

# SPAG6 (G-15): sc-165528

## BACKGROUND

SPAG6 (sperm-associated antigen 6), also known as PF16 or Repro-SA-1, is a cytoplasmic protein that contains eight armadillo repeats and belongs to the armadillo repeat family. Proteins with armadillo repeats typically participate in protein-protein interactions, suggesting that SPAG6 associates with other proteins and may function as a structural or regulatory protein. Sharing 64% amino acid identity, SPAG6 is the mammalian homolog of the *Chlamydomonas reinhardtii* protein pf16, a component of the central apparatus in flagella. Predominantly expressed in testis, SPAG6 is a central apparatus protein that plays an important role in the sperm tail and is essential for flagellar motility and male fertility. SPAG6 interacts with SPAG16 and, together, these proteins may cooperate in the regulation of sperm motility. Four isoforms exist for SPAG6 due to alternative splicing events.

## REFERENCES

1. Neilson, L.I., et al. 1999. cDNA cloning and characterization of a human sperm antigen (SPAG6) with homology to the product of the *Chlamydomonas* PF16 locus. *Genomics* 60: 272-280.
2. Sapiro, R., et al. 2000. Sperm antigen 6 is the murine homologue of the *Chlamydomonas reinhardtii* central apparatus protein encoded by the PF16 locus. *Biol. Reprod.* 62: 511-518.
3. Sapiro, R., et al. 2002. Male infertility, impaired sperm motility, and hydrocephalus in mice deficient in sperm-associated antigen 6. *Mol. Cell. Biol.* 22: 6298-6305.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 605730. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Zhang, Z., et al. 2005. Dissecting the axoneme interactome: the mammalian orthologue of *Chlamydomonas* PF6 interacts with sperm-associated antigen 6, the mammalian orthologue of *Chlamydomonas* PF16. *Mol. Cell. Proteomics* 4: 914-923.
6. Lonergan, K.M., et al. 2006. Identification of novel lung genes in bronchial epithelium by serial analysis of gene expression. *Am. J. Respir. Cell Mol. Biol.* 35: 651-661.
7. Shen, Y., et al. 2006. Abnormal CpG island methylation occurs during *in vitro* differentiation of human embryonic stem cells. *Hum. Mol. Genet.* 15: 2623-2635.
8. Zhang, Z., et al. 2007. A heterozygous mutation disrupting the SPAG16 gene results in biochemical instability of central apparatus components of the human sperm axoneme. *Biol. Reprod.* 77: 864-871.
9. Zhang, Z., et al. 2007. Accelerated mortality from hydrocephalus and pneumonia in mice with a combined deficiency of SPAG6 and SPAG16L reveals a functional interrelationship between the two central apparatus proteins. *Cell Motil. Cytoskeleton* 64: 360-376.

## CHROMOSOMAL LOCATION

Genetic locus: SPAG6 (human) mapping to 10p12.2; Spag6 (mouse) mapping to 16 A3, BC061194 (mouse) mapping to 2 A3.

## SOURCE

SPAG6 (G-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of SPAG6 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-165528 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

SPAG6 (G-15) is recommended for detection of SPAG6 of mouse, rat and human origin, BC061194 of mouse origin and Spag6l of rat 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 other SPAG family members.

SPAG6 (G-15) is also recommended for detection of SPAG6 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for SPAG6 siRNA (h): sc-90404, SPAG6 shRNA Plasmid (h): sc-90404-SH and SPAG6 shRNA (h) Lentiviral Particles: sc-90404-V.

Molecular Weight of SPAG6: 57 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201.

## 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.



Try **SPAG6 (XX-2): sc-100886**, our highly recommended monoclonal alternative to SPAG6 (G-15).