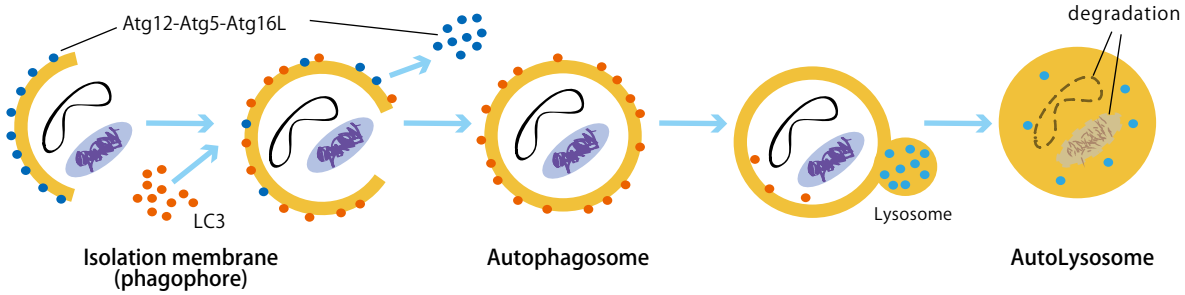
Autophagy related antibodies

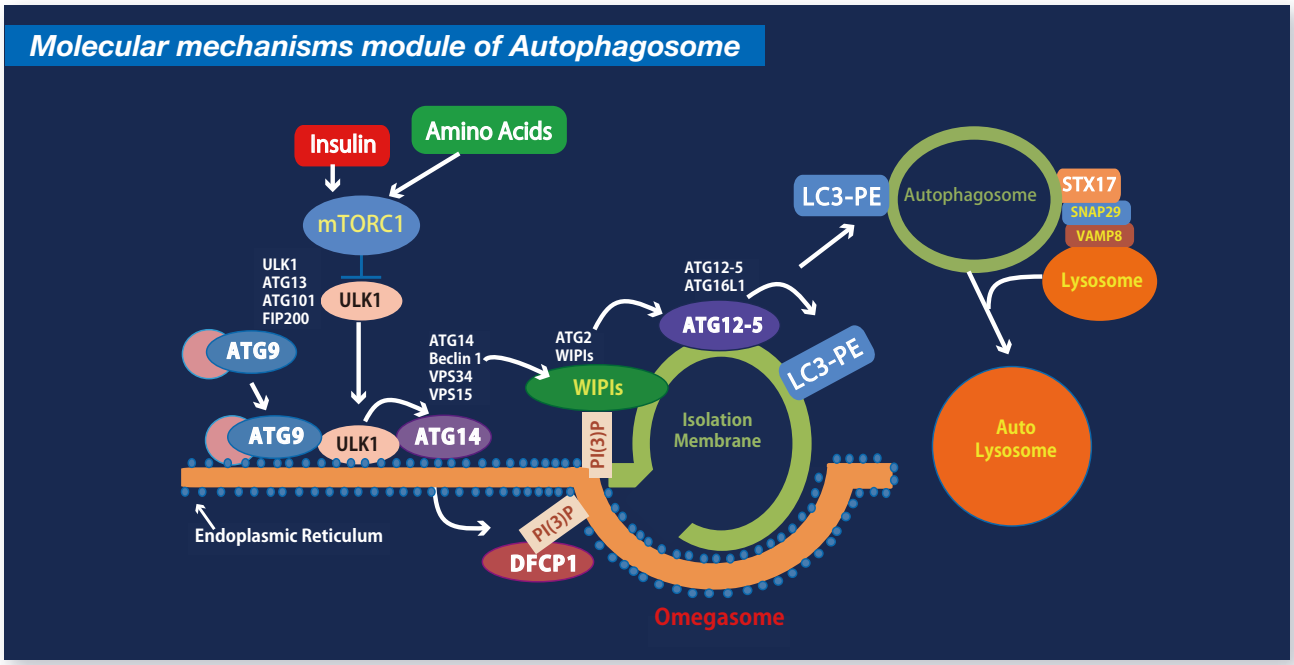
Useful for the research of a role in apoptosis, mitochondrial morphology and autophagy

Autophagy is a pathway for degradation by lysosome intracellular components under stress conditions such as amino acid starvation and viral infection. In the first step of autophagy by stress signals such as amino acid starvation forms autophagosome. MAP LC 3 microtubule - associated - protein - light - chain - 3) of autophagosome marker that best - studied is related to membrane of interior and exterior of the autophagosome.

Intracellular protein degradation systems



Molecular mechanisms module of Autophagosome



Description	Cat. No.	Clone	Applications	Size
Anti LC3	CAC-CTB-LC3-1-50	LC3.No.6	WB	50 µL
	CAC-CTB-LC3-2-IC	LC3-1703	IC(Cell)	50 µL
Anti ATG7	CAC-CTB-AT7-M01	ATG7・2	WB/IP	50 µL
Anti BIF1	CAC-CTB-BF-M01-W	BIF1-443	WB	50 µL
Anti Gtr2	BAM-62-351-EX	Rabbit poly	WB	100 µL

Autophagy related antibodies

Antibody to Autophagy marker proteins

LC3

LC3B is one of the mammalian Atg8 homologs and widely used as an autophagosome marker. Immediately after synthesis, LC3 is processed by Atg4 and becomes LC3-I. Upon induction of autophagy, the C-terminal glycine of LC3-I is conjugated to phosphatidylethanolamine, resulting in formation of membrane-bound LC3-II. Most LC3-II is thought be present on autophagosome membrane. The autophagosome subsequently fuses with a lysosome, where inside materials, including LC3-II, are degraded. The expression level of LC3-II generally correlates with the number of autophagosome.
Anti LC3 Monoclonal antibody (Clone # LC3-1703) is designed for application of immunocytochemistry. As amount of LC3-II positively correlates to autophagozome formation, this antobody is useful tool for autophagy detection in various cells . This is applicable to cells of Human or Mouse and and some examples are found applying this to immunoelectron microscopy (Fig1).

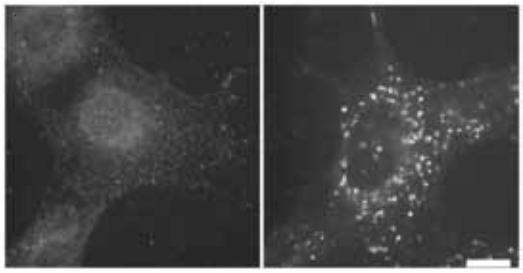


Fig.1 Immunofluorescence microscopy analysis of mouse embryonic fibroblasts (MEFs) with **#LC3-1703**

Check **User Report:** Experimental Example of endogenous LC3 detection by Immunofluorescence staining using Anti-LC3 Monoclonal Antobody (Clone # LC3-1703).
https://www.cosmobio.com/contents/appnote_LC3.html

Atg7

Atg7 acts as an E1-like enzyme in both Atg12 and Atg8 ubiquitin-like conjugation systems. Atg7 transfers Atg12 to an E2-like enzyme Atg10, and conjugates Atg12 to Atg5. On the other hand, Atg7 transfers Atg8 to another E2-like enzyme Atg3, and conjugates Atg8 to phosphatidylethanolamine. Many of these ATG genes are conserved also in mammals. Atg7 deficient neonates die soon after birth as they cannot endure perineonatal starvation. Conditional deletion of Atg7 in nerves system results in neurodegeneration with ubiquitin containing aggregates.

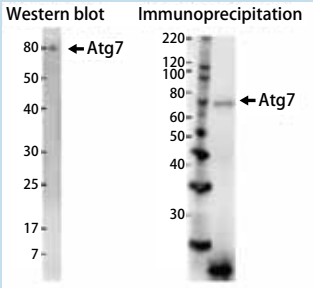


Fig.2 Sample: Lysate of Hela Cells

Bif1

Bif1 (Bax interacting factor 1; also known as SH3GLB1 was initially cloned as a binding partner of the pro-apoptotic Bax protein. This protein is a member of the endophilin B protein family and contains an amino-terminal N-BAR domain and a carboxy-terminal Src homology 3 (SH3) domain1), . Bif1 gene encodes a predicted protein of 365 amino acid and mouse and human Bif-1 protein are highly conserved and share 96% identity at the amino acids level. RNA expression of Bif-1 in human tissue is abundant in heart, skeletal muscle, kidney, and placenta1). Bif-1 protein plays a critical role in apoptosis, mitochondrial morphology and autophagy. Loss of Bif-1 suppresses programmed cell death and promotes tumorigenesis5).

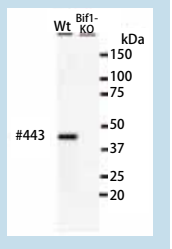


Fig.3 Western blot analysis of Bif1 with Bif1 antibody (clone#443) at 1:500 dilution blocked with 3% skim milk in TBS-T.

Gtr2

Gtr2 (341 amino acids, 38.6 kDa) is the yeast homologue of RagC identified in yeast and classified as a Ras-like small GTPase subfamily. In cytoplasm, GTP-bound Gtr2 forms a heterodimer with Gtr1, which is involved in autophagy through mTOR signal pathway.

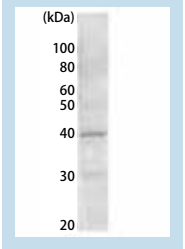


Fig.4 Western blot analysis of Gtr2 protein in the whole cell extract of S. cerevisiae (10 mg). AntiGtr2 antibody was used at 1:1,000 dilution.

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