SANTA CRUZ BIOTECHNOLOGY, INC.

B23 (h2): 293T Lysate: sc-116348

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.

REFERENCES

1. 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.
2. 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.
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/β-karyopherin, linking the docking and translocation steps of nuclear import. J. Biol. Chem. 271: 2357-2360.
4. Moroianu, J., Blobel, G. and Radu, A. 1996. The binding site of karyopherin α for karyopherin β overlaps with a nuclear localization sequence. Proc. Natl. Acad. Sci. USA 93: 6572-6576.
5. Moroianu, J., Blobel, G. and Radu, A. 1996. Nuclear protein import: Ran-GTP dissociates the karyopherin $\alpha\beta$ 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.C., Dinjens, W.N. 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 desphosphorylation 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.

PRODUCT

B23 (h2): 293T Lysate represents a lysate of human B23 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

B23 (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive B23 antibodies. Recommended use: 10-20 µl per lane.

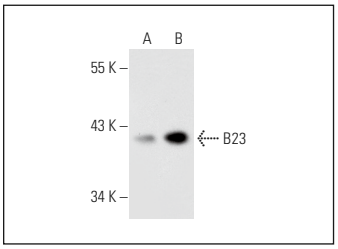
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

B23 (0412): sc-47725 is recommended as a positive control antibody for Western Blot analysis of enhanced human B23 expression in B23 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

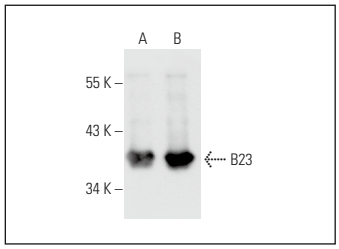
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



B23 (0412): sc-47725. Western blot analysis of B23 expression in non-transfected: sc-117752 (**A**) and human B23 transfected: sc-116348 (**B**) 293T whole cell lysates.



B23 (5E2): sc-53926. Western blot analysis of B23 expression in non-transfected: sc-117752 (**A**) and human B23 transfected: sc-116348 (**B**) 293T whole cell lysates.

RESEARCH USE

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

PROTOCOLS

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