PRODUCT INFORMATION



SV2A Rabbit Monoclonal Antibody (Clone RM520)

Item No. 42786

Overview and Properties

Contents:	This vial contains 100 μ l of protein A-affinity purified antibody
Synonym:	Synaptic Vesicle Glycoprotein 2A
Immunogen:	A peptide corresponding to the N-terminus of human SV2A
Cross Reactivity:	(+) SV2A
Species Reactivity:	(+) Human, mouse, rat
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS, pH 7.2, with 50% glycerol and 0.02% sodium azide
Clone:	RM520
Host:	Rabbit
Isotype:	lgG
Applications:	Immunohistochemistry (IHC) and Western blot (WB); the recommended starting
	dilution is 1:100-1:200 for IHC and 1:1,000-1:2,000 for WB. Other applications were
	not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



WB of mouse brain tissue lysates using SV2A Rabbit Monoclonal Antibody (Clone RM520) at 1,1000 dilution.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human pancreatic tissue using SV2A Rabbit Monoclonal Antibody (Clone RM520) at a 1:100 dilution for one hour at room temperature.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human brain cortical tissue using SV2A Rabbit Monoclonal Antibody (Clone RM520) at a 1:200 dilution for one hour at room temperature.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human andrenal tissue using SV2A Rabbit Monoclonal Antibody (Clone RM520) at a 1:200 dilution for one hour at room temperature.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human pancreatic carcinoid tumor (CTP) tissue using SV2A Rabbit Monoclonal Antibody (Clone RM520) at a 1:100 dilution for one hour at room temperature.



and paraffin-embedded human myenteric plexus of small intestinal tissue using SV2A Rabbit Monoclonal Antibody (Clone RM520) at a 1:200 dilution for one hour at room temperature.

WARNING THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Synaptic vesicle glycoprotein 2A (SV2A) is a transmembrane glycoprotein and member of the keratan sulfate proteoglycan family.¹ It is composed of N- and C-terminal cytosolic domains and 12 transmembrane domains interspersed with two ATP-binding regions, a cytoplasmic loop, and an extracellular loop.² SV2A also contains multiple glycosylation and phosphorylation sites.³ It is ubiquitously expressed in the brain, with brain region-dependent expression in glutamatergic or GABAergic neurons, and localizes to the presynaptic membrane.^{4,5} It is also expressed in the pancreas.³ SV2A interacts with synaptotagmin-1 (Syt1), a protein involved in calcium-dependent synaptic vesicle fusion, and is involved in trafficking Syt1 during synaptic vesicle endocytosis.² Glycosylated SV2 proteins, including SV2A, act as receptors for *C. botulinum* neurotoxin type A1.^{4,5} Biallelic loss-of-function mutations in *SV2A* are associated with epileptic encephalopathy, a disorder characterized by early-onset epilepsy, microcephaly, and neurodevelopmental delay.⁶ Cayman's SV2A Rabbit Monoclonal Antibody (Clone RM520) can be used for immunohistochemistry (IHC) and Western blot (WB) applications.

References

- 1. Rossi, R., Arjmand, S., Bærentzen, S.L., *et al.* Synaptic vesicle glycoprotein 2A: Features and functions. *Front. Neurosci.* **16**, (2022).
- Hogg, J.A. and Cousin, M.A. Control of synaptotagmin-1 trafficking by SV2A-mechanism and consequences for presynaptic function and dysfunction. J. Neurochem. 169(1), e16308 (2025).
- Stout, K.A., Dunn, A.R., Hoffman, C., et al. The synaptic vesicle glycoprotein 2: Structure, function, and disease relevance. ACS Chem. Neurosci. 10(9), 3927-3938 (2019).
- 4. Gustafsson, R., Zhang, S., Masuyer, G., et al. Crystal structure of botulinum neurotoxin A2 in complex with the human protein receptor SV2C reveals plasticity in receptor binding. *Toxins (Basel)* **10(4)**, 153 (2018).
- 5. Gregory, K.S. and Acharya, K.R. A comprehensive structural analysis of *Clostridium botulinum* neurotoxin a cell-binding domain from different subtypes. *Toxins* (*Basel*) **15(2**), 92 (2023).
- 6. Al-Maawali, A., Al-Murshedi, F., Al-Futaisi, A., *et al.* Biallelic variants in the synaptic vesicle glycoprotein 2 A are associated with epileptic encephalopathy. *Eur. J. Hum. Genet.* **32(2)**, 243-246 (2024).

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