Creative Enzymes®

Native Actinobacillus sp. Creatinase

Cat. No. NATE-0160

Lot. No. (See product label)

Introduction

Description	In enzymology, a creatinase (EC 3.5.3.3) is an enzyme that catalyzes the chemical reaction:creatine + H2O↔ sarcosine + urea. Thus, the two substrates of this enzyme are creatine and H2O, whereas its two products are sarcosine and urea. This enzyme belongs to the family of hydrolases, those acting on carbon-nitrogen bonds other than peptide bonds, specifically in linear amidines. Creatinase accelerates the conversion reaction of creatine and water molecule to sarcosine and urea. It always acts in homodimer state and is induced by choline chloride.
Applications	Creatinase mixed with sarcosine oxidase may be used to determine the level of creatine in different pH, temperature, enzyme ratio, and buffer concentration. It may also be used to determine the plasma creatinine level by using a centrifugal analyser.
Synonyms	Creatine amidinohydrolase; creatinase; 37340-58-2; EC 3.5.3.3

Product Information

Source	Actinobacillus sp.
Form	Lyophilized powder containing sugars and EDTA as stabilizers
EC Number	EC 3.5.3.3
CAS No.	37340-58-2
Molecular Weight	mol wt ~100 kDa
Activity	20-40 units/mg protein
Isoelectric point	4.6 ± 0.1
pH Stability	pH 5.5 − 9.0 (25°C, 16hr)
Optimum pH	8
Thermal stability	Below 50°C (pH 7.5, 30 min)
Optimum temperature	40°C
Michaelis Constant	1.9 x 10^{-2}M (Creatine)
Structure	2 subunits per mole of enzyme
Inhibitors	Cu++, Hg++, Ag+
Unit Definition	One unit will hydrolyze 1.0 µmole of creatine to urea and sarcosine per min at pH 7.5 at 37°C.

Storage and Shipping Information

Storage	−20°C