

## Product datasheet for **MC228774**

### Sh2b1 (NM\_001289541) Mouse Untagged Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Sh2b1 (NM_001289541) Mouse Untagged Clone
Tag:	Tag Free
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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**Fully Sequenced ORF:** >MC228774 representing NM\_001289541  
 Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGGATCGCC**

ATGAATGGTGCCCTTCCCAGAGGATGGGGTCTTCCCTTCTCCGCCAGCGCTGCCACCACCCCTCCCC  
 CAAGTTGGCAAGAGTTCTGTGAGTCCCATGCGAGGGCAGCTGCCCTGGATCTTGCCCGACGTTTTCGCCT  
 CTACCTGGCCTCCCACCCACAGTATGCAGAGCCGGAGCAGAGGCCGCTTTTTCTGGCCGTTTTGTGAG  
 CTCTTCTGCAGCACTTCGAAGCCGAGGTGGCTCGGGCCTCGGGCTCACTCTCCACCTGTCTGGCTC  
 CATTGAGCCCTGGTGTGAAATCCCACCATCACACGACCTGTCCCTTGAGAGCTGCAGGGTGGTGGGCC  
 CCTAGCAGTGTGGGCCCTTCTCGATCTTCTGAGGACCTGGCTGGCCCCCTTCTTCTCAGTCCCTTCC  
 TCTACAACATCCTCAAAGCCAAAGCTCAAGAAGCGCTTCTCCCTCCGCTCAGTGGGCCGTTCACTCAGAG  
 GCTCTGTTGAGGCATCCTGCAGTGGCGGGTGGCGTTGACTCGCCCTCCAAGCTGGGCCCTTGGAGAC  
 CACATCCGGCCCTCCAGTCTAGGTGAAACAGCAACTCCAACCTCCTCGGTGGTCTGGGACAGTTGGT  
 AGGGCATTGGCTAATGATGGCACATCCCCTGGGGAGAGATGGACTCATCGATTTGAGAGGCTGAGGCTAA  
 GTCGTGGAGGGGAAACCCTGAAAGACGGAGCAGGAATGATACAGAGAGAAGAGCTGCTGAGTTTCATGGG  
 GGCTGAAGAGGCTGCCCTGACCCAGCAGGAGTGGTCTGGAGGAGGGGAGCTGGGCTGACCTCAGGA  
 GGAGGAGGGCAGCCTCAGTGGCAAAAGTGTGCTTACTGCTCCGGAGTGAAGGAGAAGGAGGAGGAGGAA  
 GTCGCTTGGAGTTCTTTGTACCACCAAGGCGTCCCGACCCCGTCTCAGCATTCCCTGCTCTACTATTAC  
 TGATGTCCGCACAGCCACAGCCCTAGAGATGCCTGACAGGGAGAACACGTTTGTGGTTAAGGTAGAAGGC  
 CCTTACAGTACATCCTGGAGACAAGTGTGCGCTTCACTGTGAAGGCCTGGTGTCTGACATCCAGGAAT  
 GCCTAAGCCCCGACCCCTGCTCTGCTATCAGCCCCGTCCATGACCCCTCCCCCTGGCCCTGGACCTC  
 CTCTTTCACAAAGGATAACACAGACAGCCTGGAGTTGCCCTGCCTGAATCATTACAGAGAGTCTGCCTAGC  
 CAGGATCTGCTGCTGGGACCCAGCGAGGTAACGACCCGCTGTCGAGGGAGCTTATGGGGCCTCTCAG  
 ACCGGCCATCGGCGTCTTCTCCCTAGTTCTGCCTCCATTGCTGCCTCCATTTTGATTGATGGAACCT  
 GCTTCTCCAGAATTGCCTCCTCGAATTCCTATTGAGGAGGGCCTCCAGCAGGGACAGTTCATCCCTC  
 TCTACCCCTACCCTCCCTGGATACTCCAGAAGCAGCCACAGGATCGTTCCTGTTCCAAGGGGAGTCAG  
 AGGGGGTGGAGGGGATCAGCCCTCTCAGGCTATCCTTGGTCCACGGCATGCTCTCTCGACTCAAAGC  
 TGCCAGTTAGTGTAGAAGGAGGCACTGGCTCCCATGGTGTCTTCTTGGTACGCCAGAGTGAGACAAGG  
 CGTGGTGAATATGCTCACTTTCAACTCCAGGGCAAGGCAAGCACCTGCGCTTGTCACTAAATGAGG  
 AGGGACAGTGCCGGTCCAACATCTGTGGTCCAGTCCATTTTCGATATGCTTGAGCACTCCGGGTGCA  
 CCCCATCCCTCTGGAGTCTGGAGGCTCCAGTGTGTTGCTTGTGAGCTATGTGCCCTCCAGCGGCAG  
 CAGGGTGAAGCAGAGCAGGCTCTGCAGGGGAGGAGGTGCCGTGCACCCAAGAAGTGAGAACGGAGCACCTC  
 CCGTGACCCAGCCAGCCCTCTGAACCCCTCCATGGACAGATCCCCACATCCTGGGCGAGAAGAGGCG  
 TCGGGGGCGCCAGAAGTTGCGGCAGCCACAGCCGAGCAGCCAAAGAGAGGCAAGAGAAAAGAAAGCGG  
 GCAGTGGAGGGTCCAGGAAGAGCTGGTCCCCGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGT  
**CATAG**

**ACGCGT**ACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

**Restriction Sites:** SgfI-MluI

**ACCN:** NM\_001289541

**Insert Size:** 2175 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).

<b>OTI Annotation:</b>	Clone contains native stop codon, and expresses the complete ORF without any c-terminal tag.
<b>Components:</b>	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).
<b>Reconstitution Method:</b>	<ol style="list-style-type: none"><li>1. Centrifuge at 5,000xg for 5min.</li><li>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.</li><li>3. Close the tube and incubate for 10 minutes at room temperature.</li><li>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.</li><li>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.</li></ol>
<b>RefSeq:</b>	<u><a href="#">NM_001289541.1</a></u> , <u><a href="#">NP_001276470.1</a></u>
<b>RefSeq Size:</b>	2959 bp
<b>RefSeq ORF:</b>	2175 bp
<b>Locus ID:</b>	20399
<b>UniProt ID:</b>	<u><a href="#">Q91ZM2</a></u>
<b>Cytogenetics:</b>	7 69.06 cM

**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]

Transcript Variant: This variant (5) differs in the 5' UTR, and uses an alternate splice site that results in a frameshift in the 3' coding region, compared to variant 7. The encoded isoform (3, also known as delta) has a distinct and shorter C-terminus, compared to isoform 4. Both variants 5 and 6 encode isoform 3.