

CLAIMS

1. Use of a composition comprising bacteria of the species *Enterococcus hirae*, in the manufacture of a medicament for treating cancer, wherein said medicament is to be used as an adjuvant to an antineoplastic treatment.
- 5 2. The use of claim 1, wherein said composition further comprises bacteria selected from the group consisting of *Lactobacillus johnsonii*, segmented filamentous bacteria (SFB), *Porphyromonas*, *Barnesiella*, *Holdemania* and mixtures thereof.
3. The use of claim 1, wherein said composition comprises
10 *Enterococcus hirae* and at least one strain selected from the group consisting of *Porphyromonas*, *Barnesiella* and *Holdemania*.
4. The use of claim 1, wherein said composition further comprises *Lactobacillus johnsonii* strain.
5. The use of any of claims 1 to 4, wherein said *Enterococcus hirae*
15 strain is the strain deposited on November 7, 2013 at the Collection Nationale de Cultures de Microorganismes (CNCM), under the number I-4815.
6. The use of any of claims 1 to 5, wherein said composition is formulated for oral administration.
7. The use of any of claims 1 to 6, wherein said composition is to be
20 administered to a patient in need thereof after the administration of the antineoplastic treatment.
8. The use of any of claims 1 to 7, wherein said antineoplastic treatment is a treatment with a chemotherapeutic agent.
9. The use of any of claims 1 to 8, wherein said antineoplastic
25 treatment is an anticancer vaccine with a chemotherapeutic agent as a vaccine adjuvant.
10. The use of any of claims 1 to 9, wherein said chemotherapeutic agent is cyclophosphamide (CTX).
11. The use of any of claims 1 to 10, wherein said patient has a dysbiosis with an under-representation of species present in said composition.
- 30 12. The use of any of claims 1 to 11, wherein said composition is to be administered to a patient in need thereof after the administration of a broad-spectrum antibiotic treatment.
13. Use of an immunogenic composition comprising fragments of bacteria of the species *Enterococcus hirae*, in the manufacture of a medicament for
35 treating cancer, wherein said medicament is to be used as an adjuvant to an antineoplastic treatment administered to a cancer patient.

14. The use of claim 13, wherein said composition further comprises fragments of *Lactobacillus johnsonii*, *Enterococcus faecalis*, segmented filamentous bacteria (SFB), *Porphyromonas*, *Barnesiella*, *Holdemania* and mixtures thereof.

5 15. The use of claim 13 or claim 14, wherein said composition comprises fragments of *Enterococcus hirae* and fragments of at least one strain selected from the group consisting of *Porphyromonas*, *Barnesiella* and *Holdemania*.

16. The use of any of claims 13 to 15, wherein said *Enterococcus hirae* strain is the strain deposited on November 7, 2013 at the Collection Nationale de Cultures de Microorganismes (CNCM), under the number I-4815.

10 17. The use of any of claims 13 to 16, wherein said composition is formulated for subcutaneous or intramuscular administration.