SANTA CRUZ BIOTECHNOLOGY, INC.

EF-1 α1 siRNA (h): sc-77231

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The elongation factor-1 complex is composed of two subunits, EF-1 α1 (elongation factor 1-α 1) and EF-1 α2 (elongation factor 1-α 2), and is responsible for the delivery of aminoacyl tRNAs to the ribosome. EF-1 α1 is expressed predominately in brain, placenta, lung, liver, kidney and pancreas, while EF-1 α2 is highly expressed in heart, brain and skeletal muscle. Both EF-1 α1 and α2 localize to the nucleus and belong to the GTP-binding elongation factor family. The gene encoding EF-1 α2, which maps to human chromosome 20q13.3, may play a role in the development of ovarian cancer, while the EF-1 α1 gene, mapping to chromosome 6q13, is commonly present as an autoantigen in patients with Felty syndrome. Felty syndrome is a disorder characterized by rheumatoid arthritis, a swollen spleen, decreased white blood cell count, and increased susceptibility to infection.

REFERENCES

1. Nyborg, J. 1998. Possible evolution of factors involved in protein biosynthesis. Acta Biochim. Pol. 45: 883-894.
2. Agrawal, R.K., et al. 1998. Visualization of elongation factor G on the *Escherichia coli* 70S ribosome: the mechanism of translocation. Proc. Natl. Acad. Sci. USA 95: 6134-6138.
3. Kraal, B., et al. 1999. Translational regulation by modifications of the elongation factor Tu. Folia Microbiol. 44: 131-141.
4. Martemyanov, K.A. and Gudkov, A.T. 2000. Domain III of elongation factor G from *T. thermophilus* is essential for induction of GTP hydrolysis on the ribosome. J. Biol. Chem. 275: 35820-35824.

CHROMOSOMAL LOCATION

Genetic locus: EEF1A1 (human) mapping to 6q13.

PRODUCT

EF-1 α1 siRNA (h) is a pool 3 of 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 EF-1 α1 shRNA Plasmid (h): sc-77231-SH and EF-1 α1 shRNA (h) Lentiviral Particles: sc-77231-V as alternate gene silencing products.

For independent verification of EF-1 α1 (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-77231A, sc-77231B and sc-77231C.

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

EF-1 α1 siRNA (h) is recommended for the inhibition of EF-1 α1 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

EF-1 α1 (CBP-KK1): sc-21758 is recommended as a control antibody for monitoring of EF-1 α1 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 EF-1 α1 gene expression knockdown using RT-PCR Primer: EF-1 α1 (h)-PR: sc-77231-PR (20 µl, 549 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Byun, H.O., et al. 2009. Cathepsin D and eukaryotic translation elongation factor 1 as promising markers of cellular senescence. Cancer Res. 69: 4638-4647.
2. Lee, S.C., et al. 2017. G-quadruplex in the Nrf2 mRNA 5' untranslated region regulates *de novo* Nrf2 protein translation under oxidative stress. Mol. Cell. Biol. 37 pii: e00122-16.

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.