Synaptic Systems

Rudolf-Wissell-Str. 28
37079 Göttingen, Germany
Phone: +49 551-50556-0
Fax: +49 551-50556-384
E-mail: sales@sysy.com
Web: www.sysy.com

α/β SNAP

Cat.No. 112 111; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. For reconstitution add 100 µl H_2O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use.
Applications	**WB**: 1 : 1000 up to 1 : 10000 (AP staining) **IP**: yes **ICC**: 1 : 500 up to 1 : 1000 **IHC**: yes **IHC-P/FFPE**: not tested yet
Clone	77.2
Subtype	IgG1 (κ light chain)
Immunogen	Recombinant protein corresponding to AA 1 to 295 from rat α SNAP (UniProt Id: P54921)
Reactivity	Reacts with: human (P54920, P60880), rat (P54921, P60881), mouse (Q9DB05, P28663), zebrafish. Other species not tested yet.
Specificity	Specific for α- and β SNAP, does not cross-react to γ SNAP.
Remarks	The antibody does not immunoprecipitate the 20 S SNARE-complex.

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

The proteins **α/β-SNAP** are two related soluble and highly conserved proteins that bind to the fusion complex (SNARE complex), thus allowing the N-ethylmaleimide sensitive fusion protein NSF to bind to the complex. **γ-SNAP** binds directly to NSF and Gaf-1/Rip11, a protein of the Rab11 interacting family. In contrast to α/β-SNAP it does not interact directly with SNARE proteins and is not required for ER-Golgi transport. SNAP-proteins are abundantly expressed in all tissues. They are partially soluble, partially membrane-bound.

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**

Cortical Granule Exocytosis Is Mediated by Alpha-SNAP and N-Ethilmaleimide Sensitive Factor in Mouse Oocytes.
de Paola M, Bello OD, Michaut MA
PloS one (2015) 10(8): e0135679. **WB**

Ubiquitin-Synaptobrevin Fusion Protein Causes Degeneration of Presynaptic Motor Terminals in Mice.
Liu Y, Li H, Sugiura Y, Han W, Gallardo G, Khvotchev M, Zhang Y, Kavalali ET, Südhof TC, Lin W
The Journal of neuroscience : the official journal of the Society for Neuroscience (2015) 35(33): 11514-31. **WB**

An essential and NSF independent role for α-SNAP in store-operated calcium entry.
Miao Y, Miner C, Zhang L, Hanson PI, Dani A, Vig M
eLife (2013) 2: e00802. **WB; KD verified**

Doc2b is a high-affinity Ca2+ sensor for spontaneous neurotransmitter release.
Groffen AJ, Martens S, Díez Arazola R, Cornelisse LN, Lozovaya N, de Jong AP, Goriounova NA, Habets RL, Takai Y, Borst JG, Brose N, et al.
Science (New York, N.Y.) (2010) 327(5973): 1614-8. **WB; tested species: mouse**

alpha-SNAP and NSF are required in a priming step during the human sperm acrosome reaction.
Tomes CN, De Blas GA, Michaut MA, Farré EV, Cherhitin O, Visconti PE, Mayorga LS
Molecular human reproduction (2005) 11(1): 43-51. **ICC; tested species: human**

SNARE proteins are highly enriched in lipid rafts in PC12 cells: implications for the spatial control of exocytosis.
Chamberlain LH, Burgoyne RD, Gould GW
Proceedings of the National Academy of Sciences of the United States of America (2001) 98(10): 5619-24. **WB; tested species: rat**

Comparison of cysteine string protein (Csp) and mutant alpha-SNAP overexpression reveals a role for csp in late steps of membrane fusion in dense-core granule exocytosis in adrenal chromaffin cells.
Graham ME, Burgoyne RD
The Journal of neuroscience : the official journal of the Society for Neuroscience (2000) 20(4): 1281-9. **ICC**

The N-ethylmaleimide-sensitive fusion protein and alpha-SNAP induce a conformational change in syntaxin.
Hanson PI, Otto H, Barton N, Jahn R
The Journal of biological chemistry (1995) 270(28): 16955-61. **WB**

Selected General References

Mapping of functional domains of gamma-SNAP.
Tani K, Shibata M, Kawase K, Kawashima H, Hatsuzawa K, Nagahama M, Tagaya M
The Journal of biological chemistry (2003) 278(15): 13531-8.

Mechanisms of synaptic vesicle exocytosis.
Lin RC, Scheller RH
Annual review of cell and developmental biology (2000) 16: 19-49.

Membrane fusion and exocytosis.
Jahn R, Südhof TC
Annual review of biochemistry (1999) 68: 863-911.

Alpha-SNAP but not gamma-SNAP is required for ER-Golgi transport after vesicle budding and the Rab1-requiring step but before the EGTA-sensitive step.
Peter F, Wong SH, Subramaniam VN, Tang BL, Hong W
Journal of cell science (1998) 111 (Pt 17): 2625-33.

The synaptic vesicle cycle: a cascade of protein-protein interactions.
Südhof TC
Nature (1995) 375(6533): 645-53.

Mechanisms of intracellular protein transport.
Rothman JE
Nature (1994) 372(6501): 55-63.