SANTA CRUZ BIOTECHNOLOGY, INC.

CALML4 siRNA (h): sc-90091

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. CALML4 (Calmodulin-like protein 4), also known as Serologically defined breast cancer antigen NY-BR-20, is a 196 amino acid protein that contains four EF-hand domains and shares functional similarity with CaM. Related to the calmodulin family of calcium binding proteins, CALML4 is a novel calcium binding protein expressed in breast cancer cells. There are three isoforms of CALML4 that are produced as a result of alternative splicing events.

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. Mehul, 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. Scanlan, M.J., et al. 2001. Humoral immunity to human breast cancer: antigen definition and quantitative analysis of mRNA expression. Cancer Immun. 1: 4.
6. Durussel, I., et al. 2002. Cation- and peptide-binding properties of human calmodulin-like skin protein. Biochemistry 41: 5439-5448.
7. Chen, L., et al. 2005. Quantitative transcriptional profiling of ATDC5 mouse progenitor cells during chondrogenesis. Differentiation 73: 350-363.

CHROMOSOMAL LOCATION

Genetic locus: CALML4 (human) mapping to 15q23.

PRODUCT

CALML4 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CALML4 shRNA Plasmid (h): sc-90091-SH and CALML4 shRNA (h) Lentiviral Particles: sc-90091-V as alternate gene silencing products.

For independent verification of CALML4 (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-90091A, sc-90091B and sc-90091C.

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

CALML4 siRNA (h) is recommended for the inhibition of CALML4 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CALML4 gene expression knockdown using RT-PCR Primer: CALML4 (h)-PR: sc-90091-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.