Creative Enzymes®

Diaphorase 22 from Recombinant E.coli

Cat. No. NATE-1938

Lot. No. (See product label)

Introduction

Description A flavoprotein (FAD). A component of the multienzyme 2-oxo-acid dehydrogenase complexes. In the pyruvate dehydrogenase complex, it binds to the core of EC 2.3.1.12, dihydrolipoyllysine-residue acetyltransferase, and catalyses oxidation of its dihydrolipoyl groups. It plays a similar role in the oxoglutarate and 3-methyl-2-oxobutanoate dehydrogenase complexes. Another substrate is the dihydrolipoyl group in the H-protein of the glycine-cleavage system (click here for diagram), in which it acts, together with EC 1.4.4.2, glycine dehydrogenase (decarboxylating), and EC 2.1.2.10, aminomethyltransferase, to break down glycine. It can also use free dihydrolipoate, dihydrolipoamide or dihydrolipoyllysine as substrate. This enzyme was first shown to catalyse the oxidation of NADH by methylene blue; this activity was called diaphorase. The glycine cleavage system is composed of four components that only loosely associate: the P protein (EC 1.4.4.2), the T protein (EC 2.1.2.10), the L protein (EC 1.8.1.4) and the lipoyl-bearing H protein.

Synonyms LDP-Glc; LDP-Val; dehydrolipoate dehydrogenase; diaphorase; dihydrolipoamide dehydrogenase; dihydrolipoamide:NAD+ oxidoreductase; dihydrolipoic dehydrogenase; dihydrothioctic dehydrogenase; lipoamide dehydrogenase (NADH); lipoamide oxidoreductase (NADH); lipoamide reductase; lipoamide reductase (NADH); lipoate dehydrogenase; lipoic acid dehydrogenase; lipoyl dehydrogenase; protein-6-N-(dihydrolipoyl)lysine:NAD+ oxidoreductase

Product Information

Source	E. coli
Form	Lyophilized
EC Number	EC 1.8.1.4
CAS No.	9001-18-7
Molecular Weight	ca. 110,000
Activity	>150 U/mg protein
Contaminants	(as Diaphorase activity = 100 %) Adenylate kinase < 0.01 % NADH oxidase < 0.20 %
pH Stability	6.0 – 9.0
Optimum pH	8
Thermal stability	No detectable decrease in activity up to 70 °C.
Michaelis Constant	(50 mM HEPES buffer, pH 7.0, at 30 °C) 3-(4,5-Dimethyl-2-thiazolyl)-2,5-diphenyl-2H-tetrazolium bromide (MTT) 0.345 mM NADH 0.033 mM
Unit Definition	One unit of activity is defined as the amount of Diaphorase that forms 1 µmol of NAD+ per minute at 30 °C.

Storage and Shipping Information

Storage Store at -20°C

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