

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 × 10⁻²M (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