SANTA CRUZ BIOTECHNOLOGY, INC.

B23 (0412): sc-47725

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.

SOURCE

B23 (0412) is a mouse monoclonal antibody raised against recombinant B23 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.

B23 (0412) is available conjugated to agarose (sc-47725 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-47725 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-47725 PE), fluorescein (sc-47725 FITC), Alexa Fluor® 488 (sc-47725 AF488), Alexa Fluor® 546 (sc-47725 AF546), Alexa Fluor® 594 (sc-47725 AF594) or Alexa Fluor® 647 (sc-47725 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-47725 AF680) or Alexa Fluor® 790 (sc-47725 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

B23 (0412) is recommended for detection of B23 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for B23 siRNA (h): sc-29771, B23 shRNA Plasmid (h): sc-29771-SH and B23 shRNA (h) Lentiviral Particles: sc-29771-V.

Molecular Weight of B23: 40 kDa.

Positive Controls: CCRF-CEM cell lysate: sc-2225, LNCaP cell lysate: sc-2231 or ALL-SIL whole cell lysate: sc-364356.

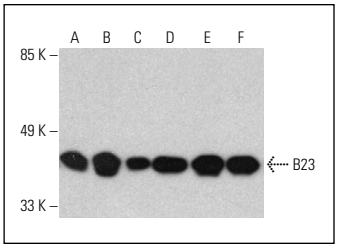
STORAGE

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

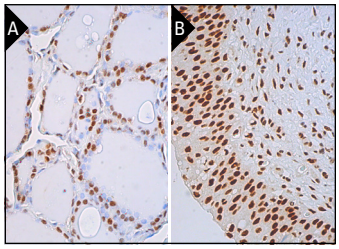
RESEARCH USE

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

DATA



B23 (0412) HRP: sc-47725 HRP. Direct western blot analysis of B23 expression in LNCaP (**A**), HEL 92.1.7 (**B**), CCRF-CEM (**C**), ALL-SIL (**D**), U-698-M (**E**) and MOLT-4 (**F**) whole cell lysates.



B23 (0412): sc-47725. Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing nuclear staining of glandular cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing nuclear staining of urothelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Mascaux, C., et al. 2008. The role of NPM, p14arf and MDM2 in precursors of bronchial squamous cell carcinoma. Eur. Respir. J. 32: 678-686.
2. Surtees, R., et al. 2016. Heat shock protein 70 family members interact with Crimean-Congo hemorrhagic fever virus and Hazara virus nucleocapsid proteins and perform a functional role in the nairovirus replication cycle. J. Virol. 90: 9305-9316.
3. Hilmi, K., et al. 2017. CTCF facilitates DNA double-strand break repair by enhancing homologous recombination repair. Sci. Adv. 3: e1601898.
4. Gu, X., et al. 2018. Leukemogenic nucleophosmin mutation disrupts the transcription factor hub that regulates granulomonocytic fates. J. Clin. Invest. 128: 4260-4279.
5. Arizala, J.A.C., et al. 2019. Identification of nucleolar factors during HIV-1 replication through Rev immunoprecipitation and mass spectrometry. J. Vis. Exp. E-published.
6. Gu, X. and Saunthararajah, Y. 2020. Cytoplasmic dislocation of NPM1 and PU.1 in NPM1-mutated leukaemia is obscured by paraformaldehyde fixation. Br. J. Haematol. 189: 578-581.
7. Arva, A., et al. 2021. The Ligand of Ate1 is intrinsically disordered and participates in nucleolar phase separation regulated by Jumonji Domain Containing 6. Proc. Natl. Acad. Sci. USA 118: e2015887118.
8. Li, J., et al. 2022. APE1 assembles biomolecular condensates to promote the ATR-Chk1 DNA damage response in nucleolus. Nucleic Acids Res. 50: 10503-10525.
9. Hirai, Y., et al. 2023. Nyamanini virus nucleoprotein and phosphoprotein organize viral inclusion bodies that associate with host biomolecular condensates in the nucleus. Int. J. Mol. Sci. 24: 6550.

PROTOCOLS

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