Creative Enzymes
Diagnostic Enzymes

Native Actinobacillus sp. Creatinase

Product Information

Cat#	NATE-0160
Abbr	Creatinase, Native (Actinobacillus sp.)
Alias	creatinase
Similar	Creatinase
Source	Actinobacillus sp.
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.
Form	Lyophilized powder containing sugars and EDTA as stabilizers
Enzyme Commission Number	EC 3.5.3.3
Activity	6.0 U/mg-solid or more
CAS No.	37340-58-2
Molecular Weight	mol wt ~100 kDa
Isoelectric point	4.6 ± 0.1
pH Stability	pH 5.5 − 9.0 (25°C, 16hr)
Michaelis Constant	1.9 x 10^{-2}M (Creatine)

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Structure	2 subunits per mole of enzyme
Unit Definition	One unit will hydrolyze 1.0 μmole of creatine to urea and sarcosine per min at pH 7.5 at 37°C.
Optimum pH	8
Optimum temperature	40°C
Thermal stability	Below 50°C (pH 7.5, 30 min)
Storage	−20°C
Inhibitors	Cu++, Hg++, Ag+
Synonyms	Creatine amidinohydrolase; creatinase; 37340-58-2; EC 3.5.3.3

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