Creative Enzymes®

Glucose Dehydrogenase from E. coli, Recombinant

Cat. No. NATE-1902

Lot. No. (See product label)

Introduction

Description	In enzymology, a glucose 1-dehydrogenase (EC 1.1.1.47) is an enzyme that catalyzes the chemical reaction:beta-D-glucose + NAD (P)+↔ D-glucono-1,5-lactone + NAD (P)H + H+. The 3 substrates of this enzyme are beta-D-glucose, NAD+, and NADP+, whereas its 4 products are D-glucono-1,5-lactone, NADH, NADPH, and H+. This enzyme belongs to the family of oxidoreductases, specifically those acting on the CH-OH group of donor with NAD+ or NADP+ as acceptor.
Applications	This enzyme is useful for determination of glucose.
Synonyms	EC 1.1.1.47; D-glucose dehydrogenase (NAD (P)+); hexose phosphate dehydrogenase; β-D-glucose:NAD (P)+ 1-oxidoreductase; glucose 1-dehydrogenase; Glucose dehydrogenase; 9028-53-9

Product Information

Source	E. coli
Appearance	Lyophilized
EC Number	EC 1.1.1.47
CAS No.	9028-53-9
Molecular Weight	ca. 126,000; Subunit molecular weight : ca. 31,500.
Specific Activity	more than 900 U/mg protein
Contaminants	as GlcDH2 activity = 100 %) NADH oxidase: <0.01 %
pH Stability	5.0 - 10.0 (with 3M NaCl)
Optimum pH	8.5
Thermal stability	No significant decrease in activity up to 70 °C. (with 3M NaCl and 0.1% BSA).
Michaelis Constant	D-Glucose: 3.7 mM; NAD+: 0.06 mM; NADP+: 0.02 mM.
Specificity	D-Glucose: 100 %; D-Maltose: 1.1 %; D-Galactose: 0.1 %; D-Xylose: 3.0 %; D-Fructose: 0.3 %; D-Mannose: 4.8 %; D-Arabinose: 0 %; Trehalose: 0 %; D-Lactose: 1.3 %; D-Sucrose: 0 %; 2-Deoxy-D-Glucose: 100 %; D-Glucose-1-Phosphate: 0 %; D-Glucose-6-Phosphate: 0 %; D-Sorbitol: 0 %;
Unit Definition	One unit of activity is defined as the amount of GlcDH2 that forms 1 µmol of NADH per minute at 37 °C.
Reaction	D-Glucose + NAD(P)+ ←→ D-Glucono-δ-lactone + NAD(P)H + H+

Storage and Shipping Information

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