

Microtubule-associated protein 1A/1B-light chain 3 (LC3) is a soluble protein with a molecular mass of approximately 17 kDa that is distributed ubiquitously in mammalian tissues and cultured cells. During autophagy, autophagosomes engulf cytoplasmic components, including cytosolic proteins and organelles. Concomitantly, a cytosolic form of LC3 (LC3-I) is conjugated to phosphatidylethanolamine to form LC3-phosphatidylethanolamine conjugate (LC3-II), which is recruited to autophagosomal membranes. Autophagosomes fuse with lysosomes to form autolysosomes, and intra-autophagosomal components are degraded by lysosomal hydrolases. At the same time, LC3-II in autolysosomal lumen is degraded. Thus, lysosomal turnover of the autophagosomal marker LC3-II reflects starvation-induced autophagic activity, and detecting LC3 by immunoblotting or immunofluorescence has become a reliable method for monitoring autophagy and autophagy-related processes, including autophagic cell death. Here we describe basic protocols to assay for endogenous LC3-II by immunoblotting, immunoprecipitation, and immunofluorescence ¹⁾.

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Tanida I, Ueno T, Kominami E. LC3 and Autophagy. *Methods Mol Biol.* 2008;445:77-88. doi: 10.1007/978-1-59745-157-4_4. PubMed PMID: 18425443.

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