

CKR-7 (4B12): sc-57074

BACKGROUND

C-C or β chemokine family members are characterized by a pair of adjacent cysteine residues and serve as potent chemoattractants and activators of monocytes and T cells. C-C chemokine receptor family members include CKR-1, CKR-2A, CKR-2B, CKR-3, CKR-4, CKR-5, CKR-6, CKR-7, CKR-8, CKR-9, CKR-10 and the Duffy blood group antigen. Each of these receptors are G protein-coupled, seven pass transmembrane domain proteins whose major physiological role is to function in the chemotaxis of T cells and phagocytic cells to areas of inflammation. However, this receptor family has also been shown to facilitate viral infection. CKR-7 (C-C chemokine receptor type 7), also known as CCR7, CMKBR7, EBI1 or EVI1, is a 378 amino acid multi-pass membrane protein that belongs to the CC-chemokine receptor family. Expressed in activated B- and T-lymphocytes, as well as in various lymphoid tissues, CKR-7 functions as a receptor for MIP-3 β and is thought to be involved in mediating normal lymphocyte function.

REFERENCES

- Schweickart, V.L., Raport, C.J., Godiska, R., Byers, M.G., Eddy, R.L., Jr., Shows, T.B. and Gray, P.W. 1994. Cloning of human and mouse EBI1, a lymphoid-specific G protein-coupled receptor encoded on human chromosome 17q12-q21.2. *Genomics* 23: 643-650.
- Deng, H., Liu, R., Ellmeier, W., Choe, S., Unutmaz, D., Burkhart, M., Di Marzio, P., Marmon, S., Sutton, R.E. and Hill, C.M. 1996. Identification of a major co-receptor for primary isolates of HIV-1. *Nature* 381: 661-666.
- Dragic, T., Litwin, V., Allaway, G.P., Martin, S.R., Huang, Y., Nagashima, K.A., Cayanan, C., Maddon, P.J., Koup, R.A. and Moore, J.P. 1996. HIV-1 entry into CD4⁺ cells is mediated by the chemokine receptor CC-CKR-5. *Nature* 381: 667-673.
- Feng, Y., Broder, C.C., Kennedy, P.E. and Berger, E.A. 1996. HIV-1 entry cofactor: functional cDNA cloning of a seven-transmembrane, G protein-coupled receptor. *Science* 272: 872-877.
- Alkhatib, G., Combadiere, C., Broder, C.C., Feng, Y., Kennedy, P.E., Murphy, P.M. and Berger, E.A. 1996. CC CKR5: a RANTES, MIP-1 α , MIP-1 β receptor as a fusion cofactor for macrophage-tropic HIV-1. *Science* 272: 1955-1958.
- Choe, H., Farzan, M., Sun, Y., Sullivan, N., Rollins, B., Ponath, P.D., Wu, L., Mackay, C.R., LaRosa, G. and Newman, W. 1996. The β -chemokine receptors CCR3 and CCR5 facilitate infection by primary HIV-1 isolates. *Cell* 85: 1135-1148.
- Doranz, B.J., Rucker, J., Yi, Y., Smyth, R.J., Samson, M., Peiper, S.C., Parmentier, M., Collman, R.G. and Doms, R.W. 1996. A dual-tropic primary HIV-1 isolate that uses fusin and the β -chemokine receptors CKR-5, CKR-3, and CKR-2 β as fusion cofactors. *Cell* 85: 1149-1158.
- Baba, M., Imai, T., Nishimura, M., Kakizaki, M., Takagi, S., Hieshima, K., Nomiyama, H. and Yoshie, O. 1997. Identification of CCR6, the specific receptor for a novel lymphocyte-directed CC chemokine LARC. *J. Biol. Chem.* 272: 14893-14898.

CHROMOSOMAL LOCATION

Genetic locus: *Ccr7* (mouse) mapping to 11 D.

SOURCE

CKR-7 (4B12) is a rat monoclonal antibody raised against CKR-7 of mouse origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CKR-7 (4B12) is available conjugated to either phycoerythrin (sc-57074 PE), fluorescein (sc-57074 FITC) or Alexa Fluor[®] 488 (sc-57074 AF488) or Alexa Fluor[®] 647 (sc-57074 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM.

Alexa Fluor[®] is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

CKR-7 (4B12) is recommended for detection of CKR-7 of mouse origin by flow cytometry (1 μ g per 1 x 10⁶ cells).

Suitable for use as control antibody for CKR-7 siRNA (m): sc-39889, CKR-7 shRNA Plasmid (m): sc-39889-SH and CKR-7 shRNA (m) Lentiviral Particles: sc-39889-V.

Molecular Weight of CKR-7: 43 kDa.

SELECT PRODUCT CITATIONS

- Ahmad, S.F., Ansari, M.A., Nadeem, A., Bakheet, S.A., Alanazi, A.Z., Alsanea, S., As Sobeai, H.M., Almutairi, M.M., Mahmood, H.M. and Attia, S.M. 2019. The Stat3 inhibitor, S3I-201, downregulates lymphocyte activation markers, chemokine receptors, and inflammatory cytokines in the BTBR T⁺ Itpr3^{tf}/J mouse model of autism. *Brain Res. Bull.* 152: 27-34.
- Lai, J.H., Wu, D.W., Wu, C.H., Hung, L.F., Huang, C.Y., Ka, S.M., Chen, A., Chang, Z.F. and Ho, L.J. 2021. Mitochondrial CMPK2 mediates immunomodulatory and antiviral activities through IFN-dependent and IFN-independent pathways. *iScience* 24: 102498.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.