

ZP2 (K-18): sc-23710



The Power to Question

BACKGROUND

The mammalian zona pellucida is composed of three major glycoproteins, ZP1, ZP2 and ZP3. ZP2 has been implicated as a secondary sperm receptor that binds sperm only after the induction of the sperm acrosome reaction. Both ZP2 and ZP3 are modified by the zona reaction; ZP2 undergoes a proteolytic cleavage and ZP3 loses its ability to induce the acrosome reaction and its sperm receptor activity. During the process of fertilization, the initial interaction between male and female gametes is mediated by a sperm receptor, ZP3, which resides in the extracellular glycoprotein matrix (zona pellucida) surrounding the oocyte. The sperm receptor function of the ZP3 molecule plays a key role in the first step of the fertilization process. Following sperm-oocyte binding, ZP3 triggers the sperm acrosome reaction that releases the protein machinery, enabling a spermatozoon to penetrate the zona pellucida.

REFERENCES

- Liang, L.-F., Chamow, S.M. and Dean, J. 1990. Oocyte-specific expression of mouse ZP2: developmental regulation of the zona pellucida genes. *Mol. Cell. Biol.* 10: 1507-1515.
- Dean, J. 1992. Biology of mammalian fertilization: role of the zona pellucida. *J. Clin. Invest.* 89: 1055-1059.
- Kipersztok, S., Osawa, G.A., Liang, L.F., Modi, W.S. and Dean, J. 1995. POM-ZP3, a bipartite transcript derived from human ZP3 and POM121 homologue. *Genomics* 25: 354-359.
- Gupta, S.K., Choudhury, S., Srivastava, N. and Ravi, C. 2003. Zona pellucida glycoproteins based immunocontraceptive vaccines: strategies for development and their applications. *Indian J. Exp. Biol.* 41: 682-693.
- Jazwinska, A. and Affolter, M. 2004. A family of genes encoding zona pellucida (ZP) domain proteins is expressed in various epithelial tissues during *Drosophila* embryogenesis. *Gene Expr. Patterns* 4: 413-421.
- Wassarman, P.M., Jovine, L. and Litscher, E.S. 2004. Mouse zona pellucida genes and glycoproteins. *Cytogenet Genome Res.* 105: 228-234.
- Wassarman, P.M., Jovine, L., Litscher, E.S., Qi, H. and Williams, Z. 2004. Egg-sperm interactions at fertilization in mammals. *Eur. J. Obstet. Gynecol. Reprod. Biol.* 115 Suppl. 1: S57-S60.
- Naz, R.K. and Rajesh, C. 2005. Gene knockouts that cause female infertility: search for novel contraceptive targets. *Front. Biosci.* 10: 2447-2459.

CHROMOSOMAL LOCATION

Genetic locus: ZP2 (human) mapping to 16p12; Zp2 (mouse) mapping to 7 F2.

SOURCE

ZP2 (K-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of ZP2 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-23710 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ZP2 (K-18) is recommended for detection of ZP2 precursor 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); non cross-reactive with mature ZP2 .

Suitable for use as control antibody for ZP2 siRNA (h): sc-44886, ZP2 shRNA Plasmid (h): sc-44886-SH and ZP2 shRNA (h) Lentiviral Particles: sc-44886-V.

Molecular Weight of human ZP2: 64-80 kDa.

Molecular Weight of mouse ZP2: 120-140 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.

MONOS
Satisfaction
Guaranteed

Try **ZP2 (C-7): sc-390422**, our highly recommended monoclonal alternative to ZP2 (K-18).