

## LHX3 (K-18): sc-13263

### BACKGROUND

During development, genetically distinct subtypes of motor neurons express unique combinations of LIM-type homeodomain factors, which regulate cell migration and axon navigation. The LHX3 LIM homeodomain transcription factor is critical for neuron specification and pituitary development. LHX3 exists as two isoforms, LHX3a and LHX3b, that differ exclusively in their amino terminus, but share common LIM domains and a conserved homeodomain. The homeodomain contains three nuclear localization signals and serves as the nuclear matrix targeting sequence. Both LHX3a and LHX3b are localized to the nucleus and are mainly expressed in the adult pituitary gland, the spinal cord, and the lungs. The amino terminus of the short LHX3b isoform inhibits DNA binding and the transcriptional activity of the protein. Human LHX3 maps to the subtelomeric region of chromosome 9 at band 9q34.3, a region noted for chromosomal translocation and insertion events, which suggests a role for LHX3 in central nervous system developmental disorders.

### REFERENCES

1. Sloop, K.W., et al. 1999. Differential activation of pituitary hormone genes by human LHX3 isoforms with distinct DNA binding properties. *Mol. Endocrinol.* 13: 2212-2225.
2. Parker, G.E., et al. 2000. The homeodomain coordinates nuclear entry of the LHX3 neuroendocrine transcription factor and association with the nuclear matrix. *J. Biol. Chem.* 275: 23891-23898.
3. Scmitt S., et al. 2000. Genomic structure, chromosomal localization, and expression pattern of the human LIM-homeobox3 (LHX3) gene. *Biochem. Biophys. Res. Commun.* 274: 49-56.
4. Sharma, K., et al. 2000. Genetic and epigenetic mechanisms contribute to motor neuron pathfinding. *Nature* 406: 515-519.
5. Sloop, K.W., et al. 2000. Analysis of the human LHX3 neuroendocrine transcription factor gene and mapping to the subtelomeric region of chromosome 9. *Gene* 245: 237-243.

### CHROMOSOMAL LOCATION

Genetic locus: LHX3 (human) mapping to 9q34.3; Lhx3 (mouse) mapping to 2 A3.

### SOURCE

LHX3 (K-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of LHX3 of human origin.

### PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-13263 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-13263 X, 200 µg/0.1 ml.

### APPLICATIONS

LHX3 (K-18) is recommended for detection of LHX3 isoforms a and b of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for LHX3 siRNA (h): sc-38712, LHX3 siRNA (m): sc-38713, LHX3 shRNA Plasmid (h): sc-38712-SH, LHX3 shRNA Plasmid (m): sc-38713-SH, LHX3 shRNA (h) Lentiviral Particles: sc-38712-V and LHX3 shRNA (m) Lentiviral Particles: sc-38713-V.

LHX3 (K-18) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of LHX3: 43 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

### RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

### SELECT PRODUCT CITATIONS

1. Kam, K.Y., et al. 2005. Oct-1 and nuclear factor Y bind to the SURG-1 element to direct basal and gonadotropin-releasing hormone (GnRH)-stimulated mouse GnRH receptor gene transcription. *Mol. Endoc.* 19: 148-162.

### STORAGE

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

### 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) or our catalog for detailed protocols and support products.

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Try **LHX3 (2C10): sc-293411**, our highly recommended monoclonal alternative to LHX3 (K-18).