Claims

1. Use of a composition in the manufacture of a medicament for treating a mammal suffering from or susceptible to an immune reaction to drug treatment, wherein the composition comprises antigen presenting cells obtained from the mammal and are treated ex-vivo with an agent which induces IDO in the presence of said drug or an epitope containing fragment thereof, wherein the drug is a protein drug and wherein the agent which induces IDO is selected from zebularine or an analogue or salt thereof, cytidine analogues, histone deacetylase inhibitors, vitamin D3 analogues, interferon gamma analogues, other interferons, toll like receptor ligands, gonadotropin receptor signalling hormones, prostaglandin E2 analogues, soluble CTLA4 conjugates and glucocorticoids.

2. The use according to claim 1 where the mammal is a human.

3. The use according to any one of claims 1 to 2 wherein the drug is FVIII.

4. The use according to any one of claims 1 to 2 wherein the drug is Factor IX.

5. The use according to any one of claims 1 to 2 wherein the drug is an antibody.

6. The use according to any one of claims 1 to 5 wherein the antigen presenting cells are dendritic cells.

7. The use according to claim 6 wherein the dendritic cells are bone marrow-derived dendritic cells, dendritic cells generated from CD34+ hematopoietic progenitor cells or dendritic cells generated from peripheral blood mononuclear cells.

8. The use according to any one of claims 1 to 7 wherein the IDO-inducing agent is zebularine or an analogue or salt thereof.

9. The use according to claim 8 wherein the agent is zebularine.

10. The use according to any one of claims 1 to 7 wherein the IDO-inducing agent is selected from azacytidine and deoxyazacytidine.

11. The use according to claims 1 to 7 wherein the IDO–inducing agent comprises two or more agents selected from (i) zebularine and IFN-gamma, (ii) IFN-gamma and valproic acid, (iii) zebularine, IFN-gamma and valproic acid, (iv) human chorionic gonadotropin (hCG) and zebularine, (v) hCG and IFN-gamma, (vi) zebularine and IFN-A, (vii) zebularine, IFN-gamma and IFN-A, (viii) zebularine, IFN-gamma and TGF-beta, and (ix) zebularine, IFN-gamma, IFN-A, and TGF-beta.

12. A method of inducing IDO in a cell culture by a method comprising *ex-vivo* treating antigen presenting cells obtained from a mammal with an agent which induces IDO in said antigen presenting cells in the presence of a drug or an epitope containing fragment thereof, wherein the drug is a protein drug and wherein the agent which induces IDO is selected from zebularine or an analogue or salt thereof, cytidine analogues, histone deacetylase inhibitors, vitamin D3 analogues, interferon gamma analogues, other interferons, toll like receptor ligands, gonadotropin receptor signalling hormones, prostaglandin E2 analogues, soluble CTLA4 conjugates and glucocorticoids.

13. A method according to claim 12 wherein the antigen presenting cells are dendritic cells.

14. A method according to any one of claims 12 to 13 wherein the drug is FVIII.

15. A method according to any one of claims 12 to 13 wherein the drug is an antibody.

16. A method according to any one of claims 12 to 15 wherein the agent is zebularine or an analogue or salt thereof.

17. A method according to any one of claims 12 to 15 wherein the agent is selected from azacytidine and deoxyazacytidine.