

Products for SNARE & Synaptic Adhesion Molecule Research



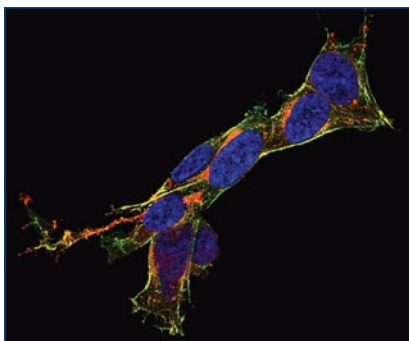
R&D Systems Products for SNARE & SAM Research

Synaptic function throughout the nervous system is dependent on protein:protein interactions including those mediated by soluble N-ethylmaleimide-sensitive factor attachment protein receptors (SNAREs) and synaptic adhesion molecules (SAMs). SNAREs are located on synaptic vesicles and presynaptic membranes where they mediate neurotransmission by stimulating membrane fusion and neurotransmitter release. SAMs, through their large extracellular domains, interact to bridge presynaptic and postsynaptic neurons, thereby maximizing neurotransmission. R&D Systems offers an extensive collection of high performance products for SNARE and SAM research.

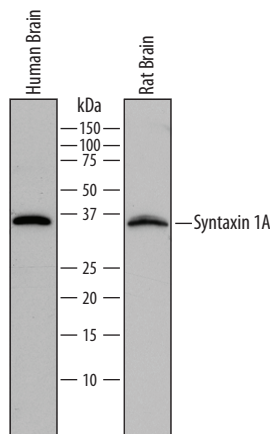
Products for Synaptic SNAREs		
MOLECULE	RECOMBINANT & NATURAL PROTEINS	ANTIBODIES
SNAP23		H (ICC, WB)
SNAP25	Ms	H (WB)
SNAP29		H (ICC, WB)
Syntaxin 1A		H (IHC, WB) M (WB) R (WB)
Syntaxin 1B		H (WB) M (WB) R (WB)
Syntaxin 2	H	H (WB)
Syntaxin 5		H (WB)
Syntaxin 6		H (IHC, WB)
Syntaxin 7		H (WB) M (WB) R (WB)
Syntaxin 8		H (IHC, WB) M (IHC, WB) R (IHC, WB)
Syntaxin 12		H (WB)
Syntaxin 16		H (WB)
VAMP-1		H (IHC, WB) M (IHC, WB)
VAMP-1/VAMP-2		H (IHC, WB) M (IHC, WB)
VAMP-2	Ms	H (IHC, WB) M (IHC, WB) R (WB)
VAMP-5		H (IHC)
VAMP-7		H (IHC, WB)
VAMP-8		H (WB)
Products for SNARE-associated Molecules		
BoNT-A Light Chain	Ba	Ba (IP, WB)
BoNT-B Light Chain	Ba	Ba (IP, WB)
BoNT-C1 Heavy Chain		Ba (IP, WB)
BoNT-C1 Light Chain	Ba	
BoNT-D Heavy Chain		Ba (WB)

Products for SNARE-associated Molecules, continued		
MOLECULE	RECOMBINANT & NATURAL PROTEINS	ANTIBODIES
BoNT-D Light Chain	Ba	Ba (WB)
BoNT-E Heavy Chain		Ba (WB)
BoNT-E Light Chain	Ba	Ba (WB)
BoNT-F Light Chain	Ba	
BoNT-G Light Chain		Ba (WB)
Complexin-1/2		H (ICC, WB) M (ICC, WB) R (ICC, WB)
Complexin-2		H (ICC, WB) M (ICC, WB) R (ICC, WB)
Snapin		H (WB) M (WB)
Synapsin I		H (ICC, IHC, IP, WB) M (ICC, IHC, IP, WB) R (ICC, IHC, IP, WB) B (ICC, IHC, IP, WB) Ca (WB) Ch (WB) X (WB) Z (WB)
Synaptophysin		H (ICC, IHC, WB) R (ICC, IHC, WB)
Synaptotagmin-1		H (WB) M (WB) R (ICC, IHC, IP, WB) B (WB) Ca (WB) Ch (WB) Pr (WB) Z (WB)
Syntabulin		H (WB)
Syntaxin-BP1		H (IHC, WB) M (IHC, WB) R (IHC, WB)
Syntaxin-BP2		H (WB)
Syntaxin-BP3		H (WB)
α -Synuclein		H (IHC, WB) M (WB) R (WB) B (WB) Ca (WB) Pr (WB)
α -Taxilin		H (WB)
UNC13A		H (WB) M (WB)
UNC13B		H (IHC)
VAP-A	H	H (IHC, WB)
VAP-B	H	H (FC, IHC, WB) R (IHC, WB)

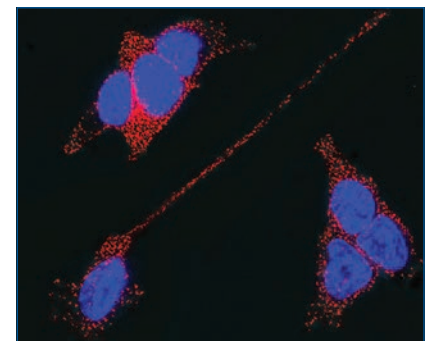
Species Key: H Human M Mouse R Rat Ba Bacterial B Bovine Ca Canine Ch Chicken Ms Multispecies Pr Primate X Xenopus Z Zebrafish
Application Key: B/N Blocking/Neutralization ELISA ELISA Capture and/or Detection FC Flow Cytometry ICC Immunocytochemistry IHC Immunohistochemistry IP Immunoprecipitation WB Western blot



SNAP25 in SH-SY5Y Human Neuroblastoma Cells. SH-SY5Y human neuroblastoma cells were cultured overnight in the presence of 1 μ M Retinoic Acid (Catalog # 0695/50) prior to immersion fixation. Synaptosomal-associated Protein, 25 kDa (SNAP25) was detected using a Sheep Anti-Human/Mouse SNAP25 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF5946). The cells were stained with the NorthernLights™ 557-conjugated Donkey Anti-Sheep Affinity-purified IgG Secondary Antibody (Catalog # NL010; red). Actin filaments were stained with FITC-conjugated Phalloidin (green), and cell nuclei were counterstained with DAPI (blue). SNAP25 immunoreactivity was localized to the synaptic termini.



Detection of Human and Rat Syntaxin 1A by Western Blot. Western blots show lysates of human brain tissue and rat brain tissue. The PVDF membrane was probed with a Mouse Anti-Human Syntaxin 1A Monoclonal Antibody (Catalog # MAB7237) followed by an HRP-conjugated Donkey Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). Syntaxin 1A was detected at approximately 35 kDa (as indicated).

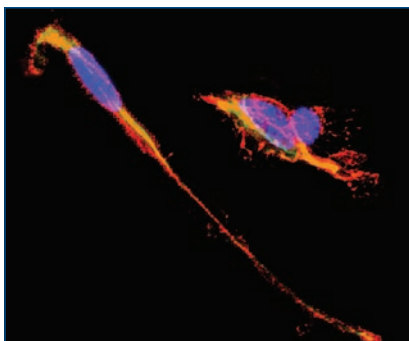


Synaptotagmin-1 in SH-SY5Y Human Neuroblastoma Cells. SH-SY5Y human neuroblastoma cells were cultured overnight in the presence of 1 μ M Retinoic Acid (Catalog # 0695/50) prior to immersion fixation. Synaptotagmin-1 was detected using a Mouse Anti-Rat Synaptotagmin-1 Monoclonal Antibody (Catalog # MAB4364).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

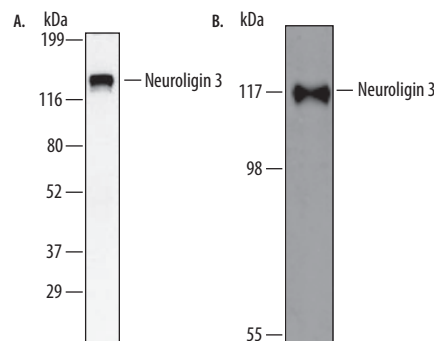
R&D Systems Products for Synaptic Adhesion Molecules

MOLECULE	RECOMBINANT & NATURAL PROTEINS	ANTIBODIES	ELISAs CELL SELECTION & DETECTION KITS & REAGENTS
Calsyntenin-1	H	H (WB)	
Calsyntenin-2	H	H (IHC, WB)	
Calsyntenin-3		H (IHC, WB)	
Cerebellin-1	H		
Cerebellin-2	H	H (IHC, WB)	
Cerebellin-4		H (IHC)	
Contactin-1	H	H (B/N, IHC, WB) M (WB) R (WB)	
Contactin-2/TAG1	H M	H (IHC, WB) M (IHC, WB) R (IHC, WB)	
Contactin-3	H	H (ICC, IHC, WB) M (FC, ICC, WB) R (ICC, WB)	
Contactin-4	H M	H (B/N, WB) M (IHC, WB)	
Contactin-5	H	H (WB)	
Contactin-6	H M	M (IHC, WB)	
DSCAM	H	H (ICC, WB)	
DSCAM-L1	H	H (FC, WB)	
EphA5	H M R	H (WB) M (FC, WB) R (FC, ICC, WB)	H M H
EphB3	H M	H (FC, WB) M (FC, ICC, WB)	H
EphB4	H M	H (FC, IHC, WB) M (FC, IHC, WB)	H H M
Ephrin-A4	H M	H (WB) M (WB)	
Ephrin-A5	H M	H (IHC, WB)	
Ephrin-B1	H M	M (IHC, WB)	
Ephrin-B2	H M Z	M (FC, ICC, IHC, WB) Z (WB)	
Ephrin-B3	H M	H (IHC, WB)	
IGSF4A/SynCAM1	H M	M (FC, WB)	
IGSF4B/SynCAM3	H	H (FC, ICC, IHC, WB)	
IGSF4C/SynCAM4	H	H (FC, ICC, IHC, WB)	
IGSF4D/SynCAM2	H		
KILON	H	H (WB) M (WB)	
L1CAM	H M	H (IHC, WB) M (FC)	H
LAMP	H	H (B/N, WB)	

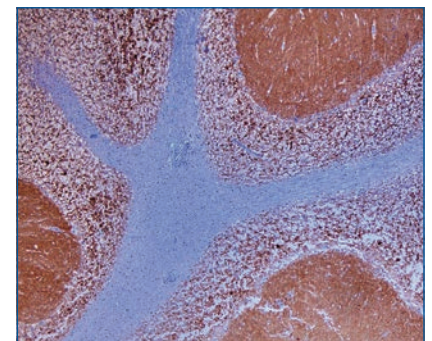
MOLECULE	RECOMBINANT & NATURAL PROTEINS	ANTIBODIES	ELISAs CELL SELECTION & DETECTION KITS & REAGENTS
N-Cadherin	H M	H (FC, ICC, IHC, WB) M (FC, ICC, IHC, WB) R (FC, ICC, IHC, WB)	H
NCAM-1/CD56	H M	H (ELISA, FC, ICC, IHC, WB) M (FC, WB) R (WB)	H H
Nectin-1	H	H (FC, WB) M (WB)	
Nectin-2/CD112	H M	H (FC, WB) M (FC, WB)	H
Nectin-3	H	H (FC, IHC, WB) M (WB)	
Nectin-4	H M	H (FC, ICC, IHC, WB) M (WB)	H H
Neurexin 1 α /NRXN1a	R		
Neurexin 1 β /NRXN1b	H	R (WB)	
Neurexin 2 α /NRXN2a	H		
Neurexin 3/NRXN3		H (IHC, WB) M (IHC, WB)	
Neurexin 3 β /NRXN3b	H	H (IHC, WB) M (IHC, WB)	
Neuroigin 1/NLGN1	H R	R (IHC, WB)	
Neuroigin 2/NLGN2	H	H (WB) R (WB)	
Neuroigin 3/NLGN3		H (ICC, IHC, WB) M (IHC, WB) R (IHC, WB)	
Neuroigin 4/NLGN4	H	H (IHC, WB)	
Neuroplastin		H (IHC, WB) M (WB)	
Neuroplastin 65	H	H (IHC, WB) M (IHC, WB)	
OBCAM/OPCML	H	H (FC, ICC, IHC, WB)	
Protocadherin-8		H (ICC, WB)	
SALM2/LRFN1	H	H (IHC, WB)	
SALM3/LRFN4	H	H (IHC)	
SALM4/LRFN3	H	H (WB)	
SLITRK1	H	H (IHC, WB)	
SLITRK2		H (WB)	
SLITRK4		H (WB)	
SLITRK5	H	H (WB)	
SLITRK6		H (ICC, WB)	
Syndecan-2	H M	H (FC, IHC) M (FC, IHC, WB)	



NCAM-1/CD56 in SH-SY5Y Human Neuroblastoma Cells. SH-SY5Y human neuroblastoma cells were cultured overnight in the presence of 1 μ M Retinoic Acid (Catalog # 0695/50) prior to immersion fixation. Neural Cell Adhesion Molecule 1 (NCAM-1)/CD56 was detected using a Goat Anti-Human NCAM-1/CD56 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF2408). The cells were stained with the NorthernLights 557-conjugated Donkey Anti-Goat IgG Affinity-purified Secondary Antibody (Catalog # NL001; red). Actin filaments were stained with FITC-conjugated Phalloidin (green), and cell nuclei were counterstained with DAPI (blue). NCAM-1/CD56 immunoreactivity was localized to the plasma membrane.



Detection of Human and Rat Neuroigin 3/NLGN3 by Western Blot. Western blots show lysates of human hippocampus (A) and rat embryonic cortical neurons (B). A. The PVDF membrane was probed with a Mouse Anti-Human Neuroigin 3/NLGN3 Monoclonal Antibody (Catalog # MAB60881) followed by a HRP-conjugated Goat Anti-Mouse IgG Secondary Antibody (Catalog # HAF007). B. The PVDF membrane was probed with a Sheep Anti-Human/Mouse/Rat Neuroigin 3/NLGN3 Antigen Affinity-purified Polyclonal Antibody (Catalog #AF6088) followed by HRP-conjugated Anti-Sheep IgG Secondary Antibody (Catalog # HAF016). Neuroigin 3 was detected at approximately 120 kDa (as indicated).



Neuroplastin 65 in Human Brain. Neuroplastin 65 was detected in immersion-fixed paraffin-embedded sections of human cerebellum using a Goat Anti-Human/Mouse Neuroplastin 65 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF5360). Before incubation with the primary antibody, the tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # CTS013). The tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (Catalog # CTS008; brown) and counterstained with hematoxylin (blue). Immunoreactivity was localized to the granular and molecular layers of the cerebellar cortex.



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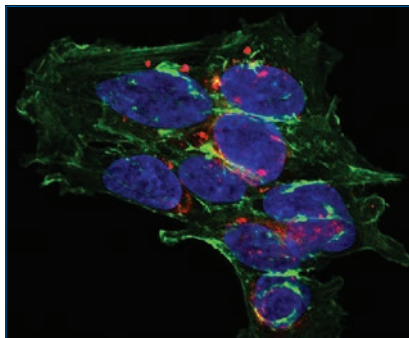
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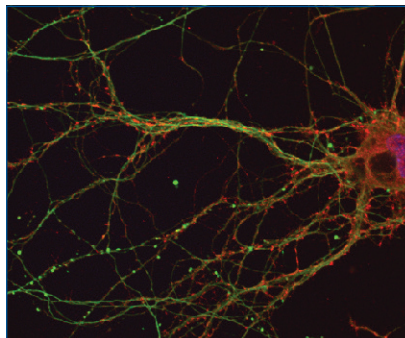
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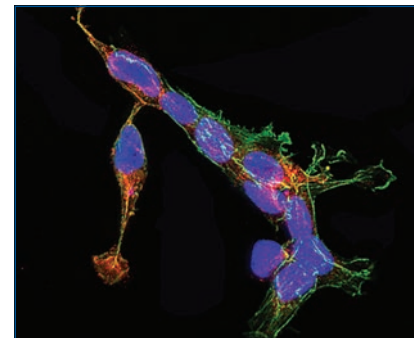
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Complexin-2 in SH-SY5Y Human Neuroblastoma Cells. SH-SY5Y human neuroblastoma cells were cultured overnight in the presence of 1 μ M Retinoic Acid (Catalog # 0695/50) prior to immersion fixation. Complexin-2 was detected using a Goat Anti-Human/Mouse/Rat Complexin-2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF5085). The cells were stained with the NorthernLights 557-conjugated Donkey Anti-Goat IgG Affinity-purified Secondary Antibody (Catalog # NL001; red). Actin filaments were stained with FITC-conjugated Phalloidin (green), and the nuclei were counterstained with DAPI (blue). Complexin-2 immunoreactivity was localized to synaptic vesicles.



Synaptophysin in Rat Neurons. Synaptophysin was detected in immersion-fixed rat hippocampal neurons (E18) using a Goat Anti-Human/Rat Synaptophysin Antigen Affinity-purified Polyclonal Antibody (Catalog # AF5555). The cells were stained using the NorthernLights 557-conjugated Donkey Anti-Goat IgG Secondary Antibody (Catalog # NL001; red) and counterstained with DAPI (blue). Specific labeling was localized to synaptic vesicles. The cells were co-stained using a Neuron-specific β -III Tubulin Monoclonal Antibody (Catalog # MAB1195) and the NorthernLights 493-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # NL009; green).



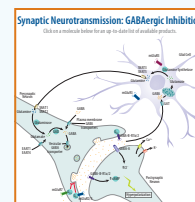
Syntaxin 1A in SH-SY5Y Human Neuroblastoma Cells. SH-SY5Y human neuroblastoma cells were cultured overnight in the presence of 1 μ M Retinoic Acid (Catalog # 0695/50) prior to immersion fixation. Syntaxin 1A was detected using a Goat Anti-Human/Mouse/Rat Syntaxin 1A Antigen Affinity-purified Polyclonal Antibody (Catalog # AF7237). The cells were stained with the NorthernLights 557-conjugated Donkey Anti-Goat IgG Affinity-purified Secondary Antibody (Catalog # NL001; red). Actin filaments were stained with FITC-conjugated Phalloidin (green), and the cell nuclei were counterstained with DAPI (blue). Syntaxin 1A immunoreactivity was localized to synaptic vesicles.

R&D Systems is excited to now offer Interactive Pathways & Processes.

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