Creative Enzymes
Diagnostic Enzymes

Native Microorganism Creatine Amidohydrolase

Product Information

Cat#	DIA-185
Abbr	Creatinase, Native (Microorganism)
Alias	Creatinase
Similar	Creatinase
Source	Microorganism
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. The native enzyme was shown to be made up of two subunit monomers via SDS-polyacrylamide gel electrophoresis. Creatinase has been found to be most active at pH 8 and is most stable between ph 6-8 for 24 hrs. at 37 degrees. This enzyme belongs to the family of hydrolases, those acting on carbon-nitrogen bonds other than peptide bonds, specifically in linear amidines. This enzyme participates in arginine and proline metabolism.
Applications	This enzyme is useful for enzymatic determination of creatinine when coupled with creatine amidinohydrolase, sarcosine dehydrogenase or sarcosine oxidase and formaldehyde dehydrogenase in clinical analysis.
Appearance	White amorphous powder, lyophilized
Form	Freeze dried powder
Enzyme Commission Number	EC 3.5.3.3
Activity	4.0 U/mg-solid or more
CAS No.	37340-58-2
Contaminants	NADH oxidase < 5.0×10^{-2}%; Catalase < 2.0%

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Molecular Weight	approx. 67 kDa (by gel filtration)
Isoelectric point	4.5±0.1
pH Stability	pH 4.0-10.0 (25°C, 20hr)
Michaelis Constant	4.5×10 - 3 M (Creatine)
Structure	2 subunits per mol of enzyme
Optimum pH	6.5-7.5
Optimum temperature	40 - 50°C
Thermal stability	below 70°C (pH 7.5, 30min)
Stability	Stable at -20°C for at least one year
Stabilizers	Sugars, EDTA
Inhibitors	Hg^{++}, Cu^{++}, Ag^{+}, SH reagent (NEM), PCMB
Synonyms	Creatine amidohydrolase; Creatinase; EC 3.5.3.3

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