

DESCRIPTION

Species Reactivity	Rat
Specificity	Detects Synaptotagmin-1 from rat, mouse, human, chicken, Xenopus, and fish.
Source	Monoclonal Mouse IgG _{2B} Clone # ASV48
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Rat brain synaptic plasma membranes
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

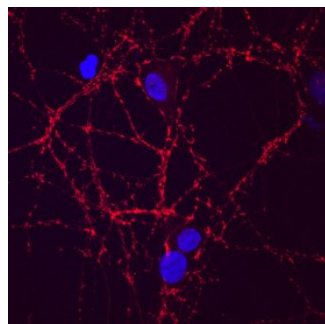
APPLICATIONS

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
Immunocytochemistry	8-25 µg/mL	See Below
Immunohistochemistry	8-25 µg/mL	See Below
Western Blot	Matthew, W.D. <i>et al.</i> (1981) J. Cell Biol. 91 :257. This application was not tested by R&D Systems.	
Immunoprecipitation	Matthew, W.D. <i>et al.</i> (1981) J. Cell Biol. 91 :257.	

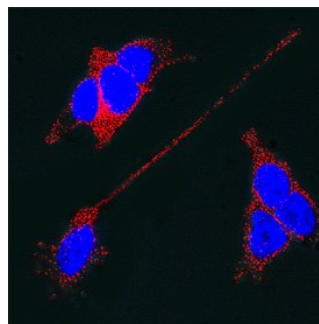
DATA

Immunocytochemistry



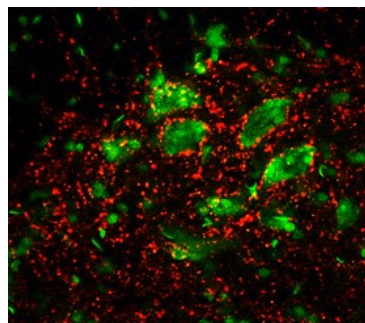
Synaptotagmin-1 in Rat Neurons.
Synaptotagmin-1 was detected in immersion fixed rat hippocampal neurons (E18) using Mouse Anti-Rat Synaptotagmin-1 Monoclonal Antibody (Catalog # MAB4364) at 10 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). Specific staining was localized to synapses. View our protocol for [Fluorescent ICC Staining of Cells on Coverslips](#).

Immunocytochemistry



Synaptotagmin-1 in SH-SY5Y Human Cell Line. SH-SY5Y human neuroblastoma cells were cultured overnight in the presence of 1 mM Retinoic Acid (Catalog # 0695/50) prior to immersion fixation. Synaptotagmin-1 was detected using a Mouse Anti-Rat Synaptotagmin-1 Monoclonal Antibody (Catalog # MAB4364). The cells were stained with the NorthernLights 557-conjugated Donkey Anti-Mouse IgG Affinity-purified Secondary Antibody (red; Catalog # NL007). The cell nuclei were counterstained with DAPI (blue). Synaptotagmin-1 immunoreactivity was localized to synaptic vesicles in the cytoplasm and on the plasma membrane. View our protocol for [Fluorescent ICC Staining of Cells on Coverslips](#).

Immunohistochemistry



Synaptotagmin in Rat Spinal Cord.
Synaptotagmin was detected in perfusion fixed frozen sections of rat spinal cord using 8 µg/mL Mouse Anti-Rat Synaptotagmin Monoclonal Antibody (Catalog # MAB4364) overnight at 4 °C. Tissue was stained (red) and counterstained (green). View our protocol for [Fluorescent IHC Staining of Frozen Tissue Sections](#).

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

The Synaptotagmins are a family of integral membrane proteins of synaptic vesicles. Rat Synaptotagmin-1 (Accession # P21707) is a 57 kDa, 421 aa glycoprotein containing two C2 domains related to protein kinase C and sites for palmitoylation and binding of acidic phospholipids, calcium and calmodulin. Synaptotagmin-1 participates in the process of vesicular trafficking and exocytosis by inducing local Ca²⁺-dependent buckling of the plasma membrane. Rat Synaptotagmin-1 shares 98% aa identity or greater with mouse, human and bovine Synaptotagmin-1.