

## MDO Protein, Mycobacterium sp.

Cat. No.:	HY-P702175
Synonyms:	Methanol:N; N-dimethyl-4-nitrosoaniline oxidoreductase; MDO; Methanol dehydrogenase (nicotinoprotein); Methanol:NDMA oxidoreductase
Species:	Others
Source:	E. coli
Accession:	C5MRT8 (M1-Y423)
Gene ID:	/
Molecular Weight:	

### PROPERTIES

Appearance	Solution.
Formulation	Supplied as a 0.22 µm filtered solution of 50 mM Tris-HCl, pH7.5, 200 mM NaCl, 20% glycerol.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	Please use rapid thawing with running water to thaw the protein.
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice.

### DESCRIPTION

Background	<p>Methanol dehydrogenase (MDO) is an essential enzyme that catalyzes the oxidation of methanol to produce formaldehyde. While the specific in vivo electron acceptor remains unknown, in vitro studies have demonstrated the ability of N,N-dimethyl-4-nitrosoaniline (NDMA) to serve this function, being reduced to 4-(hydroxylamino)-N,N-dimethylaniline in the process. Remarkably, MDO exhibits versatility in substrate utilization, showcasing comparable activity with ethanol and formaldehyde as it does with methanol. Additionally, the enzyme displays weak activity with methylamine as a substrate. This broad substrate specificity suggests MDO's potential role in diverse metabolic pathways and highlights its adaptability in accommodating different alcohol and amine substrates, emphasizing its significance in cellular metabolism and the oxidation of various organic compounds (adapted from the provided passage).</p>
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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