LC3 monoclonal antibody (5H3)

Autophagy is an alternative process of proteasomal degradation for some long-lived proteins or organelles. Alterations in the autophagic-lysosomal compartment have been linked to neuronal death in many neurodegenerative disorders as well as in transmissible neuronal pathologies (prion diseases). Genetic studies in yeast have shown that Autophagy-defective Gene-8 (Atg-8) represents a specific marker for autophagy. Among the four families of mammalian Atg8-related proteins only LC3 (Microtubule-associated Protein1 Light Chain 3) is expressed at sufficient high levels and efficiently recruited to autophagic vesicles in cells and tissues. During autophagy the cytoplasmic form, LC3-I is processed and recruited to autophagosomes, where LC3-II is generated by site specific proteolysis near to the C-terminus. Autophagic vacuoles have been also reported frequently in cardiomyopathies or muscle cells exposed to different experimental settings.

This antibody is covered by our Worry-Free Guarantee.

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Ordering Information

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ALX-803-082-C100	100µg

Manuals, SDS & CofA

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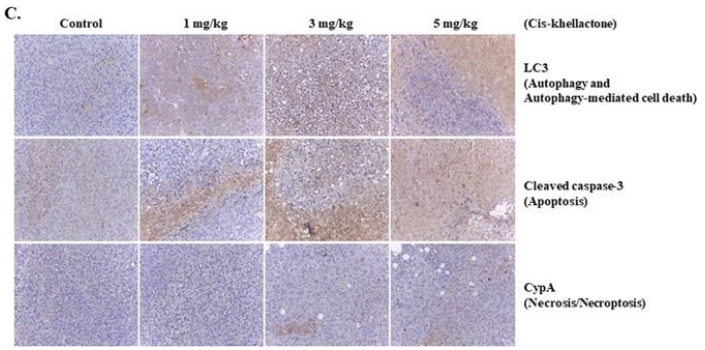
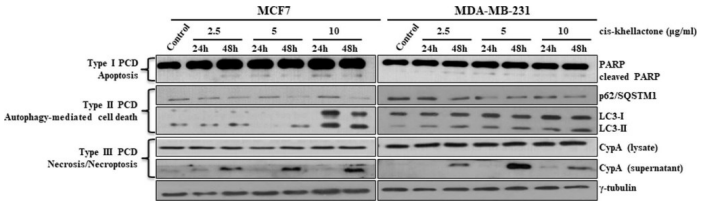


In vivo assessment of cis-khellactone anti-tumor activity in a murine model(A) Change in tumor volume after cis-khellactone treatment of a nude mouse. Tumor-bearing mice were injected with MDA-MB-231 cancer cells as mentioned in Materials and Methods. When tumors were approximately 50 to 100 mm3 in volume, mice in each treatment group were intravenously injected via the tail vein with cis-khellactone (at a dose of 1, 3, or 5 mg/kg) once every 3 days. Control groups received only normal saline (*P<0.01, n = 5, Student's t test). (B) Representative images of H&E staining of five major organs (heart, lung, liver, spleen, and kidney) and tumor. Mice were sacrificed at 30 days after the initial drug administration and tissue samples were immediately collected. Scale bar = 140 μm. (C) Induction of three PCD in xenograft mice tumor model with MDA-MB-231 cells were tested by employing Immunohistochemistry (IHC). Three PCD were checked with cleaved caspase 3 for apoptosis, LC3 for autophagic cell death, and CypA for necrosis/necroptosis.



Effect of cis-khellactone on three types of PCD (apoptosis, autophagy-mediated cell death, and necrosis/necroptosis) in MCF7 and MDA-MB-231 cancer cellsMCF7 and MDA-MB-231 cells were cultured and treated with 2.5, 5, and 10 μg/ml for 24 or 48 h, while control cells were treated with DMSO alone. Cell lysates were examined by Western blot analysis by using following corresponding biomarkers or regulatory proteins of the different types of cell death; PARP for apoptosis, p62 and LC3 for autophagy, and CypA for necrosis/necroptosis; γ-tubulin was used as an internal control. The result of Western blot was quantified by using ImageJ program.

Image collected and cropped by CiteAb under a CC-BY license from the following publication: Anti-cancerous effect of cis-khellactone from Angelica amurensis through the induction of three programmed cell deaths. *Oncotarget* (2018)

Handling & Storage

Use/Stability	Stable at -20°C up to 1 year.
Handling	Thawed aliquots may be stored at 4°C up to 3 months. Avoid freeze/thaw cycles. After opening, prepare aliquots and store at -80°C.
Long Term Storage	-20°C
Shipping	Blue Ice

Regulatory Status

RUO - Research Use Only

Product Details

Alternative Name	Microtubule-associated protein 1 light chain 3, MAP1LC3
Application	ICC, IHC, WB
Application Notes	Detects a band of ~18kDa (LC3-I; cytoplasmic form) and a band of ~16kDa (LC3-II; lipidated form) by Western blot.
Clone	5H3
Formulation	Liquid. In PBS containing 50% glycerol, 0.09% sodium azide, PEG and sucrose.
Host	Mouse
Immunogen	Synthetic peptide corresponding to an internal sequence identical in LC3A, LC3B and LC3C conjugated to hemocyanin.
Isotype	IgG1
Positive Control	Included. (Prod. No. ALX-840-038)
Purity Detail	Thiophilic adsorption and size exclusion chromatography purified.
Recommendation Dilutions/Conditions	Immunocytochemistry (paraformaldehyde/methanol fixation; 1-10 µg/ml)Western Blot (0.5µg/ml for HRPO/ECL detection; Recommended blocking buffer CPPT: 10mM TRIS-HCl, pH 7.4, 0.5% (w/v) casein, 1% (w/v) PEG 4,000, 1% (w/v) polyvinylpyrrolidone, 0.1% (v/v) Tween 20, 150mM sodium chloride)We strongly recommend to use PVDF membranes for immunoblot assays.Suggested dilutions/conditions may not be available for all applications.Optimal conditions must be determined individually for each application.

Species Reactivity	Human
Specificity	Recognizes both forms of endogenous LC3.
UniProt ID	Q9H492 (LC3A), Q9GZQ8 (LC3B), Q9BXW4 (LC3C)
Worry-free Guarantee	**This antibody is covered by our Worry-Free Guarantee.**

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