CLAIMS

1. A stabilized IgG4 antibody for use as a medicament, comprising a heavy chain and a light chain, wherein said heavy chain comprises a human IgG4 constant region having the sequence set forth in SEQ ID NO:2, wherein the stabilized IgG4 antibody is a form of IgG4 antibodies that have a reduced ability to undergo Fab-arm exchange, and wherein Lys (K) in position 250 has been replaced by Gin (Q) or Glu (E); and wherein the antibody optionally comprises one or more further substitutions, deletions and/or insertions in the constant region as set forth in SEQ ID NO:2

2. The stabilized IgG4 antibody for use according to claim 1, wherein the antibody does not comprise a Cys-Pro-Pro-Cys sequence in the hinge region.

3. The stabilized IgG4 antibody for use according to any one of the preceding claims, wherein said antibody does not comprise a substitution of the Leu (L) residue at the position corresponding to 115 by a Glu (E) as set forth in SEQ ID NO:2.

4. The stabilized IgG4 antibody for use according to any one of the preceding claims 1 to 2, wherein said antibody does comprise a substitution of the Leu (L) residue at the position corresponding to 115 by a Glu (E) as set forth in SEQ ID NO:2.

5. The stabilized IgG4 antibody for use according to any one of the preceding claims, wherein said antibody comprises one or more of the following substitutions an Ala (A) at position 114, an Ala (A) at position 116, an Ala (A) at position 117, an Ala (A) at position 177, an Ala (A) or Val (V) at position 198 an Ala (A) at position 200, an Ala (A) or Gin (Q) at position 202 as set forth in SEQ ID NO:2.

6. The stabilized IgG4 antibody for use according to any one of the preceding claims, wherein said antibody comprises a CXPC or CPXC sequence in the hinge region, wherein X can be any amino acid except for Pro (P).

7. The stabilized IgG4 antibody for use according to any one of the preceding claims, wherein said antibody does not comprise an extended IgG3-like hinge region.

8. The stabilized IgG4 antibody for use according to any one of the preceding claims, wherein said antibody comprises a CPSC sequence in the hinge region.

9. The stabilized IgG4 antibody for use according to any one of the preceding claims, wherein said antibody has less than 25, such as less than 10, e.g. less than 9, 8, 7, 6, 5, 4, 3, or 2 substitutions, deletions and/or insertions in the constant region as set forth in SEQ ID NO:2.

10. The stabilized IgG4 antibody for use according to any one of the preceding claims, wherein said antibody is less efficient in mediating CDC and/or ADCC than a corresponding IgG1 or IgG3 antibody having the same variable regions.

11. The stabilized IgG4 antibody for use according to any one of the preceding claims, wherein said antibody is selected from the group consisting of a human monoclonal antibody, a humanized monoclonal antibody and a chimeric monoclonal antibody.

12. The stabilized IgG4 antibody for use according to any one of the preceding claims, wherein said antibody comprises a human kappa light chain.

13. The stabilized IgG4 antibody for use according to any one of the preceding claims, wherein said antibody comprises a human lambda light chain.

14. The stabilized IgG4 antibody for use according to any one of the preceding claims, wherein said antibody is a bivalent antibody.

15. The stabilized IgG4 antibody for use according to any one of the preceding claims, wherein said antibody is a full-length antibody.

16. The stabilized IgG4 antibody for use according to any one of the preceding claims, wherein said antibody is linked to a compound selected from the group consisting of a cytotoxic agent; a radioisotope; a prodrug or drug, such as a taxane; a cytokine; and a chemokine.

17. The stabilized IgG4 antibody for use according to any one of the preceding claims, wherein the antibody binds to an antigen selected from the group consisting of erythropoietin, beta-amyloid, thrombopoietin, interferon-alpha (2a and 2b), interferon-beta (1b), interferon-gamma, TNFR I (CD120a), TNFR II (CD120b), IL-1R type 1 (CD121a), IL-1R type 2 (CD121b), IL-2, IL2R (CD25), IL-2R-beta (CD123), IL-3, IL-4, IL-3R (CD123), IL-4R (CD124), IL-5R (CD125), IL-6R-alpha (CD126), -beta (CD130), IL-8, IL-10, IL-11, IL-15, IL-15BP, IL-15R, IL-20, IL-21, TCR variable chain, RANK, RANK-L, CTLA4, CXCR4R, CCR5R, TGF-beta1, -beta2, -beta3, G-CSF, GM-CSF, MIF-R (CD74), M-CSF-R (CD115), GM-CSFR (CD116), soluble FcRI, sFcRII, sFcRIII, FcRn, Factor VII, Factor VIII, Factor IX, VEGF, VEGFxxxb, alpha-4 integrin, Cd11 a, CD18, CD20, CD38, CD25, CD74, FcalphaRI, FcepsilonRI, acetyl choline receptor, fas, fasL, TRAIL, hepatitis virus, hepatitis C virus, envelope E2 of hepatitis C virus, tissue factor, a complex of tissue factor and Factor VII, EGFr, CD4, CD28, VLA-1, 2, 3, or 4, LFA-1, MAC-1, I-selectin, PSGL-1, ICAM-I, P-selectin, periostin, CD33 (Siglec 3), Siglec 8, TNF, CCL1, CCL2, CCL3, CCL4, CCL5, CCL11, CCL13, CCL17, CCL18, CCL20, CCL22, CCL26, CCL27, CX3CL1, LIGHT, EGF, VEGF, TGFalpha, HGF, PDGF, NGF, complement or a related components such as: C1 q, C4, C2, C3, C5, C6, C7, C8, C9, MBL, factor B, a Matrix Metallo Protease such as any of MMP1 to MMP28, CD32b, CD200, CD200R, Killer Immunoglobulin-Like Receptors (KIRs), NKG2D and related molecules, leukocyte-associated immunoglobulin-like receptors (LAIRs), Iy49, PD-L2, CD26, BST-2, ML-IAP (melanoma inhibitor of apoptosis protein), cathepsin D, CD40, CD40R, CD86, a B cell receptor, CD79 , PD-1 and a T cell receptor.