

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

Cat. No. DIA-191

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 enzymatic determination of D-Glucose.

Synonyms Glucose Dehydrogenase; EC 1.1.1.47; beta-D-glucose: NAD(P)⁺ 1-oxidoreductase; D-glucose dehydrogenase (NAD(P)⁺)

Product Information

Source Microorganism

Appearance White amorphous powder, lyophilized

Form Freeze dried powder

EC Number EC 1.1.1.47

CAS No. 9028-53-9

Molecular Weight approx. 101 kDa (Gel filtration)

Activity Grade III 250U/mg-solid or more

Contaminants NADH oxidase < 1.0×10⁻³% α-Glucosidase < 1.0×10⁻³% Glucose-6-phosphate dehydrogenase < 1.0×10⁻³%

Isoelectric point 4.5

pH Stability pH 6.0-7.5 (20°C, 16hr)

Optimum pH 9

Thermal stability 45°C (15min-treatment with 50mM K-phosphate buffer, pH 7.0)

Optimum temperature 55°C

Michaelis Constant NAD⁺linked : 1.38×10⁻²M (D-Glucose) 3.09×10⁻⁴M (NAD⁺), NADP⁺linked : 1.25×10⁻²M (D-Glucose) 4.07×10⁻⁵M (NADP⁺)

Specificity Specific for β-D,-Glucose or 2-Deoxy-glucose (Either NAD⁺ or NADP⁺ serves as coenzyme.)

Inhibitors Ag⁺, Hg²⁺, Monoiodoacetate

Storage and Shipping Information

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