

CLAIMS

1. A method for inducing differentiation into conjunctival epithelial cells, conjunctival goblet cells, and conjunctival
5 epithelial stem and progenitor cells, the method comprising culturing colonies of pluripotent stem cells in a medium containing an epidermal growth factor (EGF) signaling activator to induce differentiation of the pluripotent stem cells.
- 10 2. The method according to claim 1, wherein the colonies of pluripotent stem cells are cultured in a medium containing an EGF signaling activator to form a self-formed ectodermal autonomous multi-zone (SEAM) cell population.
- 15 3. A method for producing conjunctival epithelial cells, conjunctival goblet cells, and conjunctival epithelial stem and progenitor cells, the method comprising
culturing colonies of pluripotent stem cells in a medium containing an epidermal growth factor (EGF) signaling activator
20 to induce formation of a self-formed ectodermal autonomous multi-zone (SEAM) cell population, and
isolating cells from the SEAM cell population using the expression levels of ITG β 4, SSEA-4, and CD200 as indicators as determined with antibodies thereagainst.
- 25 4. The method according to claim 3, wherein the isolated cells are CD200-negative cells.
5. The method according to claim 3 or 4, wherein the isolated

cells are weakly SSEA-4-positive and ITG β 4-positive cells.

6. The method according to claim 5, wherein the isolated cells are conjunctival epithelial stem and progenitor cells.

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7. The method according to claim 3 or 4, wherein the isolated cells are selected from weakly SSEA-4-positive and ITG β 4-negative cells and SSEA-4-positive and ITG β 4-negative cells.

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8. The method according to claim 7, wherein the isolated cells are conjunctival epithelial cells and/or conjunctival goblet cells.

15 9. A method for producing a conjunctival epithelial cell sheet, the method comprising the steps of:

producing conjunctival epithelial stem and progenitor cells by the method of any one of claims 3 to 6, and

20 culturing the conjunctival epithelial stem and progenitor cells in a medium containing keratinocyte growth factor (KGF).

10. A method for producing a conjunctival epithelial cell sheet, the method comprising the steps of:

25 producing conjunctival epithelial stem and progenitor cells by the method of any one of claims 3 to 6, and

culturing the conjunctival epithelial stem and progenitor cells in a medium containing a fibroblast growth factor receptor 2b (FGFR2b) activator.

11. A method for screening for a drug for a conjunctiva-related disease, the method comprising the steps of:

- producing conjunctival epithelial cells, conjunctival goblet cells, and/or conjunctival epithelial stem and
- 5 progenitor cells by the method of any one of claims 3 to 8, and
- culturing the conjunctival epithelial cells, the conjunctival goblet cells, and/or the conjunctival epithelial stem and progenitor cells.