



Product Type:	Recombinant Rabbit monoclonal IgG, primary antibodies
Species reactivity:	Human, Mouse, Rat
Applications:	WB, IHC-Fr
Molecular Wt:	Predicted band size: 83 kDa
Clone number:	PSH15-05

Description: 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 NFkB binding site is located within the nerve growth factor-responsive enhancer element that is recognized by the NFkB protein p49, but not p65 or p50. Decreased choactase expression and increased NFkB 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.

Immunogen: Recombinant protein within mouse Choline Acetyltransferase aa 1-641.

Positive control: SH-SY5Y cell lysate, Neuro-2a cell lysate, Mouse brain tissue lysate, Mouse cerebellum tissue lysate, Rat brain tissue lysate, Rat cerebellum tissue lysate.

Subcellular location: Cytosol, nucleus, cytoplasm, neuron projection, presynapse.

Database links: SwissProt: P28329 Human | Q03059 Mouse | P32738 Rat

Recommended Dilutions:

WB	1:5,000
IHC-Fr	1:200-1:500

Storage Buffer: PBS (pH7.4).

Storage Instruction: Store at +4℃ after thawing. Aliquot store at -20℃. Avoid repeated freeze / thaw cycles.

Purity: Protein A affinity purified.

Images

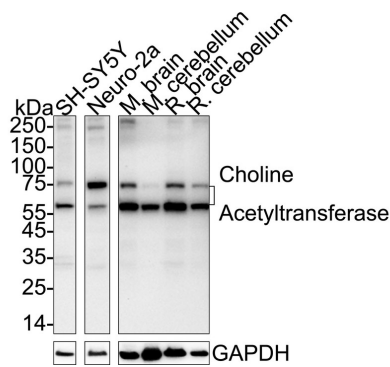


Fig1: Western blot analysis of Choline Acetyltransferase on different lysates with Rabbit anti-Choline Acetyltransferase antibody (HA751543) at 1/5,000 dilution.

Lane 1: SH-SY5Y cell lysate (20 µg/Lane)
Lane 2: Neuro-2a cell lysate (negative) (20 µg/Lane)
Lane 3: Mouse brain tissue lysate (40 µg/Lane)
Lane 4: Mouse cerebellum tissue lysate (40 µg/Lane)
Lane 5: Rat brain tissue lysate (40 µg/Lane)
Lane 6: Rat cerebellum tissue lysate (40 µg/Lane)

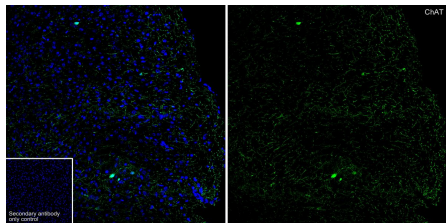
Predicted band size: 83 kDa
Observed band size: 50/75 kDa

Exposure time: 3 minutes; ECL: K1801;

4-20% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (HA751543) at 1/5,000 dilution was used in primary antibody dilution (K1803) at room temperature for 2 hours. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1/50,000 dilution was used for 1 hour at room temperature.

Fig2: Application: IHC-Fr



Species: Mouse

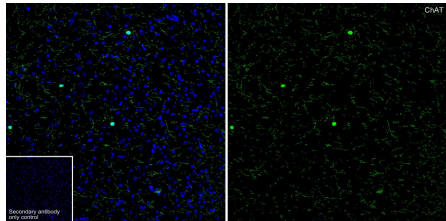
Site: brain

Sample: Frozen section

Antibody concentration: 1/500

Antigen retrieval: Not required

Fig3: Application: IHC-Fr



Species: Rat

Site: brain

Sample: Frozen section

Antibody concentration: 1/500

Antigen retrieval: Not required

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Applications:WB=Western blot IHC-P=Immunohistochemistry (paraffin) IF-Cell=Immunofluorescence (Cell) IF-Tissue=Immunofluorescence (Tissue) FC=Flow cytometry IP=Immunoprecipitation

Note: All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE".

Background References

1. Gabalski AH et al. Circulating extracellular choline acetyltransferase regulates inflammation. J Intern Med. 2024 Mar
2. Liu J et al. Choline acetyltransferase and vesicular acetylcholine transporter are required for metamorphosis, reproduction, and insecticide susceptibility in *Tribolium castaneum*. Gene. 2022 Oct

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