Claims

1. A strain of *Faecalibacterium prausnitzii* and a strain of *Desulfovibrio piger* which has one or more of the characteristics of: (i) being acetate producing, (ii) being lactate consuming and (iii) having the ability to be an electron acceptor, for use in the treatment or prevention of a disease associated with reduced butyrate levels or a disease associated with reduced or low numbers of *Faecalibacterium prausnitzii* bacteria.

2. The strains for use of claim 1, wherein said strains are administered together in combination, or sequentially, or separately.

3. The strains for use of claim 1 or claim 2, wherein said strain has all of the characteristics (i) to (iii).

4. The strains for use of any one of claims 1 to 3, wherein said strain of *Faecalibacterium prausnitzii* has (i) the ability to produce butyrate, and optionally one or more of: (ii) the ability to consume acetate, (iii) the ability to produce extracellular electrons and (iv) the ability to produce lactate.

5. The strains for use of claim 4, wherein said strain of *Faecalibacterium prausnitzii* has all of the characteristics (i) to (iv) and/or said strain of *Desulfovibrio piger* has all of the characteristics (i) to (iii).

6. The strains for use of any one of claims 1 to 5, wherein said strain of *Faecalibacterium prausnitzii* contains a L-lactate dehydrogenase gene.

7. The strains for use of any one of claims 1 to 6, wherein butyrate production is increased when both strains are present compared to the butyrate production by the *Faecalibacterium prausnitzii* strain alone.

8. The strains for use of claim 7, wherein the effect on the increase in butyrate production is a synergistic effect.

9. The strains for use of any one of claims 1 to 8, wherein the strain of *Faecalibacterium prausnitzii* is DSM 32186 or DSM 17677 and/or the strain of *Desulfovibrio piger* is DSM 32187.

10. The strains for use of any one of claims 1 to 9, wherein said use results in the increased growth and colonization of *Faecalibacterium prausnitzii* bacteria in the gastrointestinal tract.

11. The strains for use of any one of claims 1 to 10, wherein said disease is selected from the group consisting of dysbiosis, type 2 diabetes, gestational diabetes, obesity, gout, pouchitis, chronic kidney disease, psoriasis, frailty, inflammatory bowel disease, irritable bowel syndrome, abdominal pain associated with irritable bowel syndrome, constipation, and diseases associated with constipation.

12. The strains for use of claim 11, wherein said disease is type 2 diabetes or gestational diabetes.

13. A strain of *Desulfovibrio piger* for use in the treatment or prevention of a disease associated with reduced butyrate levels or a disease associated with reduced or low numbers of *Faecalibacterium prausnitzii* bacteria,

wherein said use increases growth and colonization of *Faecalibacterium prausnitzii* bacteria in the gastronintestinal tract, and/or

wherein the said use increases production of gastrointestinal butyrate; and

wherein the effect on the increase in growth and colonization of *Faecalibacterium prausnitzii* and/or butyrate production in the gastrointestinal tract is a synergistic effect.

14. The strain for use of claim 13, wherein said strain of *Desulfovibrio piger* is DSM 32187 and/or wherein said use is as defined in any one of claim 10 to 12.

15. A composition comprising a *Faecalibacterium prausnitzii* strain and a strain of *Desulfovibro piger*,

wherein said strain of *Faecalibacterium prausnitzii* has one or more of the characteristics of: (i) being a butyrate producer, (ii) being acetate consuming, (iii)

having the ability to produce extracellular electrons, and Iib) having the ability to produce lactate; and

wherein said strain of *Desulfovibrio piger* has one or more of the characteristics of: (i) being acetate producing, (ii) being lactate consuming and (iii) having the ability to be an electron acceptor.

16. The composition of claim 15, wherein said strains are as defined in any one of claims 3 to 9.

17. A kit to increase butyrate production in *F. prausnitzii* alone, as well as resulting in an increase in biomass or numbers of *Faecalibacterium prausnitzii* in the gastrointestinal tract comprising:

(i) a strain of *Faecalibacterium prausnitzii* which has one or more of the characteristics of: (i) being a butyrate producer, (ii) being acetate consuming, (iii) having the ability to produce extracellular electrons, and (iv) having the ability to produce lactate*;* and

(ii) a strain of *Desulfovibro piger* which has one or more of the characteristics of: (i) being acetate producing, (ii) being lactate consuming and (iii) having the ability to be an electron acceptor.

18. The kit of claim 17, wherein said strains are as defined in any one of claims 3 to 9.

19. The *Faecalibacterium prausnitzii* strain DSM 32186.

20. The *Desulfovibrio piger* strain DSM 32187.