

SPA-1 (B-2): sc-166914

BACKGROUND

The SPA-1 (signal-induced proliferation-associated gene-1) protein is a principal Rap 1 GTPase-activating protein in the hematopoietic progenitors and peripheral T cells. The SPA-1 gene is normally expressed in fetal and adult lymphohematopoietic tissues. Various types of mitogenic stimulation increase SPA-1 mRNA expression in normal lymphocytes. SPA-1 disrupts LFA-1-ICAM1-mediated adhesive interactions and subsequent T cell-receptor triggering and IL-2 production, possibly through inhibition of Rap 1. Mice that are deficient for the SPA-1 gene develop age-dependent progression of T cell immunodeficiency followed by a spectrum of late onset myeloproliferative disorders, mimicking human chronic myeloid leukemia. SPA-1 also directly binds to AQP2 and plays a role in regulating AQP2 trafficking to the apical membrane.

REFERENCES

- Hattori, M., et al. 1995. Molecular cloning of a novel mitogen-inducible nuclear protein with a Ran GTPase-activating domain that affects cell cycle progression. *Mol. Cell. Biol.* 15: 552-560.
- Katagiri, K., et al. 2002. RAP1 functions as a key regulator of T cell and antigen-presenting cell interactions and modulates T cell responses. *Mol. Cell. Biol.* 22: 1001-1015.
- Ishida, D., et al. 2003. Antigen-driven T cell anergy and defective memory T cell response via deregulated RAP1 activation in SPA-1-deficient mice. *Proc. Natl. Acad. Sci. USA* 100: 10919-10924.
- Harazaki, M., et al. 2004. Specific recruitment of SPA-1 to the immunological synapse: involvement of actin-bundling protein actinin. *Immunol. Lett.* 92: 221-226.

CHROMOSOMAL LOCATION

Genetic locus: SIPA1 (human) mapping to 11q13.1; Sip1 (mouse) mapping to 19 A.

SOURCE

SPA-1 (B-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 15-45 near the N-terminus of SPA-1 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.

Blocking peptide available for competition studies, sc-166914 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.

RESEARCH USE

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

APPLICATIONS

SPA-1 (B-2) is recommended for detection of SPA-1 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).

SPA-1 (B-2) is also recommended for detection of SPA-1 in additional species, including bovine.

Suitable for use as control antibody for SPA-1 siRNA (h): sc-45418, SPA-1 siRNA (m): sc-45419, SPA-1 shRNA Plasmid (h): sc-45418-SH, SPA-1 shRNA Plasmid (m): sc-45419-SH, SPA-1 shRNA (h) Lentiviral Particles: sc-45418-V and SPA-1 shRNA (m) Lentiviral Particles: sc-45419-V.

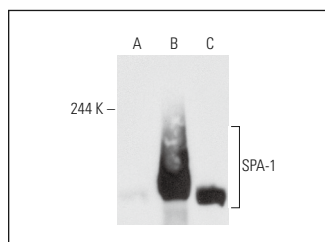
Molecular Weight of SPA-1: 130 kDa.

Positive Controls: CCRF-CEM nuclear extract: sc-2146, SPA-1 (m): 293T Lysate: sc-123727 or SPA-1 (h): 293T Lysate: sc-111824.

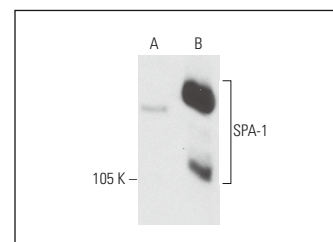
RECOMMENDED SUPPORT REAGENTS

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



SPA-1 (B-2): sc-166914. Western blot analysis of SPA-1 expression in non-transfected: sc-117752 (A) and human SPA-1 transfected: sc-111824 (B) 293T whole cell lysates and CCRF-CEM nuclear extract (C).



SPA-1 (B-2): sc-166914. Western blot analysis of SPA-1 expression in non-transfected: sc-117752 (A) and mouse SPA-1 transfected: sc-123727 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

- Moliva, J.I., et al. 2014. Molecular composition of the alveolar lining fluid in the aging lung. *Age* 36: 9633.

PROTOCOLS

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