

# ENZYMES

BY

# SORACHIM

## Malate Dehydrogenase recombinant

### MAD-322

#### SPECIFICATIONS

Product name	(s)-malate: NAD <sup>+</sup> oxydoreductase
EC	1.1.1.37
Appearance	White amorphous powder lyophilized
Activity	> 60 U/mg powder
Contaminants	Glutamate oxaloacetate transaminase $\leq 1.0 \times 10^{-3} \%$ Lactate dehydrogenase $\leq 1.0 \times 10^{-3} \%$ NADH oxidase $\leq 1.0 \times 10^{-4} \%$
Stability	Stable at - 20°C for at least 12 months
Molecular weight	Approx. 140,000
Isoelectric point	pH 4.8±0.1
Michaelis constants	5.4×10 <sup>-5</sup> M (L-Malate), 5.0×10 <sup>-6</sup> M (Oxaloacetate), 8.1×10 <sup>-6</sup> M (NADH)
Inhibitors	Hg <sup>2+</sup>
Optimum pH	8.0
Optimum temperature	70 °C
pH Stability	pH 3.0 - 9.0 (25 °C, 20hr)
Thermal stability	Below 70 °C (pH 7.5, 15min)

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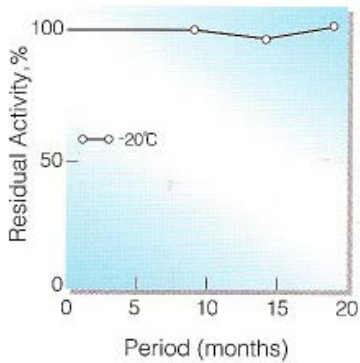
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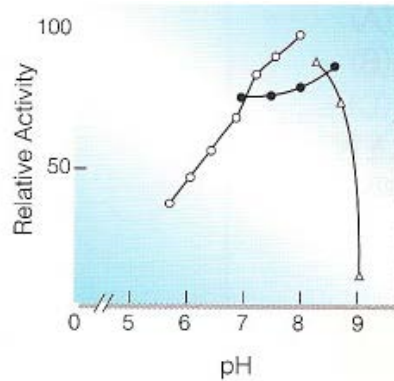
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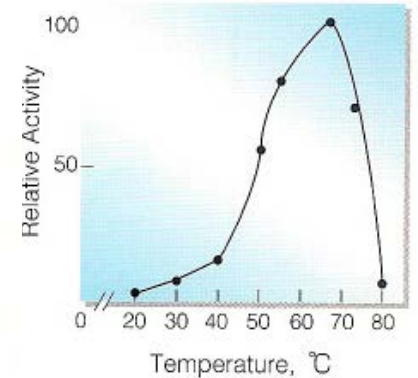


**Fig.1. Stability (Powder form)**  
[kept under dry conditions]



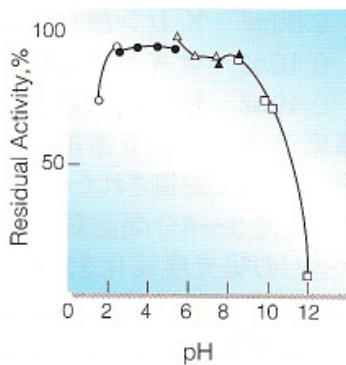
**Fig.2. PH-Activity**

[30°C, in 0.1M buffer solution:  
pH5.5-8.0, K-phosphate;pH7.0-8.5, Tris-HCl;  
pH8.0-9.0, Borate



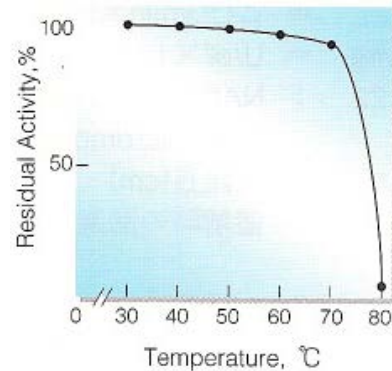
**Fig.3. Temperature activity**

[in 0.1mM K-phosphate buffer, pH7.5]



**Fig.4. pH-Stability**

[25°C, 20hr-treatment with 0.1M buffer solution:  
pH2.0-3.5, glycine-HCl; pH3.0-6.0, acetate;  
pH6.0-8.0, K-phosphate; pH8.0-9.0, Tris-HCl;  
pH8.5-12.0, borate



**Fig.5. Thermal stability**

[15min-treatment with 0.1m K-phosphate  
buffer, pH7.5  
enzyme concentration: 4.0U/ml

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