

Synaptopodin

Cat.No. 163 002; Polyclonal rabbit antibody, 200 µl antiserum (lyophilized)

Data Sheet

Reconstitution/ Storage	200 µl antiserum, lyophilized. For reconstitution add 200 µl H ₂ O, then aliquot and store at -20°C until use.
Applications	WB: 1 : 1000 (AP staining) IP: not tested yet ICC: 1 : 600 IHC: 1 : 250 up to 1 : 500 IHC-P/FFPE: 1 : 250 up to 1 : 500
Immunogen	Recombinant protein corresponding to AA 331 to 452 from mouse Synaptopodin (UniProt Id: Q9Z327-2)
Reactivity	Reacts with: human (Q8N3V7), rat (Q9Z327), mouse (Q8CC35). Other species not tested yet.
Specificity	Specific for Synaptopodin. Fragment used for immunization is present in all 3 isoforms. (K.O. verified)
matching control	163-0P

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

Synaptopodin is the founding member of a new class of proline-rich actin-associated proteins. Up to now three splice variants of synaptopodin have been identified. In neurons and podocytes the protein is expressed in a differentiation dependent manner. Synaptopodin deficient mice lack the dendritic spine apparatus and exhibit impaired activity-dependent long-term synaptic plasticity.

Selected References SYSY Antibodies

- Synaptopodin is regulated by aromatase activity.
Fester L, Zhou L, Ossig C, Labitzke J, Bläute C, Bader M, Vollmer G, Jarry H, Rune GM
Journal of neurochemistry (2017) 140(1): 126-139. **WB, ICC, IHC**
- Chronic corticosterone exposure alters postsynaptic protein levels of PSD-95, NR1, and synaptopodin in the mouse brain.
Cohen JW, Louneva N, Han LY, Hodes GE, Wilson RS, Bennett DA, Lucki I, Arnold SE
Synapse (New York, N.Y.) (2011) 65(8): 763-70. **WB, IHC**
- Synaptopodin regulates plasticity of dendritic spines in hippocampal neurons.
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The Journal of neuroscience : the official journal of the Society for Neuroscience (2009) 29(4): 1017-33. **WB, ICC**
- Structural Plasticity of Synaptopodin in the Axon Initial Segment during Visual Cortex Development.
Schlüter A, Del Turco D, Deller T, Gutzmann A, Schultz C, Engelhardt M
Cerebral cortex (New York, N.Y. : 1991) (2017) 27(9): 4662-4675. **IHC; KO verified**
- Interrogating the aged striatum: robust survival of grafted dopamine neurons in aging rats produces inferior behavioral recovery and evidence of impaired integration.
Collier TJ, O'Malley J, Rademacher DJ, Stancati JA, Sisson KA, Sortwell CE, Paumier KL, Gebremedhin KG, Steece-Collier K
Neurobiology of disease (2015) 77: 191-203. **IHC**
- NKG2D ligand overexpression in lupus nephritis correlates with increased NK cell activity and differentiation in kidneys but not in the periphery.
Spada R, Rojas JM, Pérez-Yagüe S, Mulens V, Cannata-Ortiz P, Bragado R, Barber DF
Journal of leukocyte biology (2015) 97(3): 583-98. **IHC**
- Distinct synaptic and neurochemical changes to the granule cell-CA3 projection in Bassoon mutant mice.
Dieni S, Nestel S, Sibbe M, Frotscher M, Hellwig S
Frontiers in synaptic neuroscience (2015) 7: 18. **IHC; tested species: mouse**
- Proteomic screening of glutamatergic mouse brain synaptosomes isolated by fluorescence activated sorting.
Biesemann C, Grønberg M, Luquet E, Wichert SP, Bernard V, Bungers SR, Cooper B, Varoquaux F, Li L, Byrne JA, Urlaub H, et al.
The EMBO journal (2014) 33(2): 157-70. **WB; tested species: mouse**
- Glomerular endothelial cell injury and damage precedes that of podocytes in adriamycin-induced nephropathy.
Sun YB, Qu X, Zhang X, Caruana G, Bertram JF, Li J
PloS one (2013) 8(1): e55027. **IHC**
- Podocytes require the engagement of cell surface heparan sulfate proteoglycans for adhesion to extracellular matrices.
Chen S, Wassenhove-McCarthy D, Yamaguchi Y, Holzman L, van Kuppevelt TH, Orr AW, Funk S, Woods A, McCarthy K
Kidney international (2010) 78(11): 1088-99. **IHC**
- Effect of the monocyte chemoattractant protein-1/CC chemokine receptor 2 system on nephrin expression in streptozotocin-treated mice and human cultured podocytes.
Tarabra E, Giunti S, Barutta F, Salvidio G, Burt D, Deferrari G, Gambino R, Vergola D, Pinach S, Perin PC, Camussi G, et al.
Diabetes (2009) 58(9): 2109-18. **IHC**

Selected General References

- Synaptopodin and 4 novel genes identified in primary sensory neurons.
Verpoorten N, Verhoeven K, Weckx S, Jacobs A, Serneels S, Del Favero J, Ceuterick C, Van Bockstaele DR, Berneman ZN, Van den Bosch L, Robberecht W, et al.
Molecular and cellular neurosciences (2005) 30(3): 316-25.
- Postnatal development of synaptopodin expression in the rodent hippocampus.
Czarnecki K, Haas CA, Bas Orth C, Deller T, Frotscher M
The Journal of comparative neurology (2005) 490(2): 133-44.
- Lamina-specific distribution of Synaptopodin, an actin-associated molecule essential for the spine apparatus, in identified principal cell dendrites of the mouse hippocampus.
Bas Orth C, Vlachos A, Del Turco D, Burbach GJ, Haas CA, Mundel P, Feng G, Frotscher M, Deller T
The Journal of comparative neurology (2005) 487(3): 227-39.
- Synaptopodin regulates the actin-bundling activity of alpha-actinin in an isoform-specific manner.
Asanuma K, Kim K, Oh J, Giardino L, Chabanis S, Faul C, Reiser J, Mundel P
The Journal of clinical investigation (2005) 115(5): 1188-98.
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Journal of neurochemistry (2005) 92(3): 597-606.