SANTA CRUZ BIOTECHNOLOGY, INC.

LMO4 (4H8): sc-293440

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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.

REFERENCES

1. Boehm, T., et al. 1991. The rhombotin family of cysteine-rich LIM-domain oncogenes: distinct members are involved in T-cell translocations to human chromosomes 11p15 and 11p13. Proc. Natl. Acad. Sci. USA 88: 4367-4371.
2. Agulnick, A.D., et al. 1996. Interactions of the LIM-domain-binding factor Ldb1 with LIM homeodomain proteins. Nature 384: 270-272.
3. Hinks, G.L., et al. 1997. Expression of LIM protein genes LMO1, LMO2, and LMO3 in adult mouse hippocampus and other forebrain regions: differential regulation by seizure activity. J. Neurosci. 17: 5549-5559.
4. Rabbitts, T.H., et al. 1997. Chromosomal translocations and leukaemia: a role for LMO2 in T cell acute leukaemia, in transcription and in erythropoiesis. Leukemia 3: 271-272.
5. Osada, H., et al. 1997. LIM-only protein LMO2 forms a protein complex with erythroid transcription factor GATA-1. Leukemia 3: 307-312.
6. Jurata, L.W., et al. 1998. The nuclear LIM domain interactor NLI mediates homo- and heterodimerization of LIM domain transcription factors. J. Biol. Chem. 273: 3152-3157.

CHROMOSOMAL LOCATION

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

SOURCE

LMO4 (4H8) is a mouse monoclonal antibody raised against a recombinant protein mapping to amino acids 1-165 representig full length LMO4 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} lambda light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

LMO4 (4H8) 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).

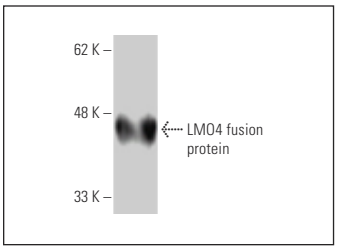
Suitable for use as control antibody for LMO4 siRNA (h): sc-38029, LMO4 siRNA (m): sc-38030, LMO4 shRNA Plasmid (h): sc-38029-SH, LMO4 shRNA Plasmid (m): sc-38030-SH, LMO4 shRNA (h) Lentiviral Particles: sc-38029-V and LMO4 shRNA (m) Lentiviral Particles: sc-38030-V.

Molecular Weight of LMO4: 17 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGλ BP-HRP: sc-516132 or m-IgGλ BP-HRP (Cruz Marker): sc-516132-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-IgGλ BP-FITC: sc-516185 or m-IgGλ BP-PE: sc-516186 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



LMO4 (4H8): sc-293440. Western blot analysis of human recombinant LMO4 fusion protein.

SELECT PRODUCT CITATIONS

1. Rosati, R., et al. 2021. LMO4 deficiency enhances susceptibility to cisplatin-induced cochlear apoptosis and hearing loss. Mol. Neurobiol. 58: 2019-2029.

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.