CXCL16 Protein, Rat (HEK293, Fc)

Cat. No.:	HY-P75314
Synonyms:	C-X-C motif chemokine 16; SR-PSOX; Srpsox; SCYB16; CXCL16
Species:	Rat
Source:	HEK293
Accession:	Q6AXU5 (M1-A198)
Gene ID:	497942
Molecular Weight:	Approximately 67 kDa

PROPERTIES

Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of PBS, pH 7.4. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.
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

CXCL16 is a membrane-bound chemokine. CXCL16 is expressed in soluble or transmembrane forms and can be observed in many cell types, including inflammatory cells (such as macrophages, neutrophils, dendritic cells and monocytes) and non-inflammatory cells (such as lung epithelial cells and renal cells). CXCL16 plays important roles both in the natural immune barrier and in the occurrence and development of autoimmune diseases[1][2].

The amino acid sequence of human CXCL16 protein has low homology between mouse, rat and dog CXCL16 protein. CXCL16 is primarily expressed on the surface of antigen-presenting cells (APCs) and consists of a chemokine domain (≈89 amino acids), a mucin-type stalk (≈110 amino acids), a single-pass transmembrane domain (≈20 amino acids), and a cytoplasmic tail (≈27 amino acids). CXCL16 is the only ligand of the CXCR6 receptor. Soluble CXCL16 induces the migration of CXCR6+ cells (including Th1 cells, NK cells and activated CD8 + T-cells), M2-macrophage infiltration, interactions between APC and CD8 + T-cells, the cellular immune response and inflammatory response, and the development of thymocytes. Membrane-bound CXCL16 can promote the adhesion of CXCR6+ cells. CXCL16 specifically binds oxidized low-density lipoprotein (OxLDL), leading to its internalization and degradation. CXCL16 may play important roles in the formation of atherosclerotic lesions. CXCL16 on macrophages and dendritic cells mediates the adhesion and phagocytosis of bacteria, such as Escherichia coli and Staphylococcus aureus, and bacterial recognition is mediated by the chemokine domain of CXCL16[1][2].

CXCL16 is not only a chemokine, but is also a multifunctional protein. CXCL16 and CXCR6 are related to various inflammatory diseases, such as glomerulonephritis, pulmonary diseases, atherosclerosis, coronary artery disease, rheumatoid arthritis and many inflammation-related cancers. The chemokine domain of CXCL16 exerts potent anti-microbial activities against E. coli and S. aureus. CXCL16 acts as a mediator of innate immunity by attracting CXCR6-expressing cells, such as activated T cells and NKT cells. CXCL16 is also a novel mediator of the innate immune reactivities of keratinocytes in the human epidermis[1][2][3].

REFERENCES

[1]. Tohyama M, et al. CXCL16 is a novel mediator of the innate immunity of epidermal keratinocytes. Int Immunol. 2007 Sep;19(9):1095-102.

[2]. Jianhui Sun, et al. A Functional Variant of CXCL16 Is Associated With Predisposition to Sepsis and MODS in Trauma Patients: Genetic Association Studies. Front Genet. 2021 Sep 3;12:720313.

[3]. Allaoui R, et al. Cancer-associated fibroblast-secreted CXCL16 attracts monocytes to promote stroma activation in triple-negative breast cancers. Nat Commun. 2016 Oct 11;7:13050.

[4]. Yojiro Sakuma, et al. Chemokine CXCL16 mediates acinar cell necrosis in cerulein induced acute pancreatitis in mice. Sci Rep. 2018 Jun 11;8(1):8829.

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