

IZUMO1 (K-14): sc-79539

BACKGROUND

IZUMO1 is a 350 amino acid protein named after a Japanese shrine to marriage. IZUMO1 is sperm-specific, and can only be observed on the sperm surface after the acrosome reaction. The acrosome reaction is where the membrane surrounding the acrosome of the sperm fuses with the plasma membrane of the egg, thereby exposing surface antigens and numerous enzymes that are required to penetrate the plasma membrane and allow fertilization to occur. Lack of IZUMO1 in males, due to homozygous mutation in the gene that encodes IZUMO1, results in sterility due to an inability to penetrate the plasma membrane of the egg. IZUMO1 is expressed as three isoforms produced by alternative splicing and contains one Ig-like (immunoglobulin-like) C2-type domain.

REFERENCES

- Inoue, N., Ikawa, M., Isotani, A. and Okabe, M. 2005. The immunoglobulin superfamily protein Izumo is required for sperm to fuse with eggs. *Nature* 434: 234-238.
- Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 609278. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Hayasaka, S., Terada, Y., Inoue, N., Okabe, M., Yaegashi, N. and Okamura, K. 2007. Positive expression of the immunoglobulin superfamily protein IZUMO on human sperm of severely infertile male patients. *Fertil. Steril.* 88: 214-216.
- Yamashita, M., Yamagata, K., Tsumura, K., Nakanishi, T. and Baba, T. 2007. Acrosome reaction of mouse epididymal sperm on oocyte zona pellucida. *J. Reprod. Dev.* 53: 255-262.
- Inoue, N., Ikawa, M. and Okabe, M. 2008. Putative sperm fusion protein IZUMO and the role of N-glycosylation. *Biochem. Biophys. Res. Commun.* 377: 910-914.
- Granados-Gonzalez, V., Akin-Seifer, I., Touraine, R.L., Chouteau, J., Wolf, J.P. and Levy, R. 2008. Preliminary study on the role of the human IZUMO gene in oocyte-spermatozoa fusion failure. *Fertil. Steril.* 90: 1246-1248.

CHROMOSOMAL LOCATION

Genetic locus: Izumo1 (mouse) mapping to 7 B4.

SOURCE

IZUMO1 (K-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of IZUMO1 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-79539 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

IZUMO1 (K-14) is recommended for detection of IZUMO1 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 IZUMO1 siRNA (m): sc-75352, IZUMO1 shRNA Plasmid (m): sc-75352-SH and IZUMO1 shRNA (m) Lentiviral Particles: sc-75352-V.

Molecular Weight (predicted) of IZUMO1 isoform 1 in human: 39 kDa.

Molecular Weight (predicted) of IZUMO1 isoform 2 in human: 22 kDa.

Molecular Weight (predicted) of IZUMO1 isoform 3 in human: 7 kDa.

Molecular Weight (predicted) of IZUMO1 in mouse: 44 kDa.

Molecular Weight (observed) of IZUMO1 in mouse: 39 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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.