

MAN1 (E-20): sc-19786

BACKGROUND

The nuclear envelope separates the nucleoplasm from the cytoplasm in eukaryotic cells and includes the outer and inner nuclear membrane, nuclear pore complexes and the nuclear lamina. The nuclear lamina contains intermediate filament-type proteins called lamins that form a dense network to strengthen and stabilize the nuclear envelope. MAN1 is a nuclear envelope protein and shares a constant amino-terminal region called the LAP2-emerin-MAN1 (LEM) motif with nuclear envelope proteins LAP2 and emerin. MAN1 belongs to the MAN antigen family identified by autoantibodies from a patient with collagen vascular disease. A nucleoplasmic N-terminal domain of MAN1 is necessary for inner nuclear membrane retention. The gene encoding human MAN1 maps to chromosome 12q14. LAP2 is another nuclear envelope protein with a LEM motif. Alternative splicing produces six isoforms of mammalian LAP2. LAP2 α and LAP2 β associate with chromosomal barrier-to-autointegration factor (BAF) and may play a role in stabilizing chromatin structure. LAP2 β also binds to lamin B. LAP2 α is a non-membrane isoform of LAP2 that associates with the internal nucleoskeleton and binds Lamin A.

REFERENCES

1. Paulin-Levasseur, M., Blake, D.L., Julien, M. and Rouleau, L. 1996. The MAN antigens are non-lamin constituents of the nuclear lamina in vertebrate cells. *Chromosoma* 104: 367-379.
2. Lin, F., Blake, D.L., Callebaut, I., Skerjanc, I.S., Holmer, L., McBurney, M.W., Paulin-Levasseur, M. and Worman, H.J. 2000. MAN1, an inner nuclear membrane protein that shares the LEM domain with lamina-associated polypeptide 2 and emerin. *J. Biol. Chem.* 275: 4840-4847.
3. Dechat, T., Vlcek, S. and Foisner, R. 2000. Review: lamina-associated polypeptide 2 isoforms and related proteins in cell cycle-dependent nuclear structure dynamics. *J. Struct. Biol.* 129: 335-345.
4. Dechat, T., Korbei, B., Vaughan, O.A., Vlcek, S., Hutchison, C.J. and Foisner, R. 2000. Lamina-associated polypeptide 2 α binds intranuclear A-type lamins. *J. Cell Sci.* 113: 3473-3484.
5. Wu, W., Lin, F. and Worman, H.J. 2002. Intracellular trafficking of MAN1, an integral protein of the nuclear envelope inner membrane. *J. Cell Sci.* 115: 1361-1371.

CHROMOSOMAL LOCATION

Genetic locus: LEMD3 (human) mapping to 12q14.3; Lemd3 (mouse) mapping to 10 D2.

SOURCE

MAN1 (E-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of MAN1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-19786 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MAN1 (E-20) is recommended for detection of MAN1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

MAN1 (E-20) is also recommended for detection of MAN1 in additional species, including bovine and porcine.

Suitable for use as control antibody for MAN1 siRNA (h): sc-43384, MAN1 siRNA (m): sc-43385, MAN1 shRNA Plasmid (h): sc-43384-SH, MAN1 shRNA Plasmid (m): sc-43385-SH, MAN1 shRNA (h) Lentiviral Particles: sc-43384-V and MAN1 shRNA (m) Lentiviral Particles: sc-43385-V.

Molecular Weight of MAN1: 82 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.