Sterile

#5367

Human Oncostatin M (hOSM)

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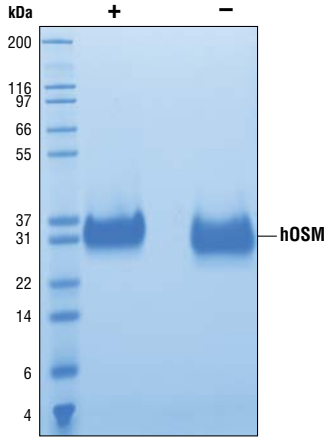
Source: Recombinant human Oncostatin M (hOSM) Ala26-Arg221 (Accession #NP_065391) was expressed in human 293 cells at Cell Signaling Technology.

Molecular Characterization: Based on amino acid sequencing, greater than 85% of recombinant hOSM starts at Aa26 (AAIGS) and has a calculated MW of 19,249. The remainder starts at Ile28 (IGSCS). DTT-reduced and non-reduced protein migrate as 32 kDa polypeptides. Lower mobility in SDS-PAGE is due to glycosylation.

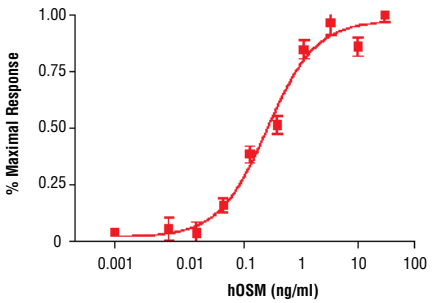
Endotoxin: Less than 0.01 ng endotoxin/1 µg hOSM.

Purity: >98% as determined by SDS-PAGE of 6 µg reduced (+) and non-reduced (-) recombinant hOSM. All lots are greater than 98% pure.

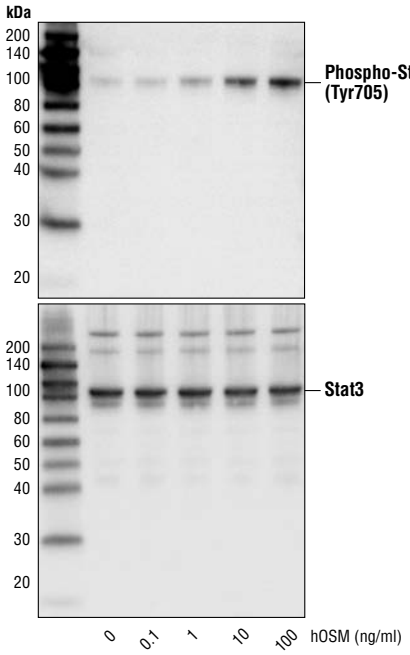


The purity of recombinant hOSM was determined by SDS-PAGE of 6 µg reduced (+) and non-reduced (-) recombinant hOSM and staining overnight with Coomassie Blue.

Bioactivity: The bioactivity of recombinant hOSM was determined in a TF-1 cell proliferation assay. The ED_{50} of each lot is between 50-500 pg/ml.



◀ *The proliferation of TF-1 cells treated with increasing concentrations of hOSM was assessed. After 48 hour treatment with hOSM, cells were incubated with a tetrazolium salt and the OD_{450} - OD_{650} was determined.*



Western blot analysis of extracts from TF-1 cells, untreated or treated with hOSM for 10 minutes, using Phospho-Stat3 (Tyr705) (DA37) XP™ Rabbit mAb #9145 (upper) and Stat3 Antibody #9132 (lower).

Formulation: With carrier: Lyophilized from a 0.22 µm filtered solution of PBS, pH 7.2 containing 20 µg BSA per 1 µg hOSM.

Carrier free: Lyophilized from a 0.22 µm filtered solution of PBS, pH 7.2.

Reconstitution:
With carrier: Add sterile PBS or PBS containing 1% bovine or human serum albumin or 5-10% FBS to a final hOSM concentration of greater than 50 µg/ml. Solubilize for 30 minutes at room temperature with occasional gentle vortexing.

Carrier free: Add sterile PBS or PBS containing protein to minimize absorption of hOSM to surfaces. Solubilize for 30 minutes at room temperature with occasional gentle vortexing. Stock hOSM should be greater than 50 µg/ml.

Storage: Stable in lyophilized state at -20°C for 1 year after receipt. Sterile stock solutions reconstituted with carrier protein are stable at 4°C for 2 months and at -20°C for 6 months. Avoid repeated freeze-thaw cycles.

Maintain sterility. Storage at -20°C should be in a manual defrost freezer.

Applications: Optimal concentration for the desired application should be determined by the user.

Background: Oncostatin M (OSM) is a member of the IL-6 family of cytokines that is produced primarily by activated T cells and macrophages (1,2). OSM induces fibroblast proliferation, inhibits tumor cell proliferation, and plays a role in immune regulation (2,3). Human OSM binds to two distinct receptor complexes, the OSMRβ/gp130 and LIFRβ/gp130 complexes (4). The ability of human OSM to bind to two receptors may explain the overlapping and distinct activities of human OSM and LIF. In contrast, Mouse OSM binds to the OSM receptor β (OSMRβ) which forms a heteromeric complex with the common IL-6 family receptor subunit, gp130 (4). OSM induces the activation the Jak2, Stat3, and Erk1/2 pathways (5).

Background References:

(1) Malik, N. et al. (1989) *Mol Cell Biol* 9, 2847-53.

(2) Silver, J.S. and Hunter, C.A. (2010) *J Leukoc Biol* 88, 1145-56.

(3) Underhill-Day, N. and Heath, J.K. (2006) *Cancer Res* 66, 10891-901.

(4) Ichihara, M. et al. (1997) *Blood* 90, 165-73.

(5) Hintzen, C. et al. (2008) *J Immunol* 181, 7341-9.