

Product Information

Thrombospondin-1, human recombinant, expressed in HEK 293 cells suitable for cell culture

Catalog Number **ECM002**
Storage Temperature $-20\text{ }^{\circ}\text{C}$

Synonyms: THBS1, THBS, TSP1, TSP

Product Description

Thrombospondin-1 (TSP1) is believed to play a role in cell migration and proliferation, during embryogenesis and wound repair.¹⁻² TSP1 expression is highly regulated by different hormones and cytokines, and is developmentally controlled. TSP1 stimulates the growth of vascular smooth muscle cells and human foreskin fibroblasts. A combination of interferon γ and tumor necrosis factor α inhibits TSP1 production in these cells.³ In endothelial cells, it controls adhesion and migration as well as proliferation. It also exhibits antiangiogenic properties and regulates immune processes.⁴⁻⁵ TSP1 binds to various cell surface receptors, such as integrins and integrin-associated protein CD47.¹ It also plays a crucial role in inflammatory processes and post-inflammatory tissue dynamics.⁶ TSP1 has been used as a potential regulator of tumor growth and metastasis.⁵ It is upregulated in rheumatoid synovial tissues and might be associated with rheumatoid arthritis.⁷ Variants of this gene might be linked with increased risk of autism.⁸

Recombinant human thrombospondin-1 is expressed in HEK293 cells as a glycoprotein with a calculated molecular mass of 127.5 kDa. This protein is produced in human cells using an all-human production system, without the use of serum. The human cells expression system allows human-like glycosylation and folding, and often supports better stability of the protein in culture.

This product is supplied as a powder, lyophilized from phosphate buffered saline. It is aseptically filled.

The biological activity of recombinant human thrombospondin-1 was tested in culture by measuring the ability of immobilized DTT-treated thrombospondin-1 to support adhesion of SVEC4-10 cells.

Uniprot: P07996

Purity: $\geq 95\%$ (SDS-PAGE)

Endotoxin level: ≤ 1.0 EU/ μg FN (LAL)

Precautions and Disclaimer

This product is 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. It is recommended to reconstitute the protein in sterile ultrapure water to a final concentration of 100–1000 $\mu\text{g}/\text{ml}$.

Storage/Stability

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

After reconstitution, it is recommended to store the protein in working aliquots at $-20\text{ }^{\circ}\text{C}$.

References

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6. Fairaq, A. et al., TNF α induces inflammatory stress response in microvascular endothelial cells via Akt- and P38 MAP kinase-mediated thrombospondin-1 expression. *Mol. Cell Biochem.*, **406**, 227-236 (2015).
7. Suzuki, T. et al., Upregulation of Thrombospondin 1 Expression in Synovial Tissues and Plasma of Rheumatoid Arthritis: Role of Transforming Growth Factor- β 1 toward Fibroblast-like Synovial Cells. *J. Rheumatol.*, **42(6)**, 943-7 (2015).
8. Lu, L. et al., Common and rare variants of the THBS1 gene associated with the risk for autism. *Psychiatr. Genet.*, **24(6)**, 235-40 (2014).

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