Synaptophysin 1

Cat.No. 101 004; Polyclonal Guinea pig antibody, 100 µl antiserum (lyophilized)

Data Sheet

Reconstitution/Storage

100 µl antiserum, lyophilized. For reconstitution add 100 µl H₂O, then aliquot and store at -20°C until use.

Applications

WB: 1 : 1000 (AP staining)
ICC: 1 : 1000
IHC: 1 : 500
IHC-P/FFPE: 1 : 200

Immunogen

Synthetic peptide corresponding to AA 301 to 313 from human Synaptophysin1

Reactivity

Reacts with: human (P08247), rat (P07825), mouse (Q62277), hamster, cow, chicken, frog.

Other species not tested yet.

Specificity

Specific for synaptophysin 1, no cross-reactivity to other synaptophysins.

Matching control

101-0P

Selected References SYSY Antibodies

Plekhgs-regulated autophagy of synaptic vesicles reveals a pathogenic mechanism in motoneuron disease.
Nature communications (2017) 8: 678. . . IHC, ICC, WB

Acute disruption of the synaptic vesicle membrane protein synaptotagmin 1 using knockoff in mouse hippocampal neurons.
Vevea JD, Chapman ER
eLife (2020) 9: 2. . . WB, ICC; tested species: mouse

Tetanus insensitive VAMP2 differentially restores synaptic and dense core vesicle fusion in tetanus neurotoxin treated neurons.
Hoogstraaten RI, van Keimpema L, Toonen RF, Verhage M
Cell reports (2020) 312: 107515. . . WB; tested species: mouse

Synaptophysin 1, also referred to as p38-1, is a membrane glycoprotein of synaptic vesicles that is ubiquitously expressed in all neurons and in many endocrine cells. It is currently the most widely used marker for nerve terminals and probably the best marker for the pathologist in differentiating neuroendocrine tumors.

Synaptophysin 1 has four transmembrane domains with both N- and C-terminus facing the cytoplasm. It binds to synaptobrevin 1 and synaptobrevin 2 in detergent extracts but its function has not been elucidated completely. It forms a complex with dynamin at high Ca²⁺ concentration suggesting an involvement in synaptic vesicle endocytosis. As typical for synaptic vesicle proteins, synaptophysin 1 represents a small protein family with two additional members, synaptoporin (synaptophysin 2) and p38-1, also referred to as synaptoporin, is widely expressed in neurons and colocalizes with synaptophysin 1 on synaptic vesicles whereas panthophysin is expressed in all tissues.