SANTA CRUZ BIOTECHNOLOGY, INC.

MIP-1γ (X-18): sc-74228



BACKGROUND

Chemokines are members of a superfamily of small inducible, secreted, proinflammatory cytokines. Members of the chemokine family exhibit 20 to 50% homology in their predicted amino acid sequences and are divided into four subfamilies. In C-C (or β) subfamily, the first two cysteines are adjacent. C-C chemokines are chemoattractants and activators for monocytes and T cells. C-C subfamily members include macrophage inflammatory protein (MIP)-1a, MIP-1β, MIP-1γ, MIP-2, MIP-3α, MIP-3β, MIP-4, HCC-1, MIP-5 (or HCC-2), RANTES, MCP-1/2/3 (and the murine homologs JE and MARC), I-309, murine C10 and TCA3. MIP-1y is strongly expressed in osteoclasts where it stimulates cytoplasmic motility and polarization through the chemokine receptor, CKR-1. This suggests that MIP-1y may play an important role in the survival and differention of osteoclasts and the regulation of bone resorption. Expression of MIP-1_γ in osteoclasts is induced by RANKL.

REFERENCES

- 1. Poltorak, A.N., Bazzoni, F., Smirnova, I.I., Alejos, E., Thompson, P., Luheshi, G., Rothwell, N. and Beutler, B. 1996. MIP-1y: molecular cloning, expression, and biological activities of a novel C-C chemokine that is constitutively secreted in vivo. J. Inflamm. 45: 207-219.
- 2. Mohamadzadeh, M., Poltorak, A.N., Bergstressor, P.R., Beutler, B. and Takashima, A. 1996. Dendritic cells produce macrophage inflammatory protein-1 y, a new member of the C-C chemokine family. J. Immunol. 156: 3102-3106.
- 3. Lean, J.M., Murphy, C., Fuller, K. and Chambers, T.J. 2002. CCL9/MIP-1y and its receptor CCR1 are the major chemokine ligand/receptor species expressed by osteoclasts. J. Cell. Biochem. 87: 386-393.
- 4. Chen, D., Ding, Y., Zhang, N., Schröppel, B., Fu, S., Zang, W., Zhang, H., Hancock, W.W. and Bromberg, J.S. 2003. Viral IL-10 gene transfer inhibits the expression of multiple chemokine and chemokine receptor genes induced by inflammatory or adaptive immune stimuli. Am. J. Transplant. 3: 1538-1549.
- 5. Okamatsu, Y., Kim, D., Battaglino, R., Sasaki, H., Späte, U. and Stashenko, P. 2004. MIP-1y promotes receptor-activator-of-NFkB-ligand-induced osteoclast formation and survival. J. Immunol. 173: 2084-2090.
- 6. Maurer, M. and von Stebut, E. 2004. Macrophage inflammatory protein-1. Int. J. Biochem. Cell Biol. 36: 1882-1886.
- 7. Hernandez-Hansen, V., Bard, J.D., Tarleton, C.A., Wilder, J.A., Lowell, C.A., Wilson, B.S. and Oliver, J.M. 2005. Increased expression of genes linked to FceRI signaling and to cytokine and chemokine production in Lyn-deficient mast cells. J. Immunol. 175: 7880-7888.
- 8. Klein, M., Paul, R., Angele, B., Popp, B., Pfister, H.W. and Koedel, U. 2006. Protein expression pattern in experimental pneumococcal meningitis. Microbes Infect. 8: 974-983.
- 9. Yang, M., Mailhot, G., MacKay, C.A., Mason-Savas, A., Aubin, J. and Odgren, P.R. 2006. Chemokine and chemokine receptor expression during colony stimulating factor-1-induced osteoclast differentiation in the toothless osteopetrotic rat: a key role for CCL9 (MIP-1 γ) in osteoclastogenesis in vivo and in vitro. Blood 107: 2262-2270.

CHROMOSOMAL LOCATION

Genetic locus: Ccl9 (mouse) mapping to 11 C.

SOURCE

MIP-1_Y (X-18) is a rat monoclonal antibody raised against full length recombinant MIP-1y of mouse origin.

PRODUCT

Each vial contains 100 μ g lgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and protein stabilizer.

APPLICATIONS

MIP-1 γ (X-18) is recommended for detection of MIP-1 γ of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MIP-1y siRNA (m): sc-62618, MIP-1y shRNA Plasmid (m): sc-62618-SH and MIP-1y shRNA (m) Lentiviral Particles: sc-62618-V.

Molecular Weight of MIP-1y: 10 kDa.

SELECT PRODUCT CITATIONS

1. Gasparrini, M., Rivas, D., Elbaz, A. and Duque, G. 2009. Differential expression of cytokines in subcutaneous and marrow fat of aging C57BL/6J mice. Exp. Gerontol. 44: 613-618.

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.