

## Rabbit Polyclonal ULK1 antibody FITC

Catalog Number: ULK1-FITC

Lot Number:

### General Information

<b>Product</b>	ULK1 Antibody FITC
<b>Description</b>	Serine/Threonine-protein kinase ULK1 Antibody FITC-Conjugated
<b>Accession #</b>	Uniprot: O75385 NCBI: NP_003556.1
<b>Verified Applications</b>	ELISA, WB
<b>Species Cross Reactivity</b>	Bovine, Human, Monkey, Panda
<b>Host</b>	Rabbit
<b>Immunogen</b>	Synthetic peptide taken within amino acid region 1000-1050 on mouse ULK1 protein.
<b>Alternative Nomenclature</b>	ATG1A antibody, Autophagy related protein 1 homolog antibody, Serine/threonine protein kinase ULK1 antibody, UNC51 antibody

### Physical Properties

<b>Quantity</b>	100 µg
<b>Volume</b>	200 µl
<b>Form</b>	FITC-Conjugated Immunoglobulins
<b>Immunoglobulin &amp; Concentration</b>	0.5 mg/ml IgG in antibody stabilization buffer
<b>Storage</b>	Store at -20°C for long term storage.

### Recommended Dilutions

<b>DOT Blot</b>	1:10,000
<b>ELISA</b>	1:10,000
<b>Western Blot</b>	1:250

### Related Products

### Catalog #

<b>Affinity Purified</b>	ULK1-101AP
<b>BIOTIN-Conjugated</b>	ULK1-BIOTIN
<b>Antigenic Blocking Peptide</b>	P-ULK1
<b>Western Blot Positive Control</b>	PC-ULK1

## Overview:

ULK1 (Unc51-like kinase) is a Serine/Threonine kinase that plays a key role in inducing autophagy in response to starvation. Autophagy is a cellular process that drives the trafficking of unwanted proteins and cellular components to lysosomes for degradation upon nutrient limitation. By degrading intracellular components, induction of autophagy provides energy as well as structural building blocks such as amino acids required for critical cellular processes and metabolic homeostasis. Autophagy plays crucial roles in development, innate immune defense, protein quality control, tumor suppression, and cell death. Under normal growth conditions when nutrients are abundant, autophagy is kept at a basal level while under stress conditions like nutrient starvation; autophagy is further induced to provide cells with additional internal nutrient supplies (1). ULK1 is phosphorylated and negatively regulated by mTORC1 (mammalian target of rapamycin complex 1). ULK1 inhibits the kinase activity of mTORC1 and cell proliferation. Deficiency of ULK1 increases signaling of mTORC1 cell proliferation rates and accumulation of cell mass, whereas overexpression of ULK1 had the opposite effect (2). ULK1 gene encodes a protein of 125kDa. Ulk1 protein regulates filopodia extension and neurite branching during sensory axon outgrowth (3). It is also a critical regulator of mitochondrial and ribosomal clearance during the final stages of erythroid maturation (4). ULK1 is the transcriptional targets of tumor suppressor gene p53. In response to DNA damage, ULK1 is upregulated by p53 for the sustained autophagy activity induced by DNA damage leading to subsequent cell death. ULK1 mediate part of tumor suppression activity and contribute to the efficacy of genotoxic chemotherapeutic drugs (5).

ULK1- selective antibodies were generated against a peptide taken from C-terminal region spanning 1030-1050 amino acids. The antibodies do not cross react to other ULK subtypes. The ULK1-selective antibodies are fully characterized for applications in western blotting and ELISA at the recommended dilutions. The ULK1 antibodies are affinity purified on an immobilized antigen based affinity matrix. The isolated antibodies were then stabilized in antibody stabilization buffer for long-term storage. ULK1 western blot positive control samples in "ready-to-use" SDS-PAGE sample buffer and antigenic blocking peptide for ULK1 antibody are available. Antibodies can be conjugated to fluorophores or secondary enzymes as an additional service. For a complete listing of all FabGennix antibodies and lab services, please visit <http://fabgennix.com>.

### References:

1. Wang X et al., Nutrient starvation elicits an acute autophagic response mediated by Ulk1 dephosphorylation and its subsequent dissociation from AMPK Proc Natl Acad U S A v.108(12); March 2011
2. Kim D et al., ULK1 inhibits the kinase activity of mTORC1 and cell proliferation Autophagy v.7(10); October 2011
3. Wang F et al. Unc-51-like kinase 1/2-mediated endocytic processes regulate filopodia extension and branching of sensory axons Proc Natl Acad Sci U S A v.104(14);April 2007
4. Thompson C et al., Ulk1 plays a critical role in the autophagic clearance of mitochondria and ribosomes during reticulocyte maturation Blood v.112(4); August 2008
5. Wang X et al., Upregulation of human autophagy-initiation kinase ULK1 by tumor suppressor p53 contributes to DNA-damage-induced cell death Cell death Differ v.18(10); October 2011

\* For users who may require large amounts of the products listed above, please inquire about bulk material discounts.

This Product is for Research Use Only and is NOT intended for use in humans or clinical diagnosis.