

MARCH5 siRNA (h): sc-90592

BACKGROUND

Ubiquitination is an important mechanism through which three classes of enzymes act in concert to target short-lived or abnormal proteins for destruction. The three classes of enzymes involved in ubiquitination are the ubiquitin-activating enzymes (E1s), the ubiquitin-conjugating enzymes (E2s) and the ubiquitin-protein ligases (E3s). MARCH5 (membrane-associated ring finger (C3HC4) 5), also known as MITOL, MARCH-V or RNF153, is a 278 amino acid multi-pass membrane protein that localizes to the mitochondrial outer membrane and contains one RING-CH-type zinc finger. Functioning as a mitochondrial E3 ubiquitin-protein ligase, MARCH5 plays an important role in mitochondrial morphology by transferring ubiquitin residues to target proteins, thereby mediating protein degradation. The gene encoding MARCH5 maps to human chromosome 10, which houses over 1,200 genes and comprises nearly 4.5% of the human genome.

REFERENCES

1. Bartee, E., et al. 2004. Downregulation of major histocompatibility complex class I by human ubiquitin ligases related to viral immune evasion proteins. *J. Virol.* 78: 1109-1120.
2. Yonashiro, R., et al. 2006. A novel mitochondrial ubiquitin ligase plays a critical role in mitochondrial dynamics. *EMBO J.* 25: 3618-3626.
3. Nakamura, N., et al. 2006. MARCH5 is a novel mitofusin 2- and DRP1-binding protein able to change mitochondrial morphology. *EMBO Rep.* 7: 1019-1022.
4. Online Mendelian Inheritance in Man, OMIM[™]. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 610637. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Karbowski, M., et al. 2007. The mitochondrial E3 ubiquitin ligase MARCH5 is required for DRP1 dependent mitochondrial division. *J. Cell Biol.* 178: 71-84.

CHROMOSOMAL LOCATION

Genetic locus: MARCH5 (human) mapping to 10q23.32.

PRODUCT

MARCH5 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MARCH5 shRNA Plasmid (h): sc-90592-SH and MARCH5 shRNA (h) Lentiviral Particles: sc-90592-V as alternate gene silencing products.

For independent verification of MARCH5 (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-90592A, sc-90592B and sc-90592C.

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.

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

MARCH5 siRNA (h) is recommended for the inhibition of MARCH5 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 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 MARCH5 gene expression knockdown using RT-PCR Primer: MARCH5 (h)-PR: sc-90592-PR (20 μ l, 570 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.