SANTA CRUZ BIOTECHNOLOGY, INC.

AChE (3A5): sc-135662

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 subunits 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

1. Roberts, W.L., et al. 1991. Bovine brain acetylcholinesterase primary sequence involved in intersubunit disulfide linkages. J. Biol. Chem. 266: 7481-7487.
2. Duval, N., et al. 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., et al. 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., et al. 1993. Expression of a cDNA encoding the glycolipid-anchored form of rat acetylcholinesterase. FEBS Lett. 315: 163-166.
5. Michel, R.N., et al. 1994. Neural regulation of acetylcholinesterase mRNAs at mammalian neuromuscular synapses. J. Cell Biol. 127: 1061-1069.

CHROMOSOMAL LOCATION

Genetic locus: ACHE (human) mapping to 7q22.1.

SOURCE

AChE (3A5) is a mouse monoclonal antibody raised against recombinant AChE protein of human origin.

PRODUCT

Each vial contains IgG_{2a} in 100 µl of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

PROTOCOLS

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

APPLICATIONS

AChE (3A5) is recommended for detection of AChE of human and rat origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000), immunoprecipitation [1-2 µl per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution to be determined by researcher, dilution range 1:30-1:5000).

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.

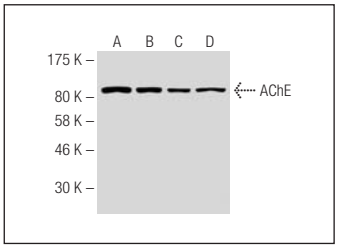
Molecular Weight of AChE: 82 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, HuT 78 whole cell lysate: sc-2208 or Ramos cell lysate: sc-2216.

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 (3A5): sc-135662. Western blot analysis of AChE expression in Ramos (**A**) HuT 78 (**B**), HeLa (**C**) and C6 (**D**) whole cell lysates.

RESEARCH USE

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