Glutamate Dehydrogenase (NAD-dependent) from Microorganism

GTD-211

SPECIFICATIONS

Product name	L-Glutamate:NAD^+ oxidoreductase (deaminating)
EC	1.4.1.2
Appearance	White amorphous powder lyophilized
Activity	Grade II, 100 U/mg-solid or more
Contaminants	NAD oxidase ≤ 1.0×10^{-2} %
Stability	Stable at - 20°C for at least 12 months
Molecular weight	approx. 260,000
Isoelectric point	5.6
Michaelis constants	9.21×10^{-3} M (NH3), 4.80×10^{-3}M (α-Ketoglutarate), 5.89×10^{-4}M (NAD^+), 7.8×10^{-5}M (L-Glutamate), 1.29×10^{-4}M (NADH)
Structure	6 subunits per mol of enzyme
Inhibitors	Heavy metals, PCMB, IAA
Optimum pH	7.5 - 8.0 (α-KG →L-Glu), 9.0 (L-Glu → α-KG)
Optimum temperature	55°C (α-KG⟶L-Glu), 50°C (L-Glu⟶α-KG)
pH stability	5.0 - 10.0 (25°C, 20hr)
Thermal stability	below 50°C (pH 8.3, 10min)

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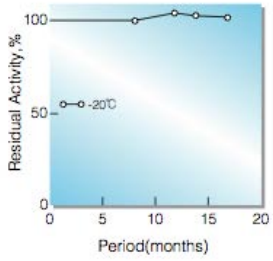

Fig.1. Stability (Powder form)
(kept under dry conditions)

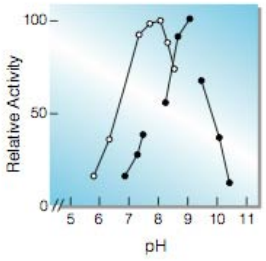

Fig.2. pH-Activity
○—○, α-KG →L-Glu;●—●L-Glu → α-KG in 0.1M buffer solution:pH5.7-7.6 K-phosphate,pH7.8-9.0,Tris-HCl; pH9.4-10.3, glycine-NaOH

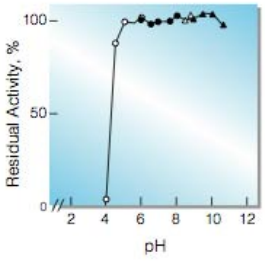

Fig.4. pH-Stability
25℃, 20hr-treatment with 0.1M buffer solution: ○—○,acetate;●—●,K-phosphate,△—△Tris-HCl; ▲—▲glycine-NaOH

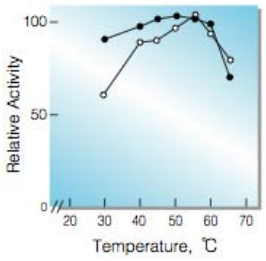

Fig.3. Temperature activity
○—○, α-KG →L-Glu:0.1M Tris-HCl buffer pH8.3;●—●,L-Glu → α-KG:0.1M Tris-HCl buffer,pH9.0

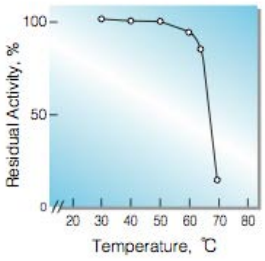

Fig.5. Thermal stability
10min-treatment with 0.1M Tris-HCl buffer, pH8.3