

GRO-beta/CXCL2 Protein, Rat

Cat. No.:	HY-P7191
Synonyms:	rRtGRO- β /CXCL2; MIP-2; CINC-3; C-X-C motif chemokine 2
Species:	Rat
Source:	E. coli
Accession:	P30348 (S32-N100)
Gene ID:	114105
Molecular Weight:	Approximately 7.6 kDa

PROPERTIES

AA Sequence	S E L R C Q C L T T L P R V D F K N I Q S L T V T P P G P H C A Q T E V I A T L K D G H E V C L N P E A P L V Q R I V Q K I L N K G K A N
Biological Activity	The EC ₅₀ is <10 ng/mL as measured by CHO-K1/G α 15/rCXCR2 cells (human G α 15 and rat CXCR2 stably expressed in CHO-K1 cells).
Appearance	Lyophilized powder.
Formulation	Lyophilized after extensive dialysis against PBS.
Endotoxin Level	<0.2 EU/ μ g, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 μ g/mL in ddH ₂ O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	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.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	<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^{[1][4][5]}.</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) expressed on macrophages, neutrophils, and epithelial cells and its classical function is to act as chemotactic factors</p>
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attracting neutrophils to sites of injury^{[2][3]}.

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^[4]. 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^[5].

REFERENCES

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- [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.
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- [6]. E C O'Leary, et al. Glucocorticoid-mediated inhibition of neutrophil emigration in an endotoxin-induced rat pulmonary inflammation model occurs without an effect on airways MIP-2 levels. *Am J Respir Cell Mol Biol.* 1997 Mar;16(3):267-74.
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