

Sos 1 (G-12): sc-376789

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, mSos 1 and mSos 2, and one from human, hSos. 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

- 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.
- Chardin, P., et al. 1993. Human Sos 1: a guanine nucleotide exchange factor for Ras that binds to GRB2. *Science* 260: 1338-1343.
- Skolnik, E.Y., et al. 1993. The function of GRB2 in linking the Insulin receptor to Ras signaling pathways. *Science* 260: 1953-1955.
- 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.
- 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.

CHROMOSOMAL LOCATION

Genetic locus: SOS1 (human) mapping to 2p22.1; Sos1 (mouse) mapping to 17 E3.

SOURCE

Sos 1 (G-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1301-1333 at the C-terminus of Sos 1 of human origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-376789 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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 (G-12) is recommended for detection of Sos 1 p170 of mouse, rat and 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

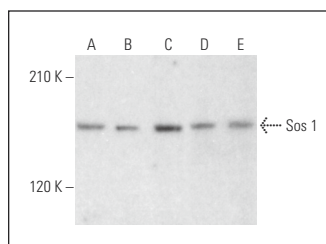
Sos 1 (G-12) is also recommended for detection of Sos 1 p170 in additional species, including equine, bovine and avian.

Suitable for use as control antibody for Sos 1 siRNA (h): sc-29486, Sos 1 siRNA (m): sc-36524, Sos 1 shRNA Plasmid (h): sc-29486-SH, Sos 1 shRNA Plasmid (m): sc-36524-SH, Sos 1 shRNA (h) Lentiviral Particles: sc-29486-V and Sos 1 shRNA (m) Lentiviral Particles: sc-36524-V.

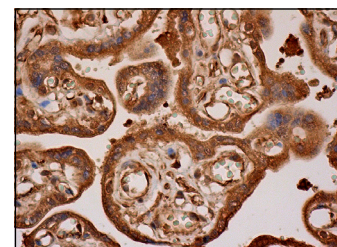
Molecular Weight of Sos 1: 170 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, K-562 whole cell lysate: sc-2203 or NIH/3T3 whole cell lysate: sc-2210.

DATA



Sos 1 (G-12): sc-376789. Western blot analysis of Sos 1 expression in K-562 (A), NIH/3T3 (B), KNRK (C), MOLT-4 (D) and HeLa (E) whole cell lysates.



Sos 1 (G-12): sc-376789. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic and nuclear staining of trophoblastic cells.

SELECT PRODUCT CITATIONS

- Santra, T., et al. 2019. An integrated global analysis of compartmentalized HRAS signaling. *Cell Rep.* 26: 3100-3115.e7.

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.