

Native *Leuconostoc mesenteroides* Mannitol Dehydrogenase

Cat. No. NATE-0435

Lot. No. (See product label)

Introduction

Description In enzymology, a mannitol 2-dehydrogenase (EC 1.1.1.67) is an enzyme that catalyzes the chemical reaction: D-mannitol + NAD⁺ ↔ D-fructose + NADH + H⁺. Thus, the two substrates of this enzyme are D-mannitol and NAD⁺, whereas its 3 products are D-fructose, NADH, and H⁺. This enzyme belongs to the family of oxidoreductases, specifically those acting on the CH-OH group of donor with NAD⁺ or NADP⁺ as acceptor. This enzyme participates in fructose and mannose metabolism.

Applications This preparation is useful in the determination of mannitol in urine. Can be used for the production of D-mannitol. It has been used in a study to assess glucosylglycerol and glucosylglycerate as enzyme stabilizers.

Synonyms mannitol dehydrogenase; D-mannitol dehydrogenase; mannitol dehydrogenase; mannitol 2-dehydrogenase; EC 1.1.1.67; 9001-65-4

Product Information

Source *Leuconostoc mesenteroides*

Form Lyophilized powder containing buffer salts, potassium phosphate, and dithiothreitol

EC Number EC 1.1.1.67

CAS No. 9001-65-4

Molecular Weight 136 kDa

Activity > 60 units/mg protein

Unit Definition One unit will reduce 1.0 μmole of D-fructose per min in the presence of NADH at pH 5.3 at 30°C. One unit of enzyme, as defined above, is equivalent to approximately 1.8 units of enzyme, as described by Lunn et al., one unit will oxidize 1.0 μmole of D-mannitol per min in the presence of NAD at pH 8.6 at 40°C.

Storage and Shipping Information

Storage -20°C