

Native Microorganism Glucose-6-phosphate Dehydrogenase

Cat. No. DIA-145

Lot. No. (See product label)

Introduction

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.

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

Product Information

Source	Microorganism
Appearance	White amorphous powder, lyophilized
Form	Freeze dried powder
EC Number	EC 1.1.1.49
CAS No.	9001-40-5
Molecular Weight	approx. 140 kDa (by gel filtration)
Activity	Gradell 200U/mg-solid or more
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 oxidase < 1×10 ⁻² % NADPH oxidase < 1×10 ⁻² %
pH Stability	pH 5.0-11.0 (25°C, 22hr)
Optimum pH	7.8
Thermal stability	below 50°C (pH 7.8, 30min)
Optimum temperature	50°C-55°C
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)
Inhibitors	Metal ions, iodoacetamimide, SDS etc.

Storage and Shipping Information

Stability Stable at -20°C for at least one year

