SANTA CRUZ BIOTECHNOLOGY, INC.

LAP2 (3A3): sc-81610

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. Lamina-associated polypeptide 2 (LAP2) is also known as thymopoietin. LAP2 is a nuclear envelope protein and contains an amino-terminal region called the LAP2-emerin-MAN1 or LEM motif. LAP2 also contains a unique DNA-binding amino-terminal domain. Alternative splicing produces six isoforms (α, β, γ, δ, ε and ζ) of mammalian LAP2 and three isoforms in *Xenopus* LAP2. LAP2α and LAP2β associate with chromosomal barrier-to-autointegration factor (BAF) and may play a role in stabilizing chromatin structure. LAP2β also binds to Lamin B. LAP2α is a non-membrane isoform of LAP2 that associates with the internal nucleoskeleton and binds Lamin A. The gene encoding human LAP2 maps to chromosome 12q23.1.

REFERENCES

1. Harris, C.A., et al. 1995. Structure and mapping of the human thymopoietin (TMPO) gene and relationship of human TMPO β to rat Lamin-associated polypeptide 2. Genomics. 28: 198-205.
2. Lin, F., et al. 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., et al. 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., et al. 2000. Lamina-associated polypeptide 2α binds intranuclear A-type lamins. J. Cell Sci. 113: 3473-3484.
5. Cai, M., et al. 2001. Solution structure of the constant region of nuclear envelope protein LAP2 reveals two LEM-domain structures: one binds BAF and the other binds DNA. EMBO J. 20: 4399-4407.

CHROMOSOMAL LOCATION

Genetic locus: TMPO (human) mapping to 12q23.1.

SOURCE

LAP2 (3A3) is a mouse monoclonal antibody raised against amino acids 684-694 corresponding to the C-terminus of LAP2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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.

APPLICATIONS

LAP2 (3A3) is recommended for detection of LAP2 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 LAP2 siRNA (h): sc-43386, LAP2 shRNA Plasmid (h): sc-43386-SH and LAP2 shRNA (h) Lentiviral Particles: sc-43386-V.

Molecular Weight of LAP2: 58 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-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-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

PROTOCOLS

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