

Product Information

Heparanase-1, pre-activated, human
recombinant, expressed in HEK 293 cells

Product Number **SAE0116**
Storage Temperature $-20\text{ }^{\circ}\text{C}$

EC 3.2.1.166

Synonyms: Endo-glucuronidase, HPA1, HPA, HPR1, HPSE1, HPSE, HSE1, Heparanase

Product Description

Heparanase-1 (heparanase) is the only heparan sulfate-degrading endoglycosidase.¹ It is involved in the regulation of multiple biological processes that increase tumor growth, metastasis, angiogenesis, and inflammation.¹ Heparanase is involved in ECM remodeling and release of heparan sulfate-linked biological molecules, including cytokines and growth factors.² Heparanase cleaves the heparan sulfate side chains of heparan sulfate proteoglycans into fragments of 10–20 sugar units.³

Heparanase is initially translated as a preproenzyme containing a signal peptide. Cleavage of the signal sequence yields a latent 65 kDa pro-heparanase, which must undergo further processing for activity. Mature active heparanase is a heterodimer consisting of an N-terminal 8 kDa subunit and a C-terminal 50 kDa subunit.⁴

This recombinant human heparanase-1 is expressed in human HEK 293 cells as an active heterodimer glycoprotein containing a 50 kDa subunit and a 8 kDa subunit. This protein is manufactured in human cells, with no serum. The human cell expression system allows human-like glycosylation and folding, and often supports higher specific activity of the protein. This heparinase-1 preparation is activated by proprietary methods to yield a catalytically active enzyme. The protein is produced with no artificial tags. It can be used to study the mode of action of heparanase-1, and to screen for potential inhibitors. It may also be used as a standard, e.g. in heparanase-1 activity assays.

This product is lyophilized from a $0.22\text{ }\mu\text{m}$ filtered solution of 20 mM Trizma® with 400 mM NaCl, pH 7.5.

The activity of the protein is measured by its ability to cleave a pentasaccharide to produce a reducing disaccharide.

Specific activity: $\geq 400\text{ units}/\mu\text{g}$

Unit definition: One unit is defined as the amount of heparanase required to cleave 1 pmol of a pentasaccharide to disaccharide and trisaccharide in one minute at $37\text{ }^{\circ}\text{C}$ and pH 5.0.

Purity: $\geq 95.0\%$ (SDS-PAGE)

Endotoxin: $\leq 1.00\text{ EU}/\mu\text{g}$ (LAL)

UniProt: Q9Y251

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Briefly centrifuge the vial before opening. Reconstitute in water to a concentration of 0.1 mg/mL . Do not vortex. This solution can be stored at $2\text{--}8\text{ }^{\circ}\text{C}$ for up to 1 week. For extended storage, it is recommended to store in working aliquots at $-20\text{ }^{\circ}\text{C}$.

Storage/Stability

Store the lyophilized product at $-20\text{ }^{\circ}\text{C}$. The product is stable for at least 2 years as supplied.

References

1. Vlodavski, I. *et al.*, *Trends Biochem. Sci.*, **43(1)**, 18-31 (2018).
2. Jin, H., and Cui, M., *Arch. Med. Res.*, **49(7)**, 423-429 (2019).
3. Vlodavski, I. *et al.*, *Nat. Med.*, **5(7)**, 793-802 (1999).
4. Levy-Adam, F. *et al.*, *Biochem. Biophys. Res. Commun.*, **308(4)**, 885-91 (2003).

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