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Product Information

Anti-Acetylcholinesterase (AChE) antibody produced in rabbit
IgG fraction of antiserum

Product Number **SAB4200839**

Product Description

Anti-Acetylcholinesterase (AChE) antibody is developed in rabbits using recombinant human AChE, expressed in HEK 293 cells (GeneID: 43). Whole antiserum is purified using protein A immobilized on agarose to provide the IgG fraction of antiserum.

Anti-Acetylcholinesterase (AChE) antibody specifically recognizes human AChE. The antibody may be used in various immunochemical techniques including immunoblotting, immunofluorescence, and ELISA. Detection of the AChE band by immunoblotting is specifically inhibited by the immunogen.

Acetylcholinesterase (AChE) is a member of the α/β-hydrolase-fold proteins superfamily which is composed of structurally related proteins with a great diversity in their catalytic, recognition, adhesion, and chaperone functions. 3D structure studies of α/β-hydrolase revealed a variety of folding patterns suggesting associations through oligomerization dependent functions.[1]

AChE is a tissue specific serine hydrolase expressed in several variants at neuromuscular junctions (NMJs),[2] cholinergic brain synapses,[2-3] or erythrocytes (Red Blood Cells, RBC).[4] In the synaptic cleft, the main function of AChE is to ensure rapid hydrolysis of acetylcholine (ACh) released from motor nerve endings into choline and acetic acid, thus preventing postsynaptic muscle ACh receptors (AChR) hyperactivation and termination of the signal transmission.[2-3,5]

AChE and Butyrylcholinesterase (BChE) inhibitory drugs or peptides are being used in several neurodegenerative diseases including Alzheimer's disease and pathological muscle weakness such as Myasthenia Gravis. These AChE inhibitors increase synaptic ACh levels and hence improve the cholinergic function in the brain.[2-3,5-6]

Erythrocyte AChE (AChE-H) is a membrane encored AChE splicing variant found in RBC. It belongs to the glycosylphosphatidylinositol (GPI) protein family and carries the Yta blood group antigen. Erythrocyte AChE can be found in plasma circulating vesicles originated from aged erythrocytes, and therefore is considered as a biomarker for RBC membrane integrity. Furthermore, Erythrocyte AChE activity is also a marker for inflammation and other diseases including essential hypertension, glaucoma, ALS, neurotoxicity, and Hirschsprung's disease.[4,7-8]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2–8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working dilution of 1:1000-1:2000 is recommended using whole extracts of Jurkat cells.

Immunofluorescence: a working dilution of 1:1000-1:2000 is recommended using human A431.

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration test.

References

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