

Purified anti-SNAP-25 Antibody

Catalog# / Size	836303 / 25 µg 836304 / 100 µg
Clone	SMI 81
Regulatory Status	RUO
Other Names	Synaptosomal-associated protein 25, SUP, Synaptosomal-associated 25 kD Protein
Isotype	Mouse IgG1, κ
Description	Synaptosomal-associated protein 25 (SNAP-25) is a component of the trans-SNARE (t-SNARE) complex. SNAP-25 has been reported to account for the specificity of membrane fusion, and to directly execute fusion by forming a tight complex that brings the synaptic vesicle and plasma membranes together. SNAP-25 has been shown to inhibit both ATP-dependent and independent Ca ²⁺ -triggered release of glutamate from central nervous system (CNS) synaptosomal membranes. This indicates that SNAP-25 has a role not only in the formation of the synaptic vesicle-target v- and t-SNARE complex, but also in the final neurotransmitter release.

Product Details

Verified Reactivity	Human, Mouse, Rat
Antibody Type	Monoclonal
Host Species	Mouse
Immunogen	Full length, unaltered SNAP-25
Formulation	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide.
Preparation	The antibody was purified by affinity chromatography.
Concentration	0.5 mg/ml
Storage & Handling	The antibody solution should be stored undiluted between 2°C and 8°C.
Application	IHC-P - Quality tested WB - Verified EM, FC, ICC, IP - Reported in the literature, not verified in house
Recommended Usage	Each lot of this antibody is quality control tested by immunohistochemistry. For immunohistochemistry, a concentration range of 0.1 - 1.0 µg per ml. For Western blotting, the suggested use of this reagent is 0.5 - 5.0 µg per ml. It is recommended that the reagent be titrated for optimal performance for each application.
Application References (PubMed link indicates BioLegend citation)	<ol style="list-style-type: none">1. Postupna NO, <i>et al.</i> 2014. <i>Lab Invest.</i> 94:1161. (FC)2. Hirano AA, <i>et al.</i> 2011. <i>J. Comp. Neurol.</i> 519:972. (WB, IHC, EM) PubMed3. Flores-Otero J, <i>et al.</i> 2007. <i>J. Neurosci.</i> 27:14023. (IF) PubMed4. Rozas JL, <i>et al.</i> 2012. <i>Neuron.</i> 74:151. (IF) PubMed5. Brinkmalm A, <i>et al.</i> 2014. <i>Mol. Neurodegener.</i> 9:53. (IP) PubMed6. Gu Y, <i>et al.</i> 2016. <i>Proc. Natl. Acad. Sci. U. S. A.</i> E922-31. (WB) PubMed7. Kabachinski G, <i>et al.</i> 2016. <i>Mol. Biol. Cell.</i> 654-68. (IF) PubMed8. Kunii M, <i>et al.</i> 2016. <i>J. Cell Biol.</i> 215:121-138. (IP) PubMed
Product Citations	<ol style="list-style-type: none">1. Brinkmalm A, <i>et al.</i> 2014. <i>Mol Neurodegener.</i> 9:53. PubMed2. Hirano A, <i>et al.</i> 2011. <i>J Comp Neurol.</i> 519:972-988. PubMed3. Wang W, <i>et al.</i> 2021. <i>Int J Mol Sci.</i> 22:. PubMed4. Marcelli S, <i>et al.</i> 2019. <i>Sci Rep.</i> 9:7146. PubMed5. Kandachar V, <i>et al.</i> 2018. <i>J Cell Sci.</i> 131:jcs222034. PubMed6. Gu Y, <i>et al.</i> 2016. <i>Proc Natl Acad Sci U S A.</i> 113: 922 - 931. PubMed7. Xie YX, <i>et al.</i> 2022. <i>Nat Commun.</i> 13:4918. PubMed8. Konstantinović J, <i>et al.</i> 2018. <i>J Med Chem.</i> 61:1595. PubMed

9. Wilhelmi I, *et al.* 2020. *Mol Metab.* 45:101151. [PubMed](#)
10. Stewart M, *et al.* 2019. *Dis Model Mech.* 12:. [PubMed](#)
11. Kabachinski G, *et al.* 2016. *Mol Biol Cell.* 27: 654 - 668. [PubMed](#)
12. Flores-Otero J, *et al.* 2007. *J Neurosci.* 27:14023-14034. [PubMed](#)
13. Kunii M, *et al.* 2016. *J Cell Biol.* 215: 121 - 138. [PubMed](#)

RRID AB_2715864 (BioLegend Cat. No. 836303)
AB_2566521 (BioLegend Cat. No. 836304)

Antigen Details

Structure	SNAP-25 is a 206 amino acid protein with a molecular mass of 23 kD.
Distribution	Tissue distribution: Mainly in the central nervous system, in neurons of the neocortex, hippocampus, piriform cortex, anterior thalamic nuclei, pontine nuclei, and granule cells of the cerebellum Cellular distribution: Cytosol, golgi apparatus, and cell membrane
Function	SNAP-25 associates with proteins involved in vesicle docking and membrane fusion. It regulates plasma membrane recycling through its interaction with centromere protein F (CENPF).
Interaction	In adult tissue, SMI 81 visualizes synapse-rich areas of brain and retina. In developing brain and cell cultures, SMI 81 reacts with neuronal cell bodies and axons. It is useful as an early marker for developing neurons in cell culture.
Cell Type	Neurons
Biology Area	Cell Biology, Neuroscience, Signal Transduction, Synaptic Biology
Molecular Family	Presynaptic proteins
Antigen References	1. Snyder DA, <i>et al.</i> 2006. <i>Cell Biochem. Biophys.</i> 45(1):111-23. 2. Nagy G, <i>et al.</i> 2004. <i>Neuron.</i> 41(3):417–29.
Gene ID	6616

Related Protocols

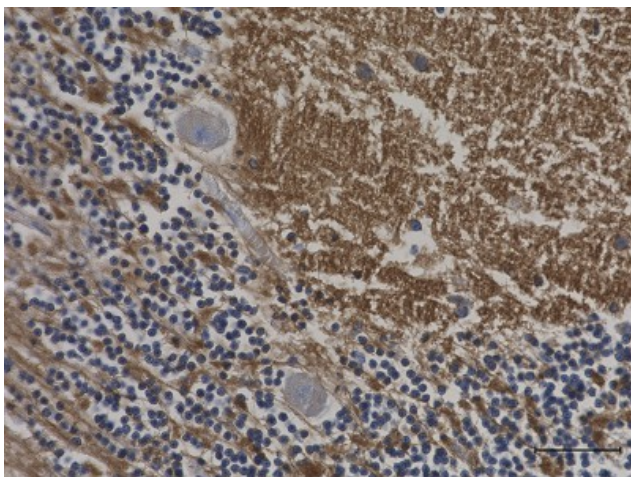
[Western Blotting Protocol](#)

[Immunohistochemistry Protocol for Paraffin-Embedded Sections](#)

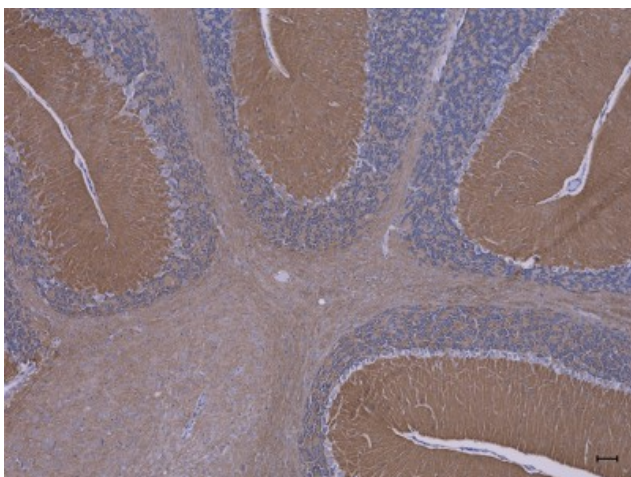
Other Formats

Purified anti-SNAP-25, Biotin anti-SNAP-25, Alexa Fluor® 594 anti-SNAP-25, Alexa Fluor® 647 anti-SNAP-25, Alexa Fluor® 488 anti-SNAP-25

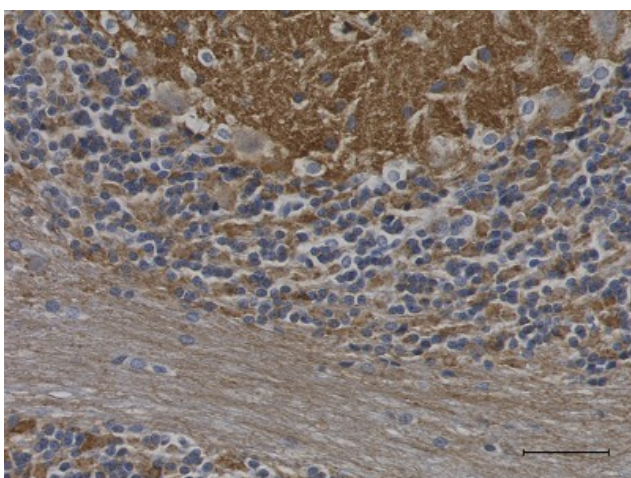
Product Data



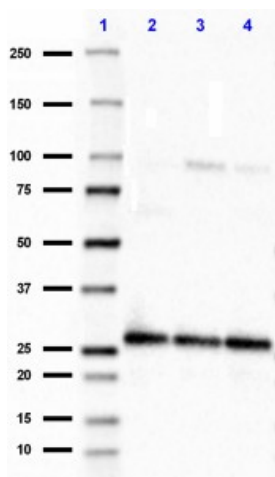
IHC staining of purified anti-SNAP-25 antibody (clone SMI 81) on formalin-fixed paraffin-embedded human brain tissue. Following antigen retrieval using Retrieve-All Antigen Unmasking System 3: Acidic, 1X (Cat. No. 927701), the tissue was incubated with 1 μ g/ml of the primary antibody for 60 minutes at room temperature. BioLegend's Ultra-Streptavidin (USA) HRP kit (Multi-Species, DAB, Cat. No. 929901) was used for detection followed by hematoxylin counterstaining, according to the protocol provided. The image was captured with a 40X objective. Scale bar: 50 μ m



IHC staining of purified anti-SNAP-25 antibody (clone SMI 81) on formalin-fixed paraffin-embedded mouse brain tissue. Following antigen retrieval using Retrieve-All Antigen Unmasking System 3: Acidic, 1X (Cat. No. 927701), the tissue was incubated with 1 μ g/ml of the primary antibody for 60 minutes at room temperature. BioLegend's Ultra-Streptavidin (USA) HRP kit (Multi-Species, DAB, Cat. No. 929901) was used for detection followed by hematoxylin counterstaining, according to the protocol provided. The image was captured with a 10X objective. Scale bar: 50 μ m



IHC staining of purified anti-SNAP-25 antibody (clone SMI 81) on formalin-fixed paraffin-embedded rat brain tissue. Following antigen retrieval using Retrieve-All Antigen Unmasking System 3: Acidic, 1X (Cat. No. 927701), the tissue was incubated with 1 μ g/ml of the primary antibody for 60 minutes at room temperature. BioLegend's Ultra-Streptavidin (USA) HRP kit (Multi-Species, DAB, Cat. No. 929901) was used for detection followed by hematoxylin counterstaining, according to the protocol provided. The image was captured with a 40X objective. Scale bar: 50 μ m



Western blot of purified anti-SNAP-25 antibody (clone SMI 81). Lane 1: Molecular weight marker; Lane 2: 15 μ g of human brain lysate; Lane 3: 15 μ g of mouse brain lysate; Lane 4: 15 μ g of rat brain lysate. The blot was incubated with 0.5 μ g/mL of the primary antibody overnight at 4°C, followed by incubation with HRP labeled goat anti-mouse IgG (Cat. No. 405306). Enhanced chemiluminescence was used as the detection system.

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