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SANTA CRUZ BIOTECHNOLOGY, INC.

NIPSNAP1 siRNA (m): sc-149978

BACKGROUND

The transient receptor potential (TRP) protein family consists of a diverse group of cation channels functioning in a variety of homeostatic and regulatory pathways. Four subfamilies exist, based on channel domain homology, not activating stimuli: C type (canonical or classical), V type (vanilloid receptor related), M type (melastatin related) and P type (PKD). NIPSNAP1 (4-nitrophenylphophatase domain and non-neuronal SNAP25-like 1) is a 228 amino acid protein that is abolishes TRPV6 currents, which facilitates calcium entry across the plasma membrane in pancreas, placenta, and to a lesser extent stomach and kidney tissue. TRPV6 membrane expression does not change in the presence of NIPSNAP1, which suggests that TRPV6 inhibition by NIPSNAP1 is independently regulated from reduced cell surface channel expression.

REFERENCES

1. Seroussi, E., et al. 1998. Characterization of the human NIPSNAP1 gene from 22q12: a member of a novel gene family. Gene 212: 13-20.
2. Lee, A.H., et al. 2002. Identification of a NIPSNAP homologue as host cell target for *Salmonella* virulence protein SpiC. Cell. Microbiol. 4: 739-750.
3. Buechler, C., et al. 2004. Expression pattern and raft association of NIPSNAP3 and NIPSNAP4, highly homologous proteins encoded by genes in close proximity to the ATP-binding cassette transporter A1. Genomics 83: 1116-1124.
4. Surendran, S., et al. 2005. Expression of calpastatin, minopontin, NIPSNAP1, rabaptin-5 and neuronatin in the phenylketonuria (PKU) mouse brain: possible role on cognitive defect seen in PKU. Neurochem. Int. 4: 595-599.
5. Serova, O.V., et al. 2008. Identification of proteins in complexes with α-latrotoxin receptors. Bioorg. Khim. 34: 747-753.
6. Schoeber, J.P., et al. 2008. Identification of NIPSNAP1 as a novel auxiliary protein inhibiting TRPV6 activity. Pflugers Arch. 457: 91-101.
7. Choudhary, C., et al. 2009. Lysine acetylation targets protein complexes and co-regulates major cellular functions. Science 325: 834-840.

CHROMOSOMAL LOCATION

Genetic locus: Nipsnap1 (mouse) mapping to 11 A1.

PRODUCT

NIPSNAP1 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NIPSNAP1 shRNA Plasmid (m): sc-149978-SH and NIPSNAP1 shRNA (m) Lentiviral Particles: sc-149978-V as alternate gene silencing products.

For independent verification of NIPSNAP1 (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-149978A, sc-149978B and sc-149978C.

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

NIPSNAP1 siRNA (m) is recommended for the inhibition of NIPSNAP1 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

NIPSNAP1 (H-9): sc-515197 is recommended as a control antibody for monitoring of NIPSNAP1 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 NIPSNAP1 gene expression knockdown using RT-PCR Primer: NIPSNAP1 (m)-PR: sc-149978-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.