

Spir-1 (4C5): sc-517039

BACKGROUND

Spir-1 (spire homolog 1) is a 756 amino acid protein that localizes to the cytoskeleton, as well as to the perinuclear region of the cytoplasm, and contains one KIND domain and 2 WH2 domains. Functioning as an Actin nucleation factor, Spir-1 assists in new filament growth and is involved in vesicle transport processes, effectively providing a link between intracellular transport and Actin organization. Multiple isoforms of Spir-1 exist due to alternative splicing events. The gene encoding Spir-1 maps to human chromosome 18, which houses over 300 protein-coding genes and contains nearly 76 million bases. There are a variety of diseases associated with defects in chromosome 18-localized genes, some of which include Trisomy 18 (also known as Edwards syndrome), Niemann-Pick disease, hereditary hemorrhagic telangiectasia, erythropoietic protoporphyria and follicular lymphomas.

REFERENCES

1. Hirosawa, M., et al. 1999. Characterization of cDNA clones selected by the GeneMark analysis from size-fractionated cDNA libraries from human brain. *DNA Res.* 6: 329-336.
2. Kerkhoff, E., et al. 2001. The Spir actin organizers are involved in vesicle transport processes. *Curr. Biol.* 11: 1963-1968.
3. Schumacher, N., et al. 2004. Overlapping expression pattern of the actin organizers Spir-1 and formin-2 in the developing mouse nervous system and the adult brain. *Gene Expr. Patterns* 4: 249-255.
4. Benzinger, A., et al. 2005. Targeted proteomic analysis of 14-3-3 σ , a p53 effector commonly silenced in cancer. *Mol. Cell. Proteomics* 4: 785-795.
5. Quinlan, M.E., et al. 2005. *Drosophila* Spire is an actin nucleation factor. *Nature* 433: 382-388.
6. Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 609216. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
7. Bosch, M., et al. 2007. Analysis of the function of Spire in actin assembly and its synergy with formin and profilin. *Mol. Cell* 28: 555-568.

CHROMOSOMAL LOCATION

Genetic locus: SPIRE1 (human) mapping to 18p11.21.

SOURCE

Spir-1 (4C5) is a mouse monoclonal antibody raised against amino acids 482-583 representing partial length Spir-1 of human origin.

PRODUCT

Each vial contains 100 μ g IgG_{2a} kappa light chain 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.

APPLICATIONS

Spir-1 (4C5) is recommended for detection of Spir-1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Spir-1 siRNA (h): sc-76567, Spir-1 shRNA Plasmid (h): sc-76567-SH and Spir-1 shRNA (h) Lentiviral Particles: sc-76567-V.

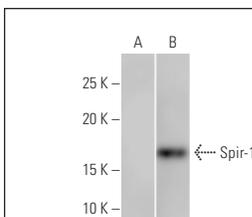
Molecular Weight of Spir-1: 86 kDa.

Positive Controls: Spir-1 transfected 293T whole cell lysate.

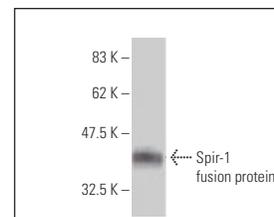
RECOMMENDED SUPPORT REAGENTS

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).

DATA



Spir-1 (4C5): sc-517039. Western blot analysis of Spir-1 expression in non-transfected (A) and Spir-1 transfected (B) 293T whole cell lysates.



Spir-1 (4C5): sc-517039. Western blot analysis of human recombinant Spir-1 fusion protein.

SELECT PRODUCT CITATIONS

1. Torres, A.A., et al. 2022. The Actin nucleator Spir-1 is a virus restriction factor that promotes innate immune signalling. *PLoS Pathog.* 18: e1010277.

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.