

# MARCKSL1 siRNA (h): sc-88464

## BACKGROUND

MARCKS (myristoylated alanine-rich protein kinase C substrate), also designated 80K or 80K-L, is a 332 amino acid protein that localizes to the plasma membrane and functions as a major cellular substrate for protein kinase C (PKC). MARCKSL1 (MARCKS-like protein 1), also known as MacMARCKS, MLP, MRP, or F52, is a 195 amino acid protein that, like MARCKS, is a major substrate for PKC. Expressed in a variety of tissues with highest levels found in testis and uterus, MARCKSL1 participates in the coordination of membrane-cytoskeletal signaling events, including secretion, migration, phagocytosis and cell adhesion. Additionally, MARCKSL1 functions as a regulator of Integrin activation and is thought to regulate Integrin-dependent signal transduction pathways, especially those involved in macrophage spreading.

## REFERENCES

- Underhill, D.M., et al. 1998. MacMARCKS is not essential for phagocytosis in macrophages. *J. Biol. Chem.* 273: 33619-33623.
- Wohnsland, F., et al. 2000. MARCKS-related protein binds to Actin without significantly affecting Actin polymerization or network structure. Myristoylated alanine-rich C kinase substrate. *J. Struct. Biol.* 131: 217-224.
- Jin, T., et al. 2001. *In vivo* interaction between dynamin and MacMARCKS detected by the fluorescent resonance energy transfer method. *J. Biol. Chem.* 276: 12879-12884.
- Jess, U., et al. 2002. Interaction of the C-terminal region of the rat serotonin transporter with MacMARCKS modulates 5-HT uptake regulation by protein kinase C. *Biochem. Biophys. Res. Commun.* 294: 272-279.
- Murphy, A., et al. 2003. Induction of protein kinase C substrates, myristoylated alanine-rich C kinase substrate (MARCKS) and MARCKS-related protein (MRP), by Amyloid  $\beta$ -protein in mouse BV-2 microglial cells. *Neurosci. Lett.* 347: 9-12.
- Sundaram, M., et al. 2004. The MARCKS family of phospholipid binding proteins: regulation of phospholipase D and other cellular components. *Biochem. Cell Biol.* 82: 191-200.
- van den Bout, I., et al. 2007. The regulation of MacMARCKS expression by Integrin  $\beta$ 3. *Exp. Cell Res.* 313: 1260-1269.

## CHROMOSOMAL LOCATION

Genetic locus: MARCKSL1 (human) mapping to 1p35.1.

## PRODUCT

MARCKSL1 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MARCKSL1 shRNA Plasmid (h): sc-88464-SH and MARCKSL1 shRNA (h) Lentiviral Particles: sc-88464-V as alternate gene silencing products.

For independent verification of MARCKSL1 (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-88464A, sc-88464B and sc-88464C.

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

## APPLICATIONS

MARCKSL1 siRNA (h) is recommended for the inhibition of MARCKSL1 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  $\mu$ M in 66  $\mu$ 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.

## GENE EXPRESSION MONITORING

MARCKSL1 (K53): sc-130471 is recommended as a control antibody for monitoring of MARCKSL1 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<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MARCKSL1 gene expression knockdown using RT-PCR Primer: MARCKSL1 (h)-PR: sc-88464-PR (20  $\mu$ 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.