

# Supplementary materials-Table

**Table S1.** Primers used in cDNA cloning.

Forward primer 5'-3' sequences	Reverse primer 5'-3' sequences	Purpose
GCTGCTGTCATCTCATGGTGTTC	TCCTTCCTTGTAGAGTTGCCTCGT	<i>PmGrx2</i> -ORF Validation
ATGAAGGGCCCAGTTGCT	CTGAACCAAATTTGCTAATTTTC	
GCATAGGTGGAGGAACAG	CTAACAACTGAGGTAGGTAGAA	

**Table S2.** Primers used in RACE.

Primer Name	5'-3' sequences
UPM Long primer	CTAATACGACTCACTATAGGGCAAGCAGTGGTATCAACGCAGAGT
UPM Short primer	CTAATACGACTCACTATAGGGC
NUP	AAGCAGTGGTATCAACGCAGAGT
<i>PmGrx2</i> -3' GSP	TGATAAGCAGCCTGATGGTG
<i>PmGrx2</i> -5' GSP	CTAACAACTGAGGTAGGTAGA

**Table S3.** Primers used in qRT-PCR experiments.

Forward primer 5'-3' sequences	Reverse primer 5'-3' sequences	Purpose
AAGCCAGGTATGGTTGTCAACTTT	CGTGGTGCATCTCCACAGACT	<i>PmEF-1α</i> qRT-PCR primers
TGATAAGCAGCCTGATGGTG	GCCTCGTTTCTGTTCCTCCA	<i>PmGrx2</i> qRT-PCR primers
TCCTCCGTCCTTCGTGTCTCTTCCT	ACCAGGTGGCGTAGAAGTCGATGAC	<i>PmTrx</i> qRT-PCR primers
TACCCTTTGGATTTACCTTTGTC	ATTGATTGTTACCTGACGGAGATT	<i>PmPrx1</i> qRT-PCR primers
CGAGGATTTGCTGTGAAGTTTT	ATGAAGGAAGGGAATAGAATAGGAT	<i>PmCAT</i> qRT-PCR primers
GGTGACATCGAGAAGGGCAAGAAGA	CCTTGGACTTGTGGCGTCTGTGTA	<i>PmCYC</i> qRT-PCR primers
ATGGAGCCCTGTATTGAG	GTGGATGGAGAACTGGAA	<i>PmIAP</i> qRT-PCR primers

**Table S4.** Primers used in dsRNA synthesis.

Forward primer 5'-3' sequences	Reverse primer 5'-3' sequences	Purpose
ATGGTGAGCAAGGGCGAGGAG	TCAAAGATCTACCATGTACAGCTCGT	dsGFP Synthesis
TAATACGACTCACTATAGGATGGTGAGC	TAATACGACTCACTATAGGTCAAAGATCT	dsGFP Synthesis (T7)
AAGGGCGAGGAG	ACCATGTACAGCTCGT	
AGGCTCATCGAGTTGTCAAATTGC	TCCTTCCTTGTAGAGTTGCCTCGT	dsPmGrx2 Synthesis
TAATACGACTCACTATAGGAGGCTCATC	TAATACGACTCACTATAGGTCCTTCCTTGT	dsPmGrx2 Synthesis (T7)
GAGTTGTCAAATTGC	AGAGTTGCCTCGT	

**Table S5.** Primers used in exons amplification of *PmGrx2*.

Forward primer 5'-3' sequences	Reverse primer 5'-3' sequences	Purpose
TGAAAATGCCCCAATAGTT	ATACTCTTACCTTTTATAGCTATCTT	Exon1 amplification of <i>PmGrx2</i>
TGATTGTGTACACTGACAGGCAT	AAGGCTACACCTGTTCCCTG	Exon2 amplification of <i>PmGrx2</i>
ACCTTGTTTCCCCAGTGAT	AGTTACACCCTTTTCTACTATTTT	Exon3 amplification of <i>PmGrx2</i>
AAACTGAAATAACATTCCATTG	AAGGATTACTTTACATGATTACAC	Exon4 amplification of <i>PmGrx2</i>

**Table S6.** Accession numbers were used the alignment and phylogenic tree in this study.

Accession number	Scientific name
KQK78544.1	<i>Amazona aestiva</i>
AK341132.1	<i>Acyrtosiphon pisum</i>
ADY47130.1	<i>Ascaris suum</i>
PSN36174.1	<i>Blattella germanica</i>
NP_001030273.1	<i>Bos taurus</i>
XP_026053840.1	<i>Carassius auratus</i>
XP_026078075.1	<i>Carassius auratus</i>
XP_005690513.1	<i>Capra hircus</i>
KAG0717517.1	<i>Chionoecetes opilio</i>
AEL23128.1	<i>Cherax quadricarinatus</i>
WP_190627512.1	<i>Cyanobacteria</i>
NP_001005950.1	<i>Danio rerio</i>
NP_001002404.1	<i>Danio rerio</i>
BC059659.1	<i>Danio rerio</i>
OAF97418.1	<i>Escherichia coli</i>
SYX47894.1	<i>Escherichia coli</i>
AXM05418.1	<i>Eriocheir sinensis</i>
XP_422200.3	<i>Gallus gallus</i>
AJ720261.1	<i>Gallus gallus</i>
XP_042205294.1	<i>Homarus americanus</i>
XP_042230596.1	<i>Homarus americanus</i>
KAA0195653.1	<i>Hyalomma azteca</i>
AAH05289.1	<i>Homo sapiens</i>
AAH28113.1	<i>Homo sapiens</i>
AB223038.1	<i>Homo sapiens</i>
XP_013786644.1	<i>Limulus polyphemus</i>
XP_010713979.1	<i>Meleagris gallopavo</i>
NP_001253327.1	<i>Macaca mulatta</i>
NP_001033681.1	<i>Mus musculus</i>
NP_075629.2	<i>Mus musculus</i>
AK013761.1	<i>Mus musculus</i>
AES71315.2	<i>Medicago truncatula</i>
KAG8003369.1	<i>Nibea albigera</i>
EZA62809.1	<i>Ooceraea biro</i>
XP_008266946.1	<i>Oryctolagus cuniculus</i>

BT073697.1	<i>Oncorhynchus mykiss</i>
XP_043941258.1	<i>Protopterus annectens</i>
MZ827442	<i>Penaeus monodon</i>
XP_042879398.1	<i>Penaeus japonicus</i>
XP_042868605.1	<i>Penaeus japonicus</i>
XP_041125683.1	<i>Polyodon spathula</i>
XP_042832948.1	<i>Panthera tigris</i>
XP_045130901.1	<i>Portunus trituberculatus</i>
MPC08028.1	<i>Portunus trituberculatus</i>
XP_027229698.1	<i>Penaeus vannamei</i>
XP_027209771.1	<i>Penaeus vannamei</i>
XP_027214062.1	<i>Penaeus vannamei</i>
XM_027358261.1	<i>Penaeus vannamei</i>
AAH86381.1	<i>Rattus norvegicus</i>
GFP69650.1	<i>Saccharomyces cerevisiae</i>
GFP69319.1	<i>Saccharomyces cerevisiae</i>
NM_001183873.1	<i>Saccharomyces cerevisiae</i>
AGS29206.1	<i>Salmonella enterica</i>
UHY14109.1	<i>Scylla paramamosain</i>
BT048738.1	<i>Salmo salar</i>
NP_001230646.1	<i>Sus scrofa</i>
QCE13504.1	<i>Vigna unguiculata</i>
NP_001016637.1	<i>Xenopus tropicalis</i>
BC075374.1	<i>Xenopus tropicalis</i>
KAG5373225.1	<i>Yarrowia sp.</i>
NP_001151051.2	<i>Zea mays</i>

**Table S7.** Homology of *PmGrx2* with Grx2 of other species.

Species	Identity %	Similarity %
<i>Penaeus vannamei</i>	96.64	98
<i>Penaeus japonicus</i>	94.96	98
<i>Portunus trituberculatus</i>	77.97	87
<i>Eriocheir sinensis</i>	77.88	86
<i>Homarus americanus</i>	76.32	92
<i>Scylla paramamosain</i>	75.42	88

**Table S8.** Names and Websites of the analysis software.

Software Name	Software Website
ORF finder	<a href="https://www.ncbi.nlm.nih.gov/orffinder">https://www.ncbi.nlm.nih.gov/orffinder</a>
BLAST	<a href="https://blast.ncbi.nlm.nih.gov/Blast.cgi?CMD=Web&amp;PAGE_TYPE=BlastHome">https://blast.ncbi.nlm.nih.gov/Blast.cgi?CMD=Web&amp;PAGE_TYPE=BlastHome</a>
SMART	<a href="http://smart.embl-heidelberg.de/">http://smart.embl-heidelberg.de/</a>
SignalP-5.0 Server	<a href="http://www.cbs.dtu.dk/services/SignalP/">http://www.cbs.dtu.dk/services/SignalP/</a>
YinOYang 1.2 Server	<a href="http://www.cbs.dtu.dk/services/YinOYang/">http://www.cbs.dtu.dk/services/YinOYang/</a>
NetNGlyc 1.0 Server	<a href="http://www.cbs.dtu.dk/services/NetNGlyc/">http://www.cbs.dtu.dk/services/NetNGlyc/</a>

---

NetPhos 3.1 Server	<a href="http://www.cbs.dtu.dk/services/NetPhos/">http://www.cbs.dtu.dk/services/NetPhos/</a>
Motif Scan	<a href="https://myhits.sib.swiss/cgi-bin/motif_scan">https://myhits.sib.swiss/cgi-bin/motif_scan</a>
SOPMA	<a href="https://npsa-prabi.ibcp.fr/cgi-bin/npsa_automat.pl?page=/NPSA/npsa_sopma.html">https://npsa-prabi.ibcp.fr/cgi-bin/npsa_automat.pl?page=/NPSA/npsa_sopma.html</a>
ConSurf	<a href="https://consurf.tau.ac.il/overview.php">https://consurf.tau.ac.il/overview.php</a>
Expasy	<a href="https://web.expasy.org/compute_pi/">https://web.expasy.org/compute_pi/</a>
NCBI	<a href="https://www.ncbi.nlm.nih.gov/">https://www.ncbi.nlm.nih.gov/</a>
STRING	<a href="https://cn.string-db.org/">https://cn.string-db.org/</a>

---