

ENZYMES

BY

SORACHIM

Glucose-6-Phosphate Dehydrogenase from Microorganism G6D-321

SPECIFICATIONS

Name	D-Glucose-6-phosphate:NADP ⁺ 1-oxydoreductase
EC	1.1.1.49
Appearance	white amorphous powder lyophilized
Activity	Grade III, 200 U/mg-solid or more
Contaminants	Creatine phosphokinase $\leq 1 \times 10^{-3}\%$ Phosphoglucomutase $\leq 1 \times 10^{-3}\%$ 6-Phosphogluconate dehydrogenase $\leq 5 \times 10^{-3}\%$ Phosphoglucose isomerase $\leq 1 \times 10^{-2}\%$ Glutathione reductase $\leq 1 \times 10^{-3}\%$ Hexokinase $\leq 1 \times 10^{-2}\%$, Myokinase $\leq 1 \times 10^{-2}\%$ NADH oxidase $\leq 1 \times 10^{-2}\%$, NADPH oxidase $\leq 1 \times 10^{-2}\%$
Stability	Stable at -20°C for at least 12 months
Molecular weight	140,000 (Gel filtration)
Michaelis constants	NAD ⁺ linked: $2.4 \times 10^{-4}\text{M}$ (NAD ⁺), $4.7 \times 10^{-4}\text{M}$ (G6P) NADP ⁺ linked: $7.4 \times 10^{-6}\text{M}$ (NADP ⁺), $3.2 \times 10^{-4}\text{M}$ (G6P)
Inhibitors	Metal ions, Iodoacetamimide, SDS etc.
Optimum pH	7.8
Optimum temperature	50°C - 55 °C
pH Stability	pH 5 - 11 (25°C, 22hr)
Thermal stability	below 50°C (pH 7.8 30min)

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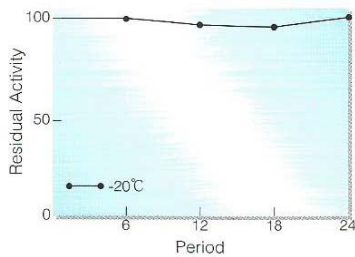


Fig.1. Stability (Powder form)
[kept under dry conditions]

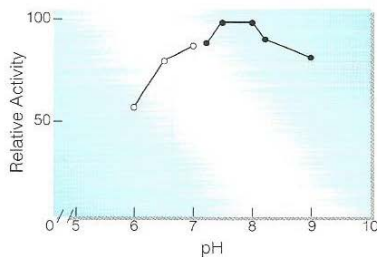


Fig.2. pH-Activity
[30°C in the following buffer solution:
pH6.0-7.0, 50mM PIPES
pH7.2-9.0, 50mM Tris-HCl]

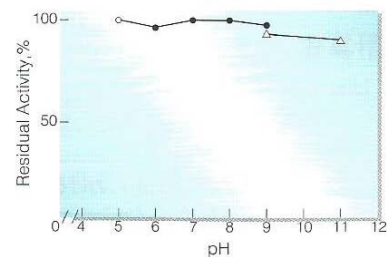


Fig.4. pH-Stability
[25°C, 22hr-treatment with the following 0.1M
buffer solution: pH5.0-6.0, Acetate;
pH6.0-9.0, K-phosphate;
pH9.0-11.0, Glycine-NaOH]

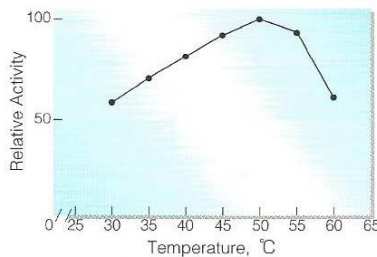


Fig.3. Temperature activity
[in 50mM Tris-HCl buffer,
pH7.8]

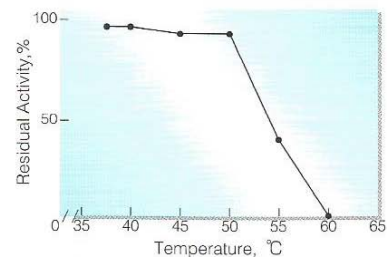


Fig.5. Thermal stability
[30min-treatment with 5.0mM Tris-HCl
buffer, pH7.8, containing 0.1% of
bovine serum albumin]

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