

## Product datasheet for **MC215986**

### **Syt7 (NM\_173067) Mouse Untagged Clone**

#### **Product data:**

Product Type:	Expression Plasmids
Product Name:	Syt7 (NM_173067) Mouse Untagged Clone
Tag:	Tag Free
Symbol:	Syt7
Synonyms:	AI851541; B230112P13Rik
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin



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**Fully Sequenced ORF:** >MC215986 representing NM\_173067  
 Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGGATCGCC**

ATGTACCGGGACCCGGAGCGGCCAGCCAGGGGCACCTACCCGGATGTCTGTGGTCTCTGCAATCA  
 TCACCGTCAGCCTTAGCGTCACTATCGTCTCTGCGGCCGTGCCACTGGTGTGTCAGCGCAAACCTGGGCAA  
 ACGCTACAAGAATTCCTTGAGACGGTGGGCACGCCAGACTCGGGGCGTGGGCGCGGTGAGAAGAAAGCC  
 ATCAACGACCTAGACAGAGACTTTTGAATAACAATGAAAGCACAGTGCAGCAGAAATGGAGTTCCTATC  
 CTCCCAAGGAGTTTATTCTAAACATTTACCCCTACGCCCTTATGGCGACCCTCGACTGTCCCTCAAGTT  
 GCCTGCAGGAGGGAAGGCTGTGAATACAGCCCCAGTGCCCGCCAGACGCCACACGATGAGTCTGACCGC  
 AGAACGGAGACCCGTTCTCTGTCTCGGACCTCGTCAACTCCCTTACCAGCGAGATGCTCATGCTCTCCC  
 CGGTTTCTGAGGAGGATGAGGCCACGAGGGCTGCAGCCGAGAGAACCTGGGCCGAATCCAGTTCAGTGT  
 TGGCTACAACCTCAAGAGTCCCACTCACCTGACCGTGAAGGTCATGAAGGCCAAGAGCTGCCAGCCAAGGAC  
 TTCAGCGTACTAGTGACCCCTTTGTCAAGATCTACCTGTACCCGACAAGAAGCACAACTGGAGACCA  
 AGGTGAAGCGGAAGAATCTAAACCCGCACTGGAATGAGACCTTTCTATTTGAAGGTTTCCCTACGAGAA  
 AGTGGTGCAGAGGGTCTCTACCTCCAGGTCTGGATTATGACCGTTTCAGCCGAATGACCCCATTTGGG  
 GAGGTGTCCATCCCTCTGAACAAGTGGACCTGACCCAGATGCAGACCTTCTGGAAGGATCTGAAGCCAT  
 GCAGCGATGGGAGTGGGAGCCGAGGGGAGCTGCTTTGTCCCTCTGCTACAACCCCTCTGCCAATCCAT  
 CATCGTGAACATCATCAAAGCTCGAAACCTCAAAGCCATGGACATCGGGGCACATCAGACCCCTATGTG  
 AAGGTGTGGCTGATGTATAAAGACAAGCGGTAGAGAAAAAGAAGACCGTGACAAAGAAGAGGAACCTGA  
 ACCCATCTTCAATGAGTCTTTTCGCTTCGACATACCCACGGAGAAGCTGAGGGAGACCAGATCATCAT  
 CACTGTGATGGACAAGACAAGCTCAGCCGCAACGACGTCATCGGCAAGATCTACCTGTCCTGGAAGAGC  
 GGACCAGGTGAAGTGAACACTGGAAGGACATGATCGCTCGTCCCGGCAGCCTGTGGCCAGTGGCACC  
 AGCTGAAAGC**TGA**

**ACGCGT**ACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

**Restriction Sites:** SgfI-MluI

**ACCN:** NM\_173067

**Insert Size:** 1344 bp

**OTI Disclaimer:** Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).

**Components:** The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).

**Reconstitution Method:**

1. Centrifuge at 5,000xg for 5min.
2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.
3. Close the tube and incubate for 10 minutes at room temperature.
4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.
5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.

RefSeq: [NM\\_173067.3](#), [NP\\_775090.1](#)

RefSeq Size: 6474 bp

RefSeq ORF: 1344 bp

Locus ID: 54525

UniProt ID: [Q9R0N7](#)

Cytogenetics: 19 A

**Gene Summary:** Ca(2+) sensor involved in Ca(2+)-dependent exocytosis of secretory and synaptic vesicles through Ca(2+) and phospholipid binding to the C2 domain. Ca(2+) induces binding of the C2-domains to phospholipid membranes and to assembled SNARE-complexes; both actions contribute to triggering exocytosis. SYT7 binds Ca(2+) with high affinity and slow kinetics compared to other synaptotagmins (PubMed:26738595). Involved in Ca(2+)-triggered lysosomal exocytosis, a major component of the plasma membrane repair (By similarity). Ca(2+)-regulated delivery of lysosomal membranes to the cell surface is also involved in the phagocytic uptake of particles by macrophages (PubMed:16982801, PubMed:21041449). Ca(2+)-triggered lysosomal exocytosis also plays a role in bone remodeling by regulating secretory pathways in osteoclasts and osteoblasts (PubMed:18539119). Involved in cholesterol transport from lysosome to peroxisome by promoting membrane contacts between lysosomes and peroxisomes: probably acts by promoting vesicle fusion by binding phosphatidylinositol-4,5-bisphosphate on peroxisomal membranes (PubMed:25860611). Acts as a key mediator of synaptic facilitation, a process also named short-term synaptic potentiation: synaptic facilitation takes place at synapses with a low initial release probability and is caused by influx of Ca(2+) into the axon terminal after spike generation, increasing the release probability of neurotransmitters (PubMed:24569478, PubMed:26738595). Probably mediates synaptic facilitation by directly increasing the probability of release (PubMed:26738595). May also contribute to synaptic facilitation by regulating synaptic vesicle replenishment, a process required to ensure that synaptic vesicles are ready for the arrival of the next action potential: SYT7 is required for synaptic vesicle replenishment by acting as a sensor for Ca(2+) and by forming a complex with calmodulin (PubMed:24569478). Also acts as a regulator of Ca(2+)-dependent insulin and glucagon secretion in beta-cells (PubMed:18308938, PubMed:19171650). Triggers exocytosis by promoting fusion pore opening and fusion pore expansion in chromaffin cells (PubMed:20956309). Also regulates the secretion of some non-synaptic secretory granules of specialized cells (By similarity). [UniProtKB/Swiss-Prot Function]