

## WHAT IS CLAIMED IS:

1. An antibody that binds to human TREM1, comprising:
  - a light chain variable region comprising:
    - a CDR-L1 comprising SEQ ID NO:11,
    - 5 a CDR-L2 comprising SEQ ID NO:12, and
    - a CDR-L3 comprising SEQ ID NO:13;
  - and a heavy chain variable region comprising:
    - a CDR-H1 comprising SEQ ID NO:14,
    - a CDR-H2 comprising SEQ ID NO:15, and
    - 10 a CDR-H3 comprising SEQ ID NO:16.
2. The antibody according to claim 1, wherein said antibody inhibits or attenuates TREM1 binding to one or more of its natural ligands.
3. The antibody according to claim 1 or claim 2, wherein said antibody inhibits or attenuates TREM1 binding to PGLYRP1.
- 15 4. The antibody according to any one of claims 1-3, wherein said antibody has a dissociation equilibrium constant (KD) of less than 600pM for human TREM1.
5. The antibody according to any one of claims 1-4, wherein said antibody binds to a different site on TREM1 than PGLYRP1.
6. The antibody according to any one of claims 1-5, wherein said antibody binds to an epitope of
  - 20 human TREM1, the epitope comprising residues E26, E27, K28, Y29, E30, L31, K32 of human TREM1 (SEQ ID NO: 1).
7. The antibody according to any one of claims 1-5, wherein the antibody binds to an epitope of human TREM1, the epitope comprising five or more residues selected from E26, E27, K28, Y29, E30, L31, K32, Q35, T36, D38, K40, D42, R97, D127, T134 and G136 of human TREM1 (SEQ ID
  - 25 NO: 1) as determined at the distance of less than 4Å contact distance between the antibody and TREM1.
8. The antibody according to claim 7, wherein said binding is determined using X-ray crystallography.
9. The antibody according to any one of claims 1-8, wherein the light chain variable region comprises the sequence given in SEQ ID NO:29.
- 30 10. The antibody according to any one of claims 1-9, wherein the heavy chain variable region comprises the sequence given in SEQ ID NO:79.
11. The antibody according to any one of claims 1-8, wherein the light chain variable region comprises the sequence given in SEQ ID NO: 29, or a sequence which is at least 90% identical

thereto; and the heavy chain variable region comprises the sequence given in SEQ ID NO: 79, or a sequence which is at least 90% identical thereto.

12. The antibody according to claim 1, wherein each CDR either contains up to three amino acid substitutions, and wherein such amino-acid substitutions are conservative.

5 13. The antibody according to claim 1, wherein the remainder of the light chain and heavy chain variable regions have at least 90% identity to SEQ ID Nos: 29 and 79 respectively.

14. The antibody according to any one of claims 1-13, wherein said antibody is an antibody fragment.

15. The antibody according to claim 14, wherein said antibody fragment is Fab, Fab', F(ab')<sub>2</sub>, Fv, dsFv, scFv, or dsscFv.

10 16. The antibody according to any one of claims 1-13, wherein said antibody is a full length antibody.

17. The antibody according to claim 16, wherein said antibody is an IgG1, IgG1 LALA, IgG4, IgG4P, or IgG4P FALA.

15 18. The antibody according to claim 16, wherein the antibody is an IgG4P comprising a light chain comprising the sequence given in SEQ ID NO: 31 and a heavy chain comprising the sequence given in SEQ ID NO: 81.

19. The antibody according to any one of claims 1-8, wherein the antibody is an IgG4P and wherein the remainder of the of the light chain and heavy chain has at least 90% identity or similarity to SEQ ID NOs:31 and 81 respectively.

20 20. An antibody that cross-competes with the antibody of claim 1 for binding to a TREM1 epitope comprising residues E26, E27, K28, Y29, E30, L31, K32, and Q35 of human TREM1 (SEQ ID NO: 1).

21. An IgG4P antibody that binds to an epitope of human TREM1, the epitope comprising residues E26, E27, K28, Y29, E30, L31, K32, and Q35 of human TREM1 (SEQ ID NO: 1).

22. An isolated polynucleotide encoding the antibody according to any one of claims 1 to 21.

25 23. An expression vector carrying the polynucleotide of claim 22.

24. A host cell comprising the vector as defined in claim 23.

25. A method of producing the antibody of any one of claims 1 to 21, comprising culturing the host cell of claim 24 under conditions permitting production of the antibody, and recovering the antibody produced.

30 26. A pharmaceutical composition comprising the antibody of any one of claims 1 to 22, and a pharmaceutically acceptable adjuvant or carrier.

27. The antibody of any one of claims 1 to 22, or the pharmaceutical composition as defined in claim 29, for use in a method of treatment of the human or animal body by therapy.
28. The antibody of any one of claims 1 to 22, or the pharmaceutical composition as defined in claim 23, for use as a medicament.
- 5 29. Use of the antibody according to any one of claims 1-22 or the pharmaceutical composition according to claim 26 for the manufacture of a medicament.
30. The antibody as defined in any one of claims 1 -22 or the pharmaceutical composition according to claim 26, for use in the treatment of a neurological disorder.
31. Use of the antibody according to any one of claims 1-22 or the pharmaceutical composition  
10 according to claim 24 for the manufacture of a medicament for the treatment of a neurological disorder.
32. The antibody or pharmaceutical composition according to claim 30, or the use according to claim 31, wherein said neurological disorder is amyotrophic lateral sclerosis (ALS) or Alzheimer's disease.