SANTA CRUZ BIOTECHNOLOGY, INC.

ELAC2 siRNA (h): sc-93846

BACKGROUND

ELAC2 (ElaC homolog protein 2), also known as Heredity prostate cancer protein 2 and tRNA 3 endonuclease 2, is a 826 amino acid nuclear protein that functions as a zinc phosphodiesterase. Likely to be involved in tRNA maturation, ELAC2 displays tRNA 3'-processing endonuclease activity and removes 3'-trailer from precursor tRNA. ELAC2 is widely expressed with highest levels found in placenta, skeletal muscle, pancreas, heart, kidney, ovary, testis and liver. Defects in the gene encoding ELAC2 may increase the susceptibility to prostate cancer. Knockdown of ELAC2 mRNA in prostate cells inhibits TGF-β induced growth arrest, supporting the role of ELAC2 as a tumor suppressor. There are three isoforms of ELAC2 that are produced as a result of alternative splicing events.

REFERENCES

1. Rebbeck, T.R., et al. 2000. Association of HPC2/ELAC2 genotypes and prostate cancer. Am. J. Hum. Genet. 67: 1014-1019.
2. Rökman, A., et al. 2001. ELAC2/HPC2 involvement in hereditary and sporadic prostate cancer. Cancer Res. 61: 6038-6041.
3. Wang, L., et al. 2001. Role of HPC2/ELAC2 in hereditary prostate cancer. Cancer Res. 61: 6494-6499.
4. Tavtigian, S.V., et al. 2001. A candidate prostate cancer susceptibility gene at chromosome 17p. Nat. Genet. 27: 172-180.
5. Camp, N.J., et al. 2002. Meta-analysis of associations of the Ser217Leu and Ala541Thr variants in ELAC2 (HPC2) and prostate cancer. Am. J. Hum. Genet. 71: 1475-1478.
6. Fujiwara, H., et al. 2002. Association of common missense changes in ELAC2 (HPC2) with prostate cancer in a Japanese case-control series. J. Hum. Genet. 47: 641-648.
7. Takahashi, H., et al. 2003. Ser217Leu polymorphism of the HPC2/ELAC2 gene associated with prostatic cancer risk in Japanese men. Int. J. Cancer 107: 224-228.
8. Takaku, H., et al. 2003. A candidate prostate cancer susceptibility gene encodes tRNA 3' processing endoribonuclease. Nucleic Acids Res. 31: 2272-2278.

CHROMOSOMAL LOCATION

Genetic locus: ELAC2 (human) mapping to 17p12.

PRODUCT

ELAC2 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 ELAC2 shRNA Plasmid (h): sc-93846-SH and ELAC2 shRNA (h) Lentiviral Particles: sc-93846-V as alternate gene silencing products.

For independent verification of ELAC2 (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-93846A, sc-93846B and sc-93846C.

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

ELAC2 siRNA (h) is recommended for the inhibition of ELAC2 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 ELAC2 gene expression knockdown using RT-PCR Primer: ELAC2 (h)-PR: sc-93846-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.