Creative Enzymes®

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	GradeⅢ 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

Stability	Stable at 20°C for at least one year