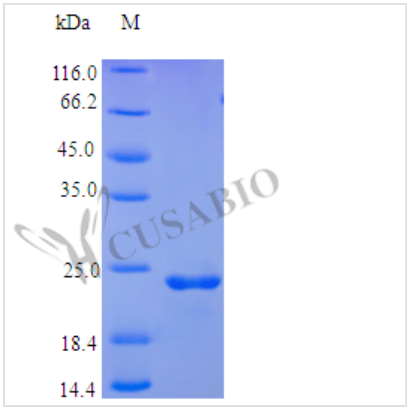
Recombinant Human Oncostatin-M protein (OSM), partial (Active)

Product Code	CSB-AP002241HU
Abbreviation	Recombinant Human OSM protein, partial (Active)
Uniprot No.	P13725
Form	Lyophilized powder
Storage Buffer	Lyophilized from a 0.2 μm filtered PBS, pH 7.4
Product Type	Growth Factor
Immunogen Species	Homo sapiens (Human)
Biological Activity	Fully biologically active when compared to standard. The ED50 as determined by a cell proliferation assay using human TF-1 cells is less than 2 ng/ml, corresponding to a specific activity of >5.0x10^5 IU/mg.
Purity	>97% as determined by SDS-PAGE.
Sequence	AAIGSCSKEY RVLLGQLQKQ TDLMQDTSRL LDPYIRIQGL DVPKLREHCR ERPGAFPSEE TLRGLGRRGF LQTLNATLGC VLHRLADLEQ RLPKAQDLER SGLNIEDLEK LQMARPNILG LRNNIYCMAQ LLDNSDTAEP TKAGRGASQP PTPTPASDAF QRKLEGCRFL HGYHRFMHSV GRVFSKWGES PNRSRRHSPH QALRKGVRR
Research Area	Immunology
Source	E.coli
Target Names	OSM
Expression Region	26-234aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	Tag-Free
Mol. Weight	23.7 kDa
Protein Length	Partial
PubMed ID	2779549; 15461802; 10591208; 15489334; 3540948; 1542792; 2325640; 2026606; 1717982; 1542793; 8999038; 10997905
Image	



Description

Recombinant Human Oncostatin-M protein (OSM) is produced in E. coli and spans the 26-234 amino acid region, providing a partial, tag-free protein. This product achieves a purity level of over 97%, confirmed by SDS-PAGE analysis. It appears to be fully biologically active, with an ED50 of less than 2 ng/ml determined via a human TF-1 cell proliferation assay, indicating a specific activity of greater than 5.0 × 10^5 IU/mg. Endotoxin levels are maintained below 1.0 EU/μg as per LAL testing.

Oncostatin-M is a cytokine that belongs to the interleukin-6 family. It plays what appears to be a significant role in cell growth regulation, differentiation, and inflammation. This protein gets involved in various signaling pathways and has implications in research focusing on cell proliferation and immune responses. Researchers often turn to this protein as a tool for exploring cellular processes and understanding its influence across different biological contexts.

Potential Applications

Note: The applications listed below are based on what we know about this protein's biological functions, published research, and experience from experts in the field. However, we haven't fully tested all of these applications ourselves yet. We'd recommend running some preliminary tests first to make sure they work for your specific research goals.

1. Cell Proliferation and Viability Assays

This recombinant OSM protein can be used to study cytokine-induced cell proliferation in various human cell lines. Hematopoietic cells like TF-1 cells work particularly well, as demonstrated in the activity testing. The high specific activity (>5.0 × 10? IU/mg) and low ED50 (<2 ng/ml) make it suitable for dose-response studies examining OSM's effects on cell growth and survival.

Researchers can investigate OSM signaling pathways that may be involved in cell cycle regulation and proliferation mechanisms. The high purity (>97%) and low endotoxin levels should ensure reliable results without confounding inflammatory responses.

2. JAK-STAT Signaling Pathway Studies

OSM is known to activate JAK-STAT signaling cascades. This makes the biologically active recombinant protein valuable for investigating these pathways in vitro. Researchers can use this protein to study STAT phosphorylation patterns, nuclear translocation, and downstream gene expression changes in response to OSM stimulation.

The tag-free nature of the protein appears to eliminate potential interference with receptor binding and signal transduction. Time-course experiments can be designed to map the kinetics of JAK-STAT activation using this highly pure protein preparation.

3. Cytokine Receptor Binding and Competition Studies

The biologically active OSM protein works well in receptor binding assays to characterize OSM receptor interactions and binding kinetics. Competition binding experiments can be performed to evaluate the relative affinities of OSM variants or to screen potential receptor antagonists.

The high purity and consistent biological activity make it suitable as a reference standard in comparative binding studies. Researchers can also use this protein to investigate receptor specificity and cross-reactivity with related cytokine family members, though results may vary depending on experimental conditions.

4. Inflammatory Response Research Models

This recombinant OSM can serve as a controlled stimulus in in vitro models studying inflammatory responses and cytokine networks. The low endotoxin content (<1.0 EU/μg) helps ensure that observed effects are specifically due to OSM activity rather than bacterial contamination artifacts.

Researchers can examine OSM's role in inflammatory cascades, including its effects on other cytokine production and inflammatory mediator release. The consistent biological activity allows for reproducible experimental conditions across multiple studies investigating inflammatory mechanisms, though some variability between cell types is likely.

5. Antibody Development and Validation

The high-purity, tag-free recombinant OSM protein serves as an excellent antigen for developing and characterizing anti-OSM antibodies for research applications. The biological activity can be used to validate whether developed antibodies retain or block OSM function through neutralization assays.

ELISA-based assays can be established using this protein as a standard for quantifying OSM levels in experimental samples. The consistent quality and activity make it suitable for antibody specificity testing and cross-reactivity studies with related cytokines, though careful optimization may be needed for optimal results.

Endotoxin	Less than 1.0 EU/μg as determined by LAL method.

Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.
Shelf Life	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.