

Recombinant MDH1 protein

Catalog No: 81295, 81995

Expressed In: *E. coli*

Quantity: 50, 1000 µg

Concentration: 1.5 µg/µl

Source: Human

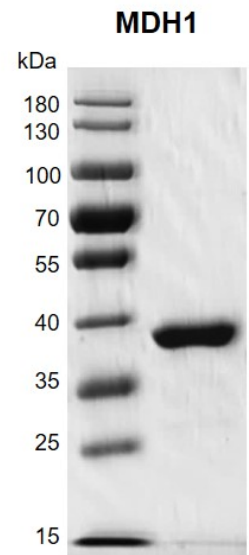
Buffer Contents: Recombinant MDH1 protein is supplied in 25 mM Tris-HCl pH 8.0, 300 mM NaCl, 10% glycerol and 0.5 mM TCEP.

Background: MDH1 (Malate Dehydrogenase 1), also called as MDHA or MOR2, catalyzes the NAD/NADH-dependent, reversible oxidation of malate to oxaloacetate in many metabolic pathways, including the citric acid cycle, fatty acid synthesis and gluconeogenesis. MDH1 is a cytosolic isozyme, and it is a part of the malate–aspartate shuttle (MAS). MAS is important for intracellular NAD(H) redox homeostasis as it transfers reducing equivalents across the mitochondrial membrane. NAD(H) itself cannot pass the mitochondrial inner membrane, so cytosolic and mitochondrial NAD⁺/NADH pools are independent from each other, and a proper balance of redox state per compartment is important for cell proliferation and cell growth. A constant supply of cytosolic NAD⁺ is required to sustain glycolysis via glyceraldehyde-3- phosphate dehydrogenase. Replenishing cytosolic NAD⁺ occurs via the reversible reduction of oxaloacetate to L-malate by MDH1. Besides, recent studies indicate that MDH1 is overexpressed in several cancers and contributes to PDAC (Pancreatic ductal adenocarcinoma) cell proliferation and metabolism via NAD production to support glycolysis.

Protein Details: Full length human MDH1 protein was expressed in *E. coli* cells (accession number NP_005908.1) with a C-terminal 6×His-Tag. The molecular weight of the protein is 37.5 kDa.

Application Notes: This product was manufactured as described in Protein Details. Where possible, Active Motif has developed functional or activity assays for recombinant proteins. Additional characterization such as enzyme kinetic activity assays, inhibitor screening or other biological activity assays may not have been performed for every product. All available data for a given product is shown on the lot-specific Technical Data Sheet.

Storage and Guarantee: Recombinant proteins in solution are temperature sensitive and must be stored at -80°C to prevent degradation. Avoid repeated freeze/thaw cycles and keep on ice when not in storage. This product is guaranteed for 6 months from date of arrival.



Recombinant MDH1 protein gel
10% SDS-PAGE gel with
Coomassie blue staining

MW: 37.5 kDa

Purity: >92%