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# iF647 Anti-Human CD184 (CXCR4) Antibody

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| **Catalog Number:** | 111413, 111414 |
| **Size:** | 25 tests, 100 tests |
| **Target Name:** | CD184, CXCR4 |
| **Regulatory Status:** | RUO |

## PRODUCT DETAILS

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| **Clone:** | 184AR1 |
| **Application:** | Flow Cytometry |
| **Reactivity:** | Human |
| **Format:** | iF647 |
| **Isotype:** | Rat IgG1 |
| **Antibody Type:** | Monoclonal |
| **Formulation:** | Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and 0.2% (w/v) BSA |
| **Protein Concentration:** | Supplied at a lot-specific concentration. |
| **Storage & Handling:** | The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. Do not freeze. |
| **Recommended Usage:** | For flow cytometric staining, it is recommended to use 5 µL of this reagent per 0.5-1.0 million cells in a 100 µL volume. Optimal reagent performance should be determined by titration for each specific application. iF647 has an excitation max at 656 nm and an emission max at 670 nm. |
| **Excitation Laser:** | Red Laser (633 nm) |
| **Isotype Control:** | 303407 |

## BACKGROUND INFORMATION

**Human CD184**, also known as **CXCR4 (C-X-C chemokine receptor type 4)**, is a chemokine receptor expressed on a wide variety of cell types, including hematopoietic stem cells, lymphocytes, monocytes, endothelial cells, and many epithelial tissues. CD184 plays a key role in regulating cell migration, immune surveillance, and tissue organization. It is particularly important in guiding the movement and homing of hematopoietic stem and progenitor cells to the bone marrow, as well as directing immune cells to sites of inflammation or injury.

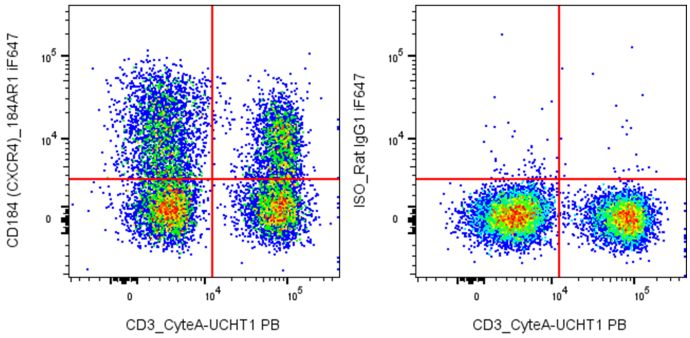
Structurally, CD184 is a member of the **G protein–coupled receptor (GPCR)** family. It is composed of approximately 352 amino acids and contains seven transmembrane α-helical domains, an extracellular N-terminus involved in ligand binding, and an intracellular C-terminal tail that mediates signaling through heterotrimeric G proteins. Upon ligand binding, CD184 activates intracellular signaling pathways that regulate cell migration, survival, and proliferation.

The principal ligand for CD184 is the chemokine **CXCL12**, also known as stromal cell–derived factor-1 (SDF-1). The CXCL12–CXCR4

axis is essential for embryonic development, particularly in the formation of the cardiovascular, hematopoietic, and nervous systems. This signaling pathway also regulates leukocyte trafficking and stem cell retention within bone marrow niches.

CD184 is implicated in several diseases. It serves as a major co-receptor for the entry of **HIV-1** into target cells and is also involved in cancer progression by promoting tumor cell migration and metastasis. Because of its biological importance, CD184 is an important therapeutic target. Small-molecule antagonists such as **plerixafor** are used clinically to mobilize hematopoietic stem cells for transplantation, and other CXCR4 inhibitors are being investigated for cancer treatment, antiviral therapy, and inflammatory diseases.

## PRODUCT DATA




Human peripheral blood lymphocytes were stained with PB Anti-Human CD3 clone 003CB and iF647 Anti-Human CD184 (CXCR4) clone 184AR1 (left) or an isotype control (right).

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