3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

Amyloid β Protein Fragment 1-42

Catalog Number **A9810**
Storage Temperature –20 °C

CAS RN 107761-42-2

Product Description

Amyloid β protein is neurotrophic and neurotoxic.[1] β-Amyloid peptides (amino acids 1-42 and 1-43) are the major constituents of senile plaques and neurofibrillary tangles that occur in the hippocampus, neocortex, and amygdala of patients with Alzheimer's disease.[2] β-Amyloid peptide fragments of 39-43 residues in length are the major components of amyloid plaques in Alzheimer's disease and late Down's Syndrome. The gene for this peptide is located on human chromosome 21.[3]

This peptide adopts a mixture of β-sheet, α-helix, and random coil structures. In aqueous solution the β-sheet conformation is preferred.[4] The rate of aggregation to the oligomeric β-sheet structure characteristic of β-amyloid plaques is dependent on pH and on peptide concentration. The hydrophobic carboxy terminus of the peptide is critical for plaque formation.[4,5]

Amino acid sequence:
NH_2-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-COOH

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

This product is soluble in ammonium hydroxide, pH >9, or in DMSO at 0.4–4 mM.[5] Solutions can then be diluted into aqueous buffers such as 10 mM sodium phosphate for use.

Storage/Stability

This product should be stored desiccated at –20 °C. It should be allowed to warm to room temperature in a desiccator prior to opening the vial.

References

1. Yankner, B.A. et al., Neurotrophic and neurotoxic effects of amyloid beta protein: Reversal by tachykinin neuropeptides. Science, **250(4978)**, 279-282 (1990).
2. Roher, A.E. et al., Beta-Amyloid-(1-42) is a major component of cerebrovascular amyloid deposits: Implications for the pathology of Alzheimer's disease. Proc. Natl. Acad. Sci. USA, **90(22)**, 10836-10840 (1993).
3. Kang, J. et al., The precursor of Alzheimer's disease amyloid A4 protein resembles a cell-surface receptor. Nature, **325**, 733-736 (1987).
4. Barrow, C.J. et al., Solution conformations and aggregational properties of synthetic amyloid beta-peptides of Alzheimer's disease. Analysis of circular dichroism spectra. J. Mol. Biol., **225**, 1075-1093 (1992).
5. Jarrett, J.T. et al., The carboxy terminus of the beta amyloid protein is critical for the seeding of amyloid formation: implications for the pathogenesis of Alzheimer's disease. Biochemistry, **32**, 4693-4697 (1993).

IRB,CMH,AJH,MAM 10/12-1