(18) A monoclonal antibody having a CDR sequence on the H chain represented by SEQ ID NOs: 7 to 13, a CDR sequence on the H chain represented by at least one of SEQ ID NOs: 7 to 13, or an H chain including in the CDR sequence having at least 85% homology with at least one CDR sequence on the H chain represented by SEQ ID NOs: 7 to 13, and/or a CDR sequence on the L chain represented by SEQ ID NOs: 14 to 17, a CDR sequence on the L chain represented by at least one of SEQ ID NOs: 14 to 17, or an L chain including in the CDR sequence having at least 85% homology with at least one CDR sequence on the L chain represented by SEQ ID NOs: 14 to 17.

(19) A monoclonal antibody comprising an H chain variable region represented by any one of SEQ ID NOs: 18 to 24 or an H chain variable region having at least 85% homology with any one of SEQ ID NOs: 18 to 24, and/or an L chain variable region represented by any one of SEQ ID NOs: 25 to 30 or an L chain variable region having at least 85% homology with any one of SEQ ID NOs: 25 to 30.

(20) The monoclonal antibody according to any one of (15) to (19), wherein the antibody is a humanized antibody or chimeric antibody.

(21) A peptide consisting of a sequence of at least 8 contiguous amino acids from among the amino acid sequence consisting of the amino acid residues corresponding to amino acid numbers 410-421 of SEQ ID NO: 1, at least one of the amino acid residues in the peptide being phosphorylated.

(22) The peptide according to (21), wherein at least one of the amino acid residues corresponding to amino acids Ser412, Ser413, Thr414 and Ser416 of SEQ ID NO: 1 is phosphorylated.

(23) The peptide according to (21) or (22), wherein the phosphorylated amino acid residue is the amino acid residue corresponding to Ser413 of SEQ ID NO: 1.

(24) Use of an antibody that specifically binds tau protein that has been phosphorylated on the amino acid

residue present at position 413 of the tau protein represented by SEQ ID NO: 1 with greater affinity than to tau protein that is not phosphorylated at position 413 of the tau protein represented by SEQ ID NO:1, as an active ingredient, in the manufacture of a medicament for preventing or treating tauopathy.

(25) Use of an antibody that specifically binds tau protein that has been phosphorylated on the amino acid residue present at position 413 of the tau protein represented by SEQ ID NO: 1, as an active ingredient, in the manufacture of a medicament for preventing or treating tauopathy, wherein the antibody comprises a heavy chain variable region having three complementary determining regions (CDRs), and a light chain variable region having three CDRs,

wherein the heavy chain variable region has the CDRs set forth in one of (a)-(e) below:

(a) a CDR-H1 sequence represented by SEQ ID NO: 7, a CDR-H2 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 9, and a CDR-H3 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 13,

(b) a CDR-H1 sequence represented by SEQ ID NO: 8, a CDR-H2 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 9, and a CDR-H3 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 13,

(c) a CDR-H1 sequence represented by SEQ ID NO: 7, a CDR-H2 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 10, and a CDR-H3 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 13,

(d) a CDR-H1 sequence represented by SEQ ID NO: 8, a CDR-H2 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 12, and a CDR-H3 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 13, and

(e) a CDR-H1 sequence represented by SEQ ID NO: 7, a CDR-H2 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 11, and a CDR-H3 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 13; and

wherein the light chain variable region has the CDRs set forth in one of (f)-(g) below:

(f) a CDR-L1 having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 14, a CDR-L2 sequence represented by SEQ ID NO: 16, and a CDR-L3 sequence represented by SEQ ID NO: 17, and

(g) a CDR-L1 having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 14, a CDR-L2 sequence represented by SEQ ID NO: 16, and a CDR-L3 sequence represented by SEQ ID NO: 17;

wherein the antibody has affinity represented by an equilibrium dissociation constant of 1.86×10^{-8} M or less.

(26) Use of an antibody that specifically binds tau protein that has been phosphorylated on the amino acid residue present at position 413 of the tau protein represented by SEQ ID NO: 1, as an active ingredient, in the manufacture of a medicament for preventing or treating tauopathy,

wherein the antibody comprises:

a CDR-H1 sequence selected from a CDR-H1 sequence represented by SEQ ID NO: 8, and a CDR-H1

sequence in which Leu at the fourth position from the N-terminus of the sequence represented by SEQ ID NO: 8 has been replaced with Met,

a CDR-H2 sequence selected from a CDR-H2 sequence represented by SEQ ID NO: 9, and a CDR-H2 sequence having one or more substitutions: Thr at the sixth position from the N-terminus of the sequence represented by SEQ ID NO: 9 has been replaced with Ser or Ala, Asn at the eighth position from the N-terminus of the sequence represented by SEQ ID NO: 9 has been replaced with His, Ala at the tenth position from the N-terminus of the sequence represented by SEQ ID NO: 9 has been replaced with Val, and Asp at the 19th position from the N-terminus of the sequence represented by SEQ ID NO: 9 has been replaced with Gly,

a CDR-H3 sequence represented by SEQ ID NO: 13,

a CDR-L1 sequence selected from a a CDR-L1 sequence represented by SEQ ID NO: 14, and a CDR-L1 sequence in which Ser at the nineth position from the N-terminus of the sequence represented by SEQ ID NO: 14 has been replaced with Thr,

a CDR-L2 sequence represented by SEQ ID NO: 16, as well as

a CDR-L3 sequence represented by SEQ ID NO: 17,

wherein the antibody has affinity represented by an equilibrium dissociation constant of 1.86×10^{-8} M or less.

(27) Use of an antibody that specifically binds tau protein that has been phosphorylated on the amino acid residue present at position 413 of the tau protein represented by SEQ ID NO: 1 with greater affinity than to tau protein that is not phosphorylated at position 413 of the tau protein represented by SEQ ID NO:1, as an active ingredient, in the manufacture of a medicament for preventing or treating tauopathy,

wherein the antibody is an antibody comprising an H

chain variable region selected from an H chain variable region represented by any one of SEQ ID NOs: 18 to 24, and an H chain variable region having at least 90% homology with any one of SEQ ID NOs: 18 to 24, as well as an L chain variable region selected from an L chain variable region represented by any one of SEQ ID NOs: 25 to 30, and an L chain variable region having at least 90% homology with any one of SEQ ID NOs: 25 to 30

wherein the antibody has affinity represented by an equilibrium dissociation constant of 1.86×10^{-8} M or less.

(28) Use of an antibody that specifically binds tau protein that has been phosphorylated on the amino acid residue present at position 413 of the tau protein represented by SEQ ID NO: 1, as an active ingredient, in the manufacture of a medicament for preventing or treating tauopathy,

wherein the antibody comprises:

an H chain variable region represented by SEQ ID NO: 20, or

an H chain variable region having one or more substitutions: Val at the second position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ile, Gln at the third position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with His, Gly at the tenth position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Glu, Asn at the 30th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ser, Leu at the 34th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Met, Ala at the 40th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Thr, Ser at the 44th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ala or Gly, Glu at the 46th position from

the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Asn or Asp, Val at the 48th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ile, Val at the 49th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ala, Thr at the 55th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ala or Ser, Asn at the 57th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with His, Ala at the 59th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Val, Asp at the 68th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Gly, Thr at the 71th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ile or Ser, Val at the 72th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ile, Ser at the 79th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Asn, Val at the 81th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ile or Leu, Lys at the 89th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Gln, and Thr at the 93th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ser; as well as

an L chain variable region represented by SEQ ID NO: 26, or

an L chain variable region having one or more substitutions: Asp at the first position from the N-terminus of the sequence represented by SEQ ID NO: 26 has been replaced with Gly or Val, Ile at the second position from the N-terminus of the sequence represented by SEQ ID NO: 26 has been replaced with Val, Met at the fourth position from the N-terminus of the sequence represented

by SEQ ID NO: 26 has been replaced with Leu, Thr at the seventh position from the N-terminus of the sequence represented by SEQ ID NO: 26 has been replaced with Ile or Ser, Gln at the 18th position from the N-terminus of the sequence represented by SEQ ID NO: 26 has been replaced with His, and Ser at the 32th position from the N-terminus of the sequence represented by SEQ ID NO: 26 has been replaced with Thr,

wherein the antibody has affinity represented by an equilibrium dissociation constant of 1.86×10^{-8} M or less.

(29) Use of a peptide that includes the amino acid sequence consisting of amino acid numbers 403-423 of SEQ ID NO: 1, the amino acid residue corresponding to Ser413 in the peptide being phosphorylated, as an active ingredient, in the manufacture of a medicament for preventing or treating tauopathy.

(30) A monoclonal antibody that specifically binds a peptide comprising the amino acid sequence consisting of amino acid numbers 403-423 of SEQ ID NO: 1, the amino acid residue corresponding to Ser413 of SEQ ID NO: 1 in the peptide being phosphorylated, with greater affinity than to a peptide comprising the amino acid sequence consisting of amino acids 403-423 of SEQ ID NO:1 that is not phosphorylated at the amino acid residue corresponding to Ser413 of SEQ ID NO:1.

(31) A monoclonal antibody that specifically binds tau protein that has been phosphorylated on the amino acid residue present at position 413 of the tau protein represented by SEQ ID NO: 1 with greater affinity than to tau protein that is not phosphorylated at position 413 of the tau protein represented by SEQ ID NO:1, the antibody being one whose binding to antigen is competitive against an antibody including VH consisting of the amino acid sequence listed as SEQ ID NO: 20 and VL consisting of the amino acid sequence listed as SEQ ID NO: 26.

(32) A monoclonal antibody for phosphorylated tau

protein, the antibody being one including VH consisting of the amino acid sequence listed as SEQ ID NO: 20 and VL consisting of the amino acid sequence listed as SEQ ID NO: 26.

(33) A monoclonal antibody that specifically binds tau protein that has the amino acid residue present at positions 403 to 423 of the tau protein represented by SEQ ID NO: 1, and has been been phosphorylated on the amino acid residue corresponding to Ser413 of the tau protein represented by SEQ ID NO: 1,

wherein the antibody comprises a heavy chain variable region having three complementary determining regions (CDRs), and a light chain variable region having three CDRs,

wherein the heavy chain variable region has the CDRs set forth in one of (a)-(e) below:

(a) a CDR-H1 sequence represented by SEQ ID NO: 7, a CDR-H2 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 9, and a CDR-H3 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 13,

(b) a CDR-H1 sequence represented by SEQ ID NO: 8, a CDR-H2 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 9, and a CDR-H3 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 13,

(c) a CDR-H1 sequence represented by SEQ ID NO: 7, a CDR-H2 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 10, and a CDR-H3 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 13,

(d) a CDR-H1 sequence represented by SEQ ID NO: 8, a CDR-H2 sequence having at least 90% sequence identity to the amino acid sequence represented by

SEQ ID NO: 12, and a CDR-H3 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 13, and

(e) a CDR-H1 sequence represented by SEQ ID NO: 7, a CDR-H2 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 11, and a CDR-H3 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 13; and

wherein the light chain variable region has the CDRs set forth in one of (f)-(g) below:

(f) a CDR-L1 having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 14, a CDR-L2 sequence represented by SEQ ID NO: 16, and a CDR-L3 sequence represented by SEQ ID NO: 17, and

(g) a CDR-L1 having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 14, a CDR-L2 sequence represented by SEQ ID NO: 16, and a CDR-L3 sequence represented by SEQ ID NO: 17;

wherein the antibody has affinity represented by an equilibrium dissociation constant of 1.86×10^{-8} M or less.

(34) A monoclonal antibody that specifically binds tau protein that has the amino acid residue present at positions 403 to 423 of the tau protein represented by SEQ ID NO: 1, and has been been phosphorylated on the amino acid residue corresponding to Ser413 of the tau protein represented by SEQ ID NO: 1,

wherein the antibody comprises:

a CDR-H1 sequence selected from a CDR-H1 sequence represented by SEQ ID NO: 8, and a CDR-H1 sequence in which Leu at the fourth position from the N-terminus of the sequence represented by SEQ ID NO: 8 has been replaced with Met,

a CDR-H2 sequence selected from a CDR-H2 sequence represented by SEQ ID NO: 9, and a CDR-H2

sequence having one or more substitutions: Thr at the sixth position from the N-terminus of the sequence represented by SEQ ID NO: 9 has been replaced with Ser or Ala, Asn at the eighth position from the N-terminus of the sequence represented by SEQ ID NO: 9 has been replaced with His, Ala at the tenth position from the N-terminus of the sequence represented by SEQ ID NO: 9 has been replaced with Val, and Asp at the 19th position from the N-terminus of the sequence represented by SEQ ID NO: 9 has been replaced with Gly,

a CDR-H3 sequence represented by SEQ ID NO: 13,

a CDR-L1 sequence selected from a a CDR-L1 sequence represented by SEQ ID NO: 14, and a CDR-L1 sequence in which Ser at the nineth position from the N-terminus of the sequence represented by SEQ ID NO: 14 has been replaced with Thr,

a CDR-L2 sequence represented by SEQ ID NO: 16, as well as

a CDR-L3 sequence represented by SEQ ID NO: 17,

wherein the antibody has affinity represented by an equilibrium dissociation constant of 1.86×10^{-8} M or less.

(35) A monoclonal antibody that specifically binds tau protein that has the amino acid residue present at positions 403 to 423 of the tau protein represented by SEQ ID NO: 1 and has been phosphorylated on the amino acid residue corresponding to Ser413 of the tau protein represented by SEQ ID NO: 1 with greater affinity than to tau protein that has the amino acid residues present at positions 403 to 423 of the tau protein represented by SEQ ID NO:1 that is not phosphorylated on the amino acid residue corresponding to Ser 413 of the tau protein represented by SEQ ID NO:1,

wherein the antibody is an antibody comprising an H chain variable region selected from an H chain variable region represented by any one of SEQ ID NOs: 18 to 24, and an H chain variable region having at least 90%

homology with any one of SEQ ID NOs: 18 to 24, as well as an L chain variable region selected from an L chain variable region represented by any one of SEQ ID NOs: 25 to 30, and an L chain variable region having at least 90% homology with any one of SEQ ID NOs: 25 to 30,

wherein the antibody has affinity represented by an equilibrium dissociation constant of 1.86×10^{-8} M or less.

(36) A monoclonal antibody that specifically binds tau protein that has been phosphorylated on the amino acid residue present at position 413 of the tau protein represented by SEQ ID NO: 1,

wherein the antibody comprises:

an H chain variable region represented by SEQ ID NO: 20, or

an H chain variable region having one or more substitutions: Val at the second position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ile, Gln at the third position from the N-terminus of the
sequence represented by SEQ ID NO: 20 has been replaced with His, Gly at the tenth position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Glu, Asn at the 30th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ser, Leu at the 34th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Met, Ala at the 40th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Thr, Ser at the 44th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ala or Gly, Glu at the 46th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Asn or Asp, Val at the 48th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ile, Val at the 49th position from the N-terminus of the

sequence represented by SEQ ID NO: 20 has been replaced with Ala, Thr at the 55th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ala or Ser, Asn at the 57th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with His, Ala at the 59th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Val, Asp at the 68th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Gly, Thr at the 71th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ile or Ser, Val at the 72th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ile, Ser at the 79th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Asn, Val at the 81th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ile or Leu, Lys at the 89th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Gln, and Thr at the 93th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ser; as well as

an L chain variable region represented by SEQ ID NO: 26, or

an L chain variable region having one or more substitutions: Asp at the first position from the N-terminus of the sequence represented by SEQ ID NO: 26 has been replaced with Gly or Val, Ile at the second position from the N-terminus of the sequence represented by SEQ ID NO: 26 has been replaced with Val, Met at the fourth position from the N-terminus of the sequence represented by SEQ ID NO: 26 has been replaced with Leu, Thr at the seventh position from the N-terminus of the sequence represented by SEQ ID NO: 26 has been replaced with Ile or Ser, Gln at the 18th position from the N-terminus of

the sequence represented by SEQ ID NO: 26 has been replaced with His, and Ser at the 32th position from the N-terminus of the sequence represented by SEQ ID NO: 26 has been replaced with Thr,

wherein the antibody has affinity represented by an equilibrium dissociation constant of 1.86×10^{-8} M or less.

(37) An isolated peptide consisting of the amino acid sequence consisting of amino acid numbers 403-423 of SEQ ID NO: 1, the amino acid residue corresponding to Ser413 in the peptide being phosphorylated.

Effect of the Invention

[0015]

What is claimed is:

1. Use of an antibody that specifically binds tau protein that has been phosphorylated on the amino acid residue present at position 413 of the tau protein represented by SEQ ID NO: 1 with greater affinity than to tau protein that is not phosphorylated at position 413 of the tau protein represented by SEQ ID NO:1, as an active ingredient, in the manufacture of a medicament for preventing or treating tauopathy.

2. Use according to claim 1, wherein the antibody is an antibody which, in binding with tau protein, binds in competition with an antibody including VH consisting of the amino acid sequence listed as SEQ ID NO: 20 and VL consisting of the amino acid sequence listed as SEQ ID NO: 26.

3. Use according to claim 1, wherein the antibody is an antibody including VH consisting of the amino acid sequence listed as SEQ ID NO: 20 and VL consisting of the amino acid sequence listed as SEQ ID NO: 26.

4. Use of an antibody that specifically binds tau protein that has been phosphorylated on the amino acid residue present at position 413 of the tau protein represented by SEQ ID NO: 1, as an active ingredient, in the manufacture of a medicament for preventing or treating tauopathy,

wherein the antibody comprises a heavy chain variable region having three complementary determining regions (CDRs), and a light chain variable region having three CDRs,

wherein the heavy chain variable region has the CDRs set forth in one of (a)-(e) below:

(a) a CDR-H1 sequence represented by SEQ ID NO: 7, a CDR-H2 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 9, and a CDR-H3 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 13,

(b) a CDR-H1 sequence represented by SEQ ID NO: 8, a CDR-H2 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 9, and a CDR-H3 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 13,

(c) a CDR-H1 sequence represented by SEQ ID NO: 7, a CDR-H2 sequence having at least 90% sequence identity to the amino acid sequence

represented by SEQ ID NO: 10, and a CDR-H3 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 13,

(d) a CDR-H1 sequence represented by SEQ ID NO: 8, a CDR-H2 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 12, and a CDR-H3 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 13, and

(e) a CDR-H1 sequence represented by SEQ ID NO: 7, a CDR-H2 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 11, and a CDR-H3 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 13; and

wherein the light chain variable region has the CDRs set forth in one of (f)-(g) below:

(f) a CDR-L1 having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 14, a CDR-L2 sequence represented by SEQ ID NO: 16, and a CDR-L3 sequence represented by SEQ ID NO: 17, and

(g) a CDR-L1 having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 14, a CDR-L2 sequence represented by SEQ ID NO: 16, and a CDR-L3 sequence represented by SEQ ID NO: 17;

wherein the antibody has affinity represented by an equilibrium dissociation constant of 1.86×10^{-8} M or less.

5. Use of an antibody that specifically binds tau protein that has been phosphorylated on the amino acid residue present at position 413 of the tau protein represented by SEQ ID NO: 1, as an active ingredient, in the manufacture of a medicament for preventing or treating tauopathy,

wherein the antibody comprises:

a CDR-H1 sequence selected from a CDR-H1 sequence represented by SEQ ID NO: 8, and a CDR-H1 sequence in which Leu at the fourth position from the N-terminus of the sequence represented by SEQ ID NO: 8 has been replaced with Met,

a CDR-H2 sequence selected from a CDR-H2 sequence represented by SEQ ID NO: 9, and a CDR-H2 sequence having one or more substitutions: Thr at the sixth position from the N-terminus of the sequence represented by SEQ ID NO: 9 has been replaced with Ser or Ala, Asn at the eighth position from the N-terminus of the sequence represented by SEQ ID NO: 9 has been replaced with His, Ala at the tenth position from the N-terminus of the sequence represented by SEQ ID NO: 9 has been replaced with Val,

and Asp at the 19th position from the N-terminus of the sequence represented by SEQ ID NO: 9 has been replaced with Gly,

a CDR-H3 sequence represented by SEQ ID NO: 13,

a CDR-L1 sequence selected from a a CDR-L1 sequence represented by SEQ ID NO: 14, and a CDR-L1 sequence in which Ser at the nineth position from the N-terminus of the sequence represented by SEQ ID NO: 14 has been replaced with Thr,

a CDR-L2 sequence represented by SEQ ID NO: 16, as well as

a CDR-L3 sequence represented by SEQ ID NO: 17,

wherein the antibody has affinity represented by an equilibrium dissociation constant of 1.86×10^{-8} M or less.

6. Use of an antibody that specifically binds tau protein that has been phosphorylated on the amino acid residue present at position 413 of the tau protein represented by SEQ ID NO: 1 with greater affinity than to tau protein that is not phosphorylated at position 413 of the tau protein represented by SEQ ID NO:1, as an active ingredient, in the manufacture of a medicament for preventing or treating tauopathy,

wherein the antibody is an antibody comprising an H chain variable region selected from an H chain variable region represented by any one of SEQ ID NOs: 18 to 24, and an H chain variable region having at least 90% homology with any one of SEQ ID NOs: 18 to 24, as well as an L chain variable region selected from an L chain variable region represented by any one of SEQ ID NOs: 25 to 30, and an L chain variable region having at least 90% homology with any one of SEQ ID NOs: 25 to 30

wherein the antibody has affinity represented by an equilibrium dissociation constant of 1.86×10^{-8} M or less.

7. Use of an antibody that specifically binds tau protein that has been phosphorylated on the amino acid residue present at position 413 of the tau protein represented by SEQ ID NO: 1, as an active ingredient, in the manufacture of a medicament for preventing or treating tauopathy,

wherein the antibody comprises:

an H chain variable region represented by SEQ ID NO: 20, or

an H chain variable region having one or more substitutions: Val at the second position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ile, Gln at the third position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with His, Gly at the tenth position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with

Glu, Asn at the 30th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ser, Leu at the 34th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Met, Ala at the 40th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Thr, Ser at the 44th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ala or Gly, Glu at the 46th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Asn or Asp, Val at the 48th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ile, Val at the 49th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ala, Thr at the 55th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ala or Ser, Asn at the 57th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with His, Ala at the 59th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Val, Asp at the 68th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Gly, Thr at the 71th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ile or Ser, Val at the 72th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ile, Ser at the 79th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Asn, Val at the 81th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ile or Leu, Lys at the 89th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Gln, and Thr at the 93th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ser; as well as

an L chain variable region represented by SEQ ID NO: 26, or

an L chain variable region having one or more substitutions: Asp at the first position from the N-terminus of the sequence represented by SEQ ID NO: 26 has been replaced with Gly or Val, Ile at the second position from the N-terminus of the sequence represented by SEQ ID NO: 26 has been replaced with Val, Met at the fourth position from the N-terminus of the sequence represented by SEQ ID NO: 26 has been replaced with Leu, Thr at the seventh position from the N-terminus of the sequence represented by SEQ ID NO: 26 has been replaced with Ile or Ser, Gln at the 18th position from the N-terminus of the sequence represented by SEQ ID NO: 26 has been replaced with His, and Ser at the 32th position from the N-terminus of the sequence represented by SEQ ID NO: 26 has been replaced with Thr,

wherein the antibody has affinity represented by an equilibrium dissociation constant of 1.86×10^{-8} M or less.

8. Use according to any one of claims 1 to 7, wherein the antibody is a humanized antibody or chimeric antibody.

9. Use of a peptide that includes the amino acid sequence consisting of amino acid numbers 403-423 of SEQ ID NO: 1, the amino acid residue corresponding to Ser413 in the peptide being phosphorylated, as an active ingredient, in the manufacture of a medicament for preventing or treating tauopathy.

10. Use according to any one claims 1-9, wherein the tauopathy is Alzheimer's disease, cortical-basal ganglia degeneration, progressive supranuclear palsy, Pick's disease, argyrophilic grain dementia (argyrophilic grain disease), Multiple system tauopathy with dementia (MSTD), chromosome 17-linked frontotemporal dementia with Parkinsonism (FTDP-17), neurofibrillary tangle dementia, diffuse neurofibrillary tangles with calcification (DNTC), white matter tauopathy with globular glial inclusions (WMT-GGI) or frontotemporal lobar degeneration with tau-positive inclusions (FTLD-tau).

11. A monoclonal antibody that specifically binds a peptide comprising the amino acid sequence consisting of amino acid numbers 403-423 of SEQ ID NO: 1, the amino acid residue corresponding to Ser413 of SEQ ID NO: 1 in the peptide being phosphorylated, with greater affinity than to a peptide comprising the amino acid sequence consisting of amino acids 403-423 of SEQ ID NO:1 that is not phosphorylated at the amino acid residue corresponding to Ser413 of SEQ ID NO:1.

12. A monoclonal antibody that specifically binds tau protein that has been phosphorylated on the amino acid residue present at position 413 of the tau protein represented by SEQ ID NO: 1 with greater affinity than to tau protein that is not phosphorylated at position 413 of the tau protein represented by SEQ ID NO:1, the antibody being one whose binding to antigen is competitive against an antibody including VH consisting of the amino acid sequence listed as SEQ ID NO: 20 and VL consisting of the amino acid sequence listed as SEQ ID NO: 26.

13. A monoclonal antibody for phosphorylated tau protein, the antibody being

one including VH consisting of the amino acid sequence listed as SEQ ID NO: 20 and VL consisting of the amino acid sequence listed as SEQ ID NO: 26.

14. A monoclonal antibody that specifically binds tau protein that has the amino acid residue present at positions 403 to 423 of the tau protein represented by SEQ ID NO: 1, and has been been phosphorylated on the amino acid residue corresponding to Ser413 of the tau protein represented by SEQ ID NO: 1,

wherein the antibody comprises a heavy chain variable region having three complementary determining regions (CDRs), and a light chain variable region having three CDRs,

wherein the heavy chain variable region has the CDRs set forth in one of (a)-(e) below:

(a) a CDR-H1 sequence represented by SEQ ID NO: 7, a CDR-H2 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 9, and a CDR-H3 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 13,

(b) a CDR-H1 sequence represented by SEQ ID NO: 8, a CDR-H2 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 9, and a CDR-H3 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 13,

(c) a CDR-H1 sequence represented by SEQ ID NO: 7, a CDR-H2 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 10, and a CDR-H3 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 13,

(d) a CDR-H1 sequence represented by SEQ ID NO: 8, a CDR-H2 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 12, and a CDR-H3 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 13, and

(e) a CDR-H1 sequence represented by SEQ ID NO: 7, a CDR-H2 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 11, and a CDR-H3 sequence having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 13; and

wherein the light chain variable region has the CDRs set forth in one of (f)-(g) below:

(f) a CDR-L1 having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 14, a CDR-L2 sequence represented by SEQ ID NO: 16, and a CDR-L3 sequence represented by SEQ ID NO: 17, and

(g) a CDR-L1 having at least 90% sequence identity to the amino acid sequence represented by SEQ ID NO: 14, a CDR-L2 sequence represented by SEQ ID NO: 16, and a CDR-L3 sequence represented by SEQ ID NO: 17;

wherein the antibody has affinity represented by an equilibrium dissociation constant of 1.86×10^{-8} M or less.

15. A monoclonal antibody that specifically binds tau protein that has the amino acid residue present at positions 403 to 423 of the tau protein represented by SEQ ID NO: 1, and has been been phosphorylated on the amino acid residue corresponding to Ser413 of the tau protein represented by SEQ ID NO: 1,

wherein the antibody comprises:

a CDR-H1 sequence selected from a CDR-H1 sequence represented by SEQ ID NO: 8, and a CDR-H1 sequence in which Leu at the fourth position from the N-terminus of the sequence represented by SEQ ID NO: 8 has been replaced with Met,

a CDR-H2 sequence selected from a CDR-H2 sequence represented by SEQ ID NO: 9, and a CDR-H2 sequence having one or more substitutions: Thr at the sixth position from the N-terminus of the sequence represented by SEQ ID NO: 9 has been replaced with Ser or Ala, Asn at the eighth position from the N-terminus of the sequence represented by SEQ ID NO: 9 has been replaced with His, Ala at the tenth position from the N-terminus of the sequence represented by SEQ ID NO: 9 has been replaced with Val, and Asp at the 19th position from the N-terminus of the sequence represented by SEQ ID NO: 9 has been replaced with Gly,

a CDR-H3 sequence represented by SEQ ID NO: 13,

a CDR-L1 sequence selected from a a CDR-L1 sequence represented by SEQ ID NO: 14, and a CDR-L1 sequence in which Ser at the nineth position from the N-terminus of the sequence represented by SEQ ID NO: 14 has been replaced with Thr,

a CDR-L2 sequence represented by SEQ ID NO: 16, as well as

a CDR-L3 sequence represented by SEQ ID NO: 17,

wherein the antibody has affinity represented by an equilibrium dissociation constant of 1.86×10^{-8} M or less.

16. A monoclonal antibody that specifically binds tau protein that has the amino acid residue present at positions 403 to 423 of the tau protein represented by SEQ

ID NO: 1 and has been phosphorylated on the amino acid residue corresponding to Ser413 of the tau protein represented by SEQ ID NO: 1 with greater affinity than to tau protein that has the amino acid residues present at positions 403 to 423 of the tau protein represented by SEQ ID NO:1 that is not phosphorylated on the amino acid residue corresponding to Ser 413 of the tau protein represented by SEQ ID NO:1,

wherein the antibody is an antibody comprising an H chain variable region selected from an H chain variable region represented by any one of SEQ ID NOs: 18 to 24, and an H chain variable region having at least 90% homology with any one of SEQ ID NOs: 18 to 24, as well as an L chain variable region selected from an L chain variable region represented by any one of SEQ ID NOs: 25 to 30, and an L chain variable region having at least 90% homology with any one of SEQ ID NOs: 25 to 30,

wherein the antibody has affinity represented by an equilibrium dissociation constant of 1.86×10^{-8} M or less.

17. A monoclonal antibody that specifically binds tau protein that has been phosphorylated on the amino acid residue present at position 413 of the tau protein represented by SEQ ID NO: 1,

wherein the antibody comprises:

an H chain variable region represented by SEQ ID NO: 20, or

an H chain variable region having one or more substitutions: Val at the second position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ile, Gln at the third position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with His, Gly at the tenth position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Glu, Asn at the 30th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ser, Leu at the 34th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Met, Ala at the 40th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Thr, Ser at the 44th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ala or Gly, Glu at the 46th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Asn or Asp, Val at the 48th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ile, Val at the 49th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ala, Thr at the 55th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ala or Ser, Asn at the 57th position

from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with His, Ala at the 59th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Val, Asp at the 68th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Gly, Thr at the 71th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ile or Ser, Val at the 72th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ile, Ser at the 79th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Asn, Val at the 81th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ile or Leu, Lys at the 89th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Gln, and Thr at the 93th position from the N-terminus of the sequence represented by SEQ ID NO: 20 has been replaced with Ser; as well as

an L chain variable region represented by SEQ ID NO: 26, or

an L chain variable region having one or more substitutions: Asp at the first position from the N-terminus of the sequence represented by SEQ ID NO: 26 has been replaced with Gly or Val, Ile at the second position from the N-terminus of the sequence represented by SEQ ID NO: 26 has been replaced with Val, Met at the fourth position from the N-terminus of the sequence represented by SEQ ID NO: 26 has been replaced with Leu, Thr at the seventh position from the N-terminus of the sequence represented by SEQ ID NO: 26 has been replaced with Ile or Ser, Gln at the 18th position from the N-terminus of the sequence represented by SEQ ID NO: 26 has been replaced with His, and Ser at the 32th position from the N-terminus of the sequence represented by SEQ ID NO: 26 has been replaced with Thr,

wherein the antibody has affinity represented by an equilibrium dissociation constant of 1.86×10^{-8} M or less.

18. The monoclonal antibody according to any one of claims 11 to 17, wherein the antibody is a humanized antibody or chimeric antibody.

19. An isolated peptide consisting of the amino acid sequence consisting of amino acid numbers 403-423 of SEQ ID NO: 1, the amino acid residue corresponding to Ser413 in the peptide being phosphorylated.