Creative Enzymes®

Native Human Butyrylcholinesterase

Cat. No. NATE-0093

Lot. No. (See product label)

Introduction

Description Butyrylcholinesterase (BChE) is a serine hydrolase that is structurally similar to acetylcholinesterase (AChE), but differs in substRate specificities and inhibitor sensitivities. BChE can, unlike AChE, efficiently hydrolyze larger esters of choline such as butyrylcholine and benzoylcholine. The enzyme is a tetrameric glycoprotein with four equal subunits (110 kDa each). The enzyme is activated by Ca2+ and Mg2+ and the activity is constant over the pH range 6.0-8.0. It is inhibited by Betaine, nicotine, organophosphates, carbamates.

Applications Butyrylcholinesterase (BChE) is a serine hydrolase that shares substantial structural similarities with acetylcholinesterase (AchE) but has different substrate and inhibitor specificities. BChE is found in the serum, hemopoietic cells, liver, lung, heart and the central nervous system of vertebrates.

Synonyms Butyrylcholinesterase; BCHE; BuChE; pseudocholinesterase; plasma cholinesterase; EC 3.1.1.8; 9001-08-5; Acylcholine acyl-hydrolase; Choline esterase; butyryl

Product Information

Species Human

Source Human serum

EC Number EC 3.1.1.8

CAS No. 9001-08-5

Activity > 50 U/mg protein

Pathway Diabetes pathways, organism-specific biosystem; Disease, organism-specific biosystem; Irinotecan Pathway, organism-specific biosystem; Synthesis, Secretion, and Deacylation of Ghrelin, organism-specific biosystem

Function acetylcholinesterase activity; acetylcholinesterase activity; beta-amyloid binding; carboxylesterase activity; carboxylesterase activity; catalytic activity; choline binding; cholinesterase activity; cholinesterase activity; cholinesterase activity; enzyme binding; hydrolase activity

Unit Definition One unit will hydrolyze 1.0 µmole of butyrylcholine to choline and butyrate per min at pH 8.0 at 37°C. The activity obtained using butyrylcholine as substrate is ~2.5 times that obtained using acetylcholine.