BGALA-RO **Roche**

β-Glucuronidase/Arylsulfatase

from *Helix pomatia*

Synonyme(s):
arylsulfatase/β-glucuronidase, sulfatase/β-glucuronidase

Toutes les photos (1)

Documents

FDS

COO/COA

Référence	Conditionnement	Disponibilité	Prix	Quantité
10127698001	10 ML	Date d'expédition estimée le 03 octobre 2022 Détails...	301,00 €	− +

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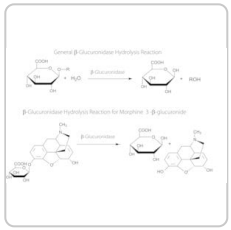
PRODUITS RECOMMANDÉS

Sigma-Aldrich

1.04114

ß-Glucuronidase/aryl sulfatase

(from Helix pomatia) stabilized aqueous solution for biochemistry EC 3.2.1.31 + EC 3.1.6.1



Sigma-Aldrich

G7017

β-Glucuronidase from *Helix pomatia*

Type HP-2, aqueous solution, ≥100,000 units/mL

Consulter le prix et la disponibilité

Consulter le prix et la disponibilité

PROPRIÉTÉS

Niveau de qualité	100
Forme	solution
Conditionnement	pkg of 10 mL (10127698001) pkg of 2 mL (10127060001)
manufacturer/tradename	Roche
pH optimal	4.5-5.0
Expédié(e)(s) dans	wet ice
Temp. de stockage	2-8°C

Catégories apparentées

Drug Analysis Enzymes

Roche® Life Science Products

DESCRIPTION

Description générale

β-Glucuronidase/Arylsulfatase from Helix pomatiais is the most widely used enzyme preparation containing sulfatase activity and has a very broad specificity. It is a crude mixture of enzymes and the preparation does not involve any kind of chromatographic separation. This preparation contains both glucuronidase and sulfatase activity. Enzymatic hydrolysis prior to detection is essential for achieving high sensitivity during analysis. After hydrolysis, the sample may be analyzed by mass spectroscopy, gas chromatography, HPLC, or immunoassays. For doping analysis, the sulfatase activity in addition to the glucuronidase activity is essential for the detection of all drug conjugates present in the sample. β-Glucuronidase/Arylsulfatase is also used for the enzymatic hydrolysis of glucuronides and sulfate esters in biological fluids and primarily urine.

Spécificité

β-Glucuronidase/Arylsulfatase shows a broad specificity for many kinds of β-glucuronides and sulfate esters.

Specificity of β-Glucuronidase:
The glycosides that β-D-glucuronic acid forms with a variety of compounds containing hydroxyl groups hydrolyze readily in the presence of β-glucuronidase.

- Such compounds include steroids, such as estriol (K_m = 0.42 mM, pH 4.5), androsterone, pregnanediol, tetrahydrocortisone,
- phenols, such as phenolphthalein (K_m = 0.39 mM), 4-nitro-phenol, 4-methylumbelliferone,
- drugs such as chloramphenicol and tetrahydrocannabinols,
- and metabolites such as thyroxine and bilirubin.

Polysaccharides that contain β-glucuronic acid residues, such as hyaluronic acid, are also hydrolyzed.
β-Glucuronidase is highly specific for the carbohydrate part: neither α-glucosides nor β-glucosiduronic acids are hydrolyzed. However, the nature of the residue linked to the β-glucuronic acid residue is hardly important at all.

Specific activity**:** 5.5 U/ml at +38°C with phenolphthalein-β-glucuronide as the substrate (4.5 U/ml at +25°C with 4-nitro-phenyl-β-D-glucuronide as the substrate = 100,000 Fishman units/ml at +38°C with phenolphthalein-β-glucuronide as the substrate). 1 Fishman unit releases 1 µg phenolphthalein from phenolphthalein-β-glucuronide in 1 hour at +38°C.

Specificity of Acrylsulfatase:
Sulfate esters of many phenols are hydrolysed in the presence of arylsulfatase. Examples are steroid sulfates such as estronesulfate, 4-nitrophenyl hydrogen sulfate (K_m = 1.8 mM, pH 7.3), 4-nitro-pyrocatechol 2-sulfate (K_m = 1.25 mM, pH 7.5), and phenolphthalein disulfate.

Specific activity: 2.6 U/ml at +38°C with phenolphthalein disulfate as the substrate (14 U/ml at +25°C with 4-nitrophenyl sulfate as the substrate = 800,000 Roy units/ml at +38°C with 2-hydroxy-5-nitrophenyl sulfate as the substrate). 1 Roy unit releases 1 µg 2-hydroxy-5-nitrophenyl sulfate in 1 hour at +38°C.

Specificity of β-Glucuronidase:
The glycosides that β-D-glucuronic acid forms with a variety of compounds containing hydroxyl groups hydrolyze readily in the presence of β-glucuronidase.

- Such compounds include steroids, such as estriol (K_m = 0.42 mM, pH 4.5), androsterone, pregnanediol, tetrahydrocortisone,
- phenols, such as phenolphthalein (K_m = 0.39 mM), 4-nitro-phenol, 4-methylumbelliferone,
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Application

β-Glucuronidase/Arylsulfatase has been used extensively in research and analytic laboratories for the simultaneous enzymatic hydrolysis of steroid β-glucuronides and sulfate esters. The enzyme is used during sample preparation to cleave off glucuronides and sulfate esters prior to GC-MS, HPLC, immunoassays, or other analytical methods, including doping analysis and hydrolysis of steroid conjugates (glucuronides) and sulfate esters in urine and other body fluids.

Caractéristiques et avantages

- Deconjugate and detect both glucuronides and sulfate esters.
- Quickly screen for steroids, benzodiazepines, cannabinoids, opioids, and other drugs.

Composants

EC 3.1.6.1 & 3.2.1.31

Principe

Glucuronidation is one of the basic principles of metabolism. Most substances presented to the human body undergo metabolic processing that includes conjugation with glucuronic acid by UDP-glucuronosyltransferases (UGTs). This enzyme catalyzes the transfer of a glucuronyl group to many biological and pharmacologically active endogenous and exogenous molecules. Glucuronide is in general more soluble, less toxic, and more easily excreted by the human body compared to the original molecule. In addition, sulfation of the drug or chemical substance by sulfotransferases in the human body may occur. Sulfation in general, is less predictable than glucuronidation since many isoenzymes of sulfotransferases exist, and there are individual differences in the ratio of glucuronidation versus sulfation of the substance.

Définition de l'unité

Glucuronidase:
Standard unit
The standard unit of β-glucuronidase activity is the enzyme activity that increases the rate of release of 4-nitrophenol from 4-nitrophenyl β-D-glucosiduronic acid at a temperature of +25 °C and pH 4.5 by 1 µM.
Phenolphthalein unit
The phenolphthalein unit of β-glucuronidase activity is the enzyme activity that increases the rate of release of phenolphthalein

from phenolphthalein β-D-glucosiduronic acid at a temperature of +38 °C by 1 µM.
Approx. 4.5 standard units are equivalent to 5.5 phenolphthalein units.
Fishman unit
The Fishman unit of β-glucuronidase activity is the enzyme activity that increases the rate of release of phenolphthalein from phenolphthalein β-D-glucosiduronic acid at a temperature of +38 °C by 1 µg.
Approx. 1 standard unit is equivalent to 22,000 Fishman units (1 phenolphthalein unit is equivalent to 19,000 Fishman units).
Arylsulfatase:
Standard unit
The standard unit of arylsulfatase activity is the enzyme activity that increases the rate of release of 4-nitrophenol from 4-nitrophenyl sulfate at a temperature of +25 °C and pH 6.2 by 1 µM.
Phenolphthalein unit
The phenolphthalein unit of arylsulfatase activity is the enzyme activity that increases the rate of release of phenolphthalein from phenolphthalein disulfate at a temperature of +38 °C and pH 6.2 by 1 µM.
Approx. 5.4 standard units are equivalent to 1 phenolphthalein unit.
Roy unit
The Roy unit of arylsulfatase activity is the enzyme activity that increases the rate of release of 4-nitropyrocatechol from 2-hydroxy-5-nitrophenyl hydrogen sulfate (4-nitropyrocatechol 2-sulfate) at a temperature of +38 °C and pH 6.2 by 1 µg.
Approx. 1 standard unit is equivalent to 57,000 Roy units (1 phenolphthalein unit is equivalent to 308,000 Roy units).

Forme physique

Solution in saline, stabilized

Notes préparatoires

Working concentration: In many applications the product can be diluted with water immediately before use or employed undiluted.
Note: The present β-glucuronidase/arylsulfatase preparation is very concentrated and must be diluted for some applications. Moreover, in the preparation of protoplasts, the precise concentration to use for a given strain of yeast must be found empirically.
Storage conditions (working solution): ***Note:*** Aliquot portions of the diluted preparation may be stored at -15 to -25 °C; they

should not be thawed and refrozen more than a time or two, and storage at the lower temperature does not lengthen their life beyond that of the product kept at 2 to 8 °C.

Autres remarques

For life science research only. Not for use in diagnostic procedures.

INFORMATIONS SUR LA SÉCURITÉ

Code de la classe de stockage	WGK	Flash Point(F)	Point d'éclair C
12 - Non Combustible Liquids	nwg	No data available	No data available

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).

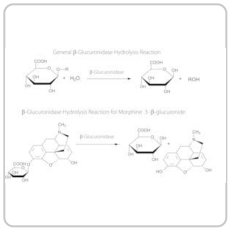
Numéro de lot

e.g. 023J5431

Comment saisir un numéro de lot (COO)

Rechercher

LES CLIENTS ONT ÉGALEMENT CONSULTÉ



Sigma-Aldrich

G8885

β-Glucuronidase from *Helix pomatia*

Type H-3, aqueous solution, ≥90,000 units/mL

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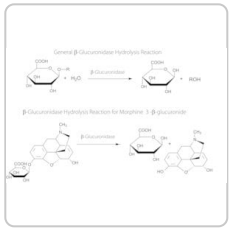

Sigma-Aldrich

G0762

β-Glucuronidase from *Helix pomatia*

Type H-3AF, aqueous solution, ≥60,000 units/mL

Consulter le prix et la disponibilité

ARTICLES REVUS PAR DES PAIRS

Absorption, metabolism, and excretion of darunavir, a new protease inhibitor, administered alone and with low-dose ritonavir in healthy subjects.

Marc Vermeir et al.
Drug metabolism and disposition: the biological fate of chemicals, 37(4), 809-820 (2009-01-10)

Absorption, metabolism, and excretion of darunavir, an inhibitor of human immunodeficiency virus protease, was studied in eight healthy male subjects after a single oral dose of 400 mg of [(14)C]darunavir given alone (unboosted subjects) or with ritonavir [100 mg b.i.d.

Optimization and validation of a liquid chromatography tandem mass spectrometry (LC/MSn) method for analysis of corticosteroids in bovine liver: evaluation of Keyhole Limpet beta-glucuronidase/sulfatase enzyme extract.

K Croes et al.
Journal of chromatography. B, Analytical technologies in the biomedical and life sciences, 877(7), 635-644 (2009-02-13)

A liquid chromatography tandem mass spectrometry (LC/MS(n)) method for the determination of 12 corticosteroids in bovine liver has been optimized and validated in accordance with the European Commission Decision 2002/657/EC. A bovine liver sample was deconjugated with beta-glucuronidase/sulfatase enzyme, extracted

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Isoflavones modulate the glucuronidation of estradiol in human liver microsomes.

Erika Pfeiffer et al.
Carcinogenesis, 26(12), 2172-2178 (2005-07-30)

Soy food has been associated with a reduced incidence of hormonal cancer in Asian countries, and the soy isoflavones daidzein and genistein are believed to protect against tumors induced by the endogenous hormone 17beta-estradiol (E2). In the present study, we

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3,3'-Diindolylmethane Exhibits Significant Metabolism after Oral Dosing in Humans.

Monica L Vermillion Maier et al.
Drug metabolism and disposition: the biological fate of chemicals, 49(8), 694-705 (2021-05-27)

3,3'-Diindolylmethane (DIM), a major phytochemical derived from ingestion of cruciferous vegetables, is also a dietary supplement. In preclinical models, DIM is an effective cancer chemopreventive agent and has been studied in a number of clinical trials. Previous pharmacokinetic studies in

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grade I, from yeast

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