Claims:

1. A *Lactobacillus reuteri* strain which is capable of producing or inducing the production of melatonin, for use in the production of melatonin in a subject, wherein said use is in treatment or prevention of infantile colic;

   wherein said strain has 5'-nucleotidase activity, and/or is capable of producing or inducing the production of adenosine, and/or is capable of producing or inducing the production of melatonin, at a level which is increased as compared to *Lactobacillus reuteri* DSM 17938.

2. The strain for use of claim 1, wherein said strain can give rise to increases of up to 5 fold in 5'-nucleotidase activity and/or levels of adenosine and/or levels of melatonin, compared with the levels with DSM 17938; or increases of at least 1.5 fold, preferably increases of at least 2 fold, more preferably increases of at least 5 fold, in 5'-nucleotidase activity and/or levels of adenosine and/or levels of melatonin, compared with the levels with DSM 17938.

3. The strain for use of claim 1 or claim 2, wherein said strain has a 5'-nucleotidase activity of greater than 8 units/L, and/or is capable of producing or inducing the production of adenosine at a level of greater than 8 $\mu mol\ L^{-1}\ min^{-1}$, and/or is capable of producing or inducing the production of melatonin at a level of greater than 20 pg/ml.

4. The strain for use of any one of claims 1 to 3, wherein the subject is an infant of up to 12 months old, preferably up to 6 or 5 months old, or preferably up to 3 or 4 months old; and/or wherein the subject is breastfed or fed with formula milk, or a combination thereof.

5. The strain for use of any one of claims 1 to 4, wherein said strain is *Lactobacillus reuteri* DSM 32846, DSM 32847, DSM 32849 and/or DSM 33198; preferably *Lactobacillus reuteri* DSM 32846, DSM 32847 and/or DSM 33198; more preferably *Lactobacillus reuteri* DSM 32846 and/or DSM 33198; more preferably *Lactobacillus reuteri* DSM 32846.

6. The strain for use of any one of claims 1 to 5, wherein said use further comprises the administration of at least one further agent, preferably wherein said further agent is AMP or a source of AMP.

7. A bacterial strain, wherein said strain is *Lactobacillus reuteri* DSM 32846, DSM 32847, DSM 32849 or DSM 33198; preferably *Lactobacillus reuteri* DSM 32846, DSM 32847 or DSM 33198; more preferably *Lactobacillus reuteri* DSM 32846 or DSM 33198.

8. The bacterial strain of claim 7, wherein said strain is *Lactobacillus reuteri* DSM 32846.

9. The bacterial strain of claim 7 or claim 8 for use in therapy; or the bacterial strain of claim 7 or claim 8 for use in the treatment or prevention of infantile colic.

10. A method for the selection of a lactic acid bacterial strain capable of producing adenosine, wherein said strain is *Lactobacillus reuteri* and wherein said method comprises:
    a) screening a lactic acid bacterial strain for the presence of a gene encoding a 5'-nucleotidase, wherein said strain is *Lactobacillus reuteri*; and/or
    b) screening a lactic acid bacterial strain, or its supernatant, for the presence of an active 5'-nucleotidase enzyme, wherein said strain is *Lactobacillus reuteri*; and
    c) selecting a *Lactobacillus reuteri* strain which is capable of producing adenosine at a level which is increased as compared to *Lactobacillus reuteri* DSM 17938; and optionally
    d) culturing or propagating such a *Lactobacillus reuteri* strain.

11. The method of claim 10, wherein said strain is selected for:
    (i) having a 5'-nucleotidase activity of greater than 8 units/L and/or being capable of producing adenosine at a level of greater than 8 μmol L^{-1} min^{-1}; and/or
    (ii) giving rise to increases of up to 5 fold in 5'-nucleotidase activity and/or levels of adenosine, compared with the levels with DSM 17938; or increases of at least 1.5 fold, preferably increases of at least 2 fold, more preferably increases of at least 5 fold, in

5'-nucleotidase activity and/or levels of adenosine, compared with the levels with DSM 17938.

12. A *Lactobacillus reuteri* strain obtainable by the method of claim 10 or claim 11, wherein said strain is capable of producing adenosine at a level which is increased as compared to *Lactobacillus reuteri* DSM 17938.

13. The strain of claim 12, wherein said strain is *Lactobacillus reuteri* DSM 32846, DSM 32847, DSM 32849 or DSM 33198; preferably *Lactobacillus reuteri* DSM 32846, DSM 32847 and/or DSM 33198; more preferably *Lactobacillus reuteri* DSM 32846 and/or DSM 33198; more preferably *Lactobacillus reuteri* DSM 32846.

14. A strain obtainable by the method according to claim 10 or claim 11, wherein said strain has a gene encoding a 5'-nucleotidase, or has an active 5'-nucleotidase enzyme, and is capable of producing adenosine, for use in the production of adenosine in a subject, or for use in the production of melatonin in a subject, wherein said use is in the treatment or prevention of infantile colic.

15. A combination product suitable for increasing the production of melatonin or adenosine in a subject comprising:
    (i) a first *Lactobacillus reuteri* strain capable of producing or inducing the production of melatonin or adenosine, wherein said strain is the strain of claim 7 or claim 8; and
    (ii) a further source of melatonin and/or adenosine, or one or more substrate components or agents to increase or enhance the production or induction of melatonin and/or adenosine by said lactic acid bacteria strain,
    preferably wherein said substrate component is AMP or a source of AMP.