

SHOX2 (JK-6E): sc-81955

BACKGROUND

Homeodomain proteins (HP) are transcriptional regulators that coordinate the expression of genes involved in development, differentiation and cellular transformation. HPs are characterized by a conserved domain of 60 amino acid residues that recognize and bind a site in the regulatory region of the target gene. SHOX2, also designated SHOT, is a human paired-related homeobox gene with two known isoforms, SHOX2A and SHOX2B, which are products of alternative splicing. The SHOX2A and SHOX2B isoforms differ in N-terminal residues and an alternatively-spliced C-terminal exon. Both isoforms contain a C-terminal OAR domain, a motif characteristic of craniofacially-expressed homeodomain proteins. Transcripts of OGI2X, the mouse ortholog of SHOX2, have been isolated in the aorta, female genitalia, diencephalon, mesencephalon, myelencephalon, nasal capsula, palate, eyelid and limbs of developing mouse embryo. OGI2X localization and expression patterns suggest that SHOX2 may play a role in the pathology of Cornelia de Lange syndrome, a multisystem disorder that is characterized by somatic and cognitive retardation, characteristic facial features and limb abnormalities.

REFERENCES

- Blaschke, R.J., et al. 1998. SHOT, a SHOX-related homeobox gene, is implicated in craniofacial, brain, heart and limb development. *Proc. Natl. Acad. Sci. USA* 95: 2406-2411.
- Semina, E.V., et al. 1998. A new human homeobox gene OGI2X is a member of the most conserved homeobox gene family and is expressed during heart development in mouse. *Hum. Mol. Genet.* 7: 415-422.
- Chariot, A., et al. 1999. The homeodomain-containing proteins: an update on their interacting partners. *Biochem. Pharmacol.* 58: 1851-1857.
- Russell, K.L., et al. 2001. Dominant paternal transmission of Cornelia de Lange syndrome: a new case and review of 25 previously reported familial recurrences. *Am. J. Med. Genet.* 104: 267-276.
- Blaschke, R.J., et al. 2001. SHOX in short stature syndromes. *Horm. Res.* 55: 21-23.

CHROMOSOMAL LOCATION

Genetic locus: SHOX2 (human) mapping to 3q25.32; Shox2 (mouse) mapping to 3 E1.

SOURCE

SHOX2 (JK-6E) is a mouse monoclonal antibody raised against recombinant SHOX2 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

SHOX2 (JK-6E) is recommended for detection of SHOX2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for SHOX2 siRNA (h): sc-44100, SHOX2 siRNA (m): sc-38783, SHOX2 shRNA Plasmid (h): sc-44100-SH, SHOX2 shRNA Plasmid (m): sc-38783-SH, SHOX2 shRNA (h) Lentiviral Particles: sc-44100-V and SHOX2 shRNA (m) Lentiviral Particles: sc-38783-V.

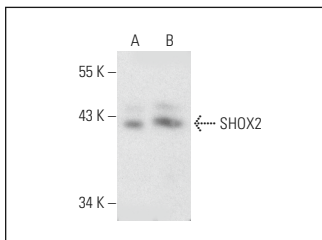
Molecular Weight of SHOX2: 35 kDa.

Positive Controls: PC-12 cell lysate: sc-2250, NIH/3T3 whole cell lysate: sc-2210 or L6 whole cell lysate: sc-364196.

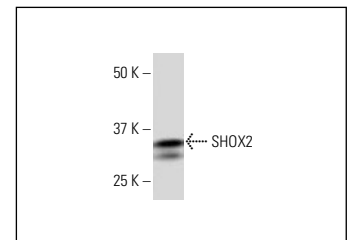
RECOMMENDED SUPPORT REAGENTS

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



SHOX2 (JK-6E): sc-81955. Western blot analysis of SHOX2 expression in NIH/3T3 (A) and L6 (B) whole cell lysates.



SHOX2 (JK-6E): sc-81955. Western blot analysis of SHOX2 expression in PC-12 whole cell lysate.

SELECT PRODUCT CITATIONS

- Yan, F., et al. 2024. Single-cell multiomics decodes regulatory programs for mouse secondary palate development. *Nat. Commun.* 15: 821.
- Oh, Y., et al. 2024. Transcriptional regulation of the postnatal cardiac conduction system heterogeneity. *Nat. Commun.* 15: 6550.

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.