

# CXCR4-Lo Antibody

Catalog # ASC10631

## Product Information

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<b>Application</b>	WB, IF, ICC, E
<b>Primary Accession</b>	<a href="#">P61073</a>
<b>Other Accession</b>	<a href="#">NP_001008540</a> , <a href="#">56790927</a>
<b>Reactivity</b>	Human
<b>Host</b>	Rabbit
<b>Clonality</b>	Polyclonal
<b>Isotype</b>	IgG
<b>Calculated MW</b>	39746
<b>Concentration (mg/ml)</b>	1 mg/mL
<b>Conjugate</b>	Unconjugated
<b>Application Notes</b>	CXCR4-Lo antibody can be used for Western blot at 10 $\mu$ g/mL. Antibody can also be used for immunocytochemistry starting at 2 $\mu$ g/mL. For immunofluorescence start at 4 $\mu$ g/mL.

## Additional Information

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<b>Gene ID</b>	7852
<b>Other Names</b>	C-X-C chemokine receptor type 4, CXCR-4, FB22, Fusin, HM89, LCR1, Leukocyte-derived seven transmembrane domain receptor, LESTR, Lipopolysaccharide-associated protein 3, LAP-3, LPS-associated protein 3, NPYRL, Stromal cell-derived factor 1 receptor, SDF-1 receptor, CD184, CXCR4
<b>Target/Specificity</b>	CXCR4; This antibody is specific for the longer isoform of CXCR4.
<b>Reconstitution &amp; Storage</b>	CXCR4-Lo antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
<b>Precautions</b>	CXCR4-Lo Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

## Protein Information

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<b>Name</b>	CXCR4 {ECO:0000303   PubMed:9468539, ECO:0000312   HGNC:HGNC:2561}
<b>Function</b>	Receptor for the C-X-C chemokine CXCL12/SDF-1 that transduces a signal by increasing intracellular calcium ion levels and enhancing MAPK1/MAPK3 activation (PubMed: <a href="#">10074102</a> , PubMed: <a href="#">10452968</a> , PubMed: <a href="#">10644702</a> , PubMed: <a href="#">10825158</a> , PubMed: <a href="#">18799424</a> , PubMed: <a href="#">20048153</a> , PubMed: <a href="#">20505072</a> , PubMed: <a href="#">24912431</a> , PubMed: <a href="#">28978524</a> , PubMed: <a href="#">8752280</a> , PubMed: <a href="#">8752281</a> ). Ligand binding causes a conformation change that triggers signaling via guanine nucleotide-binding proteins (G proteins) and modulates

the activity of downstream effectors, such as adenylate cyclase (PubMed:16725153, PubMed:17197449, PubMed:18799424, PubMed:39093700). CXCR4 is coupled to G(i) G alpha proteins and mediates inhibition of adenylate cyclase (PubMed:17197449, PubMed:39093700). Involved in the AKT signaling cascade (PubMed:24912431). Plays a role in regulation of cell migration, e.g. during wound healing (PubMed:28978524). Also acts as a receptor for extracellular ubiquitin; leading to enhanced intracellular calcium ions and reduced cellular cAMP levels (PubMed:20228059). Binds bacterial lipopolysaccharide (LPS) and mediates LPS-induced inflammatory response, including TNF secretion by monocytes (PubMed:11276205). Involved in hematopoiesis and in cardiac ventricular septum formation (By similarity). Also plays an essential role in vascularization of the gastrointestinal tract, probably by regulating vascular branching and/or remodeling processes in endothelial cells (By similarity). Involved in cerebellar development; in the CNS, could mediate hippocampal-neuron survival (By similarity).

#### Cellular Location

Cell membrane; Multi-pass membrane protein. Cell junction. Early endosome. Late endosome. Lysosome Note=In unstimulated cells, diffuse pattern on plasma membrane (PubMed:10452968, PubMed:14602072, PubMed:21540189). On agonist stimulation, colocalizes with ITCH at the plasma membrane where it becomes ubiquitinated (PubMed:14602072). In the presence of antigen, distributes to the immunological synapse forming at the T-cell-APC contact area, where it localizes at the peripheral and distal supramolecular activation cluster (SMAC) (PubMed:20215400)

#### Tissue Location

Expressed in numerous tissues, such as peripheral blood leukocytes, spleen, thymus, spinal cord, heart, placenta, lung, liver, skeletal muscle, kidney, pancreas, cerebellum, cerebral cortex and medulla (in microglia as well as in astrocytes), brain microvascular, coronary artery and umbilical cord endothelial cells Isoform 1 is predominant in all tissues tested

## Background

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CXCR4-Lo Antibody: Human immunodeficiency virus (HIV) and related viruses require coreceptors, in addition to CD4, to infect target cells. Some G protein-coupled receptors including CCR5, CXCR4, CCR3, CCR2b and CCR8 in the chemokine receptor family, and four new human molecules GPR15, STRL33, GPR1 and V28 were recently identified as HIV coreceptors. Among them, CXCR4 is a principal coreceptor for T-cell tropic strains of HIV-1 fusion and entry of human white blood cells. CXCR4 is also required for the infection by dual-tropic strains of HIV-1 and mediates CD-4 independent infection by HIV-2. The alpha-chemokine SDF-1 is the ligand for CXCR4 and prevents infection by T-tropic HIV-1. CXCR4 associates with the surface CD4-gp120 complex before HIV enters target cells. CXCR4 messenger RNA levels correlated with HIV-1 permissiveness in diverse human cell types. Antibodies to CXCR4 block HIV-1 and HIV-2 fusion and infection of human target cells. The amino-terminal domain and the second extracellular loop of CXCR4 serve as HIV binding sites.

## References

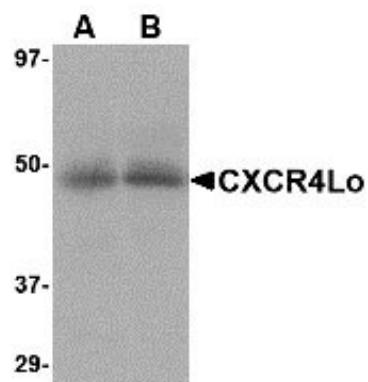
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Feng Y et al. Science1996; 272:872-7.  
Berson JF et al. J. Virol.1996; 70:6288-95.  
Doranz BJ et al. Cell 1996; 85:1149-58.

## Images

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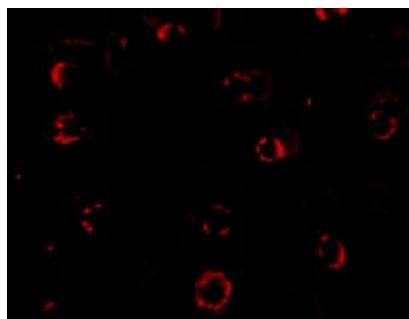
Western blot analysis of CXCR4 in (A) human spleen and



(B) human thymus tissue lysate with CXCR4-Lo antibody at 10 µg/mL.



Immunohistochemistry of CXCR4Lo in HeLa cells with CXCR4Lo antibody at 2 µg/mL.



Immunofluorescence of CXCR4-Lo in HeLa cells with CXCR4-Lo antibody at 4 µg/mL.

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