

IZUMO1 Antibody

Catalog # ASC11941

Product Information

Application	WB, IHC, E
Primary Accession	Q8IYV9
Other Accession	NP_872381 , 194097475
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	38930
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	IZUMO1 antibody can be used for detection of IZUMO1 by Western blot at 1 - 2 μ g/ml. Antibody can also be used for immunohistochemistry starting at 2.5 μ g/mL.

Additional Information

Gene ID	284359
Other Names	Izumo sperm-egg fusion protein 1, Oocyte binding/fusion factor, OBF, Sperm-specific protein izumo, IZUMO1
Target/Specificity	IZUMO1; IZUMO1 antibody is human specific. At least four isoforms of IZUMO1 are known to exist; this antibody will detect the two longest isoforms.
Reconstitution & Storage	IZUMO1 antibody can be stored at 4°C for three months and -20°C, stable for up to one year.
Precautions	IZUMO1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	IZUMO1 {ECO:0000303 PubMed:15759005, ECO:0000312 HGNC:HGNC:28539}
Function	Essential sperm cell-surface protein required for fertilization by acting as a ligand for IZUMO1R/JUNO receptor on egg. The IZUMO1:IZUMO1R/JUNO interaction is a necessary adhesion event between sperm and egg that is required for fertilization but is not sufficient for cell fusion. The ligand-receptor interaction probably does not act as a membrane 'fusogen'. Acts a ligand for the human- specific oolemma epitope FCRL3/MAIA during fertilization (PubMed: 36070373). FCRL3/MAIA replaces IZUMO1R/JUNO as IZUMO1 receptor after sperm-egg adhesion, which permits species-specific

gamete fusion (PubMed:[36070373](#)). Plays a critical role in sperm-oolemma binding prior to plasma membrane fusion. Can mediate cell-cell fusion in cultured mammalian cells independently of its binding to IZUMO1R/JUNO (By similarity).

Cellular Location

Cell membrane; Single-pass type I membrane protein. Cytoplasmic vesicle, secretory vesicle, acrosome membrane; Single-pass type I membrane protein. Note=Localizes initially to the acrosome membrane of the sperm head (both outer and inner acrosomal membranes) (PubMed:36070373). During the acrosome reaction, translocates to the plasma membrane (PubMed:15759005, PubMed:36070373).

Tissue Location

Sperm-specific (at protein level) (PubMed:15759005, PubMed:36070373). Detectable on sperm surface only after the acrosome reaction (PubMed:15759005, PubMed:36070373)

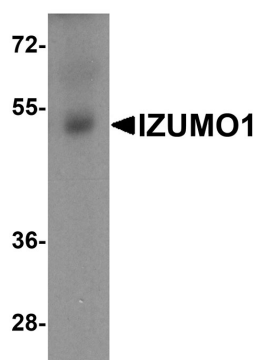
Background

IZUMO1, a sperm-specific protein, is essential for sperm-egg plasma membrane binding and fusion. It is involved in the fertilization process and in the fusion of the sperm with the egg (1,2). IZUMO1 is expressed as at least four isoforms produced by alternative splicing and contains one Ig-like (immunoglobulin-like) C2-type domain (3). 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 (4).

References

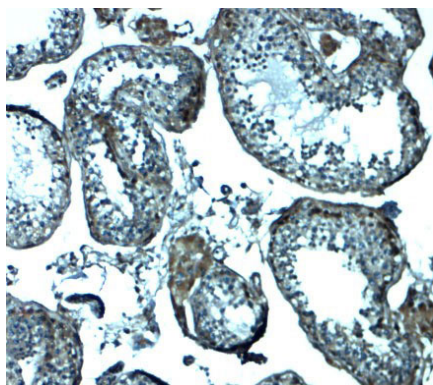
Inoue N, Hamada D, Kamikubo H, et al. Molecular dissection of IZUMO1, a sperm protein essential for sperm-egg fusion. *Development* 2013; 140:3221-9.
Inoue N, Ikawa M, and Okabe M. The mechanism of sperm-egg interaction and the involvement of IZUMO1 in fusion. *Asian J. Androl.* 2011; 13:81-7.
Xing WJ, Han BD, Wu Q, et al. Molecular cloning and characterization of Izumo1 gene from sheep and cashmere goat reveal alternative splicing. *Mol. Biol. Rep.* 2011; 38:1995-2006.
Inoue N, Ikawa M, Isotani A, et al. The immunoglobulin superfamily protein Izumo is required for sperm to fuse with eggs. *Nature* 2005; 434:234-8.

Images



Western blot analysis of IZUMO1 in human testis tissue lysate with IZUMO1 antibody at 1 µg/ml.

Immunohistochemistry of IZUMO1 in human testis tissue with IZUMO1 antibody at 2.5 µg/mL.



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