

VLK Antibody

Catalog # ASC11045

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q5RJI4
Other Accession	NP_612379 , 238636897
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	53841
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	VLK antibody can be used for detection of VLK by Western blot at 1 μ g/mL. Antibody can also be used for immunohistochemistry starting at 2.5 μ g/mL. For immunofluorescence start at 5 μ g/mL.

Additional Information

Gene ID	106522
Other Names	Extracellular tyrosine-protein kinase PKDCC, 2.7.10.2, Protein kinase domain-containing protein, cytoplasmic {ECO:0000312 MGI:MGI:2147077}, Protein kinase-like protein Sgk493, Sugen kinase 493, Vertebrate lonesome kinase, Pkdcc {ECO:0000312 MGI:MGI:2147077}
Target/Specificity	Pkdcc;
Reconstitution & Storage	VLK antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	VLK Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	Pkdcc {ECO:0000312 MGI:MGI:2147077}
Function	Secreted tyrosine-protein kinase that mediates phosphorylation of extracellular proteins and endogenous proteins in the secretory pathway, which is essential for patterning at organogenesis stages. Mediates phosphorylation of MMP1, MMP13, MMP14, MMP19 and ERP29 (PubMed: 25171405). May also have serine/threonine protein kinase activity (PubMed: 25171405). Required for longitudinal bone growth through regulation of chondrocyte differentiation (PubMed: 19097194 ,

PubMed:[23792766](#)). May be indirectly involved in protein transport from the Golgi apparatus to the plasma membrane (PubMed:[19465597](#)). Probably plays a role in platelets: rapidly and quantitatively secreted from platelets in response to stimulation of platelet degranulation (PubMed:[25171405](#)).

Cellular Location

Secreted. Golgi apparatus. Note=Both secreted and present in the Golgi apparatus.

Tissue Location

Strongly expressed in adult heart, liver and testis with weak expression in brain, spleen, lung and thymus. In the humerus, strongly expressed in early flat proliferative chondrocytes. In the embryo, expressed in the anterior visceral endoderm and anterior primitive streak at 6.5 dpc. At 7.5 dpc, expressed in the anterior definitive endoderm (ADE) and anterior mesoderm but not in the notochord. At 8.0 dpc, expressed in the ADE and anterior embryonic mesoderm. At 8.5 dpc, expressed more broadly in anterior tissues and at the midline of the neural plate in the midbrain region as well as the lateral margins of the neural plate posterior to the metencephalic region. Also weakly expressed in the anterior mesenchyme. At 9.5 dpc, strongest expression in branchial arches and limb buds. During mid- gestation, expression continues in mesenchymal cells, particularly in areas where these cells condense.

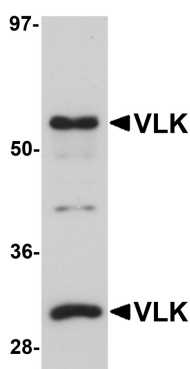
Background

VLK Antibody: VLK was identified as a novel protein kinase that was induced after the differentiation of cultured embryonic stem cells into mesendoderm. It has no homologs in invertebrates, but is highly conserved in vertebrate species although it does not belong to any known protein kinase groups. VLK is initially expressed in E-cadherin-positive anterior visceral endoderm and mesendoderm, but its expression is later confined to E-cadherin-negative mesenchyme. It is enriched in the Golgi apparatus and is thought to regulate the rate of protein export from the Golgi. Targeted disruption of VLK in mice leads to a defect in lung development and neonatal lethality. It has been suggested that mutations in VLK may be associated with the allergic condition atopy.

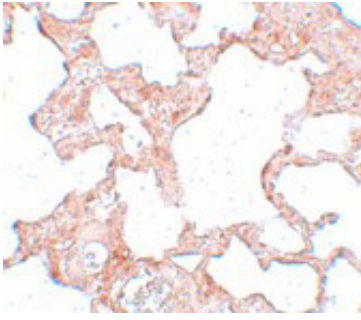
References

Kinoshita M, Era T, Jakt LM, et al. The novel protein kinase Vlk is essential for stromal function of mesenchymal cells. *Development* 2009; 136:2069-79.
Castro-Giner F, Bustamante M, Ramon Gonzalez J, et al. A pooling-based genome-wide analysis identifies new potential candidate genes for atopy in the European Community Respiratory Health Survey (ECRHS). *BMC Med. Genet.* 2009; 10:128.

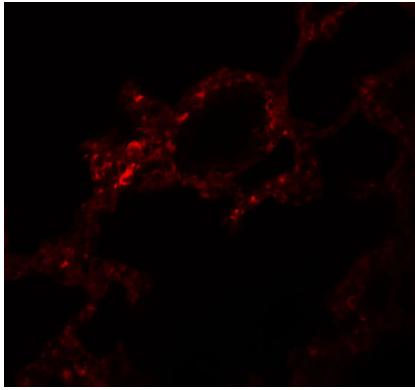
Images



Western blot analysis of VLK in human lung tissue lysate with VLK antibody at 1 µg/mL.



Immunohistochemistry of VLK in rat lung tissue with VLK antibody at 2.5 µg/mL.



Immunofluorescence of VLK in rat lung tissue with VLK antibody at 5 µg/mL.

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