

Calpain 6 siRNA (h): sc-62066

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. Calpain 6 (Capn6), also designated calpamodulin, CalpM or calpain-like protease X-linked, belongs to the peptidase C-2 family of proteins. It is exclusively expressed in placenta and may play a role in embryogenesis. Calpain 6, in addition to Calpain 10 and Calpain 5, differs from other subfamily members by the presence of a T-domain that is homologous to the *Caenorhabditis elegans* protein Tra-3. Calpain 6 is distinct from other calpains in that it lacks the cysteine and histidine residues required for protease activity. Overexpression of Calpain 6 leads to failure of cytokinesis and formation of microtubule bundles. This results in cells containing multiple nuclei. Calpain 6 may function in Actin organization and microtubule stability.

REFERENCES

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3. Markmann, A., et al. 2005. Downregulation of Calpain 9 is linked to hypertensive heart and kidney disease. *Cell. Physiol. Biochem.* 15: 109-116.
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7. Tonami, K., et al. 2007. Calpain 6 is involved in microtubule stabilization and cytoskeletal organization. *Mol. Cell. Biol.* 27: 2548-2561.
8. Lee, S.J., et al. 2007. Increased expression of Calpain 6 in uterine sarcomas and carcinosarcomas: an immunohistochemical analysis. *Int. J. Gynecol. Cancer* 17: 248-253.
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CHROMOSOMAL LOCATION

Genetic locus: CAPN6 (human) mapping to Xq23.

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.

PRODUCT

Calpain 6 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 Calpain 6 shRNA Plasmid (h): sc-62066-SH and Calpain 6 shRNA (h) Lentiviral Particles: sc-62066-V as alternate gene silencing products.

For independent verification of Calpain 6 (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-62066A, sc-62066B and sc-62066C.

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

Calpain 6 siRNA (h) is recommended for the inhibition of Calpain 6 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

Calpain 6 (1395CT446.22.5): sc-517318 is recommended as a control antibody for monitoring of Calpain 6 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Calpain 6 gene expression knockdown using RT-PCR Primer: Calpain 6 (h)-PR: sc-62066-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.