CLAIMS

1. A method for culturing an epithelial stem cell or an organoid comprising epithelial stem cells, wherein the method comprises culturing said epithelial stem cell in a culture medium suitable for epithelial stem cells, wherein the culture method further comprises contacting the cell or organoid with an integrin agonist.
2. The method of claim 1, wherein the integrin agonist interacts with the beta subunit of integrin, optionally wherein the beta subunit is β1, β2, β3 or β7.
3. The method of claim 2, wherein the integrin agonist interacts with the β1 subunit.
4. The method of claim 1, wherein the integrin agonist interacts with the alpha subunit of integrin.
5. The method of any one of claims 1-4 wherein the integrin agonist is selected from an anti-integrin antibody, a talin, a kindlin, dithiothreitol and oxysterol 25-hydroxycholesterol.
6. The method of any one of claims 1-5, wherein the agonist of integrin is an anti-integrin antibody, optionally wherein the anti-integrin antibody is JBS2, HP1/3, SNAKA51, PT25-2, PMI-1, MEM-83, NKI-L16, 496B, 12G10, 8A2, TS2/16, 15/7, HUTS-4, 8E3, N29, 9EG7, mAb 24, MEM-148, KIM127, CBR LFA-1/2, MEM-48, KIM185, AP3, AP5, LIBS6, LIBS2, 10F8, 2B8, 2G3 .
7. The method of claim 6, wherein the anti-integrin antibody is TS2/16, 12G10, 8A2, 15/7, HUTS-4, 8E3, N29 or 9EG7, further optionally wherein the anti-integrin antibody is TS2/16, 12G10, HUTS-4 or 8A2, further optionally wherein the anti-integrin antibody is TS2/16, 12G10, HUTS-4.
8. The method of any one of claims 6 or claim 7, wherein the antibody is humanised.
9. The method of any one of claims 1-5, wherein the integrin agonist is:
    a. a talin, optionally, wherein the talin is used in combination with a kindlin;
    b. a reducing agent, such as dithiothreitol; or
    c. a lipid, such as oxysterol 25-hydroxycholesterol.
10. The method of any one of claims 1-9, wherein the method results
    a. in the growth of an organoid; and/or
    b. in an at least 10%, 20%, 50% increase in epithelial stem cell growth over 4 days relative to the same method performed without the integrin agonist.
11. The method of any preceding claim, wherein the method further comprises culturing the cells in contact with an extracellular matrix, optionally wherein the extracellular matrix is a Basement Membrane Extract or Matrigel.
12. The method of any preceding claim, wherein the method further comprises culturing the cells in contact with a synthetic matrix, optionally wherein the synthetic matrix comprises a polymer, optionally a polyester, polyethylene glycol or a hydrogel.
13. The method of claim 12, wherein the synthetic matrix comprises:
    a. a cross-linked polyethylene glycol (PEG) hydrogel; and/or
    b. a biomaterial, preferably an extracellular matrix component, optionally wherein the biomaterial is one or more glycoprotein (optionally selected from collagen, laminin, perlecan, fibronectin or an RGD attachment ligand of fibronectin) and/or one or more carbohydrate (optionally hyaluronic acid).
14. The method of any one of the preceding claims, wherein the extracellular matrix or synthetic matrix is three-dimensional and/or is in suspension.

15. The method of any one of claims 1-10 and 12-14, wherein the culture method does not involve contacting the cells with an exogenous extracellular matrix.
16. The method of any one of the preceding claims, wherein the epithelial stem cell is selected from a colorectal, small intestine, stomach, pancreas, liver, lung, breast, prostate, kidney, mouth, nasopharynx, throat, hypopharynx, larynx, trachea, skin, fallopian tube, ovary, salivary gland, esophagus, hair follicle and/or cochlear cell.
17. The method of any one of the preceding claims, wherein the culture medium suitable for epithelial stem cells comprises one or more of a Wnt agonist, a BMP inhibitor, a mitogenic growth factor and a TGF-beta inhibitor.
18. A culture medium as defined in claim 17, wherein the culture medium further comprises an integrin agonist as defined in claims 2-9.
19. An extracellular matrix or a synthetic matrix as defined in any one of claims 11-15, wherein the matrix further comprises an integrin agonist as defined in claims 2-9.
20. An organoid obtainable or obtained by a method of any one of claims 1-17.
21. A composition comprising a culture medium according to 18, and an extracellular matrix or a synthetic matrix, optionally as defined in any one of claims 11-15.
22. Use of an integrin agonist for culturing a cell.
23. Use of an integrin agonist for pre-treating cells prior to transplantation into a subject.
24. An integrin agonist for use as a cell adhesion-enhancer in a method of cell transplantation.
25. An organoid according to claim 20, for use in therapy or for use in diagnosis.