Human LC3B Antibody

Monoclonal Mouse IgG_{2A} Clone # 1082854

Catalog Number: MAB11606

DESCRIPTION

Species Reactivity	Human
Specificity	Detects a synthetic peptide specific for human LC3B around amino acid 10 in Direct ELISA.
Source	Monoclonal Mouse IgG_{2A} Clone # 1082854
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Synthetic Peptide Accession # Q9GZQ8
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose.

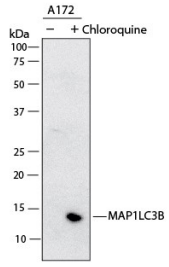
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	2 µg/mL	A172 human glioblastoma cell line untreated (-) or treated (+) with 50 µM Chloroquine for 18 hours

DATA

Western Blot



Detection of Human LC3B by Western Blot. Western Blot shows lysates of A172 human glioblastoma cell line untreated (-) or treated (+) with 50µM Chloroquine for 18 hours. PVDF membrane was probed with 2 µg/ml of Mouse Anti-Human LC3B Monoclonal Antibody (Catalog # MAB11606) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). A specific band was detected for LC3B at approximately 14 kDa (as indicated). This experiment was conducted under reducing conditions and using Western Blot Buffer Group 1.

PREPARATION AND STORAGE

Reconstitution	Reconstitute lyophilized material at 0.2 mg/ml in sterile PBS. For liquid material, refer to CoA for concentration.
Shipping	Lyophilized product is shipped at ambient temperature. Liquid small pack size (-SP) is shipped with polar packs. Upon receipt, store immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

Human Microtubule-associated Protein (MAP) Light Chain 3 (LC3) A is a121 amino acid (aa) protein with a predicted molecular weight of 14 kDa. It is a member of the LC3 subfamily of Autophagy-related 8 (Atg8) proteins (1). The LC3 subfamily also includes LC3B andLC3C. LC3 exhibits 100% aa sequence identity with its mouse and rat orthologs, and is orthologous to the yeast autophagy-related protein Atg8. Atg8 family members show structural similarity with Ubiquitin, but lack aa sequence similarity. LC3 was originally described as part is part of a complex that includes heavy and light chains comprising the MAP1 family of microtubule regulatory proteins (3). However, LC3 has gained attention for MAP1-independent functions in autophagy. LC3 utilizes a ubiquitin-like conjugation system that includes E1-, E2-, and E3-like enzymes to covalently attach phosphatidylethanolamine (PE) to its C-terminus, incorporating it into the phagophore membrane during the early stages of autophagasome formation (4). Recruitment of LC3 to the phagophore may promote membrane elongation (4,5). It may also be involved in cargo recruitment to autophagosomes (1). LC3 is often used as a marker of autophagy.

References:

1. Shpilka, T. *et al.* (2011) Genome Biol. **12**:226.
2. He, H. *et al.* (2003) J. Biol. Chem. **278**:29278.
3. Kuznetsov, S.A. & V.I. Gelfand (1987) FEBS Let. **212**:145.
4. Weidberg, H. *et al.* (2011) Ann Rev. Biochem. **80**:125.
5. Weidberg, H. *et al.* (2010) EMBO J. **29**:1792.

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