3-carboxamide;

Racemic-N-{8-[2-Hydroxy-3-[(*N*-methyl) methanesulfonamido] propyl]-8-azabicyclo[3.2.1] oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazine]-3-carboxamide L(+)-tartarate;

(R)-*N*-{8-[2-Hydroxy-3-[(*N*-methyl) methanesulfonamido] propyl]-8-azabicyclo[3.2.1] oct-3-yl} [4-hydroxy-1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazine]-3-carboxamide;

(R)-*N*-{8-[2-Hydroxy-3-[(*N*-methyl) methanesulfonamido] propyl]-8-azabicyclo[3.2.1] oct-3-yl} [4-hydroxy-1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazine]-3-carboxamide L-(+)-tartarate;

(S)-*N*-{8-[2-Hydroxy-3-[(*N*-methyl) methanesulfonamido] propyl]-8-azabicyclo[3.2.1] oct-3-yl} [4-hydroxy-1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazine]-3-carboxamide;

(S)-*N*-{8-[2-Hydroxy-3-[(*N*-methyl) methanesulfonamido] propyl]-8-azabicyclo[3.2.1] oct-3-yl} [4-hydroxy-1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazine]-3-carboxamide L-(+)-tartarate;

Racemic-N-{8-[2-Hydroxy-3-[(*N*-methyl) methanesulfonamido] propyl]-8-azabicyclo[3.2.1] oct-3-yl} [4-hydroxy-1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazine]-3-carboxamide;

Racemic-N-{8-[2-Hydroxy-3-[(*N*-methyl) methanesulfonamido] propyl]-8-azabicyclo[3.2.1] oct-3-yl} [4-hydroxy-1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazine]-3-carboxamide L-(+)-tartarate;

(R)-*N*-{8-[2-Hydroxy-3-(methanesulfonamido) propyl]-8-azabicyclo[3.2.1] oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazine]-3-carboxamide;

(R)-*N*-{8-[2-Hydroxy-3-(methanesulfonamido) propyl]-8-azabicyclo[3.2.1] oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazine]-3-carboxamide L-(+)-tartarate;

(R)-*N*-{8-[2-Hydroxy-3-[(*N*-methyl) acetamido] propyl]-8-azabicyclo[3.2.1] oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazine]-3-carboxamide;

(R)-*N*-{8-[2-Hydroxy-3-[(*N*-methyl) acetamido] propyl]-8-azabicyclo[3.2.1] oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazine]-3-carboxamide L-(+)-tartrate;

(R)-*N*-{8-[2-Hydroxy-3-[(1-methanesulfonyl piperazin)-4-yl] propyl]-8-azabicyclo[3.2.1]oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazin]-3-carboxamide;

(R)-*N*-{8-[2-Hydroxy-3-[(1-methanesulfonyl piperazin)-4-yl] propyl]-8-azabicyclo[3.2.1] oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazin]-3-carboxamide L(+)tartarate;

(R)-*N*-{8-[2-Hydroxy-3-[(1-methanesulfonyl piperazin)-4-yl] propyl]-8-azabicyclo[3.2.1] oct-3-yl} [4-hydroxy-1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazin]-3-carboxamide;

(R)-*N*-{8-[2-Hydroxy-3-[(1-methanesulfonyl piperazin)-4-yl] propyl]-8-azabicyclo[3.2.1] oct-3-yl} [4-hydroxy-1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazin]-3-carboxamide L-(+)-tartarate;

N-{8-[3-[(*N*-Methyl) methanesulfonamido] propyl]-8-azabicyclo[3.2.1] oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazine]-3-carboxamide;

N-{8-[3-[(*N*-Methyl) methanesulfonamido] propyl]-8-azabicyclo[3.2.1] oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazine]-3-carboxamide L-(+)-tartarate;

N-{8-[3-[methanesulfonamido] propyl]-8-azabicyclo[3.2.1] oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazine]-3-carboxamide;

N-{8-[3-[methanesulfonamido] propyl]-8-azabicyclo[3.2.1] oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazine]-3-carboxamide L-(+)-tartarate;

N-{8-[3-Isopropylsulfonylaminopropyl]-8-azabicyclo[3.2.1] oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazin]-3-carboxamide;

N-{8-[3-Isopropylsulfonylaminopropyl]-8-azabicyclo[3.2.1] oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazin]-3-carboxamide L-(+)-tartrate;

N-{8-[2-Methanesulfonylaminoethyl]-8-azabicyclo[3.2.1] oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazin]-3-carboxamide;

N-{8-[2-Methanesulfonylaminoethyl]-8-azabicyclo[3.2.1] oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazin]-3-carboxamide L-(+)-tartrate;

N-{8-[2-Isopropylsulfonylaminoethyl]-8-azabicyclo[3.2.1] oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazin]-3-carboxamide;

N-{8-[2-Isopropylsulfonylaminoethyl]-8-azabicyclo[3.2.1] oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazin]-3-carboxamide L-(+)-tartrate;

N-{8-[3-Acetamidopropyl]-8-azabicyclo[3.2.1] oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazin]-3-carboxamide;

N-{8-[3-Acetamidopropyl]-8-azabicyclo[3.2.1] oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazin]-3-carboxamide L-(+)-tartrate;

N-{8-[3-Carbomethoxyaminopropyl]-8-azabicyclo[3.2.1] oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazin]-3-carboxamide;

N-{8-[3-Carbomethoxyaminopropyl]-8-azabicyclo[3.2.1] oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazin]-3-carboxamide L-(+)-tartrate;

N-{8-[2-Carbomethoxyaminoethyl]-8-azabicyclo[3.2.1] oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazin]-3-carboxamide;

N-{8-[2-Carbomethoxyaminoethyl]-8-azabicyclo[3.2.1] oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazin]-3-carboxamide L-(+)-tartrate;

N-{8-[2-(4-Acetyl piperazin-1-yl) ethyl]-8-azabicyclo[3.2.1]oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazine]-3-carboxamide;

N-{8-[2-(4-Acetyl piperazin-1-yl) ethyl]-8-azabicyclo[3.2.1]oct-3-yl} [1-isopropyl-2-oxo-1,2-dihydro pyrrolo[1,2-b]pyridazine]-3-carboxamide L-(+)-tartrate;
N-{8-[2-(4-Acetyl piperazin-1-yl) ethyl]-8-azabicyclo[3.2.1]oct-3-yl} [4-hydroxy-1-isopropyl-2-oxo-1,2-dihydropyrrolo[1,2-b]pyridazine]-3-carboxamide; and
N-{8-[2-(4-Acetyl piperazin-1-yl) ethyl]-8-azabicyclo[3.2.1]oct-3-yl} [4-hydroxy-1-isopropyl-2-oxo-1,2-dihydropyrrolo[1,2-b]pyridazine]-3-carboxamide L-(+)-tartrate.

4. A pharmaceutical composition comprising a therapeutically effective amount of the compound of formula (I) or a stereoisomer or a pharmaceutically acceptable salt thereof as claimed in any one of claims 1 to 3 and pharmaceutically acceptable excipients or carriers.

5. The pharmaceutical composition as claimed in claim 4, for use in the treatment of gastrointestinal disease or disorder selected from irritable bowel syndrome, chronic constipation, functional dyspepsia, gastroparesis, gastroesophageal reflux disorder, post-operative ileus, intestinal pseudo-obstruction, drug-induced delayed transit, Barrett esophagus, intestinal pseudoileus, acute gastritis, chronic gastritis, gastric ulcer, duodenal ulcer, non-ulcer dyspepsia, Crohn's disease, celiac disease or delayed gastric emptying caused by gastric neurosis.

6. A compound of formula (I) or a stereoisomer or a pharmaceutically acceptable salt thereof as claimed in any one of claims 1 to 3, for use in the treatment of gastrointestinal disease or disorder related to 5-Hydroxytryptamine 4 receptor.

7. The compound for use as claimed in claim 6, wherein the gastrointestinal disease or disorder is selected from irritable bowel syndrome, chronic constipation, functional dyspepsia, gastroparesis, gastroesophageal reflux disorder, post-operative ileus, intestinal pseudo-obstruction, drug-induced delayed transit, Barrett esophagus, intestinal pseudoileus, acute gastritis, chronic gastritis, gastric ulcer, duodenal ulcer, non-ulcer dyspepsia, Crohn's disease, celiac disease or delayed gastric emptying caused by gastric neurosis.

8. The compound for use as claimed in claim 7, wherein the irritable bowel syndrome is selected from irritable bowel syndrome with predominant constipation, irritable bowel

syndrome with predominant diarrhea, irritable bowel syndrome with mixed bowel habits, or unclassified irritable bowel syndrome.

9. Use of the compound of formula (I) or a stereoisomer or a pharmaceutically acceptable salt thereof as claimed in any one of claims 1 to 3, for the manufacture of a medicament for the treatment of gastrointestinal disease or disorder.

10. The use as claimed in claim 9, wherein the gastrointestinal disease or disorder is selected from irritable bowel syndrome, chronic constipation, functional dyspepsia, gastroparesis, gastroesophageal reflux disorder, post-operative ileus, intestinal pseudo-obstruction, drug-induced delayed transit, Barrett esophagus, intestinal pseudoileus, acute gastritis, chronic gastritis, gastric ulcer, duodenal ulcer, non-ulcer dyspepsia, Crohn's disease, celiac disease or delayed gastric emptying caused by gastric neurosis.

11. A compound of formula (I) or a stereoisomer or a pharmaceutically acceptable salt thereof as claimed in any one of claims 1 to 3, for use in the treatment of gastrointestinal disease or disorder.