CLAIMS

1. A culture method comprising:

three-dimensionally culturing a population including two or more cells in a predetermined area, the population including a cell derived from a stem cell and a mesenchymal cell, the cell derived from a stem cell being a cell of one or more types selected from the group consisting of an undifferentiated endodermal cell, an undifferentiated ectodermal cell, and an undifferentiated mesodermal cell, wherein

the area is formed of a space in which cells are movable,

when the space has a volume of V mm^3 and the number of the mesenchymal cells seeded in the space is represented by N, the V is equal to or less than 400 and N/V is in a range from 35 to 3000, and

the population includes a cell number X of the cells derived from a stem cell and a cell number Y of the mesenchymal cells, and the X:Y is in a range from 20:1 to 100:1.

2. The culture method according to Claim 1, further comprising performing the three-dimensional culture of the population together with at least one of: a vascular cell; a factor autonomously secreted from a vascular cell; and a factor secreted from a vascular cell due to the presence of both a vascular cell and a mesenchymal cell.

3. The culture method according to Claim 1 or 2, wherein a ratio of the number of the mesenchymal cells to a total number of cells used for culture is 0.5% or more but less than 5%.

4. The culture method according to Claim 1 or 2, wherein

the X:Y is in a range from 20:1 to 50:1.

5. The culture method according to Claim 4, wherein

the area is formed of a microchamber,

the N/V is in a range from 100 to 300,

the V is equal to or less than 1, and

when an equivalent diameter of the microchamber is represented by E and a depth of the microchamber is represented by D, E:D is in a range from 1:0.5 to 1:2.

6. The culture method according to any one of Claims 1 to 5, wherein a cell cluster obtained by the three-dimensional culture is an organ bud.

7. The culture method according to any one of Claims 1 to 6, wherein a cell cluster obtained by the three-dimensional culture has a spheroid shape, and
the cell cluster having the spheroid shape has a diameter in a range from 20 μm to 2 mm.

8. The culture method according to any one of Claims 1 to 7, wherein the cell derived from a stem cell is derived from a fetal stem cell or an induced pluripotent stem cell.

9. The culture method according to any one of Claims 1 to 8, wherein
the cell derived from a stem cell is derived from an induced pluripotent stem cell, and
the cell derived from a stem cell is an endodermal cell.

10. The culture method according to any one of Claims 1 to 9, wherein
the area is formed of a microchamber,
an equivalent diameter of the microchamber is in a range from 20 μm to 2.5 mm, and
a depth of the microchamber is in a range from 20 μm to 1000 μm.

11. The culture method according to Claim 10, wherein
the microchamber includes a bottom portion and a horn portion,
the horn portion has a wall,
the wall has a taper angle in a range from 1 to 20 degrees,
the bottom portion includes a space having a hemispherical shape or a truncated cone shape.

12. The culture method according to Claim 10 or 11, wherein the microchamber includes a culture space in contact with a cell, and the culture surface is coated with a polymer selected from the group consisting of a phospholipid, a phospholipid-polymer complex, poly(2-hydroxyethyl methacrylate) (PHEMA), polyvinyl alcohol, agarose, chitosan, polyethyleneglycol, and albumin, or a combination thereof,

13. A cell cluster that is obtained by three-dimensionally culturing a population including two or more cells in a predetermined area,

the population includes a cell derived from a stem cell and a mesenchymal cell, the cell derived from a stem cell is a cell of one or more types selected from the group consisting of an endodermal cell, an ectodermal cell, and a mesodermal cell, the cell of one or more types is obtained by differentiating a stem cell in vitro,

culturing the population together with at least one of: a vascular cell; a factor secreted from a vascular cell; and a factor secreted from a vascular cell due to the presence of both a vascular cell and a mesenchymal cell, wherein

the area is formed of a space in which cells are movable,

when a volume of the space is represented by V mm^3 and the number of the mesenchymal cells seeded in the space is represented by N, the V is equal to or less than 400 and N/V is in a range from 35 to 3000, and

the population includes a cell number X of the cells derived from a stem cell and a cell number Y of the mesenchymal cells, and the X:Y is in a range from 20:1 to 100:1.

14. The cell cluster according to Claim 13, wherein

the X:Y is in a range from 20:1 to 50:1.