

Endophilin 1

Cat.No. 159 004; Polyclonal Guinea pig antibody, 100 µl antiserum (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µl antiserum, lyophilized. For reconstitution add 100 µl H ₂ O, then aliquot and store at -20°C until use.
Applications	WB: 1 : 1000 (AP staining) IP: yes ICC: 1 : 500 IHC: 1 : 500 IHC-P/FFPE: 1 : 500
Immunogen	Synthetic peptide corresponding to AA 256 to 276 from mouse Endophilin1 (UniProt Id: Q62420)
Reactivity	Reacts with: rat, mouse. Other species not tested yet.
Specificity	Specific for endophilin 1.
matching control	159-0P

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

Endophilins are SH3 domain proteins involved in endocytosis. Both, **Endophilin 1** and **2** have been shown to play important roles in clathrin mediated synaptic vesicle recycling. They recruit and stabilize the polyphosphoinositide phosphatase synaptojanin at nerve terminals.

The divergent C-terminal tail of Vglut1 has been reported to be a binding partner of Endophilin A1.

In contrast to Endophilin 1 that shows a brain specific expression, Endophilin 2 is abundantly expressed in different tissues.

Selected General References

Interaction between the vesicular glutamate transporter type 1 and endophilin A1, a protein essential for endocytosis. Vinatier J, Herzog E, Plamont MA, Wojcik SM, Schmidt A, Brose N, Daviet L, El Mestikawy S, Giros B Journal of neurochemistry (2006) 97(4): 1111-25.

Endophilin is required for synaptic vesicle endocytosis by localizing synaptojanin. Schuske KR, Richmond JE, Matthies DS, Davis WS, Runz S, Rube DA, van der Bliek AM, Jorgensen EM Neuron (2003) 40(4): 749-62.

Synaptojanin is recruited by endophilin to promote synaptic vesicle uncoating. Verstreken P, Koh TW, Schulze KL, Zhai RG, Hiesinger PR, Zhou Y, Mehta SQ, Cao Y, Roos J, Bellen HJ Neuron (2003) 40(4): 733-48.

Endophilin and synaptojanin hook up to promote synaptic vesicle endocytosis. Song W, Zinsmaier KE Neuron (2003) 40(4): 665-7.

Formation of an endophilin-Ca²⁺ channel complex is critical for clathrin-mediated synaptic vesicle endocytosis. Chen Y, Deng L, Maeno-Hikichi Y, Lai M, Chang S, Chen G, Zhang JF Cell (2003) 115(1): 37-48.

Endophilin-1: a multifunctional protein. Reutens AT, Begley CG The international journal of biochemistry & cell biology (2002) 34(10): 1173-7.

Endophilin mutations block clathrin-mediated endocytosis but not neurotransmitter release. Verstreken P, Kjaerulff O, Lloyd TE, Atkinson R, Zhou Y, Meinertzhagen IA, Bellen HJ Cell (2002) 109(1): 101-12.

Differential expression of endophilin 1 and 2 dimers at central nervous system synapses. Ringstad N, Nemoto Y, De Camilli P The Journal of biological chemistry (2001) 276(44): 40424-30.

Fission and uncoating of synaptic clathrin-coated vesicles are perturbed by disruption of interactions with the SH3 domain of endophilin. Gad H, Ringstad N, Löw P, Kjaerulff O, Gustafsson J, Wenk M, Di Paolo G, Nemoto Y, Crun J, Ellisman MH, De Camilli P, et al. Neuron (2000) 27(2): 301-12.

Endophilin/SH3p4 is required for the transition from early to late stages in clathrin-mediated synaptic vesicle endocytosis. Ringstad N, Gad H, Löw P, Di Paolo G, Brodin L, Shupliakov O, De Camilli P Neuron (1999) 24(1): 143-54.

Endophilin I mediates synaptic vesicle formation by transfer of arachidonate to lysophosphatidic acid. Schmidt A, Wolde M, Thiele C, Fest W, Kratzin H, Podtelejnikov AV, Witke W, Huttner WB, Söling HD Nature (1999) 401(6749): 133-41.

Synaptojanin forms two separate complexes in the nerve terminal. Interactions with endophilin and amphiphysin. Micheva KD, Kay BK, McPherson PS The Journal of biological chemistry (1997) 272(43): 27239-45.

SH3 domain-dependent interactions of endophilin with amphiphysin. Micheva KD, Ramjaun AR, Kay BK, McPherson PS FEBS letters (1997) 414(2): 308-12.

The SH3p4/SH3p8/SH3p13 protein family: binding partners for synaptojanin and dynamin via a Grb2-like Src homology 3 domain. Ringstad N, Nemoto Y, De Camilli P Proceedings of the National Academy of Sciences of the United States of America (1997) 94(16): 8569-74.