



Product Type: Recombinant Rabbit monoclonal IgG, primary antibodies

Species reactivity: Human, Mouse, Rat

Applications: IHC-P

Molecular Wt: Predicted band size: 72 kDa

Clone number: PSH15-49

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 NF_κB binding site is located within the nerve growth factor-responsive enhancer element that is recognized by the NF_κB protein p49, but not p65 or p50. Decreased choactase expression and increased NF_κB 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: Mouse brain (habenular nucleus) tissue, mouse brain (caudate nucleus) tissue, mouse hindbrain tissue, rat brain (habenular nucleus) tissue, rat brain (caudate nucleus) tissue, rat hindbrain tissue.

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

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

Recommended Dilutions:

IHC-P 1:200-1:1,000

Storage Buffer: PBS (pH7.4).

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

Purity: Protein A affinity purified.

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Technical:0086-571-89986345

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Images

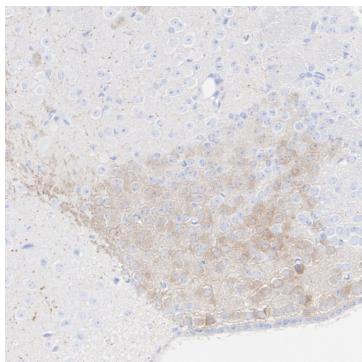


Fig1: Immunohistochemical analysis of paraffin-embedded mouse brain (habenular nucleus) tissue with Rabbit anti-Choline Acetyltransferase antibody (HA751564) at 1/200 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH₂O and PBS, and then probed with the primary antibody (HA751564) at 1/200 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

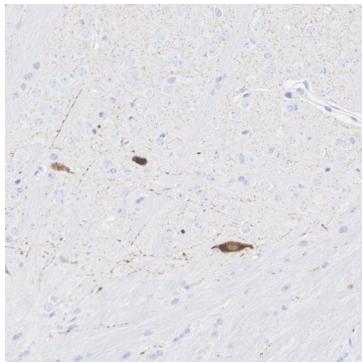


Fig2: Immunohistochemical analysis of paraffin-embedded mouse brain (caudate nucleus) tissue with Rabbit anti-Choline Acetyltransferase antibody (HA751564) at 1/200 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH₂O and PBS, and then probed with the primary antibody (HA751564) at 1/200 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

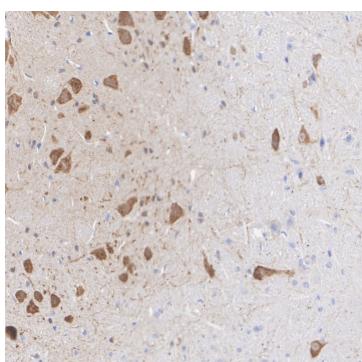


Fig3: Immunohistochemical analysis of paraffin-embedded mouse hindbrain tissue with Rabbit anti-Choline Acetyltransferase antibody (HA751564) at 1/200 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH₂O and PBS, and then probed with the primary antibody (HA751564) at 1/200 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

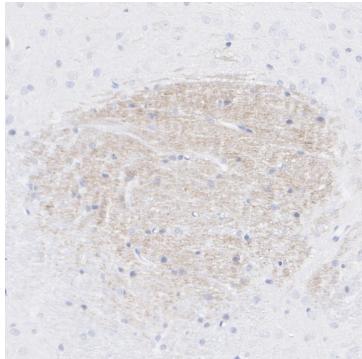


Fig4: Immunohistochemical analysis of paraffin-embedded rat brain (habenular nucleus) tissue with Rabbit anti-Choline Acetyltransferase antibody (HA751564) at 1/200 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH₂O and PBS, and then probed with the primary antibody (HA751564) at 1/200 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

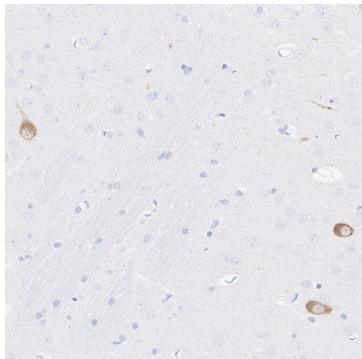


Fig5: Immunohistochemical analysis of paraffin-embedded rat brain (caudate nucleus) tissue with Rabbit anti-Choline Acetyltransferase antibody (HA751564) at 1/200 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH₂O and PBS, and then probed with the primary antibody (HA751564) at 1/200 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

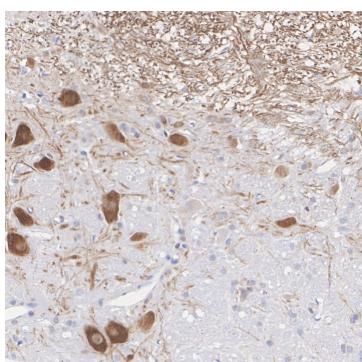


Fig6: Immunohistochemical analysis of paraffin-embedded rat hindbrain tissue with Rabbit anti-Choline Acetyltransferase antibody (HA751564) at 1/200 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH₂O and PBS, and then probed with the primary antibody (HA751564) at 1/200 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

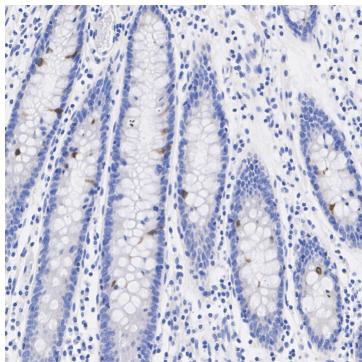


Fig7: Immunohistochemical analysis of paraffin-embedded human colon tissue with Rabbit anti-Choline Acetyltransferase antibody (HA751564) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH₂O and PBS, and then probed with the primary antibody (HA751564) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

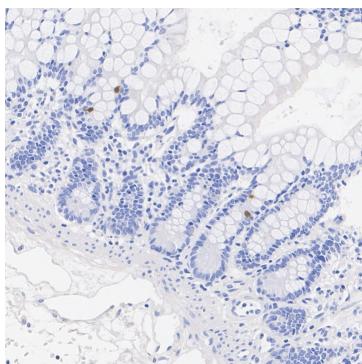


Fig8: Immunohistochemical analysis of paraffin-embedded human small intestine tissue with Rabbit anti-Choline Acetyltransferase antibody (HA751564) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH₂O and PBS, and then probed with the primary antibody (HA751564) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

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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