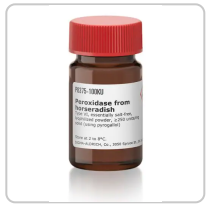

Toutes les photos (3)

Documents

FDS

COO/COA

Fiche des caractéristiques

Plus de 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 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
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 €	− +

Référence	Conditionnement	Disponibilité	Prix	Quantité
P8375-100KU	100000 UNITS	Date d'expédition estimée le 24 novembre 2022	1 680,00 €	− +
P8375-250KU	250000 UNITS	Only 3 left in stock (more on the way) Détails...	3 560,00 €	− +

Demander une commande en gros

Ajouter au panier

PRODUITS RECOMMANDÉS

Sigma-Aldrich

P6782

Peroxidase from horseradish

Type VI-A, essentially salt-free, lyophilized powder, 950-2000 units/mg solid (using ABTS), ≥250 units/mg solid...

Consulter le prix et la disponibilité

Sigma-Aldrich

P8250

Peroxidase from horseradish

Type II, essentially salt-free, lyophilized powder, 150-250 units/mg solid (using pyrogallol)

Consulter le prix et la disponibilité

PROPRIÉTÉS

Type	Type VI

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 ? 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*) and belongs to the ferroprotoporphyrin 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 prudence
P261 - 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

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

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

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

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

Filip Mollerup 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

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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

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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).

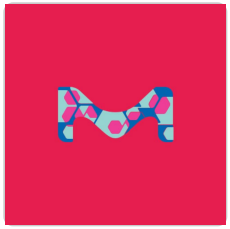
Enzymatic Assay of Peroxidase (EC 1.11.1.7) 2,2'-Azino-bis(3-Ethylbenzthiazoline-6-Sulfonic Acid) as a Substrate

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



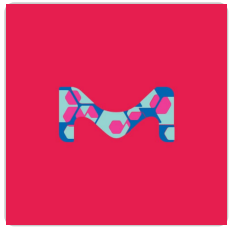
Sigma-Aldrich

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..

Contacter notre Service technique

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Que pouvons-nous faire pour améliorer cette page spécifique de notre site Internet ?

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