

## 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; dihydrolipoate dehydrogenase; diaphorase; dihydrolipoamide dehydrogenase; dihydrolipoamide:NAD<sup>+</sup> 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<sup>+</sup> oxidoreductase

### Product Information

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

### Storage and Shipping Information

**Storage** Store at -20°C

