SANTA CRUZ BIOTECHNOLOGY, INC.

PLAGL2 siRNA (h): sc-38182

BACKGROUND

Pleiomorphic adenoma gene (PLAG1) is the target gene for pleiomorphic adenomas of the salivary gland. The PLAG family of zinc finger proteins include PLAG1, ZAC1 and PLAG-like 2 (PLAGL2). PLAG1 is a zinc finger protein that localizes primarily to the outer layer of tubulo-ductal structures in primary pleiomorphic adenomas. Variable PLAG1 expression in neoplastic cells correlates with tumor differentiation. ZAC1, also known as PLAGL1, concomitantly controls apoptosis and cell cycle arrest through separate pathways. ZAC1 also acts as an either positive or negative transcriptional cofactor for nuclear receptors, depending on the expression of functional p53. ZAC1 is broadly expressed in embryo, with highest expression in the liver primordium, the umbilical region and the neural tube. ZAC1 is also expressed in normal mammary gland. PLAGL2 functions as a positive regu-lator of transcription and localizes to the nucleus. PLAGL2 and ZAC1 bind to the DNA consensus sequence ACGGGGGCCCCTTTA. PLAGL2 is ubiquitously expressed with particular abundance in spleen, lung and testis, where it may be involved in cell cycle arrest and apoptosis of tumor cells.

REFERENCES

1. Kas, K., et al. 1997. Promoter swapping between the genes for a novel zinc finger protein and beta-catenin in pleiomorphic adenomas with t(3;8)(p21;q12) translocations. Nat. Genet. 15: 170-174.
2. Kas, K., et al. 1998. Transcriptional activation capacity of the novel PLAG family of zinc finger proteins. J. Biol. Chem.273: 23026-23032.
3. Bilanges, B., et al. 1999. Loss of expression of the candidate tumor suppressor gene ZAC in breast cancer cell lines and primary tumors. Oncogene 18: 3979-3988.
4. Piras, G., et al. 2000. ZAC1 (Lot1), a potential tumor suppressor gene, and the gene for ε-sarcoglycan are maternally imprinted genes: identification by a subtractive screen of novel uniparental fibroblast lines. Mol. Cell. Biol. 9: 3308-3315.
5. Furukawa, T., et al. 2001. Involvement of PLAGL2 in activation of iron deficient- and hypoxia-induced gene expression in mouse cell lines. Oncogene 20: 4718-4727.
6. Huang, S.M., et al. 2001. Enhancement of p53-dependent gene activation by the transcriptional coactivator ZAC1. Oncogene 17: 2134-2143.

CHROMOSOMAL LOCATION

Genetic locus: Plagl2 (mouse) mapping to 2 H1.

PRODUCT

PLAGL2 siRNA (m) 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 PLAGL2 shRNA Plasmid (m): sc-38182-SH and PLAGL2 shRNA (m) Lentiviral Particles: sc-38182-V as alternate gene silencing products.

For independent verification of PLAGL2 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-38182A, sc-38182B and sc-38182C.

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

PLAGL2 siRNA (m) is recommended for the inhibition of PLAGL2 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PLAGL2 gene expression knockdown using RT-PCR Primer: PLAGL2 (m)-PR: sc-38182-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.