SANTA CRUZ BIOTECHNOLOGY, INC.

Sos 1 siRNA (m): sc-36524

BACKGROUND

The superfamily of GTP-binding proteins, of which Ras proteins are prototypes, has been implicated in a broad range of biological activities. Studies have identified a family of guanine nucleotide-releasing factors (GRFs) that activate Ras in mammalian cells and an "adapter" protein (Sem 5/GRB2) that appears to mediate the interaction of GRFs with activated receptor molecules. Ras-GRF p140 promotes nucleotide exchange on ras p21s but not on other members of the Ras gene superfamily. In addition, three mammalian homologs of the *Drosophila* Ras-GRF, son of sevenless (Sos), have been described. These include two from mouse, m Sos 1 and m Sos 2, and one from human, h Sos. Vav p95 has been reported to function as a GRF in activation of Ras by the T cell receptor and has been reported to have a domain similar to that of Dbl p115, which is a GRF specific for CDC42Hs. Subsequent to activation, Ras appears to interact with Raf, thereby activating the MAP kinase phosphorylation pathway.

REFERENCES

1. Lowenstein, E.J., et al. 1992. The SH2 and SH3 domain-containing protein GRB2 links receptor tyrosine kinases to ras signaling. Cell 40: 431-442.
2. Chardin, P., et al. 1993. Human Sos 1: a guanine nucleotide exhange factor for ras that binds to GRB2. Science 260: 1338-1343.
3. Skolnik, E.Y., et al. 1993. The function of GRB2 in linking the Insulin receptor to ras signaling pathways. Science 260: 1953-1955.
4. Simon, M.A., et al. 1993. An SH3-SH2-SH3 protein is required for p21 Ras 1 activation and binds to sevenless and Sos proteins *in vitro*. Cell 73: 169-177.
5. Egan, S.E., et al. 1993. Association of Sos Ras exchange protein with GRB2 is implicated in tyrosine kinase signal transduction and transformation. Nature 363: 45-51.
6. Buday, L. and Downward, J. 1993. Epidermal growth factor regulates p21 ras through the formation of a complex of receptor, GRB2 adaptor protein, and Sos nucleotide exchange factor. Cell 73: 611-620.
7. Zhang, X., et al. 1993. Normal and oncogenic p21 Ras proteins bind to the amino-terminal regulatory domain of c-RAF-1. Nature 364: 308-313.

CHROMOSOMAL LOCATION

Genetic locus: Sos1 (mouse) mapping to 17 E3.

PRODUCT

Sos 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 Sos 1 shRNA Plasmid (m): sc-36524-SH and Sos 1 shRNA (m) Lentiviral Particles: sc-36524-V as alternate gene silencing products.

For independent verification of Sos 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-36524A, sc-36524B and sc-36524C.

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

Sos 1 siRNA (m) is recommended for the inhibition of Sos 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.

GENE EXPRESSION MONITORING

Sos 1 (A-9): sc-17793 is recommended as a control antibody for monitoring of Sos 1 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 Sos 1 gene expression knockdown using RT-PCR Primer: Sos 1 (m)-PR: sc-36524-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.

PROTOCOLS

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