Product Data Sheet

Cat# **SP-51715-1**

Description: Prion Peptide (106-126), Human (AA: Lys-Thr-Asn-Met-Lys-His-Met-Ala-Gly-Ala-Ala-Ala-Ala-Gly-Ala-Val-Val-Gly-Gly-Leu-Gly) (MW: 1912.28)

Size: 1 mg

Purity: >95%

Store: Desiccated at -20oC.

The PRNP gene provides instructions for making a protein called prion protein (PrP), which is active in the brain and several other tissues. The word prion, coined in 1982 by Stanley B. Prusiner, is derived from the words protein and infectious. Although the precise function of this protein is unknown, researchers have proposed roles in several important processes. These include the transport of copper into cells and protection of brain cells (neurons) from injury (neuroprotection). Studies have also suggested a role for PrP in the formation of synapses, which are the junctions between nerve cells (neurons) where cell-to-cell communication occurs.

Different forms of PrP have been identified. The normal version is often designated PrPC to distinguish it from abnormal forms of the protein, which are generally designated PrPSc. A prion in the Scrapie form (PrPSc) is an infectious agent composed of protein in a misfolded form. The protein that prions are made of (PrP) is found throughout the body, even in healthy people and animals. However, PrP found in infectious material has a different structure and is resistant to proteases, the enzymes in the body that can normally break down proteins. While PrPC is structurally well-defined, PrPSc is certainly polydisperse and defined at a relatively poor level.

Prions are responsible for the transmissible spongiform encephalopathies in a variety of mammals, including bovine spongiform encephalopathy (BSE, also known as "mad cow disease") in cattle. In humans, prions cause Creutzfeldt-Jakob Disease (CJD), variant Creutzfeldt-Jakob Disease (vCJD), Gerstmann–Sträussler–Scheinker syndrome, Fatal Familial Insomnia and kuru. All known prion diseases affect the structure of the brain or other neural tissue and all are currently untreatable and universally fatal.

Prion Peptide is a 21-residue peptide corresponding to the prion protein (PrP) amyloidogenic region containing the "toxic" core of Scrapie prion protein (PrPSc) that mimics the physiochemical properties of PrPSc. Adopts a prevalent β-sheet structure, which forms amyloid fibrillar aggregates that are partially resistant to proteolysis. Induces the synthesis of transmembrane prion protein. Displays neurotoxicity and induces microglial activation. Reported to induce apoptosis via mitochondrial disruption.

References:

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