SANTA CRUZ BIOTECHNOLOGY, INC.

MICAL2 siRNA (h): sc-96854

BACKGROUND

MICAL2 (microtubule associated monoxygenase, calponin and LIM domain containing 2), also known as MICAL2PV1 or MICAL2PV2, is a 1,124 amino acid protein that localizes to both the cytoplasm and the cytoskeleton and contains one LIM zinc-binding domain and one calponin-homology domain. Using FAD as a cofactor, MICAL2 interacts with Rab 1B, plexin-A4 and Vimentin and, via these interactions, may play a role in cytoskeletal regulation, specifically at intermediate filaments. MICAL2, which exists as two alternatively spliced isoforms, is expressed at high levels in heart and brain and at lower levels in ovary, skeletal muscle, liver, testis and kidney tissue.

REFERENCES

1. Winberg, M.L., et al. 1998. Plexin A is a neuronal semaphorin receptor that controls axon guidance. Cell 95: 903-916.
2. Nagase, T., et al. 1998. Prediction of the coding sequences of unidentified human genes. XI. The complete sequences of 100 new cDNA clones from brain which code for large proteins *in vitro*. DNA Res. 5: 277-286.
3. Terman, J.R., et al. 2002. MICALs, a family of conserved flavoprotein oxidoreductases, function in plexin-mediated axonal repulsion. Cell 109: 887-900.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608881. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Fischer, J., et al. 2005. The MICAL proteins and rab1: a possible link to the cytoskeleton? Biochem. Biophys. Res. Commun. 328: 415-423.

CHROMOSOMAL LOCATION

Genetic locus: MICAL2 (human) mapping to 11p15.3.

PRODUCT

MICAL2 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 MICAL2 shRNA Plasmid (h): sc-96854-SH and MICAL2 shRNA (h) Lentiviral Particles: sc-96854-V as alternate gene silencing products.

For independent verification of MICAL2 (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-96854A, sc-96854B and sc-96854C.

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

MICAL2 siRNA (h) is recommended for the inhibition of MICAL2 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MICAL2 gene expression knockdown using RT-PCR Primer: MICAL2 (h)-PR: sc-96854-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. Hou, S.T., et al. 2015. Semaphorin3A elevates vascular permeability and contributes to cerebral ischemia-induced brain damage. Sci. Rep. 5: 7890.

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.