

Uncoating ATPase

Cat.No. 149 011; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. For reconstitution add 100 µl H ₂ O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use.
Applications	WB: 1 : 500 up to 1 : 5000 (AP staining) IP: not tested yet ICC: 1 : 500 IHC: yes IHC-P/FFPE: 1 : 200
Clone	3C5
Subtype	IgG1 (κ light chain)
Immunogen	Recombinant protein corresponding to AA 1 to 650 from bovine Uncoating ATPase
Epitop	Epitop: AA 391 to 546 from bovine Uncoating ATPase
Reactivity	Reacts with: human (P11142), rat (P63018), mouse (P63017), hamster, cow. Other species not tested yet.
Specificity	Specific for uncoating ATPase.
Remarks	For fixation a 20 min treatment with 3.7 % PFA in PBS is recommended. When microinjected into cells, the antibody inhibits clathrin mediated endocytosis.

TO BE USED IN VITRO / FOR RESEARCH ONLY

NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Clathrin coated vesicles are involved in a wide variety of transport events of the eucaryotic cell. This includes receptor mediated endocytosis or the recycling of synaptic vesicles in nerve terminals.

Before the vesicles can fuse with the endosomal compartment the clathrin coat has to be removed in an ATP dependent process. **Uncoating ATPase** (UA), also referred to as **hsc70**, has been shown to be functionally involved in this process.

Uncoating ATPase belongs to the heatshock protein (hsp70) family. Most proteins of this family are molecular chaperones and the uncoating ATPase shares the ability to refold proteins in several cellular processes.

Selected References SYSY Antibodies

Evidence for a Clathrin-independent mode of endocytosis at a continuously active sensory synapse.

Fuchs M, Brandstätter JH, Regus-Leidig H

Frontiers in cellular neuroscience (2014) 8: 60. **IHC; tested species: rat**

Cysteine string protein-alpha prevents activity-dependent degeneration in GABAergic synapses.

García-Junco-Clemente P, Cantero G, Gómez-Sánchez L, Linares-Clemente P, Martínez-López JA, Luján R, Fernández-Chacón R
The Journal of neuroscience : the official journal of the Society for Neuroscience (2010) 30(21): 7377-91. **WB**

The SNARE protein vti1a functions in dense-core vesicle biogenesis.

Walter AM, Kurps J, de Wit H, Schöning S, Toft-Bertelsen TL, Lauks J, Ziolkiewicz I, Weiss AN, Schulz A, Fischer von Mollard G, Verhage M, et al.

The EMBO journal (2014) 33(15): 1681-97. **WB; tested species: mouse**

Composition of isolated synaptic boutons reveals the amounts of vesicle trafficking proteins.

Wilhelm BG, Mandad S, Truckenbrodt S, Kröhnert K, Schäfer C, Rammner B, Koo SJ, Claßen GA, Krauss M, Haucke V, Urlaub H, et al.

Science (New York, N.Y.) (2014) 344(6187): 1023-8. **IHC; tested species: rat**

Synaptic function of nicastrin in hippocampal neurons.

Lee SH, Sharma M, Südhof TC, Shen J

Proceedings of the National Academy of Sciences of the United States of America (2014) 111(24): 8973-8. **WB; tested species: mouse**

CSPα knockout causes neurodegeneration by impairing SNAP-25 function.

Sharma M, Burré J, Bronk P, Zhang Y, Xu W, Südhof TC

The EMBO journal (2012) 31(4): 829-41. **WB; tested species: mouse**

CSPα promotes SNARE-complex assembly by chaperoning SNAP-25 during synaptic activity.

Sharma M, Burré J, Südhof TC

Nature cell biology (2011) 13(1): 30-9. **WB; tested species: mouse**

Alpha-synuclein promotes SNARE-complex assembly in vivo and in vitro.

Burré J, Sharma M, Tsetsenis T, Buchman V, Etherton MR, Südhof TC

Science (New York, N.Y.) (2010) 329(5999): 1663-7. **WB**

Quantitative proteomics analysis of cell cycle-regulated Golgi disassembly and reassembly.

Chen X, Simon ES, Xiang Y, Kachman M, Andrews PC, Wang Y

The Journal of biological chemistry (2010) 285(10): 7197-207. **WB; tested species: rat**

Dominant-interfering Hsc70 mutants disrupt multiple stages of the clathrin-coated vesicle cycle in vivo.

Newmyer SL, Schmid SL

The Journal of cell biology (2001) 152(3): 607-20. **WB**

ATP- and cytosol-dependent release of adaptor proteins from clathrin-coated vesicles: A dual role for Hsc70.

Hannan LA, Newmyer SL, Schmid SL

Molecular biology of the cell (1998) 9(8): 2217-29.

Receptor-mediated endocytosis is sensitive to antibodies against the uncoating ATPase (hsc70).

Höning S, Kreimer G, Robenek H, Jockusch BM

Journal of cell science (1994) 107 (Pt 5): 1185-96.

Endosomal sorting of readily releasable synaptic vesicles.

Hoopmann P, Punge A, Barysch SV, Westphal V, Bückers J, Opazo F, Bethani I, Lauterbach MA, Hell SW, Rizzoli SO

Proceedings of the National Academy of Sciences of the United States of America (2010) 107(44): 19055-60.

Selected General References

Hsc70 is required for endocytosis and clathrin function in Drosophila.

Chang HC, Newmyer SL, Hull MJ, Ebersold M, Schmid SL, Mellman I

The Journal of cell biology (2002) 159(3): 477-87.

Clathrin-protein interactions.

Lafer EM

Traffic (Copenhagen, Denmark) (2002) 3(8): 513-20.

Characterization of the coated vesicle uncoating ATPase: tissue distribution, association with and activity on intact coated vesicles.

Paddenberger R, Wiegand C, Jockusch BM

European journal of cell biology (1990) 52(1): 60-6.