

# CatSper (D-17): sc-21180

## BACKGROUND

CatSper is an ion transport protein located on the surface of sperm cells. CatSper (for cation channel of sperm) is vital to cAMP-mediated calcium influx in sperm, sperm motility and fertilization. The gene that encodes CatSper maps to human chromosome 15q.13. The 686 amino acid protein is a single, six-transmembrane-spanning protein of the voltage-dependent  $Ca^{2+}$  channel four-repeat structure and is expressed exclusively in the testis. In CatSper  $-/-$  sperm, neither cAMP nor cGMP elicit a significant  $Ca^{2+}$  influx in both mutant and wild-type sperm. CatSper is localized to the sperm flagellum and CatSper  $-/-$  mice show sluggish and less directed movements. CatSper is required to penetrate the egg, but is not required for egg activation.

## REFERENCES

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3. Carlson, A.E., et al. 2003. CatSper1 required for evoked  $Ca^{2+}$  entry and control of flagellar function in sperm. *Proc. Natl. Acad. Sci. U.S.A* 100: 14864-14868.
4. Loble, A., et al. 2003. Identification of human and mouse CatSper3 and CatSper4 genes: characterisation of a common interaction domain and evidence for expression in testis. *Reprod. Biol. Endocrinol* 1: 53.
5. Nikpoor, P., et al. 2004. CatSper gene expression in postnatal development of mouse testis and in subfertile men with deficient sperm motility. *Hum. Reprod* 19: 124-128.
6. Okunade, G.W., et al. 2004. Targeted ablation of plasma membrane  $Ca^{2+}$ -ATPase (PMCA) 1 and 4 indicates a major housekeeping function for PMCA1 and a critical role in hyperactivated sperm motility and male fertility for PMCA4. *J. Biol. Chem* 279: 33742-33750.
7. LocusLink Report (LocusID: 117144). <http://www.ncbi.nlm.nih.gov/LocusLink/>
8. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. Johns Hopkins University, Baltimore, MD. MIM Number: 606389: 10/16/01: World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

## CHROMOSOMAL LOCATION

Genetic locus: Catsper1 (mouse) mapping to 19 A.

## SOURCE

CatSper (D-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of CatSper of mouse origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-21180 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

CatSper (D-17) is recommended for detection of CatSper of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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 CatSper siRNA (m): sc-42376, CatSper shRNA Plasmid (m): sc-42376-SH and CatSper shRNA (m) Lentiviral Particles: sc-42376-V.

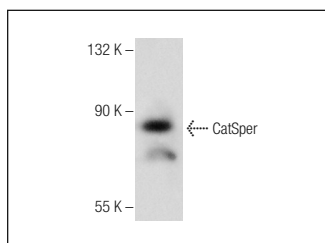
Molecular Weight of CatSper: 82 kDa.

Positive Controls: Mouse testis extract: sc-2405.

## 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<sup>™</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> 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<sup>™</sup> Mounting Medium: sc-24941.

## DATA



CatSper (D-17): sc-21180. Western blot analysis of CatSper expression in mouse testis tissue extract.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.