SANTA CRUZ BIOTECHNOLOGY, INC.

Tescalcin siRNA (h): sc-96026

BACKGROUND

The EF-hand domain is a 12 amino acid loop motif that is commonly found in proteins that participate in calcium-binding events within the cell. EF-hand domains generally exist in a pair that, together, form a stable four-helix bundle that enables the binding of calcium ions. Tescalcin, also known as TESC, TSC or CHP3, is a 267 amino acid protein that contains one EF-hand domain and is expressed abundantly in adult heart tissue. Using calcium as a cofactor, Tescalcin interacts with NHE-1 and functions to couple the activation of the ERK cascade with the expression of Ets proteins during megakaryocytic differentiation. Human Tescalcin shares 97% sequence identity with its mouse counterpart, suggesting a conserved role between species. Multiple isoforms of Tescalcin exist due to alternative splicing events.

REFERENCES

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2. Mailänder, J., et al. 2001. Human homolog of mouse Tescalcin associates with Na^+/H^+ exchanger type-1. FEBS Lett. 507: 331-335.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 611585. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Li, X., et al. 2003. The Na^+/H^+ exchanger cytoplasmic tail: structure, function, and interactions with Tescalcin. Biochemistry 42: 7448-7456.
5. Gutierrez-Ford, C., et al. 2003. Characterization of Tescalcin, a novel EF-hand protein with a single Ca^{2+}-binding site: metal-binding properties, localization in tissues and cells, and effect on calcineurin. Biochemistry 42: 14553-14565.
6. Malo, M.E. and Fliegel, L. 2006. Physiological role and regulation of the Na^+/H^+ exchanger. Can. J. Physiol. Pharmacol. 84: 1081-1095.
7. Levay, K. and Slepak, V.Z. 2007. Tescalcin is an essential factor in megakaryocytic differentiation associated with Ets family gene expression. J. Clin. Invest. 117: 2672-2683.

CHROMOSOMAL LOCATION

Genetic locus: TESC (human) mapping to 12q24.22.

PRODUCT

Tescalcin siRNA (h) is a pool of 2 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 Tescalcin shRNA Plasmid (h): sc-96026-SH and Tescalcin shRNA (h) Lentiviral Particles: sc-96026-V as alternate gene silencing products.

For independent verification of Tescalcin (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-96026A and sc-96026B.

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

Tescalcin siRNA (h) is recommended for the inhibition of Tescalcin 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 Tescalcin gene expression knockdown using RT-PCR Primer: Tescalcin (h)-PR: sc-96026-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Kang, Y.H., et al. 2014. The EF-hand calcium-binding protein Tescalcin is a potential oncotarget in colorectal cancer. Oncotarget 5: 2149-2160.

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.