Product Information

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β-Glucuronidase
Type HP-2
from *Helix pomatia*

Catalog Number **G7017**
Storage Temperature 2–8 °C

CAS RN 9001-45-0
EC 3.2.1.31
Synonym: 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 + H_2O ↔ an alcohol + D-glucuronate

β-Glucuronidase Type HP-2 has been used for the enzymatic hydrolysis of glucuronides from urine,[2-4] blood,[3] and serum[4] prior to analysis by enzyme immunoassay, mass spectrometry, high performance liquid chromatography, or other means. Amounts used for the enzymatic hydrolysis of glucuronides present in urine ranged from about 300–50,000 units/ml.[2-4] Approximately 70 units of glucuronidase were used per ml of serum;[4] whereas, 5,000 units of the enzyme were used per ml of plasma.[3] The exact amount needed will depend on the specific conditions used and must be determined empirically.

β-Glucuronidase Type HP-2 from *Helix pomatia* is a crude solution 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	(Catalog No. G5269)
D-galacturonic acid	
D-glucaro-1,4-lactone	

Substrates:

5-Bromo-6-chloro-3-indolyl β-D-glucuronide	B4532
6-Bromo-2-naphthyl β-D-glucuronide	
5-Bromo-4-chloro-3-indolyl β-D-glucuronide sodium salt tablet	B8174
8-Hydroxyquinoline glucuronide	H1254
4-Methylumbelliferyl β-D-glucuronide	M5664
4-Nitrophenyl β-D-glucuronide	73677

Glucuronidase Activity: ≥100,000 units/ml

Unit Definition: One Sigma or modified Fishman unit will liberate 1.0 μg of phenolphthalein from phenolphthalein glucuronide per hour at 37 °C at pH 5.0 (30 min assay).

Sulfatase Activity: ≤7,500 units/ml

Unit Definition: One unit of sulfatase will hydrolyze 1.0 μmole p-nitrocatechol sulfate per hour at pH 5.0 at 37 °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
Store the product at 2–8 °C. When stored at 2–8 °C, the enzyme retains activity for at least one year.

References

1. Tephly, T.R., *et al*., Adv. Pharmacol., **42**, 343-346 (1998).
2. Van Bocxlaer, J.F., *et al*., Clin. Chem., **43**, 62-634 (1997).
3. Pizarro, N., *et al*., J. Anal. Toxicol., **26**, 157-165 (2002).
4. Yang, C-Y, *et al*., J. Food and Drug Analysis, **10**, 143-148 (2002).

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