WHAT IS CLAIMED IS:

1. Bovine milk-isolated powdered exosomes comprising intact exosomes.

2. The bovine milk-isolated powdered exosomes of claim 1, wherein the intact exosomes comprise miRNA.

3. The bovine milk-isolated powdered exosomes of claim 2, wherein, after storage at 37°C for 3 weeks, the bovine milk-isolated powdered exosomes comprise a greater amount of miRNA than fresh milk exosomes stored at 37°C for 3 weeks.

4. The bovine milk-isolated powdered exosomes of any one of claims 1-3, wherein the bovine milk-isolated powdered exosomes comprise freeze dried intact exosomes.

5. The bovine milk-isolated powdered exosomes of any one of claims 1-4, wherein greater than 90% of the exosomes are from about 10 nanometers to about 250 nanometers in diameter.

6. A nutritional composition comprising protein, carbohydrate, and/or fat, and bovine milk-isolated exosomes, wherein the exosomes are provided by addition of the powdered exosomes of any one of claims 1-5.

7. The nutritional composition of claim 6, comprising from about 0.001 to about 10 wt % of the bovine milk-isolated exosomes, based on the weight of the nutritional composition.

8. The nutritional composition of claim 6 or 7, wherein the protein comprises milk protein and/or soy protein.

9. The nutritional composition of any one claims 6-8, wherein the carbohydrate comprises fiber.

10. The nutritional composition of any one of claims 6-9, wherein the fat comprises at least one omega-3 fatty acid.

11. The nutritional composition of claim 10, wherein the at least one omega-3 fatty acid of the composition is selected from the group consisting of eicosapentaenoic acid, docosahexaenoic acid, arachidonic acid, and alpha-linolenic acid.

12. The nutritional composition of any one of claims 6-11, wherein the nutritional composition is in the form of a powder.

13. The nutritional composition of any one of claims 6-11, wherein the nutritional composition is in the form of a liquid.

14. A method of preparing a powdered nutritional composition, comprising dry blending a powder composition comprising protein, carbohydrate, and/or fat with the powdered exosomes of any one of claims 1-5.

15. A method of preparing powdered exosomes isolated from bovine milk, comprising:

centrifuging bovine milk to form a lipid fraction top layer, a whey fraction middle layer, and a first pellet of cells and debris;

separating the whey fraction and centrifuging the separated whey fraction to remove additional fat, casein aggregates and debris and form a substantially clear whey fraction;

microfiltering the substantially clear whey fraction to remove residual debris;

centrifuging the microfiltered whey fraction to obtain a pellet containing exosomes;

incubating the exosome-containing pellet in aqueous medium to dissolve the pellet without disrupting exosome membranes to provide an exosome suspension; and

drying the suspension to obtain the powdered exosomes.

16. The method of claim 15, wherein the incubation step is conducted for about 12 to about 36 hours and at not more than 500 rpm centrifugation.

17. The method of claim 15 or claim 16, wherein the drying step comprises freeze drying.

18. The method of claim 17, wherein the freeze-drying comprises exposing the exosome suspension to a temperature of -80˚C and a vacuum of less than 0.3 mbar for at least 24 hours.

19. The method of any one of claims 15-18, wherein the method is conducted with bovine milk within about 5 days of obtaining the milk from a bovine, or wherein the bovine milk is thawed from bovine milk that was frozen within about 5 days of obtaining the milk from a bovine.

20. ~~A method of~~ Use of the nutritional composition according to any one of claims 6-13, or the powdered exosomes of any one of claims 1-5, in the manufacture of a medicament for lowering a risk of developing insulin resistance, prediabetes, or diabetes in a subject, or treating insulin resistance, prediabetes, or diabetes in a subject~~, comprising:~~

~~administering to a subject at risk of developing, or having, insulin resistance, prediabetes, or diabetes the powdered exosomes of any one of claims 1-5 or the nutritional composition of any one of claims 6-13, wherein the administered amount of exosomes is effective to lower the risk of development of, or treat, respectively, insulin resistance, prediabetes, or diabetes~~.

21. The ~~method~~ use of claim 20, wherein the subject is obese or has sarcopenia.

22. The nutritional composition according to any one of claims 6-13, or the powdered exosomes of any one of claims 1-5 for use in therapy.