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# TLF siRNA (m): sc-154293

## BACKGROUND

The TATA box-binding protein (TBP) is an essential component of the basal transcriptional machinery. TBP and the various RNA polymerase subunits are assembled with unique TBP-associated factors (TAFs) into distinct complexes that act specifically with either RNA polymerase I (SL1/TIF-IB), RNA polymerase II (TFIID), or RNA polymerase III (TFIIIB) on cognate promoters. TLF (also called TBP-related factor 2 [TRF2]) activates a number of different genes, including the neurofibromatosis type 1 (NF1) gene. TLF is related in sequence and structure to TBP and the *Drosophila* TBP-related factor TRF1. TLF functions as gene-specific factor for RNA polymerase II-mediated transcription, but unlike TBP, TLF does not appear to be universal binding factor of other RNA polymerase complexes. TLF preferentially binds to and forms a stable complex with TFIIA. TFIIA is required as a core promoter selective factor for both basal and activated TFIID-mediated transcription as it enhances TBP/TFIID binding to DNA and alleviates TFIID repression that is mediated by negative cofactors.

## REFERENCES

- Lee, T.I. and Young, R. 1998. Regulation of gene expression by TBP-associated proteins. *Genes Dev.* 12: 1398-1408.
- Meisterernst, M. and Roeder, R.G. 1991. Family of proteins that interact with TFIID and regulate promoter activity. *Cell* 67: 557-567.
- Orphanides, G., et al. 1996. The general transcription factors of RNA polymerase II. *Genes Dev.* 10: 2657-2683.
- Rabenstein, M.D., et al. 1999. TATA box-binding protein (TBP)-related factor 2 (TRF2), a third member of the TBP family. *Proc. Natl. Acad. Sci. USA* 96: 4791-4796.
- Maldonado, E. 1999. Transcriptional functions of a new mammalian TATA-binding protein-related factor. *J. Biol. Chem.* 274: 12963-12966.
- Teichmann, M., et al. 1999. Human TATA-binding protein-related factor-2 (hTRF2) stably associates with hTFIIA in HeLa cells. *Proc. Natl. Acad. Sci. USA* 96: 13720-13725.
- Ozer, J., et al. 2000. A testis-specific transcription factor IIA (TFIIA $\tau$ ) stimulates TATA-binding protein-DNA binding and transcription activation. *J. Biol. Chem.* 275: 122-128.
- Ozer, J., et al. 1998. Transcription factor IIA derepresses TATA-binding protein (TBP)-associated factor inhibition of TBP-DNA binding. *J. Biol. Chem.* 273: 14293-14300.

## CHROMOSOMAL LOCATION

Genetic locus: Tbp1 (mouse) mapping to 10 A3.

## PRODUCT

TLF 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TLF shRNA Plasmid (m): sc-154293-SH and TLF shRNA (m) Lentiviral Particles: sc-154293-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  $\mu$ 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

TLF siRNA (m) is recommended for the inhibition of TLF 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

TLF (C-8): sc-514059 is recommended as a control antibody for monitoring of TLF 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<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TLF gene expression knockdown using RT-PCR Primer: TLF (m)-PR: sc-154293-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.