

## Product datasheet for RC223540

### Myosin Phosphatase (PPP1R12A) (NM\_002480) Human Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Myosin Phosphatase (PPP1R12A) (NM_002480) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Myosin Phosphatase
Synonyms:	GUBS; M130; MBS; MYPT1
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
ORF Nucleotide Sequence:	>RC223540 representing NM_002480 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGATCGCC**

ATGAAGATGGCGGACGCGAAGCAGAAGCGGAACGAGCAGCTGAAACGCTGGATCGGCTCCGAGACGGACC  
TCGAGCCTCCGGTGGTGAAGCGCCAGAAGACCAAGGTGAAGTTCGACGATGGCGCCGTCTTCTGGCTGC  
TTGCTCCAGCGGCGACACGGACGAGGTCTCAAGCTGCTGCACCGCGGCGCCGACATCAATTACGCCAAT  
GTGGACGGACTCACTGCCCTGCACCAGGCTTGCAATTGATGACAATGTTGATATGGTGAAGTTTCTGGTAG  
AAAATGGAGCAAATATTAATCAACCTGATAATGAAGGCTGGATACCACTACATGCAGCAGCTTCTGTGG  
ATATCTTGATATTGCAGAGTTTTGATTGGTCAAGGAGCAGATGTAGGGCTGTCAACAGTGAAGGAGAT  
ACACCTTTAGATATTGCGGAGGAGGAGGCAATGGAAGAGCTACTTCAAAATGAAGTTAATCGGCAAGGGG  
TTGATATAGAAGCAGCTCGAAAGGAAGAAGAACGGATCATGCTTAGAGATGCCAGGCAGTGGCTAAATAG  
TGGTCATATAAATGATGTCCGGCATGCAAAATCTGGAGGTACAGCACTTACGTTGCAGCTGCTAAAGGC  
TATACGGAAGTTTTAAACTTTTAAACAGGCAGGCTATGATGTTAATATTAAGACTATGATGGCTGGA  
CACCTCTTCATGCTGCAGCTCATTGGGGTAAAGAAGAAGCATGTCGAATTTAGTGGACAATCTGTGTGA  
TATGGAGATGGTCAACAAAGTGGCCAAACAGCCTTTGATGTAGCAGATGAAGACATTTTAGGATATTTA  
GAAGAGTTGCAAAAGAAACAAAATCTGCTCCATAGTGAAAAACGGGACAAGAAATCTCCACTAATGAA  
CAACAGCAAATATGGACAATAATCAGTCACAGAAGACCTTTAAAAACAAAGAGACGTTGATTATTGAACC  
AGAGAAAAATGCATCCCCTATTGAATCTCTGGAACAAGAAAAGGTTGATGAAGAAGAAGAAGAAAAGAG  
GATGAGCTAGCTGCTCTAGTGAAGAAGATGAGGAAGTACTCGGAATCAGAAGCTGAAACAGATAAGA  
CAAAACCCTGGCTTCTGTAACCTAATGCCAACCTTCTAGTACACAAGCAGCTCCTGTAGCTGTTACAAC  
ACCTACTGTGTCATCAGGTCAAGCAACCTACATCACCTATTAAGGTTTCCAACCACAGCTACAAAA  
ATTTCTCCAAAGAAGAAGAGAGAAAAGATGAGTCTCCTGCAACTGGAGGTTAGGACTTAGAAAGACGG  
GCAGCTATGGTCACTTGTGAAATCACAGCATCTAAAGAGGTCAGAAAAGAAAAGATACTGCAGGTGT  
TACACGTTCAAGTCCCAGACTTCTCTCTTTGGATAATAAAGAAAAGGAGAAAAGATAGTAAA



[View online »](#)

GGAAGTGGCTTGCATATGTTGCACCTACAATACCAAGACGACTAGCCAGTACATCTGACATTGAAGAGA  
 AAGAAAACAGAGATTCTTCAAGTTTGCGAACAAGTAGTTCATATACAAGGAGAAAATGGGAAGATGATCT  
 TAAAAAATAGCTCAGTTAATGAAGGATCAACGTATCATAAAAGTTGCTCCTTTGGTAGAAGACAAGAT  
 GATTTGATTAGTTCTAGTGTCCAAAGCACCACATCAACACCAACAGTTACCTCTGCAGCTGGGCTCAGA  
 AAAGCCTGCTTCCAGCACAAGCACTACTACAAGATTACAACGGTTCTTCTCAGCAGGCACACAAG  
 CAGTACCTCAAATCGTTTGTGGGCTGAGGATAGTACTGAGAAAAGAAAGGACAGTGTCTTACGGCAGTG  
 ACCATTCTCTCCCAACAGAGGTGAGGAGAGACGCAGATCATACCTCACTCCTGTTAGGGATGAAGA  
 GCTGAATCCCAAAGAAAAGCAAGATCTAGACAAGCAAGACAATCTAGAAGATCAACACAGGGAGTGACA  
 TTAAGTATCTTCAAGAAGCTGAGAAAACAATAGGAAGAAGTCTTACCCGAACCAGAGAAAAGAAA  
 ATGAGAAAAGAAAAGAGGAAAAGAGAAAACAAGATAAAGAGAAAACAAGAAAAGAAAGGAGTCAAG  
 AACATCTAGAGAAGATGAATATAAACAAAAGTACTCCAGAACGTATGATGAGACTACCAGCGTTATAGG  
 CCAGTATCAACTCAAGTTCAACCACTCCATCCTTCTCACTTTCTACTATGAGCAGTTCACTGTATGCTT  
 CAAGTCAACTAAACAGGCCAAATAGTCTTGTAGGCATAACTTCTGCTTACTCCAGAGGAATAACAAAAGA  
 AAATGAAAGAGAGGGAGAAAAGAGAAGAGGAGAAAAGAGGAGAAGATAAATCACAACTAAATCAATC  
 AGAGAACGACGACGACCAAGAGAGAAAAGAGTCTACAGGAGTTTCATTTTGGACACAAGATAGTGATG  
 AAAATGAACAAGAACAAATCAGACACAGAAGAGGGATCCAATAAGAAAAGAACTCAGACGGATCCAT  
 TTCTAGATATGAAACCAGTTCTACATCAGCTGGTATCGATATGATTCTTGTGGTGGTCTGGATCA  
 TACAGTTACTTAGAAGAAAAGAAACCTTACAGCAGCAGGCTAGAAAAGGATGACTCAACTGACTTTAAA  
 AGCTTTATGAACAAATTTAGCTGAAAATGAAAAGCTGAAGGCACAGCTACATGATACAAATATGGAAC  
 AACAGATCTTAAATTACAGTTGGAAAAGGCCACCCAGAGACAAGAAAGATTTGCTGATAGATCACTGTTG  
 GAAATGGAAAAAGGGAACGAAGAGCTCTAGAAAGAAGAATATCTGAAATGGAAGAAGAGCTCAAATGT  
 TACCAGACCTAAAAGCAGACAACCAGAGGCTAAAGGATGAAAATGGGGCCTTGATCAGAGTTATAAGCAA  
 ACTTTCCAAAAAAGAAAAAAGAAAAAAGCTCGACTCTAGATTGCGGCCGCGGTCA

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:**

>RC223540 representing NM\_002480  
 Red=Cloning site Green=Tags(s)

MKMADAKQKRNEQLKRWIGSETDLEPPVVKRQTKVKFDDGAVFLAACSSGDTDEVLLKLLHRGADINYAN  
 VDGLTALHQACIDNVDVMKFLVENGANINQPDNEGWIPLHAAASCGYLDIAEFLIGQGAHVAVNSEGD  
 TPLDIAEEEEAMEELLQNEVNRQVDIEAARKEEERIMLRDARQWLNSGHINDVRHAKSGGTALHVAANKG  
 YTEVLKLLIQAGYDVNIKDYDGWTPHAAAHWGKEEACRILVDNLCDMEMVNKVGQTAFDVADEDILGYL  
 EELQKKQNLHSEKRDKKSPLIESTANMDNNSQKTFKNKETLIEPEKNASRIESLEQEKVDEEEEGKK  
 DESSCSSEDEEDSESEAEATDKPLASVTNANTSSTQAAPVAVTPTVSSGQATPTSPIKKFPTTATK  
 ISPKEEERKDESPATWRLGLRKTGSYGALAEITASKEGQKEKDTAGVTRSASSPRLSSSLDNKEKEKDSK  
 GTRLAYVAPTIPRRLASTSDIEEKENRDSSSLRTSSSYTRRKWEDDLKKNSSVNEGSTYHKSCSFGRQRD  
 DLISSVSTTSTPTVTSAAGLQKSLSSSTSTTKITGSSSAGTQSSTSNRLWAEDSTEKEKDSVPTAV  
 TIPVAPTVPVNAASTTTLTITTAGTVSSTTEVRERRRSYLPVREDEESESRKARSRQARQSRSTQGV  
 LTDLQEAETIGRSRSTRREQEENEKEKEKEKQDKEKQEEKKESETSREDEYKQKYSRTYDETYQRYR  
 PVSTSSSTTPSSSLSTMSSSLYASSQLNRPNSLVGITSAYSIRGITKENEREKEKREEEKEGEDKSQPKSI  
 RERRRPREKRRSTGVSWFTQSDENEQEQQSDTEEGSNKKTQDTSISRYETSSTAGDRYDSSLGRSGS  
 YSYLEERKPYSSRLEKDDSTDFKLYEQILAENEKLLKQLHDTNMELTDLKLQLEKATQRQERFADRSL  
 EMKRRERRALERRISEMEEELKMLPDLKADNQLKDENGALIRVISKLSKKKKKKLLDSRLRPRS

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

**Chromatograms:**

[https://cdn.origene.com/chromatograms/mk6169\\_c11.zip](https://cdn.origene.com/chromatograms/mk6169_c11.zip)

**Restriction Sites:**

Sgfl-Mlul

## Cloning Scheme:



ACCN: NM\_002480

ORF Size: 3132 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 Size: 4613 bp

RefSeq ORF: 3093 bp

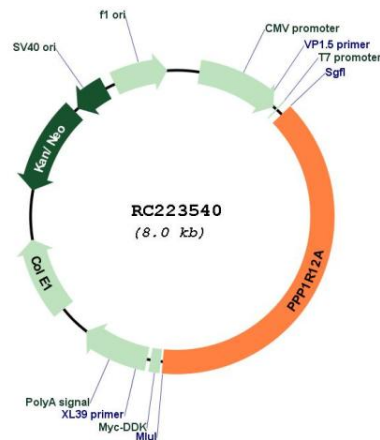
Locus ID: 4659

UniProt ID: [O14974](#)

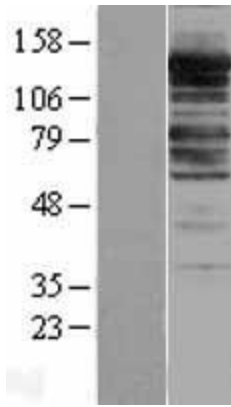
Cytogenetics: 12q21.2-q21.31

<b>Domains:</b>	ANK
<b>Protein Families:</b>	Druggable Genome
<b>Protein Pathways:</b>	Focal adhesion, Long-term potentiation, Regulation of actin cytoskeleton, Vascular smooth muscle contraction
<b>MW:</b>	117 kDa
<b>Gene Summary:</b>	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]

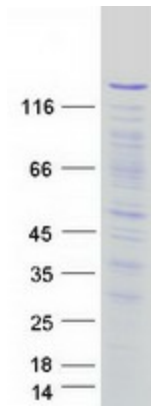
### Product images:



Circular map for RC223540



Western blot validation of overexpression lysate (Cat# [LY428392]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with [RC227493] using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified PPP1R12A protein (Cat# [TP323540]). The protein was produced from HEK293T cells transfected with PPP1R12A cDNA clone (Cat# RC223540) using MegaTran 2.0 (Cat# [TT210002]).