

TBX5 (h): 293T Lysate: sc-114054

BACKGROUND

Members of the T-box (Tbx) gene family share a conserved domain that codes for the T-box, a sequence involved in DNA-binding and protein dimerization. The Tbx gene family is largely conserved throughout metazoan evolution, and is implicated in a variety of developmental processes ranging from the formation of germ layers to the organizational patterning of the central nervous system. Embryonic expression of TBX5 has been found in the human retina. TBX5 as well as TBX20 are required for and have non-redundant functions in early heart development. The genes encoding human TBX5 and TBX1 are mutated in cardiac congenital anomaly syndromes. Specifically, mutations in the TBX5 gene have been identified in patients with Holt-Oram syndrome, an autosomal dominant heart-hand syndrome characterized by congenital heart disease and upper limb deformity.

REFERENCES

1. Agulnik, S.I., Papaioannou, V.E. and Silver, L.M. 1998. Cloning, mapping, and expression analysis of TBX15, a new member of the T-box gene family. *Genomics* 51: 68-75.
2. He, M.I., Wen, L., Campbell, C.E., Wu, J.Y. and Rao, Y. 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.
3. Begemann, G. and Ingham, P.W. 2000. Developmental regulation of TBX5 in zebrafish embryogenesis. *Mech. Dev.* 90: 299-304.
4. Ahn, D.G., Ruvinsky, I., Oates, A.C., Silver, L.M. and Ho, R.K. 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.
5. Minguillon, C. and Logan, M. 2003. The comparative genomics of T-box genes. *Brief. Funct. Genomic. Proteomic.* 2: 224-233.
6. Murakami, M., Nakagawa, M., Olson, E.N. and Nakagawa, O. 2005. A WW domain protein TAZ is a critical coactivator for TBX5, a transcription factor implicated in Holt-Oram syndrome. *Proc. Natl. Acad. Sci. USA* 102: 18034-18039.
7. McDermott, D.A., Bressan, M.C., He, J., Lee, J.S., Aftimos, S., Brueckner, M., Gilbert, F., Graham, G.E., Hannibal, M.C., Innis, J.W., Pierpont, M.E., Raas-Rothschild, A., Shanske, A.L., Smith, W.E., et al. 2005. TBX5 genetic testing validates strict clinical criteria for Holt-Oram syndrome. *Pediatr. Res.* 58: 981-986.
8. Gruenauer-Kloevekorn, C., Reichel, M.B., Duncker, G.I. and Froster, U.G. 2005. Molecular genetic and ocular findings in patients with Holt-Oram syndrome. *Ophthalmic Genet.* 26: 1-8.
9. Brown, D.D., Martz, S.N., Binder, O., Goetz, S.C., Price, B.M., Smith, J.C. and Conlon, F.L. 2005. TBX5 and TBX20 act synergistically to control vertebrate heart morphogenesis. *Development* 132: 553-563.

CHROMOSOMAL LOCATION

Genetic locus: TBX5 (human) mapping to 12q24.21.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PRODUCT

TBX5 (h): 293T Lysate represents a lysate of human TBX5 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

TBX5 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive TBX5 antibodies. Recommended use: 10-20 µl per lane.

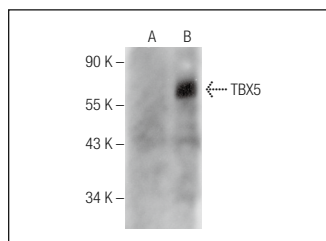
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

TBX5 (A-4): sc-376952 is recommended as a positive control antibody for Western Blot analysis of enhanced human TBX5 expression in TBX5 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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.

DATA



TBX5 (A-4): sc-376952. Western blot analysis of TBX5 expression in non-transfected: sc-117752 (A) and human TBX5 transfected: sc-114054 (B) 293T whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.