SANTA CRUZ BIOTECHNOLOGY, INC.

Pygopus 2 siRNA (h): sc-76303

BACKGROUND

Pygopus 2, also known as PYGO2, is a 406 amino acid protein that is the human homolog of the *Drosophila* Pygopus protein. Localized to the nucleus, Pygopus 2 contains one PHD finger that interacts with the homology domain of the Wnt signaling protein Bcl-9. This interaction joins Pygopus 2 with the β-catenin/TCF complex (a crucial complex in Wnt signaling), thereby allowing β-catenin to transcriptionally activate Wnt target genes. Association of Pygopus 2 with proteins involved in the Wnt signaling pathway is thought to regulate proper signal transduction, as absence of the Pygopus 2/β-catenin interaction may play a role in development of B cell malignancies. In addition, Pygopus 2 expression is upregulated in and required for the growth of breast cancer cells, suggesting a crucial role in carcinogenesis.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606903. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
2. Li, B., et al. 2004. Cloning and developmental expression of mouse Pygopus 2, a putative Wnt signaling component. Genomics 84: 398-405.
3. Popadiuk, C.M., et al. 2006. Antisense suppression of Pygopus 2 results in growth arrest of epithelial ovarian cancer. Clin. Cancer Res. 12: 2216-2223.
4. Andrews, P.G., et al. 2007. Requirement of Pygopus 2 in breast cancer. Int. J. Oncol. 30: 357-363.
5. Schwab, K.R., et al. 2007. PYGO1 and PYGO2 roles in Wnt signaling in mammalian kidney development. BMC Biol. 5: 15-15.

CHROMOSOMAL LOCATION

Genetic locus: PYGO2 (human) mapping to 1q21.3.

PRODUCT

Pygopus 2 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 Pygopus 2 shRNA Plasmid (h): sc-76303-SH and Pygopus 2 shRNA (h) Lentiviral Particles: sc-76303-V as alternate gene silencing products.

For independent verification of Pygopus 2 (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-76303A, sc-76303B and sc-76303C.

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

Pygopus 2 siRNA (h) is recommended for the inhibition of Pygopus 2 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

Pygopus 2 (B-12): sc-390506 is recommended as a control antibody for monitoring of Pygopus 2 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 Pygopus 2 gene expression knockdown using RT-PCR Primer: Pygopus 2 (h)-PR: sc-76303-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Chen, J., et al. 2010. PYGO2 associates with MLL2 histone methyltransferase and GCN5 histone acetyltransferase complexes to augment Wnt target gene expression and breast cancer stem-like cell expansion. Mol. Cell. Biol. 30: 5621-5635.

RESEARCH USE

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

PROTOCOLS

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