



Solh siRNA (m): sc-153682

BACKGROUND

Calpains are calcium-activated thiol proteases involved in intracellular processing of proteins and signal transduction. The classic Calpains are heterodimers with one large subunit, one small subunit and five EF-hand-calcium binding structures. The large subunit varies between family members and can be active without the small subunit. Widely expressed, Calpain 15, which is also known as CAPN15 or SOLH (small optic lobes homolog), is a 1,086 amino acid protein found at highest levels in brain. As a member of the peptidase C2 family, Calpain 15 exists as two alternatively spliced isoforms containing a single calpain catalytic domain and five RanBP2-type zinc fingers. Calpain 15 is encoded by a gene located on human chromosome 16 and is thought to function as an RNA-binding protein and transcription factor and has also been suggested to play a role in protein-to-protein interactions during development of the visual system.

REFERENCES

1. Banfi, S., et al. 1996. Identification and mapping of human cDNAs homologous to *Drosophila* mutant genes through EST database searching. *Nat. Genet.* 13: 167-174.
2. Kamei, M., et al. 1998. SOLH, a human homologue of the *Drosophila* melanogaster small optic lobes gene is a member of the calpain and zinc-finger gene families and maps to human chromosome 16p13.3 near CATM (cataract with microphthalmia). *Genomics* 51: 197-206.
3. Online Mendelian Inheritance in Man, OMIM™. 1998. Johns Hopkins University, Baltimore, MD. MIM Number: 603267. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Farkas, A., et al. 2003. Revisiting ubiquity and tissue specificity of human calpains. *Biol. Chem.* 384: 945-949.
5. Czogalla, A., et al. 2005. Spectrin and calpain: a "target" and a "sniper" in the pathology of neuronal cells. *Cell. Mol. Life Sci.* 62: 1913-1924.
6. Croall, D.E. and Ersfeld, K. 2007. The calpains: modular designs and functional diversity. *Genome Biol.* 8: 218.
7. Evans, J.S. and Turner, M.D. 2007. Emerging functions of the calpain superfamily of cysteine proteases in neuroendocrine secretory pathways. *J. Neurochem.* 103: 849-859.

CHROMOSOMAL LOCATION

Genetic locus: Solh (mouse) mapping to 17 A3.3.

PRODUCT

Solh 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Solh shRNA Plasmid (m): sc-153682-SH and Solh shRNA (m) Lentiviral Particles: sc-153682-V as alternate gene silencing products.

For independent verification of Solh (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-153682A, sc-153682B and sc-153682C.

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

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

Calpain 15 (D-5): sc-514406 is recommended as a control antibody for monitoring of Solh 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 Solh gene expression knockdown using RT-PCR Primer: Solh (m)-PR: sc-153682-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.