

B23 (5E3): sc-53926

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.

REFERENCES

1. Chou, Y.H. and Yung, B.Y. 1995. Cell cycle phase-dependent changes of localization and oligomerization states of nucleophosmin/B23. *Biochem. Biophys. Res. Commun.* 217: 313-325.
2. Moroianu, J. and Blobel, G. 1995. Protein export from the nucleus requires the GTPase Ran and GTP hydrolysis. *Proc. Natl. Acad. Sci. USA* 92: 4318-4322.
3. Lounsbury, K.M., Richards, S.A., Perlungher, R.R. and Macara, I.G. 1996. Ran binding domains promote the interaction of Ran with p97/karyopherin β , linking the docking and translocation steps of nuclear import. *J. Biol. Chem.* 271: 2357-2360.
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5. Moroianu, J., Blobel, G. and Radu, A. 1996. Nuclear protein import: Ran-GTP dissociates the karyopherin α/β heterodimer by displacing α from an overlapping binding site on β . *Proc. Natl. Acad. Sci. USA* 93: 7059-7062.
6. Nozawa, Y., Van Belzen, N., Van der Made, A., Dinjens, W. and Bosman, F.T. 1996. Expression of nucleophosmin/B23 in normal and neoplastic colorectal mucosa. *J. Pathol.* 178: 48-52.
7. Lu, Y.Y., Lam, C.Y. and Yung, B.Y. 1996. Decreased accumulation and dephosphorylation of the mitosis-specific form of nucleophosmin/B23 in staurosporine-induced chromosome decondensation. *Biochem. J.* 317: 321-327.

CHROMOSOMAL LOCATION

Genetic locus: NPM1 (human) mapping to 5q35.1.

SOURCE

B23 (5E3) is a mouse monoclonal antibody raised against amino acids 81-294 of B23 of human origin.

PRODUCT

Each vial contains 100 μ g IgG_{2b} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

B23 (5E3) is recommended for detection of B23 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)].

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.

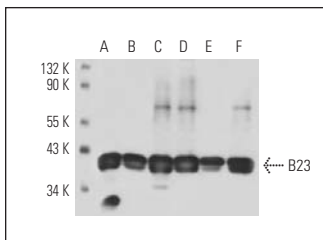
Molecular Weight of B23: 40 kDa.

Positive Controls: B23 (h): 293T Lysate: sc-174617, B23 (h2): 293T Lysate: sc-116348 or B23 (h3): 293T Lysate: sc-174628.

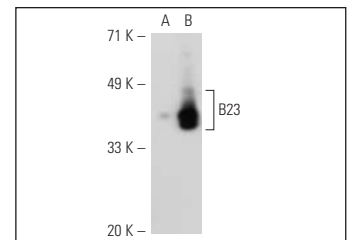
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

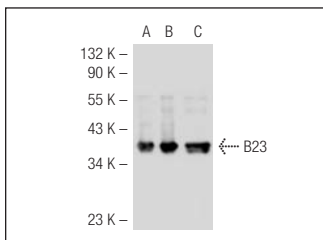
DATA



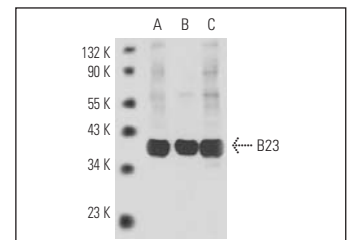
B23 (5E3): sc-53926. Western blot analysis of B23 expression in HEL 92.1.7 (A), DU 145 (B), HeLa (C), K-562 (D), CCRF-CEM (E) and MCF7 (F) whole cell lysates.



B23 (5E3): sc-53926. Western blot analysis of B23 expression in non-transfected: sc-110760 (A) and human B23 transfected: sc-111207 (B) 293 whole cell lysates.



B23 (5E3): sc-53926. Western blot analysis of B23 expression in non-transfected 293T: sc-117752 (A), human B23 transfected 293T: sc-116348 (B) and HEL 92.1.7 (C) whole cell lysates.



B23 (5E3): sc-53926. Western blot analysis of B23 expression in HEL 92.1.7 (A), LNCaP (B) and HeLa (C) whole cell lysates.

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.