Creative Enzymes
Diagnostic Enzymes

Native Microorganism Glucose-6-phosphate Dehydrogenase

Product Information

Cat#	DIA-145
Abbr	G6PDH (Microorganism)
Alias	G6PDH; GPD; G6PD1; G6PD
Similar	Glucose-6-phosphate dehydrogenase
Source	Microorganism
Description	Glucose-6-phosphate dehydrogenase (G6PD or G6PDH) (EC 1.1.1.49) is a cytosolic enzyme that catalyzes the chemical reaction:D-glucose 6-phosphate + NADP+ ↔ 6-phospho-D-glucono-1,5-lactone + NADPH + H+. This enzyme is in the pentose phosphate pathway, a metabolic pathway that supplies reducing energy to cells (such as erythrocytes) by maintaining the level of the co-enzyme nicotinamide adenine dinucleotide phosphate (NADPH).
Applications	The enzyme is useful for enzymatic determination of NAD+(NADP+) and G-6-P, and activities of phosphoglucose isomerase, phosphoglucomutase and hexokinase. The enzyme is also used for enzymatic determination of glucose and creatine phosphokinase activity when coupled with hexokinase.
Appearance	White amorphous powder, lyophilized
Form	Freeze dried powder
Enzyme Commission Number	EC 1.1.1.49
Activity	200U/mg-solid or more
CAS No.	9001-40-5
Contaminants	Creatine phosphokinase < 1×10^{-3}% Phosphoglucomutase < 1×10^{-3}% 6-Phosphogluconate dehydrogenase < 5×10^{-3}% Phosphoglucose isomerase < 1×10^{-2}% Glutathione reductase < 1×10^{-3}% Hexokinase < 1×10^{-2}% Myokinase < 1×10^{-2}% NADH

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	oxidase < 1×10^{-2}% NADPH oxidase < 1×10^{-2}%
Molecular Weight	approx. 140 kDa (by gel filtration)
pH Stability	pH 5.0-11.0 (25°C, 22hr)
Michaelis Constant	NAD^+ linked 2.4×10^{-4}M (NAD^+), 4.7×10^{-4}M (G-6-P), $NADP^+$ linked 7.4×10^{-6}M ($NADP^+$), 3.2×10^{-4}M (G-6-P)
Optimum pH	7.8
Optimum temperature	50°C-55°C
Thermal stability	below 50°C (pH 7.8, 30min)
Stability	Stable at-20°C for at least one year
Inhibitors	Metal ions, iodoacetamimide, SDS etc.
Synonyms	Glucose-6-phosphate dehydrogenase; G6PD; G6PDH; Glucose-6-phosphate dehydrogenase (NADP(+)); EC 1.1.1.49; Glucose-6-phosphate 1-dehydrogenase; Glucose-6-phosphate dehydrogenase; GPD

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