

NuMA (F-11): sc-365532

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

- 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.
- Sparks, C.A., et al. 1993. Assignment of the nuclear mitotic apparatus protein NuMA gene to human chromosome 11q13.4. *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.

CHROMOSOMAL LOCATION

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

SOURCE

NuMA (F-11) is a mouse monoclonal antibody raised against amino acids 1816-2115 mapping at the C-terminus of NuMA of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

NuMA (F-11) is available conjugated to agarose (sc-365532 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365532 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365532 PE), fluorescein (sc-365532 FITC), Alexa Fluor® 488 (sc-365532 AF488), Alexa Fluor® 546 (sc-365532 AF546), Alexa Fluor® 594 (sc-365532 AF594) or Alexa Fluor® 647 (sc-365532 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365532 AF680) or Alexa Fluor® 790 (sc-365532 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

RESEARCH USE

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

APPLICATIONS

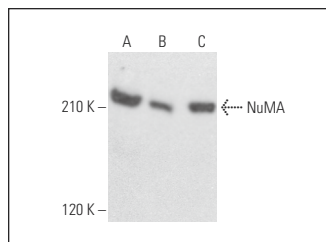
NuMA (F-11) is recommended for detection of NuMA of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (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 (h): sc-43978, NuMA shRNA Plasmid (h): sc-43978-SH and NuMA shRNA (h) Lentiviral Particles: sc-43978-V.

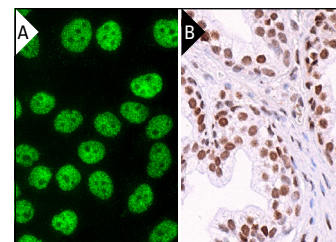
Molecular Weight of NuMA: 240 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, MOLT-4 nuclear extract: sc-2151 or MCF7 nuclear extract: sc-2149.

DATA



NuMA (F-11): sc-365532. Western blot analysis of NuMA expression in MOLT-4 (A), HeLa (B) and MCF7 (C) nuclear extracts.



NuMA (F-11): sc-365532. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human prostate tissue showing nuclear staining of glandular cells (B).

SELECT PRODUCT CITATIONS

- Taulet, N., et al. 2019. IFT88 controls NuMA enrichment at k-fibers minus-ends to facilitate their re-anchoring into mitotic spindles. *Sci. Rep.* 9: 10311.
- Torii, T., et al. 2020. NuMA1 promotes axon initial segment assembly through inhibition of endocytosis. *J. Cell Biol.* 219: e201907048.
- Sun, M., et al. 2021. NuMA regulates mitotic spindle assembly, structural dynamics and function via phase separation. *Nat. Commun.* 12: 7157.
- Zhai, D., et al. 2022. LINC01194 recruits NUMA1 to promote ubiquitination of RYR2 to enhance malignant progression in triple-negative breast cancer. *Cancer Lett.* 544: 215797.
- Risteski, P., et al. 2022. Length-dependent poleward flux of sister kinetochore fibers promotes chromosome alignment. *Cell Rep.* 40: 111169.
- Yanagida, S., et al. 2024. LAT1 supports mitotic progression through Golgi unlinking in an amino acid transport activity-independent manner. *J. Biol. Chem.* 300: 107761.

STORAGE

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