

## DESCRIPTION

<b>Species Reactivity</b>	Rat
<b>Specificity</b>	Detects Synaptotagmin-1 from rat, mouse, human, chicken, Xenopus, and fish.
<b>Source</b>	Monoclonal Mouse IgG <sub>2B</sub> Clone # ASV48
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Rat brain synaptic plasma membranes
<b>Formulation</b>	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.

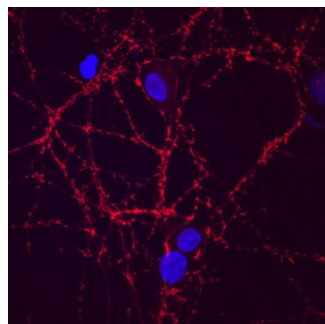
## APPLICATIONS

**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.

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

## DATA

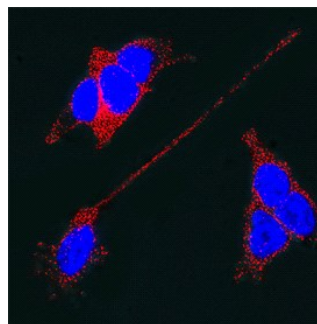
### Immunocytochemistry



#### 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](#).

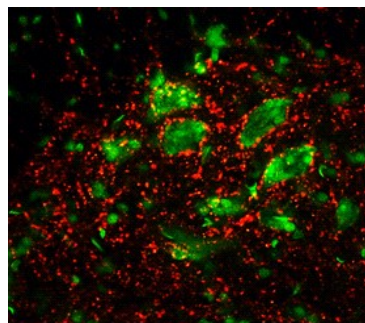
### Immunocytochemistry



#### 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

<b>Reconstitution</b>	Reconstitute at 0.5 mg/mL in sterile PBS.
<b>Shipping</b>	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
<b>Stability &amp; Storage</b>	<p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## 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 Ca<sup>2+</sup>-dependent buckling of the plasma membrane. Rat Synaptotagmin-1 shares 98% aa identity or greater with mouse, human and bovine Synaptotagmin-1.