

Product Information

Anti-Synaptotagmin 7

produced in rabbit, affinity isolated antibody

Product Number **SAB4200160**

Product Description

Anti-Synaptotagmin 7 is produced in rabbit using as the immunogen a synthetic peptide corresponding to a fragment of human synaptotagmin 7 (Syt7) (GeneID: 9066), conjugated to KLH. The corresponding sequence is identical in rat Syt7 and highly conserved (single amino acid substitution) in mouse Syt7. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Synaptotagmin 7 specifically recognizes human and mouse Synaptotagmin 7 (Syt7). The antibody may be used in several immunochemical techniques including immunoblotting (~45 kDa). Detection of the Syt7 band by immunoblotting is specifically inhibited by the Syt7 immunizing peptide.

Synaptotagmins constitute a large family of transmembrane Ca^{2+} -binding proteins, thought to regulate membrane or vesicular trafficking, including synaptic vesicle (SV) exocytosis. Synaptotagmin 7 (also known as Syt7) has been proposed to regulate different types of Ca^{2+} -dependent exocytosis.¹⁻⁴ Similar to other synaptotagmins, Syt7 contains a single transmembrane domain, a variable linker sequence and C₂A and C₂B Ca^{2+} -binding domains. Syt7 is ubiquitously expressed during development but is later restricted to dividing cells, postmitotic neurons, and neuroendocrine cells.^{1,2} In addition, Syt7 has several alternatively spliced forms that are expressed in a developmentally regulated pattern in the brain.² Ubiquitous Syt7 is a short alternative splice form present on intracellular organelles and/or the plasma membrane. In contrast, neuronal Syt7 exhibits a variety of alternative spliced variants enriched in presynaptic active zones of central synapses.¹ Syt7 has been proposed to play a key role in the regulation of Ca^{2+} -dependent lysosome exocytosis.⁴ Syt7 in neuroendocrine cells is localized to large secretory vesicles. Syt7 is targeted to dense-core vesicles and has been shown to be the major Ca^{2+} -sensor for exocytosis in chromaffin cells.³ Syt7 is expressed in pancreatic β -cells and has been suggested to function as a Ca^{2+} -sensor regulating insulin secretion.⁵ Knockout of Syt7 in mice results in impaired insulin secretion and glucose intolerance.⁶

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody concentration: ~1.0 mg/mL

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Store at $-20\text{ }^{\circ}\text{C}$. For continuous use, store at $2\text{--}8\text{ }^{\circ}\text{C}$ for up to one month. For extended storage, freeze in working aliquots at $-20\text{ }^{\circ}\text{C}$. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation. Discard working dilutions if not used within 12 hours.

Product Profile

Immunoblotting: a working antibody concentration of 1-2 $\mu\text{g}/\text{mL}$ is recommended using mouse brain extracts (S1 fraction) and HEK-293T cell lysates expressing human synaptotagmin 7.

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration.

References

1. Sugita, S., et al., *Neuron*, **30**, 459-473 (2001).
2. Fukuda, M., et al., *Biochem. J.*, **365**, 173-180 (2002).
3. Schonh, J.-S., et al., *Proc. Natl. Acad. Sci. USA*, **105**, 3998-4003 (2008).
4. Martinez, I., et al., *J. Cell Biol.*, **148**, 1141-1149 (2000).
5. Gauthier, B.R., et al., *FASEB J.*, **22**, 194-206 (2008).
6. Gustavsson, N., et al., *Proc. Natl. Acad. Sci. USA*, **105**, 3992-3997 (2008).

VS,ER,CS,KAA,PHC,MAM 07/19-1