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LEMD2 Antibody

Catalog # ASC11495

Product Information

Application	WB, IF, ICC, E
Primary Accession	Q8NC56
Other Accession	NP_851853, 31044432
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	56975
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	LEMD2 antibody can be used for detection of LEMD2 by Western blot at 1 - 2 g/mL. Antibody can also be used for immunocytochemistry starting at 2.5 g/mL. For immunofluorescence start at 2.5 g/mL.

Additional Information

Gene ID	221496
Other Names	LEM domain-containing protein 2, hLEM2, LEMD2
Target/Specificity	LEMD2; At least two isoforms of LEMD2 are known to exist; this antibody will detect only the longer isoform.
Reconstitution & Storage	LEMD2 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	LEMD2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	LEMD2
Function	Nuclear lamina-associated inner nuclear membrane protein that is involved in nuclear structure organization, maintenance of nuclear envelope (NE) integrity and NE reformation after mitosis (PubMed:16339967, PubMed:17097643, PubMed:28242692, PubMed:32494070). Plays a role as transmembrane adapter for the endosomal sorting complexes required for transport (ESCRT), and is thereby involved in ESCRT-mediated NE reformation (PubMed:28242692, PubMed:32494070). Promotes ESCRT-mediated NE closure by recruiting CHMP7 and downstream ESCRT-III proteins IST1/CHMP8 and CHMP2A to the reforming NE during anaphase (PubMed:28242692).

	During nuclear reassembly, condenses into a liquid-like coating around microtubule spindles and coassembles with CHMP7 to form a macromolecular O-ring seal at the confluence between membranes, chromatin, and the spindle to facilitate early nuclear sealing (PubMed:32494070). Plays a role in the organization of heterochromatin associated with the NE and in the maintenance of NE organization under mechanical stress (By similarity). Required for embryonic development and involved in regulation of several signaling pathways such as MAPK and AKT (By similarity). Required for myoblast differentiation involving regulation of ERK signaling (By similarity). Essential for cardiac homeostasis and proper heart function (By similarity).
Cellular Location	Nucleus inner membrane; Multi-pass membrane protein. Nucleus envelope. Cytoplasm, cytoskeleton, spindle. Note=Lamina-associated protein residing in the inner nuclear membrane (INM) of the nuclear envelope (NE) (PubMed:16339967). The localization to the INM is dependent on LMNA (PubMed:16339967). Evenly distributed around the NE during interphase (PubMed:16339967). During metaphase, found in a reticular network (PubMed:28242692). Recruited to the reforming NE on chromatin disks in early anaphase (PubMed:28242692). In late anaphase, concentrates at the NE core proximal to spindle microtubules, and then broadening to a distributed nuclear rim pattern (PubMed:28242692, PubMed:32494070)
Tissue Location	Ubiquitously expressed, including bone marrow, brain, kidney, colon, skeletal muscle, thymus, testis and uterus

Background

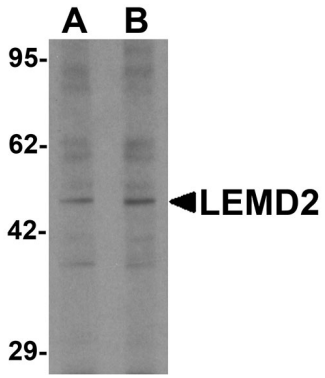
LEMD2 Antibody: The LEM (lamina-associated polypeptide-emerin-MAN1) domain is a motif shared by a group of lamin-interacting proteins of the inner nuclear membrane (INM) and nucleoplasm. One such protein, LEMD2 (LEM domain-containing protein 2), is a lamina-associated protein in the INM involved in nuclear structure organization, containing an N-terminal LEM motif, two transmembrane domains, and a MAN1-Src1p C-terminal (MSC) domain. LEMD2 is a truncated paralog of MAN1, lacking the MAN1-specific C-terminal RNA-recognition motif, but like MAN1 is required for myogenic differentiation. Mutations in LEMD2 are thought be among the possible causes of muscle disease.

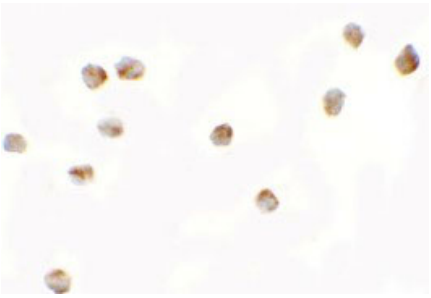
References

Brachner A, Reipert S, Foisner R, et al. LEM2 is a novel MAN1-related inner nuclear membrane protein associated with A-type lamins. J. Cell Sci. 2005; 118:5797-810
Huber MD, Guan T, and Gerace L. Overlapping functions of nuclear envelope proteins NET25 (Lem2) and Emerin in regulation of extracellular signal-regulated kinase signaling in myoblast differentiation. Mol. Cell. Biol. 2009; 29:5718-28.

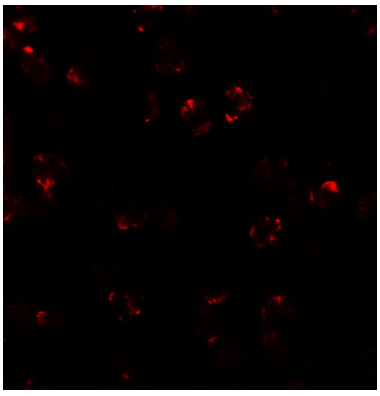
Images

Western blot analysis of LEMD2 in 293 cell lysate with LEMD2 antibody at (A) 1 and (B) 2 µg/mL.





Immunocytochemistry of LEMD2 in 3T3 cells with LEMD2 antibody at 2.5 µg/mL.



Immunofluorescence of LEMD2 in 3T3 cells with LEMD2 antibody at 20 µg/mL.

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