CLAIMS

1. Use of an isolated or purified bacterial cell of a lactic acid producing bacterium of the genus *Lactobacillus* or the genus *Bifidobacterium*, a treated product thereof, or a mixture thereof having dual- agonistic activities on a peroxisome proliferator activated receptor (PPAR)α and a peroxisome proliferator activated receptor (PPAR)γ, wherein:

(i) the PPARα agonistic activity is 70 or more relative to a dimethyl sulfoxide (DMSO) negative control activity of 0 and a 2-(4-(2-(1-cyclobexanebutyl-3-cyclohexylureido)ethyl)-phenyl-thio) 2 -methyl-propionic acid (GW 7647) 10 nM positive control activity of 100 as measured by PPARα reporter assay regarding diethyl ether extracts of the bacterial cell; and

(ii) the PPARα agonistic activity is 30 or more relative to a DMSO negative control activity of 0 and a Troglitazone 1 μM positive control activity of 100 as measured by PPARα reporter assay regarding diethyl ether extracts of the bacterial cell,

in the manufacture of a medicament for improving a lipid metabolism and/or a sugar metabolism.

2. The use of claim 1, wherein the bacterial cell belongs to *Lactobacillus amylovorus*, *Lactobacillus gasseri*, *Bifidobacterium infantis*, or *Bifidobacterium adolescentis*.

3. The use according to claim 1 or claim 2, wherein the treated product of the bacterial cell is a product of the bacterial cell when disrupted, an extracted product of the bacterial cell, or a dried product of any one thereof.

4. The use according to any one of claims 1 to 3, the isolated or purified bacterial cell of a lactic acid producing bacterium of the genus *Lactobacillus* or the genus *Bifidobacterium*, the treated product thereof, or the mixture thereof further comprising a carrier or an excipient suitable for foods or beverages or pharmaceutical drugs.

5. Use of a food or beverage comprising the isolated or purified bacterial cell of a lactic acid producing bacterium of the genus *Lactobacillus* or the genus *Bifidobacterium*, a treated product thereof, or a mixture thereof as defined in any one of claims 1 to 3 in the manufacture of a medicament to improve lipid metabolism and/or sugar metabolism in a subject.

6. A process for producing a food or beverage having a lipid metabolism and/or a sugar metabolism improving effect, comprising adding the isolated or purified bacterial cell of a lactic acid producing bacterium of the genus *Lactobacillus* or the genus *Bifidobacterium*, a treated product thereof, or a mixture thereof as defined in any one of claims 1 to 3 to a food or beverage.

7. Use of *Lactobacillus amylovorus* CP1563 strain (Accession Number FERM BP-11255), *Lactobacillus amylovorus* CP1562 strain (Accession Number FERM BP-11379), or a mutant or bred strain thereof, a treated product thereof, or a mixture thereof in the manufacture of a medicament for the improvement of lipid metabolism and/or sugar metabolism.

8. Use of *Lactobacillus amylovorus* CP1563 strain (Accession Number FERM BP-11255) or *Lactobacillus amylovorus* (1562 strain (Accession Number FERM BP-11379), or a mutant or bred strain thereof, to impart a lipid metabolism and sugar metabolism improving action to a food or beverage or pharmaceutical product.

9. Use of the bacterial cell or the treated product thereof according to any one of claims 1 to 3 in the production of a composition for improving lipid metabolism and/or sugar metabolism in a subject.

10. Use of the bacterial cell or the treated product thereof according to any one of claims 1 to 3 in the production of a composition for preventing, improving or treating disorders associated with lipid metabolism and/or sugar metabolism in a subject.

11. Use of the bacterial cell or the treated product thereof according to any one of claims 1 to 3 in the production of a composition for reducing subcutaneous fat and/or visceral fat in a subject.

12. Use of the bacterial cell or the treated product thereof according to any one of claims 1 to 3 in the production of a composition for preventing accumulation of subcutaneous fat and/or visceral fat in a subject.

13. The use according to claim 1 or claim 2, wherein the treated product of bacterial cell is a product of the bacterial cell when disrupted or a dried product thereof.

14. Use of the treated product of a bacterial cell according to any one of claims 1 to 3 in the production of a composition for improving lipid metabolism and/or sugar metabolism in a subject.

15. Use of a treated product of a bacterial cell according to any one of claims 1 to 3 in the production of a composition for preventing, improving, or treating disorders associated with lipid metabolism and/or sugar metabolism in a subject.

16. Use of the treated product of a bacterial cell according to any one of claims 1 to 3 in the production of a composition for reducing subcutaneous fat and/or visceral fat in a subject.

17. Use of the treated product of a bacterial cell according to any one of claims 1 to 3 in the production of a composition for preventing accumulation of subcutaneous fat and/or visceral fat in a subject.