Native Saccharomyces cerevisiae Alcohol Dehydrogenase

Cat. No. NATE-0035

Lot. No. (See product label)

Introduction

Description Alcohol dehydrogenases (ADH) are a group of dehydrogenase enzymes that occur in many organisms and facilitate the interconversion between alcohols and aldehydes or ketones with the reduction of nicotinamide adenine dinucleotide (NAD+ to NADH). In Humans and many other animals, they serve to break down alcohols that otherwise are toxic, and they also participate in geneRation of useful aldehyde, ketone, or alcohol groups during biosynthesis of various metabolites. In yeast, plants, and many bacteria, some alcohol dehydrogenases catalyze the opposite reaction as part of fermentation to ensure a constant supply of NAD+.

Applications Alcohol Dehydrogenase from Saccharomyces cerevisiae is used for gel filtration chromatography and as a gel filtration molecular weight marker. It has been used in bioelectrochemical research to investigate the use of diamond nanoparticles as a surface for protein loading.

Synonyms aldehyde reductase; ADH; alcohol dehydrogenase (NAD); aliphatic alcohol dehydrogenase; ethanol dehydrogenase; NAD-dependent alcohol dehydrogenase; NAD-specific aromatic alcohol dehydrogenase; NADH-alcohol dehydrogenase; NADH-aldehyde dehydrogenase; primary alcohol dehydrogenase; yeast alcohol dehydrogenase; EC 1.1.1.1

Product Information

Source Saccharomyces cerevisiae

Form Solids containing <2% Citrate buffer salts

EC Number EC 1.1.1.1

CAS No. 9031-72-5

Molecular Weight mol wt ~141 kDa (four subunits)

Activity > 300 units/mg protein

Isoelectric point 5.4-5.8

Optimum pH 8.6-9.0

Specificity The dried enzyme has been stored for several weeks in a vacuum desiccator with little loss in activity. According to experiments described by A. Kornberg,3 the enzyme can be stored in the frozen state and can be thawed repeatedly without marked loss of activity.

Inhibitors Compounds that react with free sulfhydryls, including N-alkylmaleimides and iodoacetamide. Zinc chelator inhibitors, including 1,10-phenanthroline, 8-hydroxyquinoline, 2,2′-dipyridyl, and thiourea. Substrate analogue inhibitors, including β-NAD analogs, purine and pyrimidine derivatives, chloroethanol, and fluoroethanol.

Unit Definition One unit will convert 1.0 µmole of ethanol to acetaldehyde per min at pH 8.8 at 25°C.

Storage and Shipping Information

Storage	−20°C