Claims

1. A method of producing immature dendritic cells by cultivation of monocytes, the method comprising:

pre-treatment of a tissue culture surface with a pre-treatment medium, the pre-treatment medium comprising heparin and a protein solution;

adsorption of monocytes using an adsorption medium that is either substantially plasma free, or substantially serum free; and

cultivation of monocytes using a cultivation medium that is either substantially plasma free or substantially serum free.

2. A method as claimed in claim 1 wherein the protein solution comprises human serum.

3. A method as claimed in claim 2 wherein the human serum has a concentration of between 2 and 10 %.

4. A method as claimed in any one of the preceding claims wherein the pre-treatment medium has a heparin concentration of between 10 and 200 U/ml.

5. A method as claimed in claim 4 wherein the pre-treatment medium has a heparin concentration of between 25 and 100 U/ml.

6. A composition comprising immature dendritic cells produced in accordance with the method of any one of claims 1 to 5.

7. A composition as claimed in claim 6 wherein the composition is injectable directly into a tumour.

8. Use of immature dendritic cells produced in accordance with the method of any one of claims 1 to 5 for the preparation of a pharmaceutical composition for treating cancer by immunotherapy.

9. An antigen-presenting composition produced from immature dendritic cells produced in accordance with the method of any one of claims 1 to 5.

10. A method of preparing a cytotoxic composition, comprising using an antigen-presenting composition according to claim 9 to activate T cell lymphocytes, thereby obtaining a cytotoxic composition containing tumour-specific CD8+ cytotoxic T lymphocytes.

11. A composition according to claim 6 when used as antigen presenting cells for activation of cytotoxic T lymphocytes.

12. Use of tumour-specific CD8+ cytotoxic T lymphocytes obtained by the method of claim 10 for preparation of a pharmaceutical composition for adoptive T cell immunotherapy.

Claims

1. A method of producing dendritic cells by cultivation of monocytes, characterised by at least one of:

pre-treatment of a tissue culture surface with at least one of: a substantially plasma-free and serum-free pre-treatment medium, a pre-treatment medium comprising heparin, and a pre-treatment medium comprising a protein solution;

adsorption of monocytes using at least one of: a substantially plasma-free and serum-free adsorption medium;

cultivation of monocytes using a substantially plasma-free and serum-free cultivation medium.

2. A method as claimed in claim 1 wherein the protein solution comprises human serum.

3. A method as claimed in claim 2 wherein the human serum has a concentration of between 2 and 10 %.

4. A method as claimed in any one of the preceding claims wherein the pre-treatment medium has a heparin concentration of between 10 and 200 U/ml.

5. A method as claimed in claim 4 wherein the pre-treatment medium has a heparin concentration of between 25 and 100 U/ml.

6. A composition comprising dendritic cells produced in accordance with the method of any one of claims 1 to 5.

7. A composition as claimed in claim 6 wherein the composition is injectable directly into a tumour.

8. Use of immature dendritic cells produced in accordance with the method of any one of claims 1 to 5 for the preparation of a pharmaceutical composition for treating cancer by immunotherapy.

9. A method of treating or preventing cancer by administering a vaccine comprising immature dendritic cells produced in accordance with the method of any one of claims 1 to 5.

10. A method as claimed in claim 9 wherein the vaccine is injected directly into a tumour.

11. A composition comprising immature dendritic cells produced in accordance with the method of any one of claims 1 to 5 for treatment of cancer by immunotherapy.

12. An antigen-presenting composition produced from immature dendritic cells produced in accordance with the method of any one of claims 1 to 5.

13. A method of preparing a cytotoxic composition, comprising using an antigen-presenting composition according to claim 12 to activate T cell lymphocytes, thereby obtaining a cytotoxic composition containing tumour-specific CD8+ cytotoxic T lymphocytes.

14. A method of treating cancer by stimulating an immune response against tumours, comprising administering an antigen-presenting composition according to claim 12 to a cancer patient to stimulate an immune response to the tumour antigens.

15. A method of treating cancer by adoptive T cell therapy, comprising preparing a cytotoxic composition in accordance with the method of claim 13, and administering the cytotoxic composition to a cancer patient.

16. Use of a composition according to claim 6 as antigen presenting cells for activation of cytotoxic T lymphocytes.

17. Use of tumour-specific CD8+ cytotoxic T lymphocytes obtained by the method of claim 13 for preparation of a pharmaceutical composition for adoptive T cell immunotherapy.