Claims:

1. An artificial bioxome particle comprising a cell membrane component and designed to undergo fusion with a target cell, wherein said membrane component is derived from a pre-defined cellular or extracellular source and obtained by lipid extraction with a mild solvent system; and, wherein said bioxome particle is engineered to carry a cargo comprising at least one predetermined active molecule; and, wherein said cargo can be released into the target cell after the fusion of the bioxome particle with the target cell.

2. The bioxome particle of claim 1, wherein the cargo comprises a plurality of active molecules.

3. The bioxome particle of any one of claims 1 or 2, wherein the source is selected from the group consisting of fibroblasts, mesenchymal stem cells, stem cells, cells of the immune system, dendritic cells, ectoderm, keratinocytes, cells of GI, cells of oral cavity, nasal mucosal cells, neuronal cells, retinal cells, endothelial cells, cardiospheres, cardiomyocytes, pericytes, blood cells, melanocytes, parenchymal cells, liver reserve cells, neural stem cells, pancreatic stem cells, embryonic stem cells, bone marrow, skin tissue, liver tissue, pancreatic tissue, biological fluids, excrement or surgery extracted tissues, milk, saliva, mucus, blood plasma, urine, feces, sebum, postnatal umbilical cord, placenta, amniotic sac, kidney tissue, neurological tissue, adrenal gland tissue, mucosal epithelium, smooth muscle tissue, a bacterial cell, a bacterial culture, a

whole microorganism, conditional medium, amniotic fluid, lipoaspirate, liposuction byproducts, and a plant tissue.

4. The bioxome particle of any one of claims 1 to 3, wherein the active molecule is selected from the group consisting of nucleic acid, peptide, amino acid, polypeptide, nucleoside, growth factor, organic molecule, polyphenol, steroid, lipophilic poor soluble drug, inorganic molecule, anti-oxidant, hormone, antibody, vitamin, cytokine, enzyme, heat shock protein, or a combination thereof.

5. The bioxome particle of claim 4, wherein the active molecule is selected from cannabinoid, cannabinoid acid, endocannabinoid, rapamycin and CoQ10.

6. The bioxome particle of any one of claims 1 to 5, wherein the active molecule has a therapeutic effect.

7. The bioxome of any one of claims 1 to 6 which is a redoxome, wherein the cargo comprises at least one redox active free-radicals scavenging compound.

8. The redoxome of claim 7, further capable of blocking LPO chain reaction, by means such as lipid radical/ peroxide trap, such as vitamin E, terpenoids, polyphenols, flavonoid, phenolic acids, cannabinoids, retinoids, vitamin D, lipoic acid, sterols.

9. The redoxome of claim 7, comprising an iron chelator selected from the group consisting of desferrioxamine (DFX), ethylenediaminetetraacetic acid (EDTA), rutin,

disodium EDTA, tetrasodium EDTA, calcium disodium EDTA, diethylenetriaminepentaacetic acid (DTPA) or a salt thereof, hydroxyethlethylenediaminetriacetic acid (HEDTA) or a salt thereof, nitrilotriacetic acid (NTA), acetyl trihexyl citrate, aminotrimethylene phosphonic acid, beta-alanine diacetic acid, bismuth citrate, citric acid, cyclohexanediamine tetraacetic acid, diammonium citrate, dibutyl oxalate, diethyl oxalate, diisobutyl oxalate, diisopropyl oxalate, dilithium oxalate, dimethyl oxalate, dipotassium EDTA, dipotassium oxalate, dipropyl oxalate, disodium EDTA-copper, disodium pyrophosphate, etidronic acid, HEDTA, methyl cyclodextrin, oxalic acid, pentapotassium, triphosphate, pentasodium aminotrimethylene phosphonate, pentasodium pentetate, pentasodium triphosphate, pentetic acid, dicarboxyic acid, phytic acid, potassium citrate, sodium citrate, sodium dihydroxyethylglycinate, sodium gluceptate, sodium gluconate, sodium hexametaphosphate, sodium metaphosphate, sodium metasilicate, sodium oxalate, sodium trimetaphosphate, tea-EDTA, tetrahydroxypropyl ethylenediamine, tetrapotassium etidronate, tetrapotassium pyrophosphate, tetrasodium etidronate, tetrasodium pyrophosphate, tripotassium EDTA, trisodium EDTA, trisodium hedta, trisodium NTA, trisodium phosphate, malic acid, fumaric acid, maltol, succimer, penicillamine, dimercaprol, deferipron, a natural protein based iron chelator, melatonin, siderphore, zinc or copper cation, or salt or complex, desferrioxamine mesylate, detoxamin, deferoxamine, deferiprone, deferasirox, glutathione, metalloprotein, ferrochel (bis-glycinate chelate), ceruloplasmin, penicillamine, cuprizone, trientine,

ferrulic acid, zinc acetate, and lipocalin 2 or a combination thereof.

10. The bioxome particle of any one of claims 1 to 9 which is a long circulating, slow release bioxome, a selective targeting bioxome, an immunogenic bioxome; or any combination thereof.

11. A composition comprising the bioxome particle of any one of claims 1 to 10 and at least one carrier.

12. The composition of claim 11, wherein the composition is a pharmaceutical composition and the carrier is a pharmaceutically acceptable carrier.

13. The composition of claim 11, wherein the composition is a cosmeceutical composition and the carrier is a cosmeceutically acceptable carrier.

14. The composition of claim 11, wherein the composition is an edible composition, and the carrier is food grade carrier.

15. A process for the manufacture of a sample comprising a plurality of bioxome particles, wherein the bioxome particles are engineered to carry a cargo comprising at least one active molecule and designed to undergo fusion with a target cell to release the cargo; and wherein said bioxome particles comprise a cell membrane component derived from a pre-defined cellular or extracellular source; the process comprising:

a. Performing total cell lipid extraction from the selected cellular or extracellular source in a mild solvent system to obtain a lipid extract;

b. Drying the lipid extract; and

c. Inducing self-assembly of bioxome particles by performing at least one step of ultra-sonication and/or extrusion;

wherein the resulting bioxome particles in the sample are characterized by an average particle size of about 0.03µm to 5µm.

16. The process of claim 15, wherein the average particle size is 0.05µm to 3µm.

17. The process of any one of claims 15 or 16, wherein the sample comprising the bioxome particle has the pH of 3.5 to 5.5.

18. The process of any one of claims 15 to 17, wherein the mild solvent system comprises a mixture of polar and non-polar solvents.

19. The process of any one of claims 15 to 18, wherein the solvent system further comprises a stabilizer.

20. The process of any one of claims 15 to 19, wherein the solvent system further comprises an antioxidant, a surfactant, vitamin E, squalene, cholesterol, or a combination thereof.

21. The process of any one of claims 15 to 20, further comprising the step of co-precipitation of a nucleic acid.

22. The process of any one of claims 15 to 21, wherein the cellular or extracellular source for total lipid extraction is selected from the group consisting of fibroblasts, mesenchymal stem cells, stem cells, cells of the immune system, dendritic cells, ectoderm, keratinocytes, cells of GI, cells of oral cavity, nasal mucosal cells, neuronal cells, retinal cells, endothelial cells, cardiospheres, cardiomyocytes, pericytes, blood cells, melanocytes, parenchymal cells, liver reserve cells, neural stem cells, pancreatic stem cells, embryonic stem cells, bone marrow, skin tissue, liver tissue, pancreatic tissue, postnatal umbilical cord, placenta, amniotic sac, kidney tissue, neurological tissue, adrenal gland tissue, mucosal epithelium, smooth muscle tissue, a bacterial cell, a bacterial culture, a whole microorganism, conditional medium, amniotic fluid, lipoaspirate, liposuction byproducts, and a plant tissue.

23. The process of any one of claims 15 to 22, wherein the lipid extraction is performed from cell-conditioned media, lyophilized conditioned cell media, cell pellet, frozen cells, dry cells, washed cell bulk, non-adhesive cell suspension, and adhesive cell layer.

~~24. A sample comprising a plurality of bioxome particles, prepared according to the process of any one of claims 15 to 23.~~

~~25.~~24. The pharmaceutical composition of claim 12, for use for treating or preventing a pathology in a subject in need for such treatment.

~~26.~~25. The bioxome particle of any one of claims 1 to 10 for use as a vehicle for delivery of active molecules to the target site.

~~27.~~26. The bioxome particle of any one of claims 1 to 10 for use as a medicament.