

CLAIMS

1. A recombinant cell having low fucosylation that comprises a nucleic acid sequence encoding a modified enzyme of the fucosylation pathway.
2. The recombinant cell according to claim 1, wherein the modified enzyme is derived from GDP-mannose 4,6-dehydratase (GMD), GDP-4-keto-6-deoxy-D-mannose epimerase-reductase (FX), or fucosyltransferase (FUT).
3. The recombinant cell according to claim 1, wherein the modified enzyme is derived from fucosyltransferase (FUT).
4. The recombinant cell according to claim 1, wherein the modified enzyme is derived from α -1,6-fucosyltransferase (FUT8).
5. The recombinant cell according to claim 1, wherein the nucleic acid sequence is selected from the group consisting of SEQ ID NOs: 3, 5, 7, 9, 11, 15, and any combination thereof.
6. The recombinant cell according to claim 1, wherein the modified enzyme has an amino acid sequence selected from the group consisting of SEQ ID NOs: 4, 6, 8, 10, 12, 16, and any combination thereof.
7. The recombinant cell 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.
8. The recombinant cell according to claim 1, wherein the modified enzyme inhibits or reduces fucosylation in the host cell.
9. The recombinant cell according to claim 1, wherein less than 10% of the proteins produced in the cell are fucosylated.
10. The recombinant cell according to claim 1 further comprising a nucleic acid encoding

an antibody.

11. The recombinant cell according to claim 10, wherein the antibody is expressed in the cell as an afucosylated antibody.
12. An afucosylated antibody produced in the recombinant cell of claim 11.
13. The afucosylated antibody according to claim 12 that is at least 90% afucosylated.
14. The afucosylated antibody according to claim 12, wherein the afucosylated antibody has increased antibody-dependent cellular cytotoxicity (ADCC) activity compared to its fucosylated counterpart.
15. The afucosylated antibody according to claim 12, wherein the complement dependent cytotoxicity (CDC) activity of the afucosylated antibody is not reduced or suppressed compared to its fucosylated counterpart.