Creative Enzymes
Diagnostic Enzymes

Native Microorganism Glucose Dehyrogenase (NAD(P)-dependent)

Product Information

Cat#	DIA-191
Abbr	Glucose Dehyrogenase (Microorganism)
Similar	Glucose Dehyrogenase
Source	Microorganism
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 enzymatic determination of D-Glucose.
Appearance	White amorphous powder, lyophilized
Form	Freeze dried powder
Enzyme Commission Number	EC 1.1.1.47
Activity	250U/mg-solid or more
CAS No.	9028-53-9
Contaminants	NADH oxidase < 1.0×10^{-3}% α-Glucosidase < 1.0×10^{-3}% Glucose-6-phosphate dehydrogenase < 1.0×10^{-3}%
Molecular Weight	approx. 101 kDa (Gel filtration)
Isoelectric point	4.5
pH Stability	pH 6.0-7.5 (20°C, 16hr)
Michaelis Constant	NAD^+linked : 1.38×10^{-2}M (D-Glucose) 3.09×10^{-4}M (NAD^+), $NADP^+$linked : 1.25×10^{-2}M (D-Glucose) 4.07×10^{-5}M ($NADP^+$)

Tel: 1-631-562-8517 1-516-512-3133
Email:info@creative-enzymes.com
Fax:1-631-938-8127
45-1 Ramsey Road, Shirley, NY11967, USA

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Specificity	Specific for ß-D,-Glucose or 2-Deoxy-glucose (Either NAD^+ or $NADP^+$ serves as coenzyme.)
Optimum pH	9
Optimum temperature	55°C
Thermal stability	45°C (15min-treatment with 50mM K-phosphate buffer, pH 7.0)
Stability	Stable at-20°C for at least one year
Inhibitors	Ag^+, Hg^{2+}, Monoiodoacetate
Synonyms	Glucose Dehyrogenase; EC 1.1.1.47; beta-D-glucose: NAD(P)+ 1-oxidoreductase; D-glucose dehydrogenase (NAD(P)+)

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