

# NuMA (E-20): sc-51164

## 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 and encodes a noncentrosomal protein. NuMA possesses microtubule (MT) binding capacity via its carboxyl terminal region and is involved in spindle pole organization. It 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

- Lydersen, B.K. and Pettijohn, D.E. 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.
- Sparks, C.A., et al. 1993. Assignment of the nuclear mitotic apparatus protein NuMA gene to human chromosome 11q13. *Genomics* 17: 222-224.
- 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.
- Hasholzner, U., et al. 1999. Nuclear mitotic apparatus protein (NuMA) in benign and malignant diseases. *Anticancer Res.* 19: 2415-2420.
- Zeng, C. 2000. NuMA: a nuclear protein involved in mitotic centrosome function. *Microsc. Res. Tech.* 49: 467-477.
- Gordon, M.B., et al. 2001. Chromosome movement in mitosis requires microtubule anchorage at spindle poles. *J. Cell Biol.* 152: 425-434.
- Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MIM Number: 164009. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

## CHROMOSOMAL LOCATION

Genetic locus: Numa1 (mouse) mapping to 7 E3.

## SOURCE

NuMA (E-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of NuMA of mouse origin.

## 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-51164 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

NuMA (E-20) is recommended for detection of NuMA of mouse 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), immunohistochemistry (including paraffin-embedded sections) (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 NuMA siRNA (m): sc-44345, NuMA shRNA Plasmid (m): sc-44345-SH and NuMA shRNA (m) Lentiviral Particles: sc-44345-V.

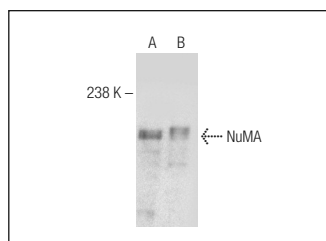
Molecular Weight of NuMA: 240 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, mouse kidney extract: sc-2255 or MM-142 cell lysate: sc-2246.

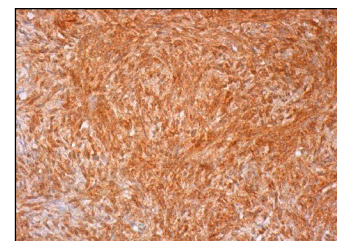
## RECOMMENDED SECONDARY REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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. 4) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

## DATA



NuMA (E-20): sc-51164. Western blot analysis of NuMA expression in NIH/3T3 (A) and MM-142 (B) nuclear extracts.



NuMA (E-20): sc-51164. Immunoperoxidase staining of formalin fixed, paraffin-embedded human ovary tissue showing nuclear and cytoplasmic staining of ovarian stroma cells.

## 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.