PRODUCT INFORMATION

GBA3 (human, recombinant)

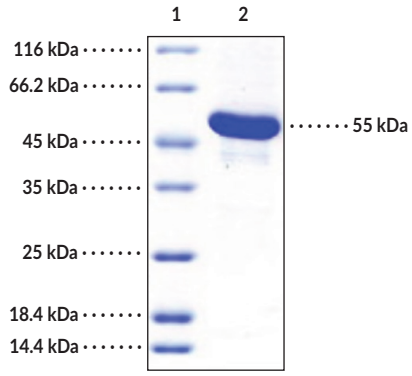
Item No. 33991

Overview and Properties

Synonyms:	cBGL1, Cytosolic β-Glucosidase, Cytosolic β-Glucosidase-like Protein-1, Klotho-related Protein, KLrP
Source:	Active recombinant human C-terminal His-tagged GBA3 expressed in insect cells
Amino Acids:	1-469 (full length)
Uniprot No.:	Q9H227
Molecular Weight:	55 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥90% estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile 20 mM Tris, 300 mM sodium chloride, pH 7.5, with 10% glycerol, 5% trehalose, 5% mannitol, and 0.01% tween-80
Endotoxin Testing:	<1.0 EU/µg, determined by the LAL endotoxin assay
Protein Concentration:	***batch specific*** mg/ml
Activity:	Measured by its ability to hydrolyze 4-methylumbelliferyl-β-D glucopyranoside.
Specific Activity:	***batch specific*** U/mg

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers
Lane 2: GBA3

SDS-PAGE Analysis of GBA3. This protein has a calculated molecular weight of 55 kDa.

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Description

Cytosolic β-glucosidase (GBA3) is a neutral β-glucocerebrosidase.[1,2] It is composed of a single glycoside hydrolase domain and hydrolyzes glucosyl- and galactosylceramides. GBA3 is expressed in the liver, small intestine, colon, spleen, and kidneys.[3] *In vitro*, knockdown of GBA3 inhibits mitotic arrest and promotes resistance to paclitaxel (Item No. 10461) in colon cancer cells.[4] Tumor levels of GBA3 are lower in patients with hepatocellular carcinoma and decreased expression is associated with poor prognosis.[5] Unlike *GBA1*, polymorphisms in *GBA3* are not associated with Gaucher disease, a lysosomal storage disorder.[6] Cayman's GBA3 (human, recombinant) protein can be used for enzyme activity assays. This protein consists of 480 amino acids and has a calculated molecular weight of 55 kDa.

References

1. Hayashi, Y. and Ito, M. Klotho-related protein KLrP: Structure and functions. *Vitamins and Hormones* **101**, 1-16 (2016).
2. Astudillo, L., Therville, N., Colacios, C., *et al*. Glucosylceramidases and malignancies in mammals. *Biochimie* **125**, 267-280 (2016).
3. Yahata, K., Mori, K., Arai, H., *et al*. Molecular cloning and expression of a novel klotho-related protein. *J. Mol. Med. (Berl.)* **78(7)**, 389-394 (2000).
4. Swanton, C., Marani, M., Pardo, O., *et al*. Regulators of mitotic arrest and ceramide metabolism are determinants of sensitivity to paclitaxel and other chemotherapeutic drugs. *Cancer Cell* **11(6)**, 498-512 (2007).
5. Ying, J.F., Zhang, Y.N., Song, S.S., *et al*. Decreased expression of GBA3 correlates with a poor prognosis in hepatocellular carcinoma patients. *Neoplasma* **67(5)**, 1139-1145 (2020).
6. Beutler, E., Beutler, L., and West, C. Mutations in the gene encoding cytosolic β-glucosidase in Gaucher disease. *J. Lab. Clin. Med*. **144(2)**, 65-68 (2004).

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