

## Product datasheet for **MR230733**

### Syk (NM\_001198977) Mouse Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Syk (NM_001198977) Mouse Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Syk
Synonyms:	Sykb
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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**ORF Nucleotide Sequence:**

>MR230733 representing NM\_001198977  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCCCGCATCGCC

ATGGCGGGAAGTGTGTGGACAGCGCCAACCACCTGACCTACCTTTTGGCAACATCACCCGGGAAGAGG  
 CTGAAGACTACCTGGTCCAGGGAGGCATGACCGATGGGCTCTACCTGCTACGCCAGAGCCGCAATTACCT  
 GGGTGGTTTTGCTTTGTGGTGGCTCACAAACAGGAAGGCACACCACTACACCATCGAGAGGGAACCTAAT  
 GGCACCTACGCCATCTCCGGGGCAGGGCCATGCCAGCCAGCAGACCTCTGCCATTACCACTCCCAGG  
 AACCTGATGGCCTTATCTGCCTCCTTAAGAAGCCCTTCAACCGGCCCCCGGGAGTACAGCCCAAGACCGG  
 ACCCTTTGAGGACCTGAAGGAGAACCTCATCAGGGAATATGTGAAACAGACCTGGAACCTTCAGGGCCAG  
 GCTCTGGAGCAAGCCATCATCAGCCAGAAGCCCACTGGAGAAGCTGATCGCCACCACGGCCCATGAGA  
 AGATGCCCTGGTCCATGGCAACATCTCCAGAGATGAATCAGAGCAGACGGTCTCATAGGGTCAAAGAC  
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 AAAGTATTGCACTACCGATTGACAGGGACAAGACCGGGAAGCTCTCCATTCTGAGGGGAAGAAGTTTG  
 ACACCCCTGGCAGCTAGTGAACATTACTCTTACAAGCCAGATGGGCTACTAAGAGTCTCACGGTACC  
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 GTGCTGATGAAAACCTACAAGGCCAGACCCACGGGAAGTGGCCCGTGAAGTGGTACGCCCCGGAATG  
 CATCAACTACTACAAGTCTCCAGTAAGAGTGACGTCTGGAGCTTCGGAGTCTGATGTGGGAAGCGTTC  
 TCCTATGGGCAGAAGCCCTACAGAGGGATGAAAGGGAGCGAAGTACCAGCATGCTGGAGAAAGGAGAGC  
 GGATGGGGTGCCTGCAGGATGCCCGAGAGAGATGTACGACCTGATGAACCTGTGCTGGACTTACGATGT  
 GGAGAACAGGCCAGGATTCACAGCTGTGGAAGTGAAGCTTCGCAATTACTACTACGACGTGGTTAAC

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:**

>MR230733 representing NM\_001198977  
 Red=Cloning site Green=Tags(s)

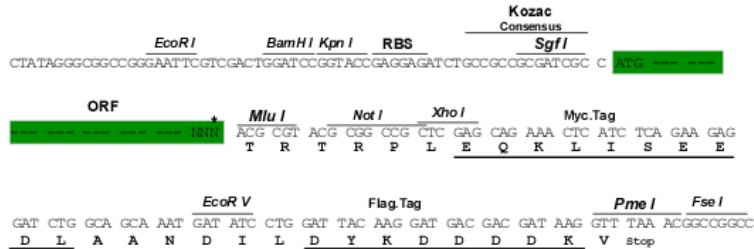
MAGSAVDSANHLTYLFGNITREEAEDYL VQGGMTDGLYLLRQSRNYLGGFAL SVAHNRKAHHTIERELN  
 GTYAISGGRAHASPADLCHYHSQEPDGLICLLKPFNRPPGVQPKTGPFDLKENLIREYVKQTNWLNQGG  
 ALEQAIISQKPQLEKLIATTAHEKMPWFHGNISRDESEQTVLIGSKTNGKFLIRARDNSGSYALCLLHEG  
 KVLHYRIDRDKTGLSIPEGKKFDLWQLVEHYSYKPDGLLRVLTVPQCQIGAQMGPSPNAHPVTWSP  
 GGIISRIKSYSPKPGHKPPAPPQGSRPESTVSFNPEPTGGPWGPDRGLQREALPMDTEVYVYADPE  
 EIRPKVYLDRLSLTLEDNELGSGNFGTVKKGYYQMKVVKTVAVKILKNEANDPALKDELLAEANVMQQ  
 LDNPYIVRMIGICEAESWMLVMEMAELGPLNKYLQQRHDKNIIELVHQSVMGMKYLEESNFVHRDLA  
 ARNVLLVTQHYAKISDFGLSKALRADENYYKAQTHGKWPVKWYAPECINYYKFSKSDVWSFGVLMWEAF  
 SYGQKPYRGMKGSEVTAMLEKGERMGCPAGCPREMYDLMNLCWTYDVENRPGFTAVELRLRNYYVDVNN

TRTRPLEQKLI SEEDLAANDILDYKDDDDKV

Restriction Sites: SgfI-MluI

Cloning Scheme:

Cloning sites used for ORF Shuttling:



\* The last codon before the Stop codon of the ORF

ACCN: NM\_001198977

ORF Size: 1887 bp

OTI Disclaimer: The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. [More info](#)

OTI Annotation: This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.

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\\_001198977.1](#), [NP\\_001185906.1](#)

RefSeq Size: 5144 bp

RefSeq ORF: 1890 bp

Locus ID: 20963

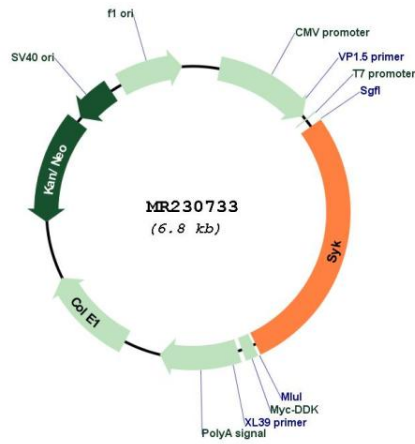
UniProt ID: [P48025](#)

**Cytogenetics:** 13 27.41 cM

**MW:** 71.3 kDa

**Gene Summary:** Non-receptor tyrosine kinase which mediates signal transduction downstream of a variety of transmembrane receptors including classical immunoreceptors like the B-cell receptor (BCR). Regulates several biological processes including innate and adaptive immunity, cell adhesion, osteoclast maturation, platelet activation and vascular development. Assembles into signaling complexes with activated receptors at the plasma membrane via interaction between its SH2 domains and the receptor tyrosine-phosphorylated ITAM domains. The association with the receptor can also be indirect and mediated by adapter proteins containing ITAM or partial hemITAM domains. The phosphorylation of the ITAM domains is generally mediated by SRC subfamily kinases upon engagement of the receptor. More rarely signal transduction via SYK could be ITAM-independent. Direct downstream effectors phosphorylated by SYK include VAV1, PLCG1, PI-3-kinase, LCP2 and BLNK. Initially identified as essential in B-cell receptor (BCR) signaling, it is necessary for the maturation of B-cells most probably at the pro-B to pre-B transition. Activated upon BCR engagement, it phosphorylates and activates BLNK an adapter linking the activated BCR to downstream signaling adapters and effectors. It also phosphorylates and activates PLCG1 and the PKC signaling pathway. It also phosphorylates BTK and regulates its activity in B-cell antigen receptor (BCR)-coupled signaling. In addition to its function downstream of BCR plays also a role in T-cell receptor signaling. Plays also a crucial role in the innate immune response to fungal, bacterial and viral pathogens. It is for instance activated by the membrane lectin CLEC7A. Upon stimulation by fungal proteins, CLEC7A together with SYK activates immune cells inducing the production of ROS. Also activates the inflammasome and NF-kappa-B-mediated transcription of chemokines and cytokines in presence of pathogens. Regulates neutrophil degranulation and phagocytosis through activation of the MAPK signaling cascade. Required for the stimulation of neutrophil phagocytosis by IL15 (By similarity). Also mediates the activation of dendritic cells by cell necrosis stimuli. Also involved in mast cells activation. Involved in interleukin-3/IL3-mediated signaling pathway in basophils (PubMed:19098920). Also functions downstream of receptors mediating cell adhesion. Relays for instance, integrin-mediated neutrophils and macrophages activation and P-selectin receptor/SELPG-mediated recruitment of leukocytes to inflammatory loci. Plays also a role in non-immune processes. It is for instance involved in vascular development where it may regulate blood and lymphatic vascular separation. It is also required for osteoclast development and function. Functions in the activation of platelets by collagen, mediating PLCG2 phosphorylation and activation. May be coupled to the collagen receptor by the ITAM domain-containing FCER1G. Also activated by the membrane lectin CLEC1B that is required for activation of platelets by PDPN/podoplanin. Involved in platelet adhesion being activated by ITGB3 engaged by fibrinogen. Together with CEACAM20, enhances production of the cytokine CXCL8/IL-8 via the NFKB pathway and may thus have a role in the intestinal immune response (PubMed:26195794).[UniProtKB/Swiss-Prot Function]

Product images:



Circular map for MR230733