SANTA CRUZ BIOTECHNOLOGY, INC.

# JP-45 siRNA (m): sc-146331

## BACKGROUND

JP-45 (junctional-face membrane protein of 45 kDa homolog), also known as JSRP1 (junctional sarcoplasmic reticulum protein 1), is a 331 amino acid sarcoplasmic and endoplasmic reticulum membrane protein. Interacting with L-type $Ca^{2+}$ CP $\alpha$1S, L-type $Ca^{2+}$ CP $\beta$1B and calsequestrin, JP-45 may participate in the regulation of the L-type $Ca^{2+}$ CP $\alpha$1S voltage-sensitive calcium channel as well as the regulation of L-type $Ca^{2+}$ CP $\alpha$1S membrane targeting and activity. JP-45 may also have a role in the excitation and contraction coupling of muscle cells via interactions with key proteins present in the sarcoplasmic reticulum (SR). JP-45's interaction with SR proteins make it an important component to skeletal muscle development and maintenance. The gene encoding JP-45 maps to human chromosome 19p13.3, silencing of this gene, while having no effect on postnatal development, may result in decreased muscle strength.

## REFERENCES


1. Zorzato, F., et al. 2000. Identification of a novel 45 kDa protein (JP-45) from rabbit sarcoplasmic-reticulum junctional-face membrane. Biochem. J. 351: 537-543.
2. Anderson, A.A., et al. 2003. The novel skeletal muscle sarcoplasmic reticulum JP-45 protein. Molecular cloning, tissue distribution, developmental expression, and interaction with $\alpha$ 1.1 subunit of the voltage-gated calcium channel. J. Biol. Chem. 278: 39987-39992.
3. Anderson, A.A., et al. 2006. The junctional SR protein JP-45 affects the functional expression of the voltage-dependent $Ca^{2+}$ channel Cav1.1. J. Cell Sci. 119: 2145-2155.
4. Ríos, E. 2006. Calcium signalling in muscle: a milestone for modulation studies. J. Physiol. 572: 1-2.
5. Gouadon, E., et al. 2006. A possible role of the junctional face protein JP-45 in modulating $Ca^{2+}$ release in skeletal muscle. J. Physiol. 572: 269-280.
6. Delbono, O., et al. 2007. Loss of skeletal muscle strength by ablation of the sarcoplasmic reticulum protein JP-45. Proc. Natl. Acad. Sci. USA 104: 20108-20113.
7. Newby, P.R., et al. 2010. Follow-up of potential novel Graves' disease susceptibility loci, identified in the UK WTCCC genome-wide nonsynonymous SNP study. Eur. J. Hum. Genet. 18: 1021-1026.


## CHROMOSOMAL LOCATION

Genetic locus: Jsrp1 (mouse) mapping to 10 C1.

## PRODUCT

JP-45 siRNA (m) is a target-specific 19-25 nt siRNA 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 JP-45 shRNA Plasmid (m): sc-146331-SH and JP-45 shRNA (m) Lentiviral Particles: sc-146331-V as alternate gene silencing 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 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

JP-45 siRNA (m) is recommended for the inhibition of JP-45 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

JP-45 (C-4): sc-377298 is recommended as a control antibody for monitoring of JP-45 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 JP-45 gene expression knockdown using RT-PCR Primer: JP-45 (m)-PR: sc-146331-PR (20 µl). 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 for detailed protocols and support products.