Phospho-Synaptotagmin-1 (S309) Antibody

Antigen Affinity-purified Polyclonal Rabbit IgG
Catalog Number: PPS085

DESCRIPTION

Species Reactivity	Human/Mouse/Rat/Bovine/Canine/Chicken/Primate/Zebrafish
Specificity	Rat Synaptotagmin phosphorylated at S309
Source	Polyclonal Rabbit IgG
Purification	Antigen Affinity-purified
Immunogen	Phosphopeptide corresponding to amino acid residues surrounding the phospho-S309 of Synaptotagmin-1
Formulation	100 µL in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 µg/mL BSA, and 50% glycerol. See Certificate of Analysis for details.

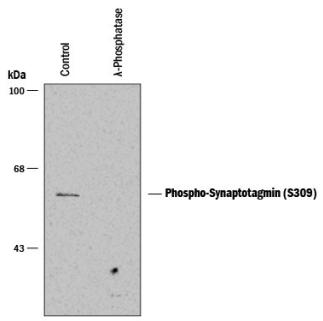
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	1:1000 dilution	See Below

DATA

Western Blot



Detection of Phospho-Synaptotagmin-1 (S309) by Western Blot. Western blot of rat cortex lysate showing specific immunolabeling of the ~60 kDa to ~62 kDa Synaptotagmin phosphorylated at S309 (Control). The phospho-specificity of this labeling is shown in the second lane (lambda-phosphatase: λ PPase). The blot is identical to the control except that it was incubated in λ PPase (1200 units for 30 minutes) before being exposed to the Anti-Synaptotagmin (S309). The immunolabeling is completely eliminated by treatment with λ PPase.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	For long-term storage, ≤ -20° C is recommended. Product is stable at ≤ -20° C for at least 1 year.

BACKGROUND

Synaptotagmins are integral membrane proteins of synaptic vesicles. Synaptotagmin-1 is a glycoprotein containing two C2 domains related to protein kinase C and sites for calcium-dependent binding of acidic phospholipids. Synaptotagmin-1 participates in the process of vesicular trafficking and exocytosis by inducing local calcium-dependent buckling of the plasma membrane. Synaptotagmin-2 is a single-pass, type Ia/III (no signal sequence) transmembrane (TM) glycoprotein. Synaptotagmin-2 is an integral component of neurotransmitter-containing synaptic vesicles that detects action potential-induced increases in presynaptic cytosolic calcium. Increased ionic calcium binds to synaptotagmin II at two sites (C2a and C2b) on its cytoplasmic tail. The first site also binds phospholipid, while the second site binds syntaxin. This promotes vesicle membrane fusion with the presynaptic plasma membrane, resulting in neurotransmitter release.

Synaptotagmins undergo three types of posttranslational modification that may affect function. N-linked glycosylation and/or O-linked glycosylation are likely necessary for recycling (internalization) of vesicle membrane after neurotransmitter release. Fatty acylation/palmitoylation of synaptotagmin may be necessary for proper cycling. Finally, synaptoagmin phosphorylation within the C2a site regulates calcium-binding, while phosphorylation in the C2b site may regulate calcium and syntaxin interaction.

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