



KPL2 (E-13): sc-104957

BACKGROUND

Flagella and cilia are both membrane-bound projections from the cell surface that beat in distinctive patterns. Cilia are shorter and usually more profuse than flagella and contain a microtubule cytoskeleton, the ciliary axoneme, surrounded by a ciliary membrane. The ciliary membranes of all cilia hold specific receptors and ion channel proteins that initiate signaling pathways that regulate motility and/or link mechanical or chemical stimuli to intracellular transduction cascades regulating differentiation, migration and cell growth during development and in adulthood. KPL2, also known as SPEF2 (sperm flagellar 2), is a 1,822 amino acid protein that contains a calponin homology domain, three nuclear localization signals, a consensus P-loop and a proline-rich region. Required for correct axoneme development, KPL2 is predominantly expressed in cells with cilia or flagella. Four isoforms of KPL2 exist as a result of alternative splicing events.

REFERENCES

1. Comer, M.T., Leese, H.J. and Southgate, J. 1998. Induction of a differentiated ciliated cell phenotype in primary cultures of fallopian tube epithelium. *Hum. Reprod.* 13: 3114-3120.
2. Ostrowski, L.E., Andrews, K., Potdar, P., Matsuura, H., Jetten, A. and Nettesheim, P. 1999. Cloning and characterization of KPL2, a novel gene induced during ciliogenesis of tracheal epithelial cells. *Am. J. Respir. Cell Mol. Biol.* 20: 675-683.
3. Chan, S.W., Fowler, K.J., Choo, K.H. and Kalitsis, P. 2005. Spef1, a conserved novel testis protein found in mouse sperm flagella. *Gene* 353: 189-199.
4. Yang, J., Gao, J., Adamian, M., Wen, X.H., Pawlyk, B., Zhang, L., Sanderson, M.J., Zuo, J., Makino, C.L. and Li, T. 2005. The ciliary rootlet maintains long-term stability of sensory cilia. *Mol. Cell. Biol.* 25: 4129-4137.
5. Sironen, A., Thomsen, B., Andersson, M., Ahola, V. and Vilkki, J. 2006. An intronic insertion in KPL2 results in aberrant splicing and causes the immotile short-tail sperm defect in the pig. *Proc. Natl. Acad. Sci. USA* 103: 5006-5011.
6. Sironen, A., Vilkki, J., Bendixen, C. and Thomsen, B. 2007. Infertile Finnish Yorkshire boars carry a full-length LINE-1 retrotransposon within the KPL2 gene. *Mol. Genet. Genomics* 278: 385-391.
7. Elferink, M.G., Vallee, A.A., Jungerius, A.P., Crooijmans, R.P. and Groenen, M.A. 2008. Partial duplication of the PRLR and SPEF2 genes at the late feathering locus in chicken. *BMC Genomics* 9: 391.

CHROMOSOMAL LOCATION

Genetic locus: SPEF2 (human) mapping to 5p13.2; Spef2 (mouse) mapping to 15 A1.

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.

SOURCE

KPL2 (E-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of KPL2 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-104957 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

KPL2 (E-13) is recommended for detection of KPL2 of mouse, rat and human 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 KPL2-3.

Suitable for use as control antibody for KPL2 siRNA (h): sc-92018, KPL2 siRNA (m): sc-146562, KPL2 shRNA Plasmid (h): sc-92018-SH, KPL2 shRNA Plasmid (m): sc-146562-SH, KPL2 shRNA (h) Lentiviral Particles: sc-92018-V and KPL2 shRNA (m) Lentiviral Particles: sc-146562-V.

Molecular Weight of KPL2: 210 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.

PROTOCOLS

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