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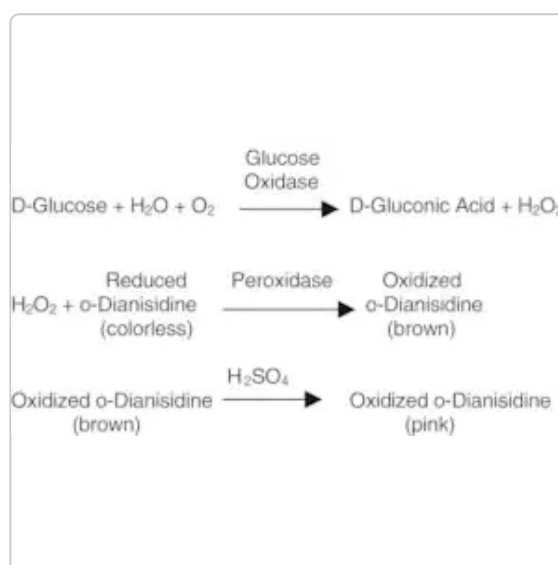


G2133 ▶ **Sigma-Aldrich**

Glucose Oxidase from *Aspergillus niger*

★★★★★ (0)

Type VII, lyophilized powder, $\geq 100,000$ units/g solid (without added oxygen)



[Toutes les photos](#) (1)

Synonyme(s):

β -D-Glucose:oxygen 1-oxidoreductase, G.Od., GOx

Numéro CAS:

9001-37-0

Numéro de classification (Commission des enzymes):

1.1.3.4 (BRENDA, IUBMB)

Numéro EC:

232-601-0

Numéro MDL:

MFC00131182

Select an Option

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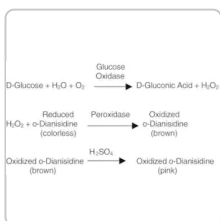
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Type X-S, lyophilized powder, 100,000-250,000 units/g solid (without added oxygen)

[Consulter le prix et la disponibilité](#)

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[GET YOURS HERE](#)**Type**

Type VII

Niveau de qualité

200

Forme

lyophilized powder

specific activity $\geq 100,000$ units/g solid (without added oxygen)**Poids mol.**

160 kDa

Ne contient pas

extender

CompositionProtein, $\geq 60\%$ **application(s)**

diagnostic assay manufacturing

Activité étrangèreCatalase ≤ 10 Sigma units/mg protein**Expédié(e)s dans**

wet ice

Temp. de stockage -20°C

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DESCRIPTION

Description générale

Molecular Weight: 160 kDa (gel filtration)

pI: 4.2

Extinction coefficient: $E^{1\%} = 16.7$ (280 nm)

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enzyme is a glycoprotein containing ~16% neutral sugar and 2% amino sugars. The enzyme also contains 3 cysteine residues and 8 potential sites for N-linked glycosylation.

Glucose oxidase is capable of oxidizing D-aldohehexoses, monodeoxy-D-glucoses, and methyl-D-glucoses at varying rates.

The pH optimum for glucose oxidase is 5.5, while it has a broad activity range of pH 4-7. Glucose oxidase is specific for β -D-glucose with a K_M of 33-110 mM.

Glucose oxidase does not require any activators, but it is inhibited by Ag^+ , Hg^{2+} , Cu^{2+} , phenylmercuric acetate, and *p*-chloromercuribenzoate. It is not inhibited by the nonmetallic SH reagents: N-ethylmaleimide, iodoacetate, and iodoacetamide.

Glucose oxidase can be utilized in the enzymatic determination of D-glucose in solution. As glucose oxidase oxidizes β -D-glucose to D-gluconolactate and hydrogen peroxide, horseradish peroxidase is often used as the coupling enzyme for glucose determination. Although glucose oxidase is specific for β -D-glucose, solutions of D-glucose can be quantified as α -D-glucose will mutarotate to β -D-glucose as the β -D-glucose is consumed by the enzymatic reaction.

Application

Several publications cite use of the G2133 glucose oxidase in their protocols and in various applications, such as the following:

a) Biosensor development:

- Diazo-resin nanofilm coatings on alginate microspheres: Srivastava, R. *et al.*, *Biotechnol. Bioeng.*, **91(1)**, 124-131 (2005).
- Paper-based glucose biosensor: Lankelma, J. *et al.*, *Anal. Chem.*, **84(9)**, 417-4152 (2012)
- Microfluidic device with glucose oxidase immobilized on hydrogel for glucose analysis of blood: He, R.-Y. *et al.*, *RSC Adv.*, **9**, 32367-32374 (2019).

b) Single-molecule FRET study of human RAD51 filament formation: Subramanyam, S. *et al.*, *Methods Enzymol.*, **600**, 201-232 (2018).

c) Enzymatic fuel-cells with chitosan-based membranes: Bahar, T., and Yazici, M.S., *Electroanalysis*, **32(6)**, 1304-1314 (2020).

Glucose oxidase is widely used in the food and pharmaceutical industries as well as a major component of glucose biosensors.

Actions biochimiques/physiologiques

Glucose oxidase catalyses the oxidation of β -D-glucose to D-glucono- β -lactone and hydrogen peroxide, with molecular oxygen as an electron acceptor.

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[GET YOURS HERE](#)**Définition de l'unité**

One unit will oxidize 1.0 μ mole of β -D-glucose to D-gluconolactone and H_2O_2 per min at pH 5.1 at 35 °C, equivalent to an O_2 uptake of 22.4 μ l per min. If the reaction mixture is saturated with oxygen, the activity may increase by up to 100%.

Forme physique

Lyophilized powder containing phosphate buffer salts and sodium chloride

Remarque sur l'analyse

Protein determined by biuret.

INFORMATIONS SUR LA SÉCURITÉ**Pictograms****GHS08****Mention d'avertissement**

Danger

Mentions de danger**H334****Conseils de prudence****P261 - P284 - P304 + P340 + P312 - P501****Classification des risques**

Resp. Sens. 1

Code de la classe de stockage

11 - Combustible Solids

WGK

WGK 1

Équipement de protection individuelle

dust mask type N95 (US), Eyeshields, Faceshields, Gloves

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e.g. 023J5431

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Numéro de lot

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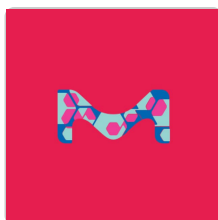
Rechercher

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[FDS](#)

LES CLIENTS ONT ÉGALEMENT CONSULTÉ



Sigma-Aldrich

C30

Catalase from bovine liver

aqueous suspension, 10,000-40,000 units/mg protein

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ARTICLES REVUS PAR DES PAIRS

The Na/K-ATPase Oxidant Amplification Loop Regulates Aging.

Komal Sodhi et al.

Scientific reports, 8(1), 9721-9721 (2018-06-28)

As aging involves oxidant injury, we examined the role of the recently described Na/K-ATPase oxidant amplification loop (NKAL). First, C57Bl6 old mice were given a western diet to stimulate oxidant injury or pNaKtide to antagonize the NKAL. The western diet

MiTF regulates cellular response to reactive oxygen species through transcriptional regulation of APE-1/Ref-1.

Feng Liu et al.

The Journal of investigative dermatology, 129(2), 422-431 (2008-10-31)

Microphthalmia-associated transcription factor (MiTF) is a key transcription factor for melanocyte lineage survival. Most previous work on this gene has been focused on its role in development. A role in carcinogenesis has emerged recently, but the mechanism is unclear. We

In situ readout of DNA barcodes and single base edits facilitated by in vitro transcription.

Amjad Askary et al.

Nature biotechnology, 38(1), 66-75 (2019-11-20)

Molecular barcoding technologies that uniquely identify single cells are hampered by limitations in barcode measurement. Readout by sequencing does not preserve the spatial organization of cells in tissues, whereas imaging methods preserve spatial structure but are less sensitive to barcode

CDK7 Inhibition Potentiates Genome Instability Triggering Anti-tumor Immunity in Small Cell Lung Cancer.

Hua Zhang et al.

Cancer cell, 37(1), 37-54 (2019-12-31)

Cyclin-dependent kinase 7 (CDK7) is a central regulator of the cell cycle and gene transcription. However, little is known about its impact on genomic instability and cancer immunity. Using a selective CDK7 inhibitor, YKL-5-124, we demonstrated that CDK7 inhibition predominately

Neuronal Small RNAs Control Behavior Transgenerationally.

Rachel Posner et al.

Cell, 177(7), 1814-1826 (2019-06-11)

It is unknown whether the activity of the nervous system can be inherited. In *Caenorhabditis elegans* nematodes, parental responses can transmit heritable small RNAs that regulate gene expression transgenerationally. In this study, we show that a neuronal process can impact

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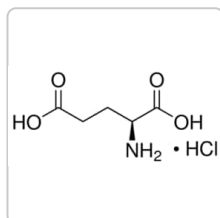


Protocoles

Enzymatic Assay of Glucose Oxidase

To measure glucose oxidase activity, a continuous spectrophotometric rate-determination assay is used at 500 nm. One unit will oxidize 1 μ mol of β -D-glucose to D-gluconolactone and hydrogen peroxide per minute.

PRODUITS CONSULTÉS RÉCEMMENT



Sigma-Aldrich

G2128

L-Glutamic acid hydrochloride

≥99% (HPLC)

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