Acetylcholinesterase Assay Kit (Colorimetric) (ab138871)

**Overview**

**Product name**
Acetylcholinesterase Assay Kit (Colorimetric)

**Sample type**
Cell culture extracts, Whole Blood, Cell Lysate, Tissue Lysate

**Assay type**
Enzyme activity

**Sensitivity**
1 mU/ml

**Species reactivity**
Reacts with: Human

**Predicted to work with:** Mammal

**Product overview**
Acetylcholinesterase Assay Kit (Colorimetric) (ab138871) provides a convenient method for the detection of AChE activity. It uses DTNB to quantify the thiocholine produced from the hydrolysis of acetylthiocholine by AChE in blood, in cell extracts, and in other solutions. The absorption intensity of DTNB adduct is used to measure the amount of thiocholine formed, which is proportional to the AChE activity. The kit provides a colorimetric one-step assay to detect as little as 0.1 mU AChE in a 100 µL assay volume (1 mU/mL). Its signal can be easily read by an absorbance microplate reader at ~410 nm. The kit is robust and can be used for continuously monitoring AChE activities.

Please note this product does not differentiate between acetylcholesterase (AchE) or butyrylcholinesterase (BChE) activity as both enzymes can hydrolyze acetylcholine.

If you are looking for a fluorometric kit, we recommend Acetylcholinesterase Assay Kit (Fluorometric-Green) (ab133872) (Ex/Em = 490/520 nm) or Acetylcholinesterase Assay Kit (Fluorometric-Red) (ab133873) (Ex/Em = 540/590 nm).

**Notes**
Acetylcholinesterase (AChE) is one of the most crucial enzymes for nerve response and function. AChE degrades the neurotransmitter acetylcholine (ACh) into choline and acetic acid. It is mainly found at neuromuscular junctions and cholinergic synapses in the central nervous system, where its activity serves to terminate the synaptic transmission. AChE inhibitors are among the key drugs approved for Alzheimer’s disease (AD) and myasthenia gravis.

**Tested applications**
Suitable for: Functional Studies

**Storage instructions**
Store at -20°C. Please refer to protocols.
Function
Terminates signal transduction at the neuromuscular junction by rapid hydrolysis of the acetylcholine released into the synaptic cleft. Role in neuronal apoptosis.

Tissue specificity
Isoform H is highly expressed in erythrocytes.

Sequence similarities
Belongs to the type-B carboxylesterase/lipase family.

Cellular localization
Cell membrane; Cell junction > synapse. Secreted. Cell membrane and Nucleus. Only observed in apoptotic nuclei.

Applications
Our Abpromise guarantee covers the use of ab138871 in the following tested applications.
The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

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Images

ab138871 was used to determine AChE activity in the cortex and in the hippocampus. AChE activity was measured at 410 nm.
AChE measured in mouse tissue lysates showing quantity (mU) per mg protein of tested sample

AChE measured in cell lysates showing quantity (mU) per 1 mln of tested cells

AChE measured in biological fluids showing quantity (mU) per mL of tested sample
Acetylcholinesterase dose response was measured in a white/clear bottom 96-well plate with ab138871 Acetylcholinesterase Assay Kit (Colorimetric) using a microplate reader. As low as 0.1 mU/well of acetylcholinesterase can be detected with 30 minutes incubation (n=3)

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

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