

# PIWIL2 (D-5): sc-377347

## 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- $x_L$ /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.

## REFERENCES

1. Sasaki, T., et al. 2003. Identification of eight members of the Argonaute family in the human genome small star, filled. *Genomics* 82: 323-330.
2. Kuramochi-Miyagawa, S., et al. 2004. Mili, a mammalian member of piwi family gene, is essential for spermatogenesis. *Development* 131: 839-849.
3. Lee, J.H., et al. 2006. Stem cell protein PIWIL2 modulates expression of murine spermatogonial stem cell expressed genes. *Mol. Reprod. Dev.* 73: 173-179.

## CHROMOSOMAL LOCATION

Genetic locus: Piwil2 (mouse) mapping to 14 D2.

## SOURCE

PIWIL2 (D-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 157-191 within an internal region of HILI of mouse origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG $_1$  kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PIWIL2 (D-5) is available conjugated to agarose (sc-377347 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377347 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377347 PE), fluorescein (sc-377347 FITC), Alexa Fluor<sup>®</sup> 488 (sc-377347 AF488), Alexa Fluor<sup>®</sup> 546 (sc-377347 AF546), Alexa Fluor<sup>®</sup> 594 (sc-377347 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-377347 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-377347 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-377347 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-377347 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## STORAGE

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

## APPLICATIONS

PIWIL2 (D-5) is recommended for detection of PIWIL2 of mouse and rat 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), immunohistochemistry (including paraffin-embedded sections) (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 (m): sc-62457, PIWIL2 shRNA Plasmid (m): sc-62457-SH and PIWIL2 shRNA (m) Lentiviral Particles: sc-62457-V.

Molecular Weight of PIWIL2: 110 kDa.

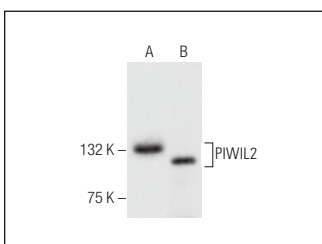
Positive Controls: F9 cell lysate: sc-2245 or rat testis extract: sc-2400.

## RECOMMENDED SUPPORT REAGENTS

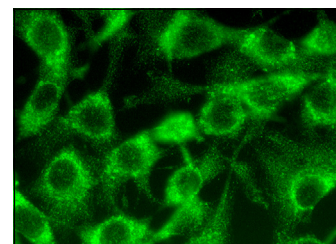
To ensure optimal results, the following support reagents are recommended:

- 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.
- 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



PIWIL2 (D-5): sc-377347. Western blot analysis of PIWIL2 expression in F9 whole cell lysate (A) and rat testis tissue extract (B).



PIWIL2 (D-5): sc-377347. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization.

## SELECT PRODUCT CITATIONS

1. Pammer, J., et al. 2020. PIWIL-2 and piRNAs are regularly expressed in epithelia of the skin and their expression is related to differentiation. *Arch. Dermatol. Res.* 312: 705-714.
2. Gasperini, C., et al. 2023. PIWIL2 (Mili) sustains neurogenesis and prevents cellular senescence in the postnatal hippocampus. *EMBO Rep.* 24: e53801.

## RESEARCH USE

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

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