SANTA CRUZ BIOTECHNOLOGY, INC.

B23 (FC82291): sc-56622

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The transport of proteins across the nuclear envelope is a selective, multi-step process involving several cytoplasmic factors. Proteins must be recognized as import substrates, dock at the nuclear pore complex, and translocate across the nuclear envelope in an ATP-dependent fashion. Several cytosolic and nuclear proteins that are central to this process have been identified. For example, two cytosolic factors critically involved in the recognition and docking process are the karyopherin α and karyopherin β proteins. The karyopherin holoenzyme is a heterodimer of α and β subunits. The nuclear protein B23 (also referred to as nucleophosmin) is involved in ribosomal assembly and rRNA transport. B23 is an abundant protein that is highly phosphorylated by Cdc2 kinase during mitosis.

CHROMOSOMAL LOCATION

Genetic locus: NPM1 (human) mapping to 5q35.1; Npm1 (mouse) mapping to 11 A4.

SOURCE

B23 (FC82291) is a mouse monoclonal antibody raised against full length purified B23 of rat 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.

B23 (FC82291) is available conjugated to agarose (sc-56622 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-56622 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-56622 PE), fluorescein (sc-56622 FITC), Alexa Fluor® 488 (sc-56622 AF488), Alexa Fluor® 546 (sc-56622 AF546), Alexa Fluor® 594 (sc-56622 AF594) or Alexa Fluor® 647 (sc-56622 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-56622 AF680) or Alexa Fluor® 790 (sc-56622 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

B23 (FC82291) is recommended for detection of both the phosphorylated and the unphosphorylated B23 molecule of mouse, rat, human, bovine and canine 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), immunohistochemistry (including paraffin-embedded sections) (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 B23 siRNA (h): sc-29771, B23 siRNA (m): sc-29772, B23 shRNA Plasmid (h): sc-29771-SH, B23 shRNA Plasmid (m): sc-29772-SH, B23 shRNA (h) Lentiviral Particles: sc-29771-V and B23 shRNA (m) Lentiviral Particles: sc-29772-V.

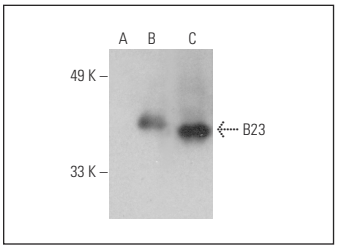
Molecular Weight of B23: 40 kDa.

Positive Controls: B23 (h): 293 Lysate: sc-111207, 3T3-L1 cell lysate: sc-2243 or K-562 whole cell lysate: sc-2203.

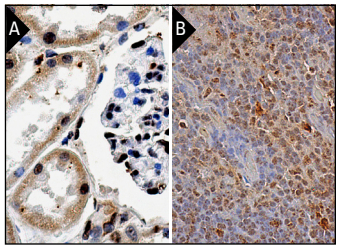
STORAGE

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

DATA



B23 (FC82291) HRP: sc-56622 HRP. Direct western blot analysis of B23 expression in non-transfected 293T: sc-117752 (**A**), human B23 transfected 293T: sc-116348 (**B**) and 3T3-L1 (**C**) whole cell lysates.



B23 (FC82291): sc-56622. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing nuclear staining of cells in glomeruli and tubules (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded rat thymus tissue showing nuclear staining of cortical cells (**B**).

SELECT PRODUCT CITATIONS

1. Castle, C.D., et al. 2010. Las1L is a nucleolar protein required for cell proliferation and ribosome biogenesis. Mol. Cell. Biol. 30: 4404-4414.
2. Hochstatter, J., et al. 2012. Myb-binding protein 1a (Mybbp1a) regulates levels and processing of pre-ribosomal RNA. J. Biol. Chem. 287: 24365-24377.
3. Velimezi, G., et al. 2013. Functional interplay between the DNA-damage-response kinase ATM and ARF tumour suppressor protein in human cancer. Nat. Cell Biol. 15: 967-977.
4. Alawi, F. and Lin, P. 2013. Dyskerin localizes to the mitotic apparatus and is required for orderly mitosis in human cells. PLoS ONE 8: e80805.
5. Caudron-Herger, M., et al. 2015. Alu element-containing RNAs maintain nucleolar structure and function. EMBO J. 34: 2758-2774.
6. Kanellis, D.C., et al. 2015. Physical and functional interaction of the TPL2 kinase with nucleophosmin. Oncogene 34: 2516-2526.
7. Yu, K.L., et al. 2016. HIV-1 nucleocapsid protein localizes efficiently to the nucleus and nucleolus. Virology 492: 204-212.
8. Lamaa, A., et al. 2016. A novel cytoprotective function for the DNA repair protein Ku in regulating p53 mRNA translation and function. EMBO Rep. 17: 508-518.
9. Pankert, T., et al. 2017. Tethering RNA to chromatin for fluorescence microscopy based analysis of nuclear organization. Methods 123: 89-101.
10. Bouchard, J.J., et al. 2018. Cancer mutations of the tumor suppressor SPOP disrupt the formation of active, phase-separated compartments. Mol. Cell 72: 19-36.

RESEARCH USE

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