

ZP3 (H-300): sc-25802

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.

CHROMOSOMAL LOCATION

Genetic locus: ZP3 (human) mapping to 7q11.23; Zp3 (mouse) mapping to 5 G2.

SOURCE

ZP3 (H-300) is a rabbit polyclonal antibody raised against amino acids 23-322 mapping within an extracellular domain of ZP3 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

ZP3 (H-300) is recommended for detection of ZP3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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 ZP3 siRNA (h): sc-72115, ZP3 siRNA (m): sc-72116, ZP3 shRNA Plasmid (h): sc-72115-SH, ZP3 shRNA Plasmid (m): sc-72116-SH, ZP3 shRNA (h) Lentiviral Particles: sc-72115-V and ZP3 shRNA (m) Lentiviral Particles: sc-72116-V.

Molecular Weight of ZP3: 47 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

- Yu, M.F., Fang, W.N., Xiong, G.F., Yang, Y. and Peng, J.P. 2011. Evidence for the inhibition of fertilization *in vitro* by anti-ZP3 antisera derived from DNA vaccine. *Vaccine* 29: 4933-4939.
- Evron, A., Goldman, S. and Shalev, E. 2012. Human amniotic epithelial cells differentiate into cells expressing germ cell specific markers when cultured in medium containing serum substitute supplement. *Reprod. Biol. Endocrinol.* 10: 108.
- Kim, S.Y., Ebbert, K., Cordeiro, M.H., Romero, M., Zhu, J., Serna, V.A., Whelan, K.A., Woodruff, T.K. and Kurita, T. 2015. Cell autonomous phosphoinositide 3-kinase activation in oocytes disrupts normal ovarian function through promoting survival and overgrowth of ovarian follicles. *Endocrinology* 156: 1464-1476.

STORAGE

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

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
Satisfation
Guaranteed

Try **ZP3 (G-1): sc-398359**, our highly recommended monoclonal alternative to ZP3 (H-300).