CLAIMS

1. A method for producing an afucosylated protein in a host cell comprising introducing a nucleic acid encoding at least one modified enzyme of the fucosylation pathway to the host cell to produce the afucosylated protein.

2. The method according to claim 1, wherein the modified enzyme is derived from GDP-mannose 4,6-dehydratase (GMD), GDP-4-keto-6-deoxy-D-mannose epinierase-reductase (FX), or fucosyltransferase (FUT).

3. The method according to claim 1, wherein the modified enzyme is derived from fucosyltransferase (FUT).

4. The method according to claim 1, wherein the modified enzyme is derived from α-1,6-fucosyltransferase (FUT8).

5. The method according to claim 1, wherein the modified enzyme reduces or inhibits the activity of the wild-type enzyme, from which the modified enzyme is derived, in the host cell.

6. The method according to claim 1, wherein the modified enzyme inhibits or reduces fucosylation in the host cell.

7. The method according to claim 1, wherein the afucosylated protein that is produced in the host cell is an afucosylated antibody or a fragment thereof.

8. The method according to claim 7, wherein the afucosylated antibody or fragment thereof is at least 90% afucosylated.

9. The method according to claim 7, wherein the afucosylated antibody has increased antibody-dependent cellular cytotoxicity (ADCC) activity compared to its fucosylated counterpart.

10. The method according to claim 7, wherein the complement dependent cytotoxicity

(CDC) activity of the afucosylated antibody is not reduced or suppressed compared to its fucosylated counterpart.