

Product Information

Follistatin 300, human recombinant, expressed in Sf21 Cells

Catalog Number **F1175**
Storage Temperature -20°C

Synonym: FS 300

Product Description

Recombinant, human Follistatin (FS) 300 is produced from a DNA sequence encoding amino acid residues Gly³⁰–Asp³²⁹ of the human follistatin 1 precursor fused to the signal peptide of human CD33.¹ The chimeric protein is expressed in Sf21 cells using a baculovirus expression system. The recombinant human FS 300 is generated after cleavage of 16 amino acid residues from the cd33 signal peptide and contains 301 amino acid residues.

Two alternatively spliced follistatin mRNAs, encoding mature FS with 288 amino acid residues (FS 288) and 315 amino acid residues (FS 315), exist. Natural FS purified from porcine ovaries is primarily a C-terminal truncated form of FS 315 composed of 300 amino acid residues. This recombinant human FS 300 product contains 301 amino acid residues and represents a molecular form derived from human FS 315 containing a truncation of 15 residues from the C-terminus. FS 288 binds with high-affinity to cell-surface heparan sulfate proteoglycans; whereas, FS 315 binds with low-affinity. The binding affinity this product to heparan sulfate has not been determined.

Follistatin was initially identified as a follicle-stimulating hormone inhibiting substance found in ovarian follicular fluid. FS is a high-affinity activin-binding protein that can act as an activin antagonist. Cell surface-associated FS has been suggested to play a role in the clearance and bioavailability of activin *in vivo*. Besides activin, FS has also been shown to bind with multiple BMPs and to inhibit BMP activity in early *Xenopus* embryos.

This product is lyophilized from a solution containing 30% acetonitrile, with 0.1% trifluoroacetic acid and 50 μg BSA/ μg chemokine.

Molecular mass: 31 kDa (calculated), migrates as a 40 kDa protein in SDS-PAGE due to glycosylation

ED₅₀: 0.1–0.4 $\mu\text{g}/\text{ml}$

The activity of recombinant human Follistatin has been measured by its ability to neutralize activin-induced bioactivity on K562 cells (erythroid differentiation).

Purity: $\geq 90\%$ (SDS-PAGE)

Endotoxin: ≤ 0.1 ng/ μg (LAL)

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.

Preparation Instructions

Reconstitute the contents of the vial using sterile balanced salt solution containing a minimum of 0.1% BSA or human serum albumin (HSA) to a stock concentration of ≥ 10 $\mu\text{g}/\text{ml}$. Additional filtration of the stock solution is not recommended as this may result in loss of product due to adsorption onto the filter membrane.

Storage/Stability

Store the lyophilized powder at -20°C . A sterile reconstituted solution can be stored at $2-4^{\circ}\text{C}$ for a maximum of 1 month. For extended storage, freeze in working aliquots at -20°C for ~ 3 months. Repeated freezing and thawing are not recommended.

References

1. Shimasaki, S. et al., Primary structure of the human follistatin precursor and its genomic organization. *Proc Natl Acad Sci. USA*, **85**, 4218-4222 (1988).
2. Iemura, S. et al., Direct binding of follistatin to a complex of bone-morphogenetic protein and its receptor inhibits ventral and epidermal cell fates in early *Xenopus* embryo. *Proc. Natl. Acad. Sci. USA*, **95**, 9337 (1998).
3. Guo, Q., Overexpression of mouse follistatin causes reproductive defects in transgenic mice. *Mol. Endocrinol.*, **12**, 96 (1998).
4. Hashimoto, O. et al., A novel role of follistatin, an activin-binding protein, in the inhibition of activin action in rat pituitary cells. Endocytotic degradation of activin and its acceleration by follistatin associated with cell-surface heparan sulfate. *J. Biol. Chem.*, **272**, 13835 (1997).

FF,TD,PCS,LPG,MAM 01/11-1

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.