

MIG siRNA (m): sc-60027

BACKGROUND

MIG (monokine induced by interferon-gamma), also designated chemokine (C-X-C motif) ligand 9 (CXCL9), CMK, Humig, SCYB9 or crg-10, is a secreted C-X-C chemokine ligand involved in T cell trafficking; it can inhibit angiogenesis and displays thymus-dependent anti-tumor effects. Human carcinoma line HSC-2 expresses MIG mRNA in response to IFN- γ , whereas Ca9-22 and the glioma line A172 do not appear to express MIG mRNA. Elevation of serum MIG and CXCL10 in ocular sarcoidosis correlates with ocular disease activity and ACE (angiotensin converting enzyme) levels. The G_{α_i} protein-coupled receptor CXCR3 can bind MIG released from intestinal epithelium. MIG can block platelet activating factor (PAF)- or leukotriene B4 (LTB4)-induced responses and can inhibit eotaxin-induced filamentous Actin (F-Actin) formation and chemoattraction. MIG is one of many chemokines that belong to a group of small, mostly basic, structurally related molecules that regulate cell trafficking of various types of leukocytes through interactions with a subset of seven transmembrane, G protein-coupled receptors.

REFERENCES

1. Ruehlmann, J.M., et al. 2001. MIG (CXCL9) chemokine gene therapy combines with antibody-cytokine fusion protein to suppress growth and dissemination of murine colon carcinoma. *Cancer Res.* 61: 8498-8503.
2. Yun, J.J., et al. 2002. The role of MIG/CXCL9 in cardiac allograft vasculopathy. *Am. J. Pathol.* 161: 1307-1313.
3. Wang, Y.Q., et al. 2003. Expression of the Mig (CXCL9) gene in murine lung carcinoma cells generated angiogenesis-independent antitumor effects. *Oncol. Rep.* 10: 909-913.
4. Hiroi, M., et al. 2003. Constitutive nuclear factor κ B activity is required to elicit interferon- γ -induced expression of chemokine CXC ligand 9 (CXCL9) and CXCL10 in human tumour cell lines. *Biochem. J.* 376: 393-402.
5. Belperio, J.A., et al. 2003. Role of CXCL9/CXCR3 chemokine biology during pathogenesis of acute lung allograft rejection. *J. Immunol.* 171: 4844-4852.
6. Fulkerson, P.C., et al. 2004. Negative regulation of eosinophil recruitment to the lung by the chemokine monokine induced by IFN- γ (Mig, CXCL9). *Proc. Natl. Acad. Sci. USA* 101: 1987-1992.
7. Mitsuhashi, N., et al. 2004. Identification, functional analysis and expression in a heterotopic heart transplant model of CXCL9 in the rat. *Immunology* 112: 87-93.
8. Fulkerson, P.C., et al. 2005. CXCL9 inhibits eosinophil responses by a CCR3- and Rac2-dependent mechanism. *Blood* 106: 436-443.
9. Kouroumalis, A., et al. 2005. The chemokines CXCL9, CXCL10, and CXCL11 differentially stimulate G_{α_i} -independent signaling and actin responses in human intestinal myofibroblasts. *J. Immunol.* 175: 5403-5411.

CHROMOSOMAL LOCATION

Genetic locus: Cxcl9 (mouse) mapping to 5 E2.

PROTOCOLS

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

PRODUCT

MIG siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MIG shRNA Plasmid (m): sc-60027-SH and MIG shRNA (m) Lentiviral Particles: sc-60027-V as alternate gene silencing products.

For independent verification of MIG (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-60027A, sc-60027B and sc-60027C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

MIG siRNA (m) is recommended for the inhibition of MIG expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μ M in 66 μ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MIG gene expression knockdown using RT-PCR Primer: MIG (m)-PR: sc-60027-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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