

Tescalcin siRNA (m): sc-154194

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

1. Perera, E.M., Martin, H., Seeherunvong, T., Kos, L., Hughes, I.A., Hawkins, J.R. and Berkovitz, G.D. 2001. Tescalcin, a novel gene encoding a putative EF-hand Ca^{2+} -binding protein, Col9a3, and renin are expressed in the mouse testis during the early stages of gonadal differentiation. *Endocrinology* 142: 455-463.
2. Mailänder, J., Müller-Esterl, W. and Dedio, J. 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., Liu, Y., Kay, C.M., Müller-Esterl, W. and Fliegel, L. 2003. The Na^+/H^+ exchanger cytoplasmic tail: structure, function, and interactions with tescalcin. *Biochemistry* 42: 7448-7456.
5. Gutierrez-Ford, C., Levay, K., Gomes, A.V., Perera, E.M., Som, T., Kim, Y.M., Benovic, J.L., Berkovitz, G.D. and Slepak, V.Z. 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 (mouse) mapping to 5 F.

PRODUCT

Tescalcin siRNA (m) 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 Tescalcin shRNA Plasmid (m): sc-154194-SH and Tescalcin shRNA (m) Lentiviral Particles: sc-154194-V as alternate gene silencing 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

Tescalcin siRNA (m) is recommended for the inhibition of Tescalcin 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 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 (m)-PR: sc-154194-PR (20 μl). Annealing temperature for the primers should be $55-60^\circ\text{C}$ and the extension temperature should be $68-72^\circ\text{C}$.

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.