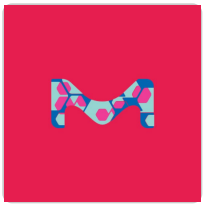


Toutes les photos (1)

Documents

FDS

COO/COA

Fiche des caractéristiques

Plus de documents

P6140 ▶ Sigma-Aldrich.

Peroxidase from horseradish

(0)

Type X, ammonium sulfate suspension

Synonyme(s):
Donor:hydrogen-peroxide oxidoreductase, Horseradish peroxidase

Numéro CAS:	9003-99-0	**Numéro de classification (Commission des enzymes):**	1.11.1.7 (BRENDA, IUBMB)
Numéro EC:	232-668-6	**Numéro MDL:**	MFCD00071339
eCl@ss:	32160410	**NACRES:**	NA.54

Référence	Conditionnement	Disponibilité		Prix	Quantité
P6140-2KU	2000 UNITS	Only 3 left in stock (more on the way)	Détails...	90,90 €	− +
P6140-5KU	5000 UNITS	Only 2 left in stock (more on the way)	Détails...	128,00 €	− +
P6140-10KU	10000 UNITS	Date d'expédition estimée le 13 janvier 2023		234,00 €	− +
P6140-25KU	25000 UNITS	Only 2 left in stock (more on the way)	Détails...	461,00 €	− +

Demander une commande en gros

Ajouter au panier

PRODUITS RECOMMANDÉS

Sigma-Aldrich

P8375

Peroxidase from horseradish

Type VI, essentially salt-free, lyophilized powder, ≥250 units/mg solid (using pyrogallol)

Consulter le prix et la disponibilité

Sigma-Aldrich

516531

Peroxidase, Horseradish

Consulter le prix et la disponibilité

PROPRIÉTÉS

Source biologique	horseradish
Niveau de qualité	200
Type	Type X
Forme	ammonium sulfate suspension
specific activity	≥225 units/mg protein (biuret, using pyrogallol)
Poids mol.	~44 kDa

Concentration	≥1.0 mg/mL
Rapport des absorbances	RZ 2.5-3.5
Temp. de stockage	2-8°C

Vous recherchez des produits similaires ? Visit **Guide de comparaison des produits**

Catégories apparentées

Detection Substrates & Enzymes

DESCRIPTION

Description générale

Horseradish peroxidase is isolated from horseradish roots (*Amoracia rusticana*) and belongs to the ferroprotoporphyrin group of peroxidases. HRP is a single chain polypeptide containing four disulfide bridges. It is a glycoprotein containing 18% carbohydrate. The carbohydrate composition consists of galactose, arabinose, xylose, fucose, mannose, mannosamine, and galactosamine depending upon the specific isozyme. Its molecular weight (~44 kDa) includes the polypeptide chain (33,890 Daltons), hemin plus Ca^{2+} (~700 Daltons), and carbohydrate (~9,400 Daltons). At least seven isozymes of HRP exist. The isoelectric point for horseradish peroxidase isozymes ranges from 3.0 - 9.0.

Application

Horseradish peroxidase (HRP) is isolated from horseradish roots (*Amoracia rusticana*). It is used in biochemistry applications such as western blots, ELISA and Immunohistochemistry. Horseradish peroxidase is used to amplify a weak signal and increase detectability of a target molecule, such as a protein. Product P6140 has been used to detect low density lipoprotein (LDL).

The enzyme from Sigma has been used while assessing the skin sensitization potential of pro-haptens. It has also been used to show that peroxidase (PO) activity and its heat stability correlate with the availability of free Ca^{2+} ions.

Actions biochimiques/physiologiques

HRP readily combines with hydrogen peroxide (H_2O_2) and the resultant [HRP-H_2O_2] complex can oxidize a wide variety of hydrogen donors. The optimal pH is 6.0-6.5 and the enzyme is most stable in the pH range of 5.0-9.0. HRP can be conjugated to antibodies by several different methods that include the use of glutaraldehyde, periodate oxidation, disulfide bonds, and also via amino- and thiol-directed cross-linkers. It is smaller and more stable than the enzyme labels, β-galactosidase and alkaline phosphatase. Hence, it is the most desired label. Also, its glycosylation leads to lower non-specific binding. It is also used for the determination of glucose and peroxides in solution. Sodium azide, cyanide, L-cystine, dichromate, ethylenethiourea, hydroxylamine, sulfide, vanadate, p-aminobenzoic acid, and Cd^{2+}, Co^{2+}, Cu^{2+}, Fe^{3+}, Mn^{2+}, Ni^{2+}, Pb^{2+} ions are found to inhibit its enzyme activity.

When incubated with a substrate, horseradish peroxidase produces a coloured, fluorimetric, or luminescent derivative of the labeled molecule, allowing quantification. Horseradish peroxidase has been shown to slightly reduce the level of inhibition in a cydAB mutant.

Définition de l'unité

One pyrogallol unit will form 1.0 mg purpurogallin from pyrogallol in 20 sec at pH 6.0 at 20 °C.

Forme physique

Crystalline suspension in 3.2 M $(NH_4)_2SO_4$ solution containing potassium phosphate buffer, pH 6.0

Notes préparatoires

Water may be used to dilute suspension if needed.

Remarque sur l'analyse

Preliminary studies indicate the presence of two basic and no acidic isoenzymes

The RZ (Reinheitszahl) is the absorbance ratio A_{403}/A_{275} determined at 0.5-1.0 mg/ml in deionized water. It is a measure of hemin content, not enzymatic activity. Even preparations with high RZ may have low enzymatic activity.

Autres remarques

View more information on peroxidase at **www.sigma-aldrich.com/enzymeexplorer**.

PRODUITS APPARENTÉS

Inhibiteur

S2002

Sodium azide, *ReagentPlus*®, ≥99.5%

View Pricing

Substrat

D9143

o-Dianisidine, peroxidase substrate

View Pricing

A0156

N-(4-Aminobutyl)-*N*-ethylisoluminol, ≥90%

View Pricing

A4685

Luminol sodium salt

View Pricing

A1888

2,2′-Azino-bis(3-ethylbenzothiazoline-6-sulfonic acid) diammonium salt, ≥98% (HPLC)

View Pricing

G5502

Guaiacol, oxidation indicator

View Pricing

A1661

N-(6-Aminohexyl)-N-ethylisoluminol

View Pricing

A3537

5-Aminosalicylic acid, ≥99%

View Pricing

A4382

4-Aminoantipyrine, reagent grade

View Pricing

A8264

4-Aminophthalhydrazide

View Pricing

A5754

3-Amino-9-ethylcarbazole, ≥95% (HPLC), powder

View Pricing

A8511

Luminol, ≥97% (HPLC)

View Pricing

INFORMATIONS SUR LA SÉCURITÉ

Pictograms

GHS08

Mention d'avertissement

Danger

Mentions de danger

H317 - H334

Conseils de prudence

P261 - P272 - P280 - P284 - P302 + P352 - P333 + P313

Classification des risques

Resp. Sens. 1 - Skin Sens. 1

Code de la classe de stockage

11 - Combustible Solids

WGK

WGK 3

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

Plus De Documents

Enzyme Explorer

FDS

LES CLIENTS ONT ÉGALEMENT CONSULTÉ

Sigma-Aldrich

1.16216

Peroxidase

(from horse radish) 10000 U/vial for biochemistry EC 1.11.1.7

Consulter le prix et la disponibilité

Roche

11428861001

Peroxidase (POD), activated

from horseradish

Consulter le prix et la disponibilité

ARTICLES REVUS PAR DES PAIRS

Plant Cell Wall Hydration and Plant Physiology: An Exploration of the Consequences of Direct Effects of Water Deficit on the Plant Cell Wall.

David Stuart Thompson et al.
Plants (Basel, Switzerland), 10(7) (2021-07-03)

The extensibility of synthetic polymers is routinely modulated by the addition of lower molecular weight spacing molecules known as plasticizers, and there is some evidence that water may have similar effects on plant cell walls. Furthermore, it appears that changes

Calcium promotes activity and confers heat stability on plant peroxidases.

Christoph Plieth et al.
Plant signaling & behavior, 7(6), 650-660 (2012-05-15)

In this paper we demonstrate how peroxidase (PO) activities and their heat stability correlate with the availability of free Ca(2+) ions. Calcium ions work as a molecular switch for PO activity and exert a protective function, rendering POs heat stable.

Estradiol as an antioxidant: incompatible with its physiological concentrations and function.

N Santanam et al.
Journal of lipid research, 39(11), 2111-2118 (1998-11-04)

Estradiol has been documented to inhibit the oxidation of low density lipoprotein (LDL). We show that physiological concentrations of estradiol do not inhibit the oxidation of LDL by copper. LDL samples isolated from a) premenopausal and postmenopausal women and from

From Concept to Product Development

Deshpande, S.S.
Enzyme Immunoassay, 169-171 (1996)

Zollner, H.
Handbook of Enzyme Inhibitors, 367-368 (1993)

Afficher tous les articles scientifiques apparentés

PROTOCOLES ET ARTICLES SCIENTIFIQUES

Articles

How to Work with Enzymes Supplied as Ammonium Sulfate Suspensions

Instructions for working with enzymes supplied as ammonium sulfate suspensions

Protocoles

Spectrophotometric Determination of Reinheitszahl (RZ) for Peroxidase (EC 1.11.1.7)

Reinheitszahl (RZ) is the ratio of absorbance due to hemin (A403, Soret region) to absorbance due to protein (A275).

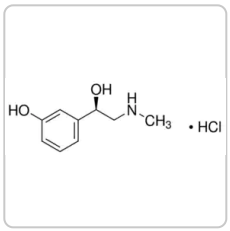
Enzymatic Assay of Peroxidase (EC 1.11.1.7) 2,2'-Azino-bis(3-Ethylbenzthiazoline-6-Sulfonic Acid) as a Substrate

To standardize a procedure for the assay of Peroxidase using 2,2'-Azino-bis(3-Ethylbenzthiazoline-6-Sulfonic Acid) as a substrate.

Enzymatic Assay of Peroxidase (EC 1.11.1.7)

This procedure is for the determination of Peroxidase enzymatic activity using Pyrogallol as the substrate.

PRODUITS CONSULTÉS RÉCEMMENT



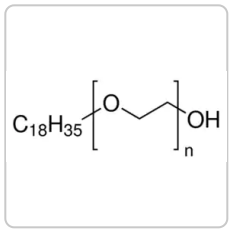
Sigma-Aldrich

P6126

(*R*)-(−)-Phenylephrine hydrochloride

powder

Consulter le prix et la disponibilité



Sigma-Aldrich

P6136

Brij® O10

Consulter le prix et la disponibilité

Évaluations

★★★★★

Soyez le premier à donner votre avis sur ce produit

Questions

Soyez le premier à poser une question

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