



**Glucose Dehydrogenase (NAD Dependant)**  
**Catalogue No. GLDE-70-1191, 70-1191-01**

**Origin:** *Bacillus* sp.

**Specifications:**

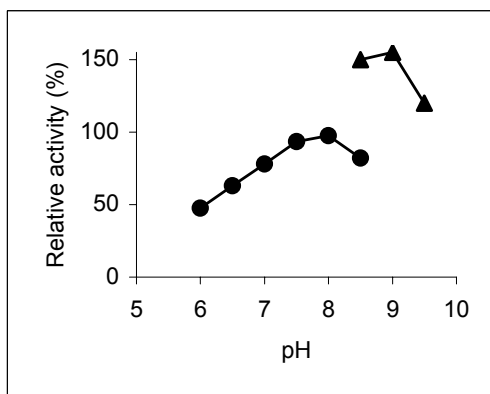
Appearance: Freeze dried powder  
 Activity:  $\geq 70$ u/mg powder at 25°C  
 Contaminants:  $\leq 0.002\%$  Lactate dehydrogenase (Pyruvate)  
 $\leq 0.002\%$  Lactate dehydrogenase (Lactate)  
 $\leq 0.002\%$  NADH oxidase

**Characteristics:**

Molecular Weight:	105kDa (gel filtration)	
Isoelectric point:	4.5	
K <sub>m</sub> values:	0.8 x 10 <sup>-2</sup> M (Glucose)	
	1.5 x 10 <sup>-4</sup> M (NAD)	
	4.3 x 10 <sup>-5</sup> M (NADP)	
Optimum pH:	8.0-8.5	See Fig. 1
Optimum temp.:	Above 50°C	See Fig. 2
pH stability:	5.0-8.0 (40°C, 90 min.)	See Fig. 3
Thermal stability:	Below 80°C (pH 7.0, 50 min.)	See Fig. 4
Inhibitors:	Ag <sup>+</sup> , Hg <sup>2+</sup>	
Stabilisers:	Inorganic salts	
Substrate specificity:		See Table 1
Lyophilised stability:	2 years desiccated at 5 °C or below	

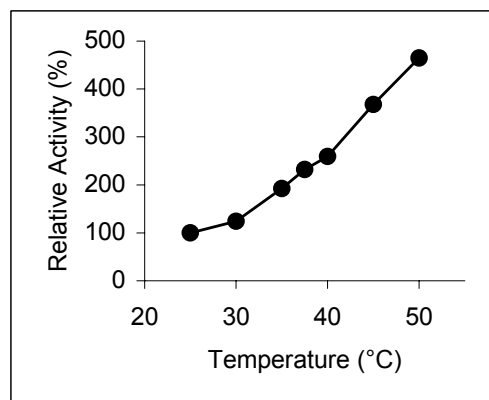
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**Fig. 1** pH Optimum

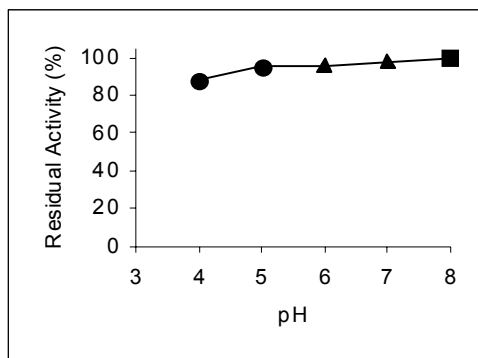


●: Phosphate buffer  
▲: Tris-HCl buffer

**Fig. 2** Temperature Optimum



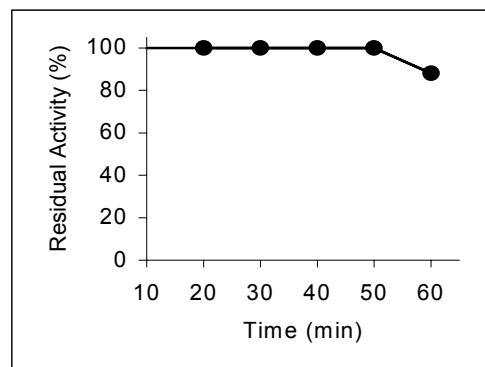
**Fig. 3** pH Stability



40°C , 90 min.

●: 0.1M Acetate buffer  
▲: 0.1M Phosphate buffer  
■: 0.1M Veronal buffer

**Fig. 4** Thermal Stability



0.01M Phosphate buffer, pH 7.0, 80°C



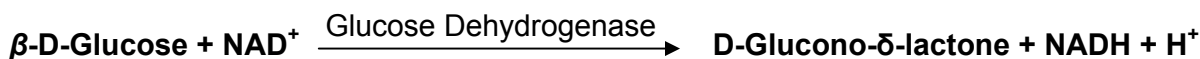
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**Table 1.** The substrate specificity of Glucose Dehydrogenase

<b>Substrate</b>	<b>Relative Activity (%)</b>
D-Glucose	100
D-Maltose	6
D-Xylose	20
D-Galactose	0
D-Mannose	10
D-Fructose	0
D-Sucrose	0

**Assay Principle:**

Glucose Dehydrogenase catalyses the following reaction:



The appearance of NADH is measured at 340nm by spectrophotometry.

**Unit Definition:**

One unit of activity is defined as the amount of enzyme that will catalyse the reduction of 1.0 micromole of  $\text{NAD}^+$  per minute at 25°C under the standard assay method conditions.

*(Please see Analytical Method for full details)*

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