SANTA CRUZ BIOTECHNOLOGY, INC.

Elongin A2 siRNA (h): sc-72311

BACKGROUND

The Elongin (SIII) complex is a heterotrimer composed of a transcriptionally active subunit and two regulatory subunits designated Elongin B and Elongin C. The active subunit of the heterotrimer is either Elongin A, Elongin A2 or Elongin A3. Elongin A2, also known as transcription elongation factor B polypeptide 3B (TCEB3B), is specifically expressed in the testis and may regulate the transcription of testis-specific genes and play an important role in spermatogenesis. It shares 81% identity with Elongin A3 and 47% identity with Elongin A. Unlike Elongin A, the transcriptional activity of Elongin A2 is not induced by Elongin BC. Elongin A2 acts to increase the rate of transcription elongation by RNA polymerase II. The Elongin complex (SIII) is a functional target of the von Hippel-Lindau (VHL) protein. VHL functions by binding to the Elongin B and C subunits and inhibiting the transcriptional efficacy of the Elongin (SIII) complex.

REFERENCES

1. Garrett, K.P., et al. 1994. Molecular cloning of an essential subunit of RNA polymerase II elongation factor SIII. Proc. Natl. Acad. Sci. USA 91: 5237-5241.
2. Krumm, A., et al. 1995. Tumor suppression and transcription elongation: the dire consequences of changing partners. Science 269: 1400-1401.
3. Duan, D.R., et al. 1995. Inhibition of transcription elongation by the VHL tumor suppressor protein. Science 269: 1402-1406.
4. Aso, T., et al. 1995. Elongin (SIII): a multisubunit regulator of elongation by RNA polymerase II. Science 269: 1439-1443.
5. Gross, D.J., et al. 1996. Familial pheochromocytoma associated with a novel mutation in the von Hippel-Lindau gene. J. Clin. Endocrinol. Metab. 81: 147-149.
6. Waber, P.G., et al. 1996. Frequent allelic loss at chromosome arm 3p is distinct from genetic alterations of the von Hippel-Lindau tumor suppressor gene in head and neck cancer. Oncogene 12: 365-369.
7. Aso, T., et al. 2000. Identification and characterization of Elongin A2, a new member of the Elongin family of transcription elongation factors, specifically expressed in the testis. J. Biol. Chem. 275: 6546-6552.
8. Yamazaki, K., et al. 2002. Identification and biochemical characterization of a novel transcription elongation factor, Elongin A3. J. Biol. Chem. 277: 26444-26451.

CHROMOSOMAL LOCATION

Genetic locus: TCEB3B (human) mapping to 18q21.1.

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.

PRODUCT

Elongin A2 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 Elongin A2 shRNA Plasmid (h): sc-72311-SH and Elongin A2 shRNA (h) Lentiviral Particles: sc-72311-V as alternate gene silencing products.

For independent verification of Elongin A2 (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-72311A, sc-72311B and sc-72311C.

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

Elongin A2 siRNA (h) is recommended for the inhibition of Elongin A2 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 Elongin A2 gene expression knockdown using RT-PCR Primer: Elongin A2 (h)-PR: sc-72311-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.