

CatSper δ (E-19): sc-248896

BACKGROUND

CatSper (cation channel, sperm associated proteins) are ion transport proteins located on the surface of sperm cells in the principal piece of the sperm tail. Vital to sperm motility, fertilization and cAMP-mediated calcium influx in sperm, CatSper contain a single, six-transmembrane-spanning segment and exhibit the voltage-dependent Ca²⁺ channel four-repeat structure. CatSper proteins are believed to assemble into a heterotetrameric complex, forming an alkalization-activated Ca²⁺-selective channel. Mutations in any of the genes encoding CatSper family proteins can result in male infertility. CatSper δ (cation channel sperm-associated protein subunit delta) is a 798 amino acid single-pass type I membrane protein that is located in the principal piece of the sperm tail. CatSper δ exists as two alternatively spliced isoforms and is encoded by a gene that maps to human chromosome 19.

REFERENCES

- Jin, J., Jin, N., Zheng, H., Ro, S., Tafolla, D., Sanders, K.M. and Yan, W. 2007. Catsper3 and Catsper4 are essential for sperm hyperactivated motility and male fertility in the mouse. *Biol. Reprod.* 77: 37-44.
- Xia, J., Reigada, D., Mitchell, C.H. and Ren, D. 2007. CATSPER channel-mediated Ca²⁺ entry into mouse sperm triggers a tail-to-head propagation. *Biol. Reprod.* 77: 551-559.
- Li, H.G., Ding, X.F., Liao, A.H., Kong, X.B. and Xiong, C.L. 2007. Expression of CatSper family transcripts in the mouse testis during post-natal development and human ejaculated spermatozoa: relationship to sperm motility. *Mol. Hum. Reprod.* 13: 299-306.
- Qi, H., Moran, M.M., Navarro, B., Chong, J.A., Krapivinsky, G., Krapivinsky, L., Kirichok, Y., Ramsey, I.S., Quill, T.A. and Clapham, D.E. 2007. All four CatSper ion channel proteins are required for male fertility and sperm cell hyperactivated motility. *Proc. Natl. Acad. Sci. USA* 104: 1219-1223.
- Suarez, S.S., Marquez, B., Harris, T.P. and Schimenti, J.C. 2007. Different regulatory systems operate in the midpiece and principal piece of the mammalian sperm flagellum. *Soc. Reprod. Fertil. Suppl.* 65: 331-334.
- Wang, H., Liu, J., Cho, K.H. and Ren, D. 2009. A novel, single, transmembrane protein CATSPERG is associated with CATSPER1 channel protein. *Biol. Reprod.* 81: 539-544.
- Online Mendelian Inheritance in Man, OMIM[™]. 2010. Johns Hopkins University, Baltimore, MD. MIM Number: 613452. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: Tmem146 (mouse) mapping to 17 D.

SOURCE

CatSper δ (E-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CatSper δ of mouse origin.

STORAGE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-248896 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CatSper δ (E-19) is recommended for detection of CatSper δ of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); non cross-reactive with other CatSper δ family members.

Suitable for use as control antibody for CatSper δ siRNA (m): sc-154379, CatSper δ shRNA Plasmid (m): sc-154379-SH and CatSper δ shRNA (m) Lentiviral Particles: sc-154379-V.

Molecular Weight of CatSper δ isoforms 1/2: 90/40 kDa.

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) 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.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.