Creative Enzymes®

Native Zymomonas mobilis Glucose-6-Phosphate Dehydrogenase

Cat. No. NATE-1898

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 diagnostic reagent, for example, glucose determination or CK determination, and for the specific determination of glucose.
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	Zymomonas mobilis
Appearance	Lyophilized
EC Number	EC 1.1.1.49
CAS No.	9001-40-5
Molecular Weight	ca. 208000; Subunit molecular weight: ca. 52,000
Specific Activity	more than 250 U/mg protein
Contaminants	(as ZM-G6PDH activity = 100 %) Glucokinase : <0.02 % Phosphoglucomutase: <0.01 % 6-Phosphogluconate dehydrogenase : <0.02 % Hexose-6-phosphate isomerase: <0.01 % Glutathione reductase: <0.01 %
pH Stability	5.0 - 10.0
Optimum pH	8
Thermal stability	No detectable decrease in activity up to 50 °C
Michaelis Constant	(30 mM Tris-HCl buffer, pH 8.0, at 30 °C) Glucose 6-phosphate: 0.14 mM; NADP+: 0.02 mM; NAD+: 0.14 mM.
Specificity	NADP+: 70 %; NAD+: 100 %.
Unit Definition	One unit of activity is defined as the amount of ZM-G6PDH that forms 1 µmol of NADH per minute at 30 °C.
Reaction	D-Glucose 6-phosphate + NAD(P) + ←→ D-Gluconolactone 6-phosphate + NAD(P)H + H+

Storage and Shipping Information

Storage	Stable at -20 °C for at least one year.