9051 Mira Mesa Blvd, #910094
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BACE1 Human

Beta-Secretase 1 Human Recombinant
ENZ0157

Product Overview

Name	BACE1 Human
Description	
Beta-Secretase 1 Human Recombinant	
Accession (Primary)	P56817
Synonyms	
BAE2, CDA13, CEAP1, DRAP, ARP1, ASP1, ASP21, 1110059C24Rik, AEPLC, AI850424, ALP56, beta-site APPcleaving enzyme 2, beta-secretase 2, Aspartyl protease 1, Asp 1, Beta-site amyloid precursor protein cleaving enzyme 2, Memapsin-1, Membrane-associated aspartic protease 1, Theta-secretase.	
Source	
HEK293 Cells.	
Physical Appearance	
Filtered clear solution.	
Formulation	
BACE2 (0.25mg/ml) is filtered in 10% (w/v) glycerol and Phosphate-Buffered Saline pH 7.4 .	
Stability	
Store at 4°C if entire vial will be used within 2-4 weeks. Store, frozen at -20°C for longer periods of time. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Avoid multiple freeze-thaw cycles.	
Purity	
Greater than 95.0% as determined by SDS-PAGE.	
Amino acid sequence	
AVPALAPAPF TLPLQVARAT NHRASAVPGL GTPELPRADG LALALEPVRA TANFLAMVDN LQGDSGRGYY LEMLIGTPPQ KVQILVDTGS SNFAVAGAPH SYIDTYFDSE SSSTYHSKGF DVTVKYTQGS WTGFVGEDLV TIPKGFNSSF LVNIATIFES ENFFLPGIKW NGILGLAYAA LAKPSSSLET FFDSLVAQAK IPDIFSMQMC GAGLPVAGSG TNGGSLVLGG IEPSLYKGDI WYTPIKEEWY YQIEILKLEI GGQNLNLDCR EYNADKAIVD SGTTLLRLPQ KVFDAVVEAV ARTSLIPEFS DGFWTGAQLA CWTNSETPWA YFPKISIYLR DENASRSFRI TILPQLYIQP MMGAGFNYEC YRFGISSSTN ALVIGATVME GFYVVFDRAQ RRVGFAVSPC AEIEGTTVSE ISGPFSTEDI ASNCVPAQAL NEP HHHHHH .	
Biological Activity	

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Specific activity is > 20 pmol/min/ug in which one unit will convert 1.0pmole of Mca-SEVNLDAEFRK(Dnp)RR-NH2 to Mca- Pro-Leu-OH per minute at pH 3.5 at 25C.

Background

BACE2 protein, a member of the beta-secretase family, has gained attention as a key player in the pathogenesis of neurological disorders, particularly Alzheimer's disease. This research aims to explore the function and potential therapeutic implications of BACE2 protein in neurodegenerative conditions. Understanding the role of BACE2 protein can provide valuable insights into its significance as a therapeutic target for the development of novel treatment strategies. Function of BACE2 Protein: BACE2 is a transmembrane aspartic protease predominantly expressed in the central nervous system. It exhibits distinct cleavage activity on various protein substrates, including neuregulins, APP-like proteins, and TGF-?. Unlike its close homolog BACE1, BACE2 has been proposed to have non-amyloidogenic processing capabilities and has shown potential neuroprotective effects. Implications of BACE2 Protein in Alzheimer's Disease: Alzheimer's disease is characterized by the accumulation of amyloid-beta (A?) peptides in the brain, which are generated through the sequential cleavage of amyloid precursor protein (APP). BACE1 is primarily responsible for the cleavage of APP, leading to the production of toxic A? peptides. In contrast, BACE2 has been suggested to compete with BACE1, thereby reducing the levels of A? generation. This has led to speculation about the neuroprotective role of BACE2 and its potential as a therapeutic target for Alzheimer's disease. BACE2 Protein and Neuronal Survival: Emerging evidence suggests that BACE2 may play a role in promoting neuronal survival and function. Studies have shown that BACE2 deficiency leads to impaired synaptic plasticity, reduced dendritic branching, and altered neurotransmitter release. BACE2 has also been implicated in the regulation of axonal growth and guidance during development. These findings highlight the potential importance of BACE2 in maintaining neuronal integrity. Association of BACE2 Protein with Other Neurological Disorders: Apart from Alzheimer's disease, BACE2 has been implicated in other neurological conditions as well. Genetic studies have identified BACE2 gene variants associated with an increased risk of Parkinson's disease, suggesting its involvement in the pathogenesis of this disorder. Furthermore, BACE2 has been linked to the regulation of insulin signaling and glucose homeostasis, making it a potential target for diabetes-associated cognitive decline. Therapeutic Implications of BACE2 Protein: Given its potential neuroprotective effects and modulatory role in amyloid processing, BACE2 protein has emerged as a promising therapeutic target for neurodegenerative disorders. Strategies aimed at enhancing BACE2 activity or selectively activating BACE2-mediated non-amyloidogenic processing pathways hold promise for reducing amyloid pathology and preserving neuronal function. However, further research is needed to better understand the complex mechanisms underlying BACE2 function and to develop safe and effective therapeutic interventions. Conclusion: The investigation of BACE2 protein has provided valuable insights into its role in neurodegenerative diseases, particularly Alzheimer's disease. The potential neuroprotective effects and modulation of amyloid processing pathways by BACE2 make it an intriguing therapeutic target. Future studies should focus on unraveling the precise mechanisms by which BACE2 influences disease pathogenesis and developing strategies to harness its therapeutic potential. The exploration of BACE2 protein opens new avenues for the development of innovative treatment approaches for neurodegenerative disorders.

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Precautions

BACE1 Human is for research use only and not for use in diagnostic or therapeutic procedures.

Target Information: (P56817)