

## 6-Phosphogluconic Dehydrogenase from Microorganism

Cat. No. NATE-1937

Lot. No. (See product label)

### Introduction

**Description** In enzymology, a phosphogluconate dehydrogenase (decarboxylating) (EC 1.1.1.44) is an enzyme that catalyzes the chemical reaction: 6-phospho-D-gluconate + NADP<sup>+</sup> ↔ D-ribulose 5-phosphate + CO<sub>2</sub> + NADPH. Thus, the two substrates of this enzyme are 6-phospho-D-gluconate and NADP<sup>+</sup>, whereas its 3 products are D-ribulose 5-phosphate, CO<sub>2</sub>, and NADPH. 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.

**Synonyms** 6-Phosphogluconic Dehydrogenase; phosphogluconic acid dehydrogenase; 6-phosphogluconic dehydrogenase; 6-phosphogluconic carboxylase; 6-phosphogluconate dehydrogenase (decarboxylating); 6-phospho-D-gluconate dehydrogenase; EC 1.1.1.44; phosphogluconate dehydrogenase; decarboxylating; 9073-95-4

### Product Information

<b>Source</b>	Microorganism
<b>Form</b>	Lyophilized
<b>EC Number</b>	EC 1.1.1.44
<b>Molecular Weight</b>	ca. 132,000
<b>Activity</b>	>40 U/mg protein
<b>Contaminants</b>	(as 6PGDH activity = 100 %) Glucokinase < 0.01 % Phosphoglucomutase < 0.01 % Hexose-6-phosphate isomerase < 0.01 % Glutathione reductase < 0.01 %
<b>Isoelectric point</b>	ca. 4.5
<b>pH Stability</b>	5.0 - 10.0
<b>Optimum pH</b>	7.0 - 7.5
<b>Thermal stability</b>	(50 mM MES-NaOH buffer, pH 6.8, containing 0.5 M KCl) No detectable decrease in activity up to 40 °C.
<b>Michaelis Constant</b>	(80 mM Glycylglycine buffer, pH 7.5, at 30 °C) 6-Phospho-D-gluconate, 0.95 mM NAD <sup>+</sup> , 0.32 mM
<b>Activators</b>	Mg <sup>2+</sup> , Mn <sup>2+</sup> , Ca <sup>2+</sup> , K <sup>+</sup> , Na <sup>+</sup>
<b>Inhibitors</b>	Fructose 1,6-bisphosphate, Erythrose 4-phosphate, NADH
<b>Stabilizers</b>	KCl, MgCl <sub>2</sub> , Sorbitol, BSA
<b>Unit Definition</b>	One unit of activity is defined as the amount of 6PGDH that forms 1 μmol of NADH per minute at 30 °C.

### Storage and Shipping Information

**Storage** Stable at -20 °C for at least six months

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