

PRODUCT INFORMATION



Butyrylcholinesterase (human, recombinant)

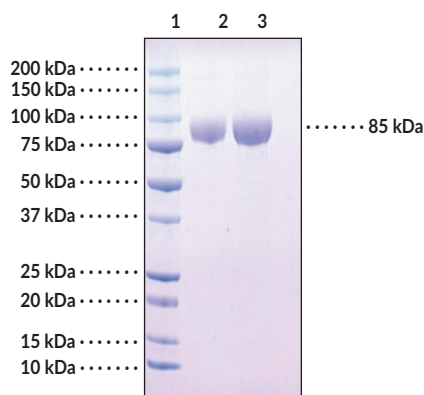
Item No. 43291

Overview and Properties

Synonyms:	Acylcholine Acylhydrolase, BChE, BuChE, Butyrylcholine Esterase, CHE1, Choline Esterase II, Cholinesterase, Plasma Cholinesterase, Pseudocholinesterase
Source:	Active recombinant human C-terminal His-tagged BChE expressed in mammalian cells
Amino Acids:	29-602
Uniprot No.:	P06276
Molecular Weight:	68.4 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥95% estimated by SDS-PAGE
Supplied in:	50 mM HEPES, pH 7.6, 150 mM sodium chloride
Protein Concentration:	<i>batch specific</i> mg/ml
Activity:	<i>batch specific</i> U/ml
Specific Activity:	<i>batch specific</i> U/mg
Unit Definition:	One unit is defined as the amount of enzyme required to produce 1 μmol of thiocholine per minute at 23°C in 1X PBS buffer pH 7.4 containing 1 mM acetylthiocholine as substrate.

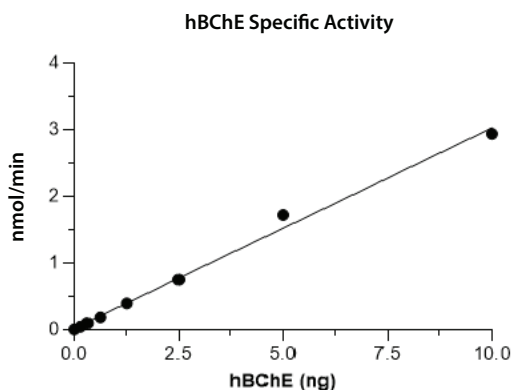
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: MW Markers
Lane 2: Butyrylcholinesterase (2 μg)
Lane 3: Butyrylcholinesterase (4 μg)

SDS-PAGE Analysis of Butyrylcholinesterase.
Recombinant butyrylcholinesterase has a predicted molecular weight of 66.2 kDa; however, due to glycosylation, the protein migrates at approximately 85 kDa on SDS-PAGE under reducing conditions.



hBChE activity was measured using 1 mM acetylthiocholine (Item No. 34313) as the substrate in 1xPBS, pH 7.4 at room temperature.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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Description

Butyrylcholinesterase (BChE) is a serine hydrolase that preferentially hydrolyzes butyrylcholine (BCh) but can also hydrolyze acetylcholine (ACh).¹ It is composed of a large catalytic domain and C-terminal tetramerization domain.² BChE can exist as a monomer but primarily oligomerizes into soluble or membrane-anchored tetramers by combining with polyproline-rich peptides, such as lamellipodin.^{2,3} It is widely expressed with high levels in the plasma, liver, lungs, and brain.^{1,4} In addition to its hydrolysis of BCh and ACh, BChE also hydrolyzes certain ester-containing exogenous substances.⁵ Due to this, loss-of-function mutations in *BCHE* are associated with the accumulation of exogenous BChE substrates, including the muscle relaxant succinylcholine (Item No. 32829), which can lead to adverse effects such as prolonged apnea.^{5,6} BChE is implicated in the regulation of the peptide hormone ghrelin, and dysregulation of BChE is found in various conditions, including Alzheimer's disease, where it is found in amyloid- β plaques and neurofibrillary tangles, and sudden infant death syndrome (SIDS), where it is found at reduced levels in infant dried blood spots.^{1,7,8} Cayman's Butyrylcholinesterase (human, recombinant) protein can be used for enzyme activity assays.

References

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