

TBX15 siRNA (m): sc-38478

BACKGROUND

The T-box (Tbx) motif is present in a family of genes whose structural features and expression patterns support their involvement in developmental gene regulation. The Tbx gene family are largely conserved throughout metazoan evolution, and these genes code for putative transcription factors that share a uniquely defining DNA-binding domain. Tbx genes are a family of developmental regulators with more than 20 members recently identified in invertebrates and vertebrates. Mutations in Tbx genes are associated with the onset of several human diseases. Our understanding of functional mechanisms of Tbx products has come mainly from the prototypical T/Brachyury, which is a transcription activator. The Tbx genes constitute a family of transcriptional regulatory genes that are implicated in a variety of developmental processes ranging from the formation of germ layers to the organizational patterning of the central nervous system. TBX15, (T-box transcription factor TBX15), also designated TBX14, is a 602 amino acid protein. Mutations in the TBX15 gene are associated with Cousin syndrome a disorder characterized by short stature, craniofacial dysmorphism and hypoplasia of scapula and pelvis.

REFERENCES

1. Law, D.J., et al. 1995. Identification, characterization, and localization to chromosome 17q21-22 of the human TBX2 homolog, member of a conserved developmental gene family. *Mamm. Genome* 6: 793-797.
2. Agulnik, S.I., et al. 1998. Cloning, mapping, and expression analysis of TBX15, a new member of the T-Box gene family. *Genomics* 51: 68-75.
3. Dheen, T., et al. 1999. Zebrafish tbx-c functions during formation of midline structures. *Development* 126: 2703-2713.
4. He, M.I., et al. 1999. Transcription repression by *Xenopus* ET and its human ortholog TBX3, a gene involved in ulnar-mammary syndrome. *Proc. Natl. Acad. Sci. USA* 96: 10212-10217.
5. Begemann, G., et al. 2000. Developmental regulation of Tbx5 in zebrafish embryogenesis. *Mech. Dev.* 90: 299-304.
6. Ahn, D.G., et al. 2000. Tbx20, a new vertebrate T-box gene expressed in the cranial motor neurons and developing cardiovascular structures in zebrafish. *Mech. Dev.* 95: 253-258.
7. Lausch, E., et al. 2008. TBX15 mutations cause craniofacial dysmorphism, hypoplasia of scapula and pelvis, and short stature in Cousin syndrome. *Am. J. Hum. Genet.* 83: 649-655.

CHROMOSOMAL LOCATION

Genetic locus: Tbx15 (mouse) mapping to 3 F2.2.

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.

PRODUCT

TBX15 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TBX15 shRNA Plasmid (m): sc-38478-SH and TBX15 shRNA (m) Lentiviral Particles: sc-38478-V as alternate gene silencing products.

For independent verification of TBX15 (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-38478A, sc-38478B and sc-38478C.

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

APPLICATIONS

TBX15 siRNA (m) is recommended for the inhibition of TBX15 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 μ M in 66 μ 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 TBX15 gene expression knockdown using RT-PCR Primer: TBX15 (m)-PR: sc-38478-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.