# SPESP1 (L-15): sc-165559



The Power to Question

#### **BACKGROUND**

SPESP1 (sperm equatorial segment protein 1) is a 399 amino acid protein belonging to the SPESP1 family. Localizing to cytoplasmic vesicle, secretory vesicle, and acrosome, SPESP1 is highly expressed in testis, with lower levels found in placenta and fetal lung. SPESP1 establishes an equatorial segment subcompartment early in sperm development and is required for proper sperm-egg fusion. Disruption of SPESP1 leads to abnormal distribution of sperm proteins resulting in a detached membrane from the equatorial segment and less fertile sperm. SPESP1 may interact with IZUMO1 and MN9 antigen and contains an N-glycosylation site as well as several cAMP-dependent kinase, protein kinase C, and casein kinase II consensus phosphorylation sites.

# **REFERENCES**

- Wolkowicz, M.J., Shetty, J., Westbrook, A., Klotz, K., Jayes, F., Mandal, A., Flickinger, C.J. and Herr, J.C. 2003. Equatorial segment protein defines a discrete acrosomal subcompartment persisting throughout acrosomal biogenesis. Biol. Reprod. 69: 735-745.
- 2. Jones, R., James, P.S., Oxley, D., Coadwell, J., Suzuki-Toyota, F. and Howes, E.A. 2008. The equatorial subsegment in mammalian spermatozoa is enriched in tyrosine phosphorylated proteins. Biol. Reprod. 79: 421-431.
- Baker, M.A., Hetherington, L., Reeves, G.M. and Aitken, R.J. 2008. The mouse sperm proteome characterized via IPG strip prefractionation and LC-MS/MS identification. Proteomics 8: 1720-1730.
- Yamatoya, K., Yoshida, K., Ito, C., Maekawa, M., Yanagida, M., Takamori, K., Ogawa, H., Araki, Y., Miyado, K., Toyama, Y. and Toshimori, K. 2009. Equatorin: identification and characterization of the epitope of the MN9 antibody in the mouse. Biol. Reprod. 81: 889-897.
- Song, F., Mahmood, S., Ghosh, S., Liang, P., Smiraglia, D.J., Nagase, H. and Held, W.A. 2009. Tissue specific differentially methylated regions (TDMR): Changes in DNA methylation during development. Genomics 93: 130-139.
- Fujihara, Y., Murakami, M., Inoue, N., Satouh, Y., Kaseda, K., Ikawa, M. and Okabe, M. 2010. Sperm equatorial segment protein 1, SPESP1, is required for fully fertile sperm in mouse. J. Cell Sci. 123: 1531-1536.
- Inoue, N., Ikawa, M. and Okabe, M. 2011. The mechanism of sperm-egg interaction and the involvement of IZUMO1 in fusion. Asian J. Androl. 13: 81-87.

# **CHROMOSOMAL LOCATION**

Genetic locus: SPESP1 (human) mapping to 15q23.

## **SOURCE**

SPESP1 (L-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of SPESP1 of human origin.

## **STORAGE**

Store at  $4^{\circ}$  C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

#### **PRODUCT**

Each vial contains 200  $\mu g$  lgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-165559 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## **APPLICATIONS**

SPESP1 (L-15) is recommended for detection of SPESP1 of 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).

Suitable for use as control antibody for SPESP1 siRNA (h): sc-90095, SPESP1 shRNA Plasmid (h): sc-90095-SH and SPESP1 shRNA (h) Lentiviral Particles: sc-90095-V.

Molecular Weight of SPESP1: 45 kDa.

# **RECOMMENDED SECONDARY REAGENTS**

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat lgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat lgG-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 lgG-FITC: sc-2024 (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.

**Santa Cruz Biotechnology, Inc.** 1.800.457.3801 831.457.3800 fax 831.457.3801 **Europe** +00800 4573 8000 49 6221 4503 0 **www.scbt.com**