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Product Information

Anti-CCR8
produced in rabbit, IgG fraction of antiserum

Catalog Number **C8729**

Product Description

Anti-CCR8 is produced in rabbit using as immunogen a peptide corresponding to the second extracellular loop and amino acids 183 to 201 of human CCR8.[1, 2, 3] The DNA sequence encoding human and mouse CCR8 was originally cloned and designated as TER1, CKR-L1, and ChemR1.[1, 2, 3, 4] Subsequently, this seven transmembrane protein was identified as the receptor for human CC chemokine I-309 and renamed as CCR8.

Anti-CCR8 specifically recognizes human CCR8 (C-C chemokine receptor type 8) by immunoblotting using human spleen tissue lysate.

Chemokines have been sub-divided into families on the basis of the relative position of their cysteine residues. The α- and β- families, with four cysteine residues, are the largest and best characterized. In the α-family, one amino acid separates the first two cysteine residues (CXC); in the β-family the two cysteine residues (CC) are adjacent to each other. The α-chemokines, (such as IL-8) that contain the N-terminal Glu-Leu-Arg amino acid sequence (ELR-motif) are chemotactic for neutrophils, while those that do not (such as IP-10 and MIG) act on lymphocytes. Examples of chemokines under the β-family category are MCP1-5 and RANTES. The chemokine lymphotactin belongs to the γ-family, with only two cysteines (C), and the recently described fractalkine or neurotactin is a member of the δ-family and has the first two cysteine residues separated by three amino acids (CXXXC).

Chemokines bind to specific G protein-coupled cell surface receptors on target cells. Five CXC receptors (CXCR1-5), nine CC receptors (CCR1-9) and one CXXXC receptor (CX_3CR1) have been cloned to date. Expression of chemokine receptors can be restricted to some cell types (CXCR1 is expressed in neutrophils) while others (such as CCR2) are expressed in a wide variety of cells.[5] Receptor expression has also been found to be constitutive (including down regulation), inducible or restricted to a cell state of activation. In addition, some chemokine receptors are also expressed in non-hematopoietic cells, such as nerve, endothelial and epithelial cells. This suggests that chemokines have other roles besides leukocyte chemotaxis. CX_3CR1, for example, is highly expressed in adult brain.

Receptor activation leads to a cascade of cellular events including the generation of inositol triphosphate, the release of calcium, and the activation of protein kinase C. Chemokine receptors activate small GTP-binding proteins of the Ras and Rho families, the latter being involved in cell motility events. In addition, chemokines bind to non-signaling molecules such as the Duffy antigen receptor for chemokines (DARC) which may act to remove chemokines from the circulation, and heparan sulfates proteoglycans that may serve to establish an extracellular matrix concentration gradient.

CCR8 is expressed in spleen, thymus, and T lymphoblastic cell lines. It is one of the chemokine receptors that function as a co-receptor for T-cell tropic, dual-tropic, and macrophage-tropic HIV-1 strains.[6] CCR8 mediates the activity of the CC chemokine I-309 induced monocyte chemoattraction and HIV-1 envelope fusion and virus infection.

Reagents

Supplied at 0.5 mg/ml in phosphate buffered saline, containing 0.02% sodium azide.

Storage/Stability

Antibody can be stored at 2-8 °C for three months and At −20 °C for 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.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Product Profile
Immunoblotting: the recommended working dilution is 1:500-1:1,000 using human spleen tissue lysate.
A band of ~50 kDa is detected.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

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3. Samson, M., et al., Molecular cloning and chromosomal mapping of anovel human gene, ChemR1, expressed in T lymphocytes and polymorphonuclear cells and encoding a putative chemokine receptor. *Eur. J. Immunol*., **26**, 3021-3028 (1996).
4. Goya, I., et al., Identification of CCR8 as the specific receptor for the human beta-chemokine I-309: cloning and molecular characterization of murine CCR8 as the receptor for TCA-3. *J. Immunol*., **160**, 1975-1981 (1998).
5. Wells, N.C., et al., Definition, function and patho-physiological significance of chemokine receptors. *Trends Pharm. Sci*., **19**, 376-380 (1998).
6. Horuk, R., et al., The CC chemokine I-309 inhibits CCR8-dependent infection by diverse HIV-1 strains. *J. Biol. Chem*., **273**, 386-391 (1998).

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