

What is claimed is:

1. An isolate peptide comprising an amino acid sequence selected from the group consisting of SEQ ID NOS: 1, 15-17, and 18-117.
2. The peptide of claim 1, wherein the amino acid sequence is a fusion peptide.
3. The peptide of claim 2, wherein the amino acid sequence is fused to a cell penetrating peptide or an endosomal release sequence.
4. The peptide of claim 3, wherein the cell penetrating peptide or the endosomal release sequence is selected from the group consisting of SEQ ID NOS: 118-137 or 140-159.
5. The peptide of claim 3, wherein a linker connects the amino acid sequence to the cell penetrating peptide or the endosomal release sequence.
6. The peptide of claim 5, wherein the linker is selected from the group consisting of SEQ ID NOS: 138, 139, 160, and 161.
7. The peptide of claim 2, wherein the cell penetrating peptide or the endosomal release sequence is fused to the amino acid sequence at an N- or a C-terminus.
8. The peptide of claim 7, wherein the fusion peptide is cyclized.
9. The peptide of claim 2, wherein the fusion peptide has an amino acid sequence selected from the group consisting of SEQ ID NOS: 2 and 4-14.
10. The peptide of claim 1 for use in the treatment of traumatic brain injury, chronic pain, peripheral nerve injury, epilepsy, diabetes, Alzheimer's disease, Huntington's disease, brain tumors (including glioblastoma multiforme), or pancreatic cancer in an animal.
11. Use of the peptide of claim 1 in the manufacture of a medicament for the treatment, alleviation, or ameliorating of a disease selected from the group consisting of traumatic brain injury, chronic pain, peripheral nerve injury, epilepsy, diabetes, Alzheimer's disease, Huntington's disease, brain tumors (including glioblastoma multiforme), or pancreatic cancer in an animal in need thereof, wherein the peptide effective to treat, alleviate, or ameliorate the disease is to be administered to the animal.

12. The use of claim 11, wherein the peptide binds to CTDSP1.
13. The use of claim 11, wherein peptide is to be administered intravenously, subcutaneously, orally, or via a mucosal membrane.
14. The use of claim 11, wherein the peptide is to be administered in multiple doses over a period of time.
15. The use of claim 14, wherein the period of time is less than one month.
16. The use of claim 14, wherein the dosage is about 0.01 mg/kg to about 1g/kg.
17. A pharmaceutical composition comprising the peptide of claim 1.
18. The composition of claim 17, wherein the peptide is contained in an oral solution, a caplet, a capsule, an injectable, an infusible, a suppository, a lozenge, a tablet, a cream, a salve, or an inhalant.
19. The composition of claim 17, further comprising an excipient.
20. The peptide of claim 2, wherein the fusion peptide has an amino acid sequence of SEQ ID NO: 13.