SANTA CRUZ BIOTECHNOLOGY, INC.

EF-1 δ siRNA (h): sc-77235

BACKGROUND

EF-1 (elongation factor-1) is a multi-protein complex that is comprised of α, β, γ and δ subunits, all of which work together to ensure the delivery of amino-acyl-tRNAs to the ribosome, thereby elongating mRNA. EF-1 δ, also known as EEF1D, is a 281 amino acid subunit of the EF-1 complex. Functioning as a guanine nucleotide exchange factor, EF-1 δ stimulates the exchange of EF-1 α-bound GDP for GTP. Additionally, EF-1 δ is thought to interact with HIV-1 Tat and may repress host-cell mRNA transcription. Overexpression of EF-1 δ is associated with oesophageal carcinoma and may adversely affect the outcome of medulloblastomas, suggesting that the role that EF-1 δ plays in transcriptional elongation is important for the tight control and regulation of the cell cycle. Multiple isoforms of EF-1 δ exist due to alternative splicing events.

REFERENCES

1. Kawaguchi, Y., et al. 2003. Conserved protein kinases encoded by herpes viruses and cellular protein kinase Cdc2 target the same phosphorylation site in eukaryotic elongation factor-1 δ. J. Virol. 77: 2359-2368.
2. Cans, C., et al. 2003. Translationally controlled tumor protein acts as a guanine nucleotide dissociation inhibitor on the translation elongation factor EEF1A. Proc. Natl. Acad. Sci. USA 100: 13892-13897.
3. Kapp, L.D., et al. 2004. The molecular mechanics of eukaryotic translation. Annu. Rev. Biochem. 73: 657-704.
4. Ogawa, K., et al. 2004. Clinical significance of elongation factor-1 δ mRNA expression in oesophageal carcinoma. Br. J. Cancer 91: 282-286.
5. Brandenberger, R., et al. 2004. Transcriptome characterization elucidates signaling networks that control human ES cell growth and differentiation. Nat. Biotechnol. 22: 707-716.
6. De Bortoli, M., et al. 2006. Medulloblastoma outcome is adversely associated with overexpression of EEF1D, RPL30, and RPS20 on the long arm of chromosome 8. BMC Cancer 6: 223.

CHROMOSOMAL LOCATION

Genetic locus: EEF1D (human) mapping to 8q24.3.

PRODUCT

EF-1 δ siRNA (h) is a pool of 2 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 δ shRNA Plasmid (h): sc-77235-SH and EF-1 δ shRNA (h) Lentiviral Particles: sc-77235-V as alternate gene silencing products.

For independent verification of EF-1 δ (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-77235A and sc-77235B.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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 δ siRNA (h) is recommended for the inhibition of EF-1 δ 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 δ (A-5): sc-393731 is recommended as a control antibody for monitoring of EF-1 δ 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 δ gene expression knockdown using RT-PCR Primer: EF-1 δ (h)-PR: sc-77235-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.