SANTA CRUZ BIOTECHNOLOGY, INC.

ESE-1 siRNA (m): sc-37852

BACKGROUND

ESE-1, a member of the Ets family of transcription factors, critically regulates epithelial cell differentiation and mediates vascular inflammation. ESE-1 is strongly expressed in vascular endothelium and smooth muscle cells, where it is induced in response to inflammatory cytokines and lipopolysaccharides, interacts with NFκB to induce nitric oxide synthase, and is induced during terminal differentiation of epidermal and primary keratinocytes. In addition, ESE-1 is upregulated upon differentiation of corneal epithelium and interacts with Sp1 and AP-1 proteins to induce squamous differentiation marker expression in bronchial epithelial cells.

REFERENCES

1. 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.
2. Rudders, S., et al. 2000. ESE-1 is a novel transcriptional mediator of inflammation that interacts with NFκB to regulate the inducible nitric-oxide synthase gene. J. Biol. Chem. 276: 3302-3309.
3. Yoshida, N., et al. 2000. Ets family transcription factor ESE-1 is expressed in corneal epithelial cells and is involved in their differentiation. Mech. Dev. 97: 27-34.
4. Reddy, S.P., et al. 2003. Interplay between proximal and distal promoter elements is required for squamous differentiation marker induction in the bronchial epithelium: role for ESE-1, Sp1, and AP-1. J. Biol. Chem. 278: 21378-21387.
5. Prescott, J.D., et al. 2004. The Ets transcription factor ESE-1 transforms MCF-12A human mammary epithelial cells via a novel cytoplasmic mechanism. Mol. Cell. Biol. 24: 5548-5564.
6. Wang, H., et al. 2004. Positive and negative modulation of the transcriptional activity of the Ets factor ESE-1 through interaction with p300, CREB-binding protein, and Ku-70/86. J. Biol. Chem. 279: 25241-25250.
7. Grall, F.T., et al. 2005. The Ets transcription factor ESE-1 mediates induction of the Cox-2 gene by LPS in monocytes. FEBS J. 272: 1676-1687.
8. Murumagi, A., et al. 2006. Ets transcription factors regulate AIRE gene promoter. Biochem. Biophys. Res. Commun. 348: 768-774.

CHROMOSOMAL LOCATION

Genetic locus: Elf3 (mouse) mapping to 1 E4.

PRODUCT

ESE-1 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-1 shRNA Plasmid (m): sc-37852-SH and ESE-1 shRNA (m) Lentiviral Particles: sc-37852-V as alternate gene silencing products.

For independent verification of ESE-1 (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-37852A, sc-37852B and sc-37852C.

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-1 siRNA (m) is recommended for the inhibition of ESE-1 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-1 gene expression knockdown using RT-PCR Primer: ESE-1 (m)-PR: sc-37852-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.

PROTOCOLS

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