WHAT WE CLAIM IS:

1. An antibody or active fragment thereof, which antibody recognizes and binds to an epitope of β-amyloid ("Aβ") peptide and,

   (a) upon co-incubation with Aβ monomeric peptides 1-42, at a molar ratio of 1:100, antibody:peptides, inhibits the aggregation of the Aβ monomers into high molecular polymeric fibrils or filaments and, in addition,

   (b) upon co-incubation with preformed high molecular polymeric amyloid fibrils or filaments formed by the aggregation of Aβ monomeric peptides 1-42, at a molar ratio of 1:100, antibody:preformed amyloid fibrils or filaments, is capable of disaggregating the preformed polymeric fibrils or filaments; and

   (c) upon co-incubation with preformed high molecular polymeric amyloid fibrils or filaments formed by the aggregation of Aβ1-42 monomeric peptides is capable of inducing a transition of the β-sheet conformation towards an α-helix and/or a random coil conformation in the Aβ1-42 molecule.

2. The antibody or active fragment thereof of claim 1, which is a monoclonal antibody.

3. The antibody or active fragment thereof of claim 1 or 2, which comprises the light chain variable region CDRs and the heavy chain variable region CDRs of the antibody produced by hybridoma cell line FP 12H3-C2, deposited on December 1, 2005 as DSM ACC2750.

4. The antibody or active fragment thereof of claim 1 or 3, which is engineered or isolated.

5. The monoclonal antibody according to claim 2, or active fragment thereof, wherein the aggregation of the Aβ monomers to high molecular polymeric fibrils is inhibited by at least 85% as compared to the respective amyloid peptide monomers incubated in buffer (control).

6. The monoclonal antibody according to claim 2, or active fragment thereof, which antibody is capable of disaggregating the preformed polymeric fibrils or filaments by at least 35%.

7. The monoclonal antibody according to claim 5 or 6, or active fragment thereof, which recognizes the native conformation of amyloid in that it specifically binds to amyloid oligomers and fibers, but not to linearized amyloid species.

8. The monoclonal antibody according to claim 7, or active fragment thereof, wherein said amyloid oligomers are comprised of multiple aggregated monomers of amyloid β (Aβ) or of modified or truncated amyloid β (Aβ) peptides or of derivatives thereof, which form oligomeric or polymeric structures which are soluble both *in vitro* in aqueous medium and *in vivo* in the mammalian or human body, respectively.

9. The monoclonal antibody according to any one of claims 5 to 8, or active fragment thereof, which antibody or fragment binds to an Aβ monomer with a binding affinity of at least about 1×10^{-6} M to at least about 1×10^{-8} M.

10. The monoclonal antibody according to any one of claims 5 to 9, or active fragment thereof, which antibody or fragment binds to an Aβ fiber, fibril or filament with a binding affinity of at least about 1×10^{-7} M to at least about 1×10^{-9} M.

11. The monoclonal antibody according to any one of claims 5 to 10, or active fragment thereof, which antibody has a high binding sensitivity to amyloid peptide $A\beta_{1-42}$ and is capable of detecting $A\beta_{1-42}$ fibers in an amount of up to 0.01 µg of $A\beta_{1-42}$ fibers.

12. The monoclonal antibody of claim 5, or active fragment thereof, wherein said antibody recognizes and binds to a conformational discontinuous epitope comprising at least two distinct binding sites on β-amyloid wherein the said at least two distinct binding sites comprise at least one amino acid residue and at least two consecutive amino acid residues, respectively, predominantly involved in the binding of the antibody, wherein the at least one residue constituting the first distinct binding site is Leu and the at least two consecutive amino acid residues, constituting the second distinct binding site, are –Phe-Phe- embedded within the following core sequence:

– Xaa_1 – Xaa_2 – Xaa_3 – Leu -Xaa_4 – Phe – Phe – Xaa_5 – Xaa_6 – Xaa_7 –

wherein

Xaa_1 is an amino acid residue selected from the group comprising His, Asn, Gln Lys, and Arg;

Xaa_2 is an amino acid residue selected from the group comprising Asn and Gln;

Xaa_3 is an amino acid residue selected from the group comprising Lys, His, Asn, Gln and Arg

Xaa_4 is an amino acid residue selected from the group comprising Ala, Val, Leu, norleucine, Met, Phe, and Ile;

Xaa_5 is an amino acid residue selected from the group comprising Ala, Val, Leu, Ser and Ile;

Xaa_6 is an amino acid residue selected from the group comprising Glu and Asp; and

Xaa_7 is an amino acid residue selected from the group comprising Glu and Asp.

13. The monoclonal antibody of claim 5, or active fragment thereof, wherein said antibody recognizes and binds to a conformational discontinuous epitope comprising at least two distinct binding sites on β-amyloid wherein said distinct binding sites comprise at least one and at least two consecutive amino acid residues, respectively, predominantly involved in the binding of the antibody, wherein the at least one and the at least two consecutive amino acids, which are separated by one amino acid residue not involved in antibody binding or to a significantly smaller extent as compared to the amino acid residues predominantly involved in the binding of the antibody, are-His- and –Lys-Leu-, respectively, embedded within the following core sequence:

– His – Xaa_2 – Lys – Leu – Xaa_3– Xaa_4– Xaa_5–Xaa_6 – Xaa_7 – Xaa_8 – wherein

Xaa_2 is an amino acid residue selected from the group comprising Asn and Gln;

Xaa_3 is an amino acid residue selected from the group comprising Ala, Val, Leu, norleucine, Met, Phe, and Ile;

Xaa_4 is an amino acid residue selected from the group comprising Ala, Val, Leu, norleucine, Met, Phe, and Ile;

Xaa_5 is an amino acid residue selected from the group comprising Ala, Val, Leu, norleucine, Met, Phe, and Ile;

Xaa_6 is an amino acid residue selected from the group comprising Ala, Val, Leu, Ser and Ile;

Xaa_7 is an amino acid residue selected from the group comprising Glu and Asp; and

Xaa_8 is an amino acid residue selected from the group comprising Glu and Asp;

and wherein said amino acid residues Xaa_2, Xaa_3, Xaa_6, Xaa_7, Xaa_8, are not involved in antibody binding or to a significantly smaller extent as compared to the –His- and the –Lys-Leu- binding site.

14. The monoclonal antibody of claim 5, or active fragment thereof, wherein said antibody recognizes and binds to a conformational discontinuous epitope comprising at least two distinct binding sites on β-amyloid wherein said distinct binding sites comprise at least one and at least two consecutive amino acid residues, respectively, predominantly involved in the binding of the antibody, wherein the at least two consecutive amino acid residues representing a first binding site are –Phe-Phe- and the at least one amino acid residue is –His- embedded within the following core sequence:

$– Xaa_1 – His – Xaa_3 – Xaa_4 – Xaa_5 – Xaa_6 – Phe – Phe – Xaa_7 – Xaa_8 – Xaa_9$

wherein

Xaa_1 is an amino acid residue selected from the group comprising His, Asn, Gln, Lys and Arg;

Xaa_3 is an amino acid residue selected from the group comprising Asn and Gln;

Xaa_4 is an amino acid residue selected from the group comprising His, Asn, Gln, Lys and Arg;

Xaa_5 is an amino acid residue selected from the group comprising Ala, Val, Leu, Ser and Ile;

Xaa_6 is an amino acid residue selected from the group comprising Ala, Val, Leu and Ile;

Xaa_7 is an amino acid residue selected from the group comprising Ala, Val, Leu and Ile;

Xaa_8 is an amino acid residue selected from the group comprising Glu and Asp; and

Xaa_9 is an amino acid residue selected from the group comprising Glu and Asp;

and wherein said amino acid residues Xaa_1, Xaa_3, Xaa_6, Xaa_7, Xaa_8 and Xaa_9, are not involved in antibody binding or to a significantly smaller extent as compared to the His and the –Phe-Phe- binding site.

15. The monoclonal antibody of claim 5, or active fragment thereof, wherein said antibody recognizes and binds to a conformational discontinuous epitope comprising at least two distinct binding sites on β-amyloid wherein said distinct binding sites comprise at least two consecutive amino acid residues, respectively, predominantly involved in the binding of the antibody, wherein the first of the at least two consecutive amino acid residues predominantly involved in the binding of the antibody are –Lys- and –Leu-, and the second of the at least two consecutive amino acid residues are –Phe-Phe- embedded within the following core sequence:

– Xaa_1 – Xaa_2 – Lys – Leu – Xaa_4 – Phe – Phe – Xaa_5 – Xaa_6 – Xaa_7 –

wherein

Xaa_1 is an amino acid residue selected from the group comprising His, Asn, Gln, Lys, and Arg;

Xaa_2 is an amino acid residue selected from the group comprising Asn and Gln;

Xaa_4 is an amino acid residue selected from the group comprising Ala, Val, Leu, norleucine, Met, Phe, and Ile;

Xaa_5 is an amino acid residue selected from the group comprising Ala, Val, Leu, Ser and Ile;

Xaa_6 is an amino acid residue selected from the group comprising Glu and Asp; and

Xaa_7 is an amino acid residue selected from the group comprising Glu and Asp;

and wherein said amino acid residues Xaa_2, Xaa_4, Xaa_5, Xaa_6, Xaa_7 are not involved in antibody binding or to a significantly smaller extent as compared to the –Lys-Leu and the –Phe-Phe- binding site.

16. The monoclonal antibody of claim 5, or active fragment thereof, wherein said antibody recognizes and binds to a conformational discontinuous epitope comprising at least three distinct binding sites on β-amyloid, wherein said distinct

binding sites comprise at least one and at least two consecutive amino acid residues, respectively, predominantly involved in the binding of the antibody, wherein the first of the at least two consecutive amino acid residues predominantly involved in the binding of the antibody are – Lys-Leu-, and the second of the at least two consecutive amino acid residues are –Phe-Phe-, and the third at least one amino residue is -His- embedded within the following core sequence:

– His – Xaa_2 – Lys – Leu – Xaa_4 – Phe – Phe – Xaa_5 – Xaa_6 – Xaa_7, –

wherein

Xaa_2 is an amino acid residue selected from the group comprising Asn and Gln;

Xaa_4 is an amino acid residue selected from the group comprising Ala, Val, Leu, norleucine, Met, Phe, and Ile;

Xaa_5 is an amino acid residue selected from the group comprising Ala, Val, Leu, Ser and Ile;

Xaa_6 is an amino acid residue selected from the group comprising Glu and Asp; and

Xaa_7 is an amino acid residue selected from the group comprising Glu and Asp,

and wherein said amino acid residues Xaa_2, Xaa_4, Xaa_5, Xaa_6, Xaa_7 are not involved in antibody binding or to a significantly smaller extent as compared to the –His-, the -Lys-Leu, and the –Phe-Phe- binding site.

17. The monoclonal antibody of claim 5, or active fragment thereof, wherein said antibody recognizes and binds to a conformational discontinuous epitope comprising at least three distinct binding sites on β-amyloid wherein said distinct binding sites comprise at least one and at least two consecutive amino acid residues, respectively, predominantly involved in the binding of the antibody, wherein the first of the at least two consecutive amino acid residues predominantly involved in the binding of the antibody are –Lys-Leu-, and the second of the at least two consecutive amino acid residues are –Phe-Phe-, and the third at least one amino residue is -Asp- embedded within the following core sequence:

– Xaa_1 – Xaa_2 – Lys – Leu – Xaa_4 – Phe – Phe – Xaa_5 – Xaa_6– Asp –

wherein

Xaa_1 is an amino acid residue selected from the group comprising His, Asn, Gln, Lys, and Arg;

Xaa_2 is an amino acid residue selected from the group comprising Asn and Gln;

Xaa_4 is an amino acid residue selected from the group comprising Ala, Val, Leu, norleucine, Met, Phe, and Ile;

Xaa_5 is an amino acid residue selected from the group comprising Ala, Val, Leu, Ser and Ile; and

Xaa_6 is an amino acid residue selected from the group comprising Glu and Asp,

and wherein said amino acid residues Xaa_2, Xaa_4, Xaa_5, Xaa_6 are not involved in antibody binding or to a significantly smaller extent as compared to the – Asp-, the -Lys-Leu, and the – Phe-Phe- binding site.

18. The monoclonal antibody of claim 5, or active fragment thereof, wherein said antibody recognizes and binds to a conformational discontinuous epitope comprising 4 distinct binding sites on β-amyloid wherein said 4 distinct binding sites comprise one amino acid residue and two consecutive amino acid residues, respectively, which residues are predominantly involved in the binding of the antibody, wherein said 4 distinct binding sites are located in close proximity to each other on the antigen, separated by at least one amino acid residue not involved in antibody binding or to a significantly smaller extent as compared to said one amino acid residue and said two consecutive amino acid residues of the 4 distinct binding sites thus forming a conformational discontinuous epitope, wherein the first of the two consecutive amino acid residues predominantly involved in the binding of the antibody are –Lys-Leu-, and the second of the at least two consecutive amino acid residues are –Phe-Phe-, the first of the single amino residues is -His- and the second of the single amino residues is -Asp- embedded within the following core sequence:

- His – Xaa_2 – Lys – Leu – Xaa_4 – Phe – Phe – Xaa_5 – Xaa_6 – Asp –

wherein

Xaa_2 is an amino acid residue selected from the group comprising Asn and

Gln;

Xaa_4 is an amino acid residue selected from the group comprising Ala, Val, Leu, norleucine, Met, Phe, and Ile;

Xaa_5 is an amino acid residue selected from the group comprising Ala, Val, Leu, Ser and Ile; and

Xaa_6 is an amino acid residue selected from the group comprising Glu and Asp,

and wherein said amino acid residues Xaa_2, Xaa_4, Xaa_5, Xaa_6, are not involved in antibody binding or to a significantly smaller extent as compared to the – His-, – Asp-, the – Lys-Leu, and the –Phe-Phe- binding site.

19. The monoclonal antibody according to any one of claims 12 to 18, or active fragment thereof, wherein said consecutive amino acid residues, particularly –Lys-Leu- at position 16 and 17 and –Phe-Phe – at position 19 and 20, which are predominantly involved in the binding of the β-amyloid protein, are embedded into the following core region of the amyloid β peptide:

Val	His	His	Gln	Lys	Leu	Val	Phe	Phe	Ala	Glu	Asp
12	13	14	15	16	17	18	19	20	21	22	23

20. An antibody or active fragment thereof, wherein said antibody or active fragment thereof comprises:

(1) both the Heavy Chain Variable Region (HCVR) of SEQ ID NO: 8 and the Light Chain Variable Region (LCVR) of SEQ ID NO: 7; or

(2) (i) a Light Chain Variable Region (LCVR) wherein the Light Chain Variable Region (LCVR) has an amino acid sequence that is 97%, 98% or 99% identical to the sequence given in SEQ ID NO: 7;

and (ii) a Heavy Chain Variable Region (HCVR) wherein the Heavy Chain Variable Region (HCVR) has an amino acid sequence that is 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, or 99% identical to the sequence given in SEQ ID NO: 8; or

(3) a Light Chain Variable Region (LCVR) and a Heavy Chain Variable Region (HCVR) that together have an amino acid sequence that is 94%, 95%, 96%, 97%, 98% or 99% identical to the sequence given in SEQ ID NOs: 7 and 8, which antibody

recognizes and binds to a conformational discontinuous epitope as defined in any one of claims 12 to 19 and exhibits the specific properties of an antibody according to any one of claims 5 to 11; or

(4) the CDR regions of the Light Chain Variable Region (LCVR) of SEQ ID NO: 7 and the Heavy Chain Variable Region (HCVR) of SEQ ID NO: 8; or

(5) the epitope-binding fragments of the Light Chain Variable Region (LCVR) of SEQ ID NO: 7 and the Heavy Chain Variable Region (HCVR) of SEQ ID NO: 8; or

(6) (i) an LCVR comprising a CDR1 having the amino acid sequence of SEQ ID NO: 23; a CDR2 having the amino acid sequence of SEQ ID NO: 24, and a CDR3 having the amino acid sequence of SEQ ID NO: 25; and (ii) an HCVR comprising a CDR1 having the amino acid sequence of SEQ ID NO: 26; a CDR2 having the amino acid sequence of SEQ ID NO: 27, and a CDR3 having the amino acid sequence of SEQ ID NO: 28;

wherein said antibody or active fragment thereof recognizes and binds to β-amyloid.

21. The antibody or active fragment thereof of claim 20, wherein said antibody or active fragment thereof comprises both the Heavy Chain Variable Region (HCVR) of SEQ ID NO: 8 and the Light Chain Variable Region (LCVR) of SEQ ID NO: 7.

22. The antibody or active fragment thereof of claim 20, wherein said antibody or active fragment thereof comprises Light Chain Variable Region (LCVR) wherein the Light Chain Variable Region (LCVR) has an amino acid sequence that is 97%, 98% or 99% identical to the sequence given in SEQ ID NO: 7;

and a Heavy Chain Variable Region (HCVR) wherein the Heavy Chain Variable Region (HCVR) has an amino acid sequence that is 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, or 99% identical to the sequence given in SEQ ID NO: 8.

23. The antibody or active fragment thereof of claim 20, wherein said antibody or active fragment thereof comprises a Light Chain Variable Region (LCVR) and a Heavy Chain Variable Region (HCVR) that together have an amino acid sequence that is 94%, 95%, 96%, 97%, 98% or 99% identical to the sequence given in SEQ ID NOs: 7 and 8.

24. The antibody or active fragment thereof of claim 20, wherein said antibody or active fragment thereof comprises the CDR regions of the Light Chain Variable Region (LCVR) of SEQ ID NO: 7 and the Heavy Chain Variable Region (HCVR) of SEQ ID NO: 8.

25. The antibody or active fragment thereof of claim 20, wherein said antibody or active fragment thereof comprises the epitope-binding fragments of the Light Chain Variable Region (LCVR) of SEQ ID NO: 7 and the Heavy Chain Variable Region (HCVR) of SEQ ID NO: 8.

26. The antibody or active fragment thereof of claim 20, wherein said antibody or active fragment thereof comprises (i) an LCVR comprising a CDR1 having the amino acid sequence of SEQ ID NO: 23; a CDR2 having the amino acid sequence of SEQ ID NO: 24, and a CDR3 having the amino acid sequence of SEQ ID NO: 25; and (ii) an HCVR comprising a CDR1 having the amino acid sequence of SEQ ID NO: 26; a CDR2 having the amino acid sequence of SEQ ID NO: 27, and a CDR3 having the amino acid sequence of SEQ ID NO: 28.

27. A monoclonal antibody or active fragment thereof produced by:

hybridoma cell line FP 12H3-C2, deposited on December 01, 2005 as DSM ACC2750 including functional equivalents thereof; or

hybridoma cell line FP 12H3-G2, deposited on December 01, 2005 as DSM ACC2751 including functional equivalents thereof.

28. The monoclonal antibody or active fragment thereof of claim 27, produced by hybridoma cell line FP 12H3-C2, deposited on December 01, 2005 as DSM ACC2750 including functional equivalents thereof.

29. The monoclonal antibody or active fragment thereof of claim 27, produced by hybridoma cell line FP 12H3-G2, deposited on December 01, 2005 as DSM ACC2751 including functional equivalents thereof.

30. The monoclonal antibody according to any one of claims 5 to 19 or 27 to 29, or active fragment thereof, which antibody has been raised against a supramolecular antigenic construct comprising an antigenic peptide corresponding to the amino acid sequence of β-amyloid peptide $A\beta_{1-16}$ modified with palmitic acid, wherein said hydrophobic moiety, PEG, and palmitic acid, respectively, is covalently bound

to each terminus through an amino acid or amino acid analogue capable of serving as a linker molecule.

31. An antibody or active fragment thereof, wherein said antibody or active fragment thereof comprises:

(1) the light chain variable region complementarity determining regions (CDRs) and the heavy chain variable region CDRs of the antibody produced by hybridoma cell line FP 12H3-C2, deposited on December 1, 2005 as DSM ACC2750; or

(2) a Light Chain Variable Region (LCVR) and a Heavy Chain Variable Region (HCVR) having the sequences of the LCVR and HCVR, respectively, of the antibody produced by hybridoma cell line FP 12H3-C2, deposited on December 1, 2005 as DSM ACC2750; or

(3) the epitope-binding fragments of the Light Chain Variable Region (LCVR) and the Heavy Chain Variable Region (HCVR) of the antibody produced by hybridoma cell line FP 12H3-C2, deposited on December 1, 2005 as DSM ACC2750;

wherein said antibody or functional part thereof recognizes and binds to an epitope of β-amyloid ("Aβ").

32. The antibody or active fragment thereof of claim 31, wherein said antibody or active fragment thereof comprises the light chain variable region complementarity determining regions (CDRs) and the heavy chain variable region CDRs of the antibody produced by hybridoma cell line FP 12H3-C2, deposited on December 1, 2005 as DSM ACC2750.

33. The antibody or active fragment thereof of claim 31, wherein said antibody or active fragment thereof comprises a Light Chain Variable Region (LCVR) and a Heavy Chain Variable Region (HCVR) having the sequences of the LCVR and HCVR, respectively, of the antibody produced by hybridoma cell line FP 12H3-C2, deposited on December 1, 2005 as DSM ACC2750.

34. The antibody or active fragment thereof of claim 31, wherein said antitbody or active fragment thereof comprises the epitope-binding fragments of the Light Chain Variable Region (LCVR) and the Heavy Chain Variable Region (HCVR) of the antibody produced by hybridoma cell line FP 12H3-C2, deposited on December 1, 2005 as DSM ACC2750.

35. The antibody of any one of claims 20-26 or 31-34, wherein the antibody is isolated or engineered.

36. The antibody or active fragment thereof according to any one of claims 1-4, 20-26 or 31-34, wherein the antibody is a monoclonal antibody.

37. The antibody or active fragment thereof according to any one of claims 1-36, wherein the antibody or active fragment thereof is a human or humanized antibody or a chimeric antibody.

38. A polynucleotide comprising a nucleotide sequence encoding an antibody or active fragment thereof according to any claims 1-37.

39. A polynucleotide according to claim 38, comprising a nucleotide sequence encoding a monoclonal antibody or active fragment thereof, comprising

a) the nucleotide sequence of the light chain variable region of SEQ ID NO: 9;
b) a nucleotide sequence that differ from the nucleotide sequence of (a) in codon sequence due to the degeneracy of the genetic code; or
c) a nucleotide sequence with the complementary sequence to (a) or (b).

40. A polynucleotide according to claim 38, comprising a nucleotide sequence encoding a monoclonal antibody or active fragment thereof, comprising

a) the nucleotide sequence of the light chain of SEQ ID NO:10;
b) a nucleotide sequence that differ from the nucleotide sequence of (a) in codon sequence due to the degeneracy of the genetic code; or
c) a nucleotide sequence with the complementary sequence to (a) or (b).

41. A polynucleotide according to claim 38, comprising a nucleotide sequence encoding a monoclonal antibody or active fragment thereof, comprising

a) the nucleotide sequence of the heavy chain variable region of SEQ ID NO: 11;
b) a nucleotide sequence that differ from the nucleotide sequence of (a) in codon sequence due to the degeneracy of the genetic code; or
c) a nucleotide sequence with the complementary sequence to (a) or (b).

42. A polynucleotide according to claim 38, comprising a nucleotide sequence encoding a monoclonal antibody or active fragment thereof, comprising

a) the nucleotide sequence of the the heavy chain of SEQ ID NO: 12;

b) a nucleotide sequence that differ from the nucleotide sequence of (a) in codon sequence due to the degeneracy of the genetic code; or

c) a nucleotide sequence with the complementary sequence to (a) or (b).

43. A composition comprising the antibody or active fragment thereof according to any one of claims 1 to 38 in a therapeutically effective amount.

44. A composition according to claim 43 which is a pharmaceutical composition optionally further comprising a pharmaceutically acceptable carrier.

45. A composition according to claim 43 or 44 for use in the treatment of amyloidosis, a group of diseases and disorders associated with amyloid or amyloid-like protein.

46. The composition of claim 45, wherein the amyloidosis is Alzheimer's disease.

47. A mixture comprising the antibody or active fragment thereof according to any one of claims 1 to 37 in a therapeutically effective amount and a further biologically active substance and/or a pharmaceutically acceptable carrier and/or a diluent and/or an excipient.

48. The mixture according to claim 47 comprising in addition to the antibody or active fragment thereof according to any one of claims 1 to 37, at least one compound selected from the group consisting of metal chelators, pirenzepin and metabolites, 3-amino-1-propanesulfonic acid (3APS), 1,3-propanedisulfonate (1,3PDS), tau proteins, neurotransmitter, or cholinesterase inhibitors (ChEIs), and nutritive supplements, together with an antibody according to any one of claims 1 to 37 and, optionally, a pharmaceutically acceptable carrier and/or a diluent and/or an excipient.

49. The mixture according to claim 48, wherein the compound is a cholinesterase inhibitor (ChEIs).

50. The mixture according to claim 49, wherein the compound is one selected from the group consisting of tacrine, rivastigmine, donepezil, galantamine, niacin and memantine.

51. The mixture according to any one of claims 47 to 50 comprising the antibody or active fragment thereof and the biologically active substance in a therapeutically effective amount.

52. A method for the preparation of a composition according to any one of claims 43 to 46, or a mixture according to any one of claims 47 to 51 using an antibody and/or active fragment thereof according to any one of claims 1 to 37 for use in treating or alleviating the effects of amyloidosis, a group of diseases and disorders associated with amyloid plaque formation including secondary amyloidosis and age-related amyloidosis, wherein said method comprises the step of formulating the antibody or active fragment thereof according to any one of claims 1 to 37 in a pharmaceutically acceptable form.

53. A method for the preparation of a medicament for use in treating or alleviating the effects of amyloidosis, a group of diseases and disorders associated with amyloid plaque formation including secondary amyloidosis and age-related amyloidosis, comprising formulating the antibody or any functional parts thereof according to any one of claims 1 to 37 in a pharmaceutically acceptable form.

54. A method according to claim 53, wherein the antibody is comprised in the composition in a therapeutically effective amount.

55. A composition according to anyone of claims 43 to 46, for use in reducing the plaque load or in reducing the amount of plaques in the brain of an animal suffering from amyloidosis.

56. A composition according to claim 55, wherein the plaque load in the brain is decreased by at least 20 %, at least 25%, at least 30%, or by more than 30%.

57. A composition according to claim 55, wherein the amount of plaques in the brain is reduced by at least 10 %, by at least 15%, or by at least 20%.

58. A composition according to anyone of claims 43 to 46 for use in decreasing the total amount of soluble Aβ in the brain of a mammal suffering from amyloidosis.

59. An antibody or active fragment thereof according to any one of claims 1 to 37 and/or a pharmaceutical composition according to any one of claims 43 to 46, or a mixture according to any one of claims 47 to 51 for use in preventing, treating or alleviating the effects of amyloidosis, a group of diseases and disorders associated

with amyloid plaque formation including secondary amyloidosis and age-related amyloidosis.

60. A composition according to anyone of claims 43 to 46 for use in retaining or increasing cognitive memory capacity in a mammal exhibiting amyloidosis.

61. A composition according to claim 60, wherein the composition comprising the antibody or active fragment thereof is formulated for administration in a therapeutically effective amount.

62. A hybridoma cell line that produces an antibody or active fragment thereof according to any one of claims 1 to 37.

63. Hybridoma cell line FP 12H3-C2, deposited on December 01, 2005 as DSM ACC2750.

64. Hybridoma cell line FP 12H3-G2, deposited on December 01, 2005 as DSM ACC2751.

65. A method of diagnosis in a patient of amyloidosis comprising detecting the immunospecific binding of an antibody or an active fragment thereof to an epitope of the amyloid protein in a sample obtained from the patient which includes the steps of:

    (a) bringing the sample suspected to contain the amyloid antigen into contact with an antibody or active fragment thereof according to any one of claims 1-37, which antibody or active fragment thereof binds an epitope of the amyloid protein;
    (b) allowing the antibody or active fragment thereof to bind to the amyloid antigen to form an immunological complex;
    (c) detecting the formation of the immunological complex; and
    (d) correlating the presence or absence of the immunological complex with the presence or absence of amyloid antigen in the sample, wherein the presence of the immunological complex correlates to the presence of amyloid antigen in the sample and the absence of the immunological complex correlates with the absence of amyloid antigen in the sample.

66. A method of determining the extent of amyloidogenic plaque burden in a tissue comprising:

(a) testing a sample representative of the tissue under investigation for the presence of amyloid antigen with an antibody or active fragment thereof according to any one of claims 1-37;

(b) determining the amount of antibody or active fragment thereof bound to the antigen; and

(c) calculating the plaque burden in the tissue.

67. A method for diagnosing in a patient a predisposition to amyloidosis comprising detecting the immunospecific binding of an antibody or an active fragment thereof to an epitope of the amyloid protein in a sample obtained from the patient which includes the steps of:

(a) bringing the sample suspected to contain the amyloid antigen into contact with an antibody or active fragment thereof according to any one of claims 1-37, which antibody or active fragment thereof binds an epitope of the amyloid protein;

(b) allowing the antibody or active fragment thereof to bind to the amyloid antigen to form an immunological complex;

(c) detecting the formation of the immunological complex; and

(d) correlating the presence or absence of the immunological complex with the presence or absence of amyloid antigen in the sample,

(e) comparing the amount of said immunological complex to a normal control value,

wherein an increase in the amount of said aggregate compared to a normal control value indicates that said patient is suffering from or is at risk of developing an amyloid-associated disease or condition.

68. A method for monitoring minimal residual disease in a patient following treatment with an antibody or active fragment thereof or a composition according to any one of the preceding claims, wherein said method comprises:

(a) bringing the sample suspected to contain the amyloid antigen into contact with an antibody or active fragment thereof according to any one of claims 1-37, which antibody or active fragment thereof binds an epitope of the amyloid protein;

(b) allowing the antibody or active fragment thereof to bind to the amyloid antigen to form an immunological complex;

(c) detecting the formation of the immunological complex; and

(d) correlating the presence or absence of the immunological complex with the presence or absence of amyloid antigen in the sample,

(e) comparing the amount of said immunological complex to a normal control value,

wherein an increase in the amount of said aggregate compared to a normal control value indicates that said patient still suffers from a minimal residual disease.

69. A method for predicting responsiveness of a patient being treated with an antibody or active fragment thereof or a composition according to any one of the preceding claims comprising:

(a) bringing the sample suspected to contain the amyloid antigen into contact with an antibody or active fragment thereof according to any one of claims 1-37, which antibody or active fragment thereof binds an epitope of the amyloid protein;

(b) allowing the antibody or active fragment thereof to bind to the amyloid antigen to form an immunological complex;

(c) detecting the formation of the immunological complex; and

(d) correlating the presence or absence of the immunological complex with the presence or absence of amyloid antigen in the sample,

(e) comparing the amount of said immunological complex before and after onset of the treatment,

wherein an decrease in the amount of said aggregate indicates that said patient has a high potential of being responsive to the treatment.

70. A test kit for detection and diagnosis of amyloid-associated diseases and conditions comprising an antibody or active fragment thereof according to any one of claims 1-37.

71. Use of the antibody or active fragment thereof according to any one of claims 1-37 in the preparation of a medicament for treating amyloidosis, a group of diseases and disorders associated with amyloid or amyloid-like protein.

72. Use of the antibody or active fragment thereof according to any one of claims 1-37 in the preparation of a medicament for treating or alleviating the effects of amyloidosis, a group of diseases and disorders associated with amyloid or amyloid-like protein.

73. Use of the antibody or active fragment thereof according to any one of claims 1-37 in the preparation of a medicament for reducing the plaque load or in reducing the amount of plaques in the brain of an animal suffering from amyloidosis.

74. Use of the antibody or active fragment thereof according to any one of claims 1-37 in the preparation of a medicament for decreasing the total amount of soluble Aβ in the brain of an animal suffering from amyloidosis.

75. Use of the antibody or active fragment thereof according to any one of claims 1-37 in the preparation of a medicament for retaining or increasing cognitive memory capacity in a mammal exhibiting amyloidosis.

76. The composition according to any one of claims 45, 55, 58, 59 or 60; or the method according to any one of claims 52, 53, 65 or 67; or the use according to any one of claims 71 to 75, wherein the amyloidosis is selected from the group consisting of: a neurological disorder, Alzheimer's Disease (AD), mild cognitive impairment (MCI), Lewy body dementia, Down's syndrome, hereditary cerebral hemorrhage with amyloidosis (Dutch type); the Guam Parkinson-Dementia complex; progressive supranuclear palsy, multiple sclerosis; Creutzfeld Jacob disease, Parkinson's disease, HIV-related dementia, ALS (amyotropic lateral sclerosis), inclusion-body myositis (IBM), Adult Onset Diabetis; senile cardiac amyloidosis; endocrine tumors, and macular degeneration.

77. The composition according to any one of claims 55, 58, or 60; or the use according to any one of claims 71-75, wherein the animal or the mammal is a human.

78. A cell line that produces an antibody according to any one of claims 1-37.

79. A cell line comprising the polynucleotide of any one of claims 38-47.

80. A method of producing an antibody or an active fragment thereof, comprising the step of culturing the cell line of claim 62-62, 78 or 79.

81. A method of producing antibody or an active fragment thereof, comprising the step of expressing the polynucleotide of any one of claims 38-47.

WHAT WE CLAIM IS:

1. An antibody or active fragment thereof, which antibody or active fragment thereof recognizes and binds to an epitope of β-amyloid ("Aβ") peptide and,

   (a) upon co-incubation with Aβ monomeric peptides 1-42, at a molar ratio of 1:100, antibody:peptides, inhibits the aggregation of the Aβ monomers into high molecular polymeric fibrils or filaments and, in addition,

   (b) upon co-incubation with preformed high molecular polymeric amyloid fibrils or filaments formed by the aggregation of Aβ monomeric peptides 1-42, at a molar ratio of 1:100, antibody:preformed amyloid fibrils or filaments, is capable of disaggregating the preformed polymeric fibrils or filaments; and

   (c) upon co-incubation with preformed high molecular polymeric amyloid fibrils or filaments formed by the aggregation of Aβ1-42 monomeric peptides is capable of inducing a transition of the β-sheet conformation towards an α-helix and/or a random coil conformation in the Aβ1-42 molecule.

2. The antibody or active fragment thereof of claim 1, which is a monoclonal antibody.

3. The antibody or active fragment thereof of claim 1 or 2, which comprises the light chain variable region complementarity determining regions (CDRs) and the heavy chain variable region CDRs of the antibody produced by hybridoma cell line FP 12H3-C2, deposited on December 1, 2005 as DSM ACC2750.

4. The antibody or active fragment thereof of claim 1 or 3, which is engineered or isolated.

5. The monoclonal antibody according to claim 2, or active fragment thereof, wherein the aggregation of the Aβ monomers to high molecular polymeric fibrils is inhibited by at least 85% as compared to the respective amyloid peptide monomers incubated in buffer (control).

6. The monoclonal antibody according to claim 2, or active fragment thereof, which antibody is capable of disaggregating the preformed polymeric fibrils or filaments by at least 35%.

7. The monoclonal antibody according to claim 5 or 6, or active fragment thereof, which recognizes the native conformation of amyloid in that it specifically binds to amyloid oligomers and fibers, but not to linearized amyloid species.

8. The monoclonal antibody according to claim 7, or active fragment thereof, wherein said amyloid oligomers are comprised of multiple aggregated monomers of amyloid β (Aβ) or of modified or truncated amyloid β (Aβ) peptides or of derivatives thereof, which form oligomeric or polymeric structures which are soluble both *in vitro* in aqueous medium and *in vivo* in the mammalian or human body, respectively.

9. The monoclonal antibody according to any one of claims 5 to 8, or active fragment thereof, which antibody or active fragment thereof binds to an Aβ monomer with a binding affinity of at least about 1×10^{-6} M to at least about 1×10^{-8} M.

10. The monoclonal antibody according to any one of claims 5 to 9, or active fragment thereof, which antibody or active fragment thereof binds to an Aβ fiber, fibril or filament with a binding affinity of at least about 1×10^{-7} M to at least about 1×10^{-9} M.

11. The monoclonal antibody according to any one of claims 5 to 10, or active fragment thereof, which antibody or active fragment thereof has a high binding sensitivity to amyloid peptide $A\beta_{1-42}$ and is capable of detecting $A\beta_{1-42}$ fibers in an amount of up to 0.01 µg of $A\beta_{1-42}$ fibers.

12. The monoclonal antibody of claim 5, or active fragment thereof, wherein said antibody or active fragment thereof recognizes and binds to a conformational discontinuous epitope comprising at least two distinct binding sites on β-amyloid wherein said at least two distinct binding sites comprise at least one amino acid residue and at least two consecutive amino acid residues, respectively, predominantly involved in the binding of the antibody or active fragment thereof, wherein the at least one residue constituting the first distinct binding site is Leu and the at least two consecutive amino acid residues, constituting the second distinct binding site, are –Phe-Phe- embedded within the following core sequence:

– Xaa_1 – Xaa_2 – Xaa_3 – Leu -Xaa_4 – Phe – Phe – Xaa_5 – Xaa_6 – Xaa_7 –

wherein

Xaa_1 is an amino acid residue selected from the group comprising His, Asn, Gln, Lys, and Arg;

Xaa_2 is an amino acid residue selected from the group comprising Asn and Gln;

Xaa_3 is an amino acid residue selected from the group comprising Lys, His, Asn, Gln and Arg;

Xaa_4 is an amino acid residue selected from the group comprising Ala, Val, Leu, norleucine, Met, Phe, and Ile;

Xaa_5 is an amino acid residue selected from the group comprising Ala, Val, Leu, Ser and Ile;

Xaa_6 is an amino acid residue selected from the group comprising Glu and Asp; and

Xaa_7 is an amino acid residue selected from the group comprising Glu and Asp.

13. The monoclonal antibody of claim 5, or active fragment thereof, wherein said antibody or active fragment thereof recognizes and binds to a conformational discontinuous epitope comprising at least two distinct binding sites on β-amyloid wherein said distinct binding sites comprise at least one and at least two consecutive amino acid residues, respectively, predominantly involved in the binding of the antibody or active fragment thereof, wherein the at least one and the at least two consecutive amino acids, which are separated by one amino acid residue not involved in antibody or active fragment thereof binding or to a significantly smaller extent as compared to the amino acid residues predominantly involved in the binding of the antibody or active fragment thereof, are -His- and –Lys-Leu-, respectively, embedded within the following core sequence:

– His – Xaa_2 – Lys – Leu – Xaa_3– Xaa_4– Xaa_5–Xaa_6 – Xaa_7 – Xaa_8 –

wherein

Xaa_2 is an amino acid residue selected from the group comprising Asn and Gln;

Xaa_3 is an amino acid residue selected from the group comprising Ala, Val, Leu, norleucine, Met, Phe, and Ile;

Xaa_4 is an amino acid residue selected from the group comprising Ala, Val, Leu, norleucine, Met, Phe, and Ile;

Xaa_5 is an amino acid residue selected from the group comprising Ala, Val, Leu, norleucine, Met, Phe, and Ile;

Xaa_6 is an amino acid residue selected from the group comprising Ala, Val, Leu, Ser and Ile;

Xaa_7 is an amino acid residue selected from the group comprising Glu and Asp; and

Xaa_8 is an amino acid residue selected from the group comprising Glu and Asp;

and wherein said amino acid residues Xaa_2, Xaa_3, Xaa_6, Xaa_7, and Xaa_8, are not involved in antibody or active fragment thereof binding or to a significantly smaller extent as compared to the –His- and the –Lys-Leu- binding site.

14. The monoclonal antibody of claim 5, or active fragment thereof, wherein said antibody or active fragment thereof recognizes and binds to a conformational discontinuous epitope comprising at least two distinct binding sites on β-amyloid wherein said distinct binding sites comprise at least one and at least two consecutive amino acid residues, respectively, predominantly involved in the binding of the antibody or active fragment thereof, wherein the at least two consecutive amino acid residues representing a first binding site are –Phe-Phe- and the at least one amino acid residue is –His- embedded within the following core sequence:

$– Xaa_1 – His – Xaa_3 – Xaa_4 – Xaa_5 – Xaa_6 – Phe – Phe – Xaa_7 – Xaa_8 – Xaa_9$

wherein

Xaa_1 is an amino acid residue selected from the group comprising His, Asn, Gln, Lys and Arg;

Xaa_3 is an amino acid residue selected from the group comprising Asn and Gln;

Xaa_4 is an amino acid residue selected from the group comprising His, Asn, Gln, Lys and Arg;

Xaa_5 is an amino acid residue selected from the group comprising Ala, Val, Leu, Ser and Ile;

Xaa_6 is an amino acid residue selected from the group comprising Ala, Val, Leu and Ile;

Xaa_7 is an amino acid residue selected from the group comprising Ala, Val, Leu and Ile;

Xaa_8 is an amino acid residue selected from the group comprising Glu and Asp; and

Xaa_9 is an amino acid residue selected from the group comprising Glu and Asp;

and wherein said amino acid residues Xaa_1, Xaa_3, Xaa_6, Xaa_7, Xaa_8 and Xaa_9, are not involved in antibody or active fragment thereof binding or to a significantly smaller extent as compared to the His and the –Phe-Phe- binding site.

15. The monoclonal antibody of claim 5, or active fragment thereof, wherein said antibody or active fragment thereof recognizes and binds to a conformational discontinuous epitope comprising at least two distinct binding sites on β-amyloid wherein said distinct binding sites comprise at least two consecutive amino acid residues, respectively, predominantly involved in the binding of the antibody or active fragment thereof, wherein the first of the at least two consecutive amino acid residues predominantly involved in the binding of the antibody or active fragment thereof are –Lys- and –Leu-, and the second of the at least two consecutive amino acid residues are –Phe-Phe- embedded within the following core sequence:

$– Xaa_1 – Xaa_2 –$ Lys – Leu $– Xaa_4 –$ Phe – Phe $– Xaa_5 – Xaa_6 – Xaa_7 –$

wherein

Xaa_1 is an amino acid residue selected from the group comprising His, Asn, Gln, Lys, and Arg;

Xaa_2 is an amino acid residue selected from the group comprising Asn and Gln;

Xaa_4 is an amino acid residue selected from the group comprising Ala, Val, Leu, norleucine, Met, Phe, and Ile;

Xaa_5 is an amino acid residue selected from the group comprising Ala, Val, Leu, Ser and Ile;

Xaa_6 is an amino acid residue selected from the group comprising Glu and Asp; and

Xaa_7 is an amino acid residue selected from the group comprising Glu and Asp;

and wherein said amino acid residues Xaa_2, Xaa_4, Xaa_5, Xaa_6, and Xaa_7 are not involved in antibody or active fragment thereof binding or to a significantly smaller extent as compared to the –Lys-Leu and the –Phe-Phe- binding site.

16. The monoclonal antibody of claim 5, or active fragment thereof, wherein said antibody or active fragment thereof recognizes and binds to a conformational discontinuous epitope comprising at least three distinct binding sites on β-amyloid,

wherein said distinct binding sites comprise at least one and at least two consecutive amino acid residues, respectively, predominantly involved in the binding of the antibody or active fragment thereof, wherein the first of the at least two consecutive amino acid residues predominantly involved in the binding of the antibody or active fragment thereof are – Lys-Leu-, and the second of the at least two consecutive amino acid residues are –Phe-Phe-, and the third at least one amino residue is -His- embedded within the following core sequence:

– His – Xaa_2 – Lys – Leu – Xaa_4 – Phe – Phe – Xaa_5 – Xaa_6 – Xaa_7 –

wherein

Xaa_2 is an amino acid residue selected from the group comprising Asn and Gln;

Xaa_4 is an amino acid residue selected from the group comprising Ala, Val, Leu, norleucine, Met, Phe, and Ile;

Xaa_5 is an amino acid residue selected from the group comprising Ala, Val, Leu, Ser and Ile;

Xaa_6 is an amino acid residue selected from the group comprising Glu and Asp; and

Xaa_7 is an amino acid residue selected from the group comprising Glu and Asp,

and wherein said amino acid residues Xaa_2, Xaa_4, Xaa_5, Xaa_6, and Xaa_7 are not involved in antibody or active fragment thereof binding or to a significantly smaller extent as compared to the –His-, the -Lys-Leu, and the –Phe-Phe- binding site.

17. The monoclonal antibody of claim 5, or active fragment thereof, wherein said antibody or active fragment thereof recognizes and binds to a conformational discontinuous epitope comprising at least three distinct binding sites on β-amyloid wherein said distinct binding sites comprise at least one and at least two consecutive amino acid residues, respectively, predominantly involved in the binding of the antibody or active fragment thereof, wherein the first of the at least two consecutive amino acid residues predominantly involved in the binding of the antibody or active fragment thereof are –Lys-Leu-, and the second of the at least two consecutive amino acid residues are –Phe-Phe-, and the third at least one amino residue is -Asp- embedded within the following core sequence:

– Xaa_1 – Xaa_2 – Lys – Leu – Xaa_4 – Phe – Phe – Xaa_5 – Xaa_6– Asp –

wherein

Xaa_1 is an amino acid residue selected from the group comprising His, Asn, Gln, Lys, and Arg;

Xaa_2 is an amino acid residue selected from the group comprising Asn and Gln;

Xaa_4 is an amino acid residue selected from the group comprising Ala, Val, Leu, norleucine, Met, Phe, and Ile;

Xaa_5 is an amino acid residue selected from the group comprising Ala, Val, Leu, Ser and Ile; and

Xaa_6 is an amino acid residue selected from the group comprising Glu and Asp,

and wherein said amino acid residues Xaa_2, Xaa_4, Xaa_5, and Xaa_6 are not involved in antibody or active fragment thereof binding or to a significantly smaller extent as compared to the – Asp-, the -Lys-Leu, and the – Phe-Phe- binding site.

18. The monoclonal antibody of claim 5, or active fragment thereof, wherein said antibody or active fragment thereof recognizes and binds to a conformational discontinuous epitope comprising 4 distinct binding sites on β-amyloid wherein said 4 distinct binding sites comprise one amino acid residue and two consecutive amino acid residues, respectively, which residues are predominantly involved in the binding of the antibody or active fragment thereof, wherein said 4 distinct binding sites are located in close proximity to each other on the antigen, separated by at least one amino acid residue not involved in antibody or active fragment thereof binding or to a significantly smaller extent as compared to said one amino acid residue and said two consecutive amino acid residues of the 4 distinct binding sites thus forming a conformational discontinuous epitope, wherein the first of the two consecutive amino acid residues predominantly involved in the binding of the antibody or active fragment thereof are –Lys-Leu-, and the second of the at least two consecutive amino acid residues are –Phe-Phe-, the first of the single amino residues is -His- and the second of the single amino residues is -Asp- embedded within the following core sequence:

- His – Xaa_2 – Lys – Leu – Xaa_4 – Phe – Phe – Xaa_5 – Xaa_6 – Asp –

wherein

Xaa_2 is an amino acid residue selected from the group comprising Asn and Gln;

Xaa_4 is an amino acid residue selected from the group comprising Ala, Val, Leu, norleucine, Met, Phe, and Ile;

Xaa_5 is an amino acid residue selected from the group comprising Ala, Val, Leu, Ser and Ile; and

Xaa_6 is an amino acid residue selected from the group comprising Glu and Asp,

and wherein said amino acid residues Xaa_2, Xaa_4, Xaa_5, and Xaa_6, are not involved in antibody or active fragment thereof binding or to a significantly smaller extent as compared to the – His-, – Asp-, the – Lys-Leu, and the –Phe-Phe- binding site.

19. The monoclonal antibody according to any one of claims 12 to 18, or active fragment thereof, wherein said consecutive amino acid residues, particularly –Lys-Leu- at position 16 and 17 and –Phe-Phe – at position 19 and 20, which are predominantly involved in the binding of the β-amyloid protein, are embedded into the following core region of the amyloid β peptide:

Val	His	His	Gln	Lys	Leu	Val	Phe	Phe	Ala	Glu	Asp
12	13	14	15	16	17	18	19	20	21	22	23

20. An antibody or active fragment thereof, wherein said antibody or active fragment thereof binds to β-amyloid and comprises:

(1) the Heavy Chain Variable Region (HCVR) of SEQ ID NO: 8 and the Light Chain Variable Region (LCVR) of SEQ ID NO: 7; or

(2) (i) a Light Chain Variable Region (LCVR) wherein the Light Chain Variable Region (LCVR) has an amino acid sequence that is 97%, 98% or 99% identical to the sequence given in SEQ ID NO: 7, and

(ii) a Heavy Chain Variable Region (HCVR) wherein the Heavy Chain Variable Region (HCVR) has an amino acid sequence that is 92%, 93%, 94%, 95%, 96%, 97%, 98%, or 99% identical to the sequence given in SEQ ID NO: 8; or

(3) a Light Chain Variable Region (LCVR) and a Heavy Chain Variable Region (HCVR) that together have an amino acid sequence that is 94%, 95%, 96%, 97%, 98% or 99% identical to the sequence given in SEQ ID NOs: 7 and 8; or

(4) the complementarity determining regions (CDRs) of the Light Chain Variable Region (LCVR) of SEQ ID NO: 7 and the CDRs of the Heavy Chain Variable Region (HCVR) of SEQ ID NO: 8; or

(5) the epitope-binding fragments of the Light Chain Variable Region (LCVR) of SEQ ID NO: 7 and the Heavy Chain Variable Region (HCVR) of SEQ ID NO: 8; or

(6) (i) a Light Chain Variable Region (LCVR) comprising a CDR1 having the amino acid sequence of SEQ ID NO: 23; a CDR2 having the amino acid sequence of SEQ ID NO: 24, and a CDR3 having the amino acid sequence of SEQ ID NO: 25; and (ii) a Heavy Chain Variable Region (HCVR) comprising a CDR1 having the amino acid sequence of SEQ ID NO: 26; a CDR2 having the amino acid sequence of SEQ ID NO: 27, and a CDR3 having the amino acid sequence of SEQ ID NO: 28.

21. The antibody or active fragment thereof of claim 20, wherein said antibody or active fragment thereof comprises the Heavy Chain Variable Region (HCVR) of SEQ ID NO: 8 and the Light Chain Variable Region (LCVR) of SEQ ID NO: 7.

22. The antibody or active fragment thereof of claim 20, wherein said antibody or active fragment thereof comprises a Light Chain Variable Region (LCVR) and a Heavy Chain Variable Region (HCVR), wherein the LCVR has an amino acid sequence that is 97%, 98% or 99% identical to the sequence given in SEQ ID NO: 7, and

wherein the HCVR has an amino acid sequence that is 92%, 93%, 94%, 95%, 96%, 97%, 98%, or 99% identical to the sequence given in SEQ ID NO: 8.

23. The antibody or active fragment thereof of claim 20, wherein said antibody or active fragment thereof comprises a Light Chain Variable Region (LCVR) and a Heavy Chain Variable Region (HCVR) that together have an amino acid sequence that is 94%, 95%, 96%, 97%, 98% or 99% identical to the sequence given in SEQ ID NOs: 7 and 8.

24. The antibody or active fragment thereof of claim 20, wherein said antibody or active fragment thereof comprises the CDRs of the Light Chain Variable Region (LCVR) of SEQ ID NO: 7 and the CDRs of the Heavy Chain Variable Region (HCVR) of SEQ ID NO: 8.

25. The antibody or active fragment thereof of claim 20, wherein said antibody or active fragment thereof comprises the epitope-binding fragments of the Light Chain

Variable Region (LCVR) of SEQ ID NO: 7 and the Heavy Chain Variable Region (HCVR) of SEQ ID NO: 8.

26. The antibody or active fragment thereof of claim 20, wherein said antibody or active fragment thereof comprises (i) a Light Chain Variable Region (LCVR) comprising a CDR1 having the amino acid sequence of SEQ ID NO: 23; a CDR2 having the amino acid sequence of SEQ ID NO: 24, and a CDR3 having the amino acid sequence of SEQ ID NO: 25; and (ii) a Heavy Chain Variable Region (HCVR) comprising a CDR1 having the amino acid sequence of SEQ ID NO: 26; a CDR2 having the amino acid sequence of SEQ ID NO: 27, and a CDR3 having the amino acid sequence of SEQ ID NO: 28.

27. A monoclonal antibody produced by:

(i) hybridoma cell line FP 12H3-C2, deposited on December 01, 2005 as DSM ACC2750, or an active fragment thereof or a functional equivalent thereof; or

(ii) hybridoma cell line FP 12H3-G2, deposited on December 01, 2005 as DSM ACC2751, or an active fragment thereof or a functional equivalent thereof.

28. The monoclonal antibody of claim 27, produced by hybridoma cell line FP 12H3-C2, deposited on December 01, 2005 as DSM ACC2750, or an active fragment thereof or a functional equivalent thereof.

29. The monoclonal antibody of claim 28, produced by hybridoma cell line FP 12H3-C2, deposited on December 01, 2005 as DSM ACC2750, or an active fragment thereof.

30. The monoclonal antibody of claim 27, produced by hybridoma cell line FP 12H3-G2, deposited on December 01, 2005 as DSM ACC2751, or an active fragment thereof or a functional equivalent thereof.

31. The monoclonal antibody of claim 30, produced by hybridoma cell line FP 12H3-G2, deposited on December 01, 2005 as DSM ACC2751, or an active fragment thereof.

32. The monoclonal antibody according to any one of claims 5 to 19 or 27 to 31, or active fragment thereof, which antibody has been raised against a supramolecular antigenic construct comprising an antigenic peptide corresponding to the amino acid sequence of β-amyloid peptide $A\beta_{1-16}$ modified with polyethylene glycol (PEG)

or a combination of both a hydrophobic and a hydrophilic moiety, wherein said PEG, hydrophobic moiety and hydrophilic moiety, respectively, is covalently bound to each terminus through an amino acid or amino acid analogue capable of serving as a linker molecule.

33. An antibody or active fragment thereof, wherein said antibody or active fragment thereof binds to β-amyloid and comprises:

(1) the Light Chain Variable Region (LCVR) complementarity determining regions (CDRs) and the Heavy Chain Variable Region (CDRs) of the antibody produced by hybridoma cell line FP 12H3-C2, deposited on December 1, 2005 as DSM ACC2750; or

(2) a Light Chain Variable Region (LCVR) and a Heavy Chain Variable Region (HCVR) having the sequences of the LCVR and HCVR, respectively, of the antibody produced by hybridoma cell line FP 12H3-C2, deposited on December 1, 2005 as DSM ACC2750; or

(3) the epitope-binding fragments of the Light Chain Variable Region (LCVR) and the Heavy Chain Variable Region (HCVR) of the antibody produced by hybridoma cell line FP 12H3-C2, deposited on December 1, 2005 as DSM ACC2750.

34. The antibody or active fragment thereof of claim 33, wherein said antibody or active fragment thereof comprises the Light Chain Variable Region (LCVR) CDRs and the Heavy Chain Variable Region CDRs of the antibody produced by hybridoma cell line FP 12H3-C2, deposited on December 1, 2005 as DSM ACC2750.

35. The antibody or active fragment thereof of claim 33, wherein said antibody or active fragment thereof comprises a Light Chain Variable Region (LCVR) and a Heavy Chain Variable Region (HCVR) having the sequences of the LCVR and HCVR, respectively, of the antibody produced by hybridoma cell line FP 12H3-C2, deposited on December 1, 2005 as DSM ACC2750.

36. The antibody or active fragment thereof of claim 33, wherein said antibody or active fragment thereof comprises the epitope-binding fragments of the Light Chain Variable Region (LCVR) and the Heavy Chain Variable Region (HCVR) of the antibody produced by hybridoma cell line FP 12H3-C2, deposited on December 1, 2005 as DSM ACC2750.

37. The antibody of any one of claims 20 to 26 or 33 to 36, wherein the antibody is isolated or engineered.

38. The antibody or active fragment thereof according to any one of claims 1 to 4, 20 to 26 or 33 to 36, wherein the antibody is a monoclonal antibody.

39. The antibody or active fragment thereof according to any one of claims 1 to 19, 24 to 26, 34 or 36, wherein the antibody is a human or humanized antibody, or active fragment thereof.

40. The antibody or active fragment thereof according to any one of claims 1 to 36, wherein the antibody is a chimeric antibody, or active fragment thereof.

41. A polynucleotide comprising a nucleotide sequence encoding an antibody or active fragment thereof according to any claims 1 to 40.

42. A polynucleotide according to claim 41, wherein the nucleotide sequence comprises:

a) the light chain variable region nucleotide sequence of SEQ ID NO: 9;
b) a nucleotide sequence that differs from the nucleotide sequence of (a) in codon sequence due to the degeneracy of the genetic code; or
c) a nucleotide sequence with the complementary sequence to (a) or (b).

43. A polynucleotide according to claim 41, wherein the nucleotide sequence comprises:

a) the light chain nucleotide sequence of SEQ ID NO:10;
b) a nucleotide sequence that differs from the nucleotide sequence of (a) in codon sequence due to the degeneracy of the genetic code; or
c) a nucleotide sequence with the complementary sequence to (a) or (b).

44. A polynucleotide according to claim 41, wherein the nucleotide sequence comprises:

a) the heavy chain variable region nucleotide sequence of SEQ ID NO: 11;
b) a nucleotide sequence that differs from the nucleotide sequence of (a) in codon sequence due to the degeneracy of the genetic code; or
c) a nucleotide sequence with the complementary sequence to (a) or (b).

45. A polynucleotide according to claim 41, wherein the nucleotide sequence comprises:

a) the heavy chain nucleotide sequence of SEQ ID NO: 12;

b) a nucleotide sequence that differs from the nucleotide sequence of (a) in codon sequence due to the degeneracy of the genetic code; or

c) a nucleotide sequence with the complementary sequence to (a) or (b).

46. A composition comprising the antibody or active fragment thereof according to any one of claims 1 to 40 in a therapeutically effective amount.

47. A composition according to claim 46 which is a pharmaceutical composition optionally further comprising a pharmaceutically acceptable carrier.

48. The composition of claim 46 or 47, for use in the treatment of Alzheimer's disease.

49. A mixture comprising the antibody or active fragment thereof according to any one of claims 1 to 40 in a therapeutically effective amount and a further biologically active substance and/or a pharmaceutically acceptable carrier and/or a diluent and/or an excipient.

50. The mixture according to claim 49, wherein the biologically active substance comprises at least one compound selected from the group consisting of metal chelators, pirenzepin and metabolites, 3-amino-1-propanesulfonic acid (3APS), 1,3-propanedisulfonate (1,3PDS), tau proteins, neurotransmitter, or cholinesterase inhibitors (ChEIs), and nutritive supplements, together with an antibody according to any one of claims 1 to 37 and, optionally, a pharmaceutically acceptable carrier and/or a diluent and/or an excipient.

51. The mixture according to claim 50, wherein the compound is a cholinesterase inhibitor (ChEIs).

52. The mixture according to claim 50, wherein the compound is selected from the group consisting of tacrine, rivastigmine, donepezil, galantamine, niacin and memantine.

53. The mixture according to any one of claims 49 to 52 comprising the antibody or active fragment thereof and the biologically active substance in a therapeutically effective amount.

54. A composition according to anyone of claims 46 to 48 for use in decreasing the total amount of soluble Aβ in the brain of a mammal suffering from amyloidosis.

55. A hybridoma cell line that produces an antibody according to any one of claims 1 to 40, or an active fragment thereof.

56. Hybridoma cell line FP 12H3-C2, deposited on December 01, 2005 as DSM ACC2750.

57. Hybridoma cell line FP 12H3-G2, deposited on December 01, 2005 as DSM ACC2751.

58. A method for monitoring minimal residual disease in a patient following treatment with an antibody or active fragment thereof according to any one of claims 1 to 40 or a composition according to any one of claims 46 to 48, wherein said method comprises:

    (a) bringing a patient sample suspected to contain amyloid antigen into contact with an antibody or active fragment thereof according to any one of claims 1 to 40;
    (b) allowing the antibody or active fragment thereof to bind to the amyloid antigen to form an immunological complex;
    (c) detecting the formation of the immunological complex;
    (d) correlating the presence or absence of the immunological complex with the presence or absence of amyloid antigen in the sample; and
    (e) comparing the amount of said immunological complex to a normal control value,

    wherein an increase in the amount of said immunological complex compared to a normal control value indicates that said patient still suffers from a minimal residual disease.

59. A method for predicting responsiveness of a patient being treated with an antibody or active fragment thereof according to any one of claims 1 to 40 or a composition according to any one of claims 46 to 48 comprising:

    (a) bringing a patient sample suspected to contain amyloid antigen into contact with an antibody or active fragment thereof according to any one of claims 1 to 40;
    (b) allowing the antibody or active fragment thereof to bind to the amyloid antigen to form an immunological complex;
    (c) detecting the formation of the immunological complex;

(d) correlating the presence or absence of the immunological complex with the presence or absence of amyloid antigen in the sample; and

(e) comparing the amount of said immunological complex before and after onset of the treatment,

wherein a decrease in the amount of said immunological complex indicates that said patient has a high potential of being responsive to the treatment.

60. Use of the antibody or active fragment thereof according to any one of claims 1 to 40 in the preparation of a medicament for decreasing the total amount of soluble Aβ in the brain of an animal suffering from amyloidosis.

61. A cell line that produces an antibody or active fragment thereof according to any one of claims 1 to 40.

62. A cell line comprising the polynucleotide of any one of claims 41 to 45.

63. A method of producing an antibody or an active fragment thereof, comprising the step of culturing the cell line of any one of claims 55 to 57, 61 or 62.

64. A method of producing antibody or an active fragment thereof, comprising the step of expressing the polynucleotide of any one of claims 41 to 45.

65. The composition according to claim 54, wherein the mammal is a human.

66. The use according to claim 60, wherein the animal is a human.