β-Amyloid (Aβ) [1-40]

PRODUCT ANALYSIS SHEET

Catalog Number:	03-136
Lot Number:	????
Quantity:	1 mg
Description:	Major constituent of plaques and tangles that occur in Alzheimer's disease (AD) patients.
Sequence:	H_2N-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-OH
Molecular Weight:	4329.9
Purity:	≥95% by HPLC analysis (purity based on peak area)
Amino Acid Analysis and Identity:	Confirms expected sequence
Peptide Content:	????? %
Physical Appearance:	Lyophilized powder
Solubility:	H_2O, TFA (trifluoroacetic acid), DMSO, HFIP (1,1,1,3,3,3-hexafluoro-2-propanol). Solubility in H_2O: 1 mg/mL.
Storage:	–20ºC
Expiration Date:	See product label

References:

Borchelt, D.R., et al. (1997) Neuron 19:939-945.
Arendash, G.W., et al. (1999) Neuroscience Letters 268:17-20.
Yan, S.D., et al. (1999) J. Biol. Chem. 274:2145-2156.
Bradt, B.M., et al. (1999) J. Exp. Med. 188:431-438.
Ulery, P.G., et al. (2000) J. Biol. Chem. 275:7410-7415.
Eisenhauer, P.B., et al. (2000) J. Neurosci. Res. 60(6):804-810.
Lefterov, I.M., et al. (2000) FASEB J. 14:1837-1847.
Town, T., et al. (2001) Neuroscience Letters 307:101-104.
Viel, J.J., et al. (2001) J. Neurosci. Res. 64(5):454-465.
Wang, S., et al. (2001) J. Biol. Chem. 276(45):42027-42034.
Paris, D., et al. (1999) Exp. Neurol. 157:211-221.
Paris, D., et al. (2002) Atherosclerosis 161(2):293-299.
Paris, D., et al. (2002) Prostaglandins and Other Lipid Mediators 70(1-2):1-12.
Wei, W.L., et al. (2002) J. Biol. Chem. 277(20):17649-17656.
Tian, G.C., et al. (2002) J. Biol. Chem. 277(35):31499-31505.
Kung, M.-P., et al. (2002) Brain Research 956:202-210.
Agdeppa, E.D., et al. (2003) Neuroscience 117(3):723-730.
Luo, X.G., et al. (2003) J. Immunol. 135(1-2):62-71.

www.invitrogen.com
Invitrogen Corporation • 542 Flynn Rd • Camarillo • CA 93012 • Tel: 800.955.6288 • E-mail: techsupport@invitrogen.com

Recommendations for Peptide Reconstitution:

Preparing peptide for neurotoxicity studies, to induce peptide aggregation:

The appearance of toxicity has recently been shown to correlate to the extent of beta sheet structure (S. Wang et al. [2001] *J. Biol. Chem*. **276**(45):42027-42034). Recommended preincubation is:

1. Dissolve the lyophilized peptide in 0.1% (v/v) trifluoroacetic acid in water at 10 mg/mL.
2. Dilute the peptide to 0.5–1.0 mg/mL with PBS (without Ca^{2+}).
3. Incubate at 25°C for 24-48 h (24-36 h is usually sufficient).

Neurotoxic activity is usually observed at 30-100 µg/mL.

Preparing peptide for studies which require minimal peptide aggregation:

1. Dissolve the peptide at a concentration of 1 mg/mL in 100% HFIP (1,1,1,3,3,3-hexafluoro-2-propanol [Sigma-Aldrich Cat. # 32,524-4, 99.8% ACS reagent grade]).
2. Incubate at RT for 2 hours. During the incubation, vortex the peptide solution several times at moderate speed, allowing the HFIP to cover as much of the surface area as possible.
3. Dry down the HFIP/peptide solution under a gentle stream of nitrogen gas. Continue drying for an additional 10 minutes. Cap vial immediately.
4. Resuspend the peptide in 100% DMSO.
5. Incubate the peptide plus DMSO for 12 minutes at RT with periodic vortexing at moderate speed.
6. Add 50 µL of this DMSO/peptide solution dropwise to 10 mL of BSAT-DPBS (see formulation below) while vortexing at moderate speed.

Peptides prepared in this manner have been used as standards in ELISA for the detection of beta amyloid in biological samples. When using this peptide in ELISA, it is important that the assay buffer used with the peptide standards has the same composition as the samples under investigation.

Buffer Formulations:

DPBS Solution (10X Stock) (Biofluids Cat. # 316-500)
Dulbecco's PBS (DPBS w/o Mg^{2+}, Ca^{2+})

BSAT-DPBS Solution:
1X DPBS, pH 7.4
5% BSA
0.03% Tween-20

Explanation of symbols

Symbol	Description	Symbol	Description
REF	Catalogue Number	LOT	Batch code
RUO	Research Use Only	IVD	*In vitro* diagnostic medical device
	Use by		Temperature limitation
	Manufacturer	EC REP	European Community authorised representative
[-]	Without, does not contain	[+]	With, contains
	Protect from light		Consult accompanying documents
	Directs the user to consult instructions for use (IFU), accompanying the product.		

For Research Use Only. CAUTION: Not for human or animal therapeutic or diagnostic use.