Claims

1. Humanized antibody specific for the protofibrillar form of the A-β peptide ~~characterized in that~~wherein:
   - said antibody comprises CDRs having a sequence identical to the sequences SEQ ID NO: 10, 12, 14, 16, 18 and 20, or differs by one amino acid relative to one of the sequences SEQ ID NO: 10, 12, 14, 16, 18 and 20; and
   - said antibody binds to the A-β peptides aggregated in senile plaques and not to the diffuse deposits of A-β peptides.

2. Antibody according claim 1, ~~characterized in that~~wherein it comprises the CDRs encoded by the nucleotide sequences SEQ ID NO 9, 11, 13, 15, 17 and 19, or by sequences differing respectively by 1, 2, 3, 4 or 5 nucleotides from these sequences.

3. Antibody according to claim 1 or 2~~, characterized in that~~wherein it comprises the CDRs of sequence SEQ ID NO: 10, 12, 14, 16, 18 and 20.

4. Antibody according to claim 1, ~~characterized in that~~wherein it comprises the CDRs encoded by the nucleotide sequences SEQ ID NO 9, 11, 13, 31, 17 and 19, or by sequences differing respectively by 1, 2, 3, 4 or 5 nucleotides from these sequences.

5. Antibody according to claim 1 or 4, ~~characterized in that~~wherein it comprises the CDRs of sequence SEQ ID NO: 10, 12, 14, 32, 18 and 20.

6. Antibody according to claim 1, ~~characterized in that~~wherein it comprises the CDRs encoded by the nucleotide sequences SEQ ID NO 9, 11, 29, 31, 17 and 19, or by sequences differing respectively by 1, 2, 3, 4 or 5 nucleotides from these sequences.

7. Antibody according to claim 1 or 6, ~~characterized in that~~wherein it comprises the CDRs of sequence SEQ ID NO: 10, 12, 30, 32, 18 and 20.

8. Antibody according to one of the preceding claims, ~~characterized in that~~wherein the variable part of its heavy chain comprises a sequence having at least 80% identity with one of the sequences SEQ ID NO: 6 and SEQ ID NO 28.

9. Antibody according to one of the preceding claims, ~~characterized in that~~wherein the variable part of its light chain comprises a sequence having at least 80% identity with one of the sequences SEQ ID NO: 8 and SEQ ID NO 24.

10. Antibody according to one of the preceding claims, ~~characterized in that~~wherein it comprises a heavy chain comprising a variable part of polypeptide sequence SEQ ID NO 6 or SEQ ID NO 28.

11. Antibody according to one of the preceding claims, ~~characterized in that~~wherein it comprises a light chain comprising a variable part of polypeptide sequence SEQ ID NO 8 or SEQ ID NO 24.

12. Antibody according to one of claims 1-3 and 8-11, ~~characterized in that~~wherein it comprises variable parts having the polypeptide sequences SEQ ID NO: 6 and 8.

13. Antibody according to one of claims 1, 4, 5 and 8-11, ~~characterized in that~~wherein it comprises variable parts having the polypeptide sequences SEQ ID NO: 6 and 24.

14. Antibody according to one of claims 1 and 6-11, ~~characterized in that~~wherein it comprises variable parts having the polypeptide sequences SEQ ID NO: 24 and 28.

15. Antibody according to one of the preceding claims, ~~characterized in that~~wherein it comprises a heavy chain having at least 80% identity with one of the polypeptide sequences SEQ ID NO 2 and SEQ ID NO 26.

16. Antibody according to one of the preceding claims, ~~characterized in that~~wherein it comprises a light chain encoded by a sequence having at least

80% identity with one of the polypeptide sequences SEQ ID NO 4 and SEQ ID NO 22.

17. Antibody according to one of claims 1-3, 8-12, 15 and 16, ~~characterized in that~~wherein it comprises chains having the polypeptide sequences SEQ ID NO: 2 and 4.

18. Antibody according to one of claims 1, 4, 5, 8-11, 13, 15 and 16, ~~characterized in that~~wherein it comprises chains having the polypeptide sequences SEQ ID NO: 2 and 22.

19. Antibody according to one of claims 1, 6-11 and 14-16, ~~characterized in that~~wherein it comprises chains having the polypeptide sequences SEQ ID NO: 26 and 22

20. Antibody according to any one of the preceding claims, ~~characterized in that~~wherein it induces a reduction of amyloid plaques.

21. Antibody according to any one of the preceding claims, ~~characterized in that~~wherein its affinity for the protofibrillar form of peptide Aβ is at least 100 times greater than its affinity for the other forms of this peptide.

22. Humanized antibody specific for the protofibrillar form of the A-β peptide ~~characterized in that~~wherein it comprises a heavy chain comprising a variable part of polypeptide sequence SEQ ID NO 6, and a light chain comprising a variable part of polypeptide sequence SEQ ID NO 8.

23. Antibody according to claim ~~23~~22, ~~characterized in that~~wherein it comprises a heavy chain comprising polypeptide sequence SEQ ID NO 2, and a light chain comprising polypeptide sequence SEQ ID NO 4.

24. Antibody according to claim 23~~2~~4, ~~characterized in that~~wherein it ~~consists~~ comprises ~~of~~ a heavy chain ~~comprising~~ consisting of polypeptide sequence SEQ ID NO 2 and ~~of~~ a light chain ~~comprising~~ consisting of polypeptide sequence SEQ ID NO 4.

25. Antibody according to any one of the preceding claims, for use in the treatment of diseases associated with neurodegenerative disorders.

26. Antibody according to any one of claims 1 to 24, for use in the treatment of Alzheimer's disease.

27. Pharmaceutical composition comprising an antibody according to any one of Claims 1 to ~~25~~ 24 and excipients.

28. Cell producing antibodies according to Claim 1 to 24.

29. Method of production of an antibody according to any one of Claims 1 to 24, ~~characterized in that~~wherein it comprises the culturing of cells according to Claim 28.

30. Medicinal product comprising an antibody according to any one of Claims 1 to 24.

31. Polynucleotide for the expression of the heavy chain and/or light chain of the antibody according to claim 1, wherein said polynucleotide codesing for a polypeptide having at least 80% identity with one of the sequences SEQ ID NO: 2, 4, 6, 8, 22, 24, 26 or 28.

32. Polynucleotide for the expression of the heavy chain and/or light chain of the antibody according to claim 1, ~~characterized in that~~wherein it has a sequence having at least 80% identity with one of the sequences SEQ ID NO: 1, 3, 5, 7, 21, 23, 25, or 27.

33. Recombinant vector comprising a nucleic acid according to either one of Claims 31 and 32.

34. Host cell comprising a vector according to Claim 33.

35. Use of an antibody according to any one of Claims 1-24, in the manufacture of a medicament for treatment of diseases associated with neurodegeneration disorders.

36. Use of an antibody according to any one of Claims 1-24 in the manufacture of a medicament for treatment of Alzheimer's disease.