

# TORC3 siRNA (m): sc-154556

## BACKGROUND

TORC3 (transducer of regulated cAMP response element-binding protein 3), also known as CRT3 (CREB-regulated transcription coactivator 3), is a 619 amino acid protein that localizes to both the cytoplasm and the nucleus and belongs to the TORC family. Expressed in lung tissue and B and T lymphocytes, as well as in colon, brain, ovary, kidney, prostate, colon and heart, TORC3 functions as a transcriptional coactivator for CREB-1, thereby regulating the expression of CREB-activated genes, and is also thought to activate the SIK/TORC signaling pathway. TORC3 exists as multiple alternatively spliced isoforms and, in addition to its role in transcriptional activation, is thought to induce mitochondrial biogenesis, specifically in muscle cells.

## REFERENCES

1. Conkright, M.D., et al. 2003. TORCs: transducers of regulated CREB activity. *Mol. Cell* 12: 413-423.
2. Iourgenko, V., et al. 2003. Identification of a family of cAMP response element-binding protein coactivators by genome-scale functional analysis in mammalian cells. *Proc. Natl. Acad. Sci. USA* 100: 12147-12152.
3. Koga, H., et al. 2004. Enhanced activation of tax-dependent transcription of human T-cell leukemia virus type I (HTLV-I) long terminal repeat by TORC3. *J. Biol. Chem.* 279: 52978-52983.
4. Siu, Y.T., et al. 2006. TORC1 and TORC2 coactivators are required for tax activation of the human T-cell leukemia virus type 1 long terminal repeats. *J. Virol.* 80: 7052-7059.
5. Wu, Z., et al. 2006. Transducer of regulated CREB-binding proteins (TORCs) induce PGC-1 $\alpha$  transcription and mitochondrial biogenesis in muscle cells. *Proc. Natl. Acad. Sci. USA* 103: 14379-14384.
6. Hishiki, T., et al. 2007. BCL3 acts as a negative regulator of transcription from the human T-cell leukemia virus type 1 long terminal repeat through interactions with TORC3. *J. Biol. Chem.* 282: 28335-28343.
7. Online Mendelian Inheritance in Man, OMIM™. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 608986. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

## CHROMOSOMAL LOCATION

Genetic locus: *Crtc3* (mouse) mapping to 7 D3.

## PRODUCT

TORC3 siRNA (m) 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TORC3 shRNA Plasmid (m): sc-154556-SH and TORC3 shRNA (m) Lentiviral Particles: sc-154556-V as alternate gene silencing products.

For independent verification of TORC3 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-154556A, sc-154556B and sc-154556C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

TORC3 siRNA (m) is recommended for the inhibition of TORC3 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  $\mu$ M in 66  $\mu$ 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

TORC3 (A-12): sc-390712 is recommended as a control antibody for monitoring of TORC3 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-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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 TORC3 gene expression knockdown using RT-PCR Primer: TORC3 (m)-PR: sc-154556-PR (20  $\mu$ l). 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](http://www.scbt.com) for detailed protocols and support products.