



Clathrin HC (4A8): sc-57684

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 captured 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 heavy chain (HC) is composed of a terminal globular domain, a distal segment and a proximal segment containing a light chain binding site. The proximal segment of the Clathrin HC protein is essential for interactions between Clathrin heavy chains and light chains which result in the formation of the triskelion structure.

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. Biophys. Chem.* 16: 49-68.
3. Kirchhausen, T., Harrison, S.C., Chow, E.P., Mattaliano, R.J., Ramachandran, K.L., Smart, J. and Brosius, J. 1987. Clathrin heavy chain: molecular cloning and complete primary structure. *Proc. Natl. Acad. Sci. USA* 84: 8805-8809.
4. Jackson, A.P. and Parham, P. 1988. Structure of human Clathrin light chains. Conservation of light chain polymorphism in three mammalian species. *J. Biol. Chem.* 263: 16688-16695.
5. Liu, S.H., Wong, M.L., Craik, C.S. and Brodsky, F.M. 1995. Regulation of Clathrin assembly and trimerization defined using recombinant triskelion hubs. *Cell* 83: 257-267.
6. Hunziker, W. and Geuze, H.J. 1996. Intracellular trafficking of lysosomal membrane proteins. *Bioessays* 18: 379-389.
7. Mellman, I. 1996. Endocytosis and molecular sorting. *Annu. Rev. Cell Dev. Biol.* 12: 575-625.

SOURCE

Clathrin HC (4A8) is a mouse monoclonal antibody raised against sucrose purified Clathrin coated vesicles of soybean origin.

PRODUCT

Each vial contains 200 µg IgG₁ 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 HC (4A8) is recommended for detection of Clathrin heavy chain of soybean origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of Clathrin HC: 192 kDa.

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) 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.

SELECT PRODUCT CITATIONS

1. Van Damme, D., Gadeyne, A., Vanstraelen, M., Inzé, D., Van Montagu, M.C., De Jaeger, G., Russinova, E. and Geelen, D. 2011. Adaptin-like protein TPLATE and Clathrin recruitment during plant somatic cytokinesis occurs via two distinct pathways. *Proc. Natl. Acad. Sci. USA* 108: 615-620.
2. McMichael, C.M., Reynolds, G.D., Koch, L.M., Wang, C., Jiang, N., Nadeau, J., Sack, F.D., Gelderman, M.B., Pan, J. and Bednarek, S.Y. 2013. Mediation of Clathrin-dependent trafficking during cytokinesis and cell expansion by *Arabidopsis* stomatal cytokinesis defective proteins. *Plant Cell* 25: 3910-3925.
3. Johnson, A., Dahhan, D.A., Gnyliukh, N., Kaufmann, W.A., Zheden, V., Costanzo, T., Mahou, P., Hrtyan, M., Wang, J., Aguilera-Servin, J., van Damme, D., Beaupaire, E., Loose, M., Bednarek, S.Y. and Friml, J. 2021. The TPLATE complex mediates membrane bending during plant clathrin-mediated endocytosis. *Proc. Natl. Acad. Sci. USA* 118: e2113046118.
4. Wang, P., Siao, W., Zhao, X., Arora, D., Wang, R., Eeckhout, D., Van Leene, J., Kumar, R., Houbaert, A., De Winne, N., Mylle, E., Vandorpe, M., Korver, R.A., Testerink, C., Gevaert, K., Vanneste, S., De Jaeger, G., et al. 2023. Adaptor protein complex interaction map in *Arabidopsis* identifies P34 as a common stability regulator. *Nat. Plants* 9: 355-371.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.



See **Clathrin HC (TD.1): sc-12734** for Clathrin HC antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.