

choactase (C-14): sc-19057

BACKGROUND

Choline acetyltransferase (also designated choactase, choline O-acetyltransferase) synthesizes acetylcholine in cholinergic neurons. Multiple choactase mRNAs with different 5'-noncoding regions are expressed as R-, N1-, N2-, S- and M-types. N1-, N2- and R-type mRNAs produce a single short enzyme, while M-type mRNA produces both long and short enzymes. The long enzyme is targeted to the nuclei of cells, whereas the short protein is found in cytoplasm. A novel NFκB binding site is located within the nerve growth factor-responsive enhancer element that is recognized by the NFκB protein p49, but not p65 or p50. Decreased choactase expression and increased NFκB activity are associated with aging and Alzheimer's disease, indicating that p49 is a negative regulator of choactase expression and suggesting a possible mechanism for aging-associated declines in cholinergic function. Phosphorylation of choactase has been shown to enhance choactase catalytic activity. Specifically, Serine 440 is found to be the phosphorylation site in a recombinant human short choactase by protein kinase C and is involved in regulation of the enzyme catalytic activity and binding to subcellular membranes.

REFERENCES

1. Oda, Y., et al. 1992. A complementary DNA for human choline acetyltransferase induces two forms of enzyme with different molecular weights in cultured cells. *Brain Res. Mol. Brain Res.* 16: 287-294.
2. Misawa, H., et al. 1997. Human choline acetyltransferase mRNAs with different 5'-region produce a 69-kDa major translation product. *Brain Res. Mol. Brain Res.* 44: 323-333.
3. Resendes, M.C., et al. 1999. Nuclear localization of the 82-kDa form of human choline acetyltransferase. *J. Biol. Chem.* 274: 19417-19421.
4. Dobransky, T., et al. 2000. Expression, purification and characterization of recombinant human cholineacetyltransferase: phosphorylation of the enzyme regulates catalytic activity. *Biochem. J.* 349: 141-151.

CHROMOSOMAL LOCATION

Genetic locus: CHAT (human) mapping to 10q11.23.

SOURCE

choactase (C-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of choactase 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-19057 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

choactase (C-14) is recommended for detection of choline acetyltransferase (choactase) isoforms M, R, S, N1 and N2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for choactase siRNA (h): sc-41919, choactase shRNA Plasmid (h): sc-41919-SH and choactase shRNA (h) Lentiviral Particles: sc-41919-V.

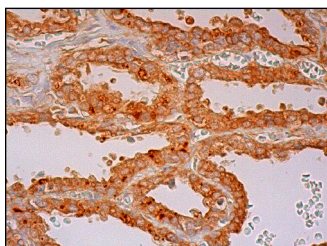
Molecular Weight of choactase: 69/82 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409 or SK-N-SH cell lysate: sc-2410.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



choactase (C-14): sc-19057. Immunoperoxidase staining of formalin fixed, paraffin-embedded human seminal vesicle tissue showing cytoplasmic staining of glandular cells.

PROTOCOLS

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

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Try **choactase (E-7): sc-55557**, our highly recommended monoclonal alternative to choactase (C-14).