

# ZP2 (IE-3): sc-32752



## 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., et al. 1990. Oocyte-specific expression of mouse Zp-2: 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., et al. 1995. POM-ZP3, a bipartite transcript derived from human ZP3 and POM121 homologue. *Genomics* 25: 354-359.
- Gupta, S.K., et al. 2003. Zona pellucida glycoproteins based immunocontraceptive vaccines: strategies for development and their applications. *Indian J. Exp. Biol.* 41: 682-693.

## CHROMOSOMAL LOCATION

Genetic locus: Zp2 (mouse) mapping to 7 F2.

## SOURCE

ZP2 (IE-3) is a rat monoclonal antibody raised against particulate murine zona pellucida.

## PRODUCT

Each vial contains 200 µg IgG<sub>2a</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ZP2 (IE-3) is available conjugated to agarose (sc-32752 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-32752 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-32752 PE), fluorescein (sc-32752 FITC), Alexa Fluor® 488 (sc-32752 AF488), Alexa Fluor® 546 (sc-32752 AF546), Alexa Fluor® 594 (sc-32752 AF594) or Alexa Fluor® 647 (sc-32752 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-32752 AF680) or Alexa Fluor® 790 (sc-32752 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## STORAGE

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

## APPLICATIONS

ZP2 (IE-3) is recommended for detection of ZP2 of mouse and rat origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

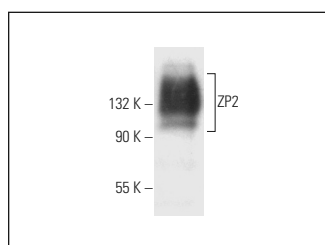
Suitable for use as control antibody for ZP2 siRNA (m): sc-41135, ZP2 shRNA Plasmid (m): sc-41135-SH and ZP2 shRNA (m) Lentiviral Particles: sc-41135-V.

Molecular Weight of human ZP2: 64-80 kDa.

Molecular Weight of mouse ZP2: 120-140 kDa.

Positive Controls: mouse ovary extract: sc-2404.

## DATA



ZP2 (IE-3): sc-32752. Western blot analysis of ZP2 expression in mouse ovary tissue extract.

## SELECT PRODUCT CITATIONS

- Zhou, C., et al. 2012. Functional characterization of double-knockout mouse sperm lacking SPAM1 and ACR or SPAM1 and PRSS21 in fertilization. *J. Reprod. Dev.* 58: 330-337.
- Dokshin, G.A., et al. 2013. Oocyte differentiation is genetically dissociable from meiosis in mice. *Nat. Genet.* 45: 877-883.
- EGge, N., et al. 2015. Amyloid properties of the mouse egg zona pellucida. *PLoS ONE* 10: e0129907.
- Brici, D., et al. 2017. Setd1b, encoding a histone 3 lysine 4 methyltransferase, is a maternal effect gene required for the oogenic gene expression program. *Development* 144: 2606-2617.
- Zhou, C., et al. 2017. Effects of latrunculin A on the relocation of sperm IZUMO1 during gamete interaction in mouse. *Mol. Reprod. Dev.* 84: 1183-1190.
- Li, H., et al. 2020. DPAGT1-mediated protein N-glycosylation is indispensable for oocyte and follicle development in mice. *Adv. Sci.* 7: 2000531.
- Zeng, L., et al. 2022. Zuogui pills maintain the stemness of oogonial stem cells and alleviate cyclophosphamide-induced ovarian aging through Notch signaling pathway. *Phytomedicine* 99: 153975.

## RESEARCH USE

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