

## Native Yeast 6-Phosphogluconic Dehydrogenase

Cat. No. NATE-0009

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.

**Applications** 6-phosphogluconic dehydrogenase (6PGD) is a key enzyme in the oxidative portion of the hexose monophosphate shunt. It is specific for oxidized nicotinamide adenine dinucleotide phosphate (NADP<sup>+</sup>). 6-phosphogluconate dehydrogenase is involved in the production of ribulose 5-phosphate, which is involved in nucleotide synthesis and the pentose phosphate pathway by generating NADPH. 6-phosphogluconate dehydrogenase is used to study nucleotide synthesis, glucose metabolism, and the protection of cells from oxidative damage.

**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>	Yeast
<b>Form</b>	lyophilized powder.
<b>EC Number</b>	EC 1.1.1.44
<b>CAS No.</b>	9073-95-4
<b>Activity</b>	3.0-6.0 units/mg solid
<b>Unit Definition</b>	One unit will oxidize 1.0 μmole of 6-phospho-D-gluconate to D-ribulose 5-phosphate and CO <sub>2</sub> per min at pH 7.4 at 37°C in the presence of NADP <sup>+</sup> .

### Storage and Shipping Information

**Storage** 2-8°C