

Claims:

1. An Fc region, optionally isolated, comprising modification to increase the affinity of association between the Fc region and TRIM21.
- 5 2. The Fc region according to claim 1, wherein the modification comprises one or more substitutions to the amino acid sequence of a polypeptide of the Fc region.
3. The Fc region according to claim 2, wherein the polypeptide comprises substitution at one or more positions corresponding to the following positions of IGHG1 (EU numbering): 252, 253, 254, 256, 309,
10 310, 311, 314, 315, 345, 428, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439 or 440.
4. The Fc region according to any one of claims 1 to claim 3, wherein the Fc region comprises a polypeptide comprising substitution at one or more positions corresponding to the following positions of IGHG1 (EU numbering): 253, 256, 433, 434, 435, 436 or 440.
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5. The Fc region according to any one of claims 1 to 4, wherein the Fc region comprises a polypeptide comprising: I or L at the position corresponding to position 253; P, A, T, V, G, I, K, N or S at the position corresponding to position 256; S, V, H, A, D, P, Q, T or I at the position corresponding to position 433; H, R, N, I, L or M at the position corresponding to position 434; H or L at the position corresponding to
20 position 435; Y, F, T, L, W or S at the position corresponding to position 436; and S, G, I, R, Y, N, V, T, P, D, W, M, A, K, F, E or C at the position corresponding to position 440.
6. The Fc region according to any one of claims 1 to 5, wherein the Fc region comprises a polypeptide comprising an amino acid sequence having at least 60% sequence identity to one of SEQ ID NOs:167 to
25 175.
7. The Fc region according to any one of claims 1 to 6, wherein the Fc region comprises a polypeptide comprising an amino acid sequence having at least 60% sequence identity to one of SEQ ID NOs:32 to
30 166.
8. A polypeptide, optionally isolated, comprising: an amino acid sequence having at least 60% sequence identity to SEQ ID NO:10, wherein the polypeptide comprises the following amino acid residues at the specified positions numbered relative to SEQ ID NO:10: I or L at the position corresponding to position 26; P, A, T, V, G, I, K, N or S at the position corresponding to position 29; S, V, H, A, D, P, Q, T or I at the
35 position corresponding to position 206; H, R, N, I, L or M at the position corresponding to position 207; H or L at the position corresponding to position 208; Y, F, T, L, W or S at the position corresponding to position 209; and S, G, I, R, Y, N, V, T, P, D, W, M, A, K, F, E or C at the position corresponding to position 213; and wherein the amino acid sequence of the polypeptide is not identical to the amino acid sequence of a constituent polypeptide of the Fc region of a wildtype immunoglobulin.

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9. The polypeptide according to claim 8, wherein the polypeptide comprises an amino acid sequence having at least 60% sequence identity to one of SEQ ID NOs:167 to 175.
10. The polypeptide according to claim 8 or claim 9, wherein the polypeptide comprises an amino acid sequence having at least 60% sequence identity to one of SEQ ID NOs:32 to 166.
11. A polypeptide, optionally isolated, comprising the amino acid sequence of one of SEQ ID NOs:32 to 166.
12. An Fc region, optionally isolated, comprising a polypeptide according to any one of claims 8 to 11.
13. A polypeptide complex, optionally isolated, comprising an Fc region according to any one of claims 1 to 7 or claim 12, or a polypeptide according to any one of claims 8 to 11.
14. An antigen-binding molecule comprising an antigen-binding domain capable of specific binding to a target antigen and an Fc region according to any one of claims 1 to 7 or claim 12, a polypeptide according to any one of claims 8 to 11, or a polypeptide complex according to claim 13.
15. The antigen-binding molecule according to claim 14, wherein the target antigen is an antigen of a pathogen, a cancer-associated antigen or an autoimmune disease-associated antigen.
16. The antigen-binding molecule according to claim 14 or claim 15, wherein the antigen-binding molecule comprises an antigen-binding domain capable of specific binding to an endocytosis receptor.
17. The antigen-binding molecule according to any one of claims 14 to 16, wherein the antigen-binding molecule is a multispecific antigen-binding molecule.
18. The antigen-binding molecule according to any one of claims 14 to 17, wherein the antigen-binding molecule further comprises an antigenic sequence of a target antigen.
19. An immunogen comprising an antigenic sequence of a target antigen and an Fc region according to any one of claims 1 to 7 or claim 12, a polypeptide according to any one of claims 8 to 11, or a polypeptide complex according to claim 13.
20. The immunogen according to claim 19, wherein the target antigen is an antigen of a pathogen, a cancer-associated antigen or an autoimmune disease-associated antigen.
21. The immunogen according to claim 19 or claim 20, wherein the immunogen additionally comprises an antigen-presenting cell (APC)-targeting region.

22. The immunogen according to claim 21, wherein the APC-targeting region comprises or consists of a moiety capable of specific binding to an endocytosis receptor.
23. The immunogen according to any one of claims 19 to 22, wherein the immunogen further comprises an antigen-binding domain capable of specific binding to a target antigen.
24. A nucleic acid, or a plurality of nucleic acids, optionally isolated, encoding an Fc region according to any one of claims 1 to 7 or claim 12, a polypeptide according to any one of claims 8 to 11, a polypeptide complex according to claim 13, an antigen-binding molecule according to any one of claims 14 to 18, or an immunogen according to any one of claims 19 to 23.
25. An expression vector, or a plurality of expression vectors, comprising a nucleic acid or a plurality of nucleic acids according to claim 24.
26. A cell comprising an Fc region according to any one of claims 1 to 7 or claim 12, a polypeptide according to any one of claims 8 to 11, a polypeptide complex according to claim 13, an antigen-binding molecule according to any one of claims 14 to 18, an immunogen according to any one of claims 19 to 23, a nucleic acid or a plurality of nucleic acids according to claim 24, or an expression vector or a plurality of expression vectors according to claim 25.
27. A method comprising culturing a cell comprising a nucleic acid or a plurality of nucleic acids according to claim 24, or an expression vector or a plurality of expression vectors according to claim 25, under conditions suitable for expression of the Fc region, polypeptide, antigen-binding molecule or immunogen from the nucleic acid(s) or expression vector(s).
28. A composition comprising an Fc region according to any one of claims 1 to 7 or claim 12, a polypeptide according to any one of claims 8 to 11, a polypeptide complex according to claim 13, an antigen-binding molecule according to any one of claims 14 to 18, an immunogen according to any one of claims 19 to 23, a nucleic acid or a plurality of nucleic acids according to claim 24, an expression vector or a plurality of expression vectors according to claim 25, or a cell according to claim 26.
29. A polypeptide complex, optionally isolated, comprising an antigen-binding molecule according to any one of claims 14 to 18, or the immunogen according to claim 23, bound to the target antigen or a fragment thereof.
30. A pharmaceutical composition comprising an antigen-binding molecule according to any one of claims 14 to 18, an immunogen according to any one of claims 19 to 23, or a polypeptide complex according to claim 29, and a pharmaceutically acceptable carrier, diluent, excipient or adjuvant.

31. An antigen-binding molecule according to any one of claims 14 to 18, an immunogen according to any one of claims 19 to 23, a polypeptide complex according to claim 29, or a pharmaceutical composition according to claim 30, for use in a method of medical treatment or prophylaxis.
- 5 32. An antigen-binding molecule according to any one of claims 14 to 18, an immunogen according to any one of claims 19 to 23, a polypeptide complex according to claim 29, or a pharmaceutical composition according to claim 30 for use in a method of medical treatment or prevention of an infectious disease, a cancer or an autoimmune disease.
- 10 33. Use of an antigen-binding molecule according to any one of claims 14 to 18, an immunogen according to any one of claims 19 to 23, a polypeptide complex according to claim 29, or a pharmaceutical composition according to claim 30 in the manufacture of a medicament for use in a method of treatment or prevention of an infectious disease, a cancer or an autoimmune disease.
- 15 34. A method of treating or preventing an infectious disease, a cancer or an autoimmune disease, comprising administering to a subject a therapeutically or prophylactically effective amount of an antigen-binding molecule according to any one of claims 14 to 18, an immunogen according to any one of claims 19 to 23, a polypeptide complex according to claim 29, or a pharmaceutical composition according to claim 30.
- 20 35. An immunogen according to any one of claims 19 to 23, or a polypeptide complex according to claim 29, for use in a method for inducing or enhancing an immune response to a target antigen in a subject.
- 25 36. Use of an immunogen according to any one of claims 19 to 23, or a polypeptide complex according to claim 29, in the manufacture of a medicament for use in a method for inducing or enhancing an immune response to a target antigen in a subject.
- 30 37. A method for inducing or enhancing an immune response to a target antigen in a subject, comprising administering an immunogen according to any one of claims 19 to 23 or a polypeptide complex according to claim 29 to the subject.
38. A method comprising contacting a population of antigen-presenting cells with an immunogen according to any one of claims 19 to 23, or a polypeptide complex according to claim 29.
- 35 39. A method for generating or expanding a population of immune cells specific for a target antigen, comprising contacting a population of immune cells with an antigen-presenting cell obtained by the method according to claim 38.