CLAIMS

1. A composition comprising a mixture comprising, or alternatively, consisting of:
- a bacterial strain identified as *Bifidobacterium bifidum* MIMBb23sg and deposited at Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH (DSMZ) under deposit number DSM 32708, and
at least one bacterial strain selected from the group comprising or, alternatively, consisting of:
- a bacterial strain identified as *Lactobacillus paracasei* DG® and deposited by SOFAR S.p.A. at the National Collection of Cultures of Microorganisms of the Pasteur Institute in Paris under accession number CNCM I-1572,
- a bacterial strain identified as *Lactobacillus paracasei* LPC-S01™ and deposited at Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH (DSMZ) under accession number DSM 26760,
- a bacterial strain identified as *Lactobacillus paracasei* CF3 and deposited at Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH (DSMZ) under accession number DSM 32353,
- a bacterial strain identified as *Lactobacillus rhamnosus* GG and deposited at Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH (DSMZ) under accession number DSM 53103,
- a bacterial strain identified as *Bifidobacterium animalis subsp. lactis* Bb12 and deposited at Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH (DSMZ) under deposit number DSM 15954, and mixtures thereof;
and wherein, optionally, said composition comprises at least one food or pharmacological grade additive and/or excipient.

2. The composition according to claim 1, wherein the mixture comprises or, alternatively, consists of: a bacterial strain *Bifidobacterium bifidum* MIMBb23sg DSM 32708 and a bacterial strain *Lactobacillus paracasei* LPC-S01™ DSM 26760.

3. The composition according to claim 2, wherein the mixture comprises or, alternatively, consists of: a bacterial strain *Bifidobacterium bifidum* MIMBb23sg DSM 32708, a bacterial strain *Lactobacillus paracasei* LPC-S01™ DSM 26760 and of at least one bacterial strain selected from the group comprising or, alternatively, consisting of: *Lactobacillus paracasei* DG® CNCM I-1572, *Lactobacillus paracasei* CF3 DSM 32353, *Lactobacillus rhamnosus* GG DSM 53103, *Bifidobacterium animalis subsp. lactis* Bb12 DSM 15954 and mixtures thereof.

4. The composition according to claim 1, wherein the mixture comprises or, alternatively, consists of: a bacterial strain *Bifidobacterium bifidum* MIMBb23sg DSM 32708 and a bacterial strain *Lactobacillus paracasei* DG® CNCM I-1572.

5. The composition according to claim 4 , wherein the mixture comprises or, alternatively, consists of: a bacterial strain *Bifidobacterium bifidum* MIMBb23sg DSM 32708, a bacterial strain *Lactobacillus paracasei* DG® CNCM I-1572 and at least one bacterial strain selected from the group comprising or, alternatively, consisting of: *Lactobacillus paracasei* LPC-S01™ DSM 26760, *Lactobacillus paracasei* CF3 DSM 32353, *Lactobacillus rhamnosus* GG DSM 53103, *Bifidobacterium animalis subsp. lactis* Bb12 DSM 15954 and mixtures thereof.

6. The composition according to any one of the preceding claims, wherein the mixture comprises or, alternatively, consists of a bacterial strain *Bifidobacterium bifidum* MIMBb23sg DSM 32708 and a bacterial strain *Lactobacillus paracasei* LPC-S01 DSM 26760 and a bacterial strain *Lactobacillus paracasei* DG® CNCM I-1572.

7. The composition according to any one of claims 1 to 6 for use as medicament.

8. The composition according to any one of claims 1 to 6 for use as an immunomodulatory and/or immunostimulatory agent capable of reducing the production of proinflammatory cytokines and/or increasing the production of anti-inflammatory cytokines;
preferably, wherein said composition is for use as an immunomodulatory and/or immunostimulatory agent capable of reducing the production of IL12 and/or TNF-α cytokines and/or of increasing the production of IL10 cytokines.

9. The composition for use according to claim 7 or 8, wherein said composition is for use as an anti-inflammatory agent.

10. The composition for use according to claim 9, wherein said composition is for use in a method for the preventive and/or curative treatment of inflammatory gastrointestinal diseases, disorders or symptoms selected from the group comprising or, alternatively, consisting of: Helicobacter pylori, peptic or gastric ulcer, duodenal ulcer, chronic inflammatory bowel diseases (IBD), Crohn's disease, ulcerative colitis, microscopic colitis, diverticular disease and diverticulitis.

11. The composition according to any one of claims 1 to 6 for use in a method for the preventive and/or curative treatment of musculoskeletal inflammatory diseases, rheumatological diseases, inflammatory articular and/or post-surgery inflammatory diseases.

12. The composition for use according to claim 11, wherein said composition is for use in a method for the preventive and/or curative treatment of osteoarthritis, rheumatoid arthritis and/or ankylosing spondylitis; preferably osteoarthritis of the joints and/or osteoarthritis of the knee.