WHAT IS CLAIMED IS:

Claim 1. A method of attenuating the post-translational fucosylation of a human IgG Fc region, comprising:

(A) modifying a human IgG Fc region to comprise an amino acid substitution relative to a wild-type Fc region to yield a modified Fc region;

(B) assessing whether said modified Fc region exhibits a ratio of high mannose oligosaccharide glycosylation to complex oligosaccharide glycosylation that is greater than 0.2;

(C) selecting said modified Fc region if said modified Fc region exhibits said ratio that is greater than 0.2;and

(D) expressing said selected modified Fc region in a host cell capable of mediating normal glycosylation.

Claim 2. The method of claim 1, wherein said amino acid substitution is at position L234, L235, F243, R292, Y300, V305 or P396.

Claim 3. The method of claim 2, wherein:

(a) said substitution at position F243 is F243C, F243L or F243R;

(b) said substitution at position R292 is R292G, R292L, R292M, R292P, R292S or R292Y;

(c) said substitution at position Y300 is Y300L; or

(d) said substitution at position P396 is P396L.

Claim 4. The method of claim 2, wherein said amino acid substitutions comprise substitutions at positions L234 and L235.

Claim 5. The method of claim 4, wherein said amino acid substitutions comprise L234F and L235V.

Claim 6. The method of any one of claims 1-5, wherein said selected modified Fc region exhibits altered affinity to a CD16A receptor, a CD16B receptor, a CD32B receptor or a CD32A receptor.

Claim 7. The method of claim 6, wherein said selected modified Fc region exhibits decreased affinity to a CD32B receptor.

Claim 8. The method of claim 6, wherein said selected modified Fc region exhibits increased affinity to a CD16A receptor.

Claim 9. The method of any one of claims 1-8, wherein said selected modified Fc region is the Fc region of a monoclonal antibody, a chimeric antibody, a humanized antibody, a human antibody or a single chain antibody.

Claim 10. The method of claim 9, wherein said antibody specifically binds CD16A, CD32B, HER2/neu, A33, CD5, CD11c, CD19, CD20, CD22, CD23, CD27, CD40, CD45, CD79a, CD79b, CD103, CTLA4, ErbB1, ErbB3, ErbB4, VEGF receptor, TNF-α receptor, TNF-ß receptor, or TNF-γ receptor.

Claim 11. The method of claim 9, wherein said antibody specifically binds a cancer antigen associated with cancer.

Claim 12. The method of claim 11, wherein said cancer is a breast, ovarian, prostate, cervical, lung or pancreatic cancer.

Claim 13. The method of claim 11, wherein said cancer is breast cancer and said antigen is HER2/neu.

Claim 14. The method of claim 1, wherein said ratio is: Σ (% Man5 + % Man6 + % Man7 + % Man8 + % Man9) : Σ (% G0F + % G1F + % G2F).

Claim 15. The use of an antibody comprising an Fc region produced by the method of any one of claims 1-14in the manufacture of a medicament for treating a disease in a subject in need thereof.

Claim 16. The use of an antibody comprising an Fc region produced by the method of any one of claims 1-14in the manufacture of a medicament for treating a cancer characterized by a cancer antigen in a subject in need thereof.

Claim 17. The use of claim 16, wherein said cancer is breast cancer and said antigen is HER-2/neu.

WHAT IS CLAIMED IS:

Claim 1. A method of attenuating the post-translational fucosylation of a molecule comprising a modified Fc region, comprising:

(A) modifying an IgG Fc region to comprise an amino acid substitution relative to a wild-type Fc region to yield a modified Fc region;

(B) expressing a candidate molecule comprising said modified Fc region in a host cell capable of mediating normal glycosylation;

(C) assessing a ratio of high mannose oligosaccharide glycosylation to complex oligosaccharide glycosylation exhibited by said modified Fc region;

(D) identifying said candidate molecule comprising said modified Fc region as a suitable molecule if said modified Fc region exhibits said ratio that is greater than 0.2; and

(E) expressing said suitable molecule possessing said modified Fc region in said host cell.

Claim 2. The method of claim 1, wherein said amino acid substitution is at position L234, L235, F243, R292, Y300, V305 or P396.

Claim 3. The method of claim 2, wherein said amino acid substitutions comprise substitutions at positions L234 and L235.

Claim 4. The method of claim 3, wherein said amino acid substitutions comprise L234F and L235V.

Claim 5. The method of any one of claims 1-4, wherein said modified Fc region exhibits altered affinity to a CD16A receptor, a CD16B receptor, a CD32B receptor, or a CD32A receptor.

Claim 6. The method of claim 5, wherein said modified Fc region exhibits decreased affinity to a CD32B receptor.

Claim 7. The method of claim 5, wherein said modified Fc region exhibits increased affinity to a CD16A receptor.

Claim 8. The method of any one of claims 1-7, wherein said modified Fc region is the Fc region of a monoclonal antibody, a chimeric antibody, a humanized antibody, a human antibody or a single chain antibody.

Claim 9. The method of claim 8, wherein said antibody specifically binds CD16A, CD32B, HER2/neu, A33, CD5, CD11c, CD19, CD20, CD22, CD23, CD27, CD40, CD45, CD79a, CD79b, CD103, CTLA4, ErbB1, ErbB3, ErbB4, VEGF receptor, TNF-α receptor, TNF-ß receptor, or TNF-γ receptor.

Claim 10. The method of claim 8, wherein said antibody specifically binds a cancer antigen associated with a cancer.

Claim 11. The method of claim 10, wherein said cancer is a breast, ovarian, prostate, cervical, lung or pancreatic cancer.

Claim 12. The method of claim 10, wherein said cancer is breast cancer and said antigen is HER2/neu.

Claim 13. The method of claim 1, wherein said ratio is: Σ (% Man5 + % Man6 + % Man7 + % Man8 + % Man9) : Σ (% G0F + % G1F + % G2F).

Claim 14. The method of claim 1, wherein said ratio is greater than 0.5 and less than 5.5.