SANTA CRUZ BIOTECHNOLOGY, INC.

NuMA (N-20): sc-18555

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 carboxyl 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 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of NuMA of human origin.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-18555 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

NuMA (N-20) is recommended for detection of NuMA of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

NuMA (N-20) is also recommended for detection of NuMA in additional species, including equine, canine, bovine and porcine.

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: A549 cell lysate: sc-2413, HeLa nuclear extract: sc-2120 or MOLT-4 nuclear extract: sc-2151.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Moorefield, K.S., et al. 2006. Sp2 localizes to subnuclear foci associated with the nuclear matrix. Mol. Biol. Cell 17: 1711-1722.

RESEARCH USE

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

PROTOCOLS

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