

Data Sheet

Product Name:	β-Amyloid (1-40)
Cat. No.:	CS-7014
CAS No.:	131438-79-4
Molecular Formula:	C194H295N53O58S
Molecular Weight:	4329.82
Target:	Amyloid-β
Pathway:	Neuronal Signaling
Solubility:	10 mM in H ₂ O

DAEFRHDSGYEVHHQKLVFFAEDVGSNKGAIIGLMVGGVV

BIOLOGICAL ACTIVITY:

β-Amyloid (1-40) is a primary protein in plaques found in the brains of patients with Alzheimer's disease. **In Vitro:** β-Amyloid (1-40) and (1-42) are major components of senile plaque amyloids, are physiological peptides present in the brain, cerebrospinal fluid (CSF) and plasma. The levels of CSF β-Amyloid (1-40) and (1-42) show a U-shaped natural course in normal aging^[1]. Chronic infusion of beta-amyloid (1-40) for 14 days into the rat cerebroventricle decreased the activity of soluble protein kinase C (PKC) in the hippocampus. Subcellular translocation of PKC to membrane fraction in hippocampal slices of rats treated with beta-amyloid (1-40) is completely abolished under acute stimulation with 0.5 microM phorbol-dibutyrate (PDBu)^[2]. **In Vivo:** Chronic infusion of β-Amyloid (1-40) into rat cerebroventricle leads to deficit in spatial and non-spatial memory formation^[2]. Chronic treatment of β-Amyloid (1-40) does not change lever-pressing performance significantly, but performance declined significantly 30 days after termination of the chronic daily regimen. The soluble unaggregated form of β-Amyloid (1-40), injected into the dorsal hippocampus, does not appear to have behavioral effects on performance or short-term working memory in rats, but multiple repeat injections produced performance decrements several weeks later. Repeated injection of β-Amyloid (1-40) through indwelling cannulae shows promise for development of an animal model of Alzheimer's disease^[3].

PROTOCOL (Extracted from published papers and Only for reference)

Animal Administration: β-Amyloid (1-40) is dissolved in HPLC buffer (35% methyl cyanide) to 1 μM.^[3] Rats: HPLC buffer insures the β-Amyloid (1-40) does not aggregate in solution prior to injection, β-Amyloid (1-40) and vehicle are bilaterally infused into the hippocampus, 20 min before experimental sessions, in volumes of 1, 2 and 3 μL per side, at a rate of <1 μL/min. Different volumes of the 1 μM solution are used. Volumes (doses) are given in random order and at least three sham-injection sessions are interposed between β-Amyloid (1-40) or vehicle injections. All rats receive all doses of β-Amyloid (1-40) under the acute injection regimen^[3].

References:

- [1]. Shoji M, et al. Cerebrospinal fluid Abeta40 and Abeta42: natural course and clinical usefulness. *Front Biosci.* 2002 Apr 1;7:d997-1006.
- [2]. Cleary J, et al. Beta-amyloid(1-40) effects on behavior and memory. *Brain Res.* 1995 Jun 5;682(1-2):69-74.
- [3]. Olariu A, et al. Memory impairment induced by chronic intracerebroventricular infusion of beta-amyloid (1-40) involves downregulation of protein kinase C. *Brain Res.* 2002 Dec 13;957(2):278-86.

CAIndexNames:

L-Valine, L-α-aspartyl-L-alanyl-L-α-glutamyl-L-phenylalanyl-L-arginyl-L-histidyl-L-α-aspartyl-L-serylglycyl-L-tyrosyl-L-α-glutamyl-L-valyl-L-histidyl-L-histidyl-

L-glutaminy-L-lysyl-L-leucyl-L-valyl-L-phenylalanyl-L-phenylalanyl-L-alanyl-L- α -glutamyl-L- α -aspartyl-L-valylglycyl-L-seryl-L-asparaginy-L-lysylglycyl-L-alanyl-L-isoleucyl-L-isoleucylglycyl-L-leucyl-L-methionyl-L-valylglycylglycyl-L-valyl-

SMILES:

[DAEFRHDSGYEVHHQKLVFFAEDVGSNKGAIIGLMVGGVV]

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

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