SANTA CRUZ BIOTECHNOLOGY, INC.

# MRG1 siRNA (m): sc-35960

## BACKGROUND

MRG1 (MSG1-related gene 1) is a primary response gene that shares substantial sequence similarity to the carboxy-terminal region of MSG1 (melanocyte-specific gene-1). Both MRG1 and MSG1 contain two conserved domains designated CR1 and CR2, the latter of which is required for transcriptional activation, and they appear to represent a unique family of transcription factors. MRG1 expression is induced by cytokines, including IL-1$\alpha$, IL-9, and GM-CSF, as well as by serum growth factors, and it is regulated by the JAK/Stat pathway. Overexpression of MRG1 induces anchorage-independent growth in soft agar, loss of cell contact inhibition and tumor formation in nude mice, suggesting that MRG1 is a transforming gene with oncogenic properties. A splice variant of MRG1, designated p35srj, is ubiquitously expressed and interacts with the p300-CH1 domain of p300/CBP, where it inhibits the interaction of p300/CBP with hypoxia-inducible factor-1$\alpha$ (HIF-1$\alpha$) to prevent HIF-1 transactivation.

## REFERENCES


1. Shioda, T., et al. 1996. MSG1, a novel melanocyte-specific gene, encodes a nuclear protein and is associated with pigmentation. Proc. Natl. Acad. Sci. USA 93: 12298-12303.
2. Shioda, T., et al. 1997. MSG1 and its related protein MRG1 share a transcription activating domain. Gene 204: 235-241.
3. Dunwoodie, S.L., et al. 1998. MSG1 and MRG1, founding members of a gene family, show distinct patterns of gene expression during mouse embryogenesis. Mech. Dev. 72: 27-40.
4. Sun, H.B., et al. 1998. MRG1, the product of a melanocyte-specific gene related gene, is a cytokine-inducible transcription factor with transformation activity. Proc. Natl. Acad. Sci. USA 95: 13555-13560.


## CHROMOSOMAL LOCATION

Genetic locus: Cited2 (mouse) mapping to 10 A2.

## PRODUCT

MRG1 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MRG1 shRNA Plasmid (m): sc-35960-SH and MRG1 shRNA (m) Lentiviral Particles: sc-35960-V as alternate gene silencing products.

For independent verification of MRG1 (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-35960A, sc-35960B and sc-35960C.

## 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

MRG1 siRNA (m) is recommended for the inhibition of MRG1 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 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

MRG1 (JA22): sc-21795 is recommended as a control antibody for monitoring of MRG1 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-IgG$\kappa$ BP-HRP: sc-516102 or m-IgG$\kappa$ 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-IgG$\kappa$ BP-FITC: sc-516140 or m-IgG$\kappa$ 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 MRG1 gene expression knockdown using RT-PCR Primer: MRG1 (m)-PR: sc-35960-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS


1. Gu, H., et al. 2016. High glucose-repressed CITED2 expression through miR-200b triggers the unfolded protein response and endoplasmic reticulum stress. Diabetes 65: 149-163.
2. Wang, F., et al. 2017. Protein kinase C-$\alpha$ suppresses autophagy and induces neural tube defects via miR-129-2 in diabetic pregnancy. Nat. Commun. 8: 15182.


## 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.