IP-10/CRG-2/CXCL10 Protein, Rat (P.pastoris, His)

Cat. No.:	HY-P74797
Synonyms:	CXCL10; C-X-C motif chemokine 10; Gamma-IP10; IP-10; Mob1; Scyb10
Species:	Rat
Source:	P. pastoris
Accession:	NP_620789 (I22-P98)
Gene ID:	245920
Molecular Weight:	Approximately 10 kDa

PROPERTIES

Appearance	Solution.
Formulation	Supplied as a 0.2 μm filtered solution of PBS pH7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	N/A.
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice.

DESCRIPTION

Background

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].

Mature human CXCL10 shares 68% amino acid sequence identity with mouse and rat CXCL10.

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 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]. Huilian Bu, et al. Spinal IFN-γ-induced protein-10 (CXCL10) mediates metastatic breast cancer-induced bone pain by activation of microglia in rat models. Breast Cancer Res Treat. 2014 Jan;143(2):255-63.

[3]. Tim Clarner, et al. CXCL10 triggers early microglial activation in the cuprizone model. J Immunol. 2015 Apr 1;194(7):3400-13.

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