

### Recombinant human ULK1 protein ab125656

[5 Images](#)

#### Description

<b>Product name</b>	Recombinant human ULK1 protein
<b>Biological activity</b>	The specific activity of ab125656 was determined to be 50 - 56 nmol/min/mg.
<b>Purity</b>	> 70 % Densitometry. Purity was determined to be >70% by densitometry. Affinity purified.
<b>Expression system</b>	Baculovirus infected Sf9 cells
<b>Accession</b>	<b><u>O75385</u></b>
<b>Protein length</b>	Protein fragment
<b>Animal free</b>	No
<b>Nature</b>	Recombinant
<b>Species</b>	Human
<b>Predicted molecular weight</b>	125 kDa including tags
<b>Amino acids</b>	1 to 649
<b>Tags</b>	GST tag N-Terminus

#### Specifications

Our **Abpromise guarantee** covers the use of **ab125656** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

<b>Applications</b>	Western blot Functional Studies SDS-PAGE
<b>Form</b>	Liquid
<b>Additional notes</b>	<b><u>ab64311</u></b> (Myelin Basic Protein protein) can be utilized as a substrate for assessing kinase activity

#### Preparation and Storage

<b>Stability and Storage</b>	Shipped on dry ice. Upon delivery aliquot and store at -80°C. Avoid freeze / thaw cycles. pH: 7.50 Constituents: 0.31% Glutathione, 0.002% PMSF, 0.004% DTT, 0.79% Tris HCl, 0.003% EDTA,
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25% Glycerol (glycerin, glycerine), 0.88% Sodium chloride

This product is an active protein and may elicit a biological response in vivo, handle with caution.

## General Info

### Function

Serine/threonine-protein kinase involved in autophagy in response to starvation. Acts upstream of phosphatidylinositol 3-kinase PIK3C3 to regulate the formation of autophagophores, the precursors of autophagosomes. Part of regulatory feedback loops in autophagy: acts both as a downstream effector and negative regulator of mammalian target of rapamycin complex 1 (mTORC1) via interaction with RPTOR. Activated via phosphorylation by AMPK and also acts as a regulator of AMPK by mediating phosphorylation of AMPK subunits PRKAA1, PRKAB2 and PRKAG1, leading to negatively regulate AMPK activity. May phosphorylate ATG13/KIAA0652 and RPTOR; however such data need additional evidences. Plays a role early in neuronal differentiation and is required for granule cell axon formation. May also phosphorylate SESN2 and SQSTM1 to regulate autophagy (PubMed:25040165).

### Tissue specificity

Ubiquitously expressed. Detected in the following adult tissues: skeletal muscle, heart, pancreas, brain, placenta, liver, kidney, and lung.

### Sequence similarities

Belongs to the protein kinase superfamily. Ser/Thr protein kinase family. APG1/unc-51/ULK1 subfamily.

Contains 1 protein kinase domain.

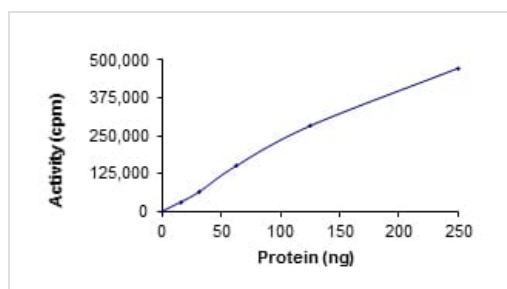
### Post-translational modifications

Autophosphorylated. Phosphorylated under nutrient-rich conditions; dephosphorylated during starvation or following treatment with rapamycin. Under nutrient sufficiency, phosphorylated by MTOR/mTOR, disrupting the interaction with AMPK and preventing activation of ULK1 (By similarity). In response to nutrient limitation, phosphorylated and activated by AMPK, leading to activate autophagy.

### Cellular localization

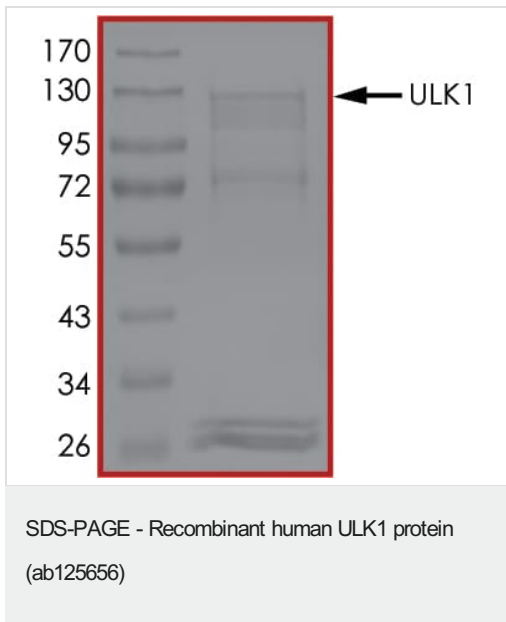
Cytoplasm, cytosol. Preautophagosomal structure. Under starvation conditions, is localized to punctate structures primarily representing the isolation membrane that sequesters a portion of the cytoplasm resulting in the formation of an autophagosome.

## Images

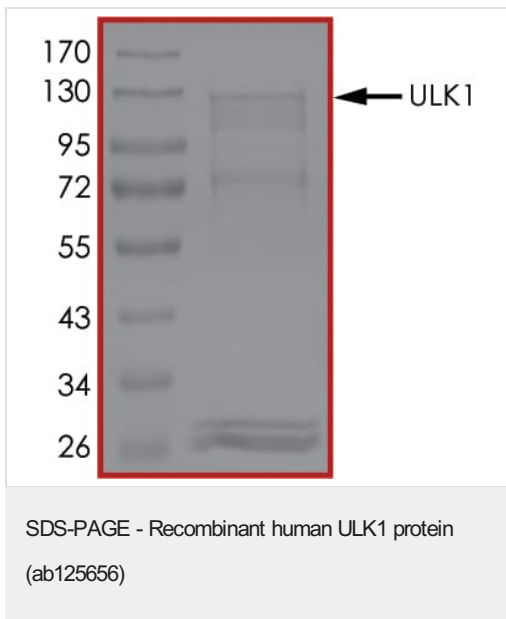


The specific activity of ULK1 (ab125656) was determined to be 53 nmol/min/mg as per activity assay protocol

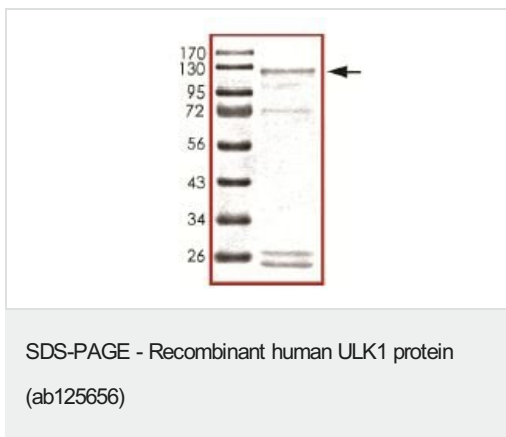
Functional Studies - Recombinant human ULK1 protein (ab125656)



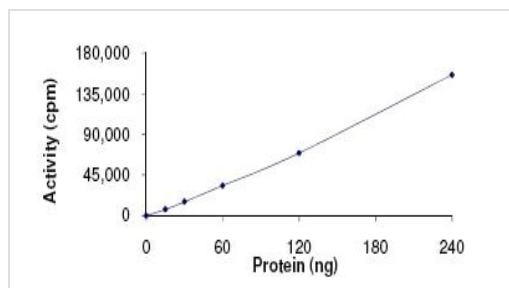
SDS PAGE analysis of ab125656



SDS PAGE analysis of ab125656



SDS-PAGE analysis of ab125656.



Sample Kinase Assay showing the specific activity of ab125656 as 50 nmol/min/mg.

Functional Studies - Recombinant human ULK1  
protein (ab125656)

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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