

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 10⁻²M (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