Store at -20°C

#3347

SYT1 Antibody

☑ 100 µl
(10 western blots)

Cell Signaling TECHNOLOGY®

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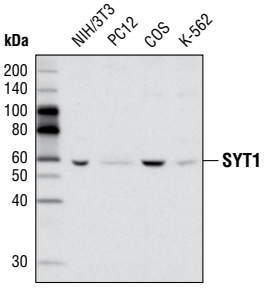
Entrez-Gene ID #6857
Swiss-Prot Acc. #P21579

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W, IF-IC, F	H, M, R, Mk	60 kDa	Rabbit**
Endogenous			

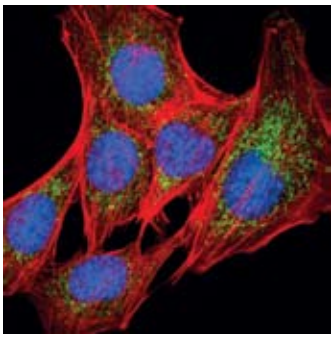
Background: Synaptotagmin 1 (SYT1) is an integral membrane protein found in synaptic vesicles thought to play a role in vesicle trafficking and exocytosis (1). Individual SYT1 proteins are composed of an amino-terminal transmembrane region, a central linker region and a pair of carboxy-terminal C2 domains responsible for binding Ca^{2+} (2). The C2 domains appear to be functionally distinct, with the C2A domain responsible for regulating synaptic vesicle fusion in a calcium-dependent manner during exocytosis while the C2B domain allows for interaction between adjacent SYT1 proteins (3). Because synaptotagmin 1 binds calcium and is found in synaptic vesicles, this integral membrane protein is thought act as a calcium sensor in fast synaptic vesicle exocytosis. Evidence suggests possible roles in vesicle-mediated endocytosis and glucose-induced insulin secretion as well (4,5). SYT1 binds several different SNARE proteins during calcium-mediated vesicle endocytosis and an association between SYT1 and the SNARE protein SNAP-25 is thought to be a key element in vesicle mediated exocytosis (6).

Specificity/Sensitivity: SYT1 Antibody detects endogenous levels of total SYT1 protein.

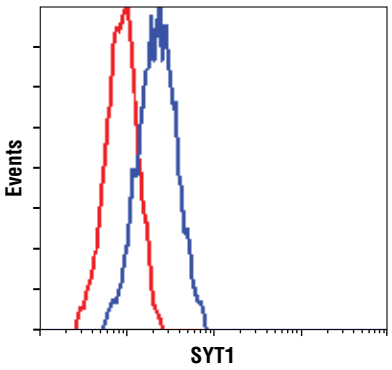
Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to human SYT1. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from various cell lines using SYT1 Antibody.



Confocal immunofluorescent analysis of C2C12 cells using SYT1 Antibody (green). Actin filaments have been labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



Flow cytometric analysis of C2C12 cells using SYT1 Antibody (blue) compared to a nonspecific negative control antibody (red).

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. *Do not aliquot the antibody.*

***Species cross-reactivity is determined by western blot.**

****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

Western blotting	1:1000
Immunofluorescence (IF-IC)	1:100
Flow Cytometry	1:100

For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.

Background References:

(1) Fukuda, M. and Mikoshiba, K. (2001) *Biochem Biophys Res Commun* 281, 1226-33.

(2) Südhof, T.C. (2002) *J Biol Chem* 277, 7629-32.

(3) Fernández-Chacón, R. et al. (2001) *Nature* 410, 41-9.

(4) Lynch, K.L. et al. (2007) *Mol Biol Cell* 18, 4957-68.

(5) Gauthier, B.R. and Wollheim, C.B. (2008) *Am J Physiol Endocrinol Metab* 295, E1279-86.

(6) Bai, J. et al. (2004) *Neuron* 41, 929-42.

Applications Key: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide

Species Cross-Reactivity Key: **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—Horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.