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# PACS-2 siRNA (m): sc-151987

## BACKGROUND

PACS-2 (phosphofurin acidic cluster sorting protein-2), also known as KIAA0602 or PACS1L, is an 889 amino acid protein that localizes to both the mitochondrion and the lumen of the endoplasmic reticulum (ER) and belongs to the PACS (phosphofurin acidic cluster sorting) family. Expressed in a broad range of tissues with highest expression in skeletal muscle, brain, heart, testis and pancreas, PACS-2 interacts with Polycystin-2 and BID and functions as a sorting protein that regulates mitochondria-ER communication. Additionally, PACS-2 is thought to be involved in ion channel trafficking, specifically direct cluster-containing ion channels to distinct subcellular compartments. Multiple isoforms of PACS-2 exist due to alternative splicing events.

## REFERENCES

1. Esposti, M.D., et al. 2001. Bid, a widely expressed proapoptotic protein of the Bcl-2 family, displays lipid transfer activity. *Mol. Cell. Biol.* 21: 7268-7276.
2. Rao, R.V., et al. 2004. Coupling endoplasmic reticulum stress to the cell death program. *Cell Death Differ.* 11: 372-380.
3. Gajkowska, B., et al. 2004. Translocation of Bax and Bid to mitochondria, endoplasmic reticulum and nuclear envelope: possible control points in apoptosis. *J. Mol. Biol.* 35: 11-19.
4. Köttgen, M., et al. 2005. Trafficking of TRPP2 by PACS proteins represents a novel mechanism of ion channel regulation. *EMBO J.* 24: 705-716.
5. Simmen, T., et al. 2005. PACS-2 controls endoplasmic reticulum-mitochondria communication and Bid-mediated apoptosis. *EMBO J.* 24: 717-729.
6. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 610423. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
7. Atkins, K.M., et al. 2008. HIV-1 Nef binds PACS-2 to assemble a multikinase cascade that triggers major histocompatibility complex class I (MHC-I) down-regulation: analysis using short interfering RNA and knock-out mice. *J. Biol. Chem.* 283: 11772-11784.

## CHROMOSOMAL LOCATION

Genetic locus: Pacs2 (mouse) mapping to 12 F1.

## PRODUCT

PACS-2 siRNA (m) 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 PACS-2 shRNA Plasmid (m): sc-151987-SH and PACS-2 shRNA (m) Lentiviral Particles: sc-151987-V as alternate gene silencing products.

For independent verification of PACS-2 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-151987A, sc-151987B and sc-151987C.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## 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

PACS-2 siRNA (m) is recommended for the inhibition of PACS-2 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  $\mu$ 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 PACS-2 gene expression knockdown using RT-PCR Primer: PACS-2 (m)-PR: sc-151987-PR (20  $\mu$ l, 595 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## PROTOCOLS

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