SANTA CRUZ BIOTECHNOLOGY, INC.

ZP3 (N-20): sc-23715

SANTA CRUZ BIOTECHNOLOGY

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.

CHROMOSOMAL LOCATION

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

SOURCE

ZP3 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region 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.

Blocking peptide available for competition studies, sc-23715 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

ZP3 (N-20) 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).

ZP3 (N-20) is also recommended for detection of ZP3 in additional species, including equine, bovine and porcine.

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.

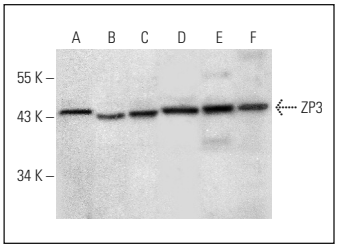
Molecular Weight of ZP3: 47 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, JAR cell lysate: sc-2276 or A549 cell lysate: sc-2413.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



ZP3 (N-20): sc-23715. Western blot analysis of ZP3 expression in ES-2 (**A**), Hep G2 (**B**), JAR (**C**), A549 (**D**) and IMR-32 (**E**) whole cell lysates and rat lung tissue extract (**F**).

SELECT PRODUCT CITATIONS

1. Antosik, P., et al. 2009. Follicular size is associated with the levels of transcripts and proteins of selected molecules responsible for the fertilization ability of oocytes of puberal gilts. J. Reprod. Dev. 55: 588-593.
2. Antosik, P., et al. 2010. The morphology of porcine oocytes is associated with zona pellucida glycoprotein 3 and integrin β2 protein levels. Vet. Med. 55: 154-162.
3. Kempisty, B., et al. 2011. Zona pellucida glycoprotein 3 (pZP3) and integrin β2 (ITGB2) mRNA and protein expression in porcine oocytes after single and double exposure to brilliant cresyl blue test. Theriogenology 75: 1525-1535.
4. Nitta, M., et al. 2013. Aberrant gene expression and sexually incompatible genomic imprinting in oocytes derived from XY mouse embryonic stem cells *in vitro*. PLoS ONE 8: e58555.

RESEARCH USE

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