

# Recombinant Human BACE1/ASP2 Protein

Catalog Number: PKSH031900



**Note:** Centrifuge before opening to ensure complete recovery of vial contents.

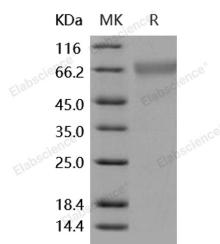
## Description

<b>Synonyms</b>	ASP2;BACE;HSPC104
<b>Species</b>	Human
<b>Expression Host</b>	HEK293 Cells
<b>Sequence</b>	Met 1-Thr 457
<b>Accession</b>	NP_036236.1
<b>Calculated Molecular Weight</b>	49.0 kDa
<b>Observed molecular weight</b>	65 kDa
<b>Tag</b>	None
<b>Bioactivity</b>	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-NH <sub>2</sub> (Catalog# ES004, R&D Systems). Cleavage of ES004 can be measured using excitation and emission wavelength of 320 and 405 nm, respectively. The specific activity is > 3.5 pmoles/min/μg.

## Properties

<b>Purity</b>	> 95 % as determined by reducing SDS-PAGE.
<b>Endotoxin</b>	< 1.0 EU per μg of the protein as determined by the LAL method.
<b>Storage</b>	Generally, lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.
<b>Shipping</b>	This product is provided as lyophilized powder which is shipped with ice packs.
<b>Formulation</b>	Lyophilized from sterile 50mM Tris, 100mM NaCl, pH 8.0 Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Please refer to the specific buffer information in the printed manual.
<b>Reconstitution</b>	Please refer to the printed manual for detailed information.

## Data



> 95 % as determined by reducing SDS-PAGE.

## Background

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 coeruleus and medulla oblongata. Strong BACE1 expression has also been described in pancreatic tissue. BACE1 has a pivotal role in the

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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  $\text{Ca}^{2+}$  (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 (A $\beta$ ) production.

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