

Product Data Sheet

Product Name: Amyloid Beta-peptide (25-35) (human)
 Cat. No.: GP10082

Chemical Properties

Cas. No. 131602-53-4

Chemical Name Amyloid Beta-peptide (25-35) (human)

SMILES CCC(C)C(C(=O)NC(C(C)CC)C(=O)NCC(=O)NC(CC(C)C)C(=O)NC(CCSC)C(=O)O)NC(=O)C(C)NC(=O)CNC(=O)C(CCCCN)NC(=O)C(CC(=

Formula C₄₅H₈₁N₁₃O₁₄S

M.Wt

1060.27

Solubility ≥ 106mg/mL in DMSO

Storage

Desiccate at -20°C

General For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be tips several months.

Shipping Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.
 Condition

Structure

Protocol

[1]:

PC12 cells

Amyloid Beta-peptide (25-35) (human)
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 1mM 37°C 4 -20°C

2 × 10⁴ / 96 37°C 48h
 20 μM Amyloid-β-(25-35) 24h

20 μM; 24 hours

20 μM Amyloid-β-(25-35) PC12 24 h
 (100%) 67%

[2]:

Sprague-Dawley

15 nmol/5 μl Amyloid Beta-peptide (25-35) (human) 8

15 nmol/5 μl; i.c.v.; 8days

Caution: Product has not been fully validated for medical applications. For research use only.

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□□□□□□□□ 15 nmol/□□ □□□ Amyloid Beta-peptide
(25-35) (human) □□□□□□□□□□□□□□□□

References:

[1]. Xian YF, Lin ZX, et.al. Protective effect of isorhynchophylline against β -amyloid-induced neurotoxicity in PC12 cells. *Cell Mol Neurobiol.* 2012 Apr;32(3):353-60. doi: 10.1007/s10571-011-9763-5. Epub 2011 Nov 1. PMID: 22042506.

[2]. Yamaguchi Y, Kawashima S. Effects of amyloid-beta-(25-35) on passive avoidance, radial-arm maze learning and choline acetyltransferase activity in the rat. *Eur J Pharmacol.* 2001 Feb 2;412(3):265-72. doi: 10.1016/s0014-2999(01)00730-0. PMID: 11166290.

Background

Amyloid beta(A β)-peptide (25-35) (human) is a fragment of Alzheimer's Amyloid beta peptide which is commonly found in the brains of people with Alzheimer's disease (AD) and is a major component of Alzheimer's amyloid plaques^[1-3]. Amyloid beta-peptide (25-35) (human) is considered a functional domain of A β due to its neurotoxic effects, and it is the bioactive region of beta-amyloid^[4].

Amyloid beta-peptide (25-35) (human) treatment (20 μ M, 6 hours) activated tau protein kinase I/glycogen synthase kinase-3beta (TPKI/GSK-3beta) in primary culture of hippocampal neurons^[5]. The Amyloid beta-peptide (25-35) (human) (100nM, 1 μ M, 10 μ M, or 30 μ M) reduces the viability of cultured cerebral cortical rat neurons^[6]. Amyloid beta-peptide (25-35) (human) (10 μ M) increased the amplitude of excitatory responses produced by local iontophoretic applications of glutamate and NMDA^[7]. Treatment of PC12 cells with 20 μ M of Amyloid beta-peptide (25-35) (human) for 24 h induced cytotoxicity as the cell viability was reduced to 67% of the control value (100%)^[8].

A single intracerebroventricular (i.c.v.) injection of Amyloid beta-peptide (25-35) (human) (15 nmol/5 μ l; i.c.v.;8days) at a dose of 15 nmol/rat induced a marked decrease in latency in step-through passive avoidance task^[9].

References:

[1]. Nalbantoglu J. Beta-amyloid protein in Alzheimer's disease. *Can J Neurol Sci.* 1991 Aug;18(3 Suppl):424-7. doi: 10.1017/s0317167100032595. PMID: 1933692.

[2]. Rush DK, Aschmies S, et.al. Intracerebral beta-amyloid(25-35) produces tissue damage: is it neurotoxic? *Neurobiol Aging.* 1992 Sep-Oct;13(5):591-4. doi: 10.1016/0197-4580(92)90061-2. PMID: 1281289.

[3]. Mattson MP, Cheng B, et.al. beta-Amyloid peptides destabilize calcium homeostasis and render human cortical neurons vulnerable to excitotoxicity. *J Neurosci.* 1992 Feb;12(2):376-89. doi: 10.1523/JNEUROSCI.12-02-00376.1992. PMID: 1346802; PMCID: PMC6575616.

[4]. D'Errico, G; Vitiello, G; et.al. Interaction between Alzheimer's A(25-35) peptide and phospholipid bilayers: The role of cholesterol. *Biochimica. Biophys. Acta (BBA) – Biomembr.*, 2008, 1778, 2710-2716.

[5]. Takashima A, Honda T, et.al. Activation of tau protein kinase I/glycogen synthase kinase-3beta by amyloid beta peptide (25-35) enhances phosphorylation of tau in hippocampal neurons. *Neurosci Res.* 1998 Aug;31(4):317-23. doi: 10.1016/s0168-0102(98)00061-3. PMID: 9809590.

[6]. Wang Y, Liu L, et.al. Mechanism of soluble beta-amyloid 25-35 neurotoxicity in primary cultured rat cortical neurons. *Neurosci Lett.* 2016 Apr 8;618:72-76. doi: 10.1016/j.neulet.2016.02.050. Epub 2016 Mar 3. PMID: 26940239.

[7]. Carette B, Poulain P, et.al. Electrophysiological effects of 25-35 amyloid-beta-protein on guinea-pig lateral septal neurons. *Neurosci Lett.* 1993 Mar 5;151(1):111-4. doi: 10.1016/0304-3940(93)90059-t. PMID: 8385758.

[8]. Xian YF, Lin ZX, Mao QQ, Ip SP, Su ZR, Lai XP. Protective effect of isorhynchophylline against β -amyloid-induced neurotoxicity in PC12 cells. *Cell Mol Neurobiol.* 2012 Apr;32(3):353-60. doi: 10.1007/s10571-011-9763-5. Epub 2011 Nov 1. PMID: 22042506.

[9]. Yamaguchi Y, Kawashima S. Effects of amyloid-beta-(25-35) on passive avoidance, radial-arm maze learning and choline acetyltransferase activity in the rat. *Eur J Pharmacol.* 2001 Feb 2;412(3):265-72. doi: 10.1016/s0014-2999(01)00730-0. PMID: 11166290.

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