

# LHX3 (S-21): sc-133736

## 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.

## CHROMOSOMAL LOCATION

Genetic locus: LHX3 (human) mapping to 9q34.3.

## SOURCE

LHX3 (S-21) is a Protein A purified rabbit polyclonal antibody raised against synthetic LHX3 peptide of human origin.

## PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

## APPLICATIONS

LHX3 (S-21) is recommended for detection of LHX3 of 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 shRNA Plasmid (h): sc-38712-SH and LHX3 shRNA (h) Lentiviral Particles: sc-38712-V.

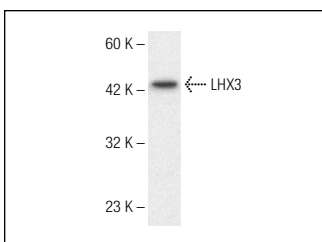
Molecular Weight of LHX3: 43 kDa.

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

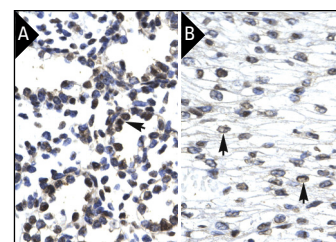
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

## DATA



LHX3 (S-21): sc-133736. Western blot analysis of LHX3 expression in Jurkat whole cell lysate.



LHX3 (S-21): sc-133736. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human lung tissue (A) and human heart tissue (B) showing nuclear localization.

## RESEARCH USE

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

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Try **LHX3 (2C10): sc-293411**, our highly recommended monoclonal alternative to LHX3 (S-21).