



## Ect2 siRNA (m): sc-35260

### BACKGROUND

Numerous cellular functions such as proliferation, differentiation, apoptosis, vesicular trafficking, nuclear transport and cytoskeletal organization are controlled by GTPases. It has become increasingly clear that GTPases act in cascades in which their activities are linked by GTPase-activating proteins (GAPs) and guanine nucleotide exchange factors (GEFs). In a search for new epithelial cell-specific oncogenes using a highly efficient cDNA expression cloning system, the *ost* oncogene was isolated from rat osteosarcoma cells. The *Ost* proto-oncogene protein contains DH and PH domains and catalyzes guanine nucleotide exchange on RhoA and Cdc42 and interacts specifically with the GTP-bound form of Rac1. A similar protein, Ect2, specifically interacts with Rho and Rac proteins *in vitro*. Ect2 shares sequence homology with the 255 amino acid central core of the breakpoint cluster gene, *Bcr*, as well as with yeast *Cdc24* and the *Dbl* oncogene, all of which have been shown to modulate the function of small Rho-like GTP binding proteins. The Ect2 contains both PH and DH domains.

### REFERENCES

1. Miki, T., et al. 1991. Development of a highly efficient expression cDNA cloning system: application to oncogene isolation. *Proc. Natl. Acad. Sci. USA* 88: 5167-5171.
2. Ron, D., et al. 1991. A region of proto-*Dbl* essential for its transforming activity shows sequence similarity to a yeast cell cycle gene, *CDC24*, and the human breakpoint cluster gene, *Bcr*. *New Biol.* 3: 372-379.
3. Miki, T., et al. 1993. Oncogene Ect2 is related to regulators of small GTP-binding proteins. *Nature* 362: 462-465.
4. Boguski, M.S. and McCormick, F. 1993. Proteins regulating Ras and its relatives. *Nature* 366: 643-654.
5. Mayer, B.J., et al. 1993. A putative modular domain present in diverse signaling proteins. *Cell* 73: 629-630.
6. Horii, Y., et al. 1994. A novel oncogene, *ost*, encodes a guanine nucleotide exchange factor that potentially links Rho and Rac signaling pathways. *EMBO J.* 13: 4776-4786.

### CHROMOSOMAL LOCATION

Genetic locus: Ect2 (mouse) mapping to 3 A3.

### PRODUCT

Ect2 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Ect2 shRNA Plasmid (m): sc-35260-SH and Ect2 shRNA (m) Lentiviral Particles: sc-35260-V as alternate gene silencing products.

For independent verification of Ect2 (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-35260A, sc-35260B and sc-35260C.

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

### APPLICATIONS

Ect2 siRNA (m) is recommended for the inhibition of Ect2 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  $\mu$ M in 66  $\mu$ 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

Ect2 (G-4): sc-514750 is recommended as a control antibody for monitoring of Ect2 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 $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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 $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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 Ect2 gene expression knockdown using RT-PCR Primer: Ect2 (m)-PR: sc-35260-PR (20  $\mu$ l, 453 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](http://www.scbt.com) for detailed protocols and support products.