

Product datasheet for **SC325374**

Myosin Phosphatase (PPP1R12A) (NM_001143886) Human Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Myosin Phosphatase (PPP1R12A) (NM_001143886) Human Untagged Clone
Tag:	Tag Free
Symbol:	Myosin Phosphatase
Synonyms:	GUBS; M130; MBS; MYPT1
Mammalian Cell Selection:	None
Vector:	<u>pCMV6-XL4</u>
E. coli Selection:	Ampicillin (100 ug/mL)

Fully Sequenced ORF: >OriGene ORF sequence for NM_001143886 edited
 GGGCGCCGCGAATTCGGCACGAGGCCCTCTCCGCCTCCCCCTTCCCCCTCGCGATAA
 GAAGACCCGGCAGGAGAGGGGATGAAGATGGCGGACGCGAAGCAGAAGCGGAACGAG
 CAGCTGAAACGCTGGATCGGCTCCGAGACGGACCTCGAGCCTCCGGTGGTGAAGCGCCAG
 AAGACCAAGTGAAGTTCGACGATGGCGCGTCTTCTGGCTGCTTGCTCCAGCGCGAC
 ACGGACGAGGTCCTCAAGCTGCTGCACCGCGCGCCGACATCAATTACGCCAATGTGGAC
 GGACTCACTGCCCTGCACCAGGCTTGCATTGATGACAATGTTGATATGGTGAAGTTTCTG
 GTAGAAAATGGAGCAAATATTAATCAACCTGATAATGAAGGCTGGATAACCACTACATGCA
 GCAGTTCCTGTGGATATCTTGATATTGCAGAGTTTTTGGATTGGTCAAGGAGCACATGTA
 GGGGCTGTCAACAGTGAAGGAGATACACCTTTAGATATTGCGGAGGAGGCAATGGAA
 GAGCTACTTCAAATGAAGTAAATCGGCAAGGGGTTGATATAGAAGCAGCTCGAAAGGAA
 GAAGAACGGATCATGCTTAGAGATGCCAGGCAGTGGCTAAATAGTGGTCAATAAATGAT
 GTCCGGCATGCAAAATCTGGAGGTACAGCACTTACGTTGCGAGCTGCTAAAGGCTATACG
 GAAGTTTTAAACTTTTTAATACAGGCAGGCTATGATGTTAATATTAAGACTATGATGGC
 TGGACACCTCTTCATGCTGCAGCTCATTGGGGTAAAGAAGAAGCATGTCGAATTTTAGTG
 GACAATCTGTGTGATATGGAGATGGTCAACAAAGTGGCCAAACAGCCTTTGATGTAGCA
 GATGAAGACATTTTAGGATATTTAGAAGAGTTGCAAAAAGAAAACAAAATCTGCTCCATAGT
 GAAAAACGGGACAAGAAATCTCCACTAATTGAATCAACAGCAAATATGGACAATAATCAG
 TCACAGAAGACCTTTAAAAACAAAGAGACGTTGATTATTGAACCAAGAAAAATGCATCC
 CGTATTGAATCTCTGGAACAAGAAAAGGTTGATGAAGAAGAAGAAGGAAAGGATGAG
 TCTAGCTGCTCTAGTGAAGAAGATGAGGAAGATGACTCGGAATCAGAAGCTGAAACAGAT
 AAGACAAAACCCCTGGCTTCTGTAACCTAATGCCAACACTTCTAGTACACAAGCAGCTCCT
 GTAGCTGTTACAACACCTACTGTGTCATCAGGTCAAGCAACACCTACATCACCTATTAA
 AAGTTTCCAACCACAGCTACAAAAATTTCTCCAAAGAAGAAGAGAGAAAAAGATGAGTCT
 CCTGCAACTTGGAGGTTAGGACTTAGAAAAGACGGGCAGCTATGGTGCCTTGCTGAAATC
 ACAGCATCTAAAGAGGGTCAGAAAAGAAAAGATACTGCAGGTGTTACACGTTTCAGCTTCA
 AGTCCCAGACTTCTCCTCTTTGGATAATAAAGAAAAGGAGAAAGATAGTAAAGGAACT



[View online >](#)

```

AGGCTTGCATATGTTGCACCTACAATACCAAGACGACTAGCCAGTACATCTGACATTGAA
GAGAAAGAAAACAGAGATTCTTCAAGTTTGCGAACAAGTAGTTTCATATACAAGGAGAAAA
TGGGAAGATGATCTTAAAAAATAGCTCAGTTAATGAAGGATCAACGTATCATAAAAGT
TGCTCCTTTGGTAGAAGACAAGATGATTTGATTAGTTCTAGTGTTCACAGCACCACATCA
ACACCAACAGTTACCTCTGCAGCTGGGCTTCAGAAAAGCCTGCTTCCAGCACAAAGCAGT
ACTACAAAGATTACAACGGGTTCTTCTCAGCAGGCACACAAAAGCAGTACCTCAAATCGT
TTGTGGGCTGAGGATAGTACTGAGAAAAGAAAAGGACAGTGTTCCTACGGCAGTGACCATT
CCTGTTGCTCCAAGTGTGTAATGCTGCAGTTCTACCACAACCTGACTACAACACTACT
GCTGGCACTGTCTCTCCACAACAGAGGTCAGGGAGAGACGCAGATCATACCTCACTCCT
GTTAGGGATGAAGAGTCTGAATCCCAAAGAAAAGCAAGATCTAGACAAGCAAGACAATCT
AGAAGATCAACACAGGGAGTGACATTAAGTATCTTCAAGAAGCTGAGAAAACAATAGGA
AGAAGTCGTTCTACCCGAACCAGAGAACAAGAAAATGAAGAAAAAGAAAAAGAGGAAAAA
GAGAAACAAGATAAAGAGAAAACAAGAAGAAAAGAGGAGTCAAGAACATCTAGAGAAGAT
GAATATAAACAAAAGTACTCCAGAACGTATGATGAGACTTACCAGCGTTATAGGCCAGTA
TCAACTTCAAGTTCAACCACTCCATCCTCTTCACTTTCTACTATGAGCAGTTCACTGTAT
GCTTCAAGTCAACTAAACAGGCCAAATAGTCTTGTAGGCATAACTTCTGCTTACTCCAGA
GGAATAACAAAAGAAAATGAAAGAGAGGGAGAAAAAGAGAAGAGGAGAAAAGAGGAGAA
GATAAATCACAACTAAATCAATCAGAGAACGACGACGACCAAGAGAGAAAAGAGATCT
ACAGGAGTTTCATTTTGGACACAAGATAGTGATGAAAAAGAACAAACAATCAGAC
ACAGAAGAGGGATCCAATAAGAAAGAACTCAGACGGATTCCATTTCTAGATATGAAACC
AGTTCTACATCAGCTGGTATCGATATGATTCTTGTGGGTCGCTCTGGATCATACAGT
TACTTAGAAGAAAAGAAAACCTTACAGCAGCAGGCTAGAAAAGGATGACTCAACTGACTTT
AAAAAGCTTTATGAACAAATTCTAGCTGAAAATGAAAAGCTGAAGGCACAGCTACATGAT
ACAAATATGGAACCTAACAGATCTTAAATTACAGTTGGAAGGAGCCACCCAGAGACAAGAA
AGATTTGCTGATAGATCACTGTTGGAAATGGAAGGGAACGAAGAGCTCTAGAAAGA
AGAATATCTGAAATGGAAGAAGAGCTCAAAATGTTACCAGACCTAAAAGCAGACAACCAG
AGGCTAAAGGATGAAAATGGGGCCTTGATCAGAGTTATAAGCAAACCTTTCAAAAAA
AAAAAAAACGACTCTAGATTGCGGCCGCGGTATAGCTGTTTCTGAACAGATCCCG
GGTGGCATCCCTGTGACCCCTCCCAAGTGCCTCTCCTGGCCCTGGAAGTTGCCACTCCAG
TGCCACCAGCCTGTCTAATAAAAATTAAGTTGCATCATTTTGTCTGACTAGGTGTCCT
TCTATAATAT
    
```

- Restriction Sites:** Please inquire
- ACCN:** NM_001143886
- Insert Size:** 3500 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).
- OTI Annotation:** This TrueClone is provided through our Custom Cloning Process that includes sub-cloning into OriGene's pCMV6 vector and full sequencing to provide a non-variant match to the expected reference without frameshifts, and is delivered as lyophilized plasmid DNA.
- 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_001143886.1](#), [NP_001137358.1](#)

RefSeq Size: 5337 bp

RefSeq ORF: 2832 bp

Locus ID: 4659

UniProt ID: [O14974](#)

Cytogenetics: 12q21.2-q21.31

Protein Families: Druggable Genome

Protein Pathways: Focal adhesion, Long-term potentiation, Regulation of actin cytoskeleton, Vascular smooth muscle contraction

Gene Summary: Myosin phosphatase target subunit 1, which is also called the myosin-binding subunit of myosin phosphatase, is one of the subunits of myosin phosphatase. Myosin phosphatase regulates the interaction of actin and myosin downstream of the guanosine triphosphatase Rho. The small guanosine triphosphatase Rho is implicated in myosin light chain (MLC) phosphorylation, which results in contraction of smooth muscle and interaction of actin and myosin in nonmuscle cells. The guanosine triphosphate (GTP)-bound, active form of RhoA (GTP.RhoA) specifically interacted with the myosin-binding subunit (MBS) of myosin phosphatase, which regulates the extent of phosphorylation of MLC. Rho-associated kinase (Rho-kinase), which is activated by GTP. RhoA, phosphorylated MBS and consequently inactivated myosin phosphatase. Overexpression of RhoA or activated RhoA in NIH 3T3 cells increased phosphorylation of MBS and MLC. Thus, Rho appears to inhibit myosin phosphatase through the action of Rho-kinase. Several transcript variants encoding different isoforms have been found for this gene. [provided by RefSeq, Jan 2009]

Transcript Variant: This variant (3) differs in the 5' UTR and coding sequence compared to variant 1. The resulting isoform (b) is shorter at the N-terminus compared to isoform a.

Sequence Note: This RefSeq record was created from transcript and genomic sequence data because no single transcript was available for the full length of the gene. The extent of this transcript is supported by transcript alignments.