

**HIWI2 / PIWIL4 Antibody**  
**Rabbit Polyclonal Antibody**  
**Catalog # ALS15562****Specification**

---

**HIWI2 / PIWIL4 Antibody - Product Information**

Application	IHC
Primary Accession	<a href="#">O7Z3Z4</a>
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	97kDa KDa

**HIWI2 / PIWIL4 Antibody - Additional Information****Gene ID** 143689**Other Names**

Piwi-like protein 4, PIWIL4, HIWI2, PIWI

**Reconstitution & Storage**

Short term 4°C, long term aliquot and store at -20°C, avoid freeze thaw cycles.

**Precautions**

HIWI2 / PIWIL4 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

**HIWI2 / PIWIL4 Antibody - Protein Information****Name** PIWIL4**Synonyms** HIWI2, PIWI**Function**

Plays a central role during spermatogenesis by repressing transposable elements and preventing their mobilization, which is essential for the germline integrity (By similarity). Acts via the piRNA metabolic process, which mediates the repression of transposable elements during meiosis by forming complexes composed of piRNAs and Piwi proteins (By similarity). The PIWIL4-piRNA pathway acts in the nucleus and mediates silencing of active transposons: engages with nascent transposable element transcripts and governs the piRNA-directed DNA methylation and subsequent repression of transposons (By similarity). In contrast to PIWIL1 and PIWIL2, does not show endonuclease activity (By similarity). Directly binds 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 (By similarity). Associates with secondary piRNAs antisense and PIWIL2/MILI is required for such association (By similarity). The piRNA process acts upstream of known mediators of DNA methylation (By similarity). Plays a key role in the piRNA amplification loop, also named ping-pong amplification cycle, by acting as a 'slicer-incompetent' component that loads cleaved piRNAs from the 'slicer-competent' component

PIWIL2 and target them on genomic transposon loci in the nucleus (By similarity). May be involved in the chromatin-modifying pathway by inducing 'Lys-9' methylation of histone H3 at some loci (PubMed:<a href="http://www.uniprot.org/citations/17544373" target="\_blank">17544373</a>). In addition to its role in germline, PIWIL4 also plays a role in the regulation of somatic cells activities (By similarity). Plays a role in pancreatic beta cell function and insulin secretion (By similarity). Involved in maintaining cell morphology and functional integrity of retinal epithelial through Akt/GSK3alpha/beta signaling pathway (PubMed:<a href="http://www.uniprot.org/citations/28025795" target="\_blank">28025795</a>). When overexpressed, acts as an oncogene by inhibition of apoptosis and promotion of cells proliferation in tumors (PubMed:<a href="http://www.uniprot.org/citations/22483988" target="\_blank">22483988</a>).

#### Cellular Location

Nucleus. Cytoplasm Note=Probable component of the meiotic nuage, also named P granule, a germ-cell-specific organelle required to repress transposon activity during meiosis. PIWIL2/MILI is required for nuclear localization (By similarity). {ECO:0000250|UniProtKB:Q8CGT6}

#### Tissue Location

Ubiquitously expressed (PubMed:17544373, PubMed:22483988, PubMed:25038252, PubMed:28025795, PubMed:28711973) Detected in retina, retinal pigment epithelia cells (RPE) (at protein level) (PubMed:28025795).

#### Volume

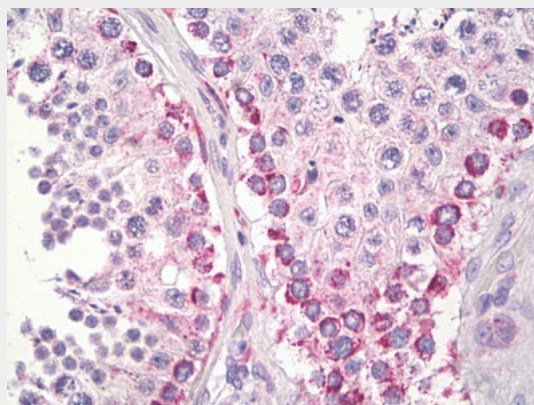
50 µl

#### HIWI2 / PIWIL4 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](#)

#### HIWI2 / PIWIL4 Antibody - Images



Anti-HIWI2 / PIWIL4 antibody IHC staining of human testis, spermatogonia.

## **HIWI2 / PIWIL4 Antibody - Background**

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. Directly binds 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. Associates with secondary piRNAs antisense and PIWIL2/MILI is required for such association. The piRNA process acts upstream of known mediators of DNA methylation. Participates in a piRNA amplification loop. Besides their function in transposable elements repression, piRNAs are probably involved in other processes during meiosis such as translation regulation (By similarity). May be involved in the chromatin-modifying pathway by inducing 'Lys-9' methylation of histone H3 at some loci.

## **HIWI2 / PIWIL4 Antibody - References**

- Sasaki T.,et al.Genomics 82:323-330(2003).
- Ota T.,et al.Nat. Genet. 36:40-45(2004).
- Bechtel S.,et al.BMC Genomics 8:399-399(2007).
- Sugimoto K.,et al.Biochem. Biophys. Res. Commun. 359:497-502(2007).