

## MDH1 Protein, Rat (His)

Cat. No.:	HY-P74757
Synonyms:	Malate Dehydrogenase Cytoplasmic; Cytosolic Malate Dehydrogenase; MDH1; MDHA
Species:	Rat
Source:	E. coli
Accession:	O88989 (M1-A334)
Gene ID:	24551
Molecular Weight:	Approximately 39 kDa

### PROPERTIES

AA Sequence	<pre> M S E P I R V L V T   G A A G Q I A Y S L   L Y S I G N G S V F   G K D Q P I I L V L L D I T P M M G V L   D G V L M E L Q D C   A L P L L Q D V I A   T D K E E V A F K D L D V A V L V G S M   P R R E G M E R K D   L L K A N V K I F K   S Q G A A L E K Y A K K S V K V I V V G   N P A N T N C L T A   S K S A P S I P K E   N F S C L T R L D H N R A K S Q I A L K   L G V T A D D V K N   V I I W G N H S S T   Q Y P D V N H A K V K L Q G K E V G V Y   E A L K D D S W L K   G E F I T T V Q Q R   G A A V I K A R K L S S A M S A A K A I   S D H I R D I W F G   T P E G E F V S M G   V I S D G N S Y G V P D D L L Y S F P V   V I K N K T W K F V   E G L P I N D F S R   E K M D L T A K E L T E E K E T A F E F   L S S A           </pre>
Biological Activity	Specific activity is 2524.23 units/mg, and is defined as the amount of enzyme that cleaves 1.0 $\mu$ mole of oxalacetate and beta-NADH to L-malate and beta-NAD per minute at pH 8.0 at 37°C.
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 $\mu$ m filtered solution of 20 mM Tris-HCL, 300 mM NaCl, pH 7.4, 10% Glycerol.
Endotoxin Level	<1 EU/ $\mu$ g, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 $\mu$ g/mL in ddH <sub>2</sub> O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

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**Background**

The MDH1 protein, an important enzyme, is responsible for catalyzing the reduction of aromatic alpha-keto acids when NADH is present. It serves critical functions in both the malate-aspartate shuttle and the tricarboxylic acid cycle, which are crucial for providing mitochondrial NADH supply needed for oxidative phosphorylation. Additionally, MDH1 catalyzes the reduction of 2-oxoglutarate to 2-hydroxyglutarate, a process that can result in increased levels of reactive oxygen species (ROS).

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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