

# Marlin-1 siRNA (h): sc-89100

## BACKGROUND

Marlin-1 (multiple  $\alpha$ -helices and RNA-linker protein 1), also known as JAKMIP1 (janus kinase and microtubule-interacting protein 1) or GABABRB (GABA-B receptor-binding protein), is a 626 amino acid protein that belongs to the JAKMIP family. Existing as six alternatively spliced isoforms, Marlin-1 is a peripheral membrane protein that can also localize to the cytoplasm and cytoskeleton. Marlin-1 is thought to be involved in JAK1 signaling, as well as transport of the GABA<sub>B</sub> receptor. Expressed in testis, lymphoid cells, neural tissue, intestine and spleen, Marlin-1 exists as a homodimer that interacts with both GABA<sub>B</sub> R1 and UKHC. The gene encoding Marlin-1 maps to human chromosome 4p16.1, which represents approximately 6% of the human genome, contains nearly 900 genes and is associated with Huntington's disease, Ellis-van Creveld syndrome, methylmalonic acidemia and polycystic kidney disease.

## REFERENCES

1. Bonaventure, J., et al. 1996. Common mutations in the fibroblast growth factor receptor 3 (FGFR 3) gene account for achondroplasia, hypochondroplasia, and thanatophoric dwarfism. *Am. J. Med. Genet.* 63: 148-154.
2. Kalchman, M.A., et al. 1996. Huntingtin is ubiquitinated and interacts with a specific ubiquitin-conjugating enzyme. *J. Biol. Chem.* 271: 19385-19394.
3. Howard, T.D., et al. 1997. Autosomal dominant postaxial polydactyly, nail dystrophy, and dental abnormalities map to chromosome 4p16, in the region containing the Ellis-van Creveld syndrome locus. *Am. J. Hum. Genet.* 61: 1405-1412.
4. Sommardahl, C., et al. 2001. Phenotypic variations of orpk mutation and chromosomal localization of modifiers influencing kidney phenotype. *Physiol. Genomics* 7: 127-134.
5. Dobson, C.M., et al. 2002. Identification of the gene responsible for the cblA complementation group of vitamin B12-responsive methylmalonic acidemia based on analysis of prokaryotic gene arrangements. *Proc. Natl. Acad. Sci. USA* 99: 15554-15559.
6. Couve, A., et al. 2004. Marlin-1, a novel RNA-binding protein associates with GABA receptors. *J. Biol. Chem.* 279: 13934-13943.
7. Steindler, C., et al. 2004. Jamip1 (Marlin-1) defines a family of proteins interacting with janus kinases and microtubules. *J. Biol. Chem.* 279: 43168-43177.
8. Sjöblom, T., et al. 2006. The consensus coding sequences of human breast and colorectal cancers. *Science* 314: 268-274.
9. Costa, V., et al. 2007. Identification and expression analysis of novel Jakmip1 transcripts. *Gene* 402: 1-8.

## CHROMOSOMAL LOCATION

Genetic locus: JAKMIP1 (human) mapping to 4p16.1.

## PROTOCOLS

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

## PRODUCT

Marlin-1 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 Marlin-1 shRNA Plasmid (h): sc-89100-SH and Marlin-1 shRNA (h) Lentiviral Particles: sc-89100-V as alternate gene silencing products.

For independent verification of Marlin-1 (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-89100A, sc-89100B and sc-89100C.

## 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

Marlin-1 siRNA (h) is recommended for the inhibition of Marlin-1 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Marlin-1 gene expression knockdown using RT-PCR Primer: Marlin-1 (h)-PR: sc-89100-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.