

Clathrin LC (3F133): sc-58717

BACKGROUND

Clathrin is a major cytosolic coat protein in pits and vesicles originating from the plasma membrane and the *trans*-Golgi network. In receptor-mediated endocytosis, receptor proteins are engulfed by clathrin-coated vesicles. Clathrin is composed of three heavy chains and three light chains which associate non-covalently to form a triskelion structure. Clathrin light chain regulates the self-assembly of triskelions onto intracellular membranes. Clathrin light chain subunits (LCA and LCB) contribute to regulation of coated vesicle formation to sort proteins during receptor-mediated endocytosis and organelle biogenesis. Although LCA and LCB are encoded by two discrete genes sharing only 60% homology, they have certain features in common. Both LCA and LCB undergo alternative mRNA splicing, which results in the generation of tissue-specific isoforms. Additionally, in the brain, LCA and LCB contain inserted sequences that form higher molecular weight isoforms. These sequences insert at similar cytoplasmic domain encoding regions for both LCA and LCB.

REFERENCES

1. Pearse, B.M. 1987. Clathrin and coated vesicles. *EMBO J.* 6: 2507-2512.
2. Pearse, B.M. and Crowther, R.A. 1987. Structure and assembly of coated vesicles. *Annu. Rev. Biophys. Biochem.* 16: 49-68.
3. Jackson, A.P., et al. 1988. Structure of human Clathrin light chains. Conservation of light chain polymorphism in three mammalian species. *J. Biol. Chem.* 263: 16688-16695.
4. Acton, S.L., et al. 1990. Predominance of Clathrin light chain LCB correlates with the presence of a regulated secretory pathway. *J. Cell Biol.* 111: 1419-1426.
5. Wong, D.H., et al. 1990. Neuron-specific expression of high-molecular-weight Clathrin light chain. *J. Neurosci.* 10: 3025-3031.
6. Acton, S.L., et al. 1993. Alteration of Clathrin light chain expression by transfection and gene disruption. *Mol. Biol. Cell* 4: 647-660.
7. Nakamura, Y., et al. 1994. Involvement of Clathrin light chains in the pathology of Alzheimer's disease. *Acta Neuropathol.* 87: 23-31.

CHROMOSOMAL LOCATION

Genetic locus: CLTA (human) mapping to 9p13.3, CLTB (human) mapping to 5q35.2; Clta (mouse) mapping to 4 B1, Cltb (mouse) mapping to 13 B1.

SOURCE

Clathrin LC (3F133) is a mouse monoclonal antibody raised against a synthetic peptide corresponding to amino acids 23-44 of Clathrin LC of bovine origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

Clathrin LC (3F133) is recommended for detection of Clathrin LCA and Clathrin LCB of mouse, rat, human, bovine, *Xenopus* and zebrafish origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight (predicted) of Clathrin LCA isoforms: 27/24 kDa.

Molecular Weight (predicted) of Clathrin LCB isoforms: 25/23 kDa.

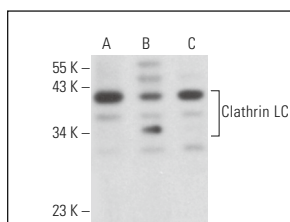
Molecular Weight (observed) of Clathrin LC: 31-44 kDa.

Positive Controls: PC-3 cell lysate: sc-2220, C6 whole cell lysate: sc-364373 or A-10 cell lysate: sc-3806.

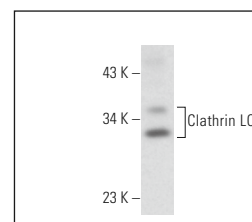
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Clathrin LC (3F133): sc-58717. Western blot analysis of Clathrin LC expression in C6 (A), RPE-J (B) and A-10 (C) whole cell lysates.



Clathrin LC (3F133): sc-58717. Western blot analysis of Clathrin LC expression in PC-3 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Neumann, K., et al. 2015. Chemokine transfer by liver sinusoidal endothelial cells contributes to the recruitment of CD4⁺ T cells into the murine liver. *PLoS ONE* 10: e0123867.
2. Seliverstova, E.V. and Prutskova, N.P. 2015. Receptor-mediated endocytosis of lysozyme in renal proximal tubules of the frog *Rana temporaria*. *Eur. J. Histochem.* 59: 2482.

RESEARCH USE

For research use only, not for use in diagnostic procedures.