

Sos 1 (E-11): sc-55528

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 exchange 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 Ras1 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 (human) mapping to 2p22.1.

SOURCE

Sos 1 (E-11) is a mouse monoclonal antibody raised against amino acids 1057-1178 mapping near the C-terminus of Sos 1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

Sos 1 (E-11) is recommended for detection of Sos 1 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Sos 1 siRNA (h): sc-29486, Sos 1 shRNA Plasmid (h): sc-29486-SH and Sos 1 shRNA (h) Lentiviral Particles: sc-29486-V.

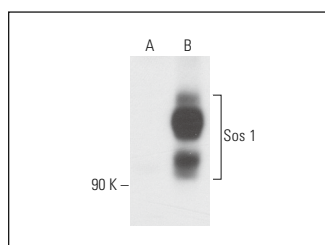
Molecular Weight of Sos 1: 170 kDa.

Positive Controls: Sos 1 (h): 293T Lysate: sc-129810 or K-562 whole cell lysate: sc-2203.

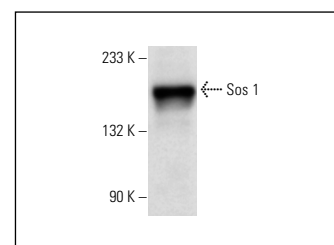
RECOMMENDED SUPPORT REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



Sos 1 (E-11): sc-55528. Western blot analysis of Sos 1 expression in non-transfected: sc-117752 (A) and human Sos 1 transfected: sc-129810 (B) 293T whole cell lysates.



Sos 1 (E-11): sc-55528. Western blot analysis of Sos 1 expression in K-562 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Linley, A.J., et al. 2012. The helicase HAGE expressed by malignant melanoma-initiating cells is required for tumor cell proliferation *in vivo*. *J. Biol. Chem.* 287: 13633-13643.
2. Yu, X., et al. 2019. Inhibitory short peptides targeting EPS8/AB11/Sos 1 tri-complex suppress invasion and metastasis of ovarian cancer cells. *BMC Cancer* 19: 878.

RESEARCH USE

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