



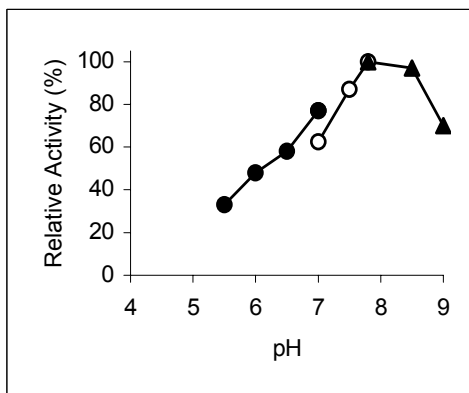
Malate Dehydrogenase Catalogue No. MADE-70-1521

<u>Origin:</u>	Microbial
<u>Specifications:</u>	
Appearance:	Freeze dried powder
Activity:	≥ 100 U/mg powder at 25°C
Contaminants:	≤ 0.003% by activity Glutamate oxaloacetic transaminase

Characteristics:

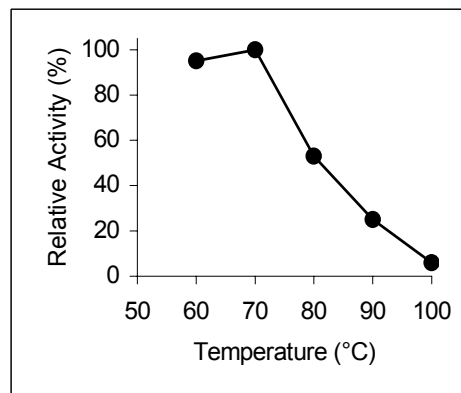
Molecular Weight:	35kDa (SDS-PAGE)	
Isoelectric point:	4.8	
K _m value:	Oxaloacetate 5.6 x 10 ⁻⁵ M	
	NADH 6.6 x 10 ⁻⁶ M	
Optimum pH:	7.8	See Fig. 1
Optimum temp.:	70°C	See Fig. 2
pH stability:	8.0-9.0 (70°C, 30 min.)	See Fig. 3
Thermal stability:	Below 80°C (pH 8.5, 30 min.)	See Fig. 4
Effect of chemicals:		See Table 1
Lyophilised stability	18 months desiccated at 5 °C or below	

Fig. 1. pH Optimum



◆ : 0.1M MES
○ : 0.1M MES
▲ : 0.1M Tris

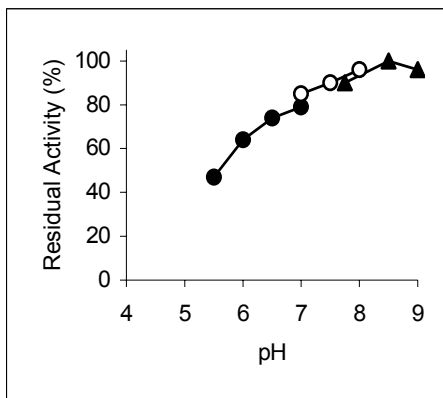
Fig. 2 Temperature Optimum



0.1M Tris, pH 7.8

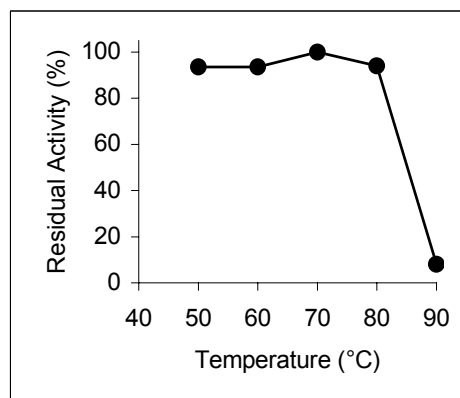
Malate Dehydrogenase (Catalogue No. 1521)

Fig. 3. pH Stability



70°C, 30 min.
 ◆ : 0.05M MES
 ○ : 0.05M TES
 ▲ : 0.05M Tris

Fig. 4 Thermal Stability



pH 8.5, 30 min., 0.05M Tris

Table 1. The effect of chemicals on Malate Dehydrogenase

Chemical	Concentration (mM)	Relative Activity (%)
None	-	100
MnCl ₂	1.0	97
MgCl ₂	1.0	95
ZnCl ₂	1.0	57
CuCl ₂	1.0	88
EDTA	1.0	89
PCMB	1.0	92
MIA	1.0	92
NaN ₃	1.0	92

EDTA, Ethylenediaminetetraacetate; PCMB, p-Chloromercuribenzoate;
 MIA, Monoiodoacetate



Malate Dehydrogenase **(Catalogue No. 1521)**

Assay Principle:

Malate Dehydrogenase catalyses the following reaction:



The disappearance of NADH can be measured spectrophotometrically at 340nm.

Unit Definition:

One unit of activity is defined as the amount of enzyme that will catalyse the oxidation of 1.0 micromole of NADH per minute at 25°C under standard assay method conditions.

(See Analytical Method for full details)

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