

EF-1 α 2 siRNA (m): sc-41699

BACKGROUND

Elongation factor 1 α 2 (EF-1 α 2) is a eukaryotic protein translation factor that is expressed in terminally differentiated cells of skeletal muscle, heart, and certain areas of the brain. Along with protein synthesis, EF-1 α 2 also plays a role in cytoskeletal remodelling and apoptosis. The gene encoding for EF-1 α 2 maps to chromosome 20q13.33. Wasted (wst) refers to a spontaneous autosomal recessive mutation in which this gene is deleted, and it leads to tremors and disturbances of gait shortly after weaning, followed by motor neuron degeneration, paralysis, and death by about 28 days in mice. EF-1 α 2 has the ability to transform mammalian cells and is highly expressed in tumors of the ovary, breast, and lung, thereby proving a good candidate for an oncogene. In addition to this, EF-1 α 2 enhances focus formation, allows anchorage-independent growth, and decreases the doubling time of rodent fibroblasts.

REFERENCES

1. Lee, S., et al. 1994. Cloning of human and mouse brain cDNAs codi the mammalian elongation factor-1 α gene family: analysis of a possible evolutionary pathway. *Biochem. Biophys. Res. Commun.* 203: 1371-1377.
2. Kristensen, P., et al. 1998. Purif α (EF-1 α 2) from rabbit muscle. *Biochem. Biophys. Res. Commun.* 245: 810-814.
3. Khalyfa, A., et al. 2003. Changes in protein lev long-term denervated rat muscle. *Restor. Neurol. Neurosci.* 21: 47-53.
4. Pan, J., et al. 2004. Immuno-characterization of the switch of peptide elongation factors eEF1A-1/EF-1 α and eEF1A-2/S1 in the central nervous system during mouse development. *Brain Res. Dev. Brain Res.* 149: 1-8.
5. Newbery, H.J., et al. 2005. Progressive loss of motor neuron function in wasted mice: effects of a spontaneous null mutation in the gene for the eEF1 A2 translation factor. *J. Neuropathol. Exp. Neurol.* 64: 295-303.
6. Tomlinson, V.A., et al. 2005. Translation elongation factor eEF1A2 is a potential oncoprotein that is overexpressed in two-thirds of breast tumours. *BMC Cancer* 5: 113.
7. McClatchy, D.B., et al. 2006. Elongation factor 1A family regulates the recycling of the M4 muscarinic acetylcholine receptor. *Neurochem. Res.* 31: 975-988.

CHROMOSOMAL LOCATION

Genetic locus: Eef1a2 (mouse) mapping to 2 H4.

PRODUCT

EF-1 α 2 siRNA (m) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see EF-1 α 2 shRNA Plasmid (m): sc-41699-SH and EF-1 α 2 shRNA (m) Lentiviral Particles: sc-41699-V as alternate gene silencing products.

For independent verification of EF-1 α 2 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-41699A, sc-41699B and sc-41699C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATION

EF-1 α 2 siRNA (h) is recommended for the inhibition of EF-1 α 2 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 μ M in 66 μ l. 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 α 1/2 (G-8): sc-377439 is recommended as a control antibody for monitoring of EF-1 α 2 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 α 2 gene expression knockdown using RT-PCR Primer: EF-1 α 2 (m)-PR: sc-41699-PR (20 μ l, 592 bp). 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.