Glutamate Dehydrogenase (NADP-dependent) from Proteus sp.

GTD-409

SPECIFICATIONS

Product name	L-Glutamate:$NADP^+$ oxidoreductase (deaminating)
EC	1.4.1.4
Appearance	50mM Tris buffer solution at pH 7.8 with 0.05% NaN_3 and 5mM EDTA
Activity	> 9000 U/ml
Contaminants	NADPH oxidase ≤ 0.01 %, Gluthathione reductase ≤ 0.01 %
Stabilizer	EDTA
Stability	Stable at 2-8°C for at least 6 months
Molecular weight	Approx. 300,000
Isoelectric point	4.6
Michaelis constants	1.1×10^{-3} M (NH_3), 3.4×10^{-4} M (α-Ketoglutarate), 1.5×10^{-5}M ($NADP^+$) 1.2×10^{-3} M (L-Glutamate), 1.4×10^{-5}M (NADPH)
Structure	6 subunits per mol of enzyme
Inhibitors	Heavy metals, PCMB, Pyridine, 4-4'-dithiopyridine, 2-2'-dithiopyridine
Optimum pH	8.5 (α-KG→L-Glu), 9.8 (L-Glu→α-KG)
Optimum temperature	45°C (α-KG→L-Glu), 45-55°C (L-Glu→α-KG)
pH stability	6.0 – 8.5 (25°C, 20hr)
Thermal stability	Below 50°C (pH 7.4, 10min)

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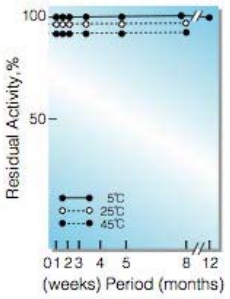

Fig.1. Stability (Solution)

50% glycerol solution in 25mM Tris-HCl buffer contg. 2.5mM EDTA, pH7.8
enyzme concentration: 5,000U/ml

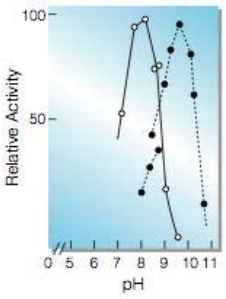

Fig.3. pH-Activity

○—○, α KG →L-Glu; ●—●, L-Glu→ α -KG in 0.1M buffer solution:pH7.4-8.8, Tris-HCl;pH8.7-10.7,glycine-NaOH

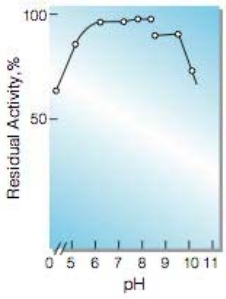

Fig.5. pH-Stability

25℃, 20hr-treatment with 0.1M buffer solution: pH4.4-6.2, acetate; pH6.2-8.4, phosphate; pH8.8-10.2, glycine-NaOH

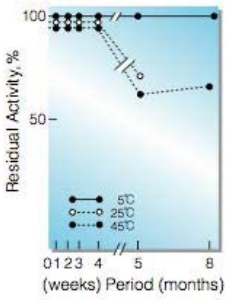

Fig.2. Stability (Suspension)

3.0M ammonium sulfate suspension in 50mM Tris-HCl buffer containing 5mM EDTA. pH7.8
enzyme concentration : 10,000U/ml

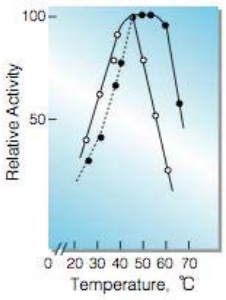

Fig.4. Temperature activity

○—○, α KG→L-Glu: 0.1M Tris-HCl buffer, pH8.3; ●—●, L-Glu→ α -KG:0.1M glycine-NaOH buffer,pH10.0

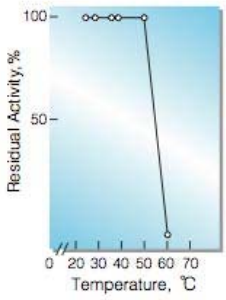

Fig.6. Thermal stability

10min-treatment with 0.1M K-phosphate buffer,pH7.4