Claims

1. A method for producing a cell aggregate comprising a ciliary marginal zone-like structure, comprising a step of culturing a cell aggregate being prepared from a pluripotent stem cell and comprising an induced retinal tissue in which Chx10 positive cells are present in a proportion of 20% or more and 100% or less of the tissue in a serum-free medium or serum-containing medium each containing a substance acting on the Wnt signal pathway that can enhance signal transduction mediated by Wnt and a substance inhibiting the FGF signal pathway for only a period before the appearance of a RPE65 gene-expressing cell, followed by culturing the resulting "cell aggregate in which a RPE65 gene-expressing cell does not appear" in a serum-free medium or serum-containing medium each free of a substance acting on the Wnt signal pathway that can enhance signal transduction mediated by Wnt.

2. The production method according to claim 1, wherein the resulting cell aggregate in which a RPE65 gene-expressing cell does not appear is a cell aggregate in which Chx10 positive cells are present in the retinal tissue in a proportion of within 30% to 0% of the tissue.

3. The production method according to claim 1 or 2, wherein the resulting "cell aggregate in which a RPE65 gene-expressing cell does not appear" is cultured in a serum-free medium or serum-containing medium each free of a substance acting on the Wnt signal pathway until the proportion of Chx10 positive cells present in the retinal tissue reaches 30% or more of the tissue.

4. The production method according to any one of claims 1 to 3, wherein the cell aggregate being prepared from a pluripotent stem cell and comprising an induced retinal tissue in which Chx10 positive cells are present in a

proportion of 20% or more and 100% or less of the tissue is a cell aggregate which is prepared by the method comprising the following steps (A) and (B):
(A) a step of subjecting pluripotent stem cells to floating culture in a serum-free medium to form an aggregate of pluripotent stem cells, and
(B) a step of performing floating culture of the aggregate formed in step (A) in a serum-free medium or serum-containing medium each free of a substance capable of enhancing signal transduction mediated by Sonic hedgehog and containing a substance capable of enhancing signal transduction mediated by BMP to give a cell aggregate comprising a retinal progenitor cell.

5. The production method according to claim 4, wherein the substance capable of enhancing signal transduction mediated by BMP is selected from a group consisting of BMP proteins, BMP2, BMP4, BMP7, GDF proteins, GDF7, anti-BMP receptor antibody and BMP partial peptide.

6. The production method according to any one of claims 1 to 5, wherein the retinal tissue is derived from a human pluripotent stem cell.

7. The production method according to any one of claims 1 to 6, wherein the substance acting on the Wnt signal pathway that can enhance signal transduction mediated by Wnt is a protein belonging to Wnt family, Wnt receptor, Wnt receptor agonist, or GSK3β inhibitor.

8. The production method according to any one of claims 1 to 7, wherein the substance acting on the Wnt signal pathway that can enhance signal transduction mediated by Wnt is CHIR99021.

9. The production method according to any one of claims 1 to

8, wherein the substance inhibiting FGF signal pathway is an FGF receptor, FGF receptor inhibitor, MAP kinase cascade inhibitory substance, PI3 kinase inhibitor, or Akt inhibitor.

10. The production method according to any one of claims 1 to 9, wherein the substance inhibiting FGF signal pathway is SU5402.

11. A method for producing a retinal tissue, comprising producing a cell aggregate comprising a ciliary marginal zone-like structure by the production method according to any one of claims 1 to 10, and physically cutting out a retinal tissue from the thus-produced cell aggregate comprising a ciliary marginal zone-like structure.

12. A regent for evaluating toxicity or drug efficacy, the reagent comprising a cultured cell aggregate comprising a ciliary marginal zone-like structure produced by the production method according to any one of claims 1 to 10.

13. A method for evaluating toxicity or drug efficacy of a test substance, comprising contacting the substance with a cultured cell aggregate comprising a ciliary marginal zone-like structure produced by the production method according to any one of claims 1 to 10, and assaying an influence of the substance on the ciliary marginal zone-like structure or the aggregate.

14. A cultured cell aggregate comprising a ciliary marginal zone-like structure produced by the production method according to any one of claims 1 to 10, for use as a biological material for transplantation.

15. A cultured cell aggregate comprising a ciliary marginal zone-like structure produced by the production method

according to any one of claims 1 to 10, for use in the treatment of a disease due to a disorder of the ciliary marginal zone-like.

16. A cultured cell aggregate comprising a ciliary marginal zone-like structure produced by the production method according to any one of claims 1 to 10.