

## PIWIL2 (N-20): sc-67503

### 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.

### 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. 2005. Stem cell protein PIWIL2 modulates expression of murine spermatogonial stem cell expressed genes. *Mol. Reprod. Dev.* 73: 173-179.
4. Lee, J.H., et al. 2006. Stem cell protein PIWIL2 is widely expressed in tumors and inhibits apoptosis through activation of Stat3/Bcl-x<sub>L</sub> pathway. *Hum. Mol. Genet.* 15: 201-211.
5. Nayernia, K., et al. 2006. Derivation of male germ cells from bone marrow stem cells. *Lab. Invest.* 86: 654-663.
6. Aravin, A., et al. 2006. A novel class of small RNAs bind to MILI protein in mouse testes. *Nature* 442: 203-207.

### CHROMOSOMAL LOCATION

Genetic locus: PIWIL2 (human) mapping to 8p21.3.

### SOURCE

PIWIL2 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of PIWIL2 of human origin.

### PRODUCT

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

Blocking peptide available for competition studies, sc-67503 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### STORAGE

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

### APPLICATIONS

PIWIL2 (N-20) is recommended for detection of PIWIL2 of human origin by Western Blotting (starting dilution 1:200, 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 shRNA Plasmid (h): sc-62456-SH and PIWIL2 shRNA (h) Lentiviral Particles: sc-62456-V.

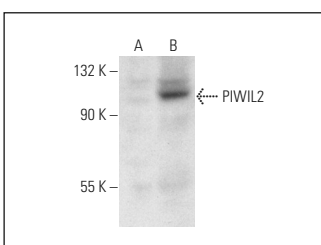
Molecular Weight of HILI: 110 kDa.

Positive Controls: PIWIL2 (h): 293T Lysate: sc-370205.

### 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



PIWIL2 (N-20): sc-67503. Western blot analysis of PIWIL2 expression in non-transfected 293T: sc-117752 (A) and human PIWIL2 transfected 293T: sc-370205 (B) whole cell lysates.

### 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) or our catalog for detailed protocols and support products.