

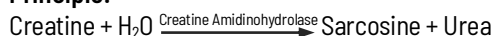
SPECIFICATION SHEET

Product Name: Creatine Amidinohydrolase
Catalog # CR02D1-E311H

Product Description: This enzyme is a diagnostic-grade reagent from a microorganism host. It is used for enzymatic determination of creatine and creatinine in clinical analysis when coupled with creatinine amidohydrolase and sarcosine oxidase.

EC 3.5.3.3

Storage and Stability: Product can be stored at 2~8°C for transportation process up to ten days but long-term storage should be at -20°C.

Principle:


The appearance of urea is measured at 435 nm by spectrophotometry.

Unit Definition	: One unit is defined as the amount of enzyme that produces 1 µmol of urea per minute at 37°C and pH 7.7 under the conditions described below.
Appearance	: White amorphous powder, lyophilized
Activity	: ≥4 U/mg solid
Contaminants	: Catalase ≤2.0 % NADH oxidase ≤5.0 × 10 ⁻² %
Stabilizers	: Sugars, EDTA
Molecular Weight	: 47 kDa
Isoelectric Point	: 5.6
Michaelis Constant	: 6.7 × 10 ⁻² M (creatinine)
Inhibitors	: Cu ²⁺ , Hg ²⁺ , Ag ⁺ , Zn ²⁺ , IAA, NEM, ProClin-300
Optimum pH	: 8.0 (Figure 1)
Optimum Temperature	: 30°C (Figure 2)
pH Stability	: pH 6.0-8.0 (25°C, 24 hr) (Figure 3)
Thermal Stability	: Below 55°C (pH 7.5, 30 min) (Figure 4)
Effect of Various Chemicals	: (Table 1)

Table 1. Effect of Various Chemicals on Creatine Amidinohydrolase

The enzyme dissolved in 50 mM Tris-HCl buffer, pH 7.5 (80 U/mL) was incubated with each chemical at 25°C for 2 hr.

Chemical	Conc. (mM)	Residual activity (%)	Chemical	Conc. (mM)	Residual activity (%)
None	—	100.0	BME	2	98.8
CaCl ₂	2	105.3	Hydroxylamine	2	107.7
MgSO ₄	2	107.7	EDTA	5	106.8
ZnSO ₄	2	38.5	NaF	20	106.8
NiCl ₂	2	81.5	NaN ₃	20	107.1
CoCl ₂	2	115.0	ProClin-300	0.045% (v/v)	75
MnCl ₂	2	105.9	SDS	0.05% (w/v)	108.2
FeCl ₃	2	98.2	Na-Cholate	0.1% (w/v)	115.3
CuSO ₄	2	48.8	Tween-20	0.1% (v/v)	114.1
AgNO ₃	2	3.2	Triton X-100	0.1% (v/v)	116.5

Table 1 (Continued)

Chemical	Conc. (mM)	Residual activity (%)
HgSO ₄	2	7.9
NEM	2	3.5
IAA	2	74.1

Chemical	Conc. (mM)	Residual activity (%)
Span-20	0.1% (v/v)	120.6
Brij-35	0.1% (v/v)	117.1

Fig.1. pH Activity

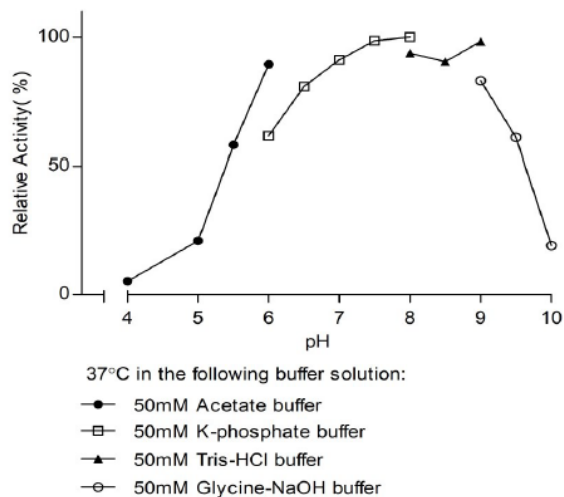


Fig.2. Temperature Activity

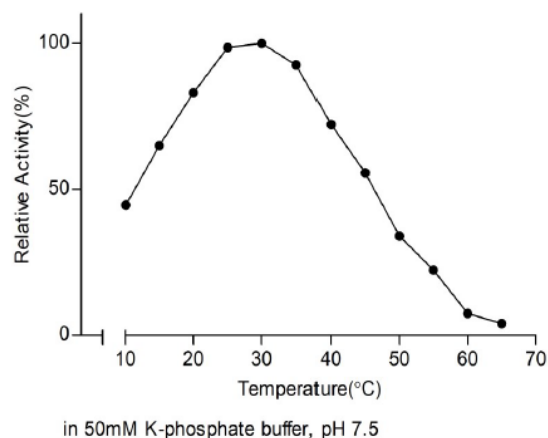


Fig.3. pH Stability

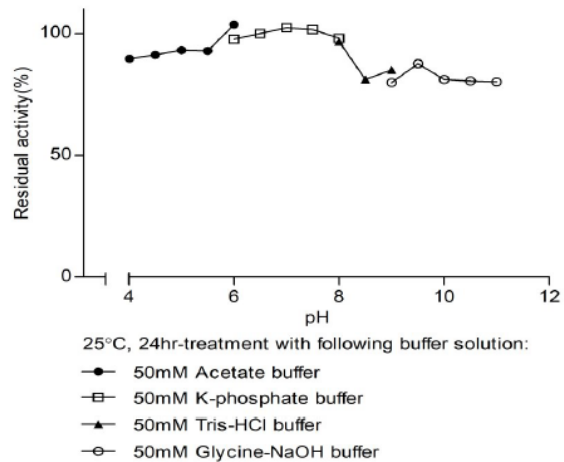


Fig.4. Thermal Stability

