

CLAIMS

1. A static culture method of expanding a population of cells with a gas permeable cell culture device having
 - a growth surface comprised of liquid impermeable gas permeable material, at least a portion of said gas permeable material in contact with ambient gas,the static culture method comprising:
 - adding cells and medium into the gas permeable cell culture device, the ratio of the volume of said medium to the surface area of said growth surface being 3 ml/cm^2 to 20 ml/cm^2 , orienting the gas permeable cell culture device in a position wherein ambient gas suitable for cell culture makes contact with said gas permeable material and cells reside upon at least a portion of said gas permeable material, and
 - allowing static cell culture for a period of time and not placing additional medium into the gas permeable cell culture device during said period of time, and
 - said period of time is at least 3 days, and
 - adding at least one type of cytokine after the onset of static cell culture.
2. The method of claim 1 wherein said period of time is at least 4 days.
3. The method of claim 1 wherein said period of time is at least 5 days.
4. The method of claim 1 wherein said period of time is at least 6 days.
5. The method of claim 1 wherein said period of time is at least 7 days.
6. The method of claim 1 wherein said period of time is at least 8 days.
7. The method of claim 1 wherein said period of time is at least 9 days.
8. The method of claim 1 wherein said period of time is at least 10 days.
9. The method of claim 1 wherein said period of time is at least 11 days.
10. The method of claim 1 wherein said period of time is at least 12 days.
11. The method of claim 1 wherein said period of time is at least 13 days.
12. The method of claim 1 wherein said period of time is at least 14 days.

13. The method of claim 1 wherein the ratio of the quantity of cells to the surface area of said growth surface at the onset of static cell culture is at least 2.0×10^6 cells/cm².
14. A static culture method of expanding a population of cells with a gas permeable cell culture device having
- a growth surface comprised of liquid impermeable gas permeable material, at least a portion of said gas permeable material in contact with ambient gas,
- the static culture method comprising:
- adding cells and medium into the gas permeable cell culture device, the ratio of the volume of said medium to the surface area of said growth surface being 3 ml/cm² to 20 ml/cm², and
 - orienting the gas permeable cell culture device in a position wherein ambient gas suitable for cell culture makes contact with said gas permeable material and cells reside upon at least a portion of said gas permeable material, and
 - allowing static cell culture over a period of time without placing additional medium into the gas permeable cell culture device, and
 - during said period of time the ratio of the quantity of cells to the surface area of said growth surface becomes at least 4×10^6 cells/cm².
15. The method of claim 14 wherein said ratio of the quantity of cells to the surface area of said growth surface becomes at least 4.5×10^6 cells/cm².
16. The method of claim 14 wherein said ratio of the quantity of cells to the surface area of said growth surface becomes at least 5.0×10^6 cells/cm².
17. The method of claim 14 wherein said ratio of the quantity of cells to the surface area of said growth surface becomes at least 5.7×10^6 cells/cm².
18. The method of claim 14 wherein said ratio of the quantity of cells to the surface area of said growth surface becomes at least 7×10^6 cells/cm².
19. The method of claim 14 wherein said ratio of the quantity of cells to the surface area of said growth surface becomes at least 7.5×10^6 cells/cm².
20. The method of claim 14 wherein said ratio of the quantity of cells to the surface area of said growth surface becomes at least 8.1×10^6 cells/cm².

21. The method of claim 14 wherein said ratio of the quantity of cells to the surface area of said growth surface becomes at least 8.5×10^6 cells/cm².
22. The method of claim 14 wherein said ratio of the quantity of cells to the surface area of said growth surface becomes at least 10×10^6 cells/cm².
23. The method of claim 14 wherein said ratio of the quantity of cells to the surface area of said growth surface becomes at least 11.0×10^6 cells/cm².

CLAIMS

1. A static culture method of expanding a population of cells with a gas permeable cell culture device having

a growth surface comprised of liquid impermeable gas permeable material, at least a portion of said gas permeable material in contact with ambient gas,

the static culture method comprising:

adding cells and medium into the gas permeable cell culture device, the ratio of the volume of said medium to the surface area of said growth surface being 3 ml/cm² to 20 ml/cm², orienting the gas permeable cell culture device in a position wherein ambient gas suitable for cell culture makes contact with said gas permeable material and cells reside upon at least a portion of said gas permeable material, and

allowing static cell culture for a period of time and not placing additional medium into the gas permeable cell culture device during said period of time, and

said period of time is at least 3 days, and

said medium containing at least one type of cytokine.

2. The method of claim 1 wherein said period of time is at least 4 days.

3. The method of claim 1 wherein said period of time is at least 5 days.

4. The method of claim 1 wherein said period of time is at least 6 days.

5. The method of claim 1 wherein said period of time is at least 7 days.

6. The method of claim 1 wherein said period of time is at least 8 days.

7. The method of claim 1 wherein said period of time is at least 9 days.

8. The method of claim 1 wherein said period of time is at least 10 days.

9. The method of claim 1 wherein said period of time is at least 11 days.

10. The method of claim 1 wherein said period of time is at least 12 days.

11. The method of claim 1 wherein said period of time is at least 13 days.

12. The method of claim 1 wherein said period of time is at least 14 days.

13. The method of claim 1 wherein the ratio of the quantity of cells to the surface area of said growth surface at the onset of static cell culture is at least 2.0×10^6 cells/cm².

14. A static culture method of expanding a population of cells with a gas permeable cell culture device having

a growth surface comprised of liquid impermeable gas permeable material, at least a portion of said gas permeable material in contact with ambient gas,

the static culture method comprising:

adding cells and medium into the gas permeable cell culture device, the ratio of the volume of said medium to the surface area of said growth surface being 3 ml/cm² to 20 ml/cm², and

orienting the gas permeable cell culture device in a position wherein ambient gas suitable for cell culture makes contact with said gas permeable material and cells reside upon at least a portion of said gas permeable material, and

allowing static cell culture over a period of time without placing additional medium into the gas permeable cell culture device, and

during said period of time the ratio of the quantity of cells to the surface area of said growth surface becomes at least 4×10^6 cells/cm².

15. The method of claim 14 wherein said ratio of the quantity of cells to the surface area of said growth surface becomes at least 4.5×10^6 cells/cm².

16. The method of claim 14 wherein said ratio of the quantity of cells to the surface area of said growth surface becomes at least 5.0×10^6 cells/cm².

17. The method of claim 14 wherein said ratio of the quantity of cells to the surface area of said growth surface becomes at least 5.7×10^6 cells/cm².

18. The method of claim 14 wherein said ratio of the quantity of cells to the surface area of said growth surface becomes at least 7×10^6 cells/cm².

19. The method of claim 14 wherein said ratio of the quantity of cells to the surface area of said growth surface becomes at least 7.5×10^6 cells/cm².

20. The method of claim 14 wherein said ratio of the quantity of cells to the surface area of said growth surface becomes at least 8.1×10^6 cells/cm².

21. The method of claim 14 wherein said ratio of the quantity of cells to the surface area of said growth surface becomes at least 8.5×10^6 cells/cm².
22. The method of claim 14 wherein said ratio of the quantity of cells to the surface area of said growth surface becomes at least 10×10^6 cells/cm².
23. The method of claim 14 wherein said ratio of the quantity of cells to the surface area of said growth surface becomes at least 11.0×10^6 cells/cm².