CLAIMS

1. An IgG2 constant region that comprises substitutions of Cys at position 14 (position 131 in the EU numbering system) with Ser, and Cys at position 102 (position 219 in the EU numbering system) with Ser, in the amino acid sequence of SEQ ID NO: 2, wherein the heterogeneity originated from the hinge region of IgG2 is reduced.

2. The IgG2 constant region according to claim 1, wherein the heterogeneity originated from the hinge region of IgG2 is reduced, compared to that of the wild type IgG2 constant region.

3. The IgG2 constant region according to any one of claims 1 to 2 that comprises a substitution of the amino acid at position 16 (position 133 in the EU numbering system) in the amino acid sequence of SEQ ID NO: 2 with another amino acid.

4. The IgG2 constant region according to claim 3 that comprises a substitution of Arg at position 16 (position 133 in the EU numbering system) in the amino acid sequence of SEQ ID NO: 2 with Lys.

5. The IgG2 constant region according to any one of claims 1 to 4 that comprises substitutions of the amino acids at positions 20 (position 137 in the EU numbering system) and 21 (position 138 in the EU numbering system) in the amino acid sequence of SEQ ID NO: 2 with other amino acids.

6. The IgG2 constant region according to any one of claims 1 to 4 that comprises substitutions of the amino acids at positions 209 (position 330 in the EU numbering system), 210 (position 331 in the EU numbering system), 218 (position 339 in the EU numbering system), 276 (position 397 in the EU numbering system), 20 (position 137 in the EU numbering system), and 21 (position 138 in the EU numbering system) in the amino acid sequence of SEQ ID NO: 2 with other amino acids.

7. The IgG2 constant region according to claim 6 that comprises deletions of both Gly at position 325 (position 446 in the EU numbering system) and Lys at position 326 (position 447 in the EU numbering system).

8. The IgG2 constant region according to any one of claims 1 to 4 that comprises substitutions of the amino acids at positions 276 (position 397 in the EU numbering system), 20 (position 137 in the EU numbering system), and 21 (position 138 in the EU numbering system) in the amino acid sequence of SEQ ID NO: 2 with other amino acids.

9. The IgG2 constant region according to claim 8 that comprises deletions of both Gly at position 325 (position 446 in the EU numbering system) and Lys at position 326 (position 447 in the EU numbering system).

10. The IgG2 constant region according to any one of claims 1 to 4 that comprises substitutions of Glu at position 20 (position 137 in the EU numbering system), Ser at position 21 (position 138 in the EU numbering system), His at position 147 (position 268 in the EU numbering system), Arg at position 234 (position 355 in the EU numbering system), and Gln at position 298 (position 419 in the EU numbering system) in the amino acid sequence of SEQ ID NO: 2 with other amino acids.

11. The IgG2 constant region according to claim 10 that comprises deletions of both Gly at position 325 (position 446 in the EU numbering system) and Lys at position 326 (position 447 in the EU numbering system).

12. The IgG2 constant region according to any one of claims 1 to 4 that comprises substitutions of Glu at position 20 (position 137 in the EU numbering system), Ser at position 21 (position 138 in the EU numbering system), His at position 147 (position 268 in the EU numbering system), Arg at position 234 (position 355 in the EU numbering system) and Gln at position 298 (position 419 in the EU numbering system) and Asn at position 313 (position 434 in the EU numbering system) in the amino acid sequence of SEQ ID NO: 2 with other amino acids.

13. The IgG2 constant region according to claim 12 that comprises deletions of both Gly at position 325 (position 446 in the EU numbering system) and Lys at position 326 (position 447 in the EU numbering system).

14. The IgG2 constant region according to any one of claims 1 to 4 that comprises substitutions of Ala at position 209 (position 330 in the EU numbering system), Pro at position 210 (position 331 in the EU numbering system), Thr at position 218 (position 339 in the EU numbering system), Glu at position 20 (position 137 in the EU numbering system), and Ser at position 21 (position 138 in the EU numbering system) in the amino acid sequence of SEQ ID NO: 2 with other amino acids.

15. The IgG2 constant region according to claim 14 that comprises deletions of both Gly at position 325 (position 446 in the EU numbering system) and Lys at position 326 (position 447 in the EU numbering system).

16. An antibody comprising the constant region of any one of claims 1 to 15.

17. The antibody according to claim 16, wherein the antibody is an anti-IL-6 receptor antibody, anti-IL-31 receptor antibody, or anti-RANKL antibody.

18. A pharmaceutical composition comprising the constant region of any one of claims 1 to 15.