

BACE1 Protein, Mouse, Recombinant (His)

General Information

Synonyms:	beta-site APP-cleaving enzyme 1;C76936; β -site APP-cleaving enzyme 1
Protein Construction:	Thr22-Thr457
Species:	Mouse
Expression Host:	HEK293 Cells
Accession:	P56818
Molecular Weight:	49.49 kDa (Predicted); 60-70 kDa (Reducing conditions due to glycosylation)

QC Testing

Biological Activity:	Measured by its ability to cleave a fluorogenic peptide substrate, Mca-SEVNLDAEFRK(Dpn)RR-NH ₂ . The specific activity is > 3 pmol/min/ μ g. (QC Test)
Purity:	> 95% as determined by Tris-Bis PAGE; > 95% as determined by HPLC
Endotoxin:	< 1.0 EU/ μ g of the protein as determined by the LAL method.
Formulation:	Lyophilized from 0.22 μ m filtered solution in PBS (pH 7.4). Normally 8% trehalose is added as protectant before lyophilization.

Preparation and Storage

Reconstitution:

Reconstitute the lyophilized protein in distilled water. The product concentration should not be less than 100 μ g/ml. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

The beta-site amyloid precursor protein cleaving enzyme-1 (BACE-1) initiates the generation of amyloid- β (A β), and the amyloid cascade leading to amyloid plaque deposition, neurodegeneration, and dementia in Alzheimer's disease (AD). Clinical failures of anti-A β therapies in dementia stages suggest that treatment has to start in the early, asymptomatic disease states.

Reference

- Christensen MA, et al. (2004) Transcriptional regulation of BACE1, the beta-amyloid precursor protein beta-secretase, by SpMol Cell Biol. 24(2):865-74.
- Stockley JH, et al. (2007) The proteins BACE1 and BACE2 and beta-secretase activity in normal and Alzheimer's disease brain. Biochem Soc Trans. 35(Pt 3): 574-6.
- Savonenko AV, et al. (2008) Alteration of BACE1-dependent NRG1/ErbB4 signaling and schizophrenia-like phenotypes in BACE1-null mice. Proc Natl Acad Sci U S A. 105(14): 5585-90.
- HAyley M, et al. (2009) Calcium enhances the proteolytic activity of BACE1: An in vitro biophysical and biochemical characterization of the BACE1-calcium interaction. Biochim Biophys Acta. 1788(9): 1933-8.

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