

# SPA-1 (H-300): sc-67094

## BACKGROUND

The SPA-1 (signal-induced proliferation-associated gene-1) protein is a principal Rap1 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 Rap1. 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.
- Noda, Y., et al. 2004. Aquaporin-2 trafficking is regulated by PDZ-domain containing protein SPA-1. *FEBS Lett.* 568: 139-145.
- Kometani, K., et al. 2004. Rap1 and SPA-1 in hematologic malignancy. *Trends Mol. Med.* 10: 401-408.

## CHROMOSOMAL LOCATION

Genetic locus: SIPA1 (human) mapping to 11q13.1; Sipa1 (mouse) mapping to 19 A.

## SOURCE

SPA-1 (H-300) is a rabbit polyclonal antibody raised against amino acids 691-990 mapping near the C-terminus of SPA-1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG 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.

## RESEARCH USE

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

## APPLICATIONS

SPA-1 (H-300) is recommended for detection of SPA-1 of human and, to a lesser extent, mouse and rat origin by Western Blotting (starting dilution 1:200, 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).

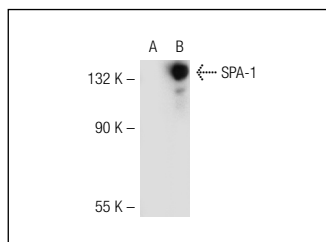
SPA-1 (H-300) is also recommended for detection of SPA-1 in additional species, including equine, canine, bovine and porcine.

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.

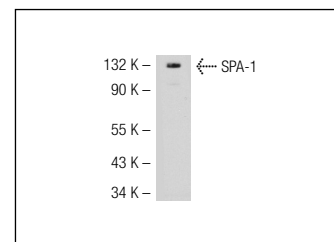
Molecular Weight of SPA-1: 130 kDa.

Positive Controls: CCRF-CEM nuclear extract: sc-2146, Ramos cell lysate: sc-2216 or HeLa whole cell lysate: sc-2200.

## DATA



SPA-1 (H-300): sc-67094. 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.



SPA-1 (H-300): sc-67094. Western blot analysis of SPA-1 expression in Ramos whole cell lysate.

## SELECT PRODUCT CITATIONS

- Ji, K., et al. 2012. Expression of signal-induced proliferation-associated gene 1 (SIPA1), a RapGTPase-activating protein is increased in colorectal cancer and has diverse effects on functions of colorectal cancer cells. *Cancer Genomics Proteomics* 9: 321-327.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

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