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

PIWIL4 antibody - N-terminal region

Rabbit Polyclonal Antibody
Catalog # AI13488

Product Information

Application	WB
Primary Accession	Q7Z3Z4
Other Accession	NM_152431, NP_689644
Reactivity	Human
Predicted	Human
Host	Rabbit
Clonality	Polyclonal
Calculated MW	96589

Additional Information

Gene ID	143689
Alias Symbol	DKFZp686P01248, FLJ36156, HIWI2, MIWI2
Other Names	Piwi-like protein 4, PIWIL4, HIWI2, PIWI
Format	Liquid. Purified antibody supplied in 1x PBS buffer with 0.09% (w/v) sodium azide and 2% sucrose.
Reconstitution & Storage	Add 50 ul of distilled water. Final anti-PIWIL4 antibody concentration is 1 mg/ml in PBS buffer with 2% sucrose. For longer periods of storage, store at 20°C. Avoid repeat freeze-thaw cycles.
Precautions	PIWIL4 antibody - N-terminal region is for research use only and not for use in diagnostic or therapeutic procedures.

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:17544373). 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:28025795). When overexpressed, acts as an oncogene by inhibition of apoptosis and promotion of cells proliferation in tumors (PubMed:22483988).

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}

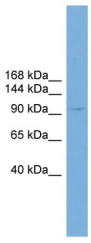
Tissue Location

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).

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).

Images



WB Suggested Anti-PIWIL4 Antibody Titration: 0.2-1 µg/ml
Positive Control: HT1080 cell lysate

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.