SANTA CRUZ BIOTECHNOLOGY, INC.

PIWIL3 siRNA (h): sc-76153

BACKGROUND

PIWIL3 (piwi-like 3), also known as HIWI3, is an 882 cytoplasmic protein that belongs to the argonaute family. Expressed in testis, PIWIL3 may participate in spermatogenesis by repressing transposable elements and preventing mobilization, which is essential for germline integrity. PIWIL3 may act via the piRNA metabolic process, which mediates the repression of transposable elements during meiosis by forming complexes composed of piRNAs and PIWI proteins while governing the methylation and subsequent repression of transposons. PIWIL3 directly binds piRNAs, a class of 24 to 30 nucleotide RNAs that are generated by a Dicer-independent mechanism and are primarily derived from transposons and other repeated sequence elements. PIWIL3 may also be involved in human specific tumor pathogenesis. The gene encoding PIWIL3 maps to human chromosome 22, which houses over 500 genes and is the second smallest human chromosome.

REFERENCES

1. Dunham, I., et al. 1999. The DNA sequence of human chromosome 22. Nature 402: 489-495.
2. Sasaki, T., et al. 2003. Identification of eight members of the Argonaute family in the human genome small star, filled. Genomics 82: 323-330.
3. Seto, A.G., et al. 2007. The coming of age for Piwi proteins. Mol. Cell 26: 603-609.
4. Peters, L. and Meister, G. 2007. Argonaute proteins: mediators of RNA silencing. Mol. Cell 26: 611-623.
5. Farazi, T.A., et al. 2008. The growing catalog of small RNAs and their association with distinct Argonaute/Piwi family members. Development 135: 1201-1214.
6. Höck, J. and Meister, G. 2008. The Argonaute protein family. Genome Biol. 9: 210.
7. Wang, X.L., et al. 2008. Preparation and distribution of polyclonal antibodies against human PIWIL3 protein in tumor tissues. Xi Bao Yu Fen Zi Mian Yi Xue Za Zhi 24: 714-716.

CHROMOSOMAL LOCATION

Genetic locus: PIWIL3 (human) mapping to 22q11.23.

PRODUCT

PIWIL3 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PIWIL3 shRNA Plasmid (h): sc-76153-SH and PIWIL3 shRNA (h) Lentiviral Particles: sc-76153-V as alternate gene silencing products.

For independent verification of PIWIL3 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-76153A, sc-76153B and sc-76153C.

RESEARCH USE

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

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

PIWIL3 siRNA (h) is recommended for the inhibition of PIWIL3 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

PIWIL3 (C-3): sc-398779 is recommended as a control antibody for monitoring of PIWIL3 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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) 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PIWIL3 gene expression knockdown using RT-PCR Primer: PIWIL3 (h)-PR: sc-76153-PR (20 µl, 540 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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