Datasheet for ABIN7272125

beta Amyloid Protein

4 Images

Go to Product page

Overview

Quantity:	100 µg
Target:	beta Amyloid (Abeta)
Origin:	Human
Source:	Synthetic
Protein Type:	Synthetic
Application:	Western Blotting (WB), In vitro Assay (in vitro), In vivo Studies (in vivo)

Product Details

Purpose:	Human Synthetic Amyloid Beta Peptide 1-42 (HFIP treated) Monomers
Sequence:	DAEFRHDSGY EVHHQKLVFF AEDVGSNKGA IIGLMVGGVV IA
Purity:	>95% pure using mass spec and HPLC.

Target Details

Target:	beta Amyloid (Abeta)
Alternative Name:	Amyloid Beta (Abeta Products)
Background:	Our amyloid beta peptide 1-42 (Aβ42) is produced synthetically and treated with 1,1,1,3,3,3-Hexafluoro-2-propanol (HFIP) prior to drying which breaks down pre-formed fibrils and monomerizes the peptide, as previously published (1,2). Upon resuspension in DMSO/dH2O, our Aβ42 presents as a monomeric peptide without fibrils when observed under TEM, AFM and on a Western Blot with an anti-amyloid beta antibody. In contrast to AB42 oligomer and fibril constructs, our Aβ42 monomers were not toxic to primary rat cortical neurons. In the brain,

Target Details

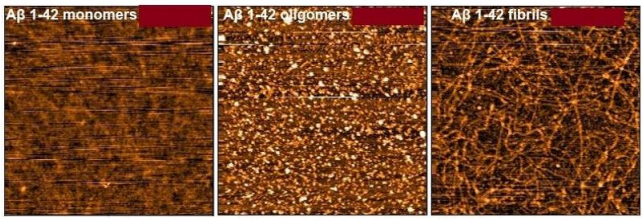
	amyloid beta peptide (Aβ) is generated by protease cleavage of amyloid precursor protein (APP), which aggregates into oligomers, protofibrils, fibrils and ultimately plaques in neurodegenerative diseases. The accumulation of Aβ plaques in the brain is considered a hallmark of Alzheimer's disease (AD), and most of the drugs tested for AD in the past 20 years have targeted amyloid beta accumulation (3). Soluble Aβ oligomers isolated from the brains of AD patients or those generated in vitro potently impaired synapse structure and function (4). Aβ oligomers generated in vitro were toxic to PC12 cells (2) and SH-SY5Y cells (5). Aβ was demonstrated to interact with tauopathies to affect neurodegeneration in AD patients (6) and accumulations of Aβ were shown to be associated with lower survival rates in Parkinson's disease patients with dementia (7)., cellular localisation: Cell Membrane , Intracellular Vesicles
Molecular Weight:	4.5 kDa
Gene ID:	351
UniProt:	P05067
Pathways:	Inflammasome

Application Details

Application Notes:	Optimal working dilution should be determined by the investigator.
Restrictions:	For Research Use only

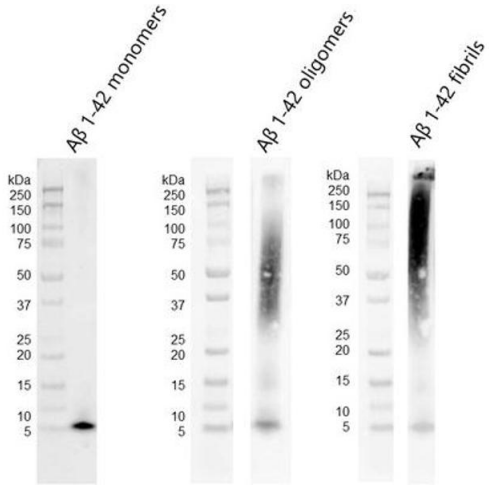
Handling

Storage:	-80 °C
Storage Comment:	-80°C



Electron Microscopy

Image 1. AFM of amyloid beta 1-42 monomers (ABIN7272125, ABIN7272126 and ABIN7272127, left), oligomers (ABIN7272125, ABIN7272126 and ABIN7272127, middle) and fibrils (ABIN7272125, ABIN7272126 and ABIN7272127, right). Atomic force microscopy analysis of 1.0 mg/mL samples diluted to 0.1 mg/mL in dH2O, mounted on freshly cleaved mica, washed, dried and analyzed with tapping mode. Representative images are 2.5 x 2.5 µm x-y with a z-range of 10 nm.



Western Blotting

Image 2. Western blot of amyloid beta 1-42 monomers (ABIN7272125, ABIN7272126 and ABIN7272127, left), oligomers (ABIN7272125, ABIN7272126 and ABIN7272127, middle) and fibrils (ABIN7272125, ABIN7272126 and ABIN7272127, right) using anti-amyloid beta 6E10 antibody. Amyloid beta constructs at 160 pmol were run on 4-12 % Bis-Tris SDS-PAGE, transferred to nitrocellulose in the presence of 0.02 % v/v Tween-20, and blotted with 1:1000 mouse 6E10 primary antibody (Biolegend). Oligomers observed under TEM/AFM show distinct dimer/trimer bands as well as a signal from ~37-75 kDa (middle). Fibrils observed under TEM/AFM show a signal greater than 100 kDa and a distinct signal in the stacking gel (right).

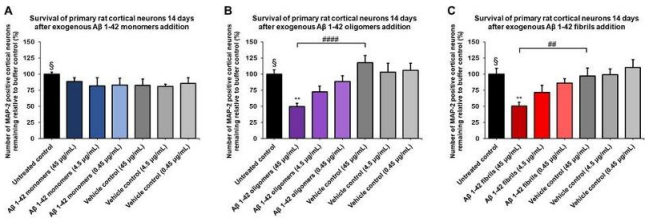


Image 3. Amyloid beta 1-42 oligomers (ABIN7272125, ABIN7272126 and ABIN7272127) and fibrils (ABIN7272125, ABIN7272126 and ABIN7272127) show a dose-dependent toxicity to primary rat cortical neurons, but not monomers (ABIN7272125, ABIN7272126 and ABIN7272127). Survival of rat primary cortical neurons 14 days after treatment with different concentrations of (A) monomers, (B) oligomers or (C) fibrils quantified by MAP2 positive neurons and

expressed as a percentage of control. Fibrils and respective vehicle controls were initially sonicated in a Bioruptor. Test conditions were run in the same plate as untreated control and vehicle controls, which consisted of buffer without amyloid beta 1-42 protein. Data expressed as mean +/- s.e.m. (n=6). A global analysis of the data was performed using a one-way ANOVA followed by Dunnett's test, ** p<0.01 stats vs control, ## p<0.01, #### p<0.0001 stats vs vehicle control. represents untreated control condition.

Please check the product details page for more images. Overall 4 images are available for ABIN7272125.

