

# TCF23 siRNA (h): sc-94492

## BACKGROUND

Basic helix-loop-helix (bHLH) proteins are a group of transcription factors that influence the regulation of neurogenesis, cardiogenesis, myogenesis, differentiation and cell proliferation. TCF23 (transcription factor 23), also known as OUT or bHLHa24, is a 214 amino acid nuclear protein that is expressed in liver, kidney, spleen and reproductive organs. Containing one basic helix-loop-helix (bHLH) domain, TCF23 inhibits E-box-mediated binding and trans-activation of bHLH factors. TCF23 is considered a novel basic helix-loop-helix transcription factor with Id-like inhibitory activity and is suggested to participate in the inhibition of myogenesis. TCF23 is encoded by a gene on human chromosome 2, which houses over 1,400 genes and comprises nearly 8% of the human genome.

## REFERENCES

1. Chaudhary, J., et al. 1997. Role of basic-helix-loop-helix transcription factors in Sertoli cell differentiation: identification of an E-box response element in the transferrin promoter. *Endocrinology* 138: 667-675.
2. Narumi, O., et al. 2000. OUT, a novel basic helix-loop-helix transcription factor with an Id-like inhibitory activity. *J. Biol. Chem.* 275: 3510-3521.
3. Tachibana, M., et al. 2001. Genomic organization and chromosomal mapping of the basic helix-loop-helix factor OUT (Tcf23/TCF23). *Cytogenet. Cell Genet.* 94: 23-25.
4. McLellan, A.S., et al. 2002. Exhaustive identification of human class II basic helix-loop-helix proteins by virtual library screening. *Gene Expr. Patterns* 2: 329-335.
5. Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 609635. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Wang, Y., et al. 2008. Progress of studies on bHLH transcription factor families. *Yi Chuan* 30: 821-830.
7. Skinner, M.K., et al. 2010. Basic helix-loop-helix transcription factor gene family phylogenetics and nomenclature. *Differentiation* 80: 1-8.

## CHROMOSOMAL LOCATION

Genetic locus: TCF23 (human) mapping to 2p23.3.

## PRODUCT

TCF23 siRNA (h) 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 TCF23 shRNA Plasmid (h): sc-94492-SH and TCF23 shRNA (h) Lentiviral Particles: sc-94492-V as alternate gene silencing products.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support 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

TCF23 siRNA (h) is recommended for the inhibition of TCF23 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  $\mu$ 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TCF23 gene expression knockdown using RT-PCR Primer: TCF23 (h)-PR: sc-94492-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.