SANTA CRUZ BIOTECHNOLOGY, INC.

LMO4 (C-15): sc-11122

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The LIM-only (LMO) proteins, LMO1 and LMO2, are nuclear factors that are characterized by a conserved LIM domain. The LIM domain consists of a cysteine-rich zinc-binding motif that is present in a variety of transcription factors, including the LIM homeobox (LHX) proteins expressed in the central nervous system and involved in cell differentiation. LMO1 and LMO2 are expressed in the adult CNS in a cell type-specific manner, where they are differentially regulated by neuronal activity and are involved in regulating the cellular differentiated phenotype of neurons. LMO2 lacks a specific DNA-binding homeobox domain but rather assembles into transcriptional regulatory complexes to mediate gene expression by interacting with the widely expressed nuclear LIM interactor (NLI). NLI, known also as CLIM-1, and the related protein CLIM-2 facilitate the formation of heteromeric LIM complexes and also enhance the nuclear retention of LIM proteins. LMO2 and the related protein LMO4 are expressed in thymic precursor cells. LMO4 is also expressed in mature T cells, cranial neural crest cells, somite, dorsal limb bud mesenchyme, motor neurons, and Schwann cell progenitors.

CHROMOSOMAL LOCATION

Genetic locus: LMO4 (human) mapping to 1p22.3; Lmo4 (mouse) mapping to 3 H2.

SOURCE

LMO4 (C-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of LMO4 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-11122 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

LMO4 (C-15) is recommended for detection of LMO4 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

LMO4 (C-15) is also recommended for detection of LMO4 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for LMO4 siRNA (h): sc-38029, LMO4 siRNA (m): sc-38030, LMO4 shRNA Plasmid (h): sc-38029-SH, LMO4 shRNA Plasmid (m): sc-38030-SH, LMO4 shRNA (h) Lentiviral Particles: sc-38029-V and LMO4 shRNA (m) Lentiviral Particles: sc-38030-V.

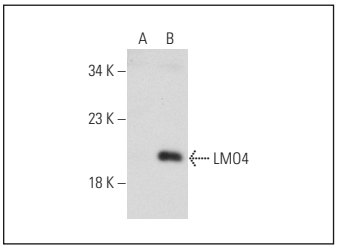
Molecular Weight of LMO4: 17 kDa.

Positive Controls: LMO4 (m5): 293T Lysate: sc-110226 or IMR-32 cell lysate: sc-2409.

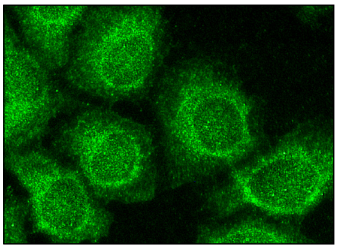
STORAGE

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

DATA



LMO4 (C-15): sc-11122. Western blot analysis of LMO4 expression in non-transfected: sc-117752 (**A**) and mouse LMO4 transfected: sc-110226 (**B**) 293T whole cell lysates.



LMO4 (C-15): sc-11122. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear localization.

SELECT PRODUCT CITATIONS

1. Chen, H.H., et al. 2002. Differential expression of a transcription regulatory factor, the LIM domain only 4 protein LMO4, in muscle sensory neurons. Development 129: 4879-4889.
2. Leuba, G., et al. 2004. Differential expression of LMO4 protein in Alzheimer's disease. Neuropathol. Appl. Neurobiol. 30: 57-69.
3. Lee, S.K., et al. 2005. The LIM domain-only protein LMO4 is required for neural tube closure. Mol. Cell. Neurosci. 28: 205-214.
4. Lu, Z., et al. 2006. LMO4 can interact with Smad proteins and modulate transforming growth factor-β signaling in epithelial cells. Oncogene 25: 2920-2930.
5. Kashani, A.H., et al. 2006. Calcium activation of the LMO4 transcription complex and its role in the patterning of thalamocortical connections. J. Neurosci. 26: 8398-8408.
6. Chen, H.H., et al. 2007. Extracellular ATP-dependent upregulation of the transcription cofactor LMO4 promotes neuron survival from hypoxia. Exp. Cell Res. 313: 3106-3116.
7. Schock, S.C., et al. 2008. Rescue of neurons from ischemic injury by peroxisome proliferator-activated receptor-γ requires a novel essential cofactor LMO4. J. Neurosci. 28: 12433-12444.
8. Lasek, A.W., et al. 2010. Lmo4 in the nucleus accumbens regulates cocaine sensitivity. Genes Brain Behav. 9: 817-824.

RESEARCH USE

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