

# Malate Dehydrogenase 1 (MDH1) Activity Assay

## ab200009

[1 References](#) [4 Images](#)

Overview

Product name	Malate Dehydrogenase 1 (MDH1) Activity Assay			
Detection method	Colorimetric			
Precision	Intra-assay			
	Sample	n	Mean	SD
	overall	4		3.4%
	Inter-assay			
	Sample	n	Mean	SD
	overall	4		8.1%
Sample type	Cell culture extracts, Tissue Extracts			
Assay type	Enzyme activity (quantitative)			
Species reactivity	<b>Reacts with:</b> Mouse, Rat, Human			
Product overview	Abcam's Malate Dehydrogenase 1 (MDH1) Activity Assay kit is designed for the sensitive and accurate measurement of MDH1 activity in Human, mouse, and rat samples.			
Notes	<p>Malate Dehydrogenase 1 is the cytoplasmic isoform of the enzyme responsible for catalyzing the reversible oxidation of malate to oxaloacetate. The enzyme's activity requires the NAD<sup>+</sup>/NADH cofactor and participates primarily in the malate-aspartate shuttle.</p> <p>The enzyme activity is determined by following the production of NADH in the following MDH1 catalyzed reaction:</p> <p>Malate + NAD<sup>+</sup> ↔ oxaloacetic acid + NADH</p> <p>The generation of NADH is coupled to the 1:1 reduction of a reporter dye to yield a colored (yellow) reaction product whose concentration can be monitored by measuring the increase in absorbance at 450nm (Dye molar extinction coefficient: 37000M<sup>-1</sup> cm<sup>-1</sup>). In each well, only native MDH1 is immunocaptured from the sample; this removes all other enzymes, including MDH2 from the activity measurement.</p>			
Platform	Microplate reader			

Properties

Storage instructions Store at +4°C. Please refer to protocols.

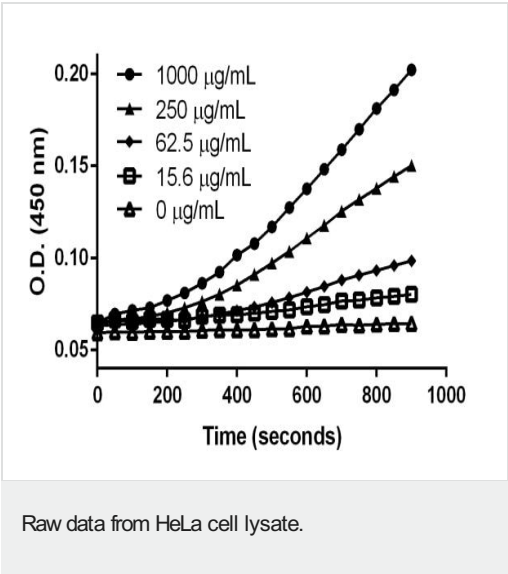
Components	1 x 96 tests
100X Coupler	1 vial
100X NAD+	1 vial
100X Reagent Dye	1 vial
100X Sodium Malate	1 vial
10X Blocking Buffer	1 x 8ml
20X Buffer	1 x 20ml
Base Buffer	1 x 24ml
Extraction Buffer (ab260490)	1 x 15ml
Malate Dehydrogenase 1 Activity Microplate	1 unit

Sequence similarities Belongs to the LDH/MDH superfamily. MDH type 2 family.

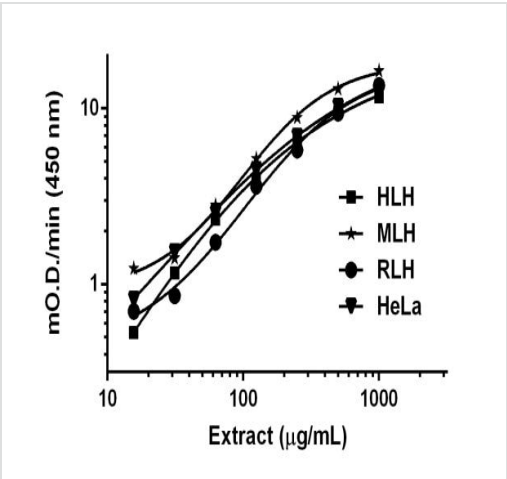
Post-translational modifications ISGylated.

Cellular localization Cytoplasm.

Images

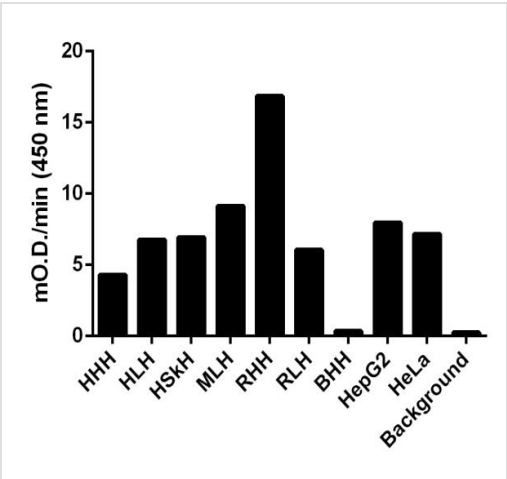


Once the rate/slope of each lane is extracted from the linear range of the time point data, it is expressed as rate (mOD/min) per microgram of cell lysate added per well.



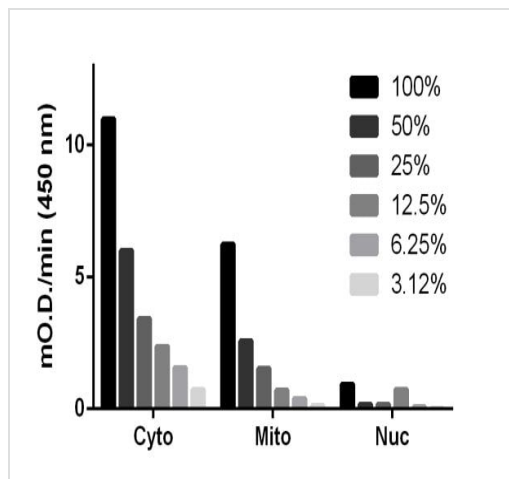
Representative background-subtracted kinetic measurements from serially diluted HeLa cell lysates and tissue homogenates HLH, MLH, RLH.

Representative background-subtracted kinetic measurements



The assay was used to determine the MDH1 activity in a series of normal cell lysates and tissue homogenates loaded at 250 μg/mL.

MDH1 activity in cell lysates and tissue homogenates



MDH1 activity in serially titrated HeLa cell fractions (Cyto = Cytoplasmic, Mito = Mitochondrial and Nuc = Nuclear) demonstrates the assay's specificity to MDH1.

MDH1 activity in serially titrated HeLa cell fractions

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