AE0015_UG_EN_V2302

D-Malate dehydrogenase (EC 1.1.1.83), *Escherichia coli*

Catalogue number	Presentation
AE00151	200 U (3.4 mL)

Description

Recombinant D-malate dehydrogenase (decarboxylating; EC 1.1.1.83) is purified from a modified *E. coli* strain. D-Malate dehydrogenase is an enzyme that catalyzes the conversion of malate into pyruvate and carbon dioxide (using NAD^+). This enzyme belongs to the family of oxidoreductases, specifically those acting on the CH-OH group of donor with NAD^+ or $NADP^+$ as acceptor. The systematic name of this enzyme class is (R)-malate:NAD+ oxidoreductase (decarboxylating). Other names in common use include D-malate dehydrogenase, D-malic enzyme, bifunctional L(+)-tartrate dehydrogenase-D(+)-malate, and (decarboxylating). This enzyme participates in butanoate metabolism. The enzyme is provided in 3.2 M ammonium sulphate. Swirl to mix the enzyme suspension immediately prior to use.

Purity

D-Malate dehydrogenase has been determined to be >95% pure, according to SDS polyacrylamide gel electrophoresis (PAGE) followed by Coomassie Blue staining (Figure 1).

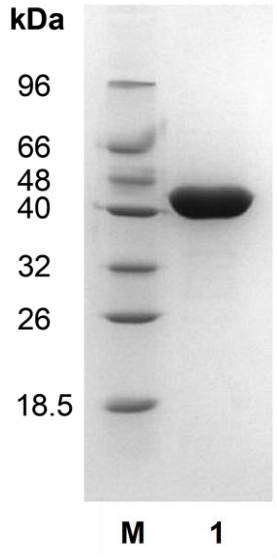

Figure 1. SDS-PAGE analysis of *E. coli* D-malate dehydrogenase. Electrophoresis was performed using a 12% polyacrylamide gel. Lane M, molecular weight marker; Lane 1, purified D-Malate dehydrogenase (42 kDa).

Storage temperature

D-Malate Dehydrogenase should be stored at 2 °C to 8 °C.

Temperature and pH optimum

The optimum pH and temperature are 8.0 and 25 °C, respectively.

Activity

59 U/ml

Unit Definition

One unit is defined as the amount of enzyme required to produce 1 mmol of NADH from NAD^+ in a reaction mixture containing 75 mM Tris-HCl buffer, pH 8.0, 7.5 mM $MgCl_2$, 40 mM KCl, 75 µg/ml D-Malic acid and 1.85 mM NAD^+, at 25 °C.

Substrate specificity

Under the reaction conditions specified the enzyme does not present any other detectable enzymatic activities.

References

Stern JR, O'Brien RW (1969) Journal of Bacteriology 98, 147–51.