

Maelstrom Antibody

Catalog # ASC11095

Product Information

Application	WB, IF, ICC, E
Primary Accession	Q96JY0
Other Accession	AA82463 , 67866977
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	49219
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	Maelstrom antibody can be used for detection of Maelstrom by Western blot at 1 µg/mL. Antibody can also be used for immunocytochemistry starting at 5 µg/mL. For immunofluorescence start at 20 µg/mL.

Additional Information

Gene ID	84944
Other Names	Protein maelstrom homolog, MAEL
Target/Specificity	MAEL;
Reconstitution & Storage	Maelstrom 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	Maelstrom Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	MAEL
Function	Plays a central role during spermatogenesis by repressing transposable elements and preventing their mobilization, which is essential for the germline integrity. Acts via the piRNA metabolic process, which mediates the repression of transposable elements during meiosis by forming complexes composed of piRNAs and Piwi proteins and governs the methylation and subsequent repression of transposons. Its association with piP-bodies suggests a participation in the secondary piRNAs metabolic process. Required for the localization of germ-cell factors to the meiotic nuage (By similarity).
Cellular Location	Cytoplasm {ECO:0000250 UniProtKB:Q8BVN9}. Nucleus

{ECO:0000250|UniProtKB:Q8BVN9}. Note=Component of the meiotic nuage, also named P granule, a germ-cell-specific organelle required to repress transposon activity during meiosis. Specifically localizes to piP-bodies, a subset of the nuage which contains secondary piRNAs (By similarity). {ECO:0000250|UniProtKB:Q8BVN9}

Tissue Location

Testis-specific. Expressed in various cancer cell lines, probably due to demethylation of its promoter {ECO:0000269|PubMed:19693694, ECO:0000269|Ref.1}

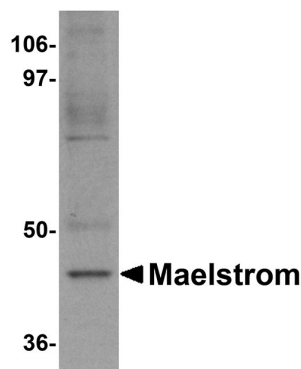
Background

Maelstrom Antibody: The mammalian homolog of the *Drosophila* protein Maelstrom is expressed in the male germline and localizes to the sex body in spermatocytes and the chromatoid body in round spermatids. Similar to its expression in *Drosophila*, Maelstrom is a component of nuages, a germ-cell specific organelle and is thought to be essential for spermatogenesis and transposon repression during meiosis. In humans, Maelstrom has been found to be expressed only in the testis and in various cancer cell lines. Treatment of these cell lines with the demethylating agent 5'-Aza-2-Deoxycytidine significantly upregulated Maelstrom levels, indicating that its expression is regulated by DNA methylation.

References

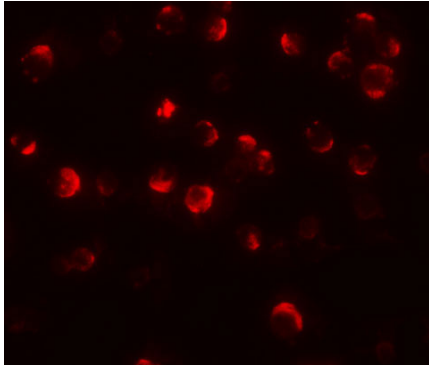
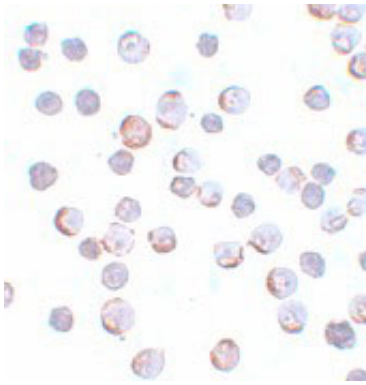
Clegg NJ, Frost DM, Larkin MK, et al. Maelstrom is required for an early step in the establishment of *Drosophila* oocyte polarity: posterior localization of grk mRNA. *Development*1997; 124:4661-71.
Costa Y, Speed RM, Gautier P, et al. Mouse MAELSTROM: the link between meiotic silencing of unsynapsed chromatin and microRNA pathway? *Hum. Mol. Genet.*2006; 15:2324-34.
Soper SFC, van der Heijden GW, Hardiman TC, et al. Mouse Maelstrom, a component of nuage, is essential for spermatogenesis and transposon repression in meiosis. *Dev. Cell*2008; 15:285-97.
Xiao L, Wang Y, Zhou Y, et al. Identification of a novel human/testis gene MAEL that is regulated by DNA methylation. *Mol. Biol. Rep.*2009; epub.

Images



Western blot analysis of Maelstrom in HeLa cell lysate with Maelstrom antibody at 1 µg/mL.

Immunocytochemistry of Maelstrom in HeLa cells with Maelstrom antibody at 5 µg/mL.



Immunofluorescence of Maelstrom in HeLa cells with Maelstrom antibody at 20 $\mu\text{g/mL}$.

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