SANTA CRUZ BIOTECHNOLOGY, INC.

B23 (FC-8791): sc-32256

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 (FC-8791) is a mouse monoclonal antibody epitope corresponding to the C-terminal 68 amino acids of 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 (FC-8791) is available conjugated to agarose (sc-32256 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-32256 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-32256 PE), fluorescein (sc-32256 FITC), Alexa Fluor® 488 (sc-32256 AF488), Alexa Fluor® 546 (sc-32256 AF546), Alexa Fluor® 594 (sc-32256 AF594) or Alexa Fluor® 647 (sc-32256 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-32256 AF680) or Alexa Fluor® 790 (sc-32256 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

B23 (FC-8791) is recommended for detection of B23 of mouse, rat and 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 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.

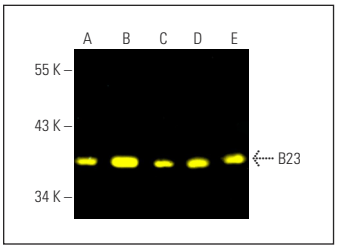
Molecular Weight of B23: 40 kDa.

Positive Controls: CCRF-CEM cell lysate: sc-2225, HEL 92.1.7 cell lysate: sc-2270 or HeLa whole cell lysate: sc-2200.

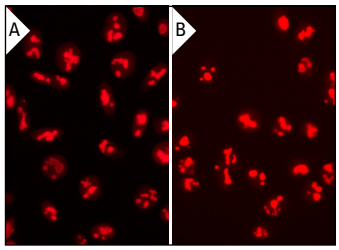
STORAGE

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

DATA



B23 (FC-8791) Alexa Fluor® 488: sc-32256 AF488. Direct fluorescent western blot analysis of B23 expression in CCRF-CEM (**A**), HEL 92.1.7 (**B**), HeLa (**C**), Daudi (**D**) and K-562 (**E**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.



B23 (FC-8791) Alexa Fluor® 594: sc-32256 AF594. Direct immunofluorescence staining of formalin-fixed SW480 cells showing nucleolar localization. Blocked with UltraCruz® Blocking Reagent: sc-516214 (**A**). B23 (FC-8791) Alexa Fluor® 647: sc-32256 AF647. Direct immunofluorescence staining of formalin-fixed SW480 cells showing nucleolar localization. Blocked with UltraCruz® Blocking Reagent: sc-516214 (**B**).

SELECT PRODUCT CITATIONS

1. Wulff, J.E., et al. 2007. The natural product avrainvillamide binds to the oncoprotein nucleophosmin. J. Am. Chem. Soc. 129: 14444-14451.
2. Liu, J., et al. 2010. Functional proteomic analysis of promyelocytic leukaemia nuclear bodies in irradiation-induced MCF-7 cells. J. Biochem. 148: 659-667.
3. Sagawa, F., et al. 2011. Nucleophosmin deposition during mRNA 3' end processing influences poly(A) tail length. EMBO J. 30: 3994-4005.
4. Vázquez-Iglesias, L., et al. 2012. Different intracellular distribution of avian reovirus core protein σA in cells of avian and mammalian origin. Virology 432: 495-504.
5. Du, G. and Stinski, M.F. 2013. Interaction network of proteins associated with human cytomegalovirus IE2-p86 protein during infection: a proteomic analysis. PLoS ONE 8: e81583.
6. Malik-Soni, N. and Frappier, L. 2014. Nucleophosmin contributes to the transcriptional activation function of the Epstein-Barr virus EBNA1 protein. J. Virol. 88: 2323-2326.
7. Sequeira, V., et al. 2015. ADP-stimulated contraction: a predictor of thin-filament activation in cardiac disease. Proc. Natl. Acad. Sci. USA 112: E7003-E7012.
8. Sun, X., et al. 2017. Ki-67 contributes to normal cell cycle progression and inactive X heterochromatin in p21 checkpoint-proficient human cells. Mol. Cell. Biol. 37: e00569-16.
9. Theodoridis, P.R., et al. 2021. Local translation in nuclear condensate amyloid bodies. Proc. Natl. Acad. Sci. USA 118: e2014457118.

RESEARCH USE

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