Creative Enzymes®

Native Microbial Creatinine Deiminase

Cat. No. NATE-0164

Lot. No. (See product label)

Introduction

Description	In enzymology, a creatinine deaminase (EC 3.5.4.21) is an enzyme that catalyzes the chemical reaction: creatinine + H2O ↔ N-methylhydantoin + NH3. Thus, the two substrates of this enzyme are creatinine and H2O, whereas its two products are N-methylhydantoin and NH3. This enzyme belongs to the family of hydrolases, those acting on carbon-nitrogen bonds other than peptide bonds, specifically in cyclic amidines. The systematic name of this enzyme class is creatinine iminohydrolase.
Applications	Creatinine deiminase has been used in a study to assess the application of a creatinine-sensitive biosensor for hemodialysis control. Creatinine deiminase has also been used in a study to investigate the bioelectronic tongue for the simultaneous determination of urea, creatinine and alkaline ions in clinical samples.
Synonyms	EC 3.5.4.21, creatinine hydrolase; creatinine desiminase; creatinine deaminase; 37289-15-9

Product Information

Source	Microbial
Form	Lyophilized powder containing mannitol as stabilizer
EC Number	EC 3.5.4.21
CAS No.	37289-15-9
Molecular Weight	mol wt ~260 kDa
Activity	> 25 units/mg protein
Isoelectric point	4.4
pH Stability	pH 7.0 – 11.0 (30°C, 20hr)
Optimum pH	8.5 – 9.5
Thermal stability	Below 65°C (pH 7.5, 1hr)
Optimum temperature	65 – 75°C
Michaelis Constant	3.5 x 10^{-3}M (Creatinine)
Inhibitors	Ag+,Hg++, o-phenanthroline,monoiodoacetate
Unit Definition	One unit will hydrolyze 1.0 µmole of creatinine to N-methylhydantoin and NH3 per min at pH 7.5 at 37°C in a coupled system with L-glutamic dehydrogenase.

Storage and Shipping Information

Storage	−20°C