

nucleobindin (D-8): sc-515246

BACKGROUND

Nucleobindin, also designated Nuc or Calnuc, is a secreted protein that promotes production of DNA-specific antibodies in lupus-prone MRL/lpr mice. Nucleobindin contains a signal peptide, two EF-hand motifs, acidic and basic regions and a leucine-zipper motif. Nucleobindin has two calcium-binding domains and is the major Golgi Ca²⁺ binding protein. The leucine zipper structure and the basic amino acid-rich region are responsible for DNA binding. Nucleobindin preferentially associates with membranes of polarized cells. Nucleobindin is found in both the cytosol and the membrane and is localized to *cis*-Golgi cisternae and the *cis*-Golgi network (CGN). Nucleobindin is involved in autoimmunity, apoptosis and calcium homeostasis in the bone matrix.

REFERENCES

1. Miura, K., et al. 1992. Molecular cloning of nucleobindin, a novel DNA-binding protein that contains both a signal peptide and a leucine zipper structure. *Biochem. Biophys. Res. Commun.* 187: 375-380.
2. Miura, K., et al. 1996. Organization of the human gene for nucleobindin (NUC) and its chromosomal assignment to 19q13.2-q13.4. *Genomics* 34: 181-186.
3. Kubota, T., et al. 1998. Upregulation of nucleobindin expression in human-activated lymphocytes and non-Hodgkin's lymphoma. *Pathol. Int.* 48: 22-28.
4. Lin, P., et al. 1998. The mammalian calcium-binding protein, nucleobindin (CALNUC), is a Golgi resident protein. *J. Cell Biol.* 141: 1515-1527.
5. Fialka, I., et al. 1999. Loss of epithelial polarity is accompanied by differential association of proteins with intracellular membranes. *Electrophoresis* 20: 331-343.
6. Lin, P., et al. 1999. Overexpression of CALNUC (nucleobindin) increases agonist and Thapsigargin releasable Ca²⁺ storage in the Golgi. *J. Cell Biol.* 145: 279-289.
7. Kawano, J., et al. 2000. CALNUC (nucleobindin) is localized in the Golgi apparatus in insect cells. *Eur. J. Cell Biol.* 79: 208-217.

CHROMOSOMAL LOCATION

Genetic locus: NUCB1 (human) mapping to 19q13.33; Nucb1 (mouse) mapping to 7 B4.

SOURCE

nucleobindin (D-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 26-47 at the N-terminus of nucleobindin of mouse origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-515246 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

nucleobindin (D-8) is recommended for detection of nucleobindin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for nucleobindin siRNA (h): sc-40778, nucleobindin siRNA (m): sc-40779, nucleobindin shRNA Plasmid (h): sc-40778-SH, nucleobindin shRNA Plasmid (m): sc-40779-SH, nucleobindin shRNA (h) Lentiviral Particles: sc-40778-V and nucleobindin shRNA (m) Lentiviral Particles: sc-40779-V.

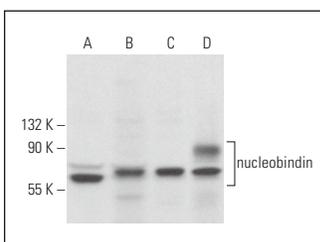
Molecular Weight of nucleobindin: 55 kDa.

Positive Controls: c4 whole cell lysate: sc-364186, NIH/3T3 whole cell lysate: sc-2210 or mouse brain extract: sc-2253.

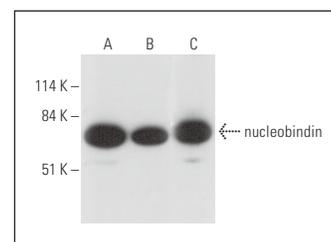
RECOMMENDED SUPPORT REAGENTS

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. 2) Immunoprecipitation: use Protein L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



nucleobindin (D-8): sc-515246. Western blot analysis of nucleobindin expression in AMJ2-C8 (A), HeLa (B) and Hep G2 (C) whole cell lysates and rat liver tissue extract (D).



nucleobindin (D-8): sc-515246. Western blot analysis of nucleobindin expression in c4 (A) and NIH/3T3 (B) whole cell lysates and mouse brain tissue extract (C).

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.