

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



Toutes les
photos (3)

Documents

FDS

COO/COA

 Fiche des
caractéristiques

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documents »

P8375 ► Sigma-Aldrich.

Peroxidase from horseradish

★★★★★ (0)

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

Synonyme(s):

Detection Enzyme, HRP, Peroxidase, Donor:hydrogen-peroxide oxidoreductase, Horseradish peroxidase

Numéro CAS: 9003-99-0

Numéro EC: 232-668-6

eCl@ss: 32160410

Numéro de classification
(Commission des enzymes): 1.11.1.7 (BRENDA, IUBMB)

Numéro MDL: MFCD00071339

NACRES: NA.54

Référence	Conditionnement	Disponibilité	Prix	Quantité
P8375-1KU	1000 UNITS	✓ Disponible pour expédition le 07 octobre 2022	Détails... 50,60 €	− +
P8375-2KU	2000 UNITS	✓ Only 6 left in stock (more on the way)	Détails... 66,70 €	− +
P8375-5KU	5000 UNITS	✓ Disponible pour expédition le 07 octobre 2022	Détails... 138,00 €	− +
P8375-10KU	10000 UNITS	✓ Disponible pour expédition le 07 octobre 2022	Détails... 254,00 €	− +
P8375-25KU	25000 UNITS	✓ Date d'expédition estimée le 21 octobre 2022	442,00 €	− +

Ajouter au panier

Niveau de qualité	300
Forme	essentially salt-free, lyophilized powder
specific activity	≥250 units/mg solid (using pyrogallol)
Poids mol.	~44 kDa
Solubilité	0.1 M phosphate buffer: soluble 10 mg/mL, clear, orange to red (pH 6.0)
Rapport des absorbances	RZ 2.5-4.0
application(s)	diagnostic assay manufacturing
Temp. de stockage	2-8°C

Vous recherchez des produits similaires ? Visitez [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 ferroporphyrin 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*) and belongs to the ferroporphyrin group of peroxidases.. 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 P8375, type VI, is an essentially salt free lyophilized powder. It is commonly used to determine amounts of glucose and peroxides in solution. It has been used to study sensory input of cervical spinal cord neurons.

The enzyme has been used to develop a thermostable soybean peroxidase-based biosensor by cross-linking and electrically 'wiring' the enzyme through a redox-conducting hydrogel to a glassy carbon electrode. It has also been used to assay the oxidation of low density lipoprotein.

Conditionnement

1000, 2000 units in glass bottle

5000 units in poly bottle

10000, 25000, 100000, 250000 units in glass bottle

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 including glutaraldehyde, periodate oxidation, through 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 and hence, it is the most desired label. Also, its glycosylation leads to lower non-specific binding.

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. Known inhibitors are 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+} , and Pb^{2+} ions.

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.

Remarque sur l'analyse

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 prudenceP261 - P272 - P280 - P284 -
P302 + P352 - P304 + P340 +
P312**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](#)

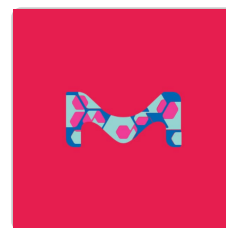
LES CLIENTS ONT ÉGALEMENT CONSULTÉ



Roche

10108090001**Peroxidase (POD)**

grade I, from horseradish

[Consulter le prix et la disponibilité](#)

Sigma-Aldrich

1.16216**Peroxidase**

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

[Consulter le prix et la disponibilité](#)

QUESTIONS FRÉQUEMMENT POSÉES (FAQ)

Which document(s) contains shelf-life or expiration date information for a given product?

If available for a given product, the recommended re-test date or the expiration date can be found on the Certificate of Analysis.

How do I get lot-specific information or a Certificate of Analysis?

The lot specific COA document can be found by entering the lot number above under the "Documents" section.

How do I convert units of Peroxidase from horseradish, Product P8375, to solid?

The activity listed on the Certificate of Analysis for each lot can be used to convert from units to milligrams of solid.

What is the optimal pH range of Peroxidase from horseradish, Product P8375?

The optimal pH range for product P8375 is 6.0 - 6.5.

What can you tell me about the stability of Peroxidase from horseradish, Product P8375, (as is, in suspension and in solution)?

This product is stable as a powder, kept refrigerated. See the certificate of analysis for a lot-specific recommended retest date. It is also stable as a crystalline suspension of 3.2 M (NH₄)₂SO₄ solution containing potassium phosphate buffer, pH 6.0 (see Product No. P6140). It is reasonably stable in solution in phosphate buffer. We have found that at 10 mg/mL in 0.1 phosphate buffer, pH 6.0, solutions kept frozen at -20°C lose less than 2% of their activity per week.

How do I find price and availability?

There are several ways to find pricing and availability for our products. Once you log onto our website, you will find the price and availability displayed on the product detail page. You can contact any of our Customer Sales and Service offices to receive a quote. USA customers: 1-800-325-3010 or view [local office numbers](#).

What is the Department of Transportation shipping information for this product?

Transportation information can be found in Section 14 of the product's (M)SDS. To access the shipping information for this material, use the link on the product detail page for the product.

My question is not addressed here, how can I contact Technical Service for assistance?

Ask a Scientist [here](#).

ARTICLES REVUS PAR DES PAIRS

[Silk fibroin as an additive for cell-free protein synthesis.](#)

Marilyn S Lee et al.

Synthetic and systems biotechnology, 5(3), 145-154 (2020-07-09)

Cell-free systems contain many proteins and metabolites required for complex functions such as transcription and translation or multi-step metabolic conversions. Research into expanding the delivery of these systems by drying or by embedding into other materials is enabling new applications

A family AA5_2 carbohydrate oxidase from *Penicillium rubens* displays functional overlap across the AA5 family.

Filip Møllerup et al.

PloS one, 14(5), e0216546-e0216546 (2019-05-16)

Copper radical alcohol oxidases belonging to auxiliary activity family 5, subfamily 2 (AA5_2) catalyze the oxidation of galactose and galactosides, as well as aliphatic alcohols. Despite their broad applied potential, so far very few AA5_2 members have been biochemically characterized.

Engineering Smut Resistance in Maize by Site-Directed Mutagenesis of LIPOXYGENASE 3.

Krishna Mohan Pathi et al.

Frontiers in plant science, 11, 543895-543895 (2020-11-17)

Biotic stresses caused by microbial pathogens impair crop yield and quality if not restricted by expensive and often ecologically problematic pesticides. For a sustainable agriculture of tomorrow, breeding or engineering of pathogen-resistant crop varieties is therefore a major cornerstone. Maize

A Thermostable Hydrogen Peroxide Sensor Based on "Wiring" of Soybean Peroxidase

Analytical Chemistry, 67 (23), 4247-4249 (1995)

Peroxidase-dependent metal-independent oxidation of low density lipoprotein in vitro: a model for in vivo oxidation?

E Wieland et al.

Proceedings of the National Academy of Sciences of the United States of America, 90(13), 5929-5933 (1993-07-01)

Oxidative modification of low density lipoprotein is believed to be an important pathway by which the lipoprotein becomes atherogenic. The in vitro systems for oxidative modification of low density lipoprotein thus far described all appear to depend upon the presence

Afficher tous les articles scientifiques apparentés

PROTOCOLES ET ARTICLES SCIENTIFIQUES

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).

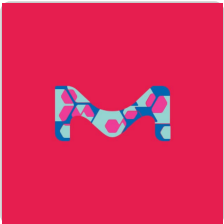
Enzymatic Assay of Peroxidase (EC 1.11.1.7) 2,2'-Azino-bis(3-Ethylbenzthiazoline-6-Sulfonic Acid) as a Substrate

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



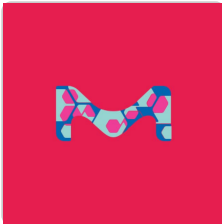
Sigma-Aldrich

P8340

Protease Inhibitor Cocktail

for use with mammalian cell and tissue extracts, DMSO solution

[Consulter le prix et la disponibilité](#)



Sigma-Aldrich

P8374

Pyoverdines-Fe complex

from *Pseudomonas fluorescens*, >90% (HPLC)

[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

SERVICE TECHNIQUE

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..

Contactez notre Service technique

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