Human BACE-1 Protein, Tag Free (active enzyme, MALS verified)

Catalog # BA1-H5213

Synonym

BACE1,ASP2,BACE,FLJ90568,HSPC104,KIAA1149,Memapsin-2,Beta-Secretase,β-secretase

Source

Human BACE-1, Tag Free(BA1-H5213) is expressed from human 293 cells (HEK293). It contains AA Thr 22 - Thr 457 (Accession # NP_036236.1). Predicted N-terminus: Thr 22

Molecular Characterization

BACE-1(Thr 22 - Thr 457)
NP_036236.1

This protein carries no "tag".

The protein has a calculated MW of 49.0 kDa. The protein migrates as 53-60 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

Endotoxin

Less than 1.0 EU per μg by the LAL method / rFC method.

Purity

>98% as determined by SDS-PAGE.

>95% as determined by SEC-MALS.

Formulation

Lyophilized from 0.22 μm filtered solution in 50 mM Tris, pH8.0 with trehalose as protectant.

Contact us for customized product form or formulation.

Reconstitution

Please see Certificate of Analysis for specific instructions.

For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.

Storage

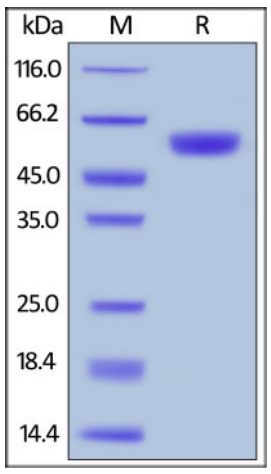
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

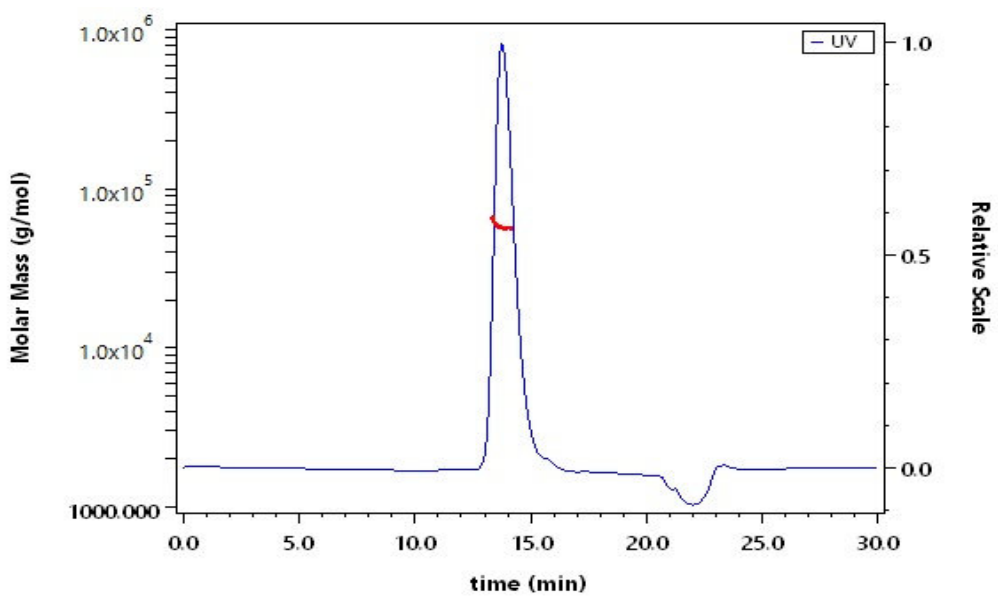
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

SDS-PAGE



Human BACE-1, Tag Free on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 98%.

SEC-MALS



The purity of Human BACE-1, Tag Free (Cat. No. BA1-H5213) is more than 95% and the molecular weight of this protein is around 55-65 kDa verified by SEC-MALS.
Report

Bioactivity

Measured by its ability to cleave a fluorogenic peptide substrate, Mca-SEVNLDAEFRK(Dpn)RR-NH2. The specific activity is >3.5 pmol/min/μg, as measured under the described conditions (QC tested).

Background

Beta-secretase 1 (BACE1) is also known as beta-site APP cleaving enzyme 1 (beta-site amyloid precursor protein cleaving enzyme 1), memapsin-2 (membrane-associated aspartic protease 2), and aspartyl protease 2 (ASP2), β-Secretase , and is a member of the peptidase A1 protein family, BACE1 is a type I integral membrane glycoprotein and aspartic protease that is found mainly in the Golgi. BACE1 is an aspartic-acid protease important in the pathogenesis of Alzheimer's disease, and in the formation of myelin sheaths in peripheral nerve cells. The transmembrane protein contains two active site aspartate residues in its extracellular protein domain and may function as a dimer. This protease is responsible for the proteolytic processing of the amyloid precursor protein (APP). Generation of the 40 or 42 amino acid-long amyloid-β peptides that aggregate in the brain of Alzheimer's patients requires two sequential cleavages of the APP. Extracellular cleavage of APP by BACE creates a soluble extracellular fragment and a cell membrane-bound fragment referred to as C99. The elevation of BACE1 levels can be induced by amyloid plaques surrounding neurons at early stages of pathology before neuron death occurs, and may drive a positive-feedback loop in AD.