

**VLK Antibody**  
**Catalog # ASC11045****Specification****VLK Antibody - Product Information**

Application	WB, IHC, IF
Primary Accession	<a href="#">Q5RJI4</a>
Other Accession	<a href="#">NP_612379</a> , <a href="#">238636897</a>
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Application Notes	VLK antibody can be used for detection of VLK by Western blot at 1 µg/mL. Antibody can also be used for immunohistochemistry starting at 2.5 µg/mL. For immunofluorescence start at 5 µg/mL.

**VLK Antibody - Additional Information**

Gene ID	106522
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.

**VLK Antibody - 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:<a href="http://www.uniprot.org/citations/25171405" target="\_blank">25171405</a>). May also have serine/threonine protein kinase activity (PubMed:<a href="http://www.uniprot.org/citations/25171405" target="\_blank">25171405</a>). Required for longitudinal bone growth through regulation of chondrocyte differentiation (PubMed:<a href="http://www.uniprot.org/citations/19097194" target="\_blank">19097194</a>, PubMed:<a href="http://www.uniprot.org/citations/23792766" target="\_blank">23792766</a>). May be indirectly involved in protein transport from the Golgi apparatus to the plasma membrane

(PubMed:<a href="http://www.uniprot.org/citations/19465597" target="\_blank">19465597</a>). Probably plays a role in platelets: rapidly and quantitatively secreted from platelets in response to stimulation of platelet degranulation (PubMed:<a href="http://www.uniprot.org/citations/25171405" target="\_blank">25171405</a>).

#### Cellular Location

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

#### Tissue Location

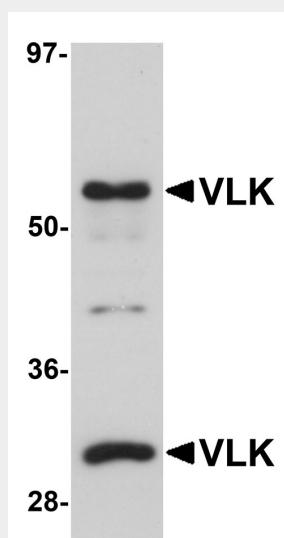
Strongly expressed in adult heart, liver and testis with weak expression in brain, spleen, lung and thymus. In the humerus, strongly expressed in early flat proliferative chondrocytes. In the embryo, expressed in the anterior visceral endoderm and anterior primitive streak at 6.5 dpc. At 7.5 dpc, expressed 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.

#### VLK Antibody - Protocols

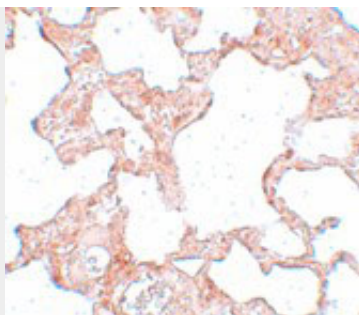
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

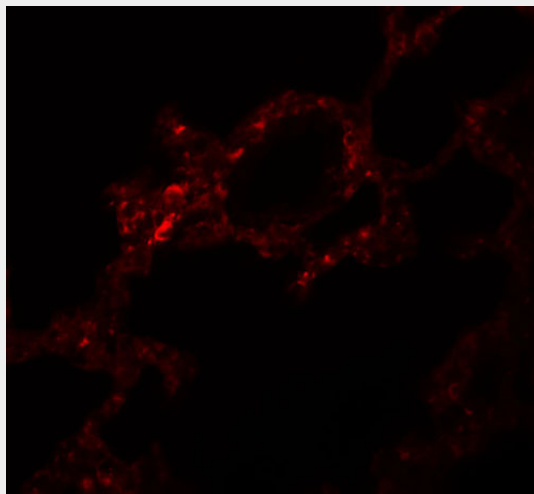
#### VLK Antibody - Images



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.

### **VLK Antibody - 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.

### **VLK Antibody - 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.