

# LHX2 (LHX2A12G1): sc-81311

## BACKGROUND

During development, genetically distinct subtypes of motor neurons express unique combinations of LIM-type homeodomain factors, which regulate cell migration and guide motor axons to establish the fidelity of a binary choice in axonal trajectory. The LIM gene family encodes a set of gene products, which carry the LIM domain, a unique cysteine-rich zinc-binding domain. At least 40 members of this family have been identified in vertebrates and invertebrates, and are distributed into 4 groups according to the number of LIM domains and to the presence of homeodomains and kinase domains. The overlapping expression of LHX1, LHX3, LHX4, Isl-1 and Isl-2 in developing motoneurons along the spinal column may influence the establishment of specific motoneuron subtypes. The human LHX2 gene maps to chromosome 9q33.3 and encodes a 389 amino acid protein. LHX2 is involved in early patterning of the telencephalon, where the neuroepithelium is first divided into cortical tissue and cortical hem.

## REFERENCES

1. Lilly, B., et al. 1999. The LIM homeodomain protein dLim1 defines a subclass of neurons within the embryonic ventral nerve cord of *Drosophila*. *Mech. Dev.* 88: 195-205.
2. Cheah, S.S., et al. 2000. Requirement of LIM domains for LIM1 function in mouse head development. *Genesis* 27: 12-21.
3. Sharma, K., et al. 2000. Genetic and epigenetic mechanisms contribute to motor neuron pathfinding. *Nature* 406: 515-519.
4. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 603759. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Bulchand, S., et al. 2001. LIM-homeodomain gene LHX2 regulates the formation of the cortical hem. *Mech. Dev.* 100: 165-175.
6. LocusLink Report (LocusID: 3975). <http://www.ncbi.nlm.nih.gov/LocusLink/>

## CHROMOSOMAL LOCATION

Genetic locus: LHX2 (human) mapping to 9q33.3.

## SOURCE

LHX2 (LHX2A12G1) is a mouse monoclonal antibody raised against a recombinant protein corresponding to the N-terminal region of LHX2 of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 1.0% stabilizer protein.

## STORAGE

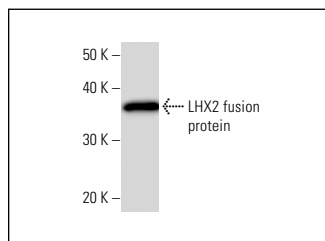
For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

## APPLICATIONS

LHX2 (LHX2A12G1) is recommended for detection of LHX2 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for LHX2 siRNA (h): sc-38710, LHX2 shRNA Plasmid (h): sc-38710-SH and LHX2 shRNA (h) Lentiviral Particles: sc-38710-V.

## DATA



LHX2 (LHX2A12G1): sc-81311. Western Blot analysis of human recombinant LHX2 fusion protein.

## SELECT PRODUCT CITATIONS

1. Gorantla, B., et al. 2011. Suppression of the uPAR-uPA system retards angiogenesis, invasion, and *in vivo* tumor development in pancreatic cancer cells. *Mol. Cancer Res.* 9: 377-389.
2. Asuthkar, S., et al. 2013. Multifunctional roles of urokinase plasminogen activator (uPA) in cancer stemness and chemoresistance of pancreatic cancer. *Mol. Biol. Cell* 24: 2620-2632.
3. Li, G., et al. 2019. Generation and characterization of induced pluripotent stem cells and retinal organoids from a Leber's congenital amaurosis patient with novel RPE65 mutations. *Front. Mol. Neurosci.* 12: 212.
4. Atefi, A., et al. 2021. Construction and characterization of EGFP reporter plasmid harboring putative human RAX promoter for *in vitro* monitoring of retinal progenitor cells identity. *BMC Mol. Cell Biol.* 22: 40.
5. Savoj, S., et al. 2022. Integrated stem cells from apical papilla in a 3D culture system improve human embryonic stem cell derived retinal organoid formation. *Life Sci.* 291: 120273.
6. Cheng, Y.T., et al. 2023. Inhibitory input directs astrocyte morphogenesis through glial GABA<sub>B</sub>R. *bioRxiv*. E-published.

## 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.