

NALP5 Antibody

Catalog # ASC11194

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	P59047
Other Accession	NP_703148 , 158321897
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	134342
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	NALP5 antibody can be used for detection of NALP5 by Western blot at 1 μ g/mL. Antibody can also be used for immunohistochemistry starting at 10 μ g/mL. For immunofluorescence start at 20 μ g/mL.

Additional Information

Other Names	NACHT, LRR and PYD domains-containing protein 5, Mater protein homolog, NLRP5, MATER, NALP5
Target/Specificity	NLRP5;
Reconstitution & Storage	NALP5 antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	NALP5 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	NLRP5 {ECO:0000303 PubMed:38868925, ECO:0000312 HGNC:HGNC:21269}
Function	Component of the subcortical maternal complex (SCMC), a multiprotein complex that plays a key role in early embryonic development (PubMed: 38868925). The SCMC complex is a structural constituent of cytoplasmic lattices, which consist in fibrous structures found in the cytoplasm of oocytes and preimplantation embryos (PubMed: 41118754). They are required to store maternal proteins critical for embryonic development, such as ribosomal proteins, cytoskeletal tubulins and proteins controlling epigenetic reprogramming of the preimplantation embryo, in a poised but restrained state, regulating their availability for early embryonic development

(PubMed:[24374158](#), PubMed:[38868925](#)). Cytoplasmic lattices also tightly control ubiquitination during the oocyte-to-embryo transition by trapping E3 ubiquitin-protein ligase UHRF1 in a compact autoinhibited conformation and maintaining SCF ubiquitin ligase complexes inactive (PubMed:[38868925](#)). Required for the localization of cortical granules to the cortex of oocytes, via association with the cortical actin scaffold (By similarity). Required for cortical actin clearance prior to oocyte exocytosis and prevention of polyspermy (By similarity). Involved in regulating post-fertilization Ca(2+) release and endoplasmic reticulum storage (ER) storage via regulation of cellular localization (By similarity). May be involved in the localization of mitochondria to the cytoplasm and perinuclear region in oocytes and early stage embryos, independent of its role in CPL formation (By similarity).

Cellular Location

Cytoplasm. Cytoplasmic vesicle, secretory vesicle, Cortical granule. Mitochondrion. Nucleus, nucleolus. Golgi apparatus. Note=Core component of cytoplasmic lattices in oocytes (PubMed:37922900). In the subcortical cytoplasm of early embryos from the 1-cell to the blastocyst stages (By similarity). From the 2-cell stage, still detected in the subcortex, but excluded from cell-cell contact regions (By similarity). Expression largely disappears in blastocysts (By similarity). Located in mitochondria and nucleoli in primary follicle oocytes (By similarity) {ECO:0000250|UniProtKB:Q9R1M5, ECO:0000269|PubMed:37922900}

Tissue Location

Expressed in cumulus cells (at protein level) (PubMed:19542546). Highly abundant in oocytes and early embryos, however poorly expressed in somatic tissues such as the liver and spinal cord (PubMed:11925379, PubMed:30877238)

Background

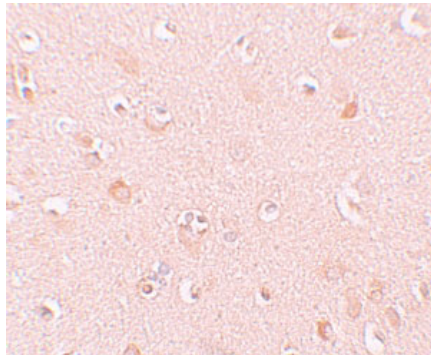
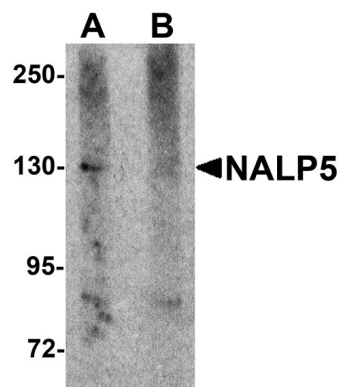
NALP5 Antibody: NALP proteins include the apoptosis regulator APAF1 (apoptotic protease activating factor 1) and mammalian NOD-LRR proteins and are thought to be involved in inflammation and reproduction. NALP5, also known as MATER, is a maternal gene required for early embryonic development in mice. Increased NALP5 expression was observed in two neuronal injury models, and transient expression of recombinant NALP5 in neurons induced caspase-3 activation and apoptosis, suggesting that NALP5 also plays a role in caspase activation and apoptosis in injured neurons, and may thus represent a novel target for therapeutic treatment in neurodegenerative disorders.

References

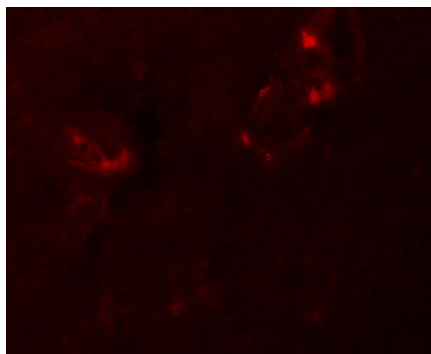
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- Tian X, Pascal G, and Monget P. Evolution and functional divergence of NLRP genes in mammalian reproductive system. *BMC Evol. Biol.*2009; 9:202.
- Tong ZB, Gold L, Pfeiffer KE, et al. Mater, a maternal effect gene required for early embryonic development in mice. *Nat. Genet.*2000; 26:267-8.
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Images

Western blot analysis of NALP5 in mouse brain tissue lysate with NALP5 antibody at 1 µg/mL in (A) the absence and (B) the presence of blocking peptide.



Immunohistochemistry of NALP5 in human brain tissue with NALP5 antibody at 10 µg/mL.



Immunofluorescence of NALP5 in human brain tissue with NALP5 antibody at 20 µg/mL.

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