

## 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)<sup>+</sup> ↔ D-glucono-1,5-lactone + NAD(P)H + H<sup>+</sup>. The 3 substrates of this enzyme are beta-D-glucose, NAD<sup>+</sup>, and NADP<sup>+</sup>, whereas its 4 products are D-glucono-1,5-lactone, NADH, NADPH, and H<sup>+</sup>. This enzyme belongs to the family of oxidoreductases, specifically those acting on the CH-OH group of donor with NAD<sup>+</sup> or NADP<sup>+</sup> 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)<sup>+</sup> 1-oxidoreductase; D-glucose dehydrogenase (NAD(P)<sup>+</sup>)

### 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<sup>-3</sup>% α-Glucosidase < 1.0×10<sup>-3</sup>% Glucose-6-phosphate dehydrogenase < 1.0×10<sup>-3</sup>%

**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<sup>+</sup>linked : 1.38×10<sup>-2</sup>M (D-Glucose) 3.09×10<sup>-4</sup>M (NAD<sup>+</sup>), NADP<sup>+</sup>linked : 1.25×10<sup>-2</sup>M (D-Glucose) 4.07×10<sup>-5</sup>M (NADP<sup>+</sup>)

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

**Inhibitors** Ag<sup>+</sup>, Hg<sup>2+</sup>, Monoiodoacetate

## ***Storage and Shipping Information***

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