

POLYCLONAL ANTIBODY

# Anti-LC3 pAb

Code No.  
PD014

Quantity  
100 µL

Form  
Purified IgG

**BACKGROUND:** Macroautophagy mediates the bulk degradation of cytoplasmic components. These components are delivered to lysosomes via autophagosomes. The rat microtubule-associated protein 1 light chain 3 (LC3), a homologue of yeast Atg8 (Aut7/Apg8), localizes to autophagosomal membranes after post-translational modifications. The C-terminal fragment of LC3 is cleaved immediately following synthesis to yield a cytosolic form called LC3-I. A subpopulation of LC3-I is further converted to an autophagosome-associating form, LC3-II. This antibody can detect both forms of LC3.

**SOURCE:** This antibody was purified from rabbit serum using protein A agarose. The rabbit was immunized with the recombinant full-length rat LC3.

**FORMULATION:** 100 µL volume of PBS containing 50% glycerol, pH 7.2. No preservative is contained.

**STORAGE:** This antibody is stable for one year from the date of purchase when stored at -20°C.

**REACTIVITY:** This antibody reacts with LC3-I and LC3-II on Western blotting.

**APPLICATIONS:**

Western blotting: 1:1,000 for chemiluminescence detection system

\*Blocking; 10% skimmed milk overnight at 4°C

Immunoprecipitation: Not tested

Immunohistochemistry: Not tested\*

Immunocytochemistry: Not tested\*

Flow cytometry: Not tested

\*It is reported that this antibody can be used in immunohistochemistry and immunocytochemistry in the reference number 4)-5) and 1), 3).

Detailed procedure is provided in the following **PROTOCOL**.

**SPECIES CROSS REACTIVITY:**

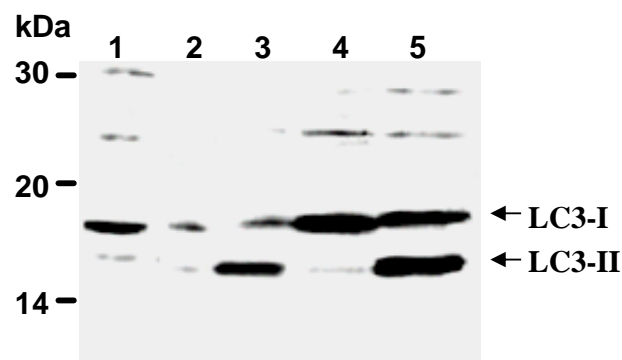
Species	Human	Mouse	Rat	Hamster
Cells	HeLa, A431	NIH/3T3	PC12	CHO
Reactivity on WB	+	+	+	+

**INTENDED USE:**

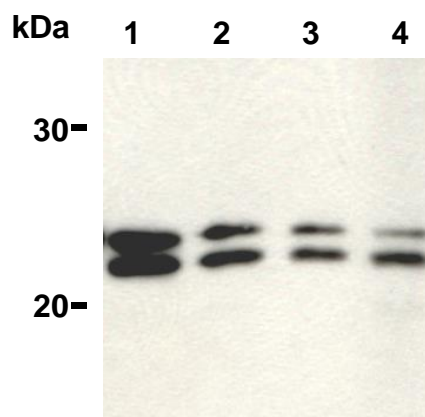
For Research Use Only. Not for use in diagnostic procedures.

**REFERENCES:**

- 1) Kobayashi, S., *et al.*, *PNAS* **112**, 7027-7032 (2015) [IC]
- 2) Delpuech, S., *et al.*, *J. Virol.* **86**, 8527-8535 (2012) [WB]
- 3) Brown, J. A., *et al.*, *J. Neurosci.* **30**, 5242-5252 (2010) [IC]
- 4) Wang, J., *et al.*, *J. Clin. Exp. Hematop.* **49**, 97-108 (2009) [IHC]
- 5) Takamura, A., *et al.*, *Biochem. Biophys. Res. Commun.* **367**, 616-622(2008) [WB, IHC]



**Western blot analysis of LC3-I and LC3-II expression in HeLa (1), A431 (2), NIH/3T3 (3), PC12 (4) and CHO (5) using PD014. LC3-II is modified form a subpopulation of LC3-I.**



**Western blot analysis of overexpressed HA-tagged LC3 in 293T cells.**

- Lane 1: Anti-HA Tag (Code no. 561)  
Lane 2: Anti-LC3 (polyclonal) (Code no. PM036)  
Lane 3: Anti-LC3 (51-11) (Code no. M115-3)  
Lane 4: Anti-LC3 (polyclonal) (Code no. PD014)

## PROTOCOL:

### SDS-PAGE & Western Blotting

To obtain starved or nutrient condition, cells were incubated with Hank's solution or DMEM respectively for 2 hours at 37°C.

- 1) Wash the cells 3 times with PBS and suspend with 10 volume of cold Lysis buffer (50 mM Tris-HCl, pH 7.2, 250 mM NaCl, 0.1% NP-40, 2 mM EDTA, 10% glycerol) containing appropriate protease inhibitors. Incubate it at 4°C with rotating for 30 minutes, then sonicate briefly (up to 10 seconds).
- 2) Centrifuge the tube at 12,000 x g for 10 minutes at 4°C and transfer the supernatant to another tube. Measure the protein concentration of the supernatant and add the cold Lysis buffer to make 8 mg/mL solution.
- 3) Mix the sample with equal volume of Laemmli's sample buffer.
- 4) Boil the samples for 3 minutes and centrifuge. Load 10 µL of the sample per lane in a 1 mm thick SDS-polyacrylamide gel for electrophoresis.
- 5) Blot the protein to a polyvinylidene difluoride (PVDF) membrane at 1 mA/cm<sup>2</sup> for 1 hour in a semi-dry transfer system (Transfer Buffer: 25 mM Tris, 190 mM glycine, 20% MeOH). See the manufacture's manual for precise transfer procedure.
- 6) To reduce nonspecific binding, place the membrane in 10% skimmed milk (in PBS, pH 7.2) overnight at 4°C.
- 7) Incubate the membrane with primary antibody diluted with PBS, pH 7.2 containing 1% skimmed milk as suggest in the **APPLICATIONS** for 1 hour at room temperature. (The concentration of antibody will depend on condition.)
- 8) Wash the membrane with PBS-T [0.05% Tween-20 in PBS] (5 minutes x 3 times).
- 9) Incubate the membrane with the 1:10,000 Anti-IgG (Rabbit) pAb-HRP (MBL; code no. 458) diluted with 1% skimmed milk (in PBS, pH 7.2) for 1 hour at room temperature.
- 10) Wash the membrane with PBS-T (10 minutes x 3 times).
- 11) Wipe excess buffer on the membrane, then incubate it with appropriate chemiluminescence reagent for 1 minute. Remove extra reagent from the membrane by dabbing with paper towel, and seal it in plastic wrap.
- 12) Expose to an X-ray film in a dark room for 2 minutes. Develop the film as usual. The condition for exposure and development may vary.

(Positive controls for Western blotting; HeLa, A431, NIH/3T3, PC1 and CHO)

### RELATED PRODUCTS:

PM036	Anti-LC3 pAb	[WB, IP, IC, IHC, FCM]
M152-3	Anti-LC3 mAb (4E12)	[WB, IP, IC, FCM, EM]
M186-3	Anti-LC3 mAb (8E10)	[WB]
M186-7	Anti-LC3 mAb-HRP-Direct (8E10)	
PD014	Anti-LC3 pAb	[WB]
PM045	Anti-p62 (SQSTM1) pAb	
PM066	Anti-p62 C-terminal pAb	

PM066-7	Anti-p62 C-terminal pAb-HRP-Direct	
M162-3	Anti-p62 (SQSTM1) (Human) mAb (5F2)	
M162-A48	Anti-p62 (SQSTM1) (Human) mAb -Alexa Fluor <sup>®</sup> 488 (5F2)	
M162-A59	Anti-p62 (SQSTM1) (Human) mAb -Alexa Fluor <sup>®</sup> 594 (5F2)	
M162-A64	Anti-p62 (SQSTM1) (Human) mAb -Alexa Fluor <sup>®</sup> 647 (5F2)	
PM074	Anti-Phospho-p62 (SQSTM1) (Ser351) pAb	
M217-3	Anti-Phospho-p62 (SQSTM1) (Ser351) mAb	
D343-3	Anti-Phospho-p62 (SQSTM1) (Ser403) mAb (4F6)	
D344-3	Anti-Phospho-p62 (SQSTM1) (Ser403) mAb (4C8)	
PD017	Anti-Becclin 1 pAb	
PM037	Anti-GABARAP pAb	
M135-3	Anti-GABARAP mAb (1F4)	
PM038	Anti-GATE-16 pAb	
PD041	Anti-Atg2A pAb	
PM034	Anti-Atg3 pAb	
M133-3	Anti-Atg3 mAb (3E8)	
M134-3	Anti-Atg4B mAb (9H5)	
PM050	Anti-Atg5 pAb	
M153-3	Anti-Atg5 mAb (4D3)	
PM039	Anti-Atg7 (Human) pAb	
PD042	Anti-Atg9A pAb	
M151-3	Anti-Atg10 (Human) mAb (5A7)	
M154-3	Anti-Atg12 (Human) mAb (6E5)	
PD036	Anti-Atg13 (Human) pAb	
M183-3	Anti-Atg13 mAb (5G4)	
PD026	Anti-Atg14 pAb	
M184-3	Anti-Atg14 (Human) mAb (4H8)	
PM040	Anti-Atg16L pAb	
M150-3	Anti-Atg16L mAb (1F12)	
M160-3	Anti-UVRAG mAb (1H4)	
PD027	Anti-Rubicon (Human) pAb	
M170-3	Anti-Rubicon (Human) mAb (1H6)	
PD037	Anti-Tel2 pAb	
PM069	Anti-NRF2 pAb	
M200-3	Anti-NRF2 mAb (1F2)	
PM072	Anti-VMP1 pAb	
PM076	Anti-Syntaxin-17 (Human) pAb	
M212-3	Anti-Syntaxin-17 (Human) mAb (2F8)	

### Kits

8485	Autophagy Ab Sampler Set
8486	Autophagy Watch
PM036-PN	Positive control for anti-LC3 antibody

WB: Western blotting  
IP: Immunoprecipitation  
IC: Immunocytochemistry  
IHC: Immunohistochemistry  
FCM: Flow cytometry  
EM: Immuno-electron microscopy

Other related antibodies and kits are also available.  
Please visit our website at <http://ruo.mbl.co.jp/>