

SPEC1 (E-2): sc-514978

BACKGROUND

Rho GTPases are molecular switches that regulate many essential cellular processes, including actin dynamics, cell adhesion, cell-cycle progression and transcription. Cdc42, a small GTPase, regulates actin polymerization, elongation of cell shape and cell signaling through interactions with many different downstream effector proteins, most of which contain a Cdc42-binding motif known as a CRIB domain. SPEC1 (small protein effector 1 of Cdc42), also known as CDC42SE1 (CDC42 small effector 1) or SCIP1, is a 79 amino acid cytoplasmic protein that may participate in the organization of the actin cytoskeleton by acting downstream of Cdc42, thereby inducing actin filament assembly and inducing cell shape changes. SPEC1 may also be involved in Cdc42-mediated F-actin accumulation at the immunological synapse of activated T-cells and may function in early contractile events during phagocytosis in macrophages. Containing a CRIB domain and a member of the Cdc42SE/ SPEC family, SPEC1 is widely expressed and exists as two alternatively spliced isoforms.

REFERENCES

- Hall, A. 1992. Ras-related GTPases and the cytoskeleton. *Mol. Biol. Cell* 3: 475-479.
- Nobes, C.D., et al. 1995. Rho, rac, and cdc42 GTPases regulate the assembly of multimolecular focal complexes associated with actin stress fibers, lamellipodia, and filopodia. *Cell* 81: 53-62.
- Olson, M.F., et al. 1995. An essential role for Rho, Rac, and Cdc42 GTPases in cell cycle progression through G₁. *Science* 269: 1270-1272.
- Pirone, D.M., et al. 2000. SPECs, small binding proteins for Cdc42. *J. Biol. Chem.* 275: 22650-22656.

CHROMOSOMAL LOCATION

Genetic locus: CDC42SE1 (human) mapping to 1q21.3; Cdc42se1 (mouse) mapping to 3 F2.1.

SOURCE

SPEC1 (E-2) is a mouse monoclonal antibody raised against amino acids 39-79 mapping at the C-terminus of SPEC1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SPEC1 (E-2) is available conjugated to agarose (sc-514978 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514978 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514978 PE), fluorescein (sc-514978 FITC), Alexa Fluor[®] 488 (sc-514978 AF488), Alexa Fluor[®] 546 (sc-514978 AF546), Alexa Fluor[®] 594 (sc-514978 AF594) or Alexa Fluor[®] 647 (sc-514978 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-514978 AF680) or Alexa Fluor[®] 790 (sc-514978 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

SPEC1 (E-2) is recommended for detection of SPEC1 isoform α 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for SPEC1 siRNA (h): sc-78876, SPEC1 siRNA (m): sc-153734, SPEC1 shRNA Plasmid (h): sc-78876-SH, SPEC1 shRNA Plasmid (m): sc-153734-SH, SPEC1 shRNA (h) Lentiviral Particles: sc-78876-V and SPEC1 shRNA (m) Lentiviral Particles: sc-153734-V.

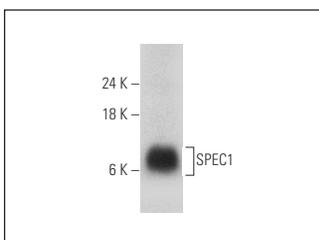
Molecular Weight of SPEC1: 8 kDa.

Positive Controls: Raji whole cell lysate: sc-364236.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



SPEC1 (E-2): sc-514978. Western blot analysis of SPEC1 expression in Raji whole cell lysate.

STORAGE

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

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.