

GCP-2/CXCL6 Protein, Human (HEK293, His)

Cat. No.:	HY-P72677
Synonyms:	C-X-C motif chemokine 6; CKA-3; GCP-2; CXCL6; GCP2; SCYB6
Species:	Human
Source:	HEK293
Accession:	P80162 (G38-N114)
Gene ID:	6372
Molecular Weight:	Approximately 13 kDa

PROPERTIES

AA Sequence	G P V S A V L T E L R C T C L R V T L R V N P K T I G K L Q V F P A G P Q C S K V E V V A S L K N G K Q V C L D P E A P F L K K V I Q K I L D S G N K K N
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm filtered solution of 20 mM PB, 150 mM NaCl, 5% Trehalose, 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.
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>CXCL6 (also known as GCP-2) is a CXC chemokine expressed by macrophages and epithelial and mesenchymal cells during inflammation. Through binding and activation of its receptors (CXCR1 and CXCR2), it exerts neutrophil-activating and angiogenic activities. In addition, CXCL6 also has antibacterial effects^{[1][3]}.</p> <p>CXCL6 is an ELR-positive CXC chemokine with a length of 77 amino acids. The NH₂-terminal glutamic acid-leucine-arginine (ELR) motif is characteristic of CXC chemokines interacting with the G-protein-coupled receptors CXCR1 and CXCR2. The ELR+ CXC family which includes IL-8, the growth-regulated oncogenes (GRO-α, -β, -γ), and ENA-78. The structure of CXCL6 is >75% homologous to ENA-78, but is unique in that it binds with high-affinity to both CXCR1 and CXCR2. GCP-2, similar to IL-8, activates target cells by binding to CXCR-1 and CXCR-2. Both receptors are expressed by neutrophil granulocytes, but not by other blood-derived cells, such as lymphocytes or monocytes. Activation of endothelial cells by CXCL6 causes a mitogenic response, resulting in angiogenesis. CXCL2 is expressed by epithelial cells of the airways, eyes, gastrointestinal tract, mammary glands, tonsils, macrophages, and mesenchymal cells, in particular during inflammation. Lipopolysaccharides</p>
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(LPS) and the proinflammatory cytokines TNF- α and IL-1 β up-regulate the expression of CXCL6, while gamma interferon has a down-regulating effect^{[1][2][3]}.

CXCL6 mediates several processes such as inflammation, immunoreaction, cell growth, and metastasis through interaction with the chemokine receptors CXCR1 and CXCR2 in humans. CXCL6 possesses potent chemotactic and proangiogenic properties. CXCL6 is over expressed in colorectal, breast, lung and thyroid cancers. In addition, CXCL6 shows antibacterial activity against gram-positive and gram-negative pathogenic bacteria of relevance to mucosal infections is seen at submicromolar concentrations^{[1][2][3]}.

REFERENCES

- [1]. Pooja Mittal, et al. CXCL6 (granulocyte chemotactic protein-2): a novel chemokine involved in the innate immune response of the amniotic cavity. *Am J Reprod Immunol.* 2008 Sep;60(3):246-57.
- [2]. Xiaolin Wang, et al. CXCL6 regulates cell permeability, proliferation, and apoptosis after ischemia-reperfusion injury by modulating Sirt3 expression via AKT/FOXO3a activation. *Cancer Biol Ther.* 2021 Jan 2;22(1):30-39.
- [3]. Helena M Linge, et al. The human CXC chemokine granulocyte chemotactic protein 2 (GCP-2)/CXCL6 possesses membrane-disrupting properties and is antibacterial. *Antimicrob Agents Chemother.* 2008 Jul;52(7):2599-607.
- [4]. Jia-Chi Ma, et al. Fibroblast-derived CXCL12/SDF-1 α promotes CXCL6 secretion and co-operatively enhances metastatic potential through the PI3K/Akt/mTOR pathway in colon cancer. *World J Gastroenterol.* 2017 Jul 28;23(28):5167-5178.
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