

Native *Thermoanaerobium brockii* Alcohol Dehydrogenase, NADP⁺ dependent

Cat. No. NATE-0062

Lot. No. (See product label)

Introduction

Description Alcohol dehydrogenase [NADP⁺] also known as aldehyde reductase or aldo-keto reductase family 1 member A1 is an enzyme that in humans is encoded by the AKR1A1 gene. This gene encodes a member of the aldo/keto reductase superfamily, which consists of more than 40 known enzymes and proteins. This member, also known as aldehyde reductase, is involved in the reduction of biogenic and xenobiotic aldehydes and is present in virtually every tissue. Alternative splicing of this gene results in two transcript variants encoding the same protein.

Applications Alcohol dehydrogenase may be used to synthesize enantiomerically pure stereoisomers of chiral alcohols. It may be used to study ethanol fuel cells, alcoholism and drug dependence. The product is NADP⁺ dependent and is obtained from *Thermoanaerobium brockii*. It contains phosphate buffer salts and dithioerythritol. The product has been assayed with 2-propanol and NADP⁺ to analyse the function of fatty aldehyde reductase (FALDR) derived from *Marinobacter aquaeolei* VT8. *Thermoanaerobium brockii* alcohol dehydrogenase (TBADH) is a biocatalyst that catalyzes the reduction of a broad range of aliphatic ketones to the corresponding secondary alcohols with excellent enantioselectivity.

Synonyms EC 1.1.1.2; Aromatic Alcohol Dehydrogenase; Alcohol:NADP⁺ oxidoreductase; AKR1A1; ALDR1; ALR; ARM; DD3; HEL-S-6; aldehyde reductase; aldo-keto reductase family 1 member A1; alcohol dehydrogenase (NADP⁺); aldehyde reductase (NADPH₂); NADP-alcohol dehydrogenase; NADP⁺-aldehyde reductase; NADP⁺-dependent aldehyde reductase; NADPH-aldehyde reductase; NADPH-dependent aldehyde reductase; nonspecific succinic semialdehyde reductase; ALR 1; low-K_m aldehyde reductase; high-K_m aldehyde reductase; alcohol dehydrogenase (NADP)

Product Information

Source *Thermoanaerobium brockii*

Form lyophilized powder

EC Number EC 1.1.1.2

CAS No. 9028-12-0

Activity 5-15 units/mg protein; 30-90 units/mg protein

pH Stability pH Range: 5.5-8.5

Composition Protein, > 20% biuret

Buffer Contains phosphate buffer salts and dithioerythritol

Unit Definition One unit will oxidize 1.0 μmole of 2-propanol to acetone per min at pH 7.8 at 40°C in the presence of NADP⁺.

Storage and Shipping Information

Stability -20°C