Recombinant ULK1 protein (His tag)

Catalog Number	546537
Synonyms	Autophagy-related protein 1 homolog; ATG1; hATG1; Unc-51-like kinase 1
Species	Human
Expression System	E. coli
Accession	O75385
Molecular Weight	Predictes a molecular mass of 33.43 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 33 kDa band.

Product Information

Sequence Region	1-280
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>85%, by SDS-PAGE with Coomassie Brilliant Blue staining.
Endotoxin	Not tested.
Activity	Not tested.
Stability	Samples are stable for up to twelve months from date of receipt at -70℃
Protein Construction	DNA encoding 1-280 aa (O75385) were fused with 6His tag.

Storage & Handling

Reconstitution	Reconstitute at 0.25 μg/μl in sterile water for short-term storage. Reconstitution with 50% glycerol solution is recommended for longer term storage (see Stability and Storage for more details). If a different concentration is needed for your purposes please adjust the reconstitution volume as required (please note: the ion concentration of the final solution will vary according to the volume used). Note: Centrifuge vial before opening. When reconstituting, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution.
Storage	Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Shipping	In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise.

Description

Description	Recombinant Human ULK1 (1-280) Fragment - A high-purity recombinant protein encompassing the complete protein kinase domain (residues 16-278) of Serine/threonine-protein kinase ULK1. This fragment serves as an essential tool for studying autophagy regulation, kinase activity, and phosphorylation mechanisms in cellular stress responses. ULK1 (Unc-51-like kinase 1) is a crucial serine/threonine-protein kinase that initiates autophagy in response to nutrient starvation. Functioning upstream of phosphatidylinositol 3-kinase PIK3C3, ULK1 regulates autophagophore formation and serves as both a downstream effector and negative regulator of mTORC1. The kinase is activated by AMPK phosphorylation while simultaneously regulating AMPK activity through phosphorylation of its subunits. ULK1 localizes to the cytoplasm and cytosol under normal conditions, but during starvation, it translocates to preautophagosomal structures and isolation membranes, where it orchestrates autophagosome formation. Its phosphorylation targets include key autophagy regulators such as AMBRA1, ATG4B, SESN2, SQSTM1, and FLCN, positioning ULK1 as a central regulator of autophagic flux and cellular homeostasis.