SYSY
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

Synaptotagmin 7

Cat.No. 105 173; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Rabbit serum albumin was added for stabilization. For reconstitution add 50 µl H_2O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use.
Applications	**WB**: 1 : 100 up to 1 : 1000 (AP staining) **IP**: not tested yet **ICC**: 1 : 200 (see remarks) **IHC**: 1 : 200 **IHC-P/FFPE**: not tested yet
Immunogen	Recombinant protein corresponding to AA 46 to 133 from rat Synaptotagmin7 (UniProt Id: Q62747)
Reactivity	Reacts with: human (O43581), rat (Q62747), mouse (Q9R0N7). Other species not tested yet.
Specificity	Recognizes synaptotagmin 7 (45 kDa) and splice variants C, D, E. (K.O. verified)
matching control	105-71P
Remarks	**ICC**: Methanol fixation recommended.

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

Synaptotagmin 7 is a proposed regulator of Ca^{2+} dependent exocytosis like neurotransmitter release. It occurs in several splicing variants which are expressed in a developmentally regulated pattern in brain. The distinct roles for the alternative splicing isoforms have not yet been determined. Synaptotagmin 7 shows Ca^{2+} dependent oligomerization via its own C2 domains leading to the formation of large linear structures which reside at the fusion site of vesicles and plasma membrane. These oligomers may be involved in the modulation of Ca^{2+} dependent exocytosis by opening or dilating fusion pores.

Selected References SYSY Antibodies

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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**

Mutant Huntingtin Is Secreted via a Late Endosomal/Lysosomal Unconventional Secretory Pathway.
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The Journal of neuroscience : the official journal of the Society for Neuroscience (2017) 37(37): 9000-9012. **WB, ICC; tested species: mouse**

A novel method for culturing stellate astrocytes reveals spatially distinct Ca2+ signaling and vesicle recycling in astrocytic processes.
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Synaptotagmin-7 as a positive regulator of glucose-induced glucagon-like peptide-1 secretion in mice.
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Diabetologia (2011) 54(7): 1824-30. **WB, IHC**

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Impaired insulin secretion and glucose intolerance in synaptotagmin-7 null mutant mice.
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Proceedings of the National Academy of Sciences of the United States of America (2008) 105(10): 3992-7. **ICC, IHC**

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Gauthier BR, Duhamel DL, Iezzi M, Theander S, Saltel F, Fukuda M, Wehrle-Haller B, Wollheim CB
FASEB journal : official publication of the Federation of American Societies for Experimental Biology (2008) 22(1): 194-206. **WB, ICC**

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Osborne SL, Wallis TP, Jimenez JL, Gorman JJ, Meunier FA
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Disabling the Gβγ-SNARE interaction disrupts GPCR-mediated presynaptic inhibition, leading to physiological and behavioral phenotypes.
Zurawski Z, Thompson Gray AD, Brady LJ, Page B, Church E, Harris NA, Dohn MR, Yim YY, Hyde K, Mortlock DP, Jones CK, et al.
Science signaling (2019) 12(569): . **WB; tested species: mouse**

The synaptotagmin C2B domain calcium-binding loops modulate the rate of fusion pore expansion.
Bendahmane M, Bohannon KP, Bradberry MM, Rao TC, Schmidtke MW, Abbineni PS, Chon NL, Tran S, Lin H, Chapman ER, Knight JD, et al.
Molecular biology of the cell (2018) : . **ICC; tested species: cow**

Glyoxal as an alternative fixative to formaldehyde in immunostaining and super-resolution microscopy.
Richter KN, Revelo NH, Seitz KJ, Helm MS, Sarkar D, Saleeb RS, D'Este E, Eberle J, Wagner E, Vogl C, Lazaro DF, et al.
The EMBO journal (2018) 37(1): 139-159. **ICC; tested species: mouse**

Synaptotagmin oligomerization is essential for calcium control of regulated exocytosis.
Bello OD, Jouannot O, Chaudhuri A, Stroeva E, Coleman J, Volynski KE, Rothman JE, Krishnakumar SS
Proceedings of the National Academy of Sciences of the United States of America (2018) 115(32): E7624-E7631. **WB; tested species: rat**

Synaptotagmin 7 and SYNCRIP proteins are ubiquitously expressed in the rat brain and co-localize in Purkinje neurons.
Tratnjek L, Živin M, Glavan G
Journal of chemical neuroanatomy (2017) 79: 12-21. **WB; tested species: rat**

Doc2B acts as a calcium sensor for vesicle priming requiring synaptotagmin-1, Munc13-2 and SNAREs.
Houy S, Groffen AJ, Ziomkiewicz I, Verhage M, Pinheiro PS, Sørensen JB
eLife (2017) 6: . **WB; KO verified; tested species: mouse**

The calcium sensor synaptotagmin 7 is required for synaptic facilitation.
Jackman SL, Turecek J, Belinsky JE, Regehr WG
Nature (2016) 529(7584): 88-91. **IHC; KO verified**