

Product Information

β -Glucuronidase

Type H-5

from *Helix pomatia*

Product Number **G 1512**

Storage Temperature $-20\text{ }^{\circ}\text{C}$

CAS# 9001-45-0

EC 3.2.1.31

Synonyms: β -D-Glucuronide glucuronosohydrolase

Product Description

Glucuronidation, conjugation with glucuronic acid, by the human UDP-glucuronosyltransferase (UGT) family of enzymes plays an important role in the metabolic fate of many drugs and other xenobiotics. This biosynthetic reaction also has a role in the conjugation and excretion of endogenous substrates, such as steroids, bilirubin, and bile acids.¹ UGT activity results in the conjugation of glucuronic acid to substrates containing sulfhydryl, hydroxyl, aromatic amino, or carboxylic acid moieties. The glucuronides formed are more polar (water soluble) than the parent organic substrate and are generally excreted through the kidney.

β -glucuronidase catalyzes the reaction:

β -D-glucuronoside + $\text{H}_2\text{O} \leftrightarrow$ an alcohol + D-glucuronate

β -Glucuronidase Type H-5 has been used for the enzymatic hydrolysis of these metabolites from urine,² plasma,^{3,4} serum,⁵ and bile⁶ prior to analysis by various means.

β -Glucuronidase Type H-5 from *Helix pomatia* is a partially purified lyophilized powder of enzymes derived from the Roman snail. Many β -glucuronidases derived from mollusks also contain sulfatase activity. For this reason, sulfatase activity of this preparation is also determined.

Optimal pH:

glucuronidase activity

4.5 to 5.0

sulfatase activity

~6.2

Inhibitors:

D-glucuronic acid
(Product No. G 5269)
D-galacturonic acid
D-glucaro-1, 4-lactone

Substrates:

5-Bromo-6-chloro-3-indolyl β -D-glucuronide	B 4532
6-Bromo-2-naphthyl β -D-glucuronide	B 6519
5-Bromo-4-chloro-3-indolyl β -D-glucuronide sodium salt tablet	B 8174
8-Hydroxyquinoline glucuronide	H 1254
4-Methylumbelliferyl β -D-glucuronide	M 5664
4-Nitrophenyl β -D-glucuronide	73677

Glucuronidase Activity:

minimum 400,000 units/gm solid

Unit Definition: One Sigma or modified Fishman unit will liberate 1.0 μg of phenolphthalein from phenolphthalein glucuronide per hour at $37\text{ }^{\circ}\text{C}$ at pH 5.0 (30 min assay).

Sulfatase Activity: $\leq 40,000$ units/gm solid

Unit Definition: One unit of sulfatase will hydrolyze 1.0 μmole p-nitrocatechol sulfate per hour at pH 5.0 at $37\text{ }^{\circ}\text{C}$.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

The product, as supplied, should be stored at -20 °C.

References

1. Tephly, T.R., *et al.*, *Adv. Pharmacol.*, **42**, 343-346 (1998).
2. Rodrigues, A.D., *et al.*, *Drug Met. Disp.*, **31**, 224-232 (2003).
3. Piskula, M.K., *et al.*, *FEBS Lett.*, **447**, 287-291 (1999).
4. Moon, J-H, *et al.*, *Am. J. Phys. Reg., Int. Comp. Phys.*, **279**, R461-R467 (2000).
5. Chang, H.C., *et al.*, *J. Food Drug Anal.*, **12**, 161-166 (2004).
6. Chang, M., *et al.*, *Drug Met. Disp.*, **25**, 814-827 (1997).

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