Mouse BACE-1 Protein (His Tag)

Catalog Number: **50002-M08H**

General Information

Gene Name Synonym:

C76936

Protein Construction:

A DNA sequence encoding the extracellular domain (NP_035922.4)(Met 1-Thr 457) of mouse BACE1 (NM_011792.5) precursor was expressed with a C-terminal polyhistidine tag.

Source: Mouse

Expression Host: HEK293 Cells

QC Testing

Purity: > 97 % as determined by SDS-PAGE

Bio Activity:

Measured by its ability to cleave a fluorescent peptide substrate Mca-Ser-Glu-Val-Asn-Leu-Asp-Ala-Glu-Phe-Arg-Lys(Dpn)-Arg-Arg-NH2 (Catalog# ES004, R&D Systems). Cleavage of ES004 can be measured using excitation and emission wavelengths of 320 and 405 nm, respectively.
The specific activity is >2 pmoles/min/μg.

Endotoxin:

< 1.0 EU per μg of the protein as determined by the LAL method

Predicted N terminal: Thr 22

Molecular Mass:

The secreted recombinant mouse BACE1 consists of 447 amino acids and has a calculated molecular mass of 49.8 kDa. As a result of glycosylation, the recombinant protein migrates as an approximately 60-65 kDa protein in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile PBS, pH 7.4

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Stability & Storage:
Samples are stable for twelve months from date of receipt at -20℃ to -80℃.

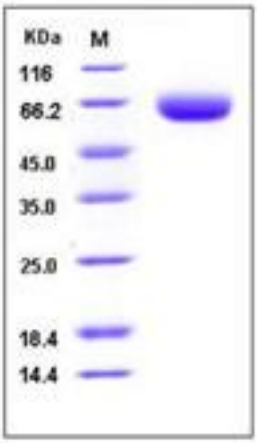
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

Beta-site APP-cleaving enzyme 1 (BACE1) is an aspartic-acid protease important in the formation of myelin sheaths in peripheral nerve cells. In the brain, This protein is expressed highly in the substantia nigra, locus coruleus and medulla oblongata. Strong BACE1 expression has also been described in pancreatic tissue. BACE1 has a pivotal role in the pathogenesis of Alzheimer's disease. In Alzheimer's disease patients, BACE1 levels were elevated although mRNA levels were not changed. It has been found that BACE1 gene expression is controlled by a TATA-less promoter. The translational repression as a new mechanism controlling its expression. And the low concentrations of Ca(2+) (microM range) significantly increased the proteolytic activity of BACE1. Furthermore, BACE1 protein is ubiquitinated, and the degradation of BACE1 proteins and amyloid precursor protein processing are regulated by the ubiquitin-proteasome pathway. It has also been identified as the rate limiting enzyme for amyloid-beta-peptide (Abeta) production.

References

1.Christensen MA, et al. (2004) Transcriptional regulation of BACE1, the beta-amyloid precursor protein beta-secretase, by Sp1. Mol Cell Biol. 24(2):865-74.
2.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.
3.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.