WHAT IS CLAIMED IS:

1. A monoclonal antibody comprising a variable heavy and light chain, wherein:

the three CDRs of said variable heavy chain are SEQ ID NO:5, SEQ ID NO:6 and SEQ ID NO:7, and

the three CDRs of said variable light chain are SEQ ID NO:8, SEQ ID NO:9 and SEQ ID NO:10,

wherein the antibody binds with greater specificity to an amyloid beta protein globulomer than to an amyloid beta protein monomer.

2. The monoclonal antibody of claim 1, which is a humanized antibody.

3. The monoclonal antibody of claim 1, wherein the variable heavy chain comprises SEQ ID NO:3 and the variable light chain comprises SEQ ID NO:4.

4. The humanized antibody of claim 2, wherein all or substantially all of the framework regions correspond to those of a human immunoglobulin consensus sequence.

5. A hybridoma having American Type Culture Collection designation number PTA-7238.

6. A monoclonal antibody (8F5) produced by said hybridoma of claim 5.

7. The antibody of any one of claims 1-4, or 6 for use in treating or preventing Alzheimer's Disease.

8. A pharmaceutical composition comprising an antibody of any one of claims 1-4, or 6.

9. A vaccine comprising an antibody of any one of claims 1-4, or 6 and a pharmaceutically acceptable adjuvant.

10. The use of an antibody of any one of claims 1-4, or 6 in the manufacture of a medicament for treating or preventing Alzheimer's Disease.

11. A method of diagnosing Alzheimer's Disease in a patient suspected of having this disease comprising the steps of:

(a) contacting a biological sample from said patient with an antibody of any one of claims 1-4, or 6 for a time and under conditions sufficient for formation of antigen/antibody complexes; and

(b) detecting presence of said antigen/antibody complexes in said sample, presence of said complexes indicating a diagnosis of Alzheimer's Disease in said patient.

12. A method of diagnosing Alzheimer's Disease in a patient suspected of having this disease comprising the steps of:

(a) contacting a biological sample from said patient with an antigen that is an amyloid beta (Aβ) protein globulomer for a time and under conditions sufficient for the formation of antigen/antibody complexes;

(b) adding a conjugate to the resulting antibody/antigen complexes for a time and under conditions sufficient to allow said conjugate to bind to the bound antibody, wherein said conjugate comprises an antibody of any one of claims 1-4, or 6; and

(c) detecting presence of said antigen/antibody complexes in said sample, presence of said complexes indicating a diagnosis of Alzheimer's Disease in said patient.

13. A method of diagnosing Alzheimer's Disease in a patient suspected of having this disease comprising the steps of:

(a) contacting a biological sample from said patient with anti-antibody,

wherein said anti-antibody is specific for said antibody of any one of claims 1-4, or 6 for a time and under conditions sufficient to allow for formation of anti-antibody/antibody complexes, said complexes containing antibody present in said biological sample;

(b) adding a conjugate to resulting anti-antibody/antibody complexes for a time and under conditions sufficient to allow said conjugate to bind to bound antibody, wherein said conjugate comprises an antigen, which binds to a

signal generating compound capable of generating a detectable signal; and

(c) detecting a signal generated by said signal generating compound, said signal indicating a diagnosis of Alzheimer's Disease in said patient.

14. A method of identifying compounds suitable for active immunization of a patient predicted to develop Alzheimer's Disease comprising the steps of:

(a) exposing one or more compounds of interest to an antibody of any one of claims 1-4, or 6 for a time and under conditions sufficient for said one or more compounds to bind to said antibody of any one of claims 1-4, or 6; and

(b) identifying those compounds which bind to said antibody of any one of claims 1-4, or 6, said identified compounds to be used in active immunization in a patient predicted to develop Alzheimer's Disease.

15. A kit comprising:

(a) an antibody of any one of claims 1-4, or 6 and

(b) a conjugate comprising a second Aβ protein globulomer-specific antibody attached to a signal-generating compound capable of generating a detectable signal, wherein said second antibody of said conjugate is different from said antibody of any one of claims 1-4, or 6.

16. A kit comprising:

(a) an anti-antibody to an antibody of any one of claims 1-4, or 6 and

(b) a conjugate comprising an Aβ protein globulomer attached to a signal-generating compound capable of generating a detectable signal.

WHAT IS CLAIMED IS:

1. An isolated antibody that binds with greater specificity to an amyloid beta (Aβ) protein globulomer than to an amyloid beta protein monomer.
2. The isolated antibody of claim 1 wherein said antibody is monoclonal.
3. The isolated antibody of claim 2 wherein the ratio of binding specificity to said globulomer and said monomer is at least 1.4.
4. The isolated antibody of claim 3 wherein said ratio is 1.4 to 16.9.
5. The isolated antibody of claim 4 wherein said amyloid beta protein monomer is selected from the group consisting of Aβ(1-42) monomer and Aβ(1-40) monomer.
6. The isolated antibody of claim 5 wherein said monoclonal antibody is produced by a hybridoma having American Type Culture Collection designation number PTA-7238 or PTA-7407.
7. A hybridoma having American Type Culture Collection designation number PTA-7238.
8. A monoclonal antibody (8F5) produced by said hybridoma of claim 7.
9. A monoclonal antibody comprising a variable heavy chain encoded by SEQ ID NO:1.
10. The monoclonal antibody of claim 9 wherein said antibody is human or humanized.
11. A monoclonal antibody comprising a variable light chain encoded by SEQ ID NO:2.
12. The monoclonal antibody of claim 11 wherein said antibody is human or humanized.
13. The monoclonal antibody of claim 11 further comprising a variable light heavy chain encoded by SEQ ID NO:1.

14. The monoclonal antibody of claim 13 wherein said antibody is human or humanized.

15. A monoclonal antibody comprising SEQ ID NO:3.

16. The monoclonal antibody of claim 15 wherein said antibody is human or humanized.

17. A monoclonal antibody comprising SEQ ID NO:4.

18. The monoclonal antibody of claim 17 wherein said antibody is human or humanized.

19. The monoclonal antibody of claim 17 further comprising SEQ ID NO:3.

20. The monoclonal antibody of claim 19 wherein said antibody is human or humanized.

21. An isolated antibody that binds with greater specificity to an amyloid beta protein globulomer than to an amyloid beta protein fibril.

22. The isolated antibody of claim 22 wherein said antibody is monoclonal.

23. The isolated antibody of claim 23 wherein said monoclonal antibody is produced by a hybridoma having American Type Culture Collection designation number PTA-7238 or PTA-7407.

24. A hybridoma having American Type Culture Collection designation number PTA-7407.

25. A monoclonal antibody (8C5) produced by said hybridoma of claim 24.

26. A monoclonal antibody comprising a variable heavy chain encoded by SEQ ID NO:11.

27. The monoclonal antibody of claim 26 wherein said antibody is human or humanized.

28. A monoclonal antibody comprising a variable light chain encoded by SEQ ID NO:12.

29. The monoclonal antibody of claim 28 wherein said antibody is human or humanized.

30. The monoclonal antibody of claim 28 further comprising a variable light chain encoded by SEQ ID NO:11.

31. The monoclonal antibody of claim 30 wherein said antibody is human or humanized.

32. A monoclonal antibody comprising SEQ ID NO:19.

33. The monoclonal antibody of claim 32 wherein said antibody is human or humanized.

34. A monoclonal antibody comprising SEQ ID NO:20.

35. The monoclonal antibody of claim 34 wherein said antibody is human or humanized.

36. A monoclonal antibody comprising a variable heavy chain, wherein said variable heavy chain comprises at least one complementarity determining region (CDR) selected from the group consisting of SEQ ID NO:13, SEQ ID NO:14 and SEQ ID NO:15.

37. A monoclonal antibody comprising a variable light chain, wherein said variable light chain comprises at least one CDR selected from the group consisting of SEQ ID NO:16, SEQ ID NO:17 and SEQ ID NO:18.

38. The monoclonal antibody of claim 37 further comprising a variable heavy chain, wherein said variable heavy chain comprises at least one CDR selected from the group consisting of SEQ ID NO:13, SEQ ID NO:14 and SEQ ID NO:15.

39. A monoclonal antibody comprising a variable heavy chain, wherein said variable heavy chain comprises at least one complementarity determining region (CDR) selected from the group consisting of SEQ ID NO:5, SEQ ID NO:6 and SEQ ID NO:7.

40. A monoclonal antibody comprising a variable light chain, wherein said variable light chain comprises at least one CDR selected from the group consisting of SEQ ID NO:8, SEQ ID NO:9 and SEQ ID NO:10.

41. The monoclonal antibody of claim 40 further comprising a variable heavy chain, wherein said variable heavy chain comprises at least one CDR selected from the group consisting of SEQ ID NO:5, SEQ ID NO:6 and SEQ ID NO:7.

42. A method of treating or preventing Alzheimer's Disease in a patient in need of said treatment or prevention comprising administering said isolated antibody of claim 1 or claim 6 to said patient in an amount sufficient to effect said treatment or prevention.

43. The method of claim 42 wherein said isolated antibody is administered *via* a route selected from the group consisting of intramuscular administration, intravenous administration and subcutaneous administration.

44. A method of diagnosing Alzheimer's Disease in a patient suspected of having this disease comprising the steps of:

a. isolating a biological sample from said patient;

b. contacting said biological sample with said isolated antibody of claim 1 or claim 6 for a time and under conditions sufficient for formation of antigen/antibody complexes; and

c. detecting presence of said antigen/antibody complexes in said sample, presence of said complexes indicating a diagnosis of Alzheimer's Disease in said patient.

45. The method of claim 44 wherein said antigen is a globulomer.

46. A method of diagnosing Alzheimer's Disease in a patient suspected of having this disease comprising the steps of:

a. isolating a biological sample from said patient;

b. contacting said biological sample with an antigen for a time and under conditions sufficient for the formation of antibody/antigen complexes;

c. adding a conjugate to the resulting antibody/antigen complexes for a time and under conditions sufficient to allow said conjugate to bind to the bound antibody, wherein said conjugate comprises said isolated antibody of claim 1 or claim 6, attached to a signal generating compound capable of generating a detectable signal; and

d. detecting the presence of an antibody which may be present in said biological sample, by detecting a signal generated by said signal generating compound, said signal indicating a diagnosis of Alzheimer's Disease in said patient.

47. The method of claim 46 wherein said antigen is a globulomer.

48. A method of diagnosing Alzheimer's Disease in a patient suspected of having Alzheimer's Disease comprising the steps of:

a. isolating a biological sample from said patient;

b. contacting said biological sample with anti-antibody, wherein said anti-antibody is specific for said antibody of claim 1 or claim 6, for a time and under conditions sufficient to allow for formation of anti-antibody/antibody complexes, said complexes containing antibody present in said biological sample;

c. adding a conjugate to resulting anti-antibody/antibody complexes for a time and under conditions sufficient to allow said conjugate to bind to bound antibody, wherein said conjugate comprises an antigen, which binds to a signal

generating compound capable of generating a detectable signal; and

d. detecting a signal generated by said signal generating compound, said signal indicating a diagnosis of Alzheimer's Disease in said patient.

49. A composition comprising said isolated antibody of claim 1 or claim 6.

50. A method of preventing or treating Alzheimer's Disease in a patient in need of said prevention or treatment comprising the step of administering said composition of claim 49 to said patient in an amount sufficient to effect said prevention or treatment.

51. A vaccine comprising said isolated antibody of claim 1 or claim 6 and a pharmaceutically acceptable adjuvant.

52. A method of preventing or treating Alzheimer's Disease in a patient in need of said prevention or treatment comprising the step of administering said vaccine of claim 51 to said patient in an amount sufficient to effect said prevention or treatment.

53. A method of identifying compounds suitable for active immunization of a patient predicted to develop Alzheimer's Disease comprising the steps of:

a) exposing one or more compounds of interest to said isolated antibody of claim 1 or claim 6 for a time and under conditions sufficient for said one or more compounds to bind to said isolated antibody of claim 1 or claim 6; and

b) identifying those compounds which bind to said isolated antibody of claim 1 or claim 6, said identified compounds to be used in active immunization in a patient predicated to develop Alzheimer's Disease.

54. A kit comprising: a) said isolated antibody of claim 1 or claim 6 and b) a conjugate comprising an antibody attached to a signal- generating compound, wherein said antibody of said conjugate is different from said isolated antibody.

55. A kit comprising: a) an anti-antibody to said isolated antibody of claim 1 or claim 6 and b) a conjugate comprising an antigen attached to a signal-generating compound.

56. The kit of claim 55 wherein said antigen is a globulomer.