SANTA CRUZ BIOTECHNOLOGY, INC.

NuMA (SPM300): sc-56449

BACKGROUND

There are a multitude of structural components in the nucleus that sustain proper structure and function relationships with respect to nuclear assembly and mitosis. The human nuclear mitotic apparatus protein gene, also designated NuMA, maps to chromosome 11q13.4 and encodes a noncentrosomal protein. NuMA possesses microtubule (MT) binding capacity via its carboxy-terminal region and is involved in spindle pole organization. NuMA is essential for the organization and stabilization of spindle poles from early mitosis until at least the onset of anaphase. During interphase, NuMA is present throughout the nucleus and upon entering mitosis, localizes to the spindle apparatus. During mitosis, NuMA forms aggregates that interact with microtubules and certain motor proteins and as a result may draw together the minus-ends of microtubules, thereby helping to organize them into a bipolar spindle. In contrast to mitotic cells, post-mitotic neurons display NuMA both in the nucleus and in the cytoplasm. Elevated levels of NuMA expression have been reported in cancer patients, particularly in colorectal carcinoma and early colorectal cancers.

REFERENCES

1. Lydersen, B.K., et al. 1980. Human-specific nuclear protein that associates with the polar region of the mitotic apparatus: distribution in a human/hamster hybrid cell. Cell 22: 489-499.
2. Sparks, C.A., et al. 1993. Assignment of the nuclear mitotic apparatus protein NuMA gene to human chromosome 11q13. Genomics 17: 222-224.
3. Ferhat, L., et al. 1998. The nuclear/mitotic apparatus protein NuMA is a component of the somatodendritic microtubule arrays of the neuron. J. Neurocytol. 27: 887-899.
4. Hasholzner, U., et al. 1999. Nuclear mitotic apparatus protein (NuMA) in benign and malignant diseases. Anticancer Res. 19: 2415-2420.
5. Zeng, C. 2000. NuMA: a nuclear protein involved in mitotic centrosome function. Microsci. Res. Tech. 49: 467-477.
6. Gordon, M.B., et al. 2001. Chromosome movement in mitosis requires microtubule anchorage at spindle poles. J. Cell Biol. 152: 425-434.
7. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 164009. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: NUMA1 (human) mapping to 11q13.4.

SOURCE

NuMA (SPM300) is a mouse monoclonal antibody raised against colon carcinoma Ls174T cells of human origin.

PRODUCT

Each vial contains 50 µg IgM kappa light chain in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

NuMA (SPM300) is recommended for detection of NuMA 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 NuMA siRNA (h): sc-43978, NuMA shRNA Plasmid (h): sc-43978-SH and NuMA shRNA (h) Lentiviral Particles: sc-43978-V.

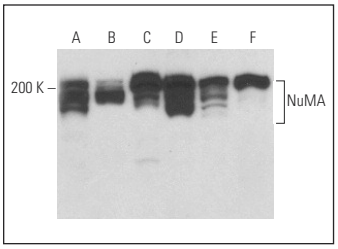
Molecular Weight of NuMA: 240 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, MOLT-4 nuclear extract: sc-2151 or A-673 nuclear extract: sc-2128.

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



NuMA (SPM300): sc-56449. Western blot analysis of NuMA expression in A549 (**A**), HeLa (**B**), MOLT-4 (**C**), A-673 (**D**), MCF7 (**E**) and CCRF-CEM (**F**) nuclear extracts.

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.

PROTOCOLS

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