

**ULK3 Antibody**  
Catalog # ASC11729

**Specification**

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**ULK3 Antibody - Product Information**

Application	WB, IHC, IF
Primary Accession	<a href="#">Q6PHR2</a>
Other Accession	<a href="#">NP_001092906</a> , <a href="#">150456432</a>
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	Predicted: 52 kDa

Application Notes	<b>Observed: 52 kDa KDa</b> <b>ULK3 antibody can be used for detection of ULK3 by Western blot at 0.5 - 1 µg/ml.</b> <b>Antibody can also be used for Immunohistochemistry starting at 5 µg/mL.</b> <b>For immunofluorescence start at 20 µg/mL.</b>
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**ULK3 Antibody - Additional Information**

Gene ID	25989
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**Target/Specificity**

ULK3; ULK3 antibody is human specific. Multiple isoforms of ULK3 are known to exist.

**Reconstitution & Storage**

ULK3 antibody can be stored at 4°C for three months and -20°C, stable for up to one year.

**Precautions**

ULK3 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

**ULK3 Antibody - Protein Information**

**Name** ULK3

**Function**

Serine/threonine protein kinase that acts as a regulator of Sonic hedgehog (SHH) signaling and autophagy. Acts as a negative regulator of SHH signaling in the absence of SHH ligand: interacts with SUFU, thereby inactivating the protein kinase activity and preventing phosphorylation of GLI proteins (GLI1, GLI2 and/or GLI3). Positively regulates SHH signaling in the presence of SHH: dissociates from SUFU, autophosphorylates and mediates phosphorylation of GLI2, activating it and promoting its nuclear translocation. Phosphorylates in vitro GLI2, as well as GLI1 and GLI3, although less efficiently. Also acts as a regulator of autophagy: following cellular senescence, able to induce autophagy.

**Cellular Location**

Cytoplasm. Note=Localizes to pre-autophagosomal structure during cellular senescence

#### Tissue Location

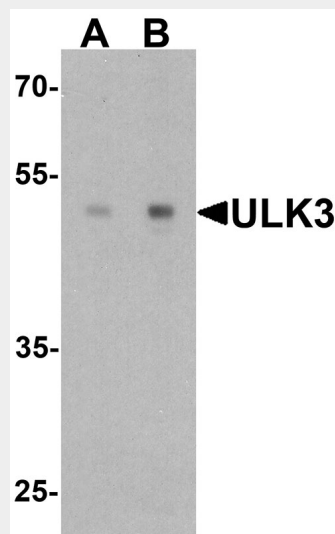
Widely expressed. Highest levels observed in fetal brain. In adult tissues, high levels in brain, liver and kidney, moderate levels in testis and adrenal gland and low levels in heart, lung, stomach, thymus, prostate and placenta. In the brain, highest expression in the hippocampus, high levels also detected in the cerebellum, olfactory bulb and optic nerve. In the central nervous system, lowest levels in the spinal cord

#### ULK3 Antibody - Protocols

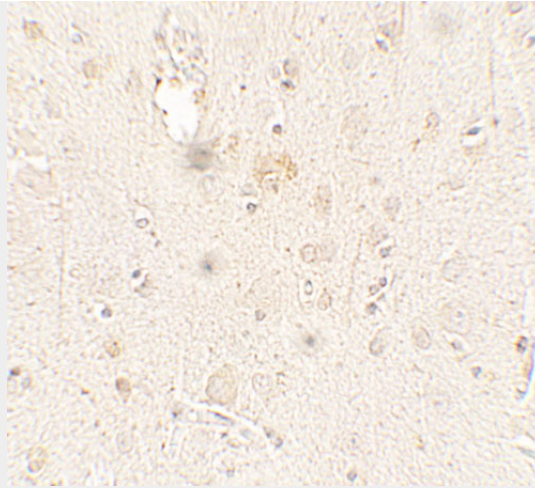
Provided below are standard protocols that you may find useful for product applications.

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

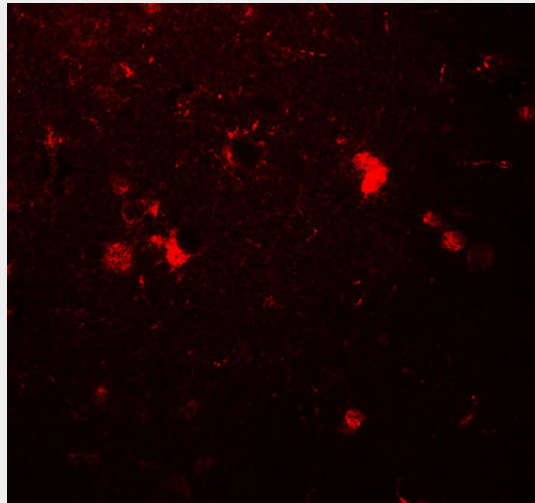
#### ULK3 Antibody - Images



Western blot analysis of ULK3 in human brain tissue lysate with ULK3 antibody at (A) 0.5 and (B) 1 µg/ml.



Immunohistochemistry of ULK3 in human brain tissue with ULK3 antibody at 5 µg/mL.



Immunofluorescence of ULK3 in human brain tissue with ULK3 antibody at 20 µg/mL.

### **ULK3 Antibody - Background**

ULK3 belongs to the Ser/Thr protein kinase superfamily and plays a role in the ATP-dependent phosphorylation of target proteins (1). Knockout of ULK genes results in a severe defect in the autophagy pathway (2). ULK3, like the other Unc-51-like kinases such as ULK1, ULK2 and ULK4, is highly conserved among eukaryotes (3). ULK3 has been shown to be a positive regulator of the Hedgehog signaling pathway by enhancing GLI1 and GLI2 transcriptional activity (4). Furthermore, ULK3 can also interact with SUFU, a protein required for the negative regulation of GLI proteins; this interaction blocks the autophosphorylation of ULK3 and blocks its ability to regulate the GLI proteins (5).

### **ULK3 Antibody - References**

- Suzuki K, Kubota Y, Sekito T, et al. Hierarchy of Atg proteins in pre-autophagosomal structure organization. *Genes to Cells* 2007; 12:209-18.
- Lee EJ and Tournier C. The requirement of uncoordinated 51-like kinase 1 (ULK1) and ULK2 in the regulation of autophagy. *Autophagy* 2011; 7:689-95.
- Zhou X, Babu JR, da Silva S, et al. Unc-51-like kinase 1/2-mediated endocytic processes regulate filopodia extension and branching of sensory axons. *Proc. Natl. Acad. Sci. USA* 2007; 104:5842-7.
- Maloverjan A, Piirsoo M, Michelson P, et al. Identification of a novel serine/threonine kinase ULK3 as a positive regulator of Hedgehog pathway. *Exp. Cell Res.* 2010; 316:627-37.