PRODUCT INFORMATION

ATG4B (human recombinant)

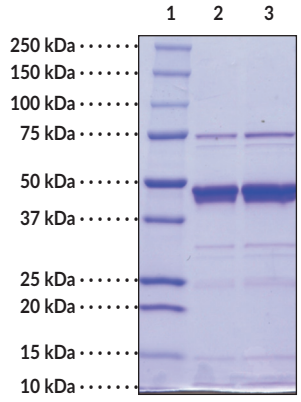
Item No. 25380

Overview and Properties

Synonyms:	AUT-like 1 Cysteine Endopeptidase, Autophagin-1, Autophagy-related Protein 4 Homolog B, Cysteine Protease ATG4B, hAPG4B
Source:	Recombinant N-terminal histidine-tagged ATG4B expressed in *E. coli*
Amino Acids:	2-393
Uniprot No.:	Q9Y4P1
Molecular Weight:	43.4 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 years
Purity:	***batch specific*** (≥80% estimated by SDS-PAGE)
Supplied in:	50 mM HEPES, pH 8.0, 150 mM sodium chloride, 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: ATG4B (2 µg)
Lane 3: ATG4B (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 4B (ATG4B), also known as autophagin-1, is a cysteine protease and a member of the C54 protease family with dual roles in the progression of autophagy.[1,2] It catalyzes the irreversible proteolytic cleavage of human homologs of yeast atg8 belonging to the microtubule-associated proteins 1 (MAP1)A/B-light chain 3 (LC3) and the GABA receptor-associated protein (GABARAP) subfamilies, including LC3, GATE16, GABARAP, and ATG8L, to expose a C-terminal glycine residue that is essential to formation of the autophagosome. It also catalyzes the reversible deconjugation of phosphatidylethanolamine from C-terminal glycine lipid-conjugated atg8 homologs.[3] ATG4B expression is increased in $CD34^+$ chronic myeloid leukemia (CML) stem and progenitor cells and knockdown of ATG4B expression increases accumulation of LC3-II and p62, indicating impaired autophagy, and reduces the viability and inhibits proliferation of $CD34^+$ CML cells.[4] *Atg4*$^{-/-}$ mice exhibit systemic decreases in basal and induced autophagy as well as increased susceptibility to colitis induced by dextran sodium sulfate (DSS) and pulmonary fibrosis induced by bleomycin (Item No. 13877).[5,6]

References

1. Li, M., Hou, Y., Wang, J., *et al.* Kinetics comparisons of mammalian Atg4 homologues indicate selective preferences toward diverse Atg8 substrates. *J. Biol. Chem.* **286(9)**, 7327-7338 (2011).
2. Yang, Z., Wilkie-Grantham, R.P., Yanagi, T., *et al.* ATG4B (Autophagin-1) phosphorylation modulates autophagy. *J. Biol. Chem.* **290(44)**, 26549-26561 (2015).
3. Kabeya, Y., Mizushima, N., Yamamoto, A., *et al.* LC3, GABARAP and GATE16 localize to autophagosomal membrane depending on form-II formation. *J. Cell Sci.* **117(Pt 13)**, 2805-2812 (2004).
4. Rothe, K., Lin, H., Lin, K.B., *et al.* The core autophagy protein ATG4B is a potential biomarker and therapeutic target in CML stem/progenitor cells. *Blood* **123(23)**, 3622-3634 (2014).
5. Cabrera, S., Fernández, A.F., Mariño, G., *et al.* ATG4B/autophagin-1 regulates intestinal homeostasis and protects mice from experimental colitis. *Autophagy* **9(8)**, 1188-1200 (2013).
6. Cabrera, S., Maciel, M., Herrera, I., *et al.* Essential role for the ATG4B protease and autophagy in bleomycin-induced pulmonary fibrosis. *Autophagy* **11(4)**, 670-684 (2015).

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