

CLAIMS

1. An anti-tau antibody or an antigen-binding fragment thereof, comprising:
a heavy chain variable region (VH) that includes:
a heavy chain CDR1 having the amino acid sequence represented by SEQ ID NO: 1;
a heavy chain CDR2 having the amino acid sequence represented by SEQ ID NO: 2; and
a heavy chain CDR3 having the amino acid sequence represented by SEQ ID NO: 3, and
a light chain variable region (VL) that includes:
a light chain CDR1 having the amino acid sequence represented by SEQ ID NO: 4;
a light chain CDR2 having the amino acid sequence represented by SEQ ID NO: 5; and
a light chain CDR3 having the amino acid sequence represented by SEQ ID NO: 6.
2. The anti-tau antibody or antigen-binding fragment thereof of claim 1, wherein the heavy chain variable region includes any one amino acid sequence selected from the group consisting of SEQ ID NOs: 7 to 11, and the light chain variable region includes any one amino acid sequence selected from the group consisting of SEQ ID NOs: 12 to 15.
3. The anti-tau antibody or antigen-binding fragment thereof of claim 1, wherein the antibody or the antigen-binding fragment thereof is any one selected from the group consisting of:

an anti-tau antibody or antigen-binding fragment thereof which comprises a heavy chain variable region having the amino acid sequence represented by SEQ ID NO: 7 and a light chain variable region having the amino acid sequence represented by SEQ ID NO: 12;

an anti-tau antibody or antigen-binding fragment thereof which comprises a heavy chain variable region having the amino acid sequence represented by SEQ ID NO: 8 and a light chain variable region having the amino acid sequence represented by SEQ ID NO: 13;

an anti-tau antibody or antigen-binding fragment thereof which comprises a heavy chain variable region having the amino acid sequence represented by SEQ ID NO: 8 and a light chain variable region having the amino acid sequence represented by SEQ ID NO: 14;

an anti-tau antibody or antigen-binding fragment thereof which comprises a heavy chain variable region having the amino acid sequence represented by SEQ ID NO: 8 and a light chain variable region having the amino acid sequence represented by SEQ ID NO: 15;

an anti-tau antibody or antigen-binding fragment thereof which comprises a heavy chain variable region having the amino acid sequence represented by SEQ ID NO: 9 and a light chain variable region having the amino acid sequence represented by SEQ ID NO: 13;

an anti-tau antibody or antigen-binding fragment thereof which comprises a heavy chain variable region having the amino acid sequence represented by SEQ ID NO: 9 and a light chain variable region having the amino acid sequence represented by SEQ ID NO: 14;

an anti-tau antibody or antigen-binding fragment thereof which comprises a heavy chain variable region having the amino acid sequence represented by SEQ ID NO: 9 and a light chain variable region having the amino acid sequence represented by SEQ ID NO: 15;

an anti-tau antibody or antigen-binding fragment thereof which comprises a

heavy chain variable region having the amino acid sequence represented by SEQ ID NO: 10 and a light chain variable region having the amino acid sequence represented by SEQ ID NO: 13;

an anti-tau antibody or antigen-binding fragment thereof which comprises a heavy chain variable region having the amino acid sequence represented by SEQ ID NO: 10 and a light chain variable region having the amino acid sequence represented by SEQ ID NO: 14;

an anti-tau antibody or antigen-binding fragment thereof which comprises a heavy chain variable region having the amino acid sequence represented by SEQ ID NO: 10 and a light chain variable region having the amino acid sequence represented by SEQ ID NO: 15;

an anti-tau antibody or antigen-binding fragment thereof which comprises a heavy chain variable region having the amino acid sequence represented by SEQ ID NO: 11 and a light chain variable region having the amino acid sequence represented by SEQ ID NO: 13;

an anti-tau antibody or antigen-binding fragment thereof which comprises a heavy chain variable region having the amino acid sequence represented by SEQ ID NO: 11 and a light chain variable region having the amino acid sequence represented by SEQ ID NO: 14; and

an anti-tau antibody or antigen-binding fragment thereof which comprises a heavy chain variable region having the amino acid sequence represented by SEQ ID NO: 11 and a light chain variable region having the amino acid sequence represented by SEQ ID NO: 15.

4. The anti-tau antibody or antigen-binding fragment thereof of claim 1, wherein the fragment is any one selected from the group consisting of Fab, scFv, F(ab')₂, and Fv.

5. A polynucleotide encoding the anti-tau antibody or antigen-binding fragment thereof of claim 1.

6. An expression vector comprising the polynucleotide of claim 5.
7. A host cell comprising the expression vector of claim 6.
8. A method for producing the anti-tau antibody or antigen-binding fragment thereof of claim 1, the method comprising a step of culturing the host cell of claim 7.
9. A polynucleotide encoding a heavy or light chain of an antibody that includes the heavy chain variable region and the light chain variable region of claim 2.
10. A hybridoma having accession number KCTC 14155BP.
11. A pharmaceutical composition for treating a tau protein-mediated neurological disease, the pharmaceutical composition comprising as an active ingredient the anti-tau antibody or antigen-binding fragment thereof of claim 1.
12. The pharmaceutical composition of claim 11, wherein the tau protein-mediated neurological disease is tauopathy, primary age-related tauopathy, chronic traumatic encephalopathy, progressive supranuclear palsy, corticobasal degeneration, frontotemporal dementia, Lytico-Bodig disease, Parkinsonism, subacute sclerosing meningitis, lead encephalopathy, tuberous sclerosis, ganglioglioma, gangliocytoma, meningioangiomatosis, subacute sclerosing panencephalitis, Hallervorden-Spatz disease, or lipofuscinosis.
13. The pharmaceutical composition of claim 12, wherein the tauopathy is Alzheimer's disease (AD), progressive supranuclear palsy (PSP), corticobasal

degeneration (CBD), Pick's disease (PiD), a group of related disorders collectively termed frontotemporal dementia with Parkinsonism linked to chromosome 17 (FTDP-17), amyotrophic lateral sclerosis (ALS), Creutzfeld-Jakob disease (CJD), dementia pugilistica (DP), Gerstmann-Sträussler-Scheinker disease (GSSD), Lewy body disease, chronic traumatic encephalopathy (CTE), or Huntington's disease.

14. The pharmaceutical composition of claim 11, wherein the pharmaceutical composition is to be administered through any one route of administration selected from the group consisting of intracerebral, intracerebroventricular, intraperitoneal, percutaneous, intramuscular, intradural, intravenous, subcutaneous, and nasal routes of administration.

15. A composition for diagnosing a degenerative neurological disease, the composition comprising the anti-tau antibody or antigen-binding fragment thereof of claim 1.

16. A kit for preventing, treating, or diagnosing a degenerative neurological disease, the kit comprising the antibody or antigen-binding fragment thereof of claim 1, the polynucleotide of claim 5, the expression vector of claim 6, or the host cell of claim 7.

17. The antibody or antigen-binding fragment thereof of claim 1 for use in therapy.

18. Use of the antibody or antigen-binding fragment thereof of claim 1 in the manufacture of a medicament for treating a tau protein-mediated neurological disease.