

Malate dehydrogenase from Bacteria, Recombinant

Cat. No. NATE-1038

Lot. No. (See product label)

Introduction

Description Malate dehydrogenase is an enzyme in the citric acid cycle that catalyzes the conversion of malate into oxaloacetate (using NAD⁺) and vice versa (this is a reversible reaction). Malate dehydrogenase is not to be confused with malic enzyme, which catalyzes the conversion of malate to pyruvate producing NADPH. Malate dehydrogenase is also involved in gluconeogenesis, the synthesis of glucose from smaller molecules. Pyruvate in the mitochondria is acted upon by pyruvate carboxylase to form oxaloacetate, a citric acid cycle intermediate. In order to get the oxaloacetate out of the mitochondria, malate dehydrogenase reduces it to malate, and it then traverses the inner mitochondrial membrane. Once in the cytosol, the malate is oxidized back to oxaloacetate by cytosolic malate dehydrogenase. Finally, phosphoenol-pyruvate carboxy kinase (PEPCK) converts oxaloacetate to phosphoenol pyruvate.

Synonyms malic dehydrogenase; L-malate dehydrogenase; NAD-L-malate dehydrogenase; malic acid dehydrogenase; NAD-dependent malic dehydrogenase; NAD-malate dehydrogenase; NAD-malic dehydrogenase; malate NAD dehydrogenase; NAD-dependent malate dehydrogenase; NAD-sp; ECifical malate dehydrogenase; NAD-linked malate dehydrogenase; MDH; L-malate-NAD⁺ oxidoreductase; S-malate: NAD⁺ oxidoreductase; EC 1.1.1.37; Malate Dehydrogenase

Product Information

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| Species | Bacteria |
| Source | E. coli |
| Form | Lyophilized powder |
| EC Number | EC 1.1.1.37 |
| CAS No. | 9001-64-3 |
| Molecular Weight | 40 kD (SDS-PAGE) |
| Activity | > 550 units / mg |
| Contaminants | Fumarase (L-Malate) : < 0.01 % Lactate dehydrogenase : < 0.01 % Aspartate aminotransferase : < 0.01 % Glutamate dehydrogenase (NAD ⁺): < 0.001 % NADH oxidase: < 0.001 % |
| pH Stability | 4.5 - 9.0 |
| Optimum pH | 5.5 - 8.0 |
| Thermal stability | <80°C |
| Optimum temperature | 37°C |

Storage and Shipping Information

Storage Below -20°C