ENZYMES

Creatininase

ORIGIN: *RECOMBINANT E.COLI*

CAT#: CRE-70-2423

EC#: 3.5.2.10

SPECIFICATIONS

Appearance: White lyophilizate

Acitvity: 600-750 U/mg lyophilizate

Contaminant: Catalase ≤0.5%

ASSAY PRINCIPLE

creatininase catalyzes the following reaction:

The appearance of creatine is measured spectrophotometrically at 525 nm.

APPLICATION

The enzyme is useful for the determination of creatinine in clinical analysis.

UNIT DEFINITION

One unit (U) is defined as the amount of enzyme which produces 1 µmol of creatine per min at 37°C and pH 6.8 under under standard assay conditions.

CHARACTERISTICS

Molecular weight: ca. 170 kDa (gel filtration)

Structure: 6 subunits of 28 kDa (SDS-PAGE)

Isoelectric point: 4.8

Michaelis constant: 3.4x 10^{-2} M (creatinine) | 4.3×10^{-2} M (creatine)

pH Optimum: 6.5–7.0

pH Stability: 7.0–11.0

Optimum temperature: 60–65°C

Thermal stability: below 60°C

Stability (liquid form): stable at 37°C for at least two weeks

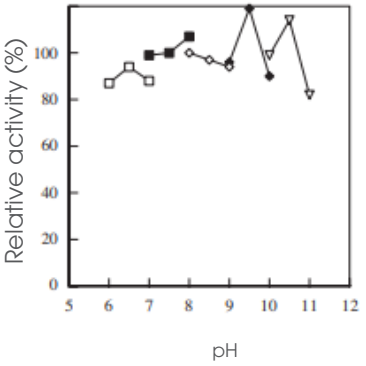
Stability (powder form): stable at 30°C for at least one month

Inhibitor: Hg^{2+}

Activators: Mg^{2+}, Mn^{2+}

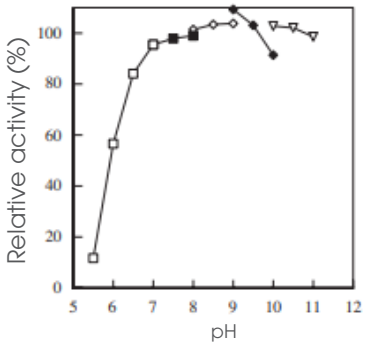
Creatininase

Figure -1 pH Optimum



□: 30 mM MES–NaOH buffer
■: 30 mM HEPES–NaOH buffer
◇: 30 mM TAPS–NaOH buffer
◆: 30 mM CHES–NaOH buffer
▽: 30 mM CAPS–NaOH buffer

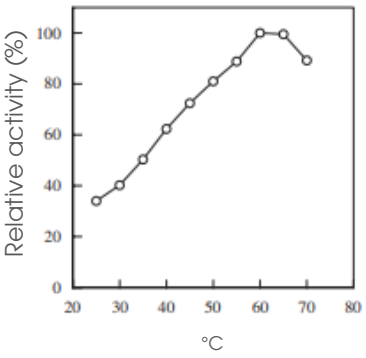
Figure -2 pH Stability



Treatment: 5°C, 24 h

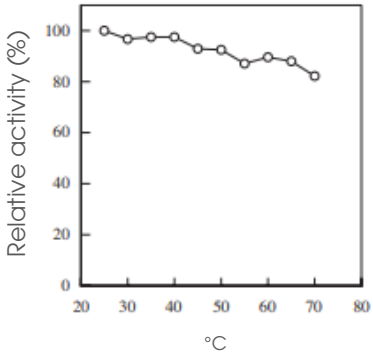
□: 30 mM MES–NaOH buffer
■: 30 mM HEPES–NaOH buffer
◇: 30 mM TAPS–NaOH buffer
◆: 30 mM CHES–NaOH buffer
▽: 30 mM CAPS–NaOH buffer

Figure -3 Optimum temperature



Buffer: 30 mM phosphate buffer, pH 6.5

Figure -4 Thermal stability



Treatment: 50 mM MES–NaOH buffer, pH 6.5, 10 min

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