

## Native Microorganism Glucose-6-phosphate Dehydrogenase

### Product Information

<b>Cat#</b>	DIA-145
<b>Abbr</b>	G6PDH (Microorganism)
<b>Alias</b>	G6PDH; GPD; G6PD1; G6PD
<b>Similar</b>	Glucose-6-phosphate dehydrogenase
<b>Source</b>	Microorganism
<b>Description</b>	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 <sup>+</sup> ↔ 6-phospho-D-glucono-1,5-lactone + NADPH + H <sup>+</sup> . 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).
<b>Applications</b>	The enzyme is useful for enzymatic determination of NAD <sup>+</sup> (NADP <sup>+</sup> ) 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.
<b>Appearance</b>	White amorphous powder, lyophilized
<b>Form</b>	Freeze dried powder
<b>Enzyme Commission Number</b>	EC 1.1.1.49
<b>Activity</b>	200U/mg-solid or more
<b>CAS No.</b>	9001-40-5
<b>Contaminants</b>	Creatine phosphokinase < 1×10 <sup>-3</sup> % Phosphoglucomutase < 1×10 <sup>-3</sup> % 6-Phosphogluconate dehydrogenase < 5×10 <sup>-3</sup> % Phosphoglucose isomerase < 1×10 <sup>-2</sup> % Glutathione reductase < 1×10 <sup>-3</sup> % Hexokinase < 1×10 <sup>-2</sup> % Myokinase < 1×10 <sup>-2</sup> % NADH

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oxidase <  $1 \times 10^{-2}\%$  NADPH oxidase <  $1 \times 10^{-2}\%$

<b>Molecular Weight</b>	approx. 140 kDa (by gel filtration)
<b>pH Stability</b>	pH 5.0-11.0 (25°C, 22hr)
<b>Michaelis Constant</b>	NAD <sup>+</sup> linked $2.4 \times 10^{-4}\text{M}$ (NAD <sup>+</sup> ), $4.7 \times 10^{-4}\text{M}$ (G-6-P), NADP <sup>+</sup> linked $7.4 \times 10^{-6}\text{M}$ (NADP <sup>+</sup> ), $3.2 \times 10^{-4}\text{M}$ (G-6-P)
<b>Optimum pH</b>	7.8
<b>Optimum temperature</b>	50°C-55°C
<b>Thermal stability</b>	below 50°C (pH 7.8, 30min)
<b>Stability</b>	Stable at -20°C for at least one year
<b>Inhibitors</b>	Metal ions, iodoacetamimide, SDS etc.
<b>Synonyms</b>	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