PRODUCT INFORMATION

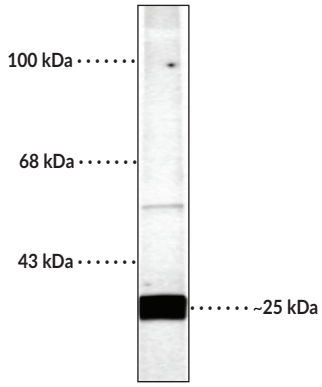
SNAP-25 Polyclonal Antibody (Clone D005)

Item No. 29293

Overview and Properties

Contents:	This vial contains 100 µl of affinity-purified rabbit polyclonal antibody.
Synonyms:	SUP, Super Protein, Synaptosomal-associated 25 kDa Protein
Immunogen:	Peptide corresponding to amino acid residues from the C-terminal region of rat SNAP-25
Species Reactivity:	(+) Rat; other species not tested
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	10 mM HEPES, pH 7.5, with 150 mM sodium chloride, 100 µg/ml BSA, and 50% glycerol
Host:	Rabbit
Applications:	Western blot (WB); the recommended starting dilution is 1:1,000. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Image



WB of rat cortical lysate showing specific labeling of the ~25 kDa SNAP-25 protein.

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

PRODUCT INFORMATION

Description

Synaptosomal-associated protein 25 (SNAP-25) is a member of the SNARE complex, which also includes syntaxin and VAMP, that is responsible for fusing synaptic vesicles with the presynaptic plasma membrane to facilitate neurotransmitter release.[1] Two SNAP-25 isoforms, SNAP-25a and SNAP-25b, are generated through alternative splicing, with SNAP-25b expressed only during the postnatal period and as the predominant isoform in the brain.[2] SNAP-25 contains two α helices, as well as one large and several smaller intrinsically disordered domains.[1] It also contains a cluster of closely spaced cysteine residues that are subject to palmitoylation, a modification that regulates the intracellular distribution of SNAP-25, as well as residues subject to phosphorylation, modifications that modulate the rate of vesicle recruitment and its interactions with syntaxin.[1,3,4] SNAP-25 is located primarily on the intracellular side of the presynaptic plasma membrane in neurons and interacts with a variety of proteins to orchestrate vesicle fusion in a calcium-triggered manner and to mediate spine development.[1] It is also found in the pancreas, enteroendocrine cells, and the chromaffin cells of the adrenal medulla where it is involved in hormone secretion.[2] Decreased expression of SNAP-25 in a heterozygous mouse model leads to moderate hyperactivity, impaired learning and memory, and increased susceptibility to seizures induced by kainate. SNPs in SNAP-25 are associated with attention deficient/hyperactivity disorder, as well as bipolar disorder, schizophrenia, and autism spectrum disorder.[5] Protein levels of SNAP-25 are decreased in postmortem brain from patients with Down syndrome and Alzheimer's disease and in postmortem hippocampus from patients with schizophrenia.[6,7] Cayman's SNAP-25 Polyclonal Antibody (Clone D005) can be used for Western blot (WB) applications. The antibody recognizes SNAP-25 at 25 kDa from rat samples.

References

1. Karmakar, S., Sharma, L.G., Roy, A., *et al.* Neuronal SNARE complex: A protein folding system with intricate protein-protein interactions, and its common neuropathological hallmark, SNAP25. *Neurochem. Int.* **122**, 196-207 (2019).
2. Kádková, A., Radecke, J., and Sørensen, J.B. The SNAP-25 protein family. *Neuroscience* **420**, 50-71 (2019).
3. Nagy, G., Matti, U., Nehring, R.B., *et al.* Protein kinase C-dependent phosphorylation of synaprosome-associated protein of 25 kDa at Ser^{187} potentiates vesicle recruitment. *J. Neurosci.* **22(21)**, 9278-9286 (2002).
4. Greaves, J. and Chamberlain, L.H. Differential palmitoylation regulates intracellular patterning of SNAP25. *J. Cell. Sci.* **124(Pt 8)**, 1351-1360 (2010).
5. Safari, M.R., Omrani, M.D., Noroozi, R., *et al.* Synaptosome-associated protein 25 (SNAP25) gene association analysis revealed risk variants for ASD, in Iranian population. *J. Mol. Neurosci.* **61(3)**, 305-311 (2017).
6. Greber, S., Lubec, G., Cairns, N., *et al.* Decreased levels of synaptosomal associated protein 25 in the brain of patients with Down Syndrome and Alzheimer's disease. *Electrophoresis* **20(4-5)**, 928-934 (1999).
7. Fatemi, S.H., Earle, J.A., Stary, J.M., *et al.* Altered levels of the synaptosomal associated protein SNAP-25 in hippocampus of subjects with mood disorders and schizophrenia. *Neuroreport* **12(15)**, 3257-3262 (2001).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM