SANTA CRUZ BIOTECHNOLOGY, INC.

PTTG siRNA (m): sc-37492

BACKGROUND

The product of the oncogene PTTG, pituitary tumor transforming gene, is a human homolog of the anaphase-inhibitor vertebrate protein, securin. PTTG contains a basic amino-terminal domain and an acidic carboxy-terminal domain, which acts as a transactivation domain when fused to a heterologous DNA binding domain. Human PTTG is overexpressed in Jurkat and is also detected in human thymus, testis and placenta. PTTG is mainly expressed in the cytoplasm and is also partially localized to the nucleus. Vertebrate PTTG regulates the separin Esp1, which promotes chromatid separation, to overcome the cohesive forces that hold sister chromatids together. This regulatory function of PTTG suggests that defective regulation of cohesion may contribute to cancer by promoting chromosome instability. Although vertebrate PTTG shares cell-cycle functions with its yeast securin counterparts Pds1p and Cut2, none share sequence homology.

REFERENCES

1. Yamamoto, A., et al. 1996. Pds1p, an inhibitor of anaphase in budding yeast, plays a critical role in the APC and checkpoint pathway(s). J. Cell Biol. 133: 99-110.
2. Dominguez, A., et al. 1998. hPTTG, a human homologue of rat PTTG, is overexpressed in hematopoietic neoplasms. Evidence for a transcriptional activation function of hPTTG. Oncogene 17: 2187-2193.
3. Zou, H., et al. 1999. Identification of a vertebrate sister-chromatid separation inhibitor involved in transformation and tumorigenesis. Science 285: 418-422.
4. Toth, A., et al. 1999. Yeast cohesion complex requires a conserved protein, Eco1p (Ctf7), to establish cohesion between sister chromatids during DNA replication. Genes Dev. 13: 320.
5. Uhlmann, F., et al. 1999. Sister-chromatid separation at anaphase onset is promoted by cleavage of the cohesion subunit Scc1. Nature 400: 37-42.
6. Minematsu, T., et al. 2006. PTTG overexpression is correlated with angiogenesis in human pituitary adenomas. Endocr. Pathol. 17: 143-153.
7. Wang, Z., et al. 2006. Expression of pituitary tumor-transforming gene in patients with multiple myeloma. Zhongguo Shi Yan Xue Ye Xue Za Zhi 14: 1143-1145.

CHROMOSOMAL LOCATION

Genetic locus: Pttg1 (mouse) mapping to 11 A5.

PRODUCT

TAB182 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 TAB182 shRNA Plasmid (h): sc-61633-SH and TAB182 shRNA (h) Lentiviral Particles: sc-61633-V as alternate gene silencing products.

For independent verification of TAB182 (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-61633A, sc-61633B and sc-61633C.

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

PTTG siRNA (m) is recommended for the inhibition of PTTG expression in mouse 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

PTTG (DCS-280): sc-56207 is recommended as a control antibody for monitoring of PTTG 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 PTTG gene expression knockdown using RT-PCR Primer: PTTG (m)-PR: sc-37492-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.