10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

KANK1 Antibody

Catalog # ASC11646

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q14678
Other Accession	NP_055973, 64464726
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	147289
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	KANK1 Antibody can be used for detection of KANK1 by Western blot at 1 g/mL.

Additional Information

Gene ID	23189
Other Names	KN motif and ankyrin repeat domain-containing protein 1, Ankyrin repeat domain-containing protein 15, Kidney ankyrin repeat-containing protein, KANK1, ANKRD15, KANK, KIAA0172
Target/Specificity	KANK1; Two alternatively spliced transcript variants encoding different isoforms have been identified. The lower molecular weight band seen in the immunoblot is thought to be non-specific.
Reconstitution & Storage	KANK1 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	KANK1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	KANK1 (HGNC:19309)
Function	Adapter protein that links structural and signaling protein complexes positioned to guide microtubule and actin cytoskeleton dynamics during cell morphogenesis (PubMed:22084092, PubMed:24120883). At focal adhesions (FAs) rims, organizes cortical microtubule stabilizing complexes (CMSCs) and directly interacts with major FA component TLN1, forming macromolecular assemblies positioned to control microtubule-actin crosstalk at the cell edge (PubMed:24120883, PubMed:27410476). Recruits KIF21A in CMSCs at axonal growth cones and regulates axon guidance by suppressing microtubule growth without inducing microtubule disassembly once it reaches the cell

	cortex (PubMed:24120883). Interacts with ARFGEF1 and participates in establishing microtubule-organizing center (MTOC) orientation and directed cell movement in wound healing (PubMed:22084092). Regulates actin stress fiber formation and cell migration by inhibiting RHOA activation in response to growth factors; this function involves phosphorylation through PI3K/Akt signaling and may depend on the competitive interaction with 14-3-3 adapter proteins to sequester them from active complexes (PubMed:18458160, PubMed:25961457). Inhibits the formation of lamellipodia but not of filopodia; this function may depend on the competitive interaction with BAIAP2 to block its association with activated RAC1. Inhibits fibronectin-mediated cell spreading; this function is partially mediated by BAIAP2 (PubMed:19171758). In the nucleus, is involved in beta-catenin-dependent activation of transcription (PubMed:16968744). During cell division, may regulate DAAM1-dependent RHOA activation that signals centrosome maturation and chromosomal segregation. May also be involved in contractile ring formation during cytokinesis (By similarity). Potential tumor suppressor for renal cell carcinoma (Probable).
Cellular Location	Cytoplasm, cell cortex. Cell projection, ruffle membrane; Peripheral membrane protein. Cytoplasm. Nucleus. Note=Shuttles between the cytoplasm and nucleus (PubMed:16968744). Colocalizes with CMSC components at focal adhesion rims. Colocalizes with KIF21A in membrane ruffles (PubMed:19559006, PubMed:27410476). Colocalizes with RHOA at the contractile ring. Colocalizes with RHOA and DAAM1 around centrosomes {ECO:0000250|UniProtKB:E9Q238, ECO:0000269|PubMed:16968744, ECO:0000269|PubMed:19559006, ECO:0000269|PubMed:27410476} [Isoform 2]: Cytoplasm. Nucleus Note=Shuttles between the cytoplasm and nucleus
Tissue Location	Widely expressed. Isoform 1 is predominantly expressed in heart and kidney. Isoform 2 probably is widely expressed at basic levels.

Background

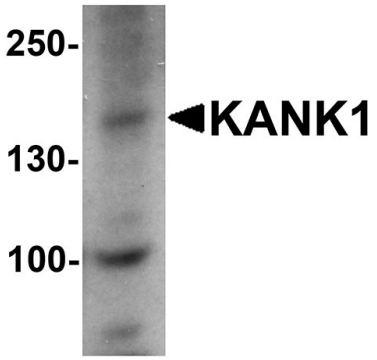
KANK1 Antibody: Ankyrins are membrane adaptor molecules that play important roles in the control of cytoskeleton formation by regulating actin polymerization. KANK1 (KN motif and ankyrin repeat domain-containing protein 1), also known as ANKRD15, is a 1,352 amino acid protein that contains at least 12 exons and 5 ANK repeats. It binds to beta-catenin and regulates its subcellular distribution. KANK1 is ubiquitously expressed and localizes to cytoplasm. It may function as a tumor suppressor for renal cell carcinoma. Mutations in this gene cause cerebral palsy spastic quadriplegic type 2, a central nervous system development disorder.

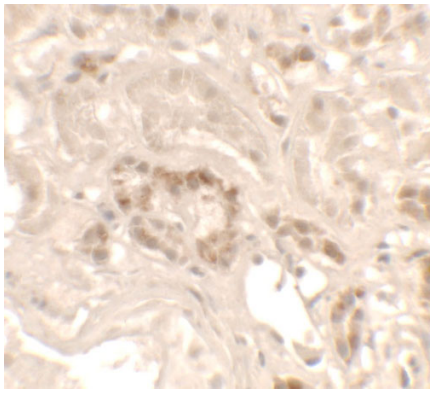
References

Zhu Y, Kakinuma N, Wang Y, et al. Kank proteins: a new family of ankyrin-repeat domain containing proteins. Biochim. Biophys. Acta 2008; 1780:128-33.
Roy BC, Kakinuma N, Kiyama R. Kank attenuates actin remodeling by preventing interaction between IRSp53 and Rac1. J. Cell Biol. 2009; 184:253-67.
Sarkar S, Roy BC, Hatano N, et al. A novel ankyrin repeat-containing gene (Kank) located at 9p24 is a growth suppressor of renal cell carcinoma. J. Biol. Chem. 2002; 277:36585-91.
Lerer I, Sagi M, Meiner V, et al. Deletion of the ANKRD15 gene at 9p24.3 causes parent-of-origin-dependent inheritance of familial cerebral palsy. Hum. Mol. Genet. 2005; 14: 3911-20

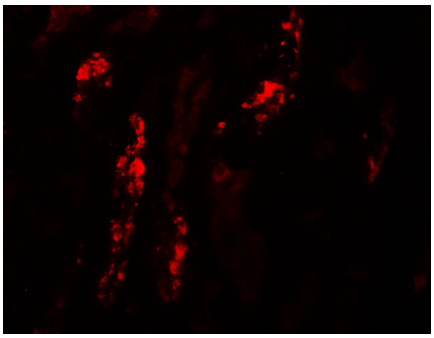
Images

Western blot analysis of KANK1 in 3T3 cell lysate with KANK1 antibody at 1 µg/mL.





Immunohistochemistry of KANK1 in human kidney tissue with KANK1 antibody at 2.5 µg/ml.



Immunofluorescence of KANK1 in human kidney tissue with KANK1 antibody at 20 µg/ml.