Claims

1. Non-therapeutic use of *Lacticaseibacillus paracasei* or a postbiotic thereof or a food composition comprising the *Lacticaseibacillus paracasei* or a postbiotic thereof for maintaining healthy blood glucose level, maintaining healthy blood lipid and/or controlling body fat or body weight by generating a cholic acid conjugated to tryptophan, wherein the *Lacticaseibacillus paracasei* is deposited with the Accession Number CGMCC NO. 17827.

2. The non-therapeutic use of claim 1, wherein the food composition is a liquid, semi-solid or solid or is selected from a group consisting of a dairy product, a confectionery product, a fruit juice and an instant food product.

3. A non-therapeutic method for maintaining healthy blood glucose level, maintaining healthy blood lipid and/or controlling body fat or body weight in a subject by generating a cholic acid conjugated to tryptophan, comprising administering to the subject *L. paracasei* or a postbiotic thereof, or a food composition comprising the *L. paracasei* or the postbiotics thereof, wherein the *Lacticaseibacillus paracasei* is deposited with the Accession Number CGMCC NO. 17827.

4. The non-therapeutic method of claim 3, wherein the *L. paracasei*

or a postbiotic thereof, or the food composition is administrated orally or the food composition is a liquid, semi-solid or solid or is selected from a group consisting of a dairy product, a confectionery product, a fruit juice and an instant food product.

5. Use of *Lacticaseibacillus paracasei* or a postbiotic thereof or a composition comprising the *Lacticaseibacillus paracasei* or postbiotics thereof for the manufacture of a pharmaceutical composition for preventing and/or treating a metabolic disease by generating a cholic acid conjugated to tryptophan, wherein the *Lacticaseibacillus paracasei* is deposited with the Accession Number CGMCC NO. 17827.

6. The use of claim 5, wherein the metabolic disease is a GLP-1 related metabolic disease selected from a group consisting of diabetes and a disease associated with diabetes.

7. The use of claim 6, wherein the diabetes is selected from a group consisting of type 1 diabetes, type 2 diabetes, gestational diabetes, obesity diabetes, autoimmune diabetes and borderline diabetes; and

the disease associated with diabetes is selected from a group consisting of obesity, an obesity-related disorder, metabolic syndrome, diabetic neuropathy, a kidney disease such as diabetic nephropathy, diabetic retinopathy, diabetic cardiomyopathy, cataract, macroangiopathy, osteopenia, hyperosmolar diabetic coma, diabetic gangrene, xerostomia,

hypoacusis, diabetic cachexia, delayed wound healing, diabetic dyslipidemia, a peripheral blood circulation disorder, non-alcoholic steatohepatitis, pre-diabetes, hyperlipemia, a fatty liver disease, impaired fasting glucose, hyperglycemia, impaired glucose tolerance, insulin resistance, hyperinsulinemia, elevated blood fatty acid or glycerol levels, impaired wound healing, glucose intolerance, increased fasting glucose and dyslipidemia, pancreatic beta cell insufficiency, enteroendocrine cell insufficiency, glycosuria, metabolic acidosis, cataract, a diabetic coronary heart disease, a diabetic cerebrovascular disease, a diabetic peripheral vascular disease, metabolic syndrome, atherosclerosis and stroke.

8. The use of claim 5, wherein the metabolic disease is selected from a group consisting of symptomatic obesity, simple obesity, childhood obesity, morbid obesity, abdominal obesity and a disease associated with obesity selected from a group consisting of glucose tolerance, abnormal lipid metabolism, hyperlipidemia, hypertension, heart failure, hyperuricemia, gout, fatty liver, a coronary heart disease, cerebral infarction, sleep apnea syndrome, obesity hypoventilation syndrome and visceral obesity syndrome.

9. The use of any one of claims 6-8, wherein the pharmaceutical composition is further for use in ameliorating constipation and/or ameliorating inflammatory bowel disease.

10. The use of claim 9, wherein the constipation is functional constipation and the inflammatory bowel disease is colitis or Crohn's disease.

11. The use of any one of claims 6-10, wherein the pharmaceutical composition further comprises one or more of a biguanide, a sulfonylurea, a glinide, an alpha-glucosidase inhibitor, a thiazolidinedione and a GLP-1 drug.

12. A method for producing a cholic acid conjugated to tryptophan, comprising culturing *Lacticaseibacillus paracasei* in a medium in the presence of a bile acid and tryptophan to produce the cholic acid conjugated to tryptophan.

13. The method of claim 12, wherein the *Lacticaseibacillus paracasei* is deposited with the Accession Number CGMCC NO. 17827.

14. Use of *Lacticaseibacillus paracasei* for the production of a cholic acid conjugated to tryptophan, wherein the *Lacticaseibacillus paracasei* is deposited with the Accession Number CGMCC NO. 17827.

15. A method for screening a strain of the genus *Lactobacillus* that produces a cholic acid conjugated to tryptophan, comprising

(1) culturing a strain of the genus *Lactobacillus* in a medium in the

presence of a bile acid and tryptophan to obtain a culture supernatant;

(2) measuring the content of the cholic acid conjugated to tryptophan in the culture supernatant; and

(3) selecting the strain of the genus *Lactobacillus* that produces the cholic acid conjugated to tryptophan;

wherein the strain of the genus *Lactobacillus* is *Lacticaseibacillus paracasei*.