abcam

ab31276

Anti-Acetylcholinesterase antibody

Key facts

Isotype	IgG
Host species	Goat
Storage buffer	pH: 7.3 Preservative: 0.02% Sodium azide Constituents: Tris buffered saline, 0.5% BSA
Form	Liquid
Clonality	Polyclonal
Immunogen	Synthetic Peptide within Human ACHE aa 600-650. The exact immunogen used to generate this antibody is proprietary information. Database link P22303
Purification technique	Affinity purification Immunogen
Specificity	This antibody is expected to recognise isoform NP_000656 only (the ubiquitously expressed, hydrophillic form).
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified from goat serum by ammonium sulphate precipitation followed by antigen affinity chromatography using the immunizing peptide.

Reactivity data

WB

Tested

Species	Human
Dilution info	1-3 µg/mL

Notes	1 hour primary incubation is recommended for this product.

Predicted

Species	Rat, Rabbit, Cow, Cat
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	10 µg/mL
Notes	-

Predicted

Species	Rat, Rabbit, Cow, Cat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	10 µg/mL
Notes	-

Predicted

Species	Rat, Rabbit, Cow, Cat
Dilution info	-
Notes	-

Target data

See full target information ACHE

Function	Hydrolyzes rapidly the acetylcholine neurotransmitter released into the synaptic cleft allowing to terminate the signal transduction at the neuromuscular junction. Role in neuronal apoptosis.

Storage

Shipped at conditions	Blue Ice
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

Supplementary info

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

Activity summary	Acetylcholinesterase also known as AChE is an enzyme with a molecular mass of approximately 67 kDa. It plays a critical role in neurotransmission by catalyzing the hydrolysis of the neurotransmitter acetylcholine into acetate and choline. This reaction occurs at neuromuscular junctions and cholinergic synapses therefore terminating synaptic transmission. AChE is highly expressed in muscle and brain tissue particularly in the synaptic cleft where it regulates the nerve signal terminations.
Biological function summary	Acetylcholinesterase is essential for maintaining neurotransmission dynamics by ensuring timely acetylcholine breakdown. It does not function as part of a larger enzyme complex but its activity is necessary for efficient synaptic signaling in the nervous system. This enzymatic action prevents continuous stimulation of muscles and nerves by rapidly degrading acetylcholine thereby ensuring proper muscle contraction and cognitive processes.
Pathways	Acetylcholinesterase participates significantly in the cholinergic system. It influences cholinergic signaling pathways by inactivating acetylcholine after its release into the synaptic cleft. This function aligns acetylcholinesterase closely with receptors like nicotinic and muscarinic acetylcholine receptors. It indirectly affects signal transduction pathways that involve these receptors with potential downstream effects on ion channels and intracellular messengers.

Associated diseases and disorders	Acetylcholinesterase plays a significant role in Alzheimer's disease and myasthenia gravis. In Alzheimer's disease decreased acetylcholinesterase function can lead to accumulations of acetylcholine and disrupted signaling contributing to cognitive dysfunction. Acetylcholinesterase inhibitors are therapeutic in such contexts. For myasthenia gravis a disorder affecting neuromuscular transmission the enzyme's interaction with antibodies targets synaptic acetylcholine receptors. This interaction results in weakened muscle contractions correlating with condition severity.

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

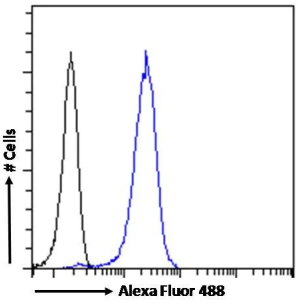
We do not recommend this combination. It is not covered by our product promise.

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.

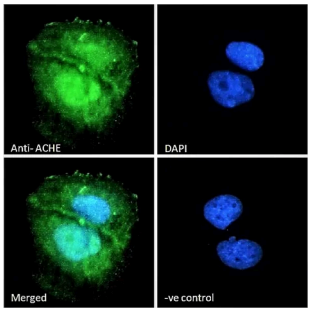
3 product images



Flow Cytometry - Anti-Acetylcholinesterase antibody (ab31276)

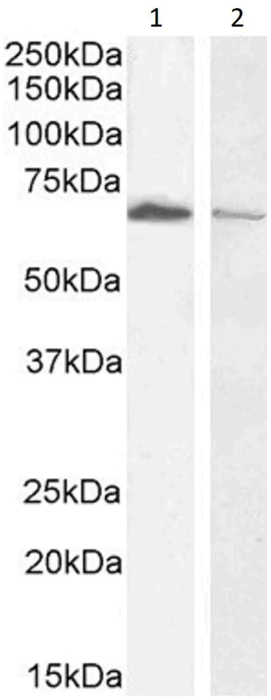
Acetylcholinesterase Flow Cytometry staining using goat Anti-Acetylcholinesterase antibody

Flow cytometric analysis of paraformaldehyde fixed Kelly cells (blue line), permeabilized with 0.5% Triton. Primary incubation 1hr (10µg/mL) followed by Alexa Fluor 488 secondary antibody (1µg/mL). IgG control: Unimmunized goat IgG (black line) followed by Alexa Fluor 488 secondary antibody.



Immunocytochemistry/ Immunofluorescence - Anti-Acetylcholinesterase antibody (ab31276)

Immunofluorescence analysis of paraformaldehyde fixed U2OS cells, permeabilized with 0.15% Triton. Primary incubation 1hr (10ug/ml) followed by Alexa Fluor 488 secondary antibody (2ug/ml), showing nuclear, membrane and cytoplasmic staining. The nuclear stain is DAPI (blue). Negative control: Unimmunized goat IgG (10ug/ml) followed by Alexa Fluor 488 secondary antibody (2ug/ml).



Western blot - Anti-Acetylcholinesterase antibody (ab31276)

Acetylcholinesterase Western blot staining using goat Anti-Acetylcholinesterase antibody

Detected by chemiluminescence.
All lanes:
Western blot - Anti-Acetylcholinesterase antibody (ab31276) at 0.3 µg/mL

Lane 1:
Jurkat cell lysate at 0.5 µg/mL

Lane 2:
HepG2 cell lysate in RIPA buffer at 35 µg

Predicted band size: 68 kDa

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