

PIWIL4 (H-90): sc-68932

BACKGROUND

PIWIL4 (PIWI-like protein 4), also known as HIWI2 is a 852 amino acid protein that belongs to the argonaute family. PIWIL4 contains one PAZ domain and one PIWI domain and is essential for the maintenance of germline stem cells. PIWIL4 is a cytoplasmic protein that is expressed in adult testis. 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. PIWIL4-null mice are of normal size and weight and have the expected life span. Homozygous PIWIL4-null females are fertile and have no obvious defects. However, PIWIL4-deficient males are infertile and show a meiotic progression defect in early prophase of meiosis I and progressive loss of germ cells with age. Mutant males show elevated expression of LINE-1 and intracisternal A particle (IAP) element transcripts in germ cell lineages. The gene encoding PIWIL4 maps to human chromosome 11.

REFERENCES

1. Sasaki, T., Shiohama, A., Minoshima, S. and Shimizu, N. 2003. Identification of eight members of the argonaute family in the human genome small star, filled. *Genomics* 82: 323-330.
2. Kuramochi-Miyagawa, S., Kimura, T., Ijiri, T.W., Isobe, T., Asada, N., Fujita, Y., Ikawa, M., Iwai, N., Okabe, M., Deng, W., Lin, H., Matsuda, Y. and Nakano, T. 2004. MILI, a mammalian member of PIWI family gene, is essential for spermatogenesis. *Development* 131: 839-849.
3. Lee, J.H., Engel, W. and Nayernia, K. 2005. Stem cell protein PIWIL2 modulates expression of murine spermatogonial stem cell expressed genes. *Mol. Reprod. Dev.* 73: 173-179.
4. Lee, J.H., Schütte, D., Wulf, G., Füzesi, L., Radzun, H.J., Schweyer, S., Engel, W. and Nayernia, K. 2006. Stem cell protein PIWIL2 is widely expressed in tumors and inhibits apoptosis through activation of Stat3/Bcl-x_L pathway. *Hum. Mol. Genet.* 15: 201-211.
5. Nayernia, K., Lee, J.H., Drusenheimer, N., Nolte, J., Wulf, G., Dressel, R., Gromoll, J. and Engel, W. 2006. Derivation of male germ cells from bone marrow stem cells. *Lab. Invest.* 86: 654-663.

CHROMOSOMAL LOCATION

Genetic locus: PIWIL4 (human) mapping to 11q21; Piwil4 (mouse) mapping to 9 A2.

SOURCE

PIWIL4 (H-90) is a rabbit polyclonal antibody raised against amino acids 471-560 mapping within an internal region of PIWIL4 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.

STORAGE

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

APPLICATIONS

PIWIL4 (H-90) is recommended for detection of PIWIL4 of human and, to a lesser extent, mouse and rat 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).

Suitable for use as control antibody for PIWIL4 siRNA (h): sc-62458, PIWIL4 shRNA Plasmid (h): sc-62458-SH and PIWIL4 shRNA (h) Lentiviral Particles: sc-62458-V.

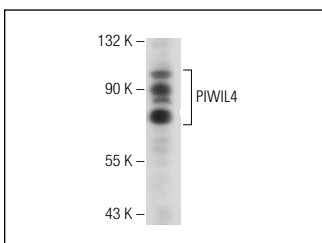
Molecular Weight of PIWIL4: 97 kDa.

Positive Controls: PC-3 cell lysate: sc-2220 or NTERA-2 cl.D1 whole cell lysate: sc-364181.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



PIWIL4 (H-90): sc-68932. Western blot analysis of PIWIL4 expression in NTERA-2 cl.D1 whole cell lysate.

RESEARCH USE

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

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Try **PIWIL4 (10G9B11): sc-517215**, our highly recommended monoclonal alternative to PIWIL4 (H-90).