SANTA CRUZ BIOTECHNOLOGY, INC.

CXCR-4 (4G10): sc-53534

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The C-X-C or a chemokine family is characterized by a pair of cysteine residues separated by a single amino acid and primarily functions as chemoattractants for neutrophils. The C-X-C family includes IL-8, NAP-2, MSGA and stromal cell derived factor-1 (SDF-1). SDF-1 was originally described as a pre-B cell stimulatory factor, but has now been shown to function as a potent chemo-attractant for T cells and monocytes but not neutrophils. Receptors for the C-X-C family are G protein-coupled, seven pass transmembrane domain proteins which include IL-8RA, IL-8RB and CXCR-4 (also known as LESTR or fusin). CXCR-4 is highly homologous to the IL-8 receptors, sharing 37% sequence identity at the amino acid level. The IL-8 receptors bind to IL-8, NAP-2 and MSGA, while fusin binds to its cognate ligand, SDF-1. CXCR-4 has been identified as the major co-receptor for T-tropic HIV-1 and SDF-1 has been shown to inhibit HIV-1 infection.

CHROMOSOMAL LOCATION

Genetic locus: CXCR4 (human) mapping to 2q22.1; Cxcr4 (mouse) mapping to 1 E4.

SOURCE

CXCR-4 (4G10) is a mouse monoclonal antibody raised against 38 N terminus amino acids of fusin of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CXCR-4 (4G10) is available conjugated to agarose (sc-53534 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-53534 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53534 PE), fluorescein (sc-53534 FITC), Alexa Fluor® 488 (sc-53534 AF488), Alexa Fluor® 546 (sc-53534 AF546), Alexa Fluor® 594 (sc-53534 AF594) or Alexa Fluor® 647 (sc-53534 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53534 AF680) or Alexa Fluor® 790 (sc-53534 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

CXCR-4 (4G10) is recommended for detection of CXCR-4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

Suitable for use as control antibody for CXCR-4 siRNA (h): sc-35421, CXCR-4 siRNA (m): sc-35422, CXCR-4 shRNA Plasmid (h): sc-35421-SH, CXCR-4 shRNA Plasmid (m): sc-35422-SH, CXCR-4 shRNA (h) Lentiviral Particles: sc-35421-V and CXCR-4 shRNA (m) Lentiviral Particles: sc-35422-V.

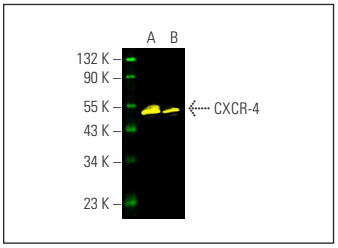
Molecular Weight of CXCR-4: 40-47 kDa.

Positive Controls: C2C12 whole cell lysate: sc-364188, HL-60 whole cell lysate: sc-2209 or EOC 20 whole cell lysate: sc-364187.

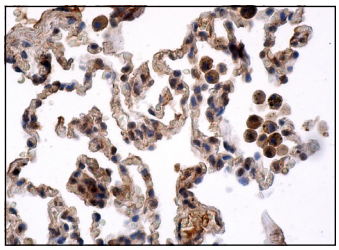
STORAGE

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

DATA



CXCR-4 (4G10) Alexa Fluor® 488: sc-53534 AF488. Direct fluorescent western blot analysis of CXCR-4 expression in C2C12 (**A**) and EOC 20 (**B**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker MW Tag-Alexa Fluor® 680: sc-516730.



CXCR-4 (4G10): sc-53534. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lung tissue showing membrane staining of pneumocytes and cytoplasmic staining of macrophages.

SELECT PRODUCT CITATIONS

1. Bingham, E.L., et al. 2009. Differentiation of human embryonic stem cells to a parathyroid-like phenotype. Stem Cells Dev. 18: 1071-1080.
2. Qiu, M., et al. 2012. Lignosulfonic acid exhibits broadly Anti-HIV-1 activity—potential as a microbicide candidate for the prevention of HIV-1 sexual transmission. PLoS ONE 7: e35906.
3. Don-Salu-Hewage, A.S., et al. 2013. Cysteine (C)-x-C receptor 4 undergoes transportin 1-dependent nuclear localization and remains functional at the nucleus of metastatic prostate cancer cells. PLoS ONE 8: e57194.
4. Chevigné, A., et al. 2014. Neutralising properties of peptides derived from CXCR4 extracellular loops towards CXCL12 binding and HIV-1 infection. Biochim. Biophys. Acta 1843: 1031-1041.
5. De Blasio, A., et al. 2016. Unusual roles of caspase-8 in triple-negative breast cancer cell line MDA-MB-231. Int. J. Oncol. 48: 2339-2348.
6. Gravina, G.L., et al. 2017. The brain-penetrating CXCR-4 antagonist, PRX177561, increases the antitumor effects of bevacizumab and sunitinib in preclinical models of human glioblastoma. J. Hematol. Oncol. 10: 5.
7. Zhang, M., et al. 2018. Opposite response to hypoxia by breast cancer cells between cell proliferation and cell migration: a clue from microRNA expression profile. Oncol. Lett. 15: 2771-2780.
8. Xue, J., et al. 2019. Acetylation of α-fetoprotein promotes hepatocellular carcinoma progression. Cancer Lett. 471: 12-26.
9. Guo, K., et al. 2020. HIF-1α/SDF-1/CXCR4 axis reduces neuronal apoptosis via enhancing the bone marrow-derived mesenchymal stromal cell migration in rats with traumatic brain injury. Exp. Mol. Pathol. 114: 104416.

RESEARCH USE

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