

Product Information

Acetylcholinesterase from human erythrocytes

Catalog Number **C0663**
Storage Temperature 2–8 °C

CAS RN 9000-81-1
Synonyms: Acetylcholine acetylhydrolase; AChE

Product Description

Acetylcholinesterase is the major *in vivo* degradative enzyme for acetylcholine. It converts acetylcholine and water to choline and acetic acid.

Cholinesterases hydrolyze choline esters faster than other substrates and are inhibited by the natural carbamate alkaloid, eserine or physostigmine. These enzymes are serine esterases and are irreversibly inhibited by organophosphates such as diisopropylfluorophosphate (DFP).

Two cholinesterases are present in the blood:

- 1) An erythrocyte associated enzyme, which is a true cholinesterase or acetylcholinesterase (AChE – E.C. 3.1.1.7)
- 2) A serum associated enzyme, which is Pseudocholinesterase or Butyrylcholinesterase (BuChE - EC 3.1.1.8)

AChE is an ectoenzyme, anchored to the erythrocyte membrane via a GPI moiety. This enzyme is the amphiphilic form extracted together with its GPI anchor.

The molecular mass of the monomeric subunit is ~80 kDa. However, there is a tendency for the enzyme to aggregate in solution into multiple forms.

The product is supplied as a solution in 20 mM HEPES, pH 8.0, containing 0.1% TRITON® X-100.

Specific Activity: ≥500 units/mg protein

Unit definition: One unit of acetylcholinesterase will hydrolyze 1.0 μmole of acetylthiocholine iodide per minute at pH 7.4 at 37 °C.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

It is recommended to store the product at 2–8 °C. This product, as supplied, remains active for at least 7 days at 37 °C.

References

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2. Jbilo, O., et al., *Toxicon*, **32**, 1445-1457 (1994).
3. Ott, P., et al., *Eur. J. Biochem.*, **57**, 469-480 (1975).
4. Low, M.G., and Finean, J.B., *FEBS Letts.*, **82**, 143-146 (1977).
5. Toutant, J-P., et al., *Eur. J. Biochem.*, **180**, 503-508 (1989).
6. Ellman, G.L., et al., *Biochem Pharmacol.*, **7**, 88-95 (1961).

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