SANTA CRUZ BIOTECHNOLOGY, INC.

AChE (190-01): sc-58481

BACKGROUND

Acetylcholinesterase (AChE) hydrolyzes acetylcholine at synaptic junctions. Alternative mRNA splicing gives rise to three forms of AChE. The T form, also known as the asymmetric form, is soluble and is present in synapses. The H form is also known as the globular form and is present on the outer surfaces of cell membranes. The R form is not known to be a functional species. AChE globular form subunits are GPI-anchored to cell membranes and asymmetric subunits are anchored to basal lamina components by a collagen tail. The catalytic sununits of AChE are oligomers composed of disulfide-linked homodimers. The loss of AChE from cholinergic and noncholinergic neurons in the brain is seen in patients with Alzheimer's disease. However, AChE activity is increased around amyloid plaques, which may be due to a disturbance in calcium homeostasis involving the opening of L-type voltage-dependent calcium channels.

REFERENCES

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2. Duval, N., Massoulie, J. and Bon, S. 1992. H and T subunits of acetylcholinesterase from Torpedo, expressed in COS cells, generate all types of globular forms. J. Cell Biol. 118: 641-653.
3. Legay, C., Bon, S., Vernier, P., Coussen, F. and Massoulie, J. 1993. Cloning and expression of a rat acetylcholinesterase subunit: generation of multiple molecular forms and complementarity with a Torpedo collagenic subunit. J. Neurochem. 60: 337-346.
4. Legay, C., Bon, S. and Massoulie, J. 1993. Expression of a cDNA encoding the glycolipid-anchored form of rat acetylcholinesterase. FEBS Lett. 315: 163-166.
5. Michel, R.N., Vu, C.Q., Tetzlaff, W. and Jasmin, B.J. 1994. Neural regulation of acetylcholinesterase mRNAs at mammalian neuromuscular synapses. J. Cell Biol. 127: 1061-1069.
6. Sberna, G., Saez-Valero, J., Beyreuther, K., Masters, C.L. and Small, D.H. 1997. The amyloid beta-protein of Alzheimer's disease increases acetylcholinesterase expression by increasing intracellular calcium in embryonal carcinoma P19 cells. J. Neurochem. 69: 1177-1184.

CHROMOSOMAL LOCATION

Genetic locus: ACHE (human) mapping to 7q22; Ache (mouse) mapping to 5 G2.

SOURCE

AChE (190-01) is a mouse monoclonal antibody raised against amino acids 574-583 of AChE of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

AChE (190-01) is recommended for detection of brain AChE of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)]; non cross-reactive with AChE from erythrocytes.

Suitable for use as control antibody for AChE siRNA (h): sc-29628, AChE shRNA Plasmid (h): sc-29628-SH and AChE shRNA (h)

Lentiviral Particles: sc-29628-V.

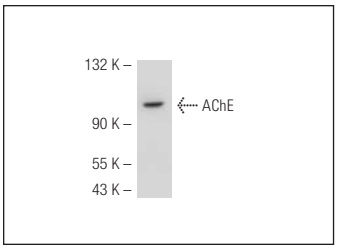
Molecular Weight of AChE: 82 kDa.

Positive Controls: human T lymphocytes.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



AChE (190-01): sc-58481. Western blot analysis of AChE expression in SW-13 whole cell lysate.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.