SANTA CRUZ BIOTECHNOLOGY, INC.

APLF siRNA (h): sc-94862

BACKGROUND

APLF (aprataxin and PNKP like factor), also known as Xip1, PALF, or C2orf13, is a 511 amino acid protein that contains one FHA doman and two C_2H_2-type zinc fingers. Localized to both the nucleus and the cytoplasm, APLF interacts with XRCC1, XRCC4 and Ku-86 and, via these interactions, is involved in single-strand and double-strand DNA break repair. APLF is subject to post-translational phosphorylation in response to DNA breaks. The gene encoding APLF 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

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2. Bekker-Jensen, S., et al. 2007. Human Xip1 (C2orf13) is a novel regulator of cellular responses to DNA strand breaks. J. Biol. Chem. 282: 19638-19643.
3. Iles, N., et al. 2007. APLF (C2orf13) is a novel human protein involved in the cellular response to chromosomal DNA strand breaks. Mol. Cell. Biol. 27: 3793-3803.
4. Macrae, C.J., et al. 2008. APLF (C2orf13) facilitates nonhomologous end-joining and undergoes ATM-dependent hyperphosphorylation following ionizing radiation. DNA Repair 7: 292-302.
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6. Ahel, I., et al. 2008. Poly(ADP-ribose)-binding zinc finger motifs in DNA repair/checkpoint proteins. Nature 451: 81-85.
7. Online Mendelian Inheritance in Man, OMIM™. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 611035. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: APLF (human) mapping to 2p13.3.

PRODUCT

APLF 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 APLF shRNA Plasmid (h): sc-94862-SH and APLF shRNA (h) Lentiviral Particles: sc-94862-V as alternate gene silencing products.

For independent verification of APLF (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-94862A, sc-94862B and sc-94862C.

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

APLF siRNA (h) is recommended for the inhibition of APLF 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor APLF gene expression knockdown using RT-PCR Primer: APLF (h)-PR: sc-94862-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.