

Human BCHE / Butyrylcholinesterase Protein (His Tag)

Catalog Number: 12010-H08H



Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

CHE1; CHE2; E1

Protein Construction:

A DNA sequence encoding the human BCHE (NP_000046.1) (Met 1-Leu 602) was expressed, fused with a polyhistidine tag at the C-terminus.

Source: Human

Expression Host: HEK293 Cells

QC Testing

Purity: > 97 % as determined by SDS-PAGE

Bio Activity:

Measured by its ability to cleave Butyrylthiocholine. The specific activity is >50,000 pmoles/min/μg.

Endotoxin:

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

Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Glu 29

Molecular Mass:

The recombinant human BCHE consists of 585 amino acids and has a predicted molecular mass of 66.5 kDa. In SDS-PAGE under reducing conditions, the apparent molecular mass of rh BCHE is approximately 85-95 kDa due to glycosylation.

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

Storage:

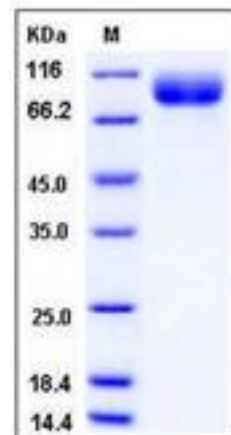
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

Butyrylcholinesterase (BCHE), also known as cholinesterase or BuChE, is an enzyme defined as "pseudo" or "non-neuronal" cholinesterase. Butyrylcholinesterase (BCHE) is widely distributed in the nervous system as well as blood plasma. It is constitutively similar to the neuronal acetylcholinesterase, and is a non-specific cholinesterase which hydrolyses many different choline esters. Butyrylcholinesterase (BCHE) is a glycoprotein of 4 identical subunits, that were arranged as a dimer of dimers with each dimer composed of two identical subunits joined by interchain disulfide bonds. Butyrylcholinesterase (BCHE) behaves principally similar to the true enzyme and thus can play a similar role in nerve conduction, although it participates probably only in relatively slow conductive processes and could be involved in other nervous system functions and in neurodegenerative diseases. It can hydrolyze toxic esters such as cocaine or scavenge organophosphorus pesticides and nerve agents. Purified human serum cholinesterase combines in its active surface an anionic and an esteratic site, similar to true cholinesterase. It has been demonstrated that butyrylcholinesterase (BCHE) may have a greater role in cholinergic transmission than previously surmised, making BCHE inhibition an important therapeutic goal in Alzheimer's disease.

References

- 1.Lockridge O. (1988) Structure of human serum cholinesterase. *Bio Essays*. 9(4):125-8.
- 2.Mesulam M, *et al.* (2002) Widely Spread Butyrylcholinesterase Can Hydrolyze Acetylcholine in the Normal and Alzheimer Brain. *Neurobiology of Disease*. 9(1): 88-93.
- 3.Nicolet Y, *et al.* (2003) Crystal Structure of Human Butyrylcholinesterase and of Its Complexes with Substrate and Products. *The Journal of Biological Chemistry*. 278: 41141-7.

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