abcam

ab192466

Alexa Fluor® 647 Anti-Choline Acetyltransferase antibody [EPR13024(B)]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 647
Excitation/Emission	Ex: 650nm, Em: 665nm
Storage buffer	Preservative: 0.02% Sodium azide Constituents: PBS, 30% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR13024(B)
Purification technique	Affinity purification Protein A
Specificity	Some of our customers have successfully used ab181023 in mouse and rat. However, our latest tests were unsuccessful and therefore we can no longer guarantee the reactivity of these species. We recommend ab178850 as an alternative product for mouse and rat.
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/100
Notes	This product gave a positive signal in human cerebellum tissue Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information CHAT

Function	Catalyzes the reversible synthesis of acetylcholine (ACh) from acetyl CoA and choline at cholinergic synapses.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle, Stable for 12 months at -20°C, Store in the dark

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

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Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Choline Acetyltransferase (ChAT) also known as EC 2.3.1.6 acts as the enzyme responsible for synthesizing the neurotransmitter acetylcholine. It catalyzes the transfer of an acetyl group from acetyl-CoA to choline to form acetylcholine. ChAT is a protein with an approximate mass of 70 kDa and is expressed in cholinergic neurons throughout the central and peripheral nervous systems. High expression is observed in regions such as the basal forebrain and neuromuscular junctions which are important for cholinergic signaling.
Biological function summary	The enzyme plays an important role in cholinergic conduction by producing acetylcholine which functions in synaptic transmission. It does not function as part of a larger complex but its activity directly influences cholinergic synapses. Choline acetyltransferase function ensures the synthesis and availability of acetylcholine for release into the synaptic cleft initiating muscle contraction and modulating activity in the central nervous system.
Pathways	Choline acetyltransferase is critical in pathways governing neurotransmitter release such as the cholinergic synapse pathway. It interacts functionally with other proteins within this pathway including acetylcholinesterase which breaks down acetylcholine in the synaptic cleft. This interaction ensures proper neurotransmitter regulation and recycling maintaining synapse function and communication within neuronal circuits.
Associated diseases and disorders	Alterations in choline acetyltransferase activity relate to neurological disorders including Alzheimer's disease and myasthenia gravis. In Alzheimer's disease reduced choline acetyltransferase function leads to decreased acetylcholine synthesis contributing to the cognitive decline observed in patients. In myasthenia gravis acetylcholine receptors are impaired but effective choline acetyltransferase activity is still necessary to manage neurotransmitter levels. A potential therapeutic angle involves targeting related proteins that exacerbate these conditions to support acetylcholine levels.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

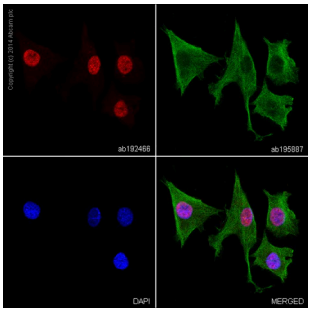
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

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2 product images

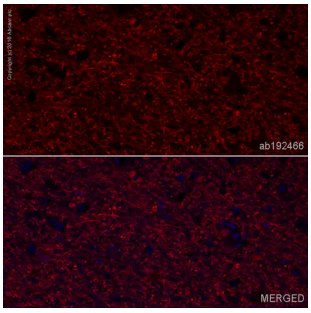


Immunocytochemistry/ Immunofluorescence - Alexa Fluor® 647 Anti-Choline Acetyltransferase antibody [EPR13024(B)] (ab192466)

Choline Acetyltransferase Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Choline Acetyltransferase antibody

ab192466 staining Choline Acetyltransferase in SKNSH cells. The cells were fixed with 4% formaldehyde (10 min), permeabilised in 0.1% Triton X-100 for 5 minutes and then blocked in 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated with ab192466 at a working dilution of 1 in 100 (shown in red) and ab195887, Mouse monoclonal [DM1A] to alpha Tubulin (Alexa Fluor® 488, shown in green) at 2µg/ml overnight at +4°C. Nuclear DNA was labelled in blue with DAPI.
This product gave a positive signal in 100% methanol (5 min) fixed SKNSH cells under the same testing conditions.

Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Alexa Fluor® 647 Anti-Choline Acetyltransferase antibody [EPR13024(B)] (ab192466)

Choline Acetyltransferase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Choline Acetyltransferase antibody

IHC image of Choline Acetyltransferase staining in a section of formalin-fixed paraffin-embedded normal human cerebellum.
The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6) in a Dako Pascal pressure cooker using the standard factory-set regime. Non-specific protein-protein interactions were then blocked in TBS containing 0.025% (v/v) Triton X-100, 0.3M (w/v) glycine and 1% (w/v) BSA for 1h at room temperature. The section was then incubated overnight at +4°C in TBS containing 0.025% (v/v) Triton X-100 and 1% (w/v) BSA with ab192466 at 1/100 (shown in red). Nuclear DNA was labelled with DAPI (shown in blue). The section was then mounted using Fluoromount®.

Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

For other IHC staining systems (automated and non-automated), customers should optimize variable parameters such as antigen retrieval conditions, antibody concentrations and incubation times.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.