

## 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 + H<sub>2</sub>O ⇌ sarcosine + urea. Thus, the two substrates of this enzyme are creatine and H<sub>2</sub>O, 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<sup>-2</sup>M (Creatine)

**Structure** 2 subunits per mole of enzyme

**Inhibitors** Cu<sup>++</sup>, Hg<sup>++</sup>, Ag<sup>+</sup>

**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