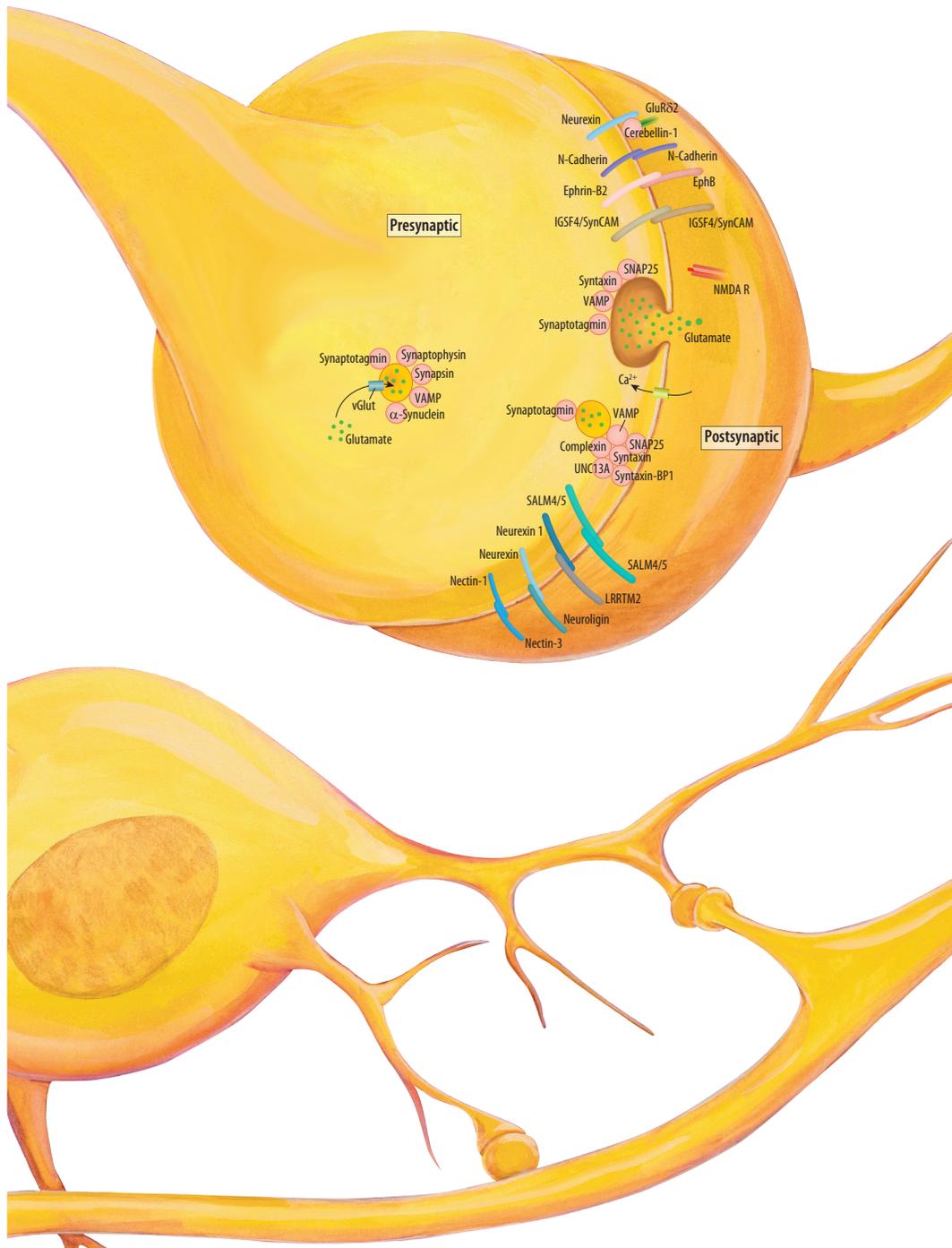


SNAREs and SAMs



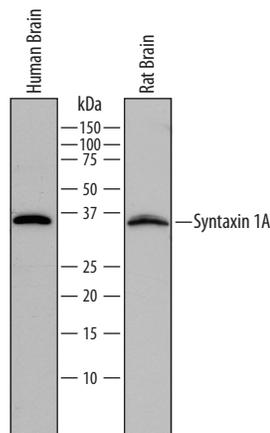
Products for SNARE & SAM Research

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. Bio-Techne offers an extensive collection of high performance R&D Systems brand 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)

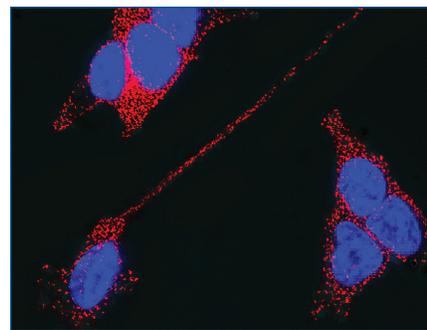
Species and Application Key on back page.



Detection of Human and Rat Syntaxin 1A by Western Blot. Western blot shows 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 a HRP-Conjugated Donkey Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). Syntaxin 1A was detected at approximately 35 kDa (as indicated).

Products for SNARE-Associated Molecules

Molecule	Recombinant & Natural Proteins	Antibodies
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)
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)
Syntaxin		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)

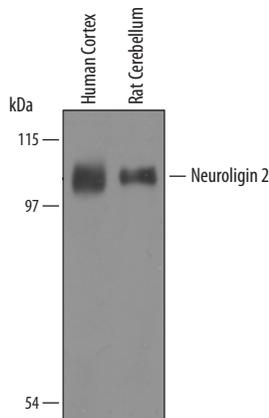


Synaptotagmin-1 in SH-SY5Y Human Neuroblastoma Cells. SH-SY5Y human neuroblastoma cells were cultured overnight in the presence of 1 μ M Retinoic Acid (Catalog # 0695/50) prior to immersion fixation. Synaptotagmin-1 was detected using a Mouse Anti-Rat Synaptotagmin-1 Monoclonal Antibody (Catalog # MAB4364). The cells were stained with the NorthernLights™ (NL) 557-Conjugated Donkey Anti-Mouse IgG 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.

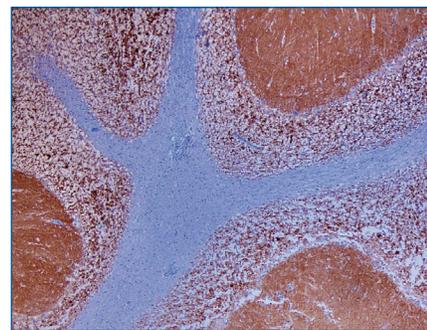
Products for Synaptic Adhesion Molecules

Molecule	Recombinant & Natural Proteins	Antibodies	ELISAs
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
EphB3	H M	H (FC, WB) M (FC, ICC, WB)	
EphB4	H M	H (FC, IHC, WB) M (FC, IHC, WB)	H
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)	
LAMP	H	H (B/N, WB)	

Molecule	Recombinant & Natural Proteins	Antibodies	ELISAs
N-Cadherin	H M	H (FC, ICC, IHC, WB) M (FC, ICC, IHC, WB) R (FC, ICC, IHC, WB)	
NCAM-1/CD56	H M	H (ELISA, FC, ICC, IHC, WB) M (FC, WB) R (WB)	H
Nectin-1	H	H (FC, WB) M (WB)	
Nectin-2/CD112	H M	H (FC, WB) M (FC, WB)	
Nectin-3	H	H (FC, IHC, WB) M (WB)	
Nectin-4	H M	H (FC, ICC, IHC, WB) M (WB)	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)	

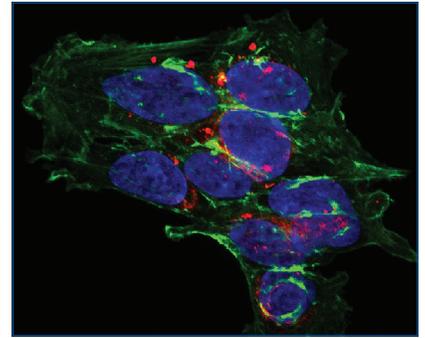
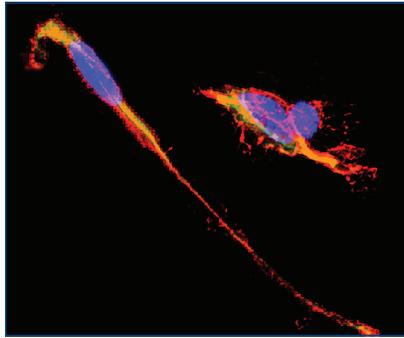
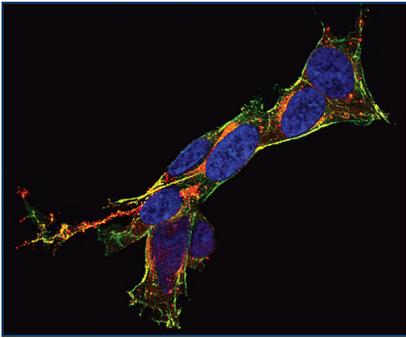


Detection of Human and Rat Neuroigin 2/NLGN2 by Western Blot. Western blot shows lysates of human cortex and rat cerebellum tissue. The PVDF membrane was probed with a Goat Anti-Human/Rat Neuroigin 2/NLGN2 Antigen Affinity-Purified Polyclonal Antibody (Catalog # AF5645) followed by a HRP-Conjugated Chicken Anti-Goat IgG Secondary Antibody (Catalog # HAF019). Neuroigin 2 was detected at approximately 105 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.

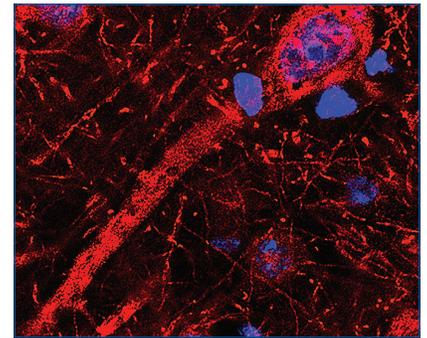
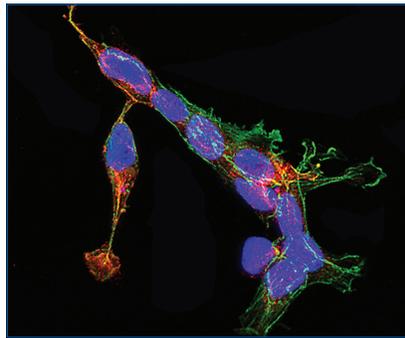
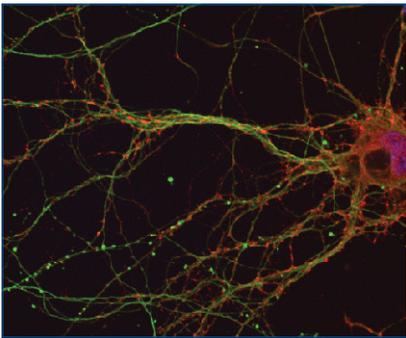
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SNAP25 in SH-SY5Y Human Neuroblastoma Cells. SH-SY5Y human neuroblastoma cells were cultured overnight in the presence of 1 μ M Retinoic Acid (Catalog # 0695/50) prior to immersion fixation. Synaptosomal-Associated Protein, 25 kDa (SNAP25) was detected using a Sheep Anti-Human/Mouse SNAP25 Antigen Affinity-Purified Polyclonal Antibody (Catalog # AF5946). The cells were stained with the NL557-Conjugated Donkey Anti-Sheep 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.

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 NL557-Conjugated Donkey Anti-Goat IgG Secondary Antibody (Catalog # NL001; red). Actin filaments were stained with FITC-Conjugated Phalloidin (green), and the cell nuclei were counterstained with DAPI (blue). NCAM-1/CD56 immunoreactivity was localized to the plasma membrane.

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 NL557-Conjugated Donkey Anti-Goat IgG 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 with the NL557-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 NL493-Conjugated Donkey 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 NL557-Conjugated Donkey Anti-Goat IgG 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.

Neuroligin 1/NLGN1 in Rat Brain. Neuroligin 1/NLGN1 was detected in perfusion-fixed frozen sections of rat cortex using a Sheep Anti-Rat Neuroligin 1/NLGN1 Antigen Affinity-Purified Polyclonal Antibody (Catalog # AF4340). The tissue was stained with the NL557-Conjugated Donkey Anti-Sheep IgG Secondary Antibody (Catalog # NL010; red) and counterstained with DAPI (blue). Neuroligin 1 immunoreactivity was localized to neuronal cell bodies, processes, and dendritic spines.

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

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