

## Product datasheet for **MR230840**

### Sh2b1 (NM\_001289540) Mouse Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Sh2b1 (NM_001289540) Mouse Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Sh2b1
Synonyms:	AI425885; C530001K22Rik; Irip; mKIAA1299; Psm; SH2-B; SH2-Bb; Sh2bpsm1
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin



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**ORF Nucleotide Sequence:**

>MR230840 representing NM\_001289540  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGATCGCC**

ATGAATGGTGCCCTTCCCAGAGGATGGGGTCTTCCCTTCTCCGCCAGCGCTGCCACCACCCCTCCCC  
 CAAGTTGGCAAGAGTTCTGTGAGTCCCATGCGAGGGCAGCTGCCCTGGATCTTGCCCGACGTTTTCGCCT  
 CTACCTGGCCTCCCACCCACAGTATGCAGAGCCGGAGCAGAGGCCGCTTTTTCTGGCCGTTTTGTGAG  
 CTCTTCTGCAGCACTTCGAAGCCGAGGTGGCTCGGGCCTCGGGCTCACTCTCCACCTGTCTGGCTC  
 CATTGAGCCCTGGTGTGAAATCCACCATCACACGACCTGTCCCTTGAGAGCTGCAGGGTGGTGGGCC  
 CCTAGCAGTGTGGGCCCTTCTCGATCTTCTGAGGACCTGGCTGGCCCCCTTCTTCTCAGTCCCTTCC  
 TCTACAACATCCTCAAAGCCAAAGCTCAAGAAGCGCTTCTCCCTCCGCTCAGTGGGCCGTTCACTCAGAG  
 GCTCTGTTGAGGCATCCTGCAGTGGCGGGTGGCGTTGACTCGCCCTCCAAGCTGGGCCCTCTGGAGAC  
 CACATCCGGCCCTCCAGTCTAGGTGAAACAGCAACTCCAACCTCCTCGGGTGGTCTGGGACAGTTGGT  
 AGGGCATTGGCTAATGATGGCACATCCCCTGGGGAGAGATGGACTCATCGATTTGAGAGGCTGAGGCTAA  
 GTCGTGGAGGGGAAACCCTGAAAGACGGAGCAGGAATGATACAGAGAGAAGAGCTGCTGAGTTTCATGGG  
 GGCTGAAGAGGCTGCCCTGACCCAGCAGGAGTGGGTCGTGGAGGAGGGGAGCTGGGCTGACCTCAGGA  
 GGAGGAGGGCAGCCTCAGTGGCAAAAGTGTGCTTACTGCTCCGAGTGAAGGAGAAGGAGGAGGAGGAA  
 GTCGCTTGGAGTTCTTTGTACCACCCAAGGCGTCCCGACCCCGTCTCAGCATTCCCTGCTCTACTATTAC  
 TGATGTCCGCACAGCCACAGCCCTAGAGATGCCTGACAGGGAGAACACGTTTGTGGTTAAGGTAGAAGGC  
 CCTTCAGAGTACATCCTGGAGACAAGTGTGCGCTTCACTGTAAGGCCTGGTGTCTGACATCCAGGAAT  
 GCCTAAGCCCCGGACCCCTGCTCTGCTATCAGCCCCGTCCATGACCCCTCCCTGGCCCTGGGACCTC  
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 CAGGATCTGCTGCTGGGACCCAGCGAGAGTAACGACCCGCTGTCGAGGGAGCTTATGGGGCCTCTCAG  
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 AGGGGGTGGAGGGGATCAGCCCTCTCAGGCTATCCTTGGTCCACGGCATGCTCTCTCGACTCAAAGC  
 TGCCAGTTAGTGTAGAAAGGAGGCACTGGCTCCCATGGTGTCTTCTTGGTACGCCAGAGTGAACAAGG  
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 AGGGACAGTGCCGGTCCAACATCTGTGTTCCAGTCCATTTTCGATATGCTTGAGCACTCCGGGTGCA  
 CCCCATCCCTCTGGAGTCTGGAGGCTCCAGTGTGTTGCTTGTGAGCTATGTGCCCTCCAGGGCGAG  
 CAGGGCCGGGAGCAGGCTGGGAGCCATGCAGGGGTGTGCGAGGGCGACCGATGCTACCCCGATGCCTCCT  
 CCACCTCCTGCCCTTCGGAGCGAGTACTGTGTAACGGAGCACCTCCCG

**ACGCGT**ACGCGGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:** >MR230840 representing NM\_001289540  
 Red=Cloning site Green=Tags(s)

MNGAPSPEDGVFPSPPALPPPPPPSWQEFCESHARAAALDLARRFRLYLASHPQYAEPGAEAAFSGRFAE  
 LFLQHFEAEVARASGSLSPVLAPLSPGVEIPPSHDLLESCRVGGPLAVLGPSRSSEDLAGLPSSVPS  
 STTSSKPKLKKRFSLRVSVGRSVRGSVRGILQWRGAVDSPSQAGPLETTSGPPVLGGNSNSNSGGAGTVG  
 RALANDGTSPGERWTHRFRERLRLSRGGGTLKDGAGMIQREELL SFMGAEAAAPDPAGVGRGGGAAGLTSG  
 GGGQPQWQKCRLLLRSEEGGGSRLEFFVPPKASRPRLSIPCSTITDVRTATALEMPDRENTFVVKVEG  
 PSEYILETSDALHVKAWSIDIQECLSPGPCPAISPRPMTLPLAPGTSFFTKDNTDSELELPCLNHSESLPS  
 QDLLLLGPSESNDRLSQGAYGGLSDRPSASFSPSSASIAASHFDSMELLPELPPRIPIIEEGPPAGTVHPL  
 STPYPLDTPAAATGSFLFQGESEGGEGDQPLSGYPWFHGMLSRLKAAQLVLEGGTSGHGVFLVRQSETR  
 RGEYVLTNFQGKAKHLRLSLNEEGQCRVQHLWFQSFIDMLEHFRVHPIPLESGGSSDVVLVSYVPSQRQ  
 QGREQAGSHAGVCEGDRCPDASSTLLPFGASDCVTEHLP

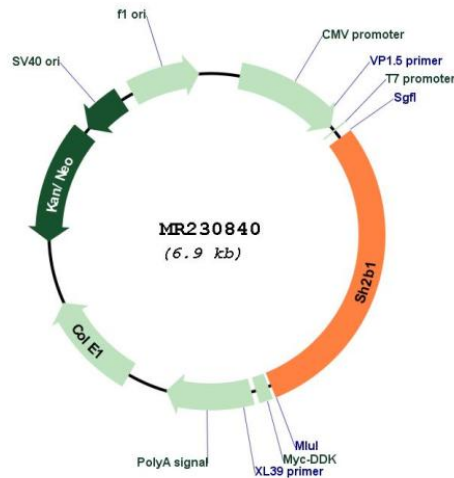
TRTRPLEQKLISEEDLAANDILDYKDDDDKV

**Restriction Sites:**

SgfI-MluI

**Cloning Scheme:**



**Plasmid Map:**


**ACCN:** NM\_001289540

**ORF Size:** 2010 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\\_001289540.1](#), [NP\\_001276469.1](#)

RefSeq Size:	3143 bp
RefSeq ORF:	2013 bp
Locus ID:	20399
UniProt ID:	<a href="#">Q91ZM2</a>
Cytogenetics:	7 69.06 cM
MW:	71.3 kDa

**Gene Summary:** Adapter protein for several members of the tyrosine kinase receptor family. Involved in multiple signaling pathways mediated by Janus kinase (JAK) and receptor tyrosine kinases, including the receptors of insulin (INS), insulin-like growth factor I (IGF1), nerve growth factor (NGF), brain-derived neurotrophic factor (BDNF), glial cell line-derived neurotrophic factor (GDNF), platelet-derived growth factor (PDGF) and fibroblast growth factors (FGFs). In growth hormone (GH) signaling, autophosphorylated ('Tyr-813') JAK2 recruits SH2B1, which in turn is phosphorylated by JAK2 on tyrosine residues. These phosphotyrosines form potential binding sites for other signaling proteins. GH also promotes serine/threonine phosphorylation of SH2B1 and these phosphorylated residues may serve to recruit other proteins to the GHR-JAK2-SH2B1 complexes, such as RAC1. In leptin (LEP) signaling, binds to and potentiates the activation of JAK2 by globally enhancing downstream pathways. In response to leptin, binds simultaneously to both, JAK2 and IRS1 or IRS2, thus mediating formation of a complex of JAK2, SH2B1 and IRS1 or IRS2. Mediates tyrosine phosphorylation of IRS1 and IRS2, resulting in activation of the PI 3-kinase pathway. Acts as positive regulator of NGF-mediated activation of the Akt/Forkhead pathway; prolongs NGF-induced phosphorylation of AKT1 on 'Ser-473' and AKT1 enzymatic activity. Enhances the kinase activity of the cytokine receptor-associated tyrosine kinase JAK2 and of other receptor tyrosine kinases, such as FGFR3 and NTRK1. For JAK2, the mechanism seems to involve dimerization of both, SH2B1 and JAK2. Enhances RET phosphorylation and kinase activity (By similarity). Isoforms seem to be differentially involved in IGF-I and PDGF-induced mitogenesis, according the order: isoform 3 > isoform 4 > isoform 1 > isoform 2.[UniProtKB/Swiss-Prot Function]