SANTA CRUZ BIOTECHNOLOGY, INC.

BChE (C-18): sc-46801

The Power to Question

BACKGROUND

Present in most cells except erythrocytes, butyrylcholine esterase (BChE), also designated acylcholine acylhydrolase or pseudocholinesterase, has esterase activity as well as aryl acylamidase activity. It hydrolyzes acylcholine into choline and carboxylate. BChE is synthesized in the liver and is highly reactive with organophosphate esters. BChE can form a homotetramer composed of two dimers linked by a disulfide bond. Defects in the gene encoding BChE are associated with the disease hypocholinesterasemia. Inhibition of BChE effects the toxicity of organophosphates in the respiratory system suggesting that BChE may play a role in respiratory function. In addition, BChE may play an important pharmocological role by hydrolyzing toxic esters. This suggests an involvement of BChE in a treatment for intoxication with substances such as cocaine.

REFERENCES

1. Schopfer, L.M., et al. 2005. Reaction kinetics of biotinylated organophosphorus toxicant, FP-biotin, with human acetylcholinesterase and human butyrylcholinesterase. Chem. Res. Toxicol. 18: 747-754.
2. Motamed, C., et al. 2005. Interaction between mivacurium and pancuronium: impact of the order of administration. Eur. J. Clin. Pharmacol. 61: 175-177.
3. Souza, R.L., et al. 2005. Four new mutations in the BCHE gene of human butyrylcholinesterase in a Brazilian blood donor sample. Mol. Genet. Metab. 84: 349-353.
4. Kotelevets, L., et al. 2005. Cholinesterase activity in human pulmonary arteries and veins: correlation with mRNA levels. Life Sci. 76: 2211-2220.
5. Decker, M. 2005. Novel inhibitors of acetyl- and butyrylcholinesterase derived from the alkaloids dehydroevodiamine and rutaecarpine. Eur. J. Med. Chem. 40: 305-313.
6. Bryk, B., et al. 2005. Inherited and acquired interactions between ACHE and PON1 polymorphisms modulate plasma acetylcholinesterase and paraoxonase activities. J. Neurochem. 92: 1216-1227.

CHROMOSOMAL LOCATION

Genetic locus: BCHE (human) mapping to 3q26.1; Bche (mouse) mapping to 3 E3.

SOURCE

BChE (C-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of BChE of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-46801 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

BChE (C-18) is recommended for detection of mature BChE and Cholinesterase precursor of human and to a lesser extent, mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

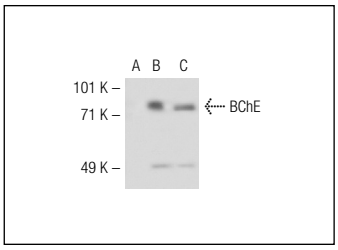
BChE (C-18) is also recommended for detection of mature BChE and Cholinesterase precursor in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for BChE siRNA (h): sc-60267, BChE siRNA (m): sc-60268, BChE shRNA Plasmid (h): sc-60267-SH, BChE shRNA Plasmid (m): sc-60268-SH, BChE shRNA (h) Lentiviral Particles: sc-60267-V and BChE shRNA (m) Lentiviral Particles: sc-60268-V.

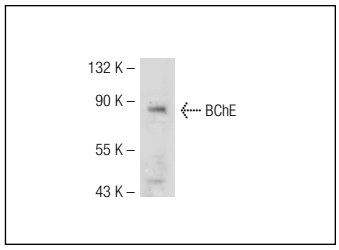
Molecular Weight of BChE: 81 kDa.

Positive Controls: BChE (h): 293T Lysate: sc-113260, SK-N-SH cell lysate: sc-2410 or HeLa whole cell lysate: sc-2200.

DATA



BChE (C-18): sc-46801. Western blot analysis of BChE expression in non-transfected 293T: sc-117752 (**A**), human BChE transfected 293T: sc-113260 (**B**) and SK-N-SH (**C**) whole cell lysates.



BChE (C-18): sc-46801. Western blot analysis of BChE expression in HeLa whole cell lysate.

SELECT PRODUCT CITATIONS

1. Barricklow, J. and Blatnik, M. 2013. 2-Arachidonoylglycerol is a substrate for butyrylcholinesterase: A potential mechanism for extracellular endocannabinoid regulation. Arch. Biochem. Biophys. 536: 1-5.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.