

Saisir le nom du produit, le numéro de lot, etc.

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Documents

[↓ FDS](#)[🔍 COO/COA](#)[📄 Fiche des caractéristiques](#)[Plus de documents](#) »**D5540** ▶ **Sigma-Aldrich.**

Diaphorase from *Clostridium kluyveri*

★★★★★ (0)

lyophilized powder, 3.0-20.0 units/mg protein (biuret)

Synonyme(s):

Diaphorase, Lipoamide Dehydrogenase, Lipoyl Dehydrogenase

Numéro CAS: **9001-18-7**Numéro EC: **232-587-6**

NACRES: NA.54

Numéro de classification
(Commission des enzymes):**1.8.1.4 (BRENDA, IUBMB)**

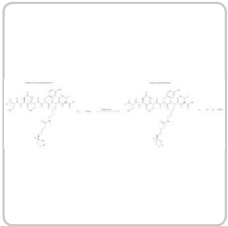
Numéro MDL:

MFCD00130947

Référence	Conditionnement	Disponibilité	Prix	Quantité
D5540-100UN	100 UNITS	✓ Only 3 left in stock (more on the way) Détails...	68,00 €	- + i
D5540-300UN	300 UNITS	✓ Only 1 left in stock (more on the way) Détails...	170,00 €	- + i
D5540-500UN	500 UNITS	✓ Only 3 left in stock (more on the way) Détails...	448,00 €	- + i
D5540-1.5KU	1500 UNITS	✓ Only 5 left in stock (more on the way) Détails...	592,00 €	- + i

[^](#)
HAUT[Demander une commande en gros](#)[Ajouter au panier](#)

PRODUITS RECOMMANDÉS

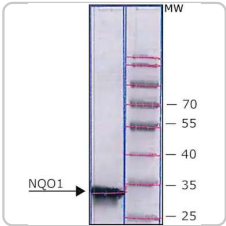


Sigma-Aldrich

D2197

Diaphorase from *Clostridium kluyveri*
recombinant, expressed in *E. coli*, Animal-component free

Consulter le prix et la disponibilité



Sigma-Aldrich

D1315

DT Diaphorase (NQO1) human
lyophilized powder, recombinant, expressed in *E. coli*, ≥90% (SDS-PAGE)

Consulter le prix et la disponibilité

PROPRIÉTÉS

Source biologique	bacterial (<i>Clostridium kluyveri</i>)
Niveau de qualité	200
Forme	lyophilized powder
specific activity	3.0-20.0 units/mg protein (biuret)
Expédié(e)s dans	wet ice
Temp. de stockage	-20°C

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DESCRIPTION

Application

Diaphorase from *Clostridium kluyveri*, or Lipoyl dehydrogenase, has been used in a study to assess the protein-protein interactions in assembly of lipoic acid on the 2-oxoacid dehydrogenases of aerobic metabolism. Lipoyl dehydrogenase has also been used in a study to investigate the redox regulation of tyrosine nitration and 3-nitrotyrosine reduction by antioxidants.

Methylene blue (MB)-containing polyacrylamide nanoparticle platforms (NPs) were tested in solution with diaphorase from *Clostridium kluyveri* and the cofactor NADH. This test was done to check whether the encapsulation of MB in NPs could prevent the reduction of MB, and thus protect its photodynamic effectiveness. The enzyme from Sigma has been used along with aldehyde dehydrogenase to construct a biosensor for acetaldehyde by immobilization. It has also been used in the reoxidation of NADP to NADPH. This reaction simultaneously catalyzed the conversion of resazurin into the highly fluorescent resorufin, and also allowed the detection of minute amounts of NADP. NADP was initially converted to NADP and NADPH by other enzymes.

Conditionnement

100, 300, 500, 1500 units in poly bottle

Sold on the basis of native diaphorase units.

Autres remarques

The name "Diaphorase" has been loosely applied to several enzymes which catalyze the oxidation of either β -NADH or β -NADPH in the presence of an electron acceptor such as methylene blue or 2,6-dichlorophenolindophenol. Many different assay procedures and "units" are used.

Diaphorases which are specific for either β -NADH or β -NADPH are known. The pig heart enzyme of Straub seems to have native diaphorase (β -NADH specific) as well as lipoic and lipoamide dehydrogenase activities. It is reported to be a single protein.

However, Massey reports that "diaphorase" is probably a denatured lipoamide dehydrogenase. Pre-incubation of the pig heart



preparation with Cu²⁺ reduces the lipoamide dehydrogenase activity and proportionately increases the β-NADH diaphorase activity. In our laboratory, we have demonstrated this copper effect to some degree on the pig heart enzyme, but no appreciable effect was observed on the *Clostridium kluyveri* or torula yeast preparations. The lipoamide dehydrogenase:diaphorase ratio is a measure of the denaturation.

Définition de l'unité

One unit of either "diaphorase" or "lipoyl" dehydrogenase will oxidize 1.0 μmole of β-NADH per min at pH 7.5 at 25 °C, with the corresponding reduction of 2,6-dichlorophenolindophenol

PRODUITS APPARENTÉS

Inhibiteur

C0400

Carmustine, ≥98%

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INFORMATIONS SUR LA SÉCURITÉ

Code de la classe de
stockage

13 - Non Combustible Solids

WGK
WGK 3

Flash Point(F)
Not applicable

Point d'éclair C
Not applicable

Équipement de protection



individuelle

Eyeshields, Gloves, type N95
(US)

DOCUMENTATION

Certificat d'analyse

Saisir un numéro de lot pour rechercher un certificat d'analyse (COA).

Numéro de lot

e.g. 023J5431

Comment saisir un numéro de lot (COA)

Rechercher

Certificat d'origine

Saisir un numéro de lot pour rechercher un certificat d'origine (COO).

Numéro de lot

e.g. 023J5431

Comment saisir un numéro de lot (COO)

Rechercher

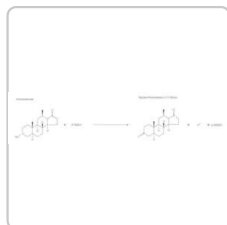
↑
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Enzyme Explorer

FDS

LES CLIENTS ONT ÉGALEMENT CONSULTÉ

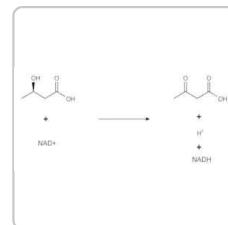


Sigma-Aldrich

H1506

3α-Hydroxysteroid Dehydrogenase from
Pseudomonas testosteroni

≥15 units/mg protein

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Sigma-Aldrich

H9408

β-Hydroxybutyrate Dehydrogenase from
Pseudomonas lemoignei

lyophilized powder, ≥200 units/mg protein

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ARTICLES REVUS PAR DES PAIRS

Bioelectronic sniffer with a diaphragm flow-cell for acetaldehyde vapor.

Mitsubayashi K, et al.

Sensors and Actuators B, Chemical, 95(1-3), 303-308 (2003)**Discrete analysis of bile acid in serum and bile with 3 alpha-hydroxysteroid dehydrogenase and diaphorase immobilized onto alkylamine glass beads.**

Kirti Rani et al.

Indian journal of biochemistry & biophysics, 43(2), 98-104 (2006-09-08)

3alpha-Hydroxysteroid dehydrogenase (3alpha-HSD) from *Pseudomonas testosteroni* and diaphorase (lipoyl dehydrogenase) from *Clostridium* spp were immobilized individually onto alkylamine glass beads through glutaraldehyde coupling. A cost-effective enzymic colorimetric method for determination of bile acid in the serum and bile was developed

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H₂O₂/nitrite-induced post-translational modifications of human hemoglobin determined by mass spectrometry: redox regulation of tyrosine nitration and 3-nitrotyrosine reduction by antioxidants.

Hauh-Jyun Candy Chen et al.

Chembiochem : a European journal of chemical biology, 9(2), 312-323 (2007-12-29)

Covalent modifications of proteins by endogenous reactive nitrogen oxide species lead to cytotoxic effects that are implicated in diseases associated with chronic infections and inflammation. Tyrosine nitration is a major post-translational modification of proteins by reactive nitrogen oxide species. Recent

Protein-protein interactions in assembly of lipoic acid on the 2-oxoacid dehydrogenases of aerobic metabolism.

Bachar H Hassan et al.

The Journal of biological chemistry, 286(10), 8263-8276 (2011-01-07)

Lipoic acid is a covalently attached cofactor essential for the activity of 2-oxoacid dehydrogenases and the glycine cleavage system. In the absence of lipoic acid modification, the dehydrogenases are inactive, and aerobic metabolism is blocked. In *Escherichia coli*, two pathways

Second messenger function of nicotinic acid adenine dinucleotide phosphate revealed by an improved enzymatic cycling assay.

Andreas Gasser et al.

The Journal of biological chemistry, 281(25), 16906-16913 (2006-04-22)

Nicotinic acid adenine dinucleotide phosphate (NAADP) is the most potent activator of Ca²⁺ release from intracellular stores known today. Although recent reports have suggested an important function of NAADP in human T lymphocytes, direct evidence for receptor-induced formation of NAADP

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PRODUITS CONSULTÉS RÉCEMMENT

Sigma-Aldrich

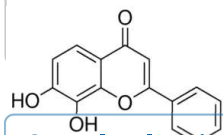
D5446

7,8-Dihydroxyflavone hydrate

Sigma-Aldrich

D5439

2,3-Dimethoxy-1,4-naphthoquinone



≥98% (HPLC)

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≥99%, solid

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Évaluations

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Notre équipe de scientifiques dispose d'une expérience dans tous les secteurs de la recherche, notamment en sciences de la vie, science des matériaux, synthèse chimique, chromatographie, analyse et dans de nombreux autres domaines..

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