SANTA CRUZ BIOTECHNOLOGY, INC.

CALML5 siRNA (h): sc-72779

BACKGROUND

The level of intracellular calcium is tightly regulated in all eukaryotic cells. A modest increase in this level can result in a myriad of physiological responses, most of which are mediated by calmodulin (CaM), the universal calcium sensor. CaM directly modulates the activity of protein kinases and phosphatases, ion channels and nitric oxide synthetases. CaM is generally involved in such diverse processes as cell proliferation, endocytosis, cellular adhesion, protein turnover and smooth muscle contraction. CALML5 (calmodulin-like 5), also known as CLSP, is a 146 amino acid protein that contains four EF-hand domains and shares functional similarity with CaM. Related to the calmodulin family of calcium binding proteins, CALML5 is a novel calcium binding protein expressed in the epidermis. CALML5 interacts with TGase3 and may be involved in terminal differentiation of keratinocytes.

REFERENCES

1. Yaswen, P., et al. 1990. Downregulation of a calmodulin-related gene during transformation of human mammary epithelial cells. Proc. Natl. Acad. Sci. USA 87: 7360-7364.
2. Rhyner, J.A., et al. 1992. Characterization of the human calmodulin-like protein expressed in *Escherichia coli*. Biochemistry 31: 12826-12832.
3. Méhul, B., et al. 2001. Calmodulin-like skin protein: a new marker of keratinocyte differentiation. J. Invest. Dermatol. 116: 905-909.
4. Rogers, M.S., et al. 2001. Human calmodulin-like protein is an epithelial-specific protein regulated during keratinocyte differentiation. Exp. Cell Res. 267: 216-224.
5. Durussel, I., et al. 2002. Cation- and peptide-binding properties of human calmodulin-like skin protein. Biochemistry 41: 5439-5448.
6. Méhul, B., et al. 2006. Influence of calcium on the proteolytic degradation of the calmodulin-like skin protein (calmodulin-like protein 5) in psoriatic epidermis. Exp. Dermatol. 15: 469-477.
7. Babini, E., et al. 2006. A structural and dynamic characterization of the EF-hand protein CLSP. Structure 14: 1029-1038.

CHROMOSOMAL LOCATION

Genetic locus: CALML5 (human) mapping to 10p15.1.

PRODUCT

CALML5 siRNA (h) is a target-specific 19-25 nt siRNA 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 CALML5 shRNA Plasmid (h): sc-72779-SH and CALML5 shRNA (h) Lentiviral Particles: sc-72779-V as alternate gene silencing products.

PROTOCOLS

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

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

CALML5 siRNA (h) is recommended for the inhibition of CALML5 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 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

CALML5 (A-3): sc-393637 is recommended as a control antibody for monitoring of CALML5 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 CALML5 gene expression knockdown using RT-PCR Primer: CALML5 (h)-PR: sc-72779-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.