SANTA CRUZ BIOTECHNOLOGY, INC.

ALPPL2 siRNA (h): sc-105390

BACKGROUND

ALPPL2 (alkaline phosphatase, placental-like 2), also known as ALPG, GCAP or ALPPL, is a 532 amino acid protein that is lipid-anchored to the cell membrane and belongs to the alkaline phosphatase family. Expressed at low levels in thymus and testis, ALPPL2 functions as a homodimer that uses magnesium and zinc as cofactors to catalyze the conversion of a phosphate monoester to an alcohol and a free phosphate. ALPPL2 is overexpressed in germ cell tumors, suggesting a role in tumor development and progression. The gene encoding ALPPL2 maps to human chromosome 2, which houses over 1,400 genes and comprises nearly 8% of the human genome. Harlequin icthyosis, a rare and morbid skin deformity, is associated with mutations in the ABCA12 gene, while the lipid metabolic disorder sitosterolemia is associated with defects in the ABCG5 and ABCG8 genes. Additionally, an extremely rare recessive genetic disorder, Alström syndrome, is caused by mutations in the ALMS1 gene, which maps to chromosome 2.

REFERENCES

1. Millán, J.L., et al. 1982. A possible new locus of alkaline phosphatase expressed in human testis. Hum. Genet. 62: 293-295.
2. Jemmerson, R., et al. 1985. Characterization of the placental alkaline phosphatase-like (Nagao) isozyme on the surface of A431 human epidermoid carcinoma cells. Cancer Res. 45: 282-287.
3. Millán, J.L. 1986. Molecular cloning and sequence analysis of human placental alkaline phosphatase. J. Biol. Chem. 261: 3112-3115.
4. Martin, D., et al. 1987. The human placental alkaline phosphatase gene and related sequences map to chromosome 2 band q37. Ann. Hum. Genet. 51: 145-152.
5. Shen, L.P., et al. 1988. 5' nucleotide sequence of a putative human placental alkaline phosphatase-like gene. Nucleic Acids Res. 16: 5694.
6. Hamilton-Dutoit, S.J., et al. 1990. The expression of placental alkaline phosphatase (PLAP) and PLAP-like enzymes in normal and neoplastic human tissues. An immunohistological survey using monoclonal antibodies. APMIS 98: 797-811.
7. Le Du, M.H. and Millan, J.L. 2002. Structural evidence of functional divergence in human alkaline phosphatases. J. Biol. Chem. 277: 49808-49814.

CHROMOSOMAL LOCATION

Genetic locus: ALPPL2 (human) mapping to 2q37.1.

PRODUCT

ALPPL2 siRNA (h) is a target-specific 19-25 nt siRNA 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 ALPPL2 shRNA Plasmid (h): sc-105390-SH and ALPPL2 shRNA (h) Lentiviral Particles: sc-105390-V as alternate gene silencing products.

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

ALPPL2 siRNA (h) is recommended for the inhibition of ALPPL2 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

ALPPL2 (9-YD35): sc-134255 is recommended as a control antibody for monitoring of ALPPL2 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 ALPPL2 gene expression knockdown using RT-PCR Primer: ALPPL2 (h)-PR: sc-105390-PR (20 µl). 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.