SANTA CRUZ BIOTECHNOLOGY, INC.

ESE-3A siRNA (m): sc-37854

BACKGROUND

Epithelium-specific Ets factor, family member-3 (ESE-3) is a distinct member of the ESE subfamily of Ets transcription factors. Ets factors constitute one important class of transcriptional regulators that play critical roles in hematopoiesis, angiogenesis, organogenesis, oncogenesis and specification of neuronal connectivity. ESE-3 shares highest homology with two other epithelium restricted Ets factors, ESE-1 and Elf-5 (also known as ESE-2). ESE-3, like ESE-1 and Elf-5, is exclusively expressed in a subset of epithelial cells, with highest expression detected in glandular epithelium of the prostate, pancreas, salivary gland and trachea. ESE-3 transactivates the c-Met promoter via three high affinity binding sites, which suggests that ESE-3 may contribute to branching morphogenesis. Additionally, ESE-3 may influence later stages of glandular epithelium differentiation, as it binds to the promoter regions of several glandular epithelium-specific genes.

REFERENCES

1. Nelsen, B., et al. 1993. Regulation of lymphoid-specific immunoglobulin μ heavy chain gene enhancer by Ets-domain proteins. Science 261: 82-86.
2. Oettgen, P., et al. 1997. Isolation and characterization of a novel epithelium-specific transcription factor, ESE-1, a member of the Ets family. Mol. Cell. Biol. 17: 4419-4433.
3. Graves, B.J. and Petersen, J.M. 1998. Specificity within the Ets family of transcription factors. Adv. Cancer Res. 75: 1-55.
4. Lin, J.H., et al. 1998. Functionally related motor neuron pool and muscle sensory afferent subtypes defined by coordinate Ets gene expression. Cell 95: 393-407.
5. Wasylyk, B., et al. 1998. Ets transcription factors: nuclear effectors of the Ras-MAP-kinase signaling pathway. Trends Biochem. Sci. 23: 213-216.
6. Oettgen, P., et al. 2000. PDEF, a novel prostate epithelium-specific Ets transcription factor, interacts with the androgen receptor and activates prostate-specific antigen gene expression. J. Biol. Chem. 275: 1216-1225.
7. Kas, K., et al. 2000. ESE-3, a novel member of an epithelium-specific Ets transcription factor subfamily, demonstrates different target gene specificity from ESE-1. J. Biol. Chem. 275: 2986-2998.
8. Tugores, A., et al. 2001. The epithelium-specific ETS protein EHF/ESE-3 is a context-dependent transcriptional repressor downstream of MAPK signaling cascades. J. Biol. Chem. 276: 20397-20406.
9. Silverman, E.S., et al. 2002. Constitutive and cytokine-induced expression of the ETS transcription factor ESE-3 in the lung. Am. J. Respir. Cell Mol. Biol. 27: 697-704.

CHROMOSOMAL LOCATION

Genetic locus: Ehf (mouse) mapping to 2 E2.

PROTOCOLS

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

PRODUCT

ESE-3A 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ESE-3A shRNA Plasmid (m): sc-37854-SH and ESE-3A shRNA (m) Lentiviral Particles: sc-37854-V as alternate gene silencing products.

For independent verification of ESE-3A (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-37854A, sc-37854B and sc-37854C.

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

ESE-3A siRNA (m) is recommended for the inhibition of ESE-3A expression in mouse 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 ESE-3A gene expression knockdown using RT-PCR Primer: ESE-3A (m)-PR: sc-37854-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Cai, Z., et al. 2009. Transcriptional regulation of Tlr11 gene expression in epithelial cells. J. Biol. Chem. 284: 33088-33096.

RESEARCH USE

For research use only, not for use in diagnostic procedures.