Creative Enzymes®

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+↔ D-ribulose 5-phosphate + CO2 + NADPH. Thus, the two substRates of this enzyme are 6-phospho-D-gluconate and NADP+, whereas its 3 products are D-ribulose 5-phosphate, CO2, and NADPH. 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	6-phosphoglyconic 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+). 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

Source	Yeast
Form	lyophilized powder.
EC Number	EC 1.1.1.44
CAS No.	9073-95-4
Activity	3.0-6.0 units/mg solid
Unit Definition	One unit will oxidize 1.0 µmole of 6-phospho-D-gluconate to D-ribulose 5-phosphate and CO2 per min at pH 7.4 at 37°C in the presence of NADP+.

Storage and Shipping Information

Storage	2-8°C