

# SPA-1 (m): 293T Lysate: sc-123727

## 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.
- 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.
- Noda, Y. and Sasaki, S. 2004. Molecular mechanisms and drug development in aquaporin water channel diseases: molecular mechanism of water channel aquaporin-2 trafficking. *J. Pharmacol. Sci.* 96: 249-254.
- Noda, Y. and Sasaki, S. 2005. Trafficking mechanism of water channel aquaporin-2. *Biol. Cell* 97: 885-892.
- Noda, Y., et al. 2005. Identification of a multiprotein "motor" complex binding to water channel aquaporin-2. *Biochem. Biophys. Res. Commun.* 330: 1041-1047.

## CHROMOSOMAL LOCATION

Genetic locus: Sipa1 (mouse) mapping to 19 A.

## PRODUCT

SPA-1 (m): 293T Lysate represents a lysate of mouse SPA-1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

## APPLICATIONS

SPA-1 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive SPA-1 antibodies. Recommended use: 10-20 µl per lane.

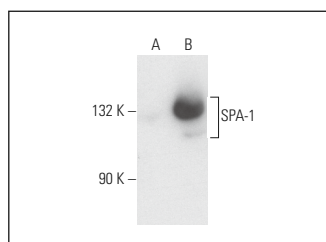
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

SPA-1 (E-6): sc-166949 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse SPA-1 expression in SPA-1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

## 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.

## DATA



SPA-1 (E-6): sc-166949. 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.

## STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. 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](http://www.scbt.com) for detailed protocols and support products.