AE0013_UG_EN_V2302

Alcohol dehydrogenase (EC 1.1.1.1), *Escherichia coli*

Catalogue number	Presentation
AE00131	1000 U (6.7 mL)

Description

Alcohol dehydrogenase (ADH; EC 1.1.1.1) is an enzyme occurring in many organisms facilitating the interconversion between primary or secondary alcohols and aldehydes or ketones, respectively, with the reduction of NAD^+ to NADH. This enzyme requires the iron or zinc as cofactor. In humans and many other animals, they serve to break down alcohols which could otherwise be toxic; in yeast and many bacteria, some alcohol dehydrogenases catalyze the opposite reaction as part of fermentation. The enzyme is provided in 3.2 M ammonium sulphate. Swirl the enzyme suspension immediately prior to use.

Purity

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

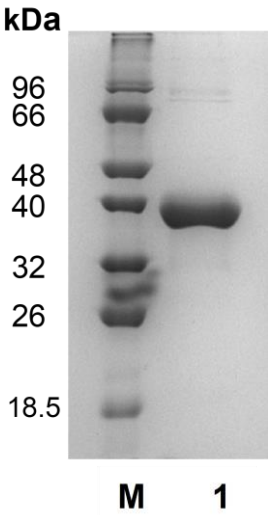

Figure 1. SDS-PAGE analysis of *E. coli* alcohol dehydrogenase. Electrophoresis was performed using a 10% polyacrylamide gel. Lane M, molecular weight marker; Lane 1, purified alcohol dehydrogenase from *E. coli* K12 (36 kDa)..

Storage temperature

Alcohol dehydrogenase should be stored at 2 °C to 8 °C.

Temperature and pH optimum

The optimum pH and temperature are 8.5 and 25 °C, respectively.

Activity

150 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 50 mM potassium pyrophosphate buffer, pH 8.5, 600 mM ethanol and 2 mM NAD^+, at 25 °C.

References

Theorell H, McKee JS (1961). Nature 192: 47–50.