ALPHA DIAGNOSTIC INTERNATIONAL

Product Data Sheet

□ Cat # RP-362 Recombinant Malate Dehydrogenase **Size**: □ 1000 IU

Malate dehydrogenase (MDH) is an enzyme that reversibly catalyzes the oxidation of malate to oxaloacetate using the reduction of NAD+ to NADH. This reaction is part of many metabolic pathways, including the citric acid cycle. Other malate dehydrogenases, which have other EC numbers and catalyze other reactions oxidizing malate, have qualified names like malate dehydrogenase (NADP+).

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, phosphoenolpyruvate carboxykinase (PEPCK) converts oxaloacetate to phosphoenolpyruvate (PEP).

Source: Escherichia Coli. The DNA encoding Malate (Malic) Dehydrogenase is cloned from cDNA library of chicken heart. The MDH is purified by proprietary chromatographic techniques. The protein (1 mg/ml) was lyophilized with 0.5 mg potassium phosphate.

Applications and Suggested Dilutions: Greater than 95.0% as determined by: (a) Analysis by RP-HPLC. (b) Analysis by SDS-PAGE. Users must optimize the appropriate concentration and conditions for each assay.

Storage and Stability: It is recommended to reconstitute the lyophilized Malate dehydrogenase in sterile water not less than 100 µg/ml, which can then be further diluted to other aqueous solutions. Lyophilized Malate dehydrogenase although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon

reconstitution MDH should be stored at 4°C between 2-7 days and for future use below -18°C. **Please prevent freeze-thaw cycles.** If supplied in powder, then reconstitute it in 100 ul water for 1 mg/ml stock and store in liquid at 4ºC for ~1 week or aliquots in suitable size and store at -20ºC for long term storage.

Unit Definition: One unit is defined as 1 µmol of NAD^+ production per minute under the assay conditions (25°C, pH 7.5).

Specific Activity: Specific Activity Greater than 710U/mg protein.

General References: Minárik P (2002). General Physiology and Biophysics 21 (3): 257–65; Musrati RA, (1998) General Physiology and Biophysics 17 (3): 193–210; Chapman AD (1999). Journal of Molecular Biology 285 (2): 703–12

This product is for in vitro research use only.

Related items

Catalog# Prod Description

RP-360 Recombinant (E.Coli) Human Matrix Metalloproteinase-7
RP-361 Recombinant (E.Coli) ProMatrix Metalloproteinase-7
RP-362 Recombinant (E.Coli) Malate Dehydrogenase

RP-363 Recombinant (E.Coli) Human Ubiquitin Conjugating Enzyme 9, his tag

RP-364 Recombinant Aeromonas Aminopeptidase
RP-365 Recombinant (E.Coli) Disulfide Oxidoreductase
RP-366 Recombinant (E.Coli) Urease

RP-367 Recombinant (E.Coli) Yeast Thioreduxin Reductase (NAPH)

RP-368 Recombinant (E.Coli) Lactate Dehydrogenase
RP-369 Recombinant (E.Coli) Human Alanine Aminotransferase (ALAT or glutamate pyruvate transaminase/SGPT)
RP-370 Recombinant (E.Coli) Thermostable dUTPase
RP-371 Recombinant (E.Coli) Human Glycogen Phosphorylase
RP-372 Recombinant (HEK293) Human Matrix Metalloproteinase-3

RP-373 Recombinant (Sf9) Human Thyroid Peroxidase

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