What is claimed is:

1. A method of freeze-drying encapsulated cells, the method comprising at least two consecutive incubation steps, wherein the encapsulated cells are incubated in each incubation step in an incubation solution containing cryoprotectant over a suitable period of time, wherein the concentration of cryoprotectant in the incubation solution is increased with each subsequent incubation step, wherein the encapsulated cells are bacterial cells or yeast cells, and wherein the cryoprotectant is a mixture of skim milk, glycerol and a carbohydrate, wherein skim milk is present in a concentration of 3 % (w/v) to 8 % (w/v), glycerol is present in a concentration of 0.5 % (w/v) to 2 % (w/v) and the carbohydrate is trehalose and is present in a concentration of 5 % (w/v) to 13 % (w/v).

2. The method of claim 1, comprising 3, 4, 5, 6, 7, 8, 9 or 10 incubation steps wherein in each incubation step the concentration of the cryoprotectant is increased.

3. The method of claim 1 or 2, wherein the same cryoprotectant is used in each incubation step.

4. The method of any one of claims 1 to 3, wherein the yeast cells are selected from the group consisting of *Saccharomyces*, *Debaryomyces*, *Candida*, *Pichia* and *Torulopsis*.

5. The method of any one of claims 1 to 3, wherein the bacterial cells are selected from the group consisting of *Bifidobacterium, Bacteroides, Clostridium, Fusobacterium, Melissococcus, Propionibacterium, Streptococcus, Enterococcus, Lactococcus, Staphylococcus, Peptostrepococcus, Bacillus, Pediococcus, Micrococcus, Leuconostoc, Weissella, Aerococcus, Oenococcus, Geobacillus and Lactobacillus*.

6. The method of any one of claims 1 to 5, wherein the cells are probiotic cells, preferably wherein the probiotic cells are selected from the group consisting of *Saccharomyces cereviseae*, *Bacillus coagulans, Bacillus licheniformis, Bacillus subtilis, Bifidobacterium angulatum, Bifidobacterium animalis, Bifidobacterium bifidum, Bifidobacterium breve, Bifidobacterium infantis, Bifidobacterium lactis, Bifidobacterium longum, Enterococcus faecium, Enterococcus faecalis, Lactobacillus acidophilus, Lactobacillus amylovorus, Lactobacillus alimentarius, Lactobacillus bulgaricus, Lactobacillus casei subsp. casei,*

Lactobacillus casei Shirota, Lactobacillus curvatus, Lactobacillus delbrueckii subsp. lactis, Lactobacillus fermentum, Lactobacillus farciminus, Lactobacillus gasseri, Lactobacillus helveticus, Lactobacillus johnsonii, Lactobacillus lacti, Lactobacillus paracasei, Lactobacillus pentosaceus, Lactobacillus plantarum, Lactobacillus reuteri, Lactobacillus rhamnosus (Lactobacillus GG), Lactobacillus sake, Lactobacillus salivarius, Lactococcus lactis, Lactobacillus thermotolerans, Lactobacillus mucosae, Micrococcus varians, Pediococcus acidilactici, Pediococcus pentosaceus, Pediococcus acidilactici, Pediococcus halophilus, Streptococcus faecalis, Streptococcus thermophilus, Staphylococcus carnosus, and *Staphylococcus xylosus*.

7. A method of preparing encapsulated cells for freeze-drying, the method comprising at least two consecutive incubation steps, wherein the encapsulated cells are incubated in each incubation step in an incubation solution containing cryoprotectant over a suitable period of time, wherein the concentration of cryoprotectant in the incubation solution is increased with each subsequent incubation step, wherein the encapsulated cells are bacterial cells or yeast cells, and wherein the method comprises incubating the encapsulated cells in a composition comprising skim milk, glycerol and a carbohydrate, wherein skim milk is present in a concentration of 3 % (w/v) to 8 % (w/v), glycerol is present in a concentration of 0.5 % (w/v) to 2 % (w/v) and the carbohydrate is trehalose and is present in a concentration of 5 % (w/v) to 13 % (w/v).

8. The method of claim 7, wherein the yeast cells are selected from the group consisting of *Saccharomyces*, *Debaryomyces*, *Candida*, *Pichia* and *Torulopsis*.

9. The method of claim 7, wherein the bacterial cells are selected from the group consisting of *Bifidobacterium, Bacteroides, Clostridium, Fusobacterium, Melissococcus, Propionibacterium, Streptococcus, Enterococcus, Lactococcus, Staphylococcus, Peptostrepococcus, Bacillus, Pediococcus, Micrococcus, Leuconostoc, Weissella, Aerococcus, Oenococcus, Geobacillus and Lactobacillus*.

10. The method of any of claims 7 to 9, wherein the cells are probiotic cells, preferably wherein the probiotic cells are selected from the group consisting of *Saccharomyces cereviseae*, *Bacillus coagulans, Bacillus licheniformis, Bacillus subtilis, Bifidobacterium angulatum, Bifidobacterium animalis, Bifidobacterium bifidum, Bifidobacterium breve,*

Bifidobacterium infantis, Bifidobacterium lactis, Bifidobacterium longum, Enterococcus faecium, Enterococcus faecalis, Lactobacillus acidophilus, Lactobacillus amylovorus, Lactobacillus alimentarius, Lactobacillus bulgaricus, Lactobacillus casei subsp. casei, Lactobacillus casei Shirota, Lactobacillus curvatus, Lactobacillus delbrueckii subsp. lactis, Lactobacillus fermentum, Lactobacillus farciminus, Lactobacillus gasseri, Lactobacillus helveticus, Lactobacillus johnsonii, Lactobacillus lacti, Lactobacillus paracasei, Lactobacillus pentosaceus, Lactobacillus plantarum, Lactobacillus reuteri, Lactobacillus rhamnosus (Lactobacillus GG), Lactobacillus sake, Lactobacillus salivarius, Lactococcus lactis, Micrococcus varians, Pediococcus acidilactici, Pediococcus pentosaceus, Pediococcus acidilactici, Pediococcus halophilus, Streptococcus faecalis, Streptococcus thermophilus, Staphylococcus carnosus, and *Staphylococcus xylosus*.

11. A composition suitable for freezing of encapsulated cells, the composition comprising skim milk, glycerol and a carbohydrate, wherein skim milk is present in a concentration of 3 % (w/v) to 8 % (w/v), glycerol is present in a concentration of 0.5 % (w/v) to 2 % (w/v) and the carbohydrate is trehalose and is present in a concentration of 5 % (w/v) to 13 % (w/v).

12. The use of a composition as defined in claim 11 for the freezing of encapsulated cells, wherein the encapsulated cells are bacterial cells or yeast cells.

13. The use of claim 12, wherein the yeast cells are selected from the group consisting of *Saccharomyces*, *Debaryomyces*, *Candida*, *Pichia* and *Torulopsis*.

14. The use of claim 12, wherein the bacterial cells are selected from the group consisting of *Bifidobacterium, Bacteroides, Clostridium, Fusobacterium, Melissococcus, Propionibacterium, Streptococcus, Enterococcus, Lactococcus, Staphylococcus, Peptostreptococcus, Bacillus, Pediococcus, Micrococcus, Leuconostoc, Weissella, Aerococcus, Oenococcus, Geobacillus and Lactobacillus*.

15. The use of any one of claims 12 to 14, wherein the cells are probiotic cells, preferably wherein the probiotic cells are selected from the group consisting of *Saccharomyces cerevisiae*, *Bacillus coagulans, Bacillus licheniformis, Bacillus subtilis, Bifidobacterium angulatum, Bifidobacterium animalis, Bifidobacterium bifidum, Bifidobacterium breve, Bifidobacterium infantis, Bifidobacterium lactis, Bifidobacterium longum, Enterococcus*

faecium, Enterococcus faecalis, Lactobacillus acidophilus, Lactobacillus amylovorus, Lactobacillus alimentarius, Lactobacillus bulgaricus, Lactobacillus casei subsp. casei, Lactobacillus casei Shirota, Lactobacillus curvatus, Lactobacillus delbrueckii subsp. lactis, Lactobacillus fermentum, Lactobacillus farciminus, Lactobacillus gasseri, Lactobacillus helveticus, Lactobacillus johnsonii, Lactobacillus lacti, Lactobacillus paracasei, Lactobacillus pentosaceus, Lactobacillus plantarum, Lactobacillus reuteri, Lactobacillus rhamnosus (Lactobacillus GG), Lactobacillus sake, Lactobacillus salivarius, Lactococcus lactis, Micrococcus varians, Pediococcus acidilactici, Pediococcus pentosaceus, Pediococcus acidilactici, Pediococcus halophilus, Streptococcus faecalis, Streptococcus thermophilus, Staphylococcus carnosus, and *Staphylococcus xylosus*.