CLAIMS

1. A recombinant protein comprising mannose-terminated N-glycans expressed by a host cell line according to a method which includes steps of:

(a) introducing a nucleic acid encoding a recombinant protein into a host cell comprising a mutation in the GnT I gene leading to loss of GnT I function, in which the host cell is a Chinese Hamster Ovary (CHO) cell selected with *Ricinus communis* agglutinin I (RCA-I) or a descendent thereof; and

(b) expressing the recombinant protein from the host cell,

in which the expressed recombinant protein comprises mannose-terminated N-glycans and the method does not include a step of introducing functional GnT I into the host cell.

2. A recombinant protein comprising mannose-terminated N-glycans according to Claim 1, in which the recombinant protein has glucocerebrosidase activity.

3. A recombinant protein comprising mannose-terminated N-glycans according to Claim 1, in which the recombinant protein is MUC1.

4. A recombinant protein comprising mannose-terminated N-glycans according to Claim 1, in which the recombinant protein is HER2/neu.

5. A recombinant protein comprising mannose-terminated N-glycans according to Claim 1, in which the recombinant protein is carcinoembryonic antigen (CEA).

6. A recombinant protein comprising mannose-terminated N-glycans according to any preceding claim for use in the treatment of a disease selected from:

a cancer, in which the recombinant protein comprising mannose-terminated N-glycans is a tumor antigen;

Gaucher's disease, in which the recombinant protein comprising mannose-terminated N-glycans has glucocerebrosidase activity;

a viral associated or caused disease, in which the recombinant protein comprising mannose-terminated N-glycans is a viral antigen;

a bacterial associated or caused disease, in which the recombinant protein comprising mannose-terminated N-glycans is a bacterial antigen;

a parasite associated or caused disease, in which the recombinant protein comprising mannose-terminated N-glycans is a parasitic antigen; or

an allergic disease, in which the recombinant protein comprising mannose-terminated N-glycans is an allergen.

7. A recombinant protein comprising mannose-terminated N-glycans for use according to Claim 6, in which the recombinant protein comprising mannose-terminated N-glycans is MUC1 and the disease is a cancer.

8. A recombinant protein comprising mannose-terminated N-glycans for use according to Claim 6, in which the recombinant protein comprising mannose-terminated N-glycans is HER2/neu, and the disease is a cancer.

9. A recombinant protein comprising mannose-terminated N-glycans for use according to Claim 6, in which the recombinant protein comprising mannose-terminated N-glycans is carcinoembryonic antigen (CEA), and the disease is a cancer.

10. A recombinant protein comprising mannose-terminated N-glycans for use according to Claim 6, in which the recombinant protein comprising mannose-terminated N-glycans has glucocerebrosidase activity, and the disease is Gaucher’s disease.

11. Use of a recombinant protein comprising mannose-terminated N-glycans according to Claim 1 in the preparation of a medicament for the treatment or prevention of a disease selected from:

a cancer, in which the recombinant protein comprising mannose-terminated N-glycans is a tumor antigen;

Gaucher’s disease, in which the recombinant protein comprising mannose-terminated N-glycans has glucocerebrosidase activity;

a viral associated or caused disease, in which the recombinant protein comprising mannose-terminated N-glycans is a viral antigen;

a bacterial associated or caused disease, in which the recombinant protein comprising mannose-terminated N-glycans is a bacterial antigen;

a parasite associated or caused disease, in which the recombinant protein comprising mannose-terminated N-glycans is a parasitic antigen; or

an allergic disease, in which the recombinant protein comprising mannose-terminated N-glycans is an allergen.

12. Use according to Claim 11, in which the recombinant protein comprising mannose-terminated N-glycans is MUC1, and the disease is a cancer.

13. Use according to Claim 11, in which the recombinant protein comprising mannose-terminated N-glycans is HER2/neu, and the disease is a cancer.

14. Use according to Claim 11, in which the recombinant protein comprising mannose-terminated N-glycans is carcinoembryonic antigen (CEA), and the disease is a cancer.

15. Use according to Claim 11, in which the recombinant protein comprising mannose-terminated N-glycans has glucocerebrosidase activity, and the disease is Gaucher's disease.

16. A recombinant protein comprising mannose-terminated N-glycans for use according to Claim 6, in which the recombinant protein comprising mannose-terminated N-glycans is a viral antigen selected from the group consisting of antigens from hepatitis viruses A, B, C, D & E, HIV, herpes viruses, cytomegalovirus, varicella zoster, papilloma viruses, Epstein Barr virus, influenza viruses, para-influenza viruses, adenoviruses, coxsakie viruses, picorna viruses, rotaviruses, respiratory syncytial viruses, pox viruses, rhinoviruses, rubella virus, papovirus, mumps virus, and measles virus, and the disease is a viral associated or caused disease.

17. A recombinant protein comprising mannose-terminated N-glycans for use according to Claim 16, in which the viral antigen is selected from the group consisting of HIV-1 antigens tat, nef, gp120 or gp160, gp40, p24, gag, env, vif, vpr, vpu, rev or part and/or combinations thereof; human herpes virus antigens gH, gL, gM, gB, gC, gK, gE, gD, or part and/or combinations thereof, Immediate Early proteins ICP27, ICP47, ICP4, ICP36 from HSV1 or HSV2; cytomegalovirus antigens gB or derivatives thereof; Epstein Barr virus antigens gp350 or derivatives thereof; Varicella Zoster Virus antigens asgp1, 11, 111 and IE63; hepatitis virus antigens env protein E1, env protein E2, core protein, NS2, NS3, NS4a, NS4b, NSSa, NSSb, p7, or part and/or combinations thereof; human papilloma virus antigens L1, L2, E1, E2, E3, E4, E5, E6, E7, or part and/or combinations thereof; Respiratory Syncytial virus antigens F

and G proteins or derivatives thereof; parainfluenza virus antigens; measles virus antigens; mumps virus antigens; flavivirus antigens; and Influenza virus antigens HA, NP, NA, M proteins, or part and/or combinations thereof, and the disease is a viral associated or caused disease.

18. A recombinant protein comprising mannose-terminated N-glycans for use according to Claim 16, in which the viral antigen is selected from the group consisting of Human herpesvirus 5 envelope glycoprotein B and Human herpesvirus 4 (Epstein-Barr virus) glycoprotein 350/220, and disease is a viral associated or caused disease.

19. A recombinant protein comprising mannose-terminated N-glycans for use according to Claim 6, in which the recombinant protein comprising mannose-terminated N-glycans is a bacterial antigen selected from the group consisting of antigens from Mycobacteria causing TB and leprosy, pneumocci, aerobic gram negative bacilli, mycoplasma, bacteria causing staphyloccocal infections, bacteria causing streptococcal infections, bacteria causing salmonellae, bacteria causing chlamydiae, and bacteria causing neisseriae, and the disease is a bacterial associated or caused disease.

20. A recombinant protein comprising mannose-terminated N-glycans for use according to Claim 6, in which the recombinant protein comprising mannose-terminated N-glycans is a parasitic antigen selected from the group consisting of antigens from parasites causing malaria, leishmaniasis, trypanosomiasis, toxoplasmosis, schistosomiasis, and filariasis, and the disease is a parasite associated or caused disease.

21. Use according to Claim 11, in which the recombinant protein comprising mannose-terminated N-glycans is a viral antigen selected from the group consisting of antigens from hepatitis viruses A, B, C, D & E, HIV, herpes viruses, cytomegalovirus, varicella zoster, papilloma viruses, Epstein Barr virus, influenza viruses, para-influenza viruses, adenoviruses, coxsakie viruses, picorna viruses, rotaviruses, respiratory syncytial viruses, pox viruses, rhinoviruses, rubella virus, papovirus, mumps virus, and measles virus, and the disease is a viral associated or caused disease.

22. Use according to Claim 21, in which the viral antigen is selected from the group consisting of HIV-1 antigens tat, nef, gp120 or gp160, gp40, p24, gag, env, vif, vpr, vpu, rev or part and/or combinations thereof; human herpes virus antigens gH, gL, gM, gB, gC, gK, gE, gD, or part and/or combinations thereof, Immediate Early proteins ICP27, ICP47, ICP4,

ICP36 from HSV1 or HSV2; cytomegalovirus antigens gB or derivatives thereof; Epstein Barr virus antigens gp350 or derivatives thereof; Varicella Zoster Virus antigens asgp1, 11, 111 and IE63; hepatitis virus antigens env protein E1, env protein E2, core protein, NS2, NS3, NS4a, NS4b, NSSa, NSSb, p7, or part and/or combinations thereof; human papilloma virus antigens L1, L2, E1, E2, E3, E4, E5, E6, E7, or part and/or combinations thereof; Respiratory Syncytial virus antigens F and G proteins or derivatives thereof; parainfluenza virus antigens; measles virus antigens; mumps virus antigens; flavivirus antigens; and Influenza virus antigens HA, NP, NA, M proteins, or part and/or combinations thereof, and the disease is a viral associated or caused disease.

23. Use according to Claim 21, in which the viral antigen is selected from the group consisting of Human herpesvirus 5 envelope glycoprotein B and Human herpesvirus 4 (Epstein-Barr virus) glycoprotein 350/220, and the disease is a viral associated or caused disease.

24. Use according to Claim 11, in which the recombinant protein comprising mannose-terminated N-glycans is a bacterial antigen selected from the group consisting of antigens from Mycobacteria causing TB and leprosy, pneumocci, aerobic gram negative bacilli, mycoplasma, bacteria causing staphyloccocal infections, bacteria causing streptococcal infections, bacteria causing salmonellae, bacteria causing chlamydiae, and bacteria causing neisseriae, and the disease is a bacterial associated or caused disease.

25. Use according to Claim 11, in which the recombinant protein comprising mannose-terminated N-glycans is a parasitic antigen selected from the group consisting of antigens from parasites causing malaria, leishmaniasis, trypanosomiasis, toxoplasmosis, schistosomiasis, and filariasis, and the disease is a parasite associated or caused disease.