SANTA CRUZ BIOTECHNOLOGY, INC.

MIG siRNA (h): sc-39361

BACKGROUND

MIG (monokine induced by interferon-γ), 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 $G_{\alpha i}$ 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 κB 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.

CHROMOSOMAL LOCATION

Genetic locus: CXCL9 (human) mapping to 4q21.1.

PRODUCT

MIG siRNA (h) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MIG shRNA Plasmid (h): sc-39361-SH and MIG shRNA (h) Lentiviral Particles: sc-39361-V as alternate gene silencing products.

For independent verification of MIG (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-39361A, sc-39361B and sc-39361C.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

MIG siRNA (h) is recommended for the inhibition of MIG expression in human 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 µM in 66 µl. 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.

GENE EXPRESSION MONITORING

MIG (A-9): sc-514138 is recommended as a control antibody for monitoring of MIG gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MIG gene expression knockdown using RT-PCR Primer: MIG (h)-PR: sc-39361-PR (20 µl). 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.

PROTOCOLS

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