

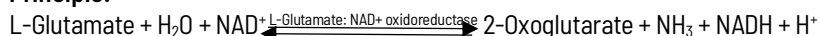
SPECIFICATION SHEET

Product Name: Glutamate dehydrogenase (NAD-dependent)
Catalog # GD04D1-E311H

Product Description: This enzyme is a diagnostic grade reagent from a microorganism host. It is useful for enzymatic determination of NH_3 , α -Ketoglutaric acid and L-Glutamic acid, and for assay of leucine aminopeptidase and urease. This enzyme is also used for enzymatic determination of urea when coupled with urease in clinical analysis.

EC 1.4.1.2

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:


Unit Definition	: One unit produces one micromole of NAD^+ per minute at pH 7.3 and 25°C	
Appearance	: White amorphous powder, lyophilized	
Activity	: ≥ 80 U/mg solid	
Contaminants	: NAD oxidase	$\leq 1.0 \times 10^{-2} \%$
Molecular Weight	: 47.3 kDa	
Michaelis Constant	: 5.4×10^{-2} M (NH_3), 7.83×10^{-5} M (α -Ketoglutarate), 3.0×10^{-3} M (L-Glutamate), 4.13×10^{-5} M (NADH), 3.16×10^{-3} M (NAD^+)	
Inhibitors	: Heavy metals, SDS	
Optimum pH	: 8.0 – 8.5	(Figure 1)
Optimum Temperature	: 65°C	(Figure 2)
pH Stability	: pH 5.0-10.0 (25°C, 20 hr)	(Figure 3)
Thermal Stability	: Below 55°C (pH 7.3, 10 min)	(Figure 4)
Effect of Various Chemicals	: (Table 1)	

Table 1. Effect of Various Chemicals on Glutamate dehydrogenase

The enzyme dissolved in 58 mM Imidazole-HCl buffer, pH 7.3 (10 U/mL) was incubated with each chemical at 25°C for 1 hr.

Chemical	Conc. (mM)	Residual activity (%)	Chemical	Conc. (mM)	Residual activity (%)
None	—	100	BME	2	109
CaCl_2	2	92	Hydroxylamine	2	92
MgSO_4	2	90	EDTA	5	92
ZnSO_4	2	92	NaF	20	97
NiCl_2	2	87	NaN_3	20	94
CoCl_2	2	86	Proclin-300	0.045% (v/v)	89
MnCl_2	2	91	SDS	0.05% (w/v)	4
FeCl_3	2	64	Na-Cholate	0.1% (w/v)	94
CuSO_4	2	80	Tween-20	0.1% (v/v)	94
AgNO_3	2	5	Triton X-100	0.1% (v/v)	97
HgSO_4	2	4	Span-20	0.1% (v/v)	98
NEM	2	83	Brij-35	0.1% (w/v)	100

Table 1 (Continued)

Chemical	Conc. (mM)	Residual activity (%)	Chemical	Conc. (mM)	Residual activity (%)
IAA	2	92			

Fig.1. pH-Activity

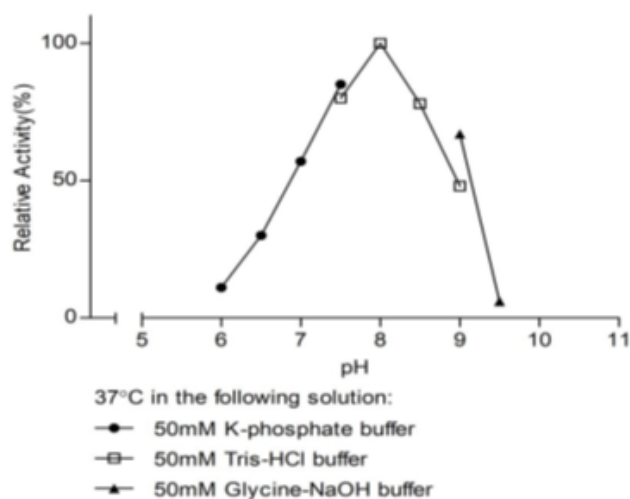


Fig.2. Temperature Activity

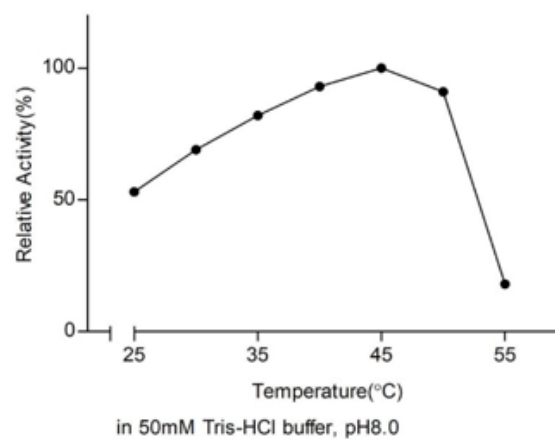


Fig.3. pH Stability

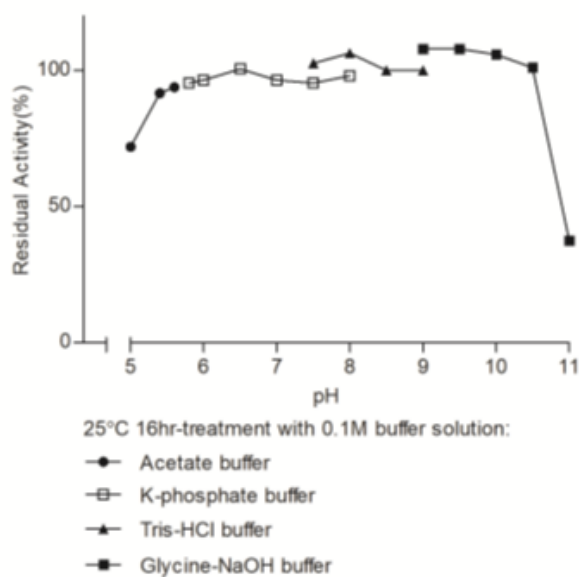


Fig.4. Thermal Stability

