

CXCL1 Protein, Human, Recombinant (His & SUMO)

General Information

Synonyms:	P450c21B;CAH1;GROa;SCYB1;MGSA;chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, α);CPS1;CA21H;MGSA-a;chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha);NAP-3;GRO1
Protein Construction:	A DNA sequence encoding the mature form of human CXCL1 (P09341-1) (Ala 35-Asn 107) was fused with a N-terminal polyhistidine-tagged SUMO tag at the N-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	E. coli
Accession:	P09341-1
Molecular Weight:	21.3 kDa (predicted); 30 kDa (reducing conditions)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 97 % as determined by SDS-PAGE
Endotoxin:	Please contact us for more information.
Formulation:	Lyophilized from a solution filtered through a 0.22 μ m filter, containing PBS, pH 7.4, 10% glycerol. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:
A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

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 γ , 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 γ in chondrocytes and support the important role of AP-2 γ 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.

Reference

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- 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.
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