

## BACE2 Protein, Mouse, Recombinant (His)

## General Information

Synonyms:	CEAP1;BAE2;1110059C24Rik; $\beta$ -site APP-cleaving enzyme 2;CDA13;beta-site APP-cleaving enzyme 2;ALP56;A1850424;AEPLC;DRAP;ARP1;ASP21
Protein Construction:	A DNA sequence encoding the mouse BACE2 (Q9JL18) (Met1-Pro462) was expressed with a C-terminal polyhistidine tag. Predicted N terminal: Ala 20
Species:	Mouse
Expression Host:	HEK293 Cells
Accession:	Q9JL18
Molecular Weight:	49.2 kDa (predicted); 55 kDa (reducing condition, due to glycosylation)

## QC Testing

Biological Activity:	Measured by its ability to cleave a fluorogenic peptide substrate Mca-KPLGL-Dpa-AR-NH <sub>2</sub> . The specific activity is >50 pmoles/min/ $\mu$ g.
Purity:	> 90 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/ $\mu$ g of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 $\mu$ m filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

## Preparation and Storage

## Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

## Stability &amp; 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

BACE2, also known as beta secretase 2, belongs to the peptidase A1 family. It is a protease known to be an important enzyme involved in the cellular pathways. BACE2 has been shown to interact with GGA1 and GGA2. It is the major  $\beta$ -secretase in vivo. BACE2 is located on chromosome 21 and may play a role in alzheimer's disease pathogenesis in down syndrome(DS). Overexpression of BACE2 by lentivirus markedly reduced amyloid  $\beta$  protein

production in primary neurons. Despite an extra copy of the BACE2 gene in DS and the increase of its transcription, BACE2 protein levels are unchanged.

### Reference

Hussain I, et al. (2001) Prodomain processing of Asp1 (BACE2) is autocatalytic. *J Biol Chem.* 276(26):23322-8.

Solans A, et al. (2000) A new aspartyl protease on 21q22.3, BACE2, is highly similar to Alzheimer's amyloid precursor protein beta-secretase. *Cytogenet Cell Genet.* 89(3-4): 177-84.

Hussain I, et al. (2001) ASP1 (BACE2) cleaves the amyloid precursor protein at the beta-secretase site. *Mol Cell Neurosci.* 16(5):609-19.

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