10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

PIWI-L1 Antibody

Catalog # ASC11226

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q96J94
Other Accession	AAK69348, 14579645
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	98603
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	PIWI-L1 antibody can be used for detection of PIWI-L1 by Western blot at 1 g/mL. Antibody can also be used for immunohistochemistry starting at 10 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	9271
Other Names	Piwi-like protein 1, PIWIL1, HIWI
Target/Specificity	PIWIL1;
Reconstitution & Storage	PIWI-L1 antibody can be stored at 4℃ for three months and -20℃, 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	PIWI-L1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PIWIL1
Function	Endoribonuclease that plays a central role in postnatal germ cells 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. Directly binds methylated piRNAs, a class of 24 to 30 nucleotide RNAs that are generated by a Dicer-independent mechanism and are primarily derived from transposons and other repeated sequence elements. Strongly prefers a uridine in the first position of their guide (g1U preference, also named 1U-bias). Not involved in

	the piRNA amplification loop, also named ping-pong amplification cycle. Acts as an endoribonuclease that cleaves transposon messenger RNAs. Besides their function in transposable elements repression, piRNAs are probably involved in other processes during meiosis such as translation regulation. Probable component of some RISC complex, which mediates RNA cleavage and translational silencing. Also plays a role in the formation of chromatoid bodies and is required for some miRNAs stability. Required to sequester RNF8 in the cytoplasm until late spermatogenesis; RNF8 being released upon ubiquitination and degradation of PIWIL1.
Cellular Location	Cytoplasm {ECO:0000250|UniProtKB:Q9JMB7}. Note=Component of the meiotic nuage, also named P granule, a germ-cell- specific organelle required to repress transposon activity during meiosis. Also present in chromatoid body {ECO:0000250|UniProtKB:Q9JMB7}
Tissue Location	Expressed in spermatocytes and spermatids. Also detected in prostate cancer (at protein level). Detected in most fetal and adult tissues. Expressed in testes, specifically in germline cells; detected in spermatocytes and spermatids during spermatogenesis Increased expression in testicular tumors originating from embryonic germ cells with retention of germ cells phenotype. No expression in testicular tumors of somatic origin, such as Sertoli cell and Leydig cell tumors. Overexpressed in gastric cancer cells. Isoform 3: Ubiquitously expressed, and specifically in CD34(+) hematopoietic progenitor cells but not in more differentiated cells

Background

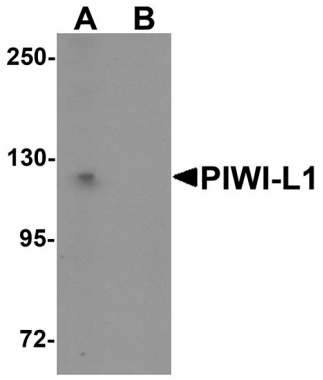
PIWI-L1 Antibody: PIWI-L1 is a member of the PIWI subfamily of Argonaute proteins, evolutionarily conserved proteins containing both PAZ and Piwi motifs that are crucial for the biogenesis and function of small non-coding RNAs and play important roles in stem cell self-renewal, RNA silencing, and translational regulation in diverse organisms. PIWI-L1 is thought to play a role as an intrinsic regulator of the self-renewal capacity of germline and hematopoietic stem cells as removing PIWI-L1 protein from single germline stem cells significantly decreases the rate of their division. Recent studies have shown that overexpression of PIWI-L1 (as well as other PIWI-like proteins) are potential biomarkers for colon and other cancers.

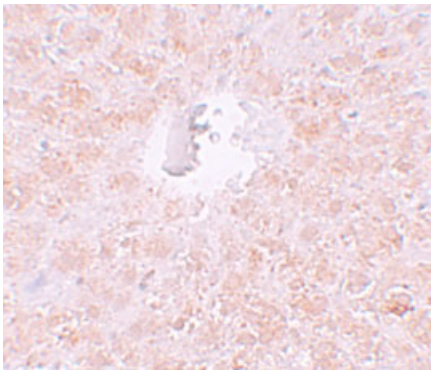
References

Thomson T and Lin H. The biogenesis and function PIWI proteins and piRNAs: progress and prospect. Annu. Rev. Cell Dev. Biol.2009; 25:355-76.
Cox DN, Chao A, and Lin H. PIWI encodes a nucleoplasmic factor whose activity modulates the number and division rate of germline stem cells. Development2000; 503-14.
Li L, Yu C, Gao H, et al. Argonaute proteins: potential biomarkers for human colon cancer. BMC Cancer2010; 10:38.

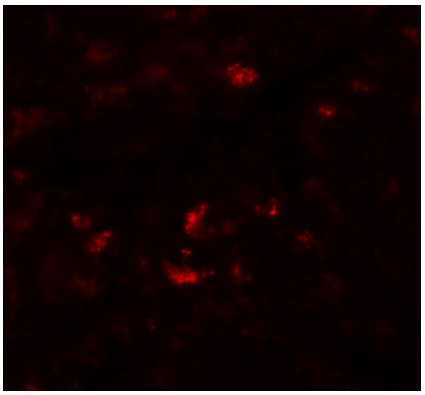
Images

Western blot analysis of PIWI-L1 in HepG2 cell lysate with PIWI-L1 antibody at 1 µg/mL in (A) the absence and (B) the presence of blocking peptide.





Immunohistochemistry of PIWI-L1 in rat liver tissue with PIWI-L1 antibody at 10 µg/mL.



Immunofluorescence of PIWI-L1 in rat liver tissue with PIWI-L1 antibody at 20 µg/mL.