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CXCL12 Antibody

Catalog # ASC11731

Product Information

Application	WB, ICC, E
Primary Accession	P48061
Other Accession	NP_001171605, 296011023
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	10666
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	CXCL12 antibody can be used for detection of CXCL12 by Western blot at 1 - 2 g/ml. Antibody can also be used for Immunocytochemistry starting at 5 g/mL.

Additional Information

Gene ID	6387
Other Names	Stromal cell-derived factor 1, SDF-1, hSDF-1, C-X-C motif chemokine 12, Intercrine reduced in hepatomas, IRH, hIRH, Pre-B cell growth-stimulating factor, PBSF, SDF-1-beta(3-72), SDF-1-alpha(3-67), CXCL12, SDF1, SDF1A, SDF1B
Target/Specificity	CXCL12; CXCL12 antibody is human and mouse reactive. Multiple isoforms of CXCL12 are known to exist.
Reconstitution & Storage	CXCL12 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	CXCL12 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CXCL12
Synonyms	SDF1, SDF1A, SDF1B
Function	Chemoattractant active on T-lymphocytes and monocytes but not neutrophils. Activates the C-X-C chemokine receptor CXCR4 to induce a rapid and transient rise in the level of intracellular calcium ions and chemotaxis. SDF-1-beta(3-72) and SDF-1-alpha(3-67) show a reduced chemotactic activity. Binding to cell surface proteoglycans seems to inhibit formation of SDF-1-alpha(3-67) and thus to preserve activity on local sites. Also binds to

	atypical chemokine receptor ACKR3, which activates the beta-arrestin pathway and acts as a scavenger receptor for SDF-1. Binds to the allosteric site (site 2) of integrins and activates integrins ITGAV:ITGB3, ITGA4:ITGB1 and ITGA5:ITGB1 in a CXCR4-independent manner (PubMed:29301984). Acts as a positive regulator of monocyte migration and a negative regulator of monocyte adhesion via the LYN kinase. Stimulates migration of monocytes and T- lymphocytes through its receptors, CXCR4 and ACKR3, and decreases monocyte adherence to surfaces coated with ICAM-1, a ligand for beta-2 integrins. SDF1A/CXCR4 signaling axis inhibits beta-2 integrin LFA-1 mediated adhesion of monocytes to ICAM-1 through LYN kinase. Inhibits CXCR4-mediated infection by T-cell line-adapted HIV-1. Plays a protective role after myocardial infarction. Induces down-regulation and internalization of ACKR3 expressed in various cells. Has several critical functions during embryonic development; required for B-cell lymphopoiesis, myelopoiesis in bone marrow and heart ventricular septum formation. Stimulates the proliferation of bone marrow-derived B-cell progenitors in the presence of IL7 as well as growth of stromal cell- dependent pre-B-cells (By similarity).
Cellular Location	Secreted.
Tissue Location	Isoform Alpha and isoform Beta are ubiquitously expressed, with highest levels detected in liver, pancreas and spleen Isoform Gamma is mainly expressed in heart, with weak expression detected in several other tissues. Isoform Delta, isoform Epsilon and isoform Theta have highest expression levels in pancreas, with lower levels detected in heart, kidney, liver and spleen

Background

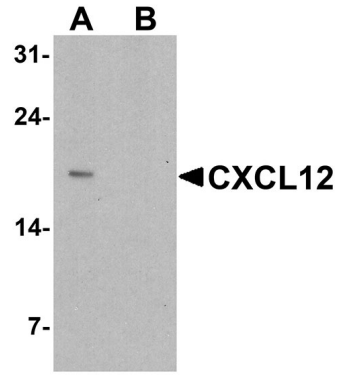
The CXCL12 protein, also known as SDF1, is a stromal cell-derived alpha chemokine member of the intercrine family. CXCL12 functions as the ligand for the G-protein coupled receptor, chemokine (C-X-C motif) receptor 4 (CXCR4) and CXCR7, and plays a role in many diverse cellular functions, including embryogenesis, immune surveillance, inflammation response, tissue homeostasis, and tumor growth and metastasis (reviewed in 1). Mutations in this gene are associated with resistance to human immunodeficiency virus type 1 infections (2).

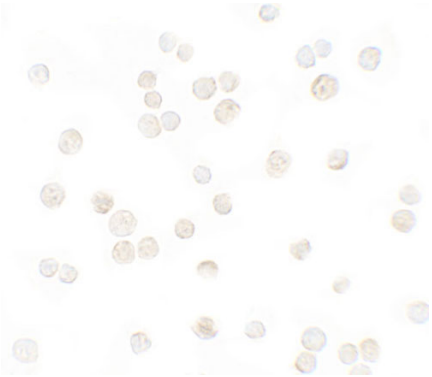
References

Timotijevic G, Mostarica Stojkovic M, and Miljkovic D. CXCL12: role in neuroinflammation. Int. J. Biochem. Cell Biol. 2012; 44:838-41.
Reiche EM, Ehara Watanabe MA, Bonametti AM, et al. The effect of stromal cell-derived factor 1 (SDF1/CXCL12) genetic polymorphism on HIV-1 disease progression. Int. J. Mol. Med. 2006; 18:785-93.

Images

Western blot analysis of CXCL12 in HeLa cell lysate with CXCL12 antibody at 1 µg/ml in (A) the absence and (B) the presence of blocking peptide.





Immunocytochemistry of CXCL12 in HeLa cells with CXCL12 antibody at 5 µg/mL.

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