

Spir-2 (K-13): sc-136904

BACKGROUND

Spir-2 (spire homolog 2), also known as SPIRE2, is a 714 amino acid protein belonging to the spire family. Spir-2 is a cytoplasmic protein that contains one KIND domain and three WH2 domains. Spir-2 binds to Actin via the WH2 domains and acts as an Actin nucleation factor. Spir-2 is involved in vesicle transport and acts as a link between Actin organization and intracellular transport. Spir-2 is expressed as four isoforms that are produced by alternative splicing events. The gene that encodes Spir-2 maps to human chromosome 16, which encodes over 900 genes and approximately 90 million base pairs, making up nearly 3% of human cellular DNA. The GAN gene is located on chromosome 16 and, with mutation, may lead to giant axonal neuropathy, a nervous system disorder characterized by increasing malfunction with growth. The rare disorder Rubinstein-Taybi syndrome is also associated with chromosome 16, though through the CREBBP gene which encodes a critical CREB binding protein. Signs of Rubinstein-Taybi include mental retardation and predisposition to tumor growth and white blood cell neoplasias. Crohn's disease is a gastrointestinal inflammatory condition associated with chromosome 16 through the NOD2 gene.

REFERENCES

1. Ben Hamida, C., et al. 1997. Homozygosity mapping of giant axonal neuropathy gene to chromosome 16q24.1. *Neurogenetics* 1: 129-133.
2. Karlsson, J., et al. 2003. Novel quantitative trait loci controlling development of experimental autoimmune encephalomyelitis and proportion of lymphocyte subpopulations. *J. Immunol.* 170: 1019-1026.
3. Forabosco, P., et al. 2006. Meta-analysis of genome-wide linkage studies of systemic lupus erythematosus. *Genes Immun.* 7: 609-614.
4. Carneiro, L.A., et al. 2007. Nod-like receptors in innate immunity and inflammatory diseases. *Ann. Med.* 39: 581-593.
5. King, K., et al. 2007. Identification, evolution, and association study of a novel promoter and first exon of the human NOD2 (CARD15) gene. *Genomics* 90: 493-501.
6. Gervasini, C., et al. 2007. High frequency of mosaic CREBBP deletions in Rubinstein-Taybi syndrome patients and mapping of somatic and germline breakpoints. *Genomics* 90: 567-573.
7. Koop, O., et al. 2007. Genotype-phenotype analysis in patients with giant axonal neuropathy (GAN). *Neuromuscul. Disord.* 17: 624-630.
8. Pechlivanis, M., et al. 2009. Identification of a short Spir interaction sequence at the C-terminal end of formin subgroup proteins. *J. Biol. Chem.* 284: 25324-25333.

CHROMOSOMAL LOCATION

Genetic locus: SPIRE2 (human) mapping to 16q24.3; Spire2 (mouse) mapping to 8 E1.

SOURCE

Spir-2 (K-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Spir-2 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.

Blocking peptide available for competition studies, sc-136904 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Spir-2 (K-13) is recommended for detection of Spir-2 isoforms 1-4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); non cross-reactive with Spir-1.

Spir-2 (K-13) is also recommended for detection of Spir-2 isoforms 1-4 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Spir-2 siRNA (h): sc-93231, Spir-2 siRNA (m): sc-153772, Spir-2 shRNA Plasmid (h): sc-93231-SH, Spir-2 shRNA Plasmid (m): sc-153772-SH, Spir-2 shRNA (h) Lentiviral Particles: sc-93231-V and Spir-2 shRNA (m) Lentiviral Particles: sc-153772-V.

Molecular Weight of Spir-2: 80 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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 or our catalog for detailed protocols and support products.