

## MIP-2/CXCL2 Protein, Mouse (His-SUMO)

Cat. No.:	HY-P75154
Synonyms:	C-X-C motif chemokine 2; MIP2; Cxcl2; Scyb2
Species:	Mouse
Source:	E. coli
Accession:	P10889 (A28-N100)
Gene ID:	20310
Molecular Weight:	Approximately 30 kDa

### PROPERTIES

<b>Biological Activity</b>	Determined by its ability to chemoattract BaF3 mouse pro-B cells transfected with Human CXCR2. The ED <sub>50</sub> for this effect is 4.143 ng/mL, corresponding to a specific activity is 2.41×10 <sup>5</sup> U/mg.
<b>Appearance</b>	Lyophilized powder.
<b>Formulation</b>	Lyophilized from a 0.2 μm filtered solution of 0.1% TFA, pH 2.9. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
<b>Endotoxin Level</b>	<1 EU/μg, determined by LAL method.
<b>Reconstitution</b>	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH <sub>2</sub> O.
<b>Storage &amp; Stability</b>	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
<b>Shipping</b>	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

#### Background

CXCL2 is a chemokine induced by endotoxin and serves as an extremely potent chemo-attractant for neutrophils, acting as a crucial inflammatory mediator. CXCL2 could be produced by multiple, different cell types, including macrophages and cancer cells. CXCL2 is involved in cancer metastasis, angiogenesis, and wound healing<sup>[1][4][5]</sup>.

The amino acid sequence of human CXCL2 protein has low homology between mouse and rat CXCL2 protein. CXCL2 is 90% identical in amino acid sequence as a related chemokine, CXCL1. The gene for CXCL2 is located on human chromosome 4 in a cluster of other CXC chemokines. CXCL2 binds to the G-protein coupled receptor CXCR2 (IL-8RB) expressed on macrophages, neutrophils, and epithelial cells and its classical function is to act as chemotactic factors attracting neutrophils to sites of injury<sup>[2][3]</sup>.

In enterocytes, LPS induces CXCL2 expression and promotes migration of neutrophils in a model of platelet-activating factor induced shock and bowel injury. In acute lung injury, CXCR2 ligands, including CXCL1/2/3, have chemotactic effects for polymorphonuclear leukocytes<sup>[4]</sup>. CXCL2 could provoke a dose-dependent increase of colorectal tumor cell migration in vitro. Further, according to Bachmeier et al., CXCL-1 and -2 silencing could down-regulate several metastasis-promoting

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genes and inhibit the metastatic potential of breast cancer cells<sup>[5]</sup>.

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## REFERENCES

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- [1]. Laila A Al-Alwan, et al. Differential roles of CXCL2 and CXCL3 and their receptors in regulating normal and asthmatic airway smooth muscle cell migration. *J Immunol.* 2013 Sep 1;191(5):2731-41.
- [2]. Louis M Pelus, et al. Peripheral blood stem cell mobilization: the CXCR2 ligand GRObeta rapidly mobilizes hematopoietic stem cells with enhanced engraftment properties. *Exp Hematol.* 2006 Aug;34(8):1010-20.
- [3]. Aimalie L Hardaway, et al. Marrow adipocyte-derived CXCL1 and CXCL2 contribute to osteolysis in metastatic prostate cancer. *Clin Exp Metastasis.* 2015 Apr;32(4):353-68.
- [4]. Jeongim Ha, et al. CXCL2 mediates lipopolysaccharide-induced osteoclastogenesis in RANKL-primed precursors. *Cytokine.* 2011 Jul;55(1):48-55.
- [5]. Yu Lu, et al. Type conversion of secretomes in a 3D TAM2 and HCC cell co-culture system and functional importance of CXCL2 in HCC. *Sci Rep.* 2016 Apr 27;6:24558.
- [6]. Sagar Paudel, et al. CXCL1 regulates neutrophil homeostasis in pneumonia-derived sepsis caused by *Streptococcus pneumoniae* serotype 3. *Blood.* 2019 Mar 21;133(12):1335-1345.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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