

choactase (H-95): sc-20672

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 nuclei of cells, whereas the short protein is found in cytoplasm. A novel NF κ B binding site is located within the nerve growth factor-responsive enhancer element that is recognized by the NF κ B protein p49, but not p65 or p50. Decreased choactase expression and increased NF κ B 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.

CHROMOSOMAL LOCATION

Genetic locus: CHAT (human) mapping to 10q11.23; Chat (mouse) mapping to 14 B.

SOURCE

choactase (H-95) is a rabbit polyclonal antibody raised against amino acids 561-655 mapping near the C-terminus of choactase of human origin.

PRODUCT

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

APPLICATIONS

choactase (H-95) is recommended for detection of all isoforms of choactase of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], 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).

choactase (H-95) is also recommended for detection of all isoforms of choactase in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for choactase siRNA (h): sc-41919, choactase siRNA (m): sc-41920, choactase shRNA Plasmid (h): sc-41919-SH, choactase shRNA Plasmid (m): sc-41920-SH, choactase shRNA (h) Lentiviral Particles: sc-41919-V and choactase shRNA (m) Lentiviral Particles: sc-41920-V.

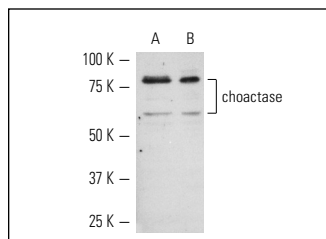
Molecular Weight of choactase: 69/82 kDa.

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

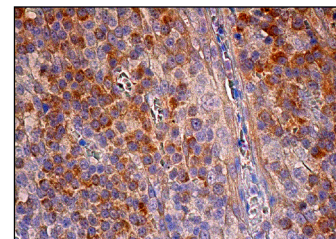
STORAGE

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

DATA



choactase (H-95): sc-20672. Western blot analysis of choactase expression in IMR-32 (A) and SK-N-SH (B) whole cell lysates.



choactase (H-95): sc-20672. Immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing cytoplasmic staining of cells in non-germinal center.

SELECT PRODUCT CITATIONS

1. Lee, J.H., et al. 2007. Concurrent administration of cilostazol with donepezil effectively improves cognitive dysfunction with increased neuroprotection after chronic cerebral hypoperfusion in rats. *Brain Res.* 1185: 246-255.
2. Hernandez, C.M., et al. 2010. Loss of α 7 nicotinic receptors enhances β -amyloid oligomer accumulation, exacerbating early-stage cognitive decline and septohippocampal pathology in a mouse model of Alzheimer's disease. *J. Neurosci.* 30: 2442-2453.
3. Matrone, C., et al. 2012. Tyr682 in the A β -precursor protein intracellular domain regulates synaptic connectivity, cholinergic function, and cognitive performance. *Aging Cell* 11: 1084-1093.
4. Li, Z., et al. 2015. Protective effect of notoginsenoside R1 on an APP/PS1 mouse model of Alzheimer's disease by up-regulating Insulin degrading enzyme and inhibiting A β accumulation. *CNS Neurol. Disord. Drug Targets* 14: 360-369.

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.

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Try **choactase (E-7): sc-55557**, our highly recommended monoclonal alternative to choactase (H-95).