

Native Microorganism Malate Dehydrogenase

Product Information

Cat#	DIA-160
Abbr	MDH (Microorganism)
Alias	NAD-sp; MDH
Similar	MDH
Source	Microorganism
Description	<p>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.</p>
Applications	<p>This enzyme is useful for enzymatic determination of L-malate and of glutamate oxaloacetate transaminase (GOT) in clinical analysis.</p>
Appearance	Slightly yellowish amorphous powder, lyophilized
Form	Freeze dried powder
Enzyme Commission Number	EC 1.1.1.37
Activity	40U/mg-solid or more
CAS No.	9001-64-3



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Contaminants	Glutamate oxaloacetate transaminase < 1.0×10 ⁻³ % Lactate dehydrogenase < 1.0×10 ⁻³ % NADH oxidase< 1.0×10 ⁻³ %
Isoelectric point	pH 4.8±0.1
pH Stability	pH 3.0-9.0 (25°C, 20hr)
Michaelis Constant	5.4×10 ⁻⁵ M (L-Malate), 5.0×10 ⁻⁶ M (Oxaloacetate), 8.1×10 ⁻⁶ M (NADH)
Structure	4 subunits per mole of enzyme
Optimum pH	8
Optimum temperature	70°C
Thermal stability	below 70°C (pH 7.5, 15min)
Storage	Stable at -20°C for at least one year
Inhibitors	Hg ⁺⁺
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; ECific malate dehydrogenase; NAD-linked malate dehydrogenase; MDH; L-malate-NAD ⁺ oxidoreductase; S-malate: NAD ⁺ oxidoreductase; EC 1.1.1.37; Malate Dehydrogenase

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