Product Data Sheet

Product Name:	β-Amyloid (1-42)	
Catalog Number:	AS-24224 (0.5 mg) AS-20276 (1 mg) AS-20276-5 (5 mg) AS-20276-25 (25 mg)	Lot Number: See label on vial
Sequence:	H-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-Ile-Ala-OH (3-letter code) DAEFRHDSGYEVHHQKLVFFAEDVGSNKGAIIGLMVGGVVIA (1-letter code)	
Molecular Weight:	4514.1	
% Peak Area by HPLC:	≥95	
Peptide Content:	≥ 60%	
Appearance:	Lyophilized white powder	

Peptide Reconstitution: Use 1.0% NH4OH as the solvent, followed by buffer (i.e.1XPBS). Add 1.0% NH4OH directly to the lyophilized peptide powder (add 35-40 µl to 0.5 mg peptide or 70-80 µl to 1 mg peptide). The peptide cannot be stored long term in 1.0% NH4OH, and it is therefore important to immediately dilute this solution with 1X PBS or other buffer to a concentration of approximately 1mg/mL or less. Gently vortex to mix.

Storage: Peptide is shipped at ambient temperature. Upon receipt, store lyophilized powder at –20°C or lower. Reconstituted peptide should be aliquoted into several freezer vials and stored at –20°C or lower. Do not freeze thaw.

Description: Aβ (1-42), a major component of amyloid plaques, accumulates in neurons of Alzheimer's disease brains. Biochemical analysis of the amyloid peptides isolated from Alzheimer's diease brain indicates that Aβ (1-42) is the principal species associated with senile plaque amyloids, while Aβ (1-40) is more abundant in cerebro-vascular amyloid deposits. Ref: Nagele, R. et al. *Nseurosci* **110**, 199 (2002); Garzon-Rodriguez, W. et al. *J Biol Chem* **272**, 21037 (1997).

Additional Information: *Listed below are relevant information that may provide a guideline on how to use this product. End users will have to adapt to their own specific applications.*

Amyloid β(1–42) peptide was purchased from AnaSpec (San Jose, CA, USA). A 1 mg sample of peptide was dissolved in 200 µL hexafluoroisopropanol (HFIP) and aliquoted to obtain 0.1 mg stocks (handle HFIP in a chemical fume hood taking the necessary precautions) - Reinke, AA. et al. *Chem Biol Drug Design* **70**, 206 (2007).

Synthetic Aβ (1–42) (AnaSpec, San Jose, CA) was prepared for aggregation by resuspending lyophilized Aβ (1–42) in hexafluoroisopropanol, dried under a nitrogen stream, and stored as a film at –20 °C. Immediately prior to use, Aβ (1–42) was resuspended in Me $_2$SO to 10 mM and sonicated for 10 min. For experiments in which early stages of aggregation were studied, these aliquots were rapidly brought to 25 uM in phosphate-buffered saline (PBS), pH 7.2, and used immediately. Oligomers were prepared by diluting the Aβ (1–42) to 25 uM with phenol red-free DMEM-F12 and incubating for 24 h at 4 °C without shaking. Fibrils were similarly prepared

by incubating 25 µM Aβ (1–42) in PBS at 37 °C for 24 h with vigorous shaking - Evans, CG. et al. *J Biol Chem* **281**, 33182 (2006).

The ability to produce the presumably neurotoxic, aggregated β-sheet structure is dependent on many factors, particularly the peptide concentration ionic strength, solvent polarity. For example, the aggregation rate is extremely rapid in aqueous acetonitrile solutions, such as those used for HPLC purification of the peptide. The longer that the Aβ (1-42) peptide remains in aqueous acetonitrile solution, the more likely it will become an aggregated β-sheet structure. Additionally, different commercially prepared batches of HPLC-purified Ab (1-42) peptides can have different starting aggregations states and structures, which will then in turn affect their solubility, aggregation rates, biological activities in solution and the ability to reproduce biophysical measurements. To partly overcome the above complications, we develop a pretreatment method that involves sonicating the dry peptide in conc. TFA before biophysical measurements. TFA breaks up the pre-aggregated peptides and affords monomeric random coil structures. This method ensures that different batches of purified Ab (1-42) peptide will provide reproducible starting points for biophysical and neurotoxicity studies. - Salomon, AR. et al. *Biochem* **35**, 13568 (1996).

Solubility of Aβ (1-42) is pH and concentration dependent, It is significantly insoluble at pH 7.4; it is highly insoluble in aqueous media but are soluble at 40 mg/ml in the a-helix-promoting solvent, 1,1,1,3,3,3-hexafluoro-2-propanol (HFIP, handle HFIP in a fumehood and take the necessary precautions) - Burdick, D. et al. *J Biol Chem* **267**, 546 (1992).

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