

**NuMA Antibody**  
**Rabbit mAb**  
**Catalog # AP91654****Specification****NuMA Antibody - Product Information**

Application	WB, IHC, ICC
Primary Accession	<a href="#">Q14980</a>
Reactivity	Rat
Clonality	Monoclonal
<b>Other Names</b>	
NMP 22; NUMA; NUMA1; SP H antigen;	
Isotype	Rabbit IgG
Host	Rabbit
Calculated MW	238260 Da

**NuMA Antibody - Additional Information**

Purification	Affinity-chromatography
Immunogen	A synthesized peptide derived from human NuMA
Description	May be a structural component of the nucleus.
Storage Condition and Buffer	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.

**NuMA Antibody - Protein Information****Name** [NUMA1 \(HGNC:8059\)](#)**Function**

Microtubule (MT)-binding protein that plays a role in the formation and maintenance of the spindle poles and the alignment and the segregation of chromosomes during mitotic cell division (PubMed:<a href="http://www.uniprot.org/citations/17172455" target="\_blank">17172455</a>, PubMed:<a href="http://www.uniprot.org/citations/19255246" target="\_blank">19255246</a>, PubMed:<a href="http://www.uniprot.org/citations/24996901" target="\_blank">24996901</a>, PubMed:<a href="http://www.uniprot.org/citations/26195665" target="\_blank">26195665</a>, PubMed:<a href="http://www.uniprot.org/citations/27462074" target="\_blank">27462074</a>, PubMed:<a href="http://www.uniprot.org/citations/7769006" target="\_blank">7769006</a>). Functions to tether the minus ends of MTs at the spindle poles, which is critical for the establishment and maintenance of the spindle poles (PubMed:<a href="http://www.uniprot.org/citations/11956313" target="\_blank">11956313</a>, PubMed:<a href="http://www.uniprot.org/citations/12445386" target="\_blank">12445386</a>). Plays a role in the establishment of the mitotic spindle orientation during metaphase and elongation during anaphase in a dynein-dynactin- dependent manner (PubMed:<a

href="http://www.uniprot.org/citations/23870127" target="\_blank">>23870127</a>, PubMed:<a href="http://www.uniprot.org/citations/24109598" target="\_blank">>24109598</a>, PubMed:<a href="http://www.uniprot.org/citations/24996901" target="\_blank">>24996901</a>, PubMed:<a href="http://www.uniprot.org/citations/26765568" target="\_blank">>26765568</a>). In metaphase, part of a ternary complex composed of GPSM2 and G(i) alpha proteins, that regulates the recruitment and anchorage of the dynein-dynactin complex in the mitotic cell cortex regions situated above the two spindle poles, and hence regulates the correct orientation of the mitotic spindle (PubMed:<a href="http://www.uniprot.org/citations/22327364" target="\_blank">>22327364</a>, PubMed:<a href="http://www.uniprot.org/citations/23027904" target="\_blank">>23027904</a>, PubMed:<a href="http://www.uniprot.org/citations/23921553" target="\_blank">>23921553</a>). During anaphase, mediates the recruitment and accumulation of the dynein-dynactin complex at the cell membrane of the polar cortical region through direct association with phosphatidylinositol 4,5-bisphosphate (PI(4,5)P2), and hence participates in the regulation of the spindle elongation and chromosome segregation (PubMed:<a href="http://www.uniprot.org/citations/22327364" target="\_blank">>22327364</a>, PubMed:<a href="http://www.uniprot.org/citations/23921553" target="\_blank">>23921553</a>, PubMed:<a href="http://www.uniprot.org/citations/24371089" target="\_blank">>24371089</a>, PubMed:<a href="http://www.uniprot.org/citations/24996901" target="\_blank">>24996901</a>). Binds also to other polyanionic phosphoinositides, such as phosphatidylinositol 3-phosphate (PIP), lysophosphatidic acid (LPA) and phosphatidylinositol triphosphate (PIP3), in vitro (PubMed:<a href="http://www.uniprot.org/citations/24371089" target="\_blank">>24371089</a>, PubMed:<a href="http://www.uniprot.org/citations/24996901" target="\_blank">>24996901</a>). Also required for proper orientation of the mitotic spindle during asymmetric cell divisions (PubMed:<a href="http://www.uniprot.org/citations/21816348" target="\_blank">>21816348</a>). Plays a role in mitotic MT aster assembly (PubMed:<a href="http://www.uniprot.org/citations/11163243" target="\_blank">>11163243</a>, PubMed:<a href="http://www.uniprot.org/citations/11229403" target="\_blank">>11229403</a>, PubMed:<a href="http://www.uniprot.org/citations/12445386" target="\_blank">>12445386</a>). Involved in anastral spindle assembly (PubMed:<a href="http://www.uniprot.org/citations/25657325" target="\_blank">>25657325</a>). Positively regulates TNKS protein localization to spindle poles in mitosis (PubMed:<a href="http://www.uniprot.org/citations/16076287" target="\_blank">>16076287</a>). Highly abundant component of the nuclear matrix where it may serve a non-mitotic structural role, occupies the majority of the nuclear volume (PubMed:<a href="http://www.uniprot.org/citations/10075938" target="\_blank">>10075938</a>). Required for epidermal differentiation and hair follicle morphogenesis (By similarity).

### Cellular Location

Nucleus. Nucleus, nucleoplasm. Nucleus matrix. Chromosome. Cytoplasm, cytoskeleton. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Cytoplasm, cytoskeleton, spindle pole. Cytoplasm, cell cortex. Cell membrane; Lipid-anchor; Cytoplasmic side. Lateral cell membrane {ECO:0000250|UniProtKB:E9Q7G0}. Note=Mitotic cell cycle-dependent shuttling protein that relocates from the interphase nucleus to the spindle poles and cell cortex (PubMed:10811826, PubMed:1541636). The localization to the spindle poles is regulated by AAAS (PubMed:26246606). In interphase, resides in the nuclear matrix (PubMed:1541630, PubMed:1541636, PubMed:23921553). In prophase, restricted to the interchromatin or condensed chromosome space (PubMed:10811826). In prometaphase, after nuclear envelope disassembly, forms aggregates both in the spindle midzone and at duplicated centrosomes and astral microtubules (MTs) of the bipolar spindle apparatus (PubMed:10811826). Translocates from the spindle midzone towards the spindle poles along spindle fibers in a MT- and dynein-dynactin-dependent manner until the anaphase onset (PubMed:10811826, PubMed:1541636). In metaphase, recruited to the polar cortical region in a GPSM2- and GNAI1-dependent manner (PubMed:23870127, PubMed:24109598, PubMed:24996901). Excluded from the metaphase equatorial cortical region in a RanGTP-dependent manner (PubMed:22327364, PubMed:23870127). Phosphorylation on Thr-2055 by CDK1 results in its localization at spindle poles in metaphase, but not at the cell cortex (PubMed:23921553). In anaphase, recruited and anchored at the cell membrane of the polar cortical region in a EPB41-, EPB41L2-, phosphatidylinositol-dependent and GPSM2- and G(i) alpha proteins-independent manner (PubMed:23870127, PubMed:24109598,

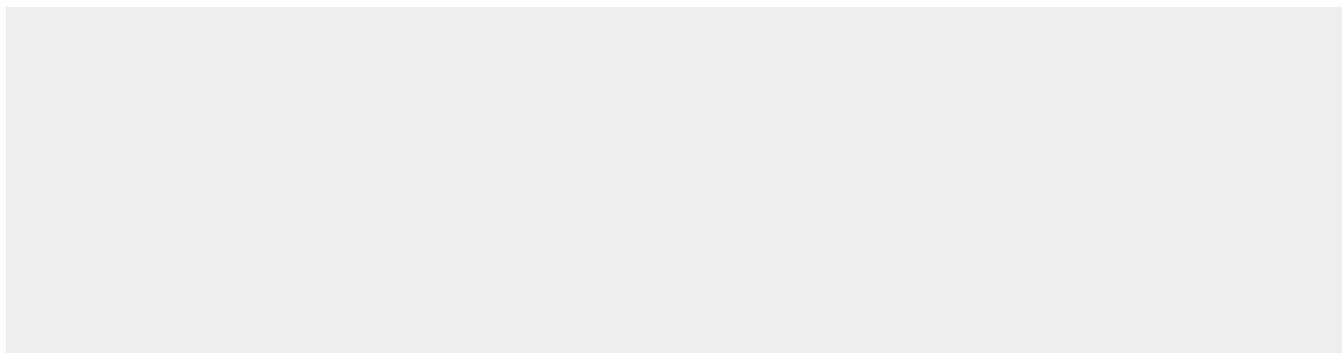
PubMed:24371089, PubMed:24996901). Excluded from the anaphase equatorial region of the cell cortex in a RACGAP1- and KIF23-dependent and RanGTP-independent manner (PubMed:24996901). Associated with astral MTs emanating from the spindle poles during anaphase (PubMed:12445386, PubMed:24996901). Nonphosphorylated Thr-2055 localizes at the cell cortex, weakly during metaphase and more prominently during anaphase in a phosphatase PPP2CA-dependent manner (PubMed:23921553). As mitosis progresses it reassociates with telophase chromosomes very early during nuclear reformation, before substantial accumulation of lamins on chromosomal surfaces is evident (PubMed:1541636). Localizes to the tips of cortical MTs in prometaphase (PubMed:26765568). Localizes along MTs and specifically to both MT plus and minus ends (PubMed:26765568) Accumulates also at MT tips near the cell periphery (PubMed:26765568) Colocalizes with GPSM2 at mitotic spindle poles during mitosis (PubMed:11781568, PubMed:21816348). Colocalizes with SPAG5 at mitotic spindle at prometaphase and at mitotic spindle poles at metaphase and anaphase (PubMed:27462074). Colocalizes with ABRO1 at mitotic spindle poles (PubMed:26195665). Colocalized with TNKS from prophase through to anaphase in mitosis (PubMed:16076287). Colocalizes with tubulin alpha (PubMed:12445386). CCSAP is essential for its centrosomal localization (PubMed:26562023). In horizontally retinal progenitor dividing cells, localized to the lateral cortical region (By similarity) {ECO:0000250|UniProtKB:E9Q7G0, ECO:0000269|PubMed:10811826, ECO:0000269|PubMed:11781568, ECO:0000269|PubMed:12445386, ECO:0000269|PubMed:1541630, ECO:0000269|PubMed:1541636, ECO:0000269|PubMed:16076287, ECO:0000269|PubMed:21816348, ECO:0000269|PubMed:22327364, ECO:0000269|PubMed:23870127, ECO:0000269|PubMed:23921553, ECO:0000269|PubMed:24109598, ECO:0000269|PubMed:24371089, ECO:0000269|PubMed:24996901, ECO:0000269|PubMed:26195665, ECO:0000269|PubMed:26246606, ECO:0000269|PubMed:26562023, ECO:0000269|PubMed:26765568, ECO:0000269|PubMed:27462074} [Isoform 4]: Cytoplasm, cytosol. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Cytoplasm, cytoskeleton, spindle pole. Note=During interphase, mainly clustered at the centrosomal region in the cytosol After entry into mitosis, detected at mitotic spindle poles

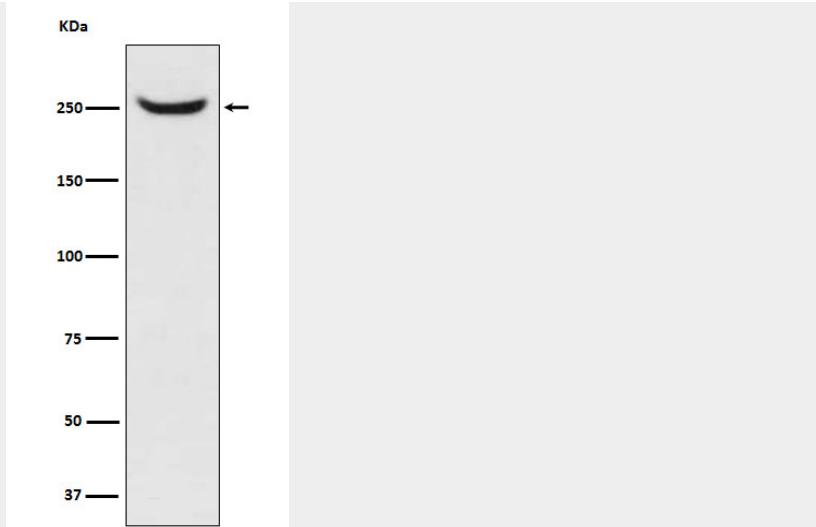
## NuMA Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

## NuMA Antibody - Images





Western blot analysis of Mad2L1 expression in HeLa cell lysate.