

PRODUCT INFORMATION



ATG5 (human recombinant)

Item No. 25381

Overview and Properties

Synonyms: APG5-like, hAPG5, Apoptosis-specific Protein, Autophagy Protein 5, Autophagy-related 5

Source: Recombinant N-terminal histidine-tagged ATG5 purified from *E. coli*

Amino Acids: 2-275

Uniprot No.: Q9H1Y0

Molecular Weight: 34.5 kDa

Storage: -80°C (as supplied)

Stability: ≥1 year

Purity: *batch specific* (≥70% estimated by SDS-PAGE)

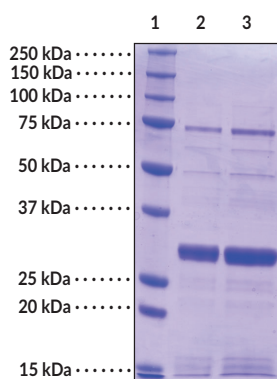
Supplied in: 50 mM HEPES, pH 8.0, 150 mM sodium chloride, and 10% glycerol

Protein

Concentration: *batch specific* mg/ml

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers

Lane 2: ATG5 (human recombinant) (2 µg)

Lane 3: ATG5 (human recombinant) (4 µg)

Representative gel image shown; actual purity may vary between each batch.

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Autophagy-related 5 (ATG5), formerly known as apoptosis specific protein (ASP), is a protein that is essential to autophagosome elongation.¹⁻³ ATG5 is covalently conjugated to the C-terminal glycine residue of ATG12 (ATG12-ATG5) and forms a non-covalent complex with ATG16 (ATG12-ATG5-ATG16), which functions as an E3 ubiquitin ligase-like enzyme to facilitate LC3 transfer from ATG3 to phosphatidylethanolamine in canonical autophagy. ATG12-ATG5 also binds to the ATG12-ATG5-interaction region of the lysosomal localized protein TECPR1, freeing the TECPR1 pleckstrin homology domain to interact with phosphatidylinositol 3-phosphate components in the autophagosome membrane, promoting autophagosome-lysosome fusion.³ Polymorphisms in ATG5 have been associated with various autoimmune diseases, including lupus nephritis and Behcet's disease, gastrointestinal and colorectal cancers, as well as sporadic Parkinson's disease and childhood asthma.

References

1. Otomo, C., Metlagel, Z., Takaesu, G., *et al.* Structure of the human ATG12~ATG5 conjugate required for LC3 lipidation in autophagy. *Nat. Struct. Mol. Biol.* **20(1)**, 59-66 (2013).
2. Kim, J.H., Hong, S.B., Lee, J.K., *et al.* Insights into autophagosome maturation revealed by the structures of ATG5 with its interacting partners. *Autophagy* **11(1)**, 75-87 (2015).
3. Ye, X., Zhou, X.J., and Zhang, H. Exploring the role of autophagy-related gene 5 (ATG5) yields important insights into autophagy in autoimmune/autoinflammatory diseases. *Front. Immunol.* **9:2334**, (2018).

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