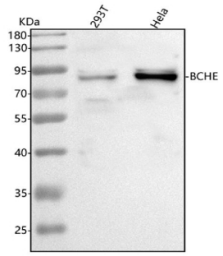
BCHE Antibody / Butyrylcholinesterase (FY13026)

Catalog No.	Formulation	Size
FY13026	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	P06276
Applications	Western Blot : 0.25-0.5ug/ml ELISA : 0.1-0.5ug/ml
Limitations	This BCHE antibody is available for research use only.



Western blot analysis of BCHE using anti-BCHE antibody. Lane 1: human 293T whole cell lysates, Lane 2: human Hela whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-BCHE antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using enhanced chemiluminescent. A doublet is observed at ~85-90 kDa, higher than the predicted 68 kDa molecular weight. This shift is well documented and results from extensive N-linked glycosylation of the mature secreted enzyme, which adds ~15-20 kDa of carbohydrate mass. Variability in glycan composition or processing produces the characteristic doublet pattern seen for BCHE in multiple mammalian cell types.

Description

BCHE antibody detects Butyrylcholinesterase, a serine hydrolase that catalyzes the hydrolysis of esters of choline,

contributing to neurotransmitter metabolism and detoxification of xenobiotics. The UniProt recommended name is Butyrylcholinesterase (BCHE). This enzyme is found predominantly in plasma, liver, and nervous tissue and acts as a metabolic complement to acetylcholinesterase in cholinergic regulation.

Functionally, BCHE antibody identifies a 602-amino-acid glycoprotein secreted as a tetrameric enzyme that hydrolyzes choline esters such as butyrylcholine and succinylcholine. BCHE regulates cholinergic neurotransmission indirectly by hydrolyzing circulating esters and serves as a bioscavenger for organophosphorus compounds and nerve agents. It also participates in drug metabolism by inactivating esterified anesthetics and muscle relaxants.

The BCHE gene is located on chromosome 3q26.1-q26.2 and encodes a protein synthesized mainly in the liver before secretion into plasma. BCHE shares structural homology with acetylcholinesterase but differs in substrate specificity and inhibitor sensitivity. Its activity is regulated by genetic polymorphisms that influence catalytic efficiency and drug sensitivity. Reduced BCHE activity causes prolonged neuromuscular blockade following exposure to succinylcholine or mivacurium, a clinically relevant pharmacogenetic condition.

Beyond neurotransmission, BCHE plays roles in lipid metabolism, inflammation, and neurodegenerative diseases. Elevated BCHE activity is associated with obesity and metabolic syndrome, while decreased activity has been observed in liver dysfunction, Alzheimer's disease, and chronic inflammation. Its ability to hydrolyze ghrelin and other acylated hormones links it to appetite regulation and energy balance. In neurobiology, BCHE is thought to modulate cholinergic tone during aging and cognitive decline.

BCHE antibody is widely used in neurobiology, pharmacology, and metabolic disease research. It is suitable for western blotting, ELISA, and enzyme histochemistry to detect BCHE in plasma, liver, or neural tissue. This antibody supports studies of cholinesterase activity, drug metabolism, and neurodegenerative mechanisms. In toxicology, BCHE detection helps evaluate exposure to organophosphate inhibitors and nerve agents.

Structurally, BCHE is a glycoprotein composed of four identical subunits stabilized by disulfide bonds and carbohydrate moieties. Its catalytic triad (Ser-His-Glu) mediates ester hydrolysis through a charge-relay mechanism. NSJ Bioreagents provides BCHE antibody reagents validated for use in neurotransmission, toxicology, and enzyme metabolism research.

Application Notes

Optimal dilution of the BCHE antibody should be determined by the researcher.

Immunogen

E.coli-derived human BCHE recombinant protein (Position: E29-L602) was used as the immunogen for the BCHE antibody.

Storage

After reconstitution, the BCHE antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.