

PRODUCT INFORMATION



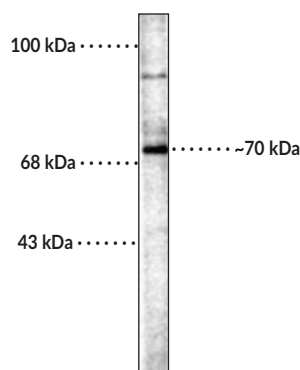
Choline Acetyltransferase Polyclonal Antibody

Item No. 29255

Overview and Properties

Contents:	This vial contains 100 µl affinity-purified polyclonal antibody.
Synonym:	ChAT
Immunogen:	Recombinant human choline acetyltransferase
Molecular Weight:	~70 kDa
Species Reactivity:	(+) Human, avian, chicken, guinea pig, mouse, non-human primate, rat
Storage:	-80°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS with 5 mg/ml BSA and 0.2% sodium azide
Host:	Goat
Applications:	Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution for IHC is 1:100-1:1,000 and 1:100 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Image



WB of rat hippocampal lysate showing specific immunolabeling of the ~70 kDa Choline Acetyltransferase Polyclonal Antibody.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Choline acetyltransferase (ChAT) is an acyltransferase that catalyzes the synthesis of acetylcholine from acetyl coenzyme A (acetyl-CoA; Item No. 16160) and choline.¹ It is composed of a catalytic domain flanked on both sides by a substrate binding domain.^{1,2} ChAT is synthesized in the soma of cholinergic neurons in the central and peripheral nervous system and is transported to nerve terminals where it exists in a soluble form or on synaptic vesicles in a membrane-bound form.¹ It is used as a marker of cholinergic neurons.³ Genome-wide deletion of *Chat* in mice is perinatal lethal.⁴ Intracerebroventricular transplantation of human HB1.F3 neural stem cells overexpressing *CHAT* reverses learning and memory deficits in a mouse model of Alzheimer's disease induced by kainic acid (Item No. 78050).⁵ ChAT activity is reduced in a number of neurodegenerative disorders, including Alzheimer's disease, amyotrophic lateral sclerosis (ALS), and Huntington's disease.¹ SNPs in *CHAT* are associated with Alzheimer's disease in humans.⁴ Cayman's Choline Acetyltransferase Polyclonal Antibody can be used for immunohistochemistry (IHC) and Western blot (WB) applications. The antibody recognizes ChAT at approximately 70 kDa from human, avian, chicken, guinea pig, mouse, non-human primate, and rat samples.

References

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2. Kim, A.-R., Rylett, R.J., and Shilton, B.H. Substrate binding and catalytic mechanism of human choline acetyltransferase. *Biochem.* **45(49)**, 14621-14631 (2006).
3. Wu, D. and Hersh, L.B. Choline acetyltransferase: Celebrating its fiftieth year. *J. Neurochem.* **62(5)**, 1653-1663 (1994).
4. Brandon, E.P., Lin, W., D'Amour, K.A., et al. Aberrant patterning of neuromuscular synapses in choline acetyltransferase-deficient mice. *J. Neurosci.* **23(2)**, 539-549 (2003).
5. Park, D., Joo, S.S., Kim, T.K., et al. Human neural stem cells overexpressing choline acetyltransferase restore cognitive function of kainic acid-induced learning and memory deficit animals. *Cell Transplant.* **21(1)**, 365-371 (2012).

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