

transgelin-3 siRNA (h): sc-78220

BACKGROUND

Transgelin (also designated SM22 α) is expressed abundantly in smooth muscle cells. Transgelin-2 (also known as SM22 α homolog) is a homolog of transgelin and is also expressed in smooth muscle cells and by peritoneal B-1 cells. Unlike the other two transgelin proteins, transgelin-3 (also designated TAGLN2, NP22 (neuronal protein 22) or NP25) is predominantly expressed in brain. Transgelin-3 contains a putative Actin-binding domain, two EF-hand motifs, two potential phosphorylation sites and a calponin-homology (CH) domain. Transgelin-3 shares homology with transgelin and Calponin, two cytoskeleton-interacting proteins. Belonging to the calponin family, transgelin-3 colocalizes with Actin and Tubulin, suggesting a possible role for transgelin-3 in neuronal plasticity or as a signaling protein. Due to a varied expression pattern, transgelin-3 may play different roles in the developing and adult brain. Expression of transgelin-3 is upregulated in regions of the human alcoholic brain.

REFERENCES

- Ren, W.Z., et al. 1994. The identification of NP25: a novel protein that is differentially expressed by neuronal subpopulations. *Brain Res. Mol. Brain Res.* 22: 173-185.
- Fan, L., et al. 2001. Molecular cloning and characterization of hNP22: a gene up-regulated in human alcoholic brain. *J. Neurochem.* 76: 1275-1281.
- Depaz, I., et al. 2003. Expression of hNP22 is altered in the frontal cortex and hippocampus of the alcoholic human brain. *Alcohol. Clin. Exp. Res.* 27: 1481-1488.
- Online Mendelian Inheritance in Man, OMIM[™]. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 607953. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Depaz, I.M., et al. 2005. Changes in neuronal protein 22 expression and cytoskeletal association in the alcohol-dependent and withdrawn rat brain. *J. Neurosci. Res.* 81: 253-260.
- Depaz, I.M. and Wilce, P.A. 2006. The novel cytoskeleton-associated protein neuronal protein 22: elevated expression in the developing rat brain. *Brain Res.* 1081: 59-64.

CHROMOSOMAL LOCATION

Genetic locus: TAGLN3 (human) mapping to 3q13.2.

PRODUCT

transgelin-3 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 transgelin-3 shRNA Plasmid (h): sc-78220-SH and transgelin-3 shRNA (h) Lentiviral Particles: sc-78220-V as alternate gene silencing products.

For independent verification of transgelin-3 (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-78220A, sc-78220B and sc-78220C.

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

transgelin-3 siRNA (h) is recommended for the inhibition of transgelin-3 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.

GENE EXPRESSION MONITORING

transgelin-3 (438.1): sc-100960 is recommended as a control antibody for monitoring of transgelin-3 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 κ BP-HRP: sc-516102 or m-IgG κ 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 κ BP-FITC: sc-516140 or m-IgG κ 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 transgelin-3 gene expression knockdown using RT-PCR Primer: transgelin-3 (h)-PR: sc-78220-PR (20 μ 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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.