SANTA CRUZ BIOTECHNOLOGY, INC.

# PIWI (G-1): sc-390946

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. In the *Drosophila* ovary, PIWI is required for the asymmetric division of Germline stem cells (GSCs) to produce and maintain a daughter GSC, but is not essential for the further differentiation of the committed daughter cell. PIWI is a highly basic nucleoplasmic protein present in both somatic and germline cells, with the highly conserved C-terminal region essential for its function. Removing PIWI protein from single germline stem cells significantly decreases the rate of their division, suggesting that PIWI has a second role as a cell-autonomous promoter of germline stem cell division. Consistent with its dual function, over-expression of PIWI in somatic cells causes an increase both in the number of germline stem cells and the rate of their division. Thus, PIWI is a key regulator of stem cell division; its somatic expression modulates the number of germline stem cells and the rate of their division, while its germline expression also contributes to promoting stem cell division in a cell-autonomous manner.

## SOURCE

PIWI (G-1) is a mouse monoclonal antibody raised against amino acids 1-190 mapping at the N-terminus of PIWI of *Drosophila melanogaster* origin.

## PRODUCT

Each vial contains 200 µg $IgG_{2b}$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PIWI (G-1) is available conjugated to agarose (sc-390946 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390946 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390946 PE), fluorescein (sc-390946 FITC), Alexa Fluor® 488 (sc-390946 AF488), Alexa Fluor® 546 (sc-390946 AF546), Alexa Fluor® 594 (sc-390946 AF594) or Alexa Fluor® 647 (sc-390946 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390946 AF680) or Alexa Fluor® 790 (sc-390946 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## 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.

## APPLICATIONS

PIWI (G-1) is recommended for detection of PIWI of *Drosophila melanogaster* origin by Western Blotting (starting dilution 1:100, 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).

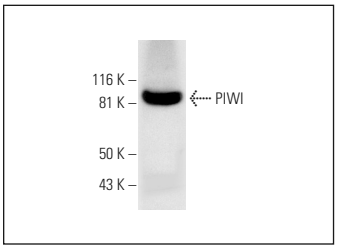
Molecular Weight of PIWI: 97 kDa.

Positive Controls: Schneider's *Drosophila* Line 2 whole cell lysate: sc-364794.

## RECOMMENDED SUPPORT REAGENTS

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

## DATA




PIWI (G-1): sc-390946. Western blot analysis of PIWI expression in Schneider's *Drosophila* Line 2 whole cell lysate.

## SELECT PRODUCT CITATIONS


1. Jones, B.C., et al. 2016. A somatic piRNA pathway in the *Drosophila* fat body ensures metabolic homeostasis and normal lifespan. Nat. Commun. 7: 13856.
2. Lepesant, J.M.J., et al. 2019. A dual role of dLsd1 in oogenesis: regulating developmental genes and repressing transposons. Nucleic Acids Res. 48: 1206-1224.
3. Mugat, B., et al. 2020. The Mi-2 nucleosome remodeler and the Rpd3 histone deacetylase are involved in piRNA-guided heterochromatin formation. Nat. Commun. 11: 2818.


## PROTOCOLS

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