

# PIWIL2 (G-1): sc-377258

## BACKGROUND

PIWIL2 (PIWI-like protein 2), also known as HILI and cancer/testis antigen 80 (CT80), is a 973 amino acid protein that belongs to the argonaute family. PIWIL2 contains one PAZ domain and one PIWI domain. PIWIL2 is a cytoplasmic protein that is expressed in adult testis and in most tumors. It regulates spermatogenesis and primordial germ cell production and has an essential role in meiotic differentiation of spermatocytes and in self-renewal of spermatogonial stem cells. Expression of PIWIL2 can modulate expression of genes involved in stem cell proliferation (such as PDGFR- $\beta$ ), in energy metabolism (such as Glut1), in cell-cell interaction (such as Integrin  $\alpha 6$ , GJA7, THY-1 and CD9), and in germ cell differentiation (such as STRA8). It may also play a role as a regulatory factor of Stat3/Bcl-x<sub>S<sub>L</sub></sub>/CCND1 pathway. Repression of PIWIL2 can inhibit tumor cell growth. PIWIL2 acts as an oncogene by inhibition of apoptosis and promotion of proliferation in tumors.

## CHROMOSOMAL LOCATION

Genetic locus: PIWIL2 (human) mapping to 8p21.3; Piwil2 (mouse) mapping to 14 D2.

## SOURCE

PIWIL2 (G-1) is a mouse monoclonal antibody raised against amino acids 14-240 mapping at the N-terminus of HILI of mouse origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PIWIL2 (G-1) is available conjugated to agarose (sc-377258 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377258 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377258 PE), fluorescein (sc-377258 FITC), Alexa Fluor<sup>®</sup> 488 (sc-377258 AF488), Alexa Fluor<sup>®</sup> 546 (sc-377258 AF546), Alexa Fluor<sup>®</sup> 594 (sc-377258 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-377258 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-377258 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-377258 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

PIWIL2 (G-1) is recommended for detection of PIWIL2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

Suitable for use as control antibody for PIWIL2 siRNA (h): sc-62456, PIWIL2 siRNA (m): sc-62457, PIWIL2 shRNA Plasmid (h): sc-62456-SH, PIWIL2 shRNA Plasmid (m): sc-62457-SH, PIWIL2 shRNA (h) Lentiviral Particles: sc-62456-V and PIWIL2 shRNA (m) Lentiviral Particles: sc-62457-V.

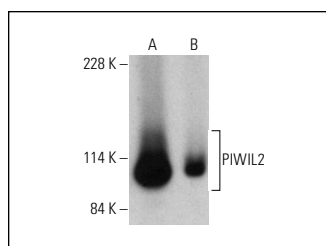
Molecular Weight of PIWIL2: 110 kDa.

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

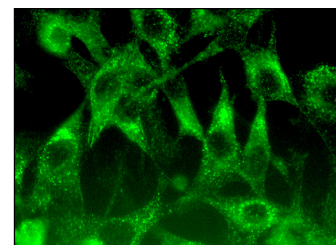
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 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 m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



PIWIL2 (G-1) HRP: sc-377258 HRP. Direct western blot analysis of PIWIL2 expression in rat testis (A) and mouse testis (B) tissue extracts.



PIWIL2 (G-1): sc-377258. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization.

## SELECT PRODUCT CITATIONS

1. Qiu, B., et al. 2019. PIWIL2 stabilizes  $\beta$ -catenin to promote cell cycle and proliferation in tumor cells. *Biochem. Biophys. Res. Commun.* 516: 819-824.
2. Lü, J., et al. 2020. Cyclin D1 promotes secretion of pro-oncogenic immunomiRNAs and piRNAs. *Clin. Sci.* 134: 791-805.
3. Ikhlas, S., et al. 2022. Exosomes/microvesicles target SARS-CoV-2 via innate and RNA-induced immunity with PIWI-piRNA system. *Life Sci. Alliance* 5: e202101240.
4. Gasperini, C., et al. 2022. PIWIL2 (Mili) sustains neurogenesis and prevents cellular senescence in the postnatal hippocampus. *EMBO Rep.* E-published.

## 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](http://www.scbt.com) for detailed protocols and support products.