

## SPECIFICATION SHEET

**Product Name: Creatine Amidinohydrolase**
**Catalog # CR02D1-E311H**

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

**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:**

Creatine + H<sub>2</sub>O  $\xrightarrow{\text{Creatine amidinohydrolase}}$  Sarcosine + Urea

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

**Data for a Sample Lot:**

|                                    |                                                                                                                                              |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Unit Definition</b>             | : One unit is defined as the amount of enzyme which produces 1 µmol of urea per min at 37°C and pH 7.7 under the conditions described below. |
| <b>Appearance</b>                  | : White amorphous powder, lyophilized                                                                                                        |
| <b>Activity</b>                    | : 4U/mg-solid or more                                                                                                                        |
| <b>Contaminants</b>                | : Catalase <span style="float: right;">≤2.0%</span><br>NADH oxidase <span style="float: right;">5.0×10<sup>-2</sup>%</span>                  |
| <b>Stabilizers</b>                 | : Sugars, EDTA                                                                                                                               |
| <b>Molecular weight</b>            | : 47 kDa                                                                                                                                     |
| <b>Isoelectric point</b>           | : 5.6                                                                                                                                        |
| <b>Michaelis constant</b>          | : 6.7×10 <sup>-2</sup> M (Creatine)                                                                                                          |
| <b>Inhibitors</b>                  | : Cu <sup>2+</sup> , Hg <sup>2+</sup> , Ag <sup>+</sup> , Zn <sup>2+</sup> , IAA, NEM, ProClin300                                            |
| <b>Optimum pH</b>                  | : 8.0 <span style="float: right;">(Fig.1)</span>                                                                                             |
| <b>Optimum temperature</b>         | : 30°C <span style="float: right;">(Fig.2)</span>                                                                                            |
| <b>pH stability</b>                | : Ph6.0~8.0(25°C, 24hr) <span style="float: right;">(Fig.3)</span>                                                                           |
| <b>Thermal stability</b>           | : below 55°C (pH7.5, 30min) <span style="float: right;">(Fig.4)</span>                                                                       |
| <b>Effect of various chemicals</b> | : (Table 1)                                                                                                                                  |

**Table 1. Effect of Various Chemicals on <Insert Product Name>**

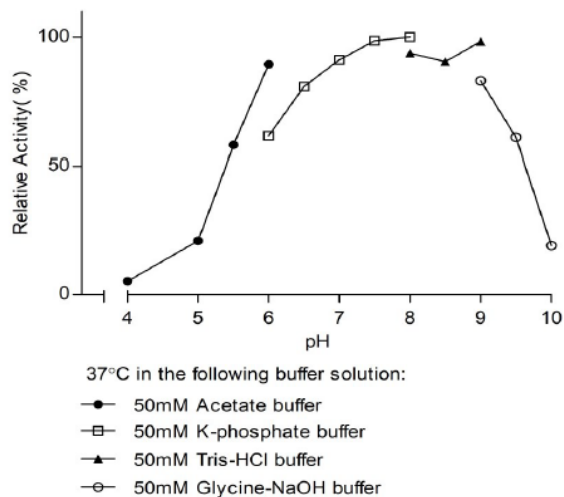
The enzyme dissolved in 50mM Tris-HCl buffer, pH7.5(80U/ml) was incubated with each chemical at 25°C for 2hr.

| Chemical          | Concn.(mM) | Residual activity (%) | Chemical         | Concn.(mM)   | Residual activity (%) |
|-------------------|------------|-----------------------|------------------|--------------|-----------------------|
| None              | —          | 100.0                 | BME              | 2            | 98.8                  |
| CaCl <sub>2</sub> | 2          | 105.3                 | Hydroxylamine    | 2            | 107.7                 |
| MgSO <sub>4</sub> | 2          | 107.7                 | EDTA             | 5            | 106.8                 |
| ZnSO <sub>4</sub> | 2          | 38.5                  | NaF              | 20           | 106.8                 |
| NiCl <sub>2</sub> | 2          | 81.5                  | NaN <sub>3</sub> | 20           | 107.1                 |
| CoCl <sub>2</sub> | 2          | 115.0                 | Proclin-300      | 0.045% (v/v) | 75                    |
| MnCl <sub>2</sub> | 2          | 105.9                 | SDS              | 0.05% (w/v)  | 108.2                 |
| FeCl <sub>3</sub> | 2          | 98.2                  | Na-Cholate       | 0.1% (w/v)   | 115.3                 |

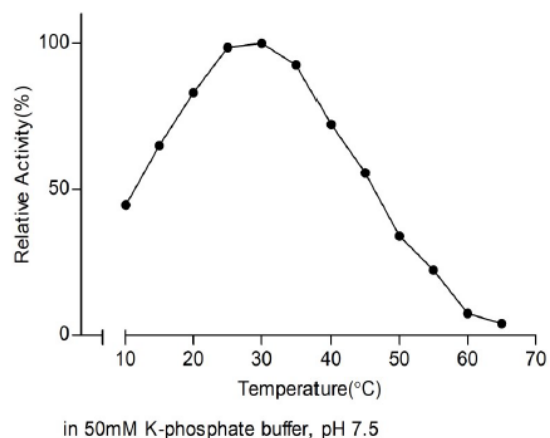
|                   |   |      |
|-------------------|---|------|
| CuSO <sub>4</sub> | 2 | 48.8 |
| AgNO <sub>3</sub> | 2 | 3.2  |
| HgSO <sub>4</sub> | 2 | 7.9  |
| NEM               | 2 | 3.5  |
| IAA               | 2 | 74.1 |

|              |            |       |
|--------------|------------|-------|
| Tween-20     | 0.1% (v/v) | 114.1 |
| Triton X-100 | 0.1% (v/v) | 116.5 |
| Span-20      | 0.1% (v/v) | 120.6 |
| Brij-35      | 0.1% (v/v) | 117.1 |

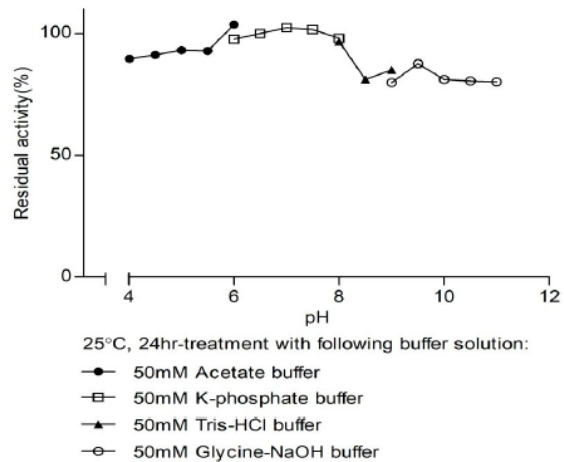
**Fig.1. pH Activity**



**Fig.2. Temperature Activity**



**Fig.3. pH Stability**



**Fig.4. Thermal Stability**

