Human CXCR4 Antibody

Monoclonal Mouse IgG_{2B} Clone # 44716

Catalog Number: MAB172

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human CXCR4. It will also react with cells expressing feline CXCR4 but not rat CXCR4.
Source	Monoclonal Mouse IgG_{2B} Clone # 44716
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	3T3 cells transfected with human CXCR4
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

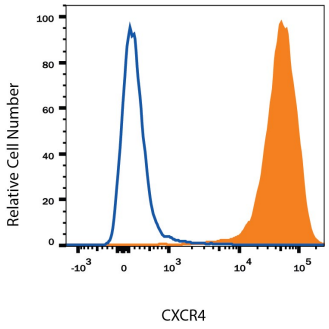
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Flow Cytometry	0.25 µg/10^6 cells	See Below
Immunohistochemistry	8-25 µg/mL	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	
Neutralization	Measured by its ability to neutralize CXCL12/SDF-1α-induced chemotaxis in the BaF3 mouse pro-B cell line transfected with human CXCR4. The Neutralization Dose (ND_{50}) is typically 2.5-12 µg/mL in the presence of 1 ng/mL Recombinant Human/Feline/Rhesus Macaque CXCL12/SDF-1α.	

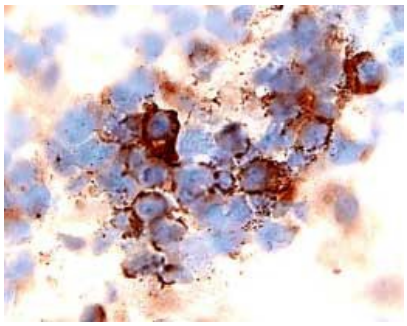
DATA

Flow Cytometry



Detection of CXCR4 in Jurkat Human Cell Line by Flow Cytometry. Jurkat human acute T cell leukemia cell line was stained with Mouse Anti-Human CXCR4 Monoclonal Antibody (Catalog # MAB172, filled histogram) or isotype control antibody (Catalog # Catalog # MAB004, open histogram), followed by Allophycocyanin-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # Catalog # F0101B). View our protocol for Staining Membrane-associated Proteins.

Immunohistochemistry



CXCR4 in Human Lymph Node. CXCR4 was detected in immersion fixed paraffin-embedded sections of human lymph node using 15 µg/mL Human CXCR4 Monoclonal Antibody (Catalog # MAB172) overnight at 4 °C. Tissue was stained with the Anti-Mouse HRP-AEC Cell & Tissue Staining Kit (red; Catalog # Catalog # CTS003) and counterstained with hematoxylin (blue). View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

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Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449

Human CXCR4 Antibody

Monoclonal Mouse IgG_{2B} Clone # 44716

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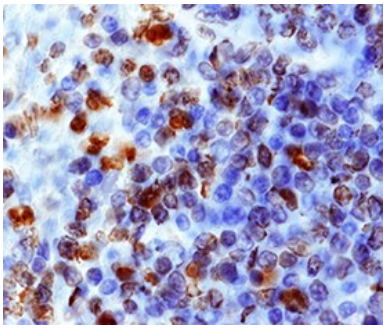
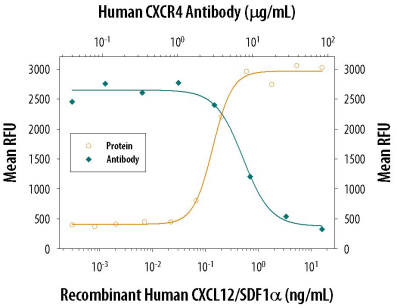
Immunohistochemistry



CXCR4 in Human Spleen. CXCR4 was detected in immersion fixed paraffin-embedded sections of human spleen using Mouse Anti-Human CXCR4 Monoclonal Antibody (Catalog # MAB172) at 15 µg/mL overnight at 4 °C. Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # Catalog # CTS013). Tissue was stained using the Anti-Mouse HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # Catalog # CTS002) and counterstained with hematoxylin (blue). Specific staining was localized to cytoplasm and nuclei. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

Neutralization



Chemotaxis Induced by CXCL12/SDF-1α and Neutralization by Human CXCR4 Antibody. Recombinant Human/Feline/Rhesus Macaque CXCL12/SDF-1a (Catalog # Catalog # 350-NS) chemoattracts the BaF3 mouse pro-B cell line transfected with human CXCR4 in a dose-dependent manner (orange line). The amount of cells that migrated through to the lower chemotaxis chamber was measured by Resazurin (Catalog # Catalog # AR002). Chemotaxis elicited by Recombinant Human/Feline/Rhesus Macaque CXCL12/SDF-1a (1 ng/mL) is neutralized (green line) by increasing concentrations of Mouse Anti-Human CXCR4 Monoclonal Antibody (Catalog # MAB172). The $ND_{50}$is typically 2.5-12 µg/mL.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

CXCR4, also known as CD184, is a G-protein-linked seven transmembrane spanning receptor that binds stromal cell-derived factor-1 (SDF-1). CXCR4 acts as a co-factor for T-cell tropic HIV-1 and -2 viral entry into cells. While primarily a membrane protein, CXCR4 undergoes trafficking and internalization in response to stimulation with phorbol esters and ligand (1). Cytoplasmic and nuclear localization of CXCR4 has been observed in colorectal and renal carcinomas (2,3) and it has been used as the basis of prognosis and metastatic state (3,4,5).

References:

1. Orsini, M.J. et al. (1999) J. Biol. Chem. **274**:31076.
2. Zagzag, D. et al. (2005) Cancer Res. **65**:6178.
3. Speetjens, F.M. et al. (2009) Cancer Microenvironment **2**:1.
4. Wang, L. et al. (2009) Oncology Reports **22**:1333.
5. Amara, S. et al. (2015) Cancer Biomark. **15**:869.

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