CLAIMS

1. A method for modulating level of heterogeneity components of a desired protein while the protein is prepared by culturing an animal cell that produces the protein to cause the protein to be produced, wherein the culture is performed at a normal culture temperature for a certain period and then the culture is continued at a culture temperature lowered to 25-35°C.

2. The method according to Claim 1, wherein the animal cell is a cell having such a character that productivity of the desired protein per cell does not rise or drops at a lower temperature than the normal culture temperature.

3. The method according to Claim 1 or 2, wherein the modulation of the level of the heterogeneity components of the desired protein includes reduction of level of acidic peaks.

4. The method according to Claim 1 or 2, wherein the culture is performed at the normal culture temperature until 3 to 7 days after the date of starting the culture and then the culture temperature is lowered.

5. The method according to Claim 1 or 2, wherein the culture is performed at a temperature of 36-38°C for a certain period and then the culture is continued at a culture temperature lowered to 32-35°C.

6. The method according to any of Claims 1-5, wherein the cell is cultured by batch culture, repeated batch culture, fed-batch culture, repeated fed-batch culture, continuous culture, or perfusion culture.

7. The method according to any of Claims 1-5, wherein the animal cell is cultured by fed-batch culture.

8. The method according to any of Claims 1-7, wherein the animal cell is a cell into which a gene encoding the desired protein has been introduced.

9. The method according to Claim 8, wherein the desired protein is an antibody.

10. The method according to any of Claims 1-9, wherein the animal cell is a mammalian cell.

11. The method according to Claim 10, wherein the mammalian cell is a CHO cell.

12. The method according to Claim 11, wherein the CHO cell is selected from the cell lines DG44, DXB-11, K-1 and CHO-S.

13. A method for producing a desired protein, wherein the protein is prepared by culturing a cell that produces the protein using the method according to any of Claims 1-12.

14. The method according to Claim 13, comprising the step of harvesting the protein from a culture solution after the cell that produces the desired protein is cultured.

15. A method for preparing a medicament comprising a protein prepared by the method according to Claim 13 or 14 as an active ingredient.

16. The method any of Claims 1-15, wherein the desired protein is an anti-glypican 3 antibody or an anti-IL-31RA antibody.

CLAIMS

1. A method for modulating level of heterogeneity components of an antibody while the antibody is prepared by culturing an animal cell that produces the antibody to cause the antibody to be produced, wherein the culture is performed at a normal culture temperature for a certain period and then the culture is continued at a culture temperature lowered to 25-35°C, and wherein the animal cell is a cell having such a character that productivity of the antibody per cell does not rise or drops at a lower temperature than the normal culture temperature.

2. The method according to Claim 1, wherein the modulation of the level of the heterogeneity components of the antibody includes reduction of level of acidic peaks.

3. The method according to Claim 1, wherein the culture is performed at the normal culture temperature until 3 to 7 days after the date of starting the culture and then the culture temperature is lowered.

4. The method according to Claim 1, wherein the culture is performed at a temperature of 36-38°C for a certain period and then the culture is continued at a culture temperature lowered to 32-35°C.

5. The method according to any of Claims 1-4, wherein the cell is cultured by batch culture, repeated batch culture, fed-batch culture, repeated fed-batch culture, continuous culture, or perfusion culture.

6. The method according to any of Claims 1-4, wherein the animal cell is cultured by fed-batch culture.

7. The method according to any of Claims 1-6, wherein the animal cell is a cell into which a gene

encoding the antibody has been introduced.

8. The method according to any of Claims 1-7, wherein the animal cell is a mammalian cell.

9. The method according to Claim 8, wherein the mammalian cell is a CHO cell.

10. The method according to Claim 9, wherein the CHO cell is selected from the cell lines DG44, DXB-11, K-1 and CHO-S.

11. A method for producing an antibody, wherein the antibody is prepared by culturing a cell that produces the antibody using the method according to any of Claims 1-10.

12. The method according to Claim 11, comprising the step of harvesting the antibody from a culture solution after the cell that produces the antibody is cultured.

13. A method for preparing a medicament comprising an antibody prepared by the method according to Claim 11 or 12 as an active ingredient.

14. The method any of Claims 1-13, wherein the desired protein is an anti-glypican 3 antibody or an anti-IL-31RA antibody.