

CLAIMS

1. A composition comprising an immunoglobulin comprising at least one mutation in the Fc region of said immunoglobulin, wherein said immunoglobulin has altered binding to FcRn, and wherein said immunoglobulin is selected from the group consisting of
IgG1-Q311R/N434W/M428E,
IgG1-Q311R/N434W,
IgG3(b)-Q311R/N434W/M428E,
IgG1-M252S/Q311R/N434W/M428E,
IgG1-Q311R/N434P/M428E,
IgG1-Q311R/N434W/M428D,
IgG1-Q311R/N434W/M428E/H433K,
IgG1-L309K/Q311R/N434W/M428E,
IgG1-L309R/Q311R/N434W/M428E,
IgG1-L309S/Q311R/N434W/M428E and
IgG3(b)-Q311R/N434W/M428E/R435H.
2. The composition of claim 1, wherein said mutation extends the serum half-life of the immunoglobulin as compared to an immunoglobulin lacking said mutation.
3. The composition of claim 1 or 2, wherein the constant region of said immunoglobulin comprises an amino acid sequence selected from the group consisting of SEQ ID NOs: 2, 3, 7, 8, 9, 10, 11, 12, 13, 14, 15, and 16.
4. The composition of claim 1 comprising an IgG1 immunoglobulin with altered binding to FcRn, wherein said immunoglobulin comprises Q311R, N434W and M428E mutations.
5. The composition of claim 4, wherein said mutation extends the serum half-life of the immunoglobulin as compared to an immunoglobulin lacking said mutation.
6. The composition of any one of claims 1 to 5, wherein said immunoglobulin binds to a target selected from the group consisting of a cancer marker, a cytokine, an infectious disease marker, and a growth factor.
7. The immunoglobulin of any one of claims 1 to 6 for use in treatment or prevention of a disease in a subject in need thereof.

8. The immunoglobulin of claim 7, wherein said disease is selected from the group consisting of cancer, autoimmune disease, inflammatory disease, transplant rejection, and infectious disease.
9. The immunoglobulin of claim 7 or 8 wherein said immunoglobulin binds to a target selected from the group consisting of a cancer marker, a cytokine, an infectious disease marker, and a growth factor.
10. Use of the immunoglobulin of any one of claims 1 to 6 in the manufacture of a medicament for the treatment or prevention of a disease, wherein said disease is selected from the group consisting of cancer, autoimmune disease, inflammatory disease, transplant rejection, and infectious disease.
11. The use of claim 10, wherein said immunoglobulin binds to a target selected from the group consisting of a cancer marker, a cytokine, an infectious disease marker, and a growth factor.
12. An Fc fusion comprising an Fc variant from the immunoglobulin of any one of claims 1 to 6.
13. A fusion protein comprising the immunoglobulin of any one of claims 1 to 6 or the Fc region the immunoglobulin of any one of claims 1 to 6 fused to an immunogen.
14. A vaccine composition comprising the fusion protein of claim 13.
15. The vaccine composition of claim 14 for use in the generation of an immune response in a subject.
16. Use of the vaccine composition of claim 14 in the manufacture of a medicament for the generation of an immune response to said immunogen in a subject.