

ARG54316 anti-CXCR4 (extracellular loop) antibody

Package: 50 µg
Store at: -20°C

Summary

Product Description	Rabbit Polyclonal antibody recognizes CXCR4 (extracellular loop)
Tested Reactivity	Hu, Ms
Tested Application	FACS, IHC-P, WB
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Target Name	CXCR4 (extracellular loop)
Species	Human
Immunogen	Synthetic peptide corresponding to aa. 182-196 in the second extracellular loop (EL) of Human CXCR4.
Conjugation	Un-conjugated
Alternate Names	Lipopolysaccharide-associated protein 3; LAP-3; LAP3; Stromal cell-derived factor 1 receptor; Leukocyte-derived seven transmembrane domain receptor; WHIMS; NPY3R; SDF-1 receptor; Fusin; LPS-associated protein 3; HM89; HSY3RR; FB22; NPYR; CD antigen CD184; LCR1; NPY3R; WHIM; D2S201E; C-X-C chemokine receptor type 4; LESTR; CXC-R4; CD184; NPYRL; CXCR-4

Application Instructions

Application table	Application	Dilution
	FACS	4-10 µg/mL
	IHC-P	5-20 µg/mL
	WB	1-2 µg/mL
Application Note	Western blot: use at 1:500 - 1:1,000 dilution. * The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.	
Positive Control	HeLa	

Properties

Form	Liquid
Purification	Protein A purified
Buffer	PBS (pH 7.4) and 0.02% Sodium azide
Preservative	0.02% Sodium azide
Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C or below. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use.

Note

For laboratory research only, not for drug, diagnostic or other use.

Bioinformation

Database links

[GeneID: 12767 Mouse](#)

[GeneID: 7852 Human](#)

[Swiss-port # P61073 Human](#)

[Swiss-port # P70658 Mouse](#)

Gene Symbol

CXCR4

Gene Full Name

chemokine (C-X-C motif) receptor 4

Background

Human immunodeficiency virus (HIV) and related viruses require coreceptors in addition to CD4 to infect target cells. Some G protein-coupled receptors in the chemokine receptor family, including CCR5, CXCR4, CCR3, CCR2b, and CCR8 in the chemokine receptor family, have been identified as HIV coreceptors. CXCR4 (also called Fusin, LESTR, HUMSTR) is a principal coreceptor for T-cell tropic strains of HIV-1. CXCR4 is also required for the infection by dual-tropic strains of HIV-1 and mediates CD4-independent infection by HIV-2. The α -chemokine SDF-1 is the ligand for CXCR4 and prevents infection by T-cell tropic HIV-1. CXCR4 associates with the surface CD4-gp120 complex before HIV enters target cells. The amino-terminal domain and the second extracellular loop of CXCR4 serve as HIV binding sites. CXCR4 messenger RNA levels correlate with HIV-1 permissiveness in diverse human cell types. Antibodies to CXCR4 may block HIV-1 and HIV-2 infection of human target cells.

Function

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. Acts as a receptor for extracellular ubiquitin; leading to enhanced intracellular calcium ions and reduced cellular cAMP levels. Involved in hematopoiesis and in cardiac ventricular septum formation. Also plays an essential role in vascularization of the gastrointestinal tract, probably by regulating vascular branching and/or remodeling processes in endothelial cells. Involved in cerebellar development. In the CNS, could mediate hippocampal-neuron survival. Acts as a coreceptor (CD4 being the primary receptor) for HIV-1 X4 isolates and as a primary receptor for some HIV-2 isolates. Promotes Env-mediated fusion of the virus. Binds bacterial lipopolysaccharide (LPS) et mediates LPS-induced inflammatory response, including TNF secretion by monocytes. [UniProt]

Research Area

Cancer antibody; Developmental Biology antibody; Immune System antibody; Metabolism antibody; Microbiology and Infectious Disease antibody; Neuroscience antibody

Calculated Mw

40 kDa

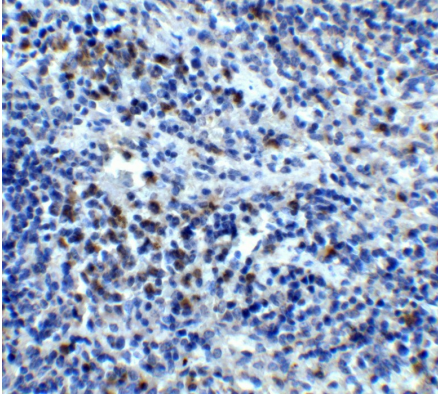
PTM

Phosphorylated on agonist stimulation. Rapidly phosphorylated on serine and threonine residues in the C-terminal. Phosphorylation at Ser-324 and Ser-325 leads to recruitment of ITCH, ubiquitination and protein degradation.

Ubiquitinated by ITCH at the cell membrane on agonist stimulation. The ubiquitin-dependent mechanism, endosomal sorting complex required for transport (ESCRT), then targets CXCR4 for lysosomal degradation. This process is dependent also on prior Ser-/Thr-phosphorylation in the C-terminal of CXCR4. Also binding of ARRB1 to STAM negatively regulates CXCR4 sorting to lysosomes though modulating ubiquitination of SFR5S.

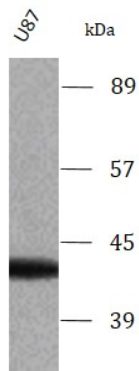
Sulfation on Tyr-21 is required for efficient binding of CXCL12/SDF-1 α and promotes its dimerization. Tyr-7 and Tyr-12 are sulfated in a sequential manner after Tyr-21 is almost fully sulfated, with the binding affinity for CXCL12/SDF-1 α increasing with the number of sulfotyrosines present. Sulfotyrosines Tyr-7 and Tyr-12 occupy clefts on opposing CXCL12 subunits, thus bridging the CXCL12 dimer interface and promoting CXCL12 dimerization.

O- and N-glycosylated. Asn-11 is the principal site of N-glycosylation. There appears to be very little or no glycosylation on Asn-176. N-glycosylation masks coreceptor function in both X4 and R5 laboratory-adapted and primary HIV-1 strains through inhibiting interaction with their Env glycoproteins. The O-glycosylation chondroitin sulfate attachment does not affect interaction with CXCL12/SDF-1 α nor its coreceptor activity.



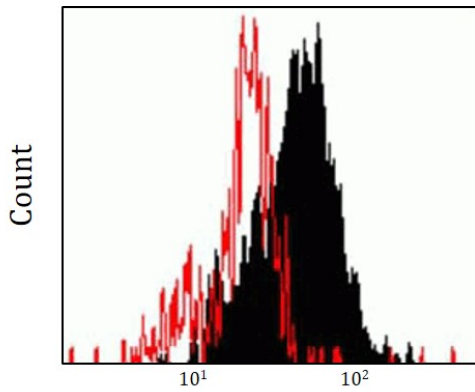
ARG54316 anti-CXCR4 (extracellular loop) antibody IHC-P image

Immunohistochemistry: Human spleen stained with ARG54316 anti-CXCR4 (extracellular loop) antibody at 5 $\mu\text{g}/\text{mL}$ dilution.



ARG54316 anti-CXCR4 (extracellular loop) antibody WB image

Western blot: U-87 stained with ARG54316 anti-CXCR4 (extracellular loop) antibody at 1 $\mu\text{g}/\text{mL}$ dilution.



ARG54316 anti-CXCR4 (extracellular loop) antibody FACS image

Flow Cytometry: stained with ARG54316 anti-CXCR4 (extracellular loop) antibody at 4 $\mu\text{g}/\text{mL}$ dilution.
