WHAT IS CLAIMED IS:

1. A polypeptide comprising:

(a) a first peptide comprising 3-10 amino acids from residues 1-10 or 12-25 of SEQ ID NO:01;

(b) a second peptide comprising 3-13 amino acids from residues 244-400 of SEQ ID NO:02; and

(c) a third peptide comprising 3-10 amino acids from residues 81-140 of SEQ ID NO:58;

wherein the first peptide, second peptide and third peptide are arranged in any order in the polypeptide.

2. The polypeptide of claim 1, further comprising a fourth peptide selected from one of:

(a) a peptide comprising 3-10 amino acids from residues 1-10 or 12-25 of SEQ ID NO:01;

(b) a peptide comprising 3-13 amino acids from residues 244-400 of SEQ ID NO:02; and

(c) a peptide comprising 3-10 amino acids from residues 81-140 of SEQ ID NO:58;

wherein the first peptide, second peptide, third peptide, and fourth peptide are arranged in any order in the polypeptide.

3. The polypeptide of claim 1 or claim 2, wherein the second peptide is from the microtubule binding region (MTBR) of tau (residues 244-372 of SEQ ID NO:02).

4. The polypeptide of any of claims 1 to 3, wherein:

(a) the first peptide comprises an amino acid sequence selected from the group consisting of

DAEFRHDSGY (SEQ ID NO:03),

DAEFRHDSG (SEQ ID NO:04),

DAEFRHDS (SEQ ID NO:05),

DAEFRHD (SEQ ID NO:06),

DAEFRH (SEQ ID NO:07),
DAEFR (SEQ ID NO:08),
DAEF (SEQ ID NO:09),
DAE (SEQ ID NO:10),
AEFRHDSGY (SEQ ID NO:11),
AEFRHDSG (SEQ ID NO:12),
AEFRHDS (SEQ ID NO:13),
AEFRHD (SEQ ID NO:14),
AEFRH (SEQ ID NO:15),
AEFR (SEQ ID NO:16),
AEF (SEQ ID NO:17),
EFRHDSGY (SEQ ID NO:18),
EFRHDSG (SEQ ID NO:19),
EFRHDS (SEQ ID NO:20),
EFRHD (SEQ ID NO:21),
EFRH (SEQ ID NO:22),
EFR (SEQ ID NO:23),
FRHDSGY (SEQ ID NO:24),
FRHDSG (SEQ ID NO:25),
FRHDS (SEQ ID NO:26),
FRHD (SEQ ID NO:27),
FRH (SEQ ID NO:28),
RHDSGY (SEQ ID NO:29),
RHDSG (SEQ ID NO:30),
RHDS (SEQ ID NO:31),
RHD (SEQ ID NO:32),
HDSGY (SEQ ID NO:33),
HDSG (SEQ ID NO:34),
HDS (SEQ ID NO:35),
DSGY (SEQ ID NO:36),
DSG (SEQ ID NO:37),
SGY (SEQ ID NO:38),
VHHQKLVFFA (SEQ ID NO:1002),
VHHQKLVFF (SEQ ID NO:1003),

VHHQKLVF (SEQ ID NO:1004),
VHHQKLV (SEQ ID NO:1005),
VHHQKL (SEQ ID NO:1006),
HHQKLVFFAE (SEQ ID NO:1007),
HHQKLVFFA (SEQ ID NO:1008),
HHQKLVFF (SEQ ID NO:1009),
HHQKLVF (SEQ ID NO:1010),
HHQKLV (SEQ ID NO:1011),
HHQKL (SEQ ID NO:1012),
HQKLVFFAED (SEQ ID NO:1013),
HQKLVFFAE (SEQ ID NO:1014),
HQKLVFFA (SEQ ID NO:1015),
HQKLVFF (SEQ ID NO:1016),
HQKLVF (SEQ ID NO:1017),
HQKLV (SEQ ID NO:1018),
HQKL (SEQ ID NO:1019),
QKLVFFAEDV (SEQ ID NO:1020),
QKLVFFAED (SEQ ID NO:1021),
QKLVFFAE (SEQ ID NO:1022),
QKLVFFA (SEQ ID NO:1023),
QKLVFF (SEQ ID NO:1024),
QKLVF (SEQ ID NO:1025),
QKLV (SEQ ID NO:1026),
QKL (SEQ ID NO:1027),
KLVFFAEDVG (SEQ ID NO:1028),
KLVFFAEDV (SEQ ID NO:1029),
KLVFFAED (SEQ ID NO:1030),
KLVFFAE (SEQ ID NO:1031),
KLVFFA (SEQ ID NO:1032),
KLVFF (SEQ ID NO:1033),
KLVF (SEQ ID NO:1034),
KLV (SEQ ID NO:1035),
LVFFAEDVG (SEQ ID NO:1036),
LVFFAEDV (SEQ ID NO:1037),

LVFFAED (SEQ ID NO:1038),
LVFFAE (SEQ ID NO:1039),
LVFFA (SEQ ID NO:1040),
LVFF (SEQ ID NO:1041),
LVF (SEQ ID NO:1042),
VFFAEDVG (SEQ ID NO:1043),
VFFAEDV (SEQ ID NO:1044),
VFFAED (SEQ ID NO:1045),
VFFAE (SEQ ID NO:1046),
VFFA (SEQ ID NO:1047),
VFF (SEQ ID NO:1048),
FFAEDVG (SEQ ID NO:1049),
FFAEDV (SEQ ID NO:1050),
FFAED (SEQ ID NO:1051),
FFAE (SEQ ID NO:1052),
FFA (SEQ ID NO:1053),
FAEDVG (SEQ ID NO:1054),
FAEDV (SEQ ID NO:1055),
FAED (SEQ ID NO:1056), and
FAE (SEQ ID NO:1057);

(b) the second peptide comprises an amino acid sequence selected from the group consisting of

QIVYKPV (SEQ ID NO:39),
QIVYKP (SEQ ID NO:40),
QIVYKSV (SEQ ID NO:41),
EIVYKSV (SEQ ID NO:42),
QIVYKS (SEQ ID NO:997),
EIVYKSP (SEQ ID NO:43),
EIVYKS (SEQ ID NO:998),
EIVYKPV (SEQ ID NO:44),
EIVYKP (SEQ ID NO:999),
IVYKSPV (SEQ ID NO:45),
IVYK (SEQ ID NO:46),
CNIKHVPG (SEQ ID NO:1000),

CNIKHVP (SEQ ID NO:47),

NIKHVP (SEQ ID NO:48),

HVPGGG (SEQ ID NO:49),

HVPGG (SEQ ID NO:50),

HKPGGG (SEQ ID NO:51),

HKPGG (SEQ ID NO:52),

KHVPGGG SEQ ID NO:53),

KHVPGG (SEQ ID NO:54),

HQPGGG (SEQ ID NO:55),

HQPGG (SEQ ID NO:56),

NIKHVPG (SEQ ID NO:57), and

SEQ ID NOs: 146-996; and

(c) the third peptide comprises an amino acid sequence selected from the group consisting of

VDPDNEAYEM (SEQ ID NO:59),

VDPDNEAYE (SEQ ID NO:60),

VDPDNEAY (SEQ ID NO:61),

VDPDNEA (SEQ ID NO:62),

VDPDNE (SEQ ID NO:63),

VDPDN (SEQ ID NO:64),

VDPD (SEQ ID NO:65),

VDP (SEQ ID NO:66),

DPDNEAYEM (SEQ ID NO:67),

DPDNEAYE (SEQ ID NO:68),

DPDNEAY (SEQ ID NO:69),

DPDNEA (SEQ ID NO:70),

DPDNE (SEQ ID NO:71),

DPDN (SEQ ID NO:72),

DPD (SEQ ID NO:73),

PDNEAYEM (SEQ ID NO:74),

PDNEAYE (SEQ ID NO:75),

PDNEAY (SEQ ID NO:76),

PDNEA (SEQ ID NO:77),

PDNE (SEQ ID NO:78),

PDN (SEQ ID NO:79),
DNEAYEM (SEQ ID NO:80),
DNEAYE (SEQ ID NO:81),
DNEAY (SEQ ID NO:82),
DNEA (SEQ ID NO:83),
DNE (SEQ ID NO:84),
NEAYEM (SEQ ID NO:85),
NEAYE (SEQ ID NO:86),
NEAY (SEQ ID NO:87),
NEA (SEQ ID NO:88),
EAYEM (SEQ ID NO:89),
EAYE (SEQ ID NO:90),
EAY (SEQ ID NO:91),
AYEM (SEQ ID NO:92),
AYE(SEQ ID NO:93),
YEM (SEQ ID NO:94),
ATGFVKKDQL (SEQ ID NO:95),
ATGFVKKDQ (SEQ ID NO:96),
ATGFVKKD (SEQ ID NO:97),
ATGFVKK (SEQ ID NO:98),
ATGFVK (SEQ ID NO:99),
ATGFV(SEQ ID NO:100),
ATGF (SEQ ID NO:101),
ATG (SEQ ID NO:102),
TGFVKKDQL (SEQ ID NO:103),
TGFVKKDQ (SEQ ID NO:104),
TGFVKKD (SEQ ID NO:105),
TGFVKK (SEQ ID NO:106),
TGFVK (SEQ ID NO:107),
TGFV (SEQ ID NO:108),
TGF (SEQ ID NO:109),
GFVKKDQL (SEQ ID NO:110),
GFVKKDQ (SEQ ID NO:111),
GFVKKD (SEQ ID NO:112),

GFVKK (SEQ ID NO:113),
GFVK (SEQ ID NO:114),
GFV(SEQ ID NO:115),
FVKKDQL (SEQ ID NO:116),
FVKKDQ(SEQ ID NO:117),
FVKKD (SEQ ID NO:118),
FVKK (SEQ ID NO:119),
FVK (SEQ ID NO:120),
VKKDQL (SEQ ID NO:121),
VKKDQ (SEQ ID NO:122),
VKKD (SEQ ID NO:123),
VKK (SEQ ID NO:124),
KKDQL (SEQ ID NO:125),
KKDQ (SEQ ID NO:126),
KKD (SEQ ID NO:127),
KDQL (SEQ ID NO:128), and
KDQ (SEQ ID NO:129); and

(d) the fourth peptide, if present, is one of any one of the amino acid sequences of SEQ ID NO: 3-38, 1002-1057, 39-57,142-1000, and 59-129.

5. The polypeptide of any of claims 1 to 4, wherein two or more of the first peptide, the second peptide, and the third peptide, and the fourth peptide, if present, are each linked by a cleavable linker.

6. The polypeptide of claim 5, wherein each of the cleavable linkers comprise an amino acid sequence.

7. The polypeptide of claim 6, wherein the amino acid sequence of each cleavable linker is independently selected from the group consisting of: arginine-arginine (Arg-Arg), arginine-valine-arginine-arginine (Arg-Val-Arg-Arg; SEQ ID NO:138), valine-citrulline (Val-Cit), valine-arginine (Val-Arg), valine-lysine (Val-Lys), valine-alanine (Val-Ala), phenylalanine-lysine (Phe-Lys), glycine-alanine-glycine-alanine (Gly-Ala-Gly-Ala; SEQ ID NO:139), alanine-glycine-alanine-glycine (Ala-Gly-Ala-Gly; SEQ ID NO:140), and lysine-glycine-lysine-glycine (Lys-Gly-Lys-Gly; SEQ ID NO:141).

8. The polypeptide of any of claims 1 to 7, further comprising a linker to a carrier at either a C-terminal portion of the polypeptide, or a N-terminal portion of the polypeptide.

9. The polypeptide of claim 8, wherein the linker to a carrier comprises an amino acid sequence selected from the group consisting of GG, GGG, AA, AAA, KK, KKK, SS, SSS, GAGA (SEQ ID NO:139), AGAG (SEQ ID NO:140), and KGKG (SEQ ID NO:141).

10. The polypeptide of any of claims 1 to 9, wherein the polypeptide or linker to the carrier, if present, further comprises a C-terminal cysteine (C).

11. The polypeptide of any of claims 1 to 10, wherein the polypeptide further comprises a blocked amine at the N-terminus.

12. The polypeptide of any of claims 2 to 11, wherein any of the first peptide, second peptide, third peptide, or fourth peptide comprises 5-10 amino acids.

13. The polypeptide of any of claims 1 to 12, wherein the first peptide is DAEFRHD (SEQ ID NO:06).

14. The polypeptide of any of claims 1 to 12, wherein the first peptide is EFRHDSG (SEQ ID NO:19).

15. The polypeptide of any of claims 1 to 12, wherein the second peptide comprises the amino acid sequence QIVYKPV (SEQ ID NO:39).

16. The polypeptide of any of claims 1 to 12, wherein the second peptide comprises the amino acid sequence NIKHVPG (SEQ ID NO:57).

17. The polypeptide of any of claims 1 to 12, wherein the third peptide comprises the amino acid sequence PDNEAYE (SEQ ID NO:75).

18. The polypeptide of any of claims 1 to 12, wherein the third peptide comprises the amino acid sequence DPDNEAY (SEQ ID NO:69).

19. The polypeptide of any of claims 1 to 12, wherein the fourth peptide comprises the amino acid sequence NIKHVP (SEQ ID NO:48).

20. The polypeptide of any of claims 1 to 12, wherein the fourth peptide comprises the amino acid sequence QIVYKPV (SEQ ID NO:39).

21. The polypeptide of claim 1, comprising an amino acid sequence of:

DAEFRHDRRPDNEAYERRQIVYKPVKKC (SEQ ID NO:130);
DAEFRHDRRQIVYKPVRRPDNEAYEKKC (SEQ ID NO:131);
DAEFRHDRRPDNEAYERRNIKHVPGKKC(SEQ ID NO:132).
DAEFRHDRRNIKHVPGRRPDNEAYEKKC (SEQ ID NO:133);
DAEFRHDRRDPDNEAYERRENLKHQPGGGC (SEQ ID NO:1058);
DAEFRHDRRENLKHQPGRRDPDNEAYEGGC (SEQ ID NO:1059);
DAEFRHDRRPDNEAYERRENLKHQPGGGC (SEQ ID NO:1060);
DAEFRHDRRENLKHQPGRRPDNEAYEGGC (SEQ ID NO:1061);
DAEFRHDRRSKIGSKDNIKHRRDPDNEAYEGGC (SEQ ID NO:1062); or
DAEFRHDRRDPDNEAYERRSKIGSKDNIKHGGC (SEQ ID NO:1063).

22. The polypeptide of claim 2, comprising an amino acid sequence of:

DAEFRHDRRQIVYKPVRRPDNEAYERRNIKHVPGGC
(SEQ ID NO:134);
DAEFRHDRRDPDNEAYRRNIKHVPGRRQIVYKPVGGC
(SEQ ID NO:135);
EFRHDSGRRQIVYKPVRRPDNEAYERRNIKHVPGGC
(SEQ ID NO:136); or
EFRHDSGRRDPDNEAYRRNIKHVPGRRQIVYKPVGGC
(SEQ ID NO:137).

23. The polypeptide of claim 22, wherein the polypeptide is EFRHDSGRRQIVYKPVRRPDNEAYERRNIKHVPGGC (SEQ ID NO:136), and further comprises a blocked amine at the N-terminus.

24. The polypeptide of claim 22, wherein the polypeptide is EFRHDSGRRDPDNEAYRRNIKHVPGRRQIVYKPVGGC (SEQ ID NO:137), and further comprising a blocked amine at the N-terminus.

25. An immunotherapy composition, comprising the polypeptide of any of claims 1 to 24, wherein the polypeptide is linked to a carrier.

26. The immunotherapy composition of claim 25, wherein the carrier comprises serum albumins, immunoglobulin molecules, thyroglobulin, ovalbumin, tetanus toxoid (TT), diphtheria toxoid (DT), a genetically modified cross-reacting material (CRM) of diphtheria toxin, CRM197, meningococcal outer membrane protein complex (OMPC) and *H. influenzae* protein D (HiD), rEPA (*Pseudomonas aeruginosa* exotoxin A), KLH (keyhole limpet hemocyanin), and flagellin.

27. The immunotherapy composition of claim 26, wherein the carrier is CRM197.

28. The immunotherapy composition of claim 26, wherein the carrier is diphtheria toxoid.

29. A pharmaceutical formulation comprising (a) the polypeptide of any one of claims 1 to 24 or the immunotherapy composition of any of claims 25 to 28 and (b) at least one adjuvant.

30. The pharmaceutical formulation of claim 29, wherein the adjuvant is selected from the group consisting of aluminum hydroxide, aluminum phosphate, aluminum sulfate, 3 De-O-acylated monophosphoryl lipid A (MPL), QS-21, TQL1055, QS-18, QS-17, QS-7, Complete Freund's Adjuvant (CFA), Incomplete Freund's Adjuvant (IFA), oil in water emulsions (such as squalene or peanut oil), CpG, polyglutamic acid, polylysine, AddaVax™, MF59®, and combinations thereof.

31. The pharmaceutical formulation of claim 30, wherein the adjuvant is QS-21 or TQL1055.

32. The pharmaceutical formulation of claim 30, wherein the adjuvant is MPL.

33. The pharmaceutical formulation of claim 30, wherein the adjuvant is a combination of MPL and QS-21 or a combination of MPL and TQL1055.

34. The pharmaceutical formulation of any of claims 29 to 33, wherein the adjuvant comprises a liposomal formulation.

35. The pharmaceutical formulation of any of claims 29 to 34, wherein the composition comprises at least one pharmaceutically acceptable diluent.

36. The pharmaceutical formulation of any of claims 29 to 35, comprising a multiple antigen presenting system (MAP).

37. The pharmaceutical formulation of claim 36, wherein the MAP comprises one or more of a Lys-based dendritic scaffold, helper T-cell epitopes, immune stimulating lipophilic moieties, cell penetrating peptides, radical induced polymerization, self-assembling nanoparticles as antigen-presenting platforms and gold nanoparticles.

38. An immunotherapy composition, comprising:

(a) a first peptide sequence comprising 3-10 amino acid residues from the first ten or 12 to 25 N-terminal residues of SEQ ID NO:01;

(b) a second peptide sequence comprising 3-13 amino acids from residues 244-400 of SEQ ID NO:02; and

(c) a third peptide sequence comprising 3-10 amino acids from residues 81-140 of SEQ ID NO:58.

39. The polypeptide of claim 38, further comprising a fourth peptide sequence selected from one of:

(a) a peptide comprising 3-10 amino acids from residues 1-10 or 12-25 of SEQ ID NO:01;

(b) a peptide comprising 3-13 amino acids from residues 244-400 of SEQ ID NO:02; and

(c) a peptide comprising 3-10 amino acids from residues 81-140 of SEQ ID NO:58.

40. The immunotherapy composition of claim 38 or claim 39, wherein:

(a) the first peptide sequence comprises an amino acid sequence selected from the group consisting of

DAEFRHDSGY (SEQ ID NO:03),
DAEFRHDSG (SEQ ID NO:04),
DAEFRHDS (SEQ ID NO:05),
DAEFRHD (SEQ ID NO:06),
DAEFRH (SEQ ID NO:07),
DAEFR (SEQ ID NO:08),
DAEF (SEQ ID NO:09),
DAE (SEQ ID NO:10),
AEFRHDSGY (SEQ ID NO:11),
AEFRHDSG (SEQ ID NO:12),
AEFRHDS (SEQ ID NO:13),
AEFRHD (SEQ ID NO:14),
AEFRH (SEQ ID NO:15),
AEFR (SEQ ID NO:16),
AEF (SEQ ID NO:17),
EFRHDSGY (SEQ ID NO:18),
EFRHDSG (SEQ ID NO:19),
EFRHDS (SEQ ID NO:20),
EFRHD (SEQ ID NO:21),
EFRH (SEQ ID NO:22),
EFR (SEQ ID NO:23),
FRHDSGY (SEQ ID NO:24),
FRHDSG (SEQ ID NO:25),
FRHDS (SEQ ID NO:26),
FRHD (SEQ ID NO:27),
FRH (SEQ ID NO:28),
RHDSGY (SEQ ID NO:29),
RHDSG (SEQ ID NO:30),

RHDS (SEQ ID NO:31),
RHD (SEQ ID NO:32),
HDSGY (SEQ ID NO:33),
HDSG (SEQ ID NO:34),
HDS (SEQ ID NO:35),
DSGY (SEQ ID NO:36),
DSG (SEQ ID NO:37),
SGY (SEQ ID NO:38),
VHHQKLVFFA (SEQ ID NO:1002),
VHHQKLVFF (SEQ ID NO:1003),
VHHQKLVF (SEQ ID NO:1004),
VHHQKLV (SEQ ID NO:1005),
VHHQKL (SEQ ID NO:1006),
HHQKLVFFAE (SEQ ID NO:1007),
HHQKLVFFA (SEQ ID NO:1008),
HHQKLVFF (SEQ ID NO:1009),
HHQKLVF (SEQ ID NO:1010),
HHQKLV (SEQ ID NO:1011),
HHQKL (SEQ ID NO:1012),
HQKLVFFAED (SEQ ID NO:1013),
HQKLVFFAE (SEQ ID NO:1014),
HQKLVFFA (SEQ ID NO:1015),
HQKLVFF (SEQ ID NO:1016),
HQKLVF (SEQ ID NO:1017),
HQKLV (SEQ ID NO:1018),
HQKL (SEQ ID NO:1019),
QKLVFFAEDV (SEQ ID NO:1020),
QKLVFFAED (SEQ ID NO:1021),
QKLVFFAE (SEQ ID NO:1022),
QKLVFFA (SEQ ID NO:1023),
QKLVFF (SEQ ID NO:1024),
QKLVF (SEQ ID NO:1025),
QKLV (SEQ ID NO:1026),
QKL (SEQ ID NO:1027),

KLVFFAEDVG (SEQ ID NO:1028),
KLVFFAEDV (SEQ ID NO:1029),
KLVFFAED (SEQ ID NO:1030),
KLVFFAE (SEQ ID NO:1031),
KLVFFA (SEQ ID NO:1032),
KLVFF (SEQ ID NO:1033),
KLVF (SEQ ID NO:1034),
KLV (SEQ ID NO:1035),
LVFFAEDVG (SEQ ID NO:1036),
LVFFAEDV (SEQ ID NO:1037),
LVFFAED (SEQ ID NO:1038),
LVFFAE (SEQ ID NO:1039),
LVFFA (SEQ ID NO:1040),
LVFF (SEQ ID NO:1041),
LVF (SEQ ID NO:1042),
VFFAEDVG (SEQ ID NO:1043),
VFFAEDV (SEQ ID NO:1044),
VFFAED (SEQ ID NO:1045),
VFFAE (SEQ ID NO:1046),
VFFA (SEQ ID NO:1047),
VFF (SEQ ID NO:1048),
FFAEDVG (SEQ ID NO:1049),
FFAEDV (SEQ ID NO:1050),
FFAED (SEQ ID NO:1051),
FFAE (SEQ ID NO:1052),
FFA (SEQ ID NO:1053),
FAEDVG (SEQ ID NO:1054),
FAEDV (SEQ ID NO:1055),
FAED (SEQ ID NO:1056), and
FAE (SEQ ID NO:1057);

(b) the second peptide sequence comprises an amino acid sequence selected from the group consisting of

QIVYKPV (SEQ ID NO:39),
QIVYKP (SEQ ID NO:40),

QIVYKSV (SEQ ID NO:41),

EIVYKSV (SEQ ID NO:42),

QIVYKS (SEQ ID NO:997),

EIVYKSP (SEQ ID NO:43),

EIVYKS (SEQ ID NO:998),

EIVYKPV (SEQ ID NO:44),

EIVYKP (SEQ ID NO:999),

IVYKSPV (SEQ ID NO:45),

IVYK (SEQ ID NO:46),

CNIKHVPG (SEQ ID NO:1000),

CNIKHVP (SEQ ID NO:47),

NIKHVP (SEQ ID NO:48),

HVPGGG (SEQ ID NO:49),

HVPGG (SEQ ID NO:50),

HKPGGG (SEQ ID NO:51),

HKPGG (SEQ ID NO:52),

KHVPGGG SEQ ID NO:53),

KHVPGG (SEQ ID NO:54),

HQPGGG (SEQ ID NO:55),

HQPGG (SEQ ID NO:56),

NIKHVPG (SEQ ID NO:57), and

SEQ ID NOs: 146-996; and

(c) the third peptide sequence comprises an amino acid sequence selected from the group consisting of

VDPDNEAYEM (SEQ ID NO:59),

VDPDNEAYE (SEQ ID NO:60),

VDPDNEAY (SEQ ID NO:61),

VDPDNEA (SEQ ID NO:62),

VDPDNE (SEQ ID NO:63),

VDPDN (SEQ ID NO:64),

VDPD (SEQ ID NO:65),

VDP (SEQ ID NO:66),

DPDNEAYEM (SEQ ID NO:67),

DPDNEAYE (SEQ ID NO:68),

DPDNEAY (SEQ ID NO:69),
DPDNEA (SEQ ID NO:70),
DPDNE (SEQ ID NO:71),
DPDN (SEQ ID NO:72),
DPD (SEQ ID NO:73),
PDNEAYEM (SEQ ID NO:74),
PDNEAYE (SEQ ID NO:75),
PDNEAY (SEQ ID NO:76),
PDNEA (SEQ ID NO:77),
PDNE (SEQ ID NO:78),
PDN (SEQ ID NO:79),
DNEAYEM (SEQ ID NO:80),
DNEAYE (SEQ ID NO:81),
DNEAY (SEQ ID NO:82),
DNEA (SEQ ID NO:83),
DNE (SEQ ID NO:84),
NEAYEM (SEQ ID NO:85),
NEAYE (SEQ ID NO:86),
NEAY (SEQ ID NO:87),
NEA (SEQ ID NO:88),
EAYEM (SEQ ID NO:89),
EAYE (SEQ ID NO:90),
EAY (SEQ ID NO:91),
AYEM (SEQ ID NO:92),
AYE(SEQ ID NO:93),
YEM (SEQ ID NO:94),
ATGFVKKDQL (SEQ ID NO:95),
ATGFVKKDQ (SEQ ID NO:96),
ATGFVKKD (SEQ ID NO:97),
ATGFVKK (SEQ ID NO:98),
ATGFVK (SEQ ID NO:99),
ATGFV(SEQ ID NO:100),
ATGF (SEQ ID NO:101),
ATG (SEQ ID NO:102),

TGFVKKDQL (SEQ ID NO:103),
TGFVKKDQ (SEQ ID NO:104),
TGFVKKD (SEQ ID NO:105),
TGFVKK (SEQ ID NO:106),
TGFVK (SEQ ID NO:107),
TGFV (SEQ ID NO:108),
TGF (SEQ ID NO:109),
GFVKKDQL (SEQ ID NO:110),
GFVKKDQ (SEQ ID NO:111),
GFVKKD (SEQ ID NO:112),
GFVKK (SEQ ID NO:113),
GFVK (SEQ ID NO:114),
GFV(SEQ ID NO:115),
FVKKDQL (SEQ ID NO:116),
FVKKDQ(SEQ ID NO:117),
FVKKD (SEQ ID NO:118),
FVKK (SEQ ID NO:119),
FVK (SEQ ID NO:120),
VKKDQL (SEQ ID NO:121),
VKKDQ (SEQ ID NO:122),
VKKD (SEQ ID NO:123),
VKK (SEQ ID NO:124),
KKDQL (SEQ ID NO:125),
KKDQ (SEQ ID NO:126),
KKD (SEQ ID NO:127),
KDQL (SEQ ID NO:128), and
KDQ (SEQ ID NO:129) and

(d) the fourth peptide sequence, if present, is one of any one of the amino acid sequences of SEQ ID NO: 3-38, 1002-1057, 39-57, 142-1000, and 59-129;

wherein each of the first peptide sequence, the second peptide sequence, the third peptide sequence, and the fourth peptide sequence, if present, may optionally comprise a C-terminal cysteine.

41. The immunotherapy composition of any one of claims 38 to 40, wherein the at least one of the first peptide sequence, the second peptide sequence, the third peptide sequence, and the fourth peptide sequence further comprise a linker to a carrier at either a C-terminal portion of the polypeptide, or a N-terminal portion of the polypeptide.

42. The immunotherapy composition of claim 41, wherein the linker comprises an amino acid sequence selected from the group consisting of GG, GGG, AA, AAA, KK, KKK, SS, SSS, GAGA (SEQ ID NO:139), AGAG (SEQ ID NO:140), and KGKG (SEQ ID NO:141).

43. The immunotherapy composition of claim 42, wherein the linker to the carrier may optionally comprise a C-terminal cysteine (C).

44. The immunotherapy composition of any one of claims 42 to 43, wherein the carrier comprises serum albumins, immunoglobulin molecules, thyroglobulin, ovalbumin, tetanus toxoid (TT), diphtheria toxoid (DT), a genetically modified cross-reacting material (CRM) of diphtheria toxin, CRM197, meningococcal outer membrane protein complex (OMPC) and *H. influenzae* protein D (HiD), rEPA (*Pseudomonas aeruginosa* exotoxin A), KLH (keyhole limpet hemocyanin), and flagellin.

45. The immunotherapy composition of claim 54, wherein the carrier is CRM197.

46. The immunotherapy composition of claim 54, wherein the carrier is diphtheria toxoid.

47. The immunotherapy composition of any one of claims 38 to 46, further comprising at least one pharmaceutically acceptable diluent.

48. The immunotherapy composition of any one of claims 38 to 47, further comprising a multiple antigen presenting system (MAP).

49. The immunotherapy composition of claim 48, wherein the MAP comprises one or more of a Lys-based dendritic scaffold, helper T-cell epitopes, immune stimulating lipophilic moieties, cell penetrating peptides, radical induced polymerization, self-assembling nanoparticles as antigen-presenting platforms and gold nanoparticles.

50. A pharmaceutical composition comprising the immunotherapy composition of any of claims 38 to 49 and at least one adjuvant.

51. The pharmaceutical composition of claim 50, wherein the adjuvant is selected from the group consisting of aluminum hydroxide, aluminum phosphate, aluminum sulfate, 3 De-O-acylated monophosphoryl lipid A (MPL), QS-21, TQL1055, QS-18, QS-17, QS-7, Complete Freund's Adjuvant (CFA), Incomplete Freund's Adjuvant (IFA), oil in water emulsions (such as squalene or peanut oil), CpG, polyglutamic acid, polylysine, AddaVax™, MF59®, and combinations thereof.

52. The pharmaceutical composition of claim 51, wherein the adjuvant is QS-21 or TQL1055.

53. The pharmaceutical composition of claim 51, wherein the adjuvant is MPL.

54. The pharmaceutical composition of claim 51, wherein the adjuvant is a combination of MPL and QS-21 or a combination of MPL and TQL1055.

55. A nucleic acid comprising a nucleic acid sequence encoding a polypeptide of any one of claims 1 to 24 of the immunotherapy composition of claims 38 to 55.

56. A nucleic acid immunotherapy composition comprising the nucleic acid of claim 55 and at least one adjuvant.

57. Use of ~~A method of treating or effecting prophylaxis of Alzheimer's disease in a subject, comprising administrating to the subject~~ the immunotherapy composition of any of claims 25 to 28 and 38 to 49 or the pharmaceutical formulations of any of claims 31 to 37 and 50 to 54 in the manufacture of a medicament for treating or

effecting prophylaxis of Alzheimer's disease in a subject, wherein the medicament is to be administered to the subject.

58. Use of ~~A method of inhibiting or reducing aggregation of at least one of Aβ, tau, and alpha-synuclein in a subject having or at risk of developing Alzheimer's disease, comprising, administering to the subject~~ the immunotherapy composition of any of claims 25 to 28 and 38 to 49 or the pharmaceutical formulations of any of claims 31 to 37 and 50 to 54 in the manufacture of a medicament for inhibiting or reducing aggregation of at least one of Aβ, tau, and alpha-synuclein in a subject having or at risk of developing Alzheimer's disease, wherein the medicament is to be administered to the subject.

59. Use of ~~A method of treating or effecting prophylaxis of Alzheimer's disease in a subject, comprising administrating to the subject~~ the nucleic acid immunotherapy composition of claim 56 in the manufacture of a medicament for treating or effecting prophylaxis of Alzheimer's disease in a subject, wherein the medicament is to be administered to the subject.

60. Use of ~~A method of inhibiting or reducing aggregation of at least one of Aβ, tau, and alpha-synuclein in a subject having or at risk of developing Alzheimer's disease, comprising administering to the subject~~ the nucleic acid immunotherapy composition of claim 56 in the manufacture of a medicament for inhibiting or reducing aggregation of at least one of Aβ, tau, and alpha-synuclein in a subject having or at risk of developing Alzheimer's disease, wherein the medicament is to be administered to the subject.

61. The ~~method~~ use of any of claims 57 to 60, wherein the medicament is to be repeatedly administered~~further comprising repeating the administering~~ at least a second time, at least a third time, at least a fourth time, at least a fifth time, or at least a sixth time.

62. The ~~method~~ use of claim 61, wherein the medicament is to be repeatedly administered~~further comprising repeating the administering~~ at an interval of about 21 to about 28 days.

63. Use of ~~A method of inducing an immune response in an animal, comprising administering to the animal~~ any one of the polypeptides of claims 1 to 21, the immunotherapy composition of any one of claims 25 to 28 and 38 to 49, the pharmaceutical formulations of any one of claims 25 to 37 and 50 to 54 or the nucleic acid immunotherapy composition of claim 62, in the manufacture of medicament for inducing an immune response in an animal, wherein the medicament is to be administered to the animal in a regimen effective to generate an immune response comprising antibodies that specifically bind to Aβ, tau, and/or alpha-synuclein.

64. The ~~method~~ use of claim 63, wherein the immune response comprises antibodies that specifically bind to Aβ, antibodies that specifically bind to tau, and antibodies that specifically bind to alpha-synuclein.

65. The ~~method~~ use of any of claims 63 to 64, wherein the inducing the immune response comprises antibodies that specifically bind to the N-terminal region of Aβ, the microtubule region of tau, and/or the C-terminal region of alpha-synuclein.

66. An immunization kit comprising the immunotherapy composition of any of claims 25 to 28 and 38 to 49.

67. The kit of claim 66, further comprising an adjuvant.

68. The kit of claim 67, wherein the immunotherapy composition is in a first container and the adjuvant is in a second container.

69. A kit comprising the nucleic acid immunotherapy composition of claim 56.

70. The kit of claim 69, further comprising an adjuvant.

71. The kit of claim 71, wherein the nucleic acid is in a first container and the adjuvant is in a second container.

72. The polypeptide of any one of claims 1 to 21, the immunotherapy composition of any one of claims 25 to 28 and 38 to 49, the pharmaceutical formulation of any one of claims 25 to 37 and 50 to 54 or the nucleic acid immunotherapy composition of claim 56 or 62 for use in therapy.