

## IP-10/CRG-2/CXCL10 Protein, Mouse

<b>Cat. No.:</b>	HY-P7227
<b>Synonyms:</b>	rMuIP-10/CXCL10; C-X-C motif chemokine 10; Gamma-IP10; Mob-1
<b>Species:</b>	Mouse
<b>Source:</b>	E. coli
<b>Accession:</b>	P17515 (I22-P98)
<b>Gene ID:</b>	15945
<b>Molecular Weight:</b>	Approximately 8.7 kDa

### PROPERTIES

<b>AA Sequence</b>	<p>I P L A R T V R C N    C I H I D D G P V R    M R A I G K L E I I    P A S L S C P R V E</p> <p>I I A T M K K N D E    Q R C L N P E S K T    I K N L M K A F S Q    K R S K R A P</p>
<b>Biological Activity</b>	Full biological activity determined by a chemotaxis bioassay using human peripheral blood lymphocytes is in a concentration range of 0.1-10.0 ng/ml in the presence of IL-2.
<b>Appearance</b>	Lyophilized powder
<b>Formulation</b>	Lyophilized after extensive dialysis against 2× PBS, pH 7.4.
<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. 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>CXCL10 is a pro-inflammatory chemokine secreted by a wide spectrum of cells. CXCL10 activates T lymphocytes (Th1), NK cells, macrophages, dendritic and B cells. Alterations in CXCL10 expression levels have been associated with inflammatory diseases including infectious diseases, angiogenesis, immune dysfunction and tumor development<sup>[1]</sup>.</p> <p>Mature human CXCL10 shares 68% amino acid sequence identity with mouse and rat CXCL10.</p> <p>Human CXCL10 gene, is initially isolated in 1985 by Luster while treating a lymphoma cell line (U937) with recombinant IFN-γ. CXCL10 cDNA has an open reading frame of 1173-bp containing 4 exons and encoding a protein of 98-amino acids. The primary translational product of the CXCL10 gene is a 12 kDa protein containing two internal disulfide cross bridges. CXCL10</p>
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exerts its biological effects by binding to CXCR3, a seven trans-membrane-spanning G protein-coupled receptor in a paracrine or autocrine fashion, which is predominantly expressed on activated T, B lymphocyte, natural killer (NK), dendritic and macrophage cells. CXCL10 induction depends predominantly on the carboxyl-terminal region of CXCR3, which is essential for CXCR3 internalization, chemotaxis and calcium mobilization induced by the CXCL10 ligand. The powerful chemotactic action of CXCL10 on activated lymphocytes allows it to modulate both innate and adaptive immunity, inducing tissue damage and modulating tumor formation<sup>[1]</sup>.

CXCL10 is a pleiotropic molecule capable of exerting potent biological functions, including promoting the chemotactic activity of CXCR3+ cells, inducing apoptosis, regulating cell growth and proliferation as well as angiogenesis in infectious and inflammatory diseases and cancer. ELR-negative CXCL10 is an angiostatic chemokine, which inhibits angiogenesis. Abnormal levels of CXCL10 have been observed in body fluids of individuals infected with viruses, bacteria, fungi and parasites<sup>[1]</sup>.

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## REFERENCES

- [1]. Liu M, et al. CXCL10/IP-10 in infectious diseases pathogenesis and potential therapeutic implications. *Cytokine Growth Factor Rev.* 2011 Jun;22(3):121-30.
- [2]. Shunya Sasaki, et al. Blockade of CXCL10 protects mice from acute colitis and enhances crypt cell survival. *Eur J Immunol.* 2002 Nov;32(11):3197-205.
- [3]. Dianhua Jiang, et al. Inhibition of pulmonary fibrosis in mice by CXCL10 requires glycosaminoglycan binding and syndecan-4. *J Clin Invest.* 2010 Jun;120(6):2049-57.
- [4]. Shinrye Lee, et al. Lipocalin-2 is a chemokine inducer in the central nervous system: role of chemokine ligand 10 (CXCL10) in lipocalin-2-induced cell migration. *J Biol Chem.* 2011 Dec 23;286(51):43855-43870.
- [5]. Liu M, et al. CXCL10/IP-10 in infectious diseases pathogenesis and potential therapeutic implications. *Cytokine Growth Factor Rev.* 2011 Jun;22(3):121-30.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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