Beta-Amyloid (1-42)

Catalog Number: 81100
Unit Size: 1 mg

Product Details

Storage Conditions	Freeze (< -15 °C), Minimize light exposure
Expiration Date	12 months upon receiving

Chemical Properties

Appearance	Solid white
Molecular Weight	4514.08
Soluble In	DMSO
Chemical Structure	

Spectral Properties

Excitation Wavelength	N/A
Emission Wavelength	N/A

Applications

Beta-amyloid (1-42) (Aβ1-42) is a 42-amino acid peptide that is the primary pathogenic species associated with Alzheimer's disease (AD). It has the amino acid sequence of H-Asp-Ala-Glu-Phe-Arg-His-Asp-Ser-Gly-Tyr-Glu-Val-His-His-Gln-Lys-Leu-Val-Phe-Phe-Ala-Glu-Asp-Val-Gly-Ser-Asn-Lys-Gly-Ala-Ile-Ile-Gly-Leu-Met-Val-Gly-Gly-Val-Val-Ile-Ala-OH (DAEFRHDSGYEVHHQKLVFFAEDVGSNKGAIIGLMVGGVVIA). It is a major component of the amyloid plaques that accumulate in the brains of patients with AD, a hallmark of the disease. Aβ1-42 is produced by the sequential cleavage of a larger protein, the amyloid precursor protein (APP), by two enzymes: beta-secretase and gamma-secretase. In Alzheimer's disease, the production and/or clearance of Aβ1-42 are dysregulated, leading to its accumulation. It is highly hydrophobic and prone to misfolding and aggregating into small, toxic oligomers and larger, insoluble fibrils. These aggregates form the amyloid plaques found between neurons in the brain. Aβ1-42 has a much higher propensity to aggregate into amyloid fibrils than the more abundant, shorter Aβ1-40 form. This aggregation is believed to be an initial event in the progression of AD, potentially initiating neurotoxic processes like synaptic dysfunction, chronic inflammation, and ultimately, nerve cell death. The ratio of Aβ1-42 to Aβ1-40 is used as a highly accurate diagnostic marker for AD pathology. It is also a drug target for developing AD medicines. AAT Bioquest's beta-Amyloid (1-42) material is thoroughly analyzed to ensure its quality by HPLC, electrophoresis and cell functional analysis.