

IP-10/CRG-2/CXCL10 Protein, Human

Cat. No.:	HY-P7226
Synonyms:	rHuIP-10/CXCL10; C-X-C motif chemokine 10; Gamma-IP10; Mob-1
Species:	Human
Source:	E. coli
Accession:	P02778 (V22-P98) with N-Met
Gene ID:	3627
Molecular Weight:	Approximately 8-13 kDa

PROPERTIES

AA Sequence	V P L S R T V R C T C I S I S N Q P V N P R S L E K L E I I P A S Q F C P R V E I I A T M K K K G E K R C L N P E S K A I K N L L K A V S K E R S K R S P
Biological Activity	1. The ED ₅₀ is <0.2 µg/mL as measured by HUVEC cells, corresponding to a specific activity of >5.0 × 10 ³ units/mg. 2. Measured by its ability to chemoattract Jurkat cells. The ED ₅₀ for this effect is 45.45 ng/mL, corresponding to a specific activity is 2.200×10 ⁴ U/mg.
Appearance	Lyophilized powder
Formulation	Lyophilized after extensive dialysis against 50 mM Tris, pH 8.0 or PBS, pH 7.4.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/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>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^[1].</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</p>
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primary translational product of the CXCL10 gene is a 12 kDa protein containing two internal disulfide cross bridges. CXCL10 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^[1].

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^[1].

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]. U Barash, et al. Heparanase enhances myeloma progression via CXCL10 downregulation. *Leukemia.* 2014 Nov;28(11):2178-87.
 - [3]. Lilach Goldberg-Bittman, et al. The expression of the chemokine receptor CXCR3 and its ligand, CXCL10, in human breast adenocarcinoma cell lines. *Immunol Lett.* 2004 Mar 29;92(1-2):171-8.
 - [4]. 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.
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Caution: Product has not been fully validated for medical applications. For research use only.

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