

# LHX3 (2C10): sc-293411

## 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 (2C10) is a mouse monoclonal antibody raised against amino acids 228-316 of LHX3 of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>2a</sub> 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

LHX3 (2C10) is recommended for detection of LHX3 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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.

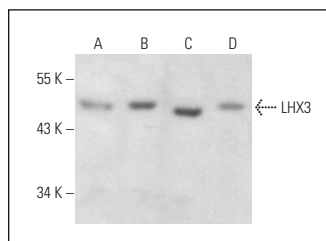
Molecular Weight of LHX3: 43 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, Jurkat whole cell lysate: sc-2204 or Neuro-2A whole cell lysate: sc-364185.

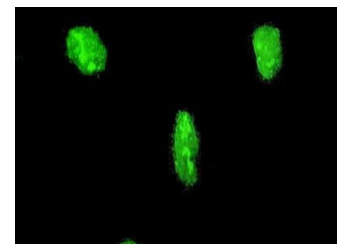
## RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



LHX3 (2C10): sc-293411. Western blot analysis of LHX3 expression in Jurkat (A), Hep G2 (B) and Neuro-2A (C) whole cell lysates and human brain tissue extract (D).



LHX3 (2C10): sc-293411. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

## 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) for detailed protocols and support products.