SANTA CRUZ BIOTECHNOLOGY, INC.

LAP2 (G-20): sc-19784

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; Tmpo (mouse) mapping to 10 C2.

SOURCE

LAP2 (G-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of LAP2 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-19784 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

LAP2 (G-20) is recommended for detection of all LAP2 isoforms 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).

LAP2 (G-20) is also recommended for detection of all LAP2 isoforms in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for LAP2 siRNA (h): sc-43386, LAP2 siRNA (m): sc-43387, LAP2 shRNA Plasmid (h): sc-43386-SH, LAP2 shRNA Plasmid (m): sc-43387-SH, LAP2 shRNA (h) Lentiviral Particles: sc-43386-V and LAP2 shRNA (m) Lentiviral Particles: sc-43387-V.

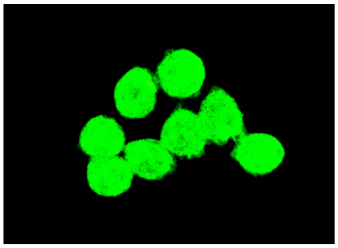
Molecular Weight of LAP2: 58 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203 or HeLa whole cell lysate: sc-2200.

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.

DATA



LAP2 (G-20): sc-19784. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Jacque, J.M., et al. 2006. The inner-nuclear-envelope protein emerin regulates HIV-1 infectivity. Nature 441: 641-645.
2. Finlan, L.E., et al. 2008. Recruitment to the nuclear periphery can alter expression of genes in human cells. PLoS Genet. 4: e1000039.

RESEARCH USE

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