Recombinant Human Follistatin-like protein 1

20180503BB

FOR RESEARCH ONLY! NOT FOR HUMAN USE!

Cat.-no.:	**100-437**
Size:	50 µg
Lot. No.:	According to product label

Scientific Background

Gene-ID (NCBI):	*11167*
Synonyms:	Follistatin-like protein 1, FSL1, Follistatin-related protein 1, FRP, OCC1, OCC-1, TGF-β1-stimulated clone 36, TSC-36

Follistatin-like protein 1 (FSTL1) is a widely-expressed, extracellular glycoprotein that is homologously grouped into the osteonectin (BM-40/SPARC) family of secreted proteins based on its possession of both a follistatin-like and extracellular calcium-binding domain. Initially identified as a TGF-β-inducible protein in a cloned mouse osteoblast cell line, FSTL1 has since been implicated in an array of cell-type-specific functions, such as the regulation of proliferation, differentiation, apoptosis and migration, as well as a number of biological processes, including embryonic development, inflammatory response, angiogenesis, tumorigenesis, and immune disease pathogenesis. Highly conserved across mammalian species and widely expressed in human tissues, FSTL1 can be upregulated through signaling mediators of the innate immune system,such as TLR4 agonists and the arthritogenic cytokine IL-1β via NFκB pathways, to stimulate the expression and secretion of pro-inflammatory cytokines, including TNF-α, IL-1β, IL-6 and IL-8. While cells of mesenchymal lineage are capable of FSTL1 production, FSTL1 expression is notably absent from cells of hematopoietic lineage under normal physiological conditions. Macrophages and monocytes are, however, capable of taking up FSTL1 at sites of inflammation where FSTL1 stimulation can cause the expression of caspase-1 and its resultant enzymatic cleavage of active IL-1β from pro-IL-1β. Whereas the overexpression of FSTL1 has been noted as a substantial contributor to the progression of immune diseases like rheumatoid arthritis (RA) and osteoarthritis (OA), diminished FSTL1 serum levels have been identified as playing a significant part in both ovarian and endometrial carcinogenesis, where it directly affects cell proliferation, migration and invasion. CHO cell-derived recombinant human FSTL1 is a 288-amino-acid-length glycoprotein with a calculated molecular weight of 32.7 kDa; however, due to glycosylation, protein migration occurs at an apparent molecular weight of approximately 50-55 kDa by SDS-PAGE analysis under both reducing and non-reducing conditions.

Sequence

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EEELRSKSKI CANVFCGAGR ECAVTEKGEP TCLCIEQCKP
HKRPVCGSNG KTYLNHCELH RDACLTGSKI QVDYDGHCKE
KKSVSPSASP VVCYQSNRDE LRRRIIQWLE AEIIPDGWFS
KGSNYSEILD KYFKNFDNGD SRLDSSEFLK FVEQNETAIN
ITTYPDQENN KLLRGLCVDA LIELSDENAD WKLSFQEFLK
CLNPSFNPPE KKCALEDETY ADGAETEVDC NRCVCACGNW
VCTAMTCDGK NQKGAQTQTE EEMTRYVQEL QKHQETAEKT KRVSTKEI
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Database References

Protein RefSeq:	NP-009016.1
Uniprot ID:	Q12841
mRNA RefSeq:	NM_007085.4

Product Specifications

Expressed in	CHO cells
Purity	> 95% by SDS-PAGE & HPLC analyses
Endotoxin level	< 0.1 ng /µg of protein (<1EU/µg).
Formulation	lyophilized
Length (aa):	182
MW:	21.2 kDa

AVOID REPEATED FREEZE AND THAW CYCLES!

Biological Activity: Measured by its binding ability in a functional ELISA. When recombinant human Follistatin like 1/FSTL1 is coated at 200 ng/well, the concentration of recombinant human BMP-4 that produces 50% of the optimal binding response is found to be approximately 250 ng/mL.