Creative Enzymes®

# Native Leuconostoc mesenteroides Mannitol Dehydrogenase

*Cat. No. NATE-0435*

*Lot. No.* (See product label)

## Introduction

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| ***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

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| ***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

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| ***Storage*** | −20°C |