



## SPAM1 (D-15): sc-49199

### BACKGROUND

Hyaluronidases (HAases or HYALs) are a family of lysosomal enzymes that are crucial for the spread of bacterial infections and of toxins present in a variety of venoms. HYALs may also be involved in the progression of cancer. In humans, six members of the hyaluronidase family have been identified. These proteins are significant in the degradation of hyaluronic acid (HA), which is present in body fluids, tissues and the extracellular matrix of vertebrate tissues. HA keeps tissues hydrated, maintains osmotic balance and promotes cell proliferation, differentiation and metastasis. HA is also an important structural component of cartilage and other tissues and acts as a lubricant in joints. SPAM1 (sperm adhesion molecule 1), also designated Hyal-PH20 or sperm surface protein PH-20, was formerly referred to as HYAL1 (HYA1). The current nomenclature references the functional hyaluronidase activity of SPAM1 to permit acrosome-intact sperm to penetrate through the HA-rich cumulus cell layer surrounding the oocyte. SPAM1 is also implicated in intracellular signaling and zona pellucida binding. SPAM1 is found in the epididymis and in testis, more specifically in plasma and acrosomal membranes of sperm. SPAM1 is a structurally unique hyaluronidase in that it is a GPI-anchored protein.

### REFERENCES

- Lathrop, W.F., Carmichael, E.P., Myles, D.G. and Primakoff, P. 1990. cDNA cloning reveals the molecular structure of a sperm surface protein, PH-20, involved in sperm-egg adhesion and the wide distribution of its gene among mammals. *J. Cell Biol.* 111: 2939-2949.
- Lin, Y., Kimmel, L.H., Myles, D.G. and Primakoff, P. 1993. Molecular cloning of the human and monkey sperm surface protein PH-20. *Proc. Natl. Acad. Sci. USA* 90: 10071-10075.
- Gmachl, M., Sagan, S., Ketter, S. and Kreil, G. 1993. The human sperm protein PH-20 has hyaluronidase activity. *FEBS Lett.* 336: 545-548.
- Lin, Y., Mahan, K., Lathrop, W.F., Myles, D.G. and Primakoff, P. 1994. A hyaluronidase activity of the sperm plasma membrane protein PH-20 enables sperm to penetrate the cumulus cell layer surrounding the egg. *J. Cell Biol.* 125: 1157-1163.
- Jones, M.H., Davey, P.M., Aplin, H. and Affara, N.A. 1995. Expression analysis, genomic structure, and mapping to 7q31 of the human sperm adhesion molecule gene SPAM1. *Genomics* 29: 796-800.
- Isoyama, T., Thwaites, D., Selzer, M.G., Carey, R.I., Barbucci, R. and Lokeshwar, V.B. 2005. Differential selectivity of hyaluronidase inhibitors toward acidic and basic hyaluronidases. *Glycobiology* 16: 11-21.
- Jedrzejewski, M.J. and Stern, R. 2005. Structures of vertebrate hyaluronidases and their unique enzymatic mechanism of hydrolysis. *Proteins* 61: 227-238.
- Dunn, C.A. and Mager, D.L. 2005. Transcription of the human and rodent SPAM1/PH-20 genes initiates within an ancient endogenous retrovirus. *BMC Genomics* 6: 47.

### STORAGE

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

### CHROMOSOMAL LOCATION

Genetic locus: Spam1 (mouse) mapping to 6 A2.

### SOURCE

SPAM1 (D-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of SPAM1 of mouse 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-49199 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### APPLICATIONS

SPAM1 (D-15) is recommended for detection of SPAM1 of mouse and 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).

Suitable for use as control antibody for SPAM1 siRNA (m): sc-60823.

Molecular Weight of SPAM1: 67 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](http://www.scbt.com) or our catalog for detailed protocols and support products.