CLAIMS

1. An immunogenic peptide comprising a sequence of SEQ ID NO. 108, wherein the peptide is linked to a carrier.

2. An immunogenic peptide consisting of a sequence of SEQ ID NO. 108, wherein the peptide is linked to a carrier.

3. The immunogenic peptide of claim 1, further comprising an additional cysteine.

4. The immunogenic peptide of claim 3, wherein the peptide has the sequence represented by SEQ ID NO. 218.

5. The immunogenic peptide of any one of claims 1 to 4, wherein the peptide is linked to the carrier as a fusion protein.

6. The immunogenic peptide of claim 5, wherein the peptide is linked to the carrier at the amino terminal end of the peptide.

7. The immunogenic peptide of claim 5, wherein the peptide is linked to the carrier at the carboxy terminal end of the peptide.

8. The immunogenic peptide of claim 5, wherein the peptide is linked to the carrier at an internal amino acid of the peptide.

9. The immunogenic peptide of claim 5, wherein the carrier is conjugated to the immunogenic peptide by chemical crosslinking, optionally via N-succinimidyl-3-(2-pyridyl-thio) propionate (SPDP) or succinimidyl 4-(N-maleimidomethyl)cyclohexane-1-carboxylate (SMCC) or N-[γ-maleimidobutyryloxy]succinimide ester (GMBS).

10. The immunogenic peptide of any one of claims 1 to 9, wherein the carrier is albumin, an immunoglobulin molecule or fragment thereof, thyroglobulin, ovoglobulin, tetanus toxoid, diphtheria toxoid, cholera toxoid, a T-cell epitope, a Pan DR Th-cell epitope, interleukin 1 (IL-1), interleukin 1-alpha (IL-1α), interleukin 1-beta (IL-1β), interleukin 2 (IL-2), interleukin 10 (IL-10), interferon-gamma (IFN-γ), granulocyte macrophage colony stimulating factor (GM-CSF), macrophage inflammatory protein 1 alpha (MIP1α), MIP1β, or RANTES.

11. The immunogenic peptide of any one of claims 1 to 9, wherein the carrier is an attenuated toxin derivative or a virus protein.

12. The immunogenic peptide of claim 11, wherein the attenuated virus protein is an adenovirus, HSV, hepatitis B virus, Venezuelan equine encephalitis virus, vesicular stomatitis virus, rhabdo virus, vaccinia virus, or fowl pox virus protein.

13. The immunogenic peptide of any one of claims 1 to 9, wherein the carrier is an attenuated hepatitis B virus protein or a tetanus toxoid protein.

14. The immunogenic peptide of any one of claims 1 to 9, wherein the carrier is a keyhole limpet hemocyanin (KLH).

15. A composition comprising (1) the immunogenic peptide of any one of claims 1 to 14, and (2) a pharmaceutically acceptable excipient.

16. The composition of claim 15, further comprising an adjuvant.

17. The composition of claim 16, wherein the adjuvant is an aluminum salt.

18. The composition of claim 17, wherein the aluminum salt is aluminum hydroxide.

19. A medical device comprising the immunogenic peptide of any one of claims 1 to 14 or the composition of any one of claims 15 to 18, wherein the device is suitable

for contacting or administering the immunogenic peptide or the composition by at least one mode selected from parenteral, subcutaneous, intramuscular, intravenous, intracavitary, intrarectal, intranasal, and transdermal administration.

20. The composition of any one of claims 15 to 18 for use in the treatment of Alzheimer's disease or a related tauopathy.

21. Use of the composition of any one of claims 15 to 18 in the manufacture of a medicament for the treatment of Alzheimer's disease or a related tauopathy.

22. The use of claim 21, wherein the medicament induces an immune response to pathological tau in a subject.

23. The use of claim 22, wherein said immune response comprises the generation of antibodies against the peptide.

24. The use of claim 23, wherein said antibodies are capable of:
(i) recognizing one or more epitopes of an antibody comprising:
a) an antibody light chain variable region comprising:
i. QSLLNSRTRKNY (SEQ ID NO: 117) for CDR1;
ii. WAS (SEQ ID NO: 118) for CDR2; and
iii. KQSFYLRT (SEQ ID NO: 119) for CDR3; and
b) an antibody heavy chain variable region comprising:
iv. GYIFTDYVIS (SEQ ID NO: 120) for CDR1
v. IFPRSGST (SEQ ID NO: 121) for CDR2; and
vi. ARDYYGTSFAMDY (SEQ ID NO: 122) for CDR3;
(ii) discriminating between pathological tau and normal tau; and/or
(iii) recognizing neurofibrillary lesions in human AD brain and/or in transgenic rat models of AD.

25. The use of any one of claims 21 to 24, characterized in that tau-tau aggregation is inhibited.

26. The use of any one of claims 21 to 25, characterized in that said medicament is formulated to be administered by parenteral, intradermal, intravenous, oral, subcutaneous, intranasal or intramuscular means.

27. The use of claim 26, characterized in that said medicament is formulated to be administered subcutaneously or by intramuscular injection.

28. The use of any one of claims 21 to 27, wherein the amount of peptide comprised by the medicament is between 1 ng and 10 mg.

29. The use of any one of claims 21 to 27, wherein the amount of peptide comprised by the medicament is between 1 µg and 500 µg per injection.

30. The use of any one of claims 21 to 29, characterized in that said medicament is to be administered at multiple intervals in multiple dosages over a period of at least 6 months.

31. The use of any one of claims 21 to 30, characterized in that levels of co-stimulatory molecule CD28 on CD8+T cells is determined prior to administration of said medicament.

32. The use of any one of claims 21 to 31, wherein the medicament is capable of ameliorating at least one of the symptoms associated with Alzheimer's disease or a related tauopathy in the subject.

33. The use of any one of claims 21 to 32, wherein the medicament is capable of reducing motor impairment, improving motor function, reducing cognitive impairment, improving cognitive function, or a combination thereof.

34. The use of any one of claims 21 to 33, characterized in that treatment effectiveness is assessed.

35. The use of claim 34, wherein the treatment effectiveness is assessed by assaying levels of one or more pathological tau forms; clearance of pathological tau from the brain and/or CSF; cognitive performance measures; motor function tests; performance of basic activities of daily living (ADL) tests; and lessened severity/grading of AD impaired grip strength, locomotion, and apraxia, memory decline, aphasia, agnosia, disorientation in time and space, and depression.

36. The use of any one of claims 21 to 35, wherein the medicament is capable of ameliorating at least one symptom of Alzheimer's Disease chosen from progressive memory impairment, cognitive decline, decline in language, behavioral changes, psychological symptoms, disturbances in mood, emotion, appetite, wake sleep cycle, confusion, agitation, depression, impaired motor function, apraxia, myoclonus, gait impairment, decreased muscle strength, extrapyramidal features, bradykinesia, rigidity, resting tremor, impaired performance of basic activities of daily living, and disorientation.