

## GRO-beta/CXCL2 Protein, Human

<b>Cat. No.:</b>	HY-P7190
<b>Synonyms:</b>	rHuGRO-β/CXCL2; C-X-C motif chemokine 2; MIP2-alpha; HSF
<b>Species:</b>	Human
<b>Source:</b>	E. coli
<b>Accession:</b>	P19875 (A35-N107)
<b>Gene ID:</b>	2920
<b>Molecular Weight:</b>	Approximately 8.0 kDa

### PROPERTIES

<b>AA Sequence</b>	A P L A T E L R C Q C L Q T L Q G I H L K N I Q S V K V K S P G P H C A Q T E V I A T L K N G Q K A C L N P A S P M V K K I I E K M L K N G K S N
<b>Biological Activity</b>	The ED <sub>50</sub> is <200 ng/mL as measured by CHO-K1/Gα15/hCXCR2 cells (human Gα15 and human CXCR2 stably expressed in CHO-K1 cells).
<b>Appearance</b>	Lyophilized powder.
<b>Formulation</b>	Lyophilized after extensive dialysis against PBS.
<b>Endotoxin Level</b>	<0.2 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. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
<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

<b>Background</b>	<p>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>.</p> <p>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)</p>
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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 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.
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- [6]. Pelus LM, 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.
- [7]. Al-Alwan LA, 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.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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