SANTA CRUZ BIOTECHNOLOGY, INC.

# SPAG1 (S-17): sc-98146

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

Mammalian sperm flagellum contain two cytoskeletal structures associated with the the axoneme: the outer dense fibers and the fibrous sheath. The outer dense fibers surround the axoneme in the midpiece and principal piece, whereas the fibrous sheath surrounds outer dense fibers of the tail of the principal piece. SPAG1 (sperm associated antigen 1), also known as SP75 or TPIS, is a 926 amino acid cytoplasmic protein detected in pachytene primary spermatocytes where it predominantly localizes to the neck and midpiece. Involved in fertilization, SPAG1 expression is also high in the cytoplasm of malignant pancreatic ductal adenocarcinomas (PDAC) and is therefore considered a novel marker of PDAC progression. Containing an ATP/GTP-binding site, multiple putative phosphorylation sites and three tetratricopeptide (TPR) motifs, SPAG1 possesses GTPase activity and binds GTP.

## REFERENCES


1. Zhang, M.L., et al. 1992. Isolation and sequencing of the cDNA encoding the 75-kD human sperm protein related to infertility. Chin. Med. J. 105: 998-1003.
2. Schuler, G.D., et al. 1996. A gene map of the human genome. Science 274: 540-546.
3. Takaishi, M., et al. 1999. A tetratricopeptide repeat-containing protein gene, tpis, whose expression is induced with differentiation of spermatogenic cells. Biochem. Biophys. Res. Commun. 264: 81-85.
4. Kanazawa, R., et al. 2003. Isolation and characterization of a human sperm antigen gene h-Sp-1. Int. J. Androl. 26: 226-235.
5. Ficarro, S., et al. 2003. Phosphoproteome analysis of capacitated human sperm. Evidence of tyrosine phosphorylation of a kinase-anchoring protein 3 and valosin-containing protein/p97 during capacitation. J. Biol. Chem. 278: 11579-11589.
6. Liu, N., et al. 2006. A sperm component, HSD-3.8 (SPAG1), interacts with G-protein β 1 subunit and activates extracellular signal-regulated kinases (ERK). Front. Biosci. 11: 1679-1689.
7. Neesse, A., et al. 2007. Sperm-associated antigen 1 is expressed early in pancreatic tumorigenesis and promotes motility of cancer cells. Oncogene 26: 1533-1545.


## CHROMOSOMAL LOCATION

Genetic locus: SPAG1 (human) mapping to 8q22.2; Spag1 (mouse) mapping to 15 B3.1.

## SOURCE

SPAG1 (S-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of SPAG1 of human origin.

## STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## 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-98146 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

SPAG1 (S-17) is recommended for detection of SPAG1 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 other SPAG family members.

SPAG1 (S-17) is also recommended for detection of SPAG1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for SPAG1 siRNA (h): sc-77567, SPAG1 siRNA (m): sc-153701, SPAG1 shRNA Plasmid (h): sc-77567-SH, SPAG1 shRNA Plasmid (m): sc-153701-SH, SPAG1 shRNA (h) Lentiviral Particles: sc-77567-V and SPAG1 shRNA (m) Lentiviral Particles: sc-153701-V.

Molecular Weight of SPAG1: 104 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.

## 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.