

Product datasheet for **TA328776**

Catsper1 Rabbit Polyclonal Antibody

Product data:

Product Type:	Primary Antibodies
Applications:	WB
Recommended Dilution:	WB: 1:200-1:2000
Reactivity:	Mouse, Rat
Host:	Rabbit
Clonality:	Polyclonal
Immunogen:	Peptide (C)RALFQDSDPKRFQN, corresponding to amino acid residues 508-521 of mouse CatSper1. 3rd extracellular loop.
Formulation:	Lyophilized. Concentration before lyophilization ~0.8mg/ml (lot dependent, please refer to CoA along with shipment for actual concentration). Buffer before lyophilization: Phosphate buffered saline (PBS), pH 7.4, 1% BSA, 0.05% NaN ₃ .
Reconstitution Method:	Add 50 ul double distilled water (DDW) to the lyophilized powder.
Purification:	Affinity purified on immobilized antigen.
Conjugation:	Unconjugated
Storage:	Store at -20°C as received.
Stability:	Stable for 12 months from date of receipt.
Gene Name:	cation channel, sperm associated 1
Database Link:	NP_647462 Entrez Gene 689349 Rat Entrez Gene 225865 Mouse Q91ZR5



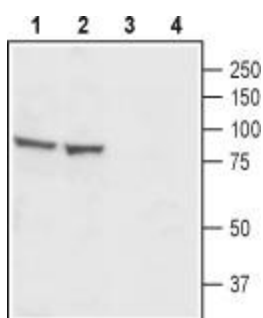
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Background:

Capacitation is the final stage of spermatozoon maturation which eventually enables it to bind the zona pellucida (ZP) - a thick layer of glycoproteins surrounding the oocyte. It occurs in the fallopian tubes of the female reproductive tract and is preceded by spermatogenesis (testes) and epididymal maturation (epididymis). Capacitation is accompanied by drastic morphological and functional alterations, such as membrane hyperpolarization, changes in membrane lipid composition, intracellular alkalinization, increased level of protein tyrosine phosphorylation by cAMP-dependent PKA, and elevated intracellular concentrations of Ca^{2+} ($[Ca^{2+}]_i$) and pH_i , which render the sperm chemotaxis-responsive and hyperactive. Increased flagellar bend, triggered by Ca^{2+} signaling, produces asymmetrical, whiplash-like motility pattern that provides the sperm with significantly stronger swimming thrust. Hyperactivity, together with the eruption of hydrolytic enzymes from the sperm's acrosome vesicle facilitate the disruption of the ZP matrix and make way for the sperm to enter the egg cytoplasm. CatSper (cation channel of spermatozoa) is a sperm-specific Ca^{2+} channel located explicitly in the spermatozoon flagellum². It mediates flagellar hyperactivity, and is chemotactically responsive to progesterone. CatSper is composed of 4 pore-forming subunits (CatSper1-4) with 6 transmembrane (TM) domains each, and of 3 auxiliary subunits: CatSper α ? (2 TM domains), CatSper β ? and CatSper δ ? (1 TM domain each). While all four CatSper proteins are necessary for the channel's function (and hence male fertility)⁹, each is synthesized independently. Trafficking to the flagellum requires the cooperation of all subunits. CatSper1, the first identified subunit of the channel, is highly homologous to CaV channels; a voltage sensor domain (S1-S4) containing enough positively charged residues to confer weak voltage sensitivity to the channel. Furthermore, its histidine-rich, intracellular amino terminus likely serves as the pH sensor necessary to induce hyperactivation (by permitting an influx of Ca^{2+}). Indeed, intracellular alkaline pH (7.9-8.5) was shown to efficiently hyper-activate CatSper channels.

Synonyms:

CATSPER; hCatSper; MGC33335; MGC33368

Product images:

Western blot analysis of rat testis (lanes 1 and 3) and mouse (lanes 2 and 4) lysates: 1. Anti-CatSper1 (extracellular) antibody, (1:200). 2. Anti-CatSper1 (extracellular) antibody, preincubated with the control peptide antigen.