CXCL1 Recombinant Protein

PRODUCT OVERVIEW

Product Name	CXCL1, Recombinant Protein
Full Product Name	CXCL1 Protein, Rat, Recombinant
Product Gene Name	CXCL1 recombinant protein
Product Synonym Names	Rat CXCL1/MGSA/NAP-3 Protein; chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)
Sequence	Ala25-Lys9 6
Host	E Coli
Form/Format	Lyophilized from sterile 20mM Tris, 500mM NaCl, pH8. Normally 5%-8% trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Please refer to the specific buffer information in the hard copy of CoA.
Purity/Purification	>90% as determined by SDS-PAGE
Preparation and Storage	Samples are stable for up to twelve months from date of receipt at -20 degree C to -80 degree C. Store it under sterile conditions at -20 degree C to -80 degree C. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles. In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice.
Matching Pairs	Antibody: CXCL1 (MBS8125702) Immunogen: CXCL1 (MBS8123338)
Molecular Weight	10,249 Da
3D Structure	ModBase 3D Structure for P14095
Species	Rat
Predicted N Terminal	Ala 25
Tag	N-cleavage
Protein Construction	A DNA sequence encoding the rat Cxcl1 (NP_110472.1)(Ala25-Lys96) was expressed.
Reconstitution	A hardcopy of COA with reconstitution instruction is sent along with the products. Please refer to it for detailed information.
Product Categories/Family for CXCL1 recombinant protein	IL17 signaling pathway
Related Product Information for CXCL1 recombinant protein	Background: The Chemokine (C-X-C motif) Ligand 1, CXCL1, is a small cytokine belonging to the CXC chemokine family that was previously called GRO1 oncogene, GRO, KC, Neutrophil-activating protein 3 (NAP-3) and melanoma growth stimulating activity, alpha (MSGA-a). CXCL1 already known to be important in osteoarthritis (OA), as a novel target gene of transcription factor AP-2 in chondrocytes and support the important role of AP-2 in cartilage. CXCL1 is a potent neutrophil chemoattractant with recognized roles in angiogenesis and inflammation. CXCL1 is a novel immediate PTH/PTHrP-responsive gene. CXCL1 may act as a chemoattractant for osteoclast precursors. CXCL1 may also have important pro-nociceptive effects via its direct actions on sensory neurons, and may induce long-term changes that involve protein synthesis. CXCL1 plays a critical nonredundant role in the development of experimental Lyme arthritis and carditis via CXCR2-mediated recruitment of neutrophils into the site of infection. CXCL1 functions through CXCR2 to transactivate the EGFR by proteolytic cleavage of HB-EGF, leading to activation of MAPK signalling and increased proliferation of epithelial ovarian cancer (EOC) cells. It might limit tumor growth by reinforcing senescence early in tumorigenesis. Thus, CXCL1 plays a role in spinal cord development by inhibiting the migration of oligodendrocyte precursors and is involved in the processes of angiogenesis, inflammation, wound healing, and tumorigenesis.

Product References and Citations for CXCL1 recombinant protein	Wang JG, et al. (2008) The chemokine CXCL1/growth related oncogene increases sodium currents and neuronal excitability in small diameter sensory neurons. Mol Pain. 4: 38.Acosta JC, et al. (2009) A role for CXCR2 in senescence, but what about in cancer Cancer Res. 69(6): 2167-70.Onan D, et al. (2009) The chemokine Cxcl1 is a novel target gene of parathyroid hormone (PTH)/PTH-related protein in committed osteoblasts. Endocrinology. 150(5): 2244-53.Ritzman AM, et al. (2010) The chemokine receptor CXCR2 ligand KC (CXCL1) mediates neutrophil recruitment and is critical for development of experimental Lyme arthritis and carditis. Infect Immun. 78(11): 4593-600.Bolitho C, et al. (2010) The chemokine CXCL1 induces proliferation in epithelial ovarian cancer cells by transactivation of the epidermal growth factor receptor. Endocr Relat Cancer. 17(4): 929-40.Wenke AK, et al. (2011) The transcription factor AP-2 regulates CXCL1 during cartilage development and in osteoarthritis. Osteoarthritis Cartilage. 19(2): 206-12.
Other Notes	Small volumes of CXCL1 recombinant protein vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for CXCL1 purchase	MBS8123338 is a recombinant protein targeting CXCL1. Also known as CXCL1 Protein, Rat, Recombinant. Host: E Coli.



SDS-Page of CXCL1 recombinant protein

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for CXCL1. It may not necessarily be applicable to this product.

NCBI GI #	13540652
NCBI GeneID	81503
NCBI Accession #	NP_110472.1
UniProt Primary Accession #	P14095
UniProt Related Accession #	P14095
GenBank Nucleotide #	NM_030845.1
NCBI Official Full Name	growth-regulated alpha protein
NCBI Official Synonym Full Names	chemokine (C-X-C motif) ligand 1
NCBI Official Symbol	Cxcl1
NCBI Official Synonym Symbols	Gro1; CINC-1
UniProt Protein Name	Growth-regulated alpha protein
UniProt Synonym Protein Names	C-X-C motif chemokine 1; Cytokine-induced neutrophil chemoattractant 1; CINC-1; Platelet-derived growth factor-inducible protein KC
Protein Family	Growth-regulated alpha protein
UniProt Gene Name	Cxcl1
UniProt Synonym Gene Names	Cinc1; Gro; Scyb1; CINC-1
UniProt Entry Name	GROA_RAT

NCBI Protein Information	growth-regulated alpha protein; C-X-C motif chemokine 1; chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha); cytokine-induced neutrophil chemoattractant 1; platelet-derived growth factor-inducible protein KC
NCBI Summary for CXCL1	acts as a neutrophil chemoattractant; may play a role in acute phase inflammatory response [RGD, Feb 2006]
UniProt Comments for CXCL1	CXCL2: Produced by activated monocytes and neutrophils and expressed at sites of inflammation. Hematoregulatory chemokine, which, in vitro, suppresses hematopoietic progenitor cell proliferation. GRO-beta(5-73) shows a highly enhanced hematopoietic activity. Belongs to the intercrine alpha (chemokine CxC) family. Protein type: Secreted; Secreted, signal peptide; Motility/polarity/chemotaxis Cellular Component: extracellular space Molecular Function: growth factor activity; chemokine activity; CXCR chemokine receptor binding Biological Process: neutrophil chemotaxis; response to amphetamine; positive regulation of potassium ion transport; response to glucocorticoid stimulus; response to lipopolysaccharide; positive regulation of leukocyte chemotaxis; response to estradiol stimulus; regulation of cell proliferation; G-protein coupled receptor protein signaling pathway; elevation of cytosolic calcium ion concentration; response to heat; positive regulation of superoxide release; response to molecule of bacterial origin; response to gamma radiation; immune response; acute inflammatory response
Research Articles on CXCL1	**1.** IL-1beta-mediated regulation of the CXCL1 and CXCL2 genes in pancreatic beta-cells requires stimulus-induced changes in histone chemical modifications, recruitment of the NF-kappaB and STAT1 transcription factors to genomic regulatory sequences within the proximal gene promoters, and increases in phosphorylated forms of RNA polymerase II.
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