

## glycerol-3-phosphate dehydrogenase

Cat. No. EXWM-0431

Lot. No. (See product label)

### Introduction

#### Description

This flavin-dependent dehydrogenase is an essential membrane enzyme, functioning at the central junction of glycolysis, respiration and phospholipid biosynthesis. In bacteria, the enzyme is localized to the cytoplasmic membrane, while in eukaryotes it is tightly bound to the outer surface of the inner mitochondrial membrane. In eukaryotes, this enzyme, together with the cytosolic enzyme EC 1.1.1.8, glycerol-3-phosphate dehydrogenase (NAD<sup>+</sup>), forms the glycerol-3-phosphate shuttle by which NADH produced in the cytosol, primarily from glycolysis, can be reoxidized to NAD<sup>+</sup> by the mitochondrial electron-transport chain. This shuttle plays a critical role in transferring reducing equivalents from cytosolic NADH into the mitochondrial matrix. Insect flight muscle uses only CoQ10 as the physiological quinone whereas hamster and rat mitochondria use mainly CoQ9. The enzyme is activated by calcium.

#### Synonyms

α-glycerophosphate dehydrogenase; α-glycerophosphate dehydrogenase (acceptor); anaerobic glycerol-3-phosphate dehydrogenase; DL-glycerol 3-phosphate oxidase (misleading); FAD-dependent glycerol-3-phosphate dehydrogenase; FAD-dependent sn-glycerol-3-phosphate dehydrogenase; FAD-GPDH; FAD-linked glycerol 3-phosphate dehydrogenase; FAD-linked L-glycerol-3-phosphate dehydrogenase; flavin-linked glycerol-3-phosphate dehydrogenase; flavoprotein-linked L-glycerol 3-phosphate dehydrogenase; glycerol 3-phosphate cytochrome c reductase (misleading); glycerol phosphate dehydrogenase; glycerol phosphate dehydrogenase (acceptor); glycerol phosphate dehydrogenase (FAD); glycerol-3-phosphate CoQ reductase; glycerol-3-phosphate dehydrogenase (flavin-linked); glycerol-3-phosphate:CoQ reductase; glycerophosphate dehydrogenase; L-3-glycerophosphate-ubiquinone oxidoreductase; L-glycerol-3-phosphate dehydrogenase (ambiguous); L-glycerophosphate dehydrogenase; mGPD; mitochondrial glycerol phosphate dehydrogenase; NAD<sup>+</sup>-independent glycerol phosphate dehydrogenase; pyridine nucleotide-independent L-glycerol 3-phosphate dehydrogenase; sn-glycerol 3-phosphate oxidase (misleading); sn-glycerol-3-phosphate dehydrogenase; sn-glycerol-3-phosphate:(acceptor) 2-oxidoreductase; sn-glycerol-3-phosphate:acceptor 2-oxidoreductase

### Product Information

**Form** Liquid or lyophilized powder

**EC Number** EC 1.1.5.3

**CAS No.** 9001-49-4

**Reaction** sn-glycerol 3-phosphate + a quinone = glycerone phosphate + a quinol

**Notes** This item requires custom production and lead time is between 5-9 weeks. We can custom produce according to your specifications.

### Storage and Shipping Information

**Storage** Store it at +4 °C for short term. For long term storage, store it at -20 °C~-80 °C.