

Recombinant Rat ATG5 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52465

Size: 10ug, 100ug

Protein Name: Autophagy protein 5

Synonym: Atg5

UniProt ID: Q3MQ06

UniProt Link: www.uniprot.org/uniprotkb/Q3MQ06/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 275 AA

Molecular Weight: 32 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MTDDKDVLRDVWFGRIPTCFTLYQDEITEREAEPYYLLLPRVSYLTLVTDKVKKHFQKVMRQEDVSEI
WFEYEGTPLKWHYPIGLLFDLLASSALPWNITVHFKSFPEKDLLHCPCKDAVEAHFMSCVKEADAL
KHKSQVINEMQRKDKHQLWMGLQNDRFDQFWTINRKLMEYPPPEENGFRYIPFRIYQTTTERPFIQKL
FRPVAADGQLHTLGDLLREVCPSAVAPEDGEKKSQVMIHGIEPLLETPLQWLSEHLSYPDNFLHISIV
PQPTD

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Autophagy protein 5 produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Involved in autophagic vesicle formation. Conjugation with ATG12, through a ubiquitin-like conjugating system involving ATG7 as an E1-like activating enzyme and ATG10 as an E2-like conjugating enzyme, is essential for its function. The ATG12-ATG5 conjugate acts as an E3-like enzyme which is required for lipidation of ATG8 family proteins and their association to the vesicle membranes. Involved in mitochondrial quality control after oxidative damage, and in subsequent cellular longevity. Plays a critical role in multiple aspects of lymphocyte development and is essential for both B and T lymphocyte survival and proliferation. Required for optimal processing and presentation of antigens for MHC II. Involved in the maintenance of axon morphology and membrane structures, as well as in normal adipocyte differentiation. Promotes primary ciliogenesis through removal of OFD1 from centriolar satellites and degradation of IFT20 via the autophagic pathway. As part of the ATG8 conjugation system with ATG12 and ATG16L1, required for recruitment of LRRK2 to stressed lysosomes and induction of LRRK2 kinase activity in response to lysosomal stress (By similarity).; May play an important role in the apoptotic process, possibly within the modified cytoskeleton. Its expression is a relatively late event in the apoptotic process, occurring downstream of caspase activity. Plays a crucial role in IFN-gamma-induced autophagic cell death by interacting with FADD.

Subcellular Localization: Cytoplasm . Preautophagosomal structure membrane ; Peripheral membrane protein . Note=The conjugate detaches from the membrane immediately before or after autophagosome formation is completed. Also localizes to discrete punctae along the ciliary axoneme and to the base of the ciliary axoneme. Under starved conditions, the ATG12-ATG5-ATG16L1 complex is translocated to phagophores driven by RAB33B (By similarity).

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.