

## Amphiphysin

Cat.No. 120 002; Polyclonal rabbit antibody, 200 µl antiserum (lyophilized)

### Data Sheet

|                            |  |
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| Reconstitution/<br>Storage | 200 µl antiserum, lyophilized. For reconstitution add 200 µl H <sub>2</sub> O, then aliquot and store at -20°C until use.              |
| Applications               | <b>WB:</b> 1 : 1000 (AP staining)<br><b>IP:</b> yes<br><b>ICC:</b> 1 : 500<br><b>IHC:</b> 1 : 400<br><b>IHC-P/FFPE:</b> not tested yet |
| Immunogen                  | Synthetic peptide corresponding to AA 2 to 15 from rat Amphiphysin (UniProt Id: O08838)  |
| Reactivity                 | Reacts with: human (P49418), rat (O08838), mouse (Q7TQF7), hamster, cow, chicken.<br>Other species not tested yet.                     |
| Specificity                | Specific for amphiphysin.  |
| matching<br>control        | 120-0P   |

**TO BE USED IN VITRO / FOR RESEARCH ONLY**  
**NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS**

**Amphiphysin**, a dominant autoantigen in paraneoplastic Stiff-man syndrome, is a neuronal protein highly concentrated in nerve terminals. It is an abundant presynaptic protein that interacts via its COOH-terminal src homology 3 (SH3) domain with the GTPase dynamin and the inositol-5-phosphatase synaptojanin and additionally directly to clathrin. Amphiphysin, dynamin and synaptojanin have a putative role in synaptic vesicle recycling and undergo rapid dephosphorylation in synaptosomes stimulated by a depolarizing stimulus. Two isoforms are known which seem to act in concert as a heterodimer.

### Selected References SYSY Antibodies

- 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. **WB, ICC, IHC; tested species: mouse, rat**
- 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, EM; tested species: rat**
- Modes and regulation of endocytic membrane retrieval in mouse auditory hair cells. Neef J, Jung S, Wong AB, Reuter K, Pangrsic T, Chakrabarti R, Kügler S, Lenz C, Nouvian R, Boumil RM, Frankel WN, et al. *The Journal of neuroscience : the official journal of the Society for Neuroscience* (2014) 34(3): 705-16. **IHC; tested species: mouse**
- Role of the clathrin terminal domain in regulating coated pit dynamics revealed by small molecule inhibition. von Kleist L, Stahlschmidt W, Bulut H, Gromova K, Puchkov D, Robertson MJ, MacGregor KA, Tomilin N, Tomlin N, Pechstein A, Chau N, et al. *Cell* (2011) 146(3): 471-84. **ICC; tested species: mouse**
- A pathologic cascade leading to synaptic dysfunction in alpha-synuclein-induced neurodegeneration. Scott DA, Tabarean I, Tang Y, Cartier A, Masliah E, Roy S *The Journal of neuroscience : the official journal of the Society for Neuroscience* (2010) 30(24): 8083-95. **ICC**
- Sleep deprivation-induced protein changes in basal forebrain: implications for synaptic plasticity. Basheer R, Brown R, Ramesh V, Begum S, McCarley RW *Journal of neuroscience research* (2005) 82(5): 650-8. **WB**
- SCAMP1 function in endocytosis. Fernández-Chacón R, Achiriloaie M, Janz R, Albanesi JP, Südhof TC *The Journal of biological chemistry* (2000) 275(17): 12752-6. **WB**
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- 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.

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- The structural era of endocytosis. Marsh M, McMahon HT *Science (New York, N.Y.)* (1999) 285(5425): 215-20.
- The amphiphysin family of proteins and their role in endocytosis at the synapse. Wigge P, McMahon HT *Trends in neurosciences* (1998) 21(8): 339-44.
- Amphiphysin heterodimers: potential role in clathrin-mediated endocytosis. Wigge P, Köhler K, Vallis Y, Doyle CA, Owen D, Hunt SP, McMahon HT *Molecular biology of the cell* (1997) 8(10): 2003-15.
- A role of amphiphysin in synaptic vesicle endocytosis suggested by its binding to dynamin in nerve terminals. David C, McPherson PS, Mundigl O, de Camilli P *Proceedings of the National Academy of Sciences of the United States of America* (1996) 93(1): 331-5.
- The synaptic vesicle cycle: a cascade of protein-protein interactions. Südhof TC *Nature* (1995) 375(6533): 645-53.
- Synaptic vesicles and exocytosis. Jahn R, Südhof TC *Annual review of neuroscience* (1994) 17: 219-46.
- The synaptic vesicle-associated protein amphiphysin is the 128-kD autoantigen of Stiff-Man syndrome with breast cancer. De Camilli P, Thomas A, Cofield R, Folli F, Lichte B, Piccolo G, Meinck HM, Austoni M, Fassetta G, Bottazzo G, Bates D, et al. *The Journal of experimental medicine* (1993) 178(6): 2219-23.