Claims

1. An antibody or antigen binding fragment thereof having affinity against Aβ protofibrils, wherein the antibody or antigen binding fragment thereof has a variable light chain according to SEQ ID NO: 8, wherein

   x_1 (Xaa at position 17 of SEQ ID NO:8) is selected from A, D, E and Q, or a functional analogue thereof;

   x_2 (Xaa at position 79 of SEQ ID NO:8) is selected from R, T, K, A and G, or a functional analogue thereof;

   x_3 (Xaa at position 82 of SEQ ID NO:8) is selected from R, S, C, G and N, or a functional analogue thereof;

   y_1 (Xaa at position 13 of SEQ ID NO:8) is selected from V and A;

   y_2 (Xaa at position 21 of SEQ ID NO:8) is selected from I and V;

   y_3 (Xaa at position 81 of SEQ ID NO:8) is selected from S and Q;

   y_4 (Xaa at position 84 of SEQ ID NO:8) is selected from E and D; and optionally

   a variable heavy chain according to SEQ ID NO: 14, wherein

   z_1 (Xaa at position 37 of SEQ ID NO:14) is selected from V and I;

   z_2 (Xaa at position 38 of SEQ ID NO:14) is selected from R and Q; and

   z_3 (Xaa at position 40 of SEQ ID NO:14) is selected from A, N and T;

   with the exception for the combination x_1=A, x_2=R and x_3=R.

2. The antibody or antigen binding fragment according to claim 1, wherein

   x_1 is selected from A, D, E and Q;

   x_2 is selected from R, T, K, A and G;

   x_3 is selected from R, S, C, G and N;

   y_1 is selected from V and A;

   y_2 is selected from I and V;

   y_3 is selected from S and Q; and

   y_4 is selected from E and D;

   with the exception for the combination x_1=A, x_2=R and x_3=R.

3. The antibody or antigen binding fragment according to claim 1, wherein

   x_1 is D;

   x_2 is T;

x_3 is R;

y_1 is selected from V and A;

y_2 is selected from V and I;

y_3 is selected from Q and S;

y4 is selected from D and E;

z_1 is V;

z_2 is R; and

z_3 is selected from N, T and A;

with exclusion of the combination wherein y_1 is V, y_2 is I, y_3, is S, y4 is E, z_1 is V, z_2 is R and z_3 is A.

4. An antibody or antigen binding fragment thereof, according to claim 1, comprising a variable light chain comprising the amino acid sequence as set out in SEQ ID NO: 9; and a variable heavy chain comprising the amino acid sequence as set out in SEQ ID NO: 15.

5. An antibody or antigen binding fragment thereof, according to claim 1, comprising a variable light chain comprising the amino acid sequence as set out in SEQ ID NO: 10; and a variable heavy chain comprising the amino acid sequence as set out in SEQ ID NO: 15.

6. An antibody or antigen binding fragment thereof, according to claim 1, comprising a variable light chain comprising the amino acid sequence as set out in SEQ ID NO: 11; and a variable heavy chain comprising the amino acid sequence as set out in SEQ ID NO: 15.

7. An antibody or antigen binding fragment thereof, according to claim 1, comprising a variable light chain comprising the amino acid sequence as set out in SEQ ID NO: 12; and a variable heavy chain comprising the amino acid sequence as set out in SEQ ID NO: 15.

8. An antibody or antigen binding fragment thereof, according to claim 1, comprising a variable light chain comprising the amino acid sequence as set out in SEQ ID NO: 9; and a variable heavy chain comprising the amino acid sequence as set out in SEQ ID NO: 16.

9. An antibody or antigen binding fragment thereof, according to claim 1, comprising a variable light chain comprising the amino acid sequence as set out in SEQ ID NO: 10; and a variable heavy chain comprising the amino acid sequence as set out in SEQ ID NO: 16.

10. An antibody or antigen binding fragment thereof, according to claim 1, comprising a variable light chain comprising the amino acid sequence as set out in SEQ ID NO: 11; and a variable heavy chain comprising the amino acid sequence as set out in SEQ ID NO: 16.

11. The antibody or antigen binding fragment according to claim 1, wherein the antibody or the antigen binding fragment comprises an IgG heavy chain constant region.

12. A pharmaceutical composition comprising the antibody or antigen binding fragment according to claim 2, together with a pharmaceutically acceptable excipient and/or diluent.

13. A method for measuring the amount of Aβ protofibrils and/or aggregated Aβ protein in a person, comprising contacting the person's tissue or body fluid, in vivo or in vitro, with the antibody or antigen binding fragment according to claim 2 and measuring the amount of antibody or antigen binding fragment bound to said Aβ protofibrils and/or aggregated Aβ protein.

14. An antibody or antigen binding fragment thereof having affinity against Aβ protofibrils, wherein the antibody or antigen binding fragment thereof comprises a variable light chain comprising the amino acid sequence as set out in SEQ ID NO: 12 and a variable heavy chain comprising the amino acid sequence as set out in SEQ ID NO: 16.

15. The antibody according to claim 14, wherein the antibody or antigen binding fragment thereof comprises an IgG heavy chain constant region.

16. A pharmaceutical composition comprising the antibody or antigen binding fragment thereof according to claim 14, together with a pharmaceutically acceptable excipient and/or diluent.