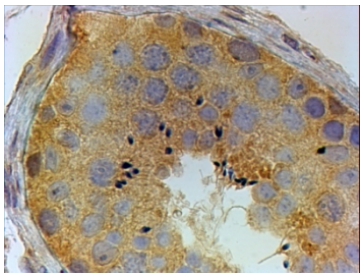
PIWIL1 Antibody / Testicular Germ Cell Marker Antibody (R35993)

Catalog No.	Formulation	Size
R35993-100UG	0.5 mg/ml in 1X TBS, pH7.3, with 0.5% BSA (US sourced) and 0.02% sodium azide	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Predicted Reactivity	Dog, Mouse, Pig, Rat
Format	Antigen affinity purified
Host	Goat
Clonality	Polyclonal (goat origin)
Isotype	Goat Ig
Purity	Antigen affinity
Gene ID	9271
Applications	Immunohistochemistry (FFPE): 4-6ug/ml ELISA (peptide) LOD: 1:64000
Limitations	This PIWIL1 Antibody / Testicular Germ Cell Marker Antibody is available for research use only.



PIWIL1 Antibody Human Testis IHC. Immunohistochemistry staining of FFPE human testis using PIWIL1 Antibody / Testicular Germ Cell Marker Antibody demonstrates strong cytoplasmic HRP-DAB brown staining within seminiferous tubule germ cell populations. The staining pattern is consistent with expression of PIWIL1 (HIWI), a member of the PIWI family of Argonaute proteins that regulates piRNA-mediated gene silencing, transposon suppression, genome stability, and germ cell development. PIWIL1 is highly associated with spermatogenesis and germline maintenance, making it a valuable marker for studies of reproductive biology, fertility, and germ cell differentiation. HIER was performed by steaming tissue sections in pH 6 citrate buffer prior to immunostaining. Primary antibody was applied at 4 ug/ml and detected using an HRP-DAB staining system.

Description

PIWIL1 Antibody / Testicular Germ Cell Marker Antibody detects PIWIL1, a member of the PIWI subfamily of Argonaute proteins that plays a critical role in germ cell development, spermatogenesis, stem cell maintenance, and genome

integrity. PIWIL1, also known as HIWI in humans, is predominantly expressed in germline tissues and is most strongly associated with the development and maintenance of male germ cells within the testis. Because of its highly restricted expression pattern in normal adult tissues, PIWIL1 is widely utilized as a marker of germline differentiation and reproductive biology.

PIWIL1 functions through interactions with PIWI-interacting RNAs (piRNAs), a specialized class of small non-coding RNAs that regulate gene expression and suppress transposable elements. The PIWIL1-piRNA pathway serves as an essential genome defense mechanism, protecting germ cells from transposon-mediated genomic instability. This pathway contributes to the preservation of genetic integrity during germ cell development and is required for normal reproductive function in many organisms. As a result, PIWIL1 has become a central focus of studies investigating fertility, germline biology, and epigenetic regulation.

Within the testis, PIWIL1 expression is associated with developing germ cells and spermatogenic cell populations. The protein participates in cellular processes that support germ cell survival, differentiation, and maturation, making it a valuable marker for investigations of testicular development and reproductive health. Researchers frequently evaluate PIWIL1 expression to better understand mechanisms controlling germline maintenance, gametogenesis, and the molecular pathways that govern reproductive capacity.

Beyond its established role in normal germline biology, PIWIL1 has attracted significant interest in cancer research. Aberrant PIWIL1 expression has been reported in a variety of human malignancies, where it may contribute to altered cellular proliferation, survival, migration, and stem cell-like properties. Because PIWIL1 belongs to a group of proteins normally enriched in germline tissues but detected in certain tumors, it is frequently studied in the context of cancer-testis antigen biology, tumor progression, and cancer-associated epigenetic regulation.

PIWIL1 Antibody / Testicular Germ Cell Marker Antibody is useful for researchers studying spermatogenesis, germ cell differentiation, reproductive biology, fertility, stem cell regulation, piRNA signaling, epigenetics, and cancer biology. Validation may include applications such as immunohistochemistry, western blotting, immunofluorescence, flow cytometry, and protein expression analysis when supported by experimental data. As a key regulator of germline development and genome protection, PIWIL1 remains an important target for understanding the molecular mechanisms that govern reproductive function, cellular identity, and disease-associated biological pathways.

Explore our Stem Cell Antibodies page for additional markers involved in germline stem cell maintenance, cellular differentiation, and developmental regulation.

Application Notes

Optimal dilution of the PIWIL1 Antibody / Testicular Germ Cell Marker Antibody should be determined by the researcher.

Immunogen

Amino acids SNRKDKYDAIKKY were used as the immunogen for this PIWIL1 antibody.

Storage

Aliquot and store the PIWIL1 antibody at -20oC.

Alternate Names

PIWIL1 Antibody, Piwi-like Protein 1 Antibody, Piwi Protein Homolog 1 Antibody, HIWI Antibody, Germ Cell Development Protein Antibody, Testicular Germ Cell Marker Antibody

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