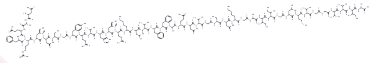
Data Sheet (Cat.No.TP1007)

TargetMol

β-Amyloid (1-42), human

Chemical Properties



CAS No. : 107761-42-2

Formula: C203H311N55O60S

Molecular Weight: 4514.04

Storage: Keep away from moisture,Store at low temperature,
Keep away from direct sunlight
Powder: -20°C for 3 years
Actual storage temperature shall be subject to the COA.

Biological Description

Description	β-Amyloid (1-42), human, is a 42-amino acid peptide integral to the pathogenesis of Alzheimer disease.
Targets(IC50)	Beta Amyloid
In vitro	Amyloid β-Peptide (1-42) human is a 42-amino acid peptide which plays a key role in the pathogenesis of Alzheimer disease. Application of Amyloid β-Peptide (1-42) human (1 to 10 μM) in the bathing solution does not change delayed rectifier K+-current and leakage current, but enhances inactivation of Ca2+-current and blocks Ca2+-dependent K+-current[1]. At 2.5 μM concentration, Amyloid β-Peptide (1-42) human reduces viability of SH-SY5Y cells to 65%. Results show that Amyloid β-Peptide (1-42) human localizes in both the cytoplasm and nucleus of SH-SY5Y cells after 30 min of incubation and after 8 h. In the latter, large accumulations of Amyloid β-Peptide (1-42) human are seen in the cytoplasm and in the nucleus. Increased APP mRNA levels are also detected upon Amyloid β-Peptide (1-42) human treatment[2]. Preparation of Monomeric Aβ42 from Lyophilized Peptide [2] The following procedure is a recommended guideline and may require optimization based on the requirements of specific downstream applications. 1. Equilibrate lyophilized Aβ42 peptide to room temperature. Briefly centrifuge at 1,500 × g for 30 seconds to collect material at the bottom of the tube. 2. Add ice-cold hexafluoroisopropanol (HFIP) at a ratio of 100 μL per 0.5 mg Aβ42. Incubate the mixture on ice for 30 minutes to fully solubilize the peptide. Caution: HFIP is volatile and toxic. Perform all handling in a certified chemical fume hood with appropriate personal protective equipment. 3. Dispense the peptide/HFIP solution into 20 μL aliquots, allowing solvent to evaporate in a fume hood for 2-3 hours until a uniform peptide film is formed. Films may be stored at –20 °C or –80 °C. Note: If available, vacuum desiccation or nitrogen gas blowing is recommended.

In vitro	Preparation of Aβ42 Oligomers 1. Dissolve the peptide film in 10 μL of freshly prepared DMSO (Cat. No. T0341). Sonicate in a water-bath sonicator for 10 minutes at room temperature to facilitate monomerization. 2. Dilute the DMSO stock with 190 μL of 50 mM Tris-HCl buffer (pH 7.4) and mix gently by pipetting to avoid introducing air bubbles. 3. Centrifuge the solution at 20,000 × g for 20 minutes at 4 °C to remove insoluble aggregates. Carefully transfer the supernatant (monomer-enriched fraction) to a clean tube. 4. Incubate the collected supernatant at 4-8 °C for 24-48 hours to promote controlled oligomerization. Centrifuge again at 20,000 × g for 20 minutes at 4 °C to remove newly formed large aggregates. Use the final supernatant for experiments following dilution (typically 10-200 fold depending on assay requirements). Warning: Aβ42 oligomeric assemblies are unstable and prone to further aggregation. Fresh preparation is strongly recommended. For extended storage, peptides should remain in film form at –20 °C or –80 °C rather than in solution. 5. Quantify peptide concentration using a bicinchoninic acid (BCA) protein assay (Cat. No. C0050), following the manufacturer's instructions. Note: The protocol is derived from published literature and is provided for reference only. TargetMol has not independently validated the method.

Solubility Information

Solubility	DMSO: 50 mg/mL (11.08 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	0.2215 mL	1.1077 mL	2.2153 mL
5 mM	0.0443 mL	0.2215 mL	0.4431 mL
10 mM	0.0222 mL	0.1108 mL	0.2215 mL
50 mM	0.0044 mL	0.0222 mL	0.0443 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Solntseva EI, et al. Impact of amyloid-β peptide (1-42) on voltage-gated ion currents in molluscan neurons. Bull Exp Biol Med. 2011 Oct;151(6):671-4.
Deng J L, Huang L F, Bian Z Y, et al.A new neuroprotective candidate TJ1 targeting amyloidogenesis in 5xFAD Alzheimer's disease mice.International Immunopharmacology.2024, 138: 112653.
K Singh et al. Analysis of β-Amyloid-induced Abnormalities on Fibrin Clot Structure by Spectroscopy and Scanning Electron Microscopy JoVE. 2018 Nov DOI: 10.3791/58475

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