Claims

Claim 1

A method for producing a repair agent for damaged tissue, said method comprising the step of:

culturing mesenchymal stem cells in a serum-free medium at an oxygen concentration of 1% or less.

Claim 2

The method as set forth in claim 1, wherein the serum-free medium contains an FGF, a PDGF, an EGF, at least one phospholipid, and at least one fatty acid.

Claim 3

The method as set forth in claim 1 or 2, wherein the mesenchymal stem cells are subcultured at least once in the culturing step.

Claim 4

A repair agent for damaged tissue, said repair agent comprising mesenchymal stem cells in which when said mesenchymal stem cells are cultured in a serum-free medium at an oxygen concentration of 1% or less, a gene that encodes angiopoietin-like 4, a gene that encodes fatty acid binding protein 3, a gene that encodes delta-like 2 homolog (Drosophila), a gene that encodes fructose-

bisphosphate aldolase C, a gene that encodes TRPM8 channel-associated factor 2, and a gene that encodes REST corepressor 2, are respectively expressed in amounts at least 3 or more times greater than respective expression amounts thereof in mesenchymal stem cells which have been cultured in a serum-containing medium at an oxygen concentration of 5% or more.

Claim 5

The repair agent as set forth in claim 4, wherein said repair agent is intended to (i) suppress fibrosis of a living tissue, (ii) suppress infiltration of an inflammatory cell, or (iii) control activity of a macrophage.

Claim 6

The repair agent as set forth in claim 4 or 5, wherein:

the damaged tissue accompanies acute kidney injury, chronic kidney disease, chronic renal failure, chronic glomerulonephritis, diabetic nephropathy, nephrosclerosis, rapidly progressive glomerulonephritis, polycystic kidney, tubulointerstitial nephritis, drug-induced nephritis, lupus nephritis, hydronephrosis, gouty kidney, cirrhosis, pulmonary fibrosis, a burn, interstitial pneumonia, drug-induced pneumonia, irradiation pneumonitis, chronic

obstructive pulmonary disease, an acute respiratory distress syndrome, cartilage damage, a bone defect, spinal cord damage, periodontal disease, multiple sclerosis, rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, diabetes, arteriosclerosis, myocardial infarction, stroke, Alzheimer's disease, macular degeneration, viral hepatitis, alcoholic hepatitis, non-alcoholic steatohepatitis, jawbone reconstruction, cleft palate, a bone replacement material, a bone defect, a bone system disease, a dry eye, a corneal disorder, pharyngitis, arthritis, a cancer, cancer neighborhood fibrosis, or fibrosis.