SANTA CRUZ BIOTECHNOLOGY, INC.

PIWIL1 (N-17): sc-22685

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The PIWI family is an evolutionarily conserved gene family that plays an essential role in stem cell self-renewal, gametogenesis, and RNA interference in diverse organisms. PIWIL1 (PIWI-like 1), also known as HIWI belongs within the PIWI subfamily of argonaute proteins. PIWIL1 maps to the long arm of chromosome 12, band 12q24.33, a genomic region that displays genetic linkage to the development of testicular germ cell tumors of adolescents and adults. PIWIL1 encodes a 3.6 kb mRNA that is expressed abundantly in the adult testis and encodes a highly basic 861-amino-acid protein that shares significant homology throughout its entire length with other members of the PIWI family proteins in *Drosophila, C. elegans,* and mammals. In normal human testis, PIWIL1 is specifically expressed in germline cells, with its expression detectable in spermatocytes and round spermatids during spermatogenesis. PIWIL1 is also present in human $CD34^+$ hematopoietic progenitor cells, but not in more differentiated cell populations. *Drosophila* PIWI gene is required for the asymmetric division of GSCs to produce and maintain a daughter GSC, but is not essential for the further differentiation of the committed daughter cell.

CHROMOSOMAL LOCATION

Genetic locus: PIWIL1 (human) mapping to 12q24.33; Piwil1 (mouse) mapping to 5 G1.3.

SOURCE

PIWIL1 (N-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of PIWIL1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-22685 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PIWIL1 (N-17) is recommended for detection of PIWIL1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

PIWIL1 (N-17) is also recommended for detection of PIWIL1 in additional species, including equine, canine and porcine.

Suitable for use as control antibody for PIWIL1 siRNA (h): sc-40677, PIWIL1 siRNA (m): sc-40678, PIWIL1 shRNA Plasmid (h): sc-40677-SH, PIWIL1 shRNA Plasmid (m): sc-40678-SH, PIWIL1 shRNA (h) Lentiviral Particles: sc-40677-V and PIWIL1 shRNA (m) Lentiviral Particles: sc-40678-V.

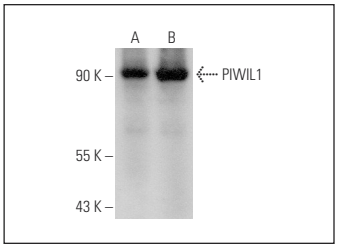
Molecular Weight of PIWIL1: 99 kDa.

Positive Controls: mouse testis extract: sc-2405 or rat testis extract: sc-2400.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



PIWIL1 (N-17): sc-22685. Western blot analysis of PIWIL1 expression in mouse testis (**A**) and rat testis (**B**) tissue extracts.

SELECT PRODUCT CITATIONS

1. Grochola, L.F., et al. 2008. The stem cell-associated HIWI gene in human adenocarcinoma of the pancreas: expression and risk of tumour-related death. Br. J. Cancer 99: 1083-1088.
2. Sato, H., et al. 2010. Relevance of gonadotropin-regulated testicular RNA helicase (GRTH/DDX25) in the structural integrity of the chromatoid body during spermatogenesis. Biochim. Biophys. Acta 1803: 534-543.
3. Sun, G., et al. 2011. Clinical significance of Hiwi gene expression in gliomas. Brain Res. 1373: 183-188.
4. Ding, X., et al. 2013. Characterization of a piRNA binding protein Miwi in mouse oocytes. Theriogenology 79: 610-615.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.