Animal-Free™ Recombinant Human Oncostatin M/OSM

Catalog Number: Qk049

DESCRIPTION

Source	*E. coli*-derived human Oncostatin M/OSM protein Accession # P13725.2
Predicted Molecular Mass	22 kDa

SPECIFICATIONS

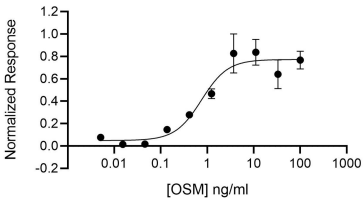
SDS-PAGE	Monomeric Oncostatin M (OSM) protein only
Activity	No significant difference between EC_{50} of reference and test lots
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Mass Spectrometry	Single species with expected mass
Formulation	Lyophilized from acetonitrile/TFA See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Resuspend in water at >100 µg/ml, prepare single use aliquots, add carrier protein if desired.
Shipping	The product is shipped lyophilized at ambient temperture, on ice blocks or dry ice. Shipping at ambient temperture does not affect the bioactivity or stability of the protein. Upon reciept, store immediately at the conditions stated below.
Stability & Storage	BulkLotPrefix assignment required for Storage Info

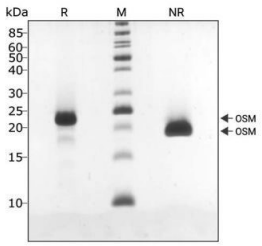
DATA

Bioactivity



Recombinant Human Oncostatin M (OSM), Animal-Free Protein Bioactivity OSM activity is determined using the Promega serum response element luciferase reporter assay (*) in transfected HEK293T cells. Cells are treated in triplicate with a serial dilution of OSM for 6 hours. Firefly luciferase activity is measured and normalized to the control Renilla luciferase activity. EC_{50} = 0.75 ng/ml (34.2 pM). *Promega pGL4.33[luc2P/SRE/Hygro] #E1340

SDS-PAGE



Recombinant Human Oncostatin M (OSM), Animal-Free Protein SDS-PAGE OSM migrates as a single band at 20 kDa in non-reducing (NR) conditions and 22 kDa upon reduction (R). The slight band under the main band in the reduced sample is likely an artefact of the reduction protocol. No contaminating protein bands are visible. Purified recombinant protein (3 µg) was resolved using 15% w/v SDS-PAGE in reduced (+β-mercaptothanol, R) and non-reduced (NR) conditions and stained with Coomassie Brilliant Blue R250.

BACKGROUND

Oncostatin M (OSM) is an approximately 30 KDa secreted cytokine belonging to the Interleukin-6 family. Like other members of the IL-6 family such as IL-11, CNTF, and Cardiotrophin-1, OSM plays crucial roles in inflammation, neuroprotection, hematopoiesis, metabolism and development (1). The human OSM cDNA encodes a 252 amino acid (aa) prepro protein with a signal peptide and a hydrophilic Cterminal domain that are proteolytically processed to generate the 195 aa mature form (2). Although both mature and pro-OSM are equally active in radioreceptor assays, the mature OSM is 5 to 60 fold more active in growth inhibition assays (3). Thus, proteolytic processing of the pro-OSM peptide may be important in regulating the *in vivo* activities of OSM (3). Cytokines of the IL-6 family share a common receptor subunit, gp130, which allows intracellular signal transduction. In contrast to other cytokines, OSM binds gp130 with very low affinity and has little to no biological activity unless a second receptor chain is recruited (4). The OSM-gp130 complex recruits either LIF R alpha, or OSM R beta to form the OSM receptor type I or OSM receptor type II respectively (5). Among multiples roles, OSM has been reported to modulate tumor cell and epithelial cell growth (6, 7). An axis involving OSM, CD40 Ligand and OSM receptor described as an antiviral and immunostimulatory system is disrupted in patients liver showing hepatitis C infection (8). Human OSM shares 45% aa sequence homology with mouse and rat OSM.

References:

1. Richards, C.D. (2013) ISRN Inflamm. **2013**:512103.
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7. Chollangi, S. *et al.* (2012) J. Biol. Chem. **287**:32848.
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PRODUCT SPECIFIC NOTICES

The above product was manufactured, tested and released by R&D System's contract manufacturer, Qkine Ltd, at 1 Murdoch House, Cambridge, UK, CB5 8HW. The product is for research use only and not for the diagnostic or theraputic use.

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