

Product Information

Follistatin 288, mouse recombinant, Expressed in Sf 21 cells

Catalog Number **F2177**
Storage Temperature -20°C

Synonym: FS-288

Product Description

Recombinant, mouse Follistatin 288 is produced from a DNA sequence encoding amino acid residues Gly³⁰ to Asn³¹⁷ of mouse follistatin precursor protein fused to the signal peptide of human CD33.¹ Recombinant mouse FS-288 is generated after cleavage of 16 amino acid residues from the CD33 signal peptide. It contains 289 amino acid residues and has a calculated molecular mass of ~31 kDa. Due to glycosylation, the recombinant protein migrates as a 35–40 kDa protein in SDS-PAGE under reducing conditions.

Follistatin was initially identified as a follicle-stimulating hormone inhibiting substance found in ovarian follicular fluid. FS, a high-affinity activin-binding protein, acts as an activin antagonist.² Two alternatively spliced follistatin mRNAs, encoding mature FS with 288 and 315 amino acid residues (FS-288 and FS-315), exist. FS-288 binds with high-affinity to cell-surface heparan sulfate proteoglycans; whereas, FS-315 binds with low-affinity.³ Cell surface-associated follistatin plays a role in the clearance and bioavailability of activin *in vivo*. In addition to activin, FS binds to multiple BMPs (bone morphogenetic proteins) and inhibits BMP activity in early *Xenopus* embryos.⁴ Overexpression of FS causes reproductive defects in transgenic mice and FS deficient mice will have multiple embryonic defects that result in death shortly after birth.^{5,6}

Recombinant Mouse Follistatin 288 is lyophilized from a 0.2 μm filtered solution in 30% acetonitrile and 0.1% TFA containing 1.25 mg of bovine serum albumin.

Recombinant Mouse Follistatin 288 is measured by its ability to neutralize activin-mediated erythroid differentiation of K562 cells.

The ED₅₀ for this effect is typically 0.04–0.4 $\mu\text{g/mL}$ in the presence of 7.5 ng/mL of recombinant human Activin A. The ED₅₀ is defined as the effective concentration of growth factor that elicits a 50 % increase in cell growth in a cell based bioassay.

Purity: >95 % (SDS-PAGE)

Endotoxin level: <0.1 ng/ μg protein
[LAL (Limulus ameobocyte lysate) method]

Preparation Instructions

Reconstitute the contents of the vial using sterile phosphate-buffered saline (PBS) containing at least 0.1% human serum albumin or bovine serum albumin. Prepare a stock solution of no less than 10 $\mu\text{g/mL}$.

Storage/Stability

Store at -20°C . Upon reconstitution, store at $2-8^{\circ}\text{C}$ for one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Do not store in a frost-free freezer.

References

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2. Phillips, D.J., and de Kretser, D.M., Follistatin: a multifunctional regulatory protein. *Front Neuroendocrinol.*, **19**, 287 (1998).
3. 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).
4. 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).
5. Guo, Q., Overexpression of mouse follistatin causes reproductive defects in transgenic mice. *Mol. Endocrinol.*, **12**, 96 (1998).
6. Patel, K., Follistatin. *Int. J. Biochem. Cell Biol.*, **30**, 1087 (1998).

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