

Alcohol dehydrogenase (EC 1.1.1.1), *Escherichia coli*

Catalogue number:

AE00131, 1000 U (33 mg)

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 mix 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).

Specific activity

30 U/mg, 150 U/ml.

Unit definition

One unit is defined as the amount of enzyme required to produce 1 μ mol 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.

Reference

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

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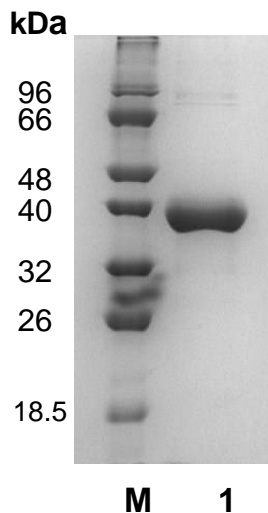


Figure 1. SDS-PAGE analysis of *E. coli* alcohol dehydrogenase. Electrophoresis was performed using a 10% polyacrylamide gel. Lane M, molecular weight marker; Lane 1, purified alcohol dehydrogenase from *E. coli* K12 (36 kDa).

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.

Certificate of Analysis

Test	Criteria	Result
Protein purity	Purity in line with the stated value	Meets specification
Protein concentration	Concentration in line with the stated value	Meets specification
Catalytic activity	Activity in line with the stated value	Meets specification
Blank assay variability	Absorbance values with less than 10% of variability	Meets specification

Approved by:



Patricia Ponte
Senior Manager, Quality Systems

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