Beta-Amyloid Abeta1-42 Peptide, HFIP-treated

Catalogue No.: PE-1749-50
Description: Synthetic beta-amyloid Aβ1-42 was monomerized by HFIP (hexafluoro-2-propanol) treatment and dried. One vial contains 50 µg monomeric Aβ peptide that can be used to form solutions of unaggregated Aβ monomers, aggregated Aβ oligomers, Aβ fibrils and Aβ protein complexes according to published protocols, and used in a variety of research applications.

Related products:
- Oligomeric Aβ ELISA Kit (BEK-2215)
- ApoE/Aβ Complex ELISA kit (BEK-2224)
- Oligomeric Aβ Peptide, stabilized (PE-1750-1000)
- MOAB-2 Mouse Monoclonal Antibody to Aβ Peptide (Aβ1-40/42, M-1586-1000)

Batch No.: See product label. Each lot is tested by ELISA assay and validated for oligomer formation (Oligomeric Aβ ELISA Kit, cat# BEK-2215).

Unit size: 3 vials. 1 x 50 µg Abeta1-42 peptide; 1 x 100 µL Reconstituting Buffer, 1 x 1 mL Dilution Buffer

Sequence: DAEFRHDSGYEVHHQKLVFFAEDVGSNKGAIIGLMVGGVVIA

Other Names: Beta-APP42; Beta-amyloid protein 42; ABPP; APPi; Amyloid beta A4 protein; AB42; abeta

Accession: P05067 A4_HUMAN;

Produced in: Synthetic

Molecular Weight: 4.5 kDa (monomer)

Applications:

Preparation of unaggregated Aβ1-42:

Important: unaggregated Aβ has to be prepared just prior to use!

1. Add 5 µL of reconstituting buffer to one vial of 50 µg of HFIP-treated Aβ peptide; spin down the liquid briefly
2. Vortex the vial for 5 seconds at highest speed while rotating the vial with your hands; spin down the liquid (bench-top microcentrifuge) and repeat the vortex-spin procedure for a minimum of 3 times; continue the vortex-spin procedure until all lyophilized peptide is dissolved and collected at the bottom of the tube. Important: refer to the attached instructions for a detailed procedure to ensure that all peptide is fully reconstituted!
3. Add 106 µL of cold Dilution Buffer to make up to 111 µL total volume and a peptide concentration of 100 µM. Vortex-spin for 3 more times
4. Final concentration of Aβ is 450 µg/mL
5. Use reconstituted peptide immediately to avoid oligomer formation

Preparation of oligomeric Aβ1-42:

1. Add 5 µL of reconstituting buffer to one vial of 50 µg of HFIP-treated Aβ peptide; spin down
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the liquid briefly
2. Vortex the vial for 5 seconds at highest speed while rotating the vial with your hands; spin down the liquid (bench-top microcentrifuge) and repeat the vortex-spin procedure for a minimum of 3 times; continue the vortex-spin procedure until all lyophilized peptide is dissolved and collected at the bottom of the tube. Important: refer to the attached instructions for a detailed procedure to ensure that all peptide is fully reconstituted!
3. Add 106 µL of cold Dilution Buffer to make up to 111 µL total volume and a peptide concentration of 100 µM
4. Vortex-spin for 3 more times
5. Incubate the solution at 2-8°C for 24 hours (protected from light)
6. Final concentration of Aβ is 450 µg/mL
7. Once reconstituted and oligomerized, α-Aβ should be used as soon as possible and within 7 days to ensure the stability of the oligomers

Note: while the concentration of monomeric Aβ peptide used to form the oligomeric complexes is accurately determined, the precise formation, size and number of oligomers cannot be quantified by any known method.

Preparation of fibrillar Aβ1-42:

1. Add 5 µL of reconstituting buffer to one vial of 50 µg of HFIP-treated Aβ peptide; spin down the liquid briefly
2. Vortex the vial for 5 seconds at highest speed while rotating the vial with your hands; spin down the liquid (bench-top microcentrifuge) and repeat the vortex-spin procedure for a minimum of 3 times; continue the vortex-spin procedure until all lyophilized peptide is dissolved and collected at the bottom of the tube. Important: refer to the attached instructions for a detailed procedure to ensure that all peptide is fully reconstituted!
3. Add 106 µL of 10 mM HCl to make up to 111 µL total volume and a peptide concentration of 100 µM
4. Vortex-spin for 3 more times
5. Incubate the solution at 37°C for 24 hours (protected from light)
6. Final concentration of Aβ is 450 µg/mL

Preparation of Aβ1-42 Complexes:

Important: only unaggregated Aβ will form complexes. Use Aβ peptide immediately after reconstitution to form complexes.

1. Add 5 µL of reconstituting buffer to one vial of 50 µg of HFIP-treated Aβ peptide; spin down the liquid briefly
2. Vortex the vial for 5 seconds at highest speed while rotating the vial with your hands; spin
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down the liquid (bench-top microcentrifuge) and repeat the vortex-spin procedure for a minimum of 3 times; continue the vortex-spin procedure until all lyophilized peptide is dissolved and collected at the bottom of the tube. Important: refer to the attached instructions for a detailed procedure to ensure that all peptide is fully reconstituted!

3. Add 106 µL of cold Dilution Buffer to make up to 111 µL total volume and a peptide concentration of 100 µM
4. Vortex-spin for 3 more times
5. Use reconstituted peptide immediately to avoid oligomer formation
6. Mix the Ab monomer with its complex partner (e.g., lipoprotein) at desired concentrations in PBS, pH 7.4, or other suitable buffers compatible with its intended application
7. Incubate at room temperature for 2 hours without shaking
8. Use complexes immediately after incubation

These protocols are based on procedures published by Youmans KL et al., 2012 and Tai LM et al., 2013, and we refer to these publications and other relevant literature for further details.

Provided working concentrations are only meant to guide the user. Optimal concentrations depend on the experimental design and need to be determined empirically.

Form: Lyophilized.
Appearance: Translucent film or droplets, dry, without preservatives.
Reconstitution: Varies, dependent on intended use. Refer to Applications.
Storage: Store unopened, dry Ab peptide vial with desiccant, insulated, at -20°C short term, -80°C long term. Store the buffers at 2-8°C, do not freeze.
Expiry Date: Stability of unopened vials is 1 year if stored appropriately.

Oligomeric A-beta standard curves generated with BEK-2215 (Oligomeric A beta ELISA kit). Pre-formed oligomers (PE-1750-1000) were reconstituted in assay buffer and compared to oligomers freshly prepared from HFIP-treated A-beta peptide (PE-1749-50). This data demonstrates the usefulness of PE-1749-50 as oligomeric A-beta protein standard.