

# PRODUCT INFORMATION



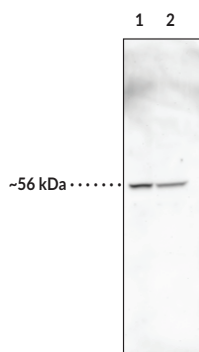
## ATG5 Monoclonal Antibody (Clone 4D5)

Item No. 26671

### Overview and Properties

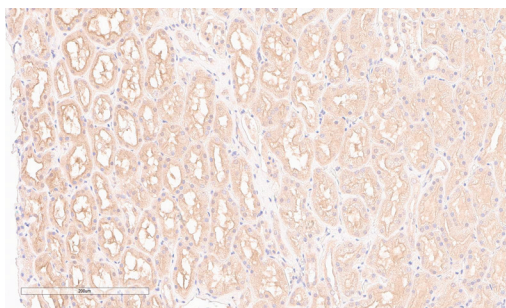
<b>Contents:</b>	This vial contains 100 µg of protein G-purified monoclonal antibody.
<b>Synonyms:</b>	APG5-like, hAPG5, Apoptosis-specific Protein, Autophagy Protein 5, Autophagy-related 5
<b>Immunogen:</b>	Full-length human recombinant ATG5 protein
<b>Cross Reactivity:</b>	(-) ATG8
<b>Species Reactivity:</b>	(+) Human; other species not tested
<b>Uniprot No.:</b>	Q9H1Y0
<b>Form:</b>	Liquid
<b>Storage:</b>	-20°C (as supplied)
<b>Stability:</b>	≥3 years
<b>Storage Buffer:</b>	PBS, pH 7.2, with 50% glycerol and 0.02% sodium azide
<b>Clone:</b>	4D5
<b>Host:</b>	Mouse
<b>Isotype:</b>	IgG1
<b>Applications:</b>	ELISA, Immunohistochemistry (IHC), and Western blot (WB); the recommended starting dilution for ELISA and WB 1:1,000 and 1:200 for IHC. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

### Images



Lane 1: Raji Cell Lysate (50 µg)  
Lane 2: HepG2 Cell Lysate (50 µg)

The predicted molecular weight of human ATG5 is 32.4 kDa. Cayman's ATG5 Monoclonal Antibody (Clone 4D5) (Item No. 26671) detects a band at ~56 kDa from cell lysates due to the combined size of the ATG5-ATG12 complex.



Immunohistochemistry analysis of formalin-fixed, paraffin-embedded (FFPE) human kidney tissue after heat induced antigen retrieval in pH 6.0 citrate buffer. After incubation with Cayman's ATG5 Monoclonal Antibody (Clone 4D5) (Item No. 26671) at a 1:200 dilution, slides were incubated with biotinylated secondary antibody, followed by alkaline phosphatase-streptavidin and chromogen (DAB).

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

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Autophagy-related 5 (ATG5), formerly known as apoptosis-specific protein (ASP), is a protein that is essential to autophagosome elongation.<sup>1-3</sup> 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 lysosomally localized protein TECPR1, freeing the TECPR1 pleckstrin homology domain to interact with phosphatidylinositol 3-phosphate components in the autophagosome membrane, promoting autophagosome-lysosome fusion.<sup>3</sup> Polymorphisms in ATG5 have been associated with various autoimmune diseases, including lupus nephritis and Behçet's disease, gastrointestinal and colorectal cancers, as well as sporadic Parkinson's disease and childhood asthma. Cayman's ATG5 Monoclonal Antibody (Clone 4D5) can be used for ELISA, immunohistochemistry, and Western blot applications. The antibody recognizes the ATG5-ATG12 complex at approximately 56 kDa from human samples.

## References

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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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