

## Supplementary Materials:

Supporting materials: 1 Figure and 1 Table.

**Table S1** was used to point to **Section 3.1**.

**Fig. S1** was used to point to **Section 3.2**

**Table S1** The nucleic acid sequence and amino acid sequence of *LPMS05445*

1	atgcctaaattataaaaaacacgggtgggaaggtaacacacggtgggcttttacctc
1	M P K F I K N T V G K V N T T L G F Y L
61	ctaaccgtggtcttattttggctaaagacatatatcgcttataagagcgagttacttta
21	L T V V L F W L K T Y I A Y K S E F T L
121	ggggtaagggaccggtcaggaattatctgttcttgaatccattccgacagcgatc
41	G V K G P V Q E F I L F L N P F P T A I
181	gtgctgctcggtattgcctatatttccgtggcgcttaaagtattggattatgatgatc
61	V L L G I A L Y F R G R L K Y W I M M I
241	attgacgccctacagacgacgtggttatttgccaatatcttgattaccgggaattctct
81	I D A L Q T T W L F A N I L Y Y R E F S
301	gattcatgtcggcgggggtaattaagagtccgggtgctgtagtaataacctcggaag
101	D F M S A G V I K S S G A A S N N L G K
361	agtttgggacagatcattcatggaaccgacttctagttatgcagatgctggttgctg
121	S L G Q I I H G T D F L V Y A D V V L L
421	attctgtattagcctcaaggtcattcggatcgatccacggccttcaaaatcggtat
141	I L L L A F K V I R I D P R P F K I R Y
481	gcggcaactgaccatgattgggggtggcgttgttgctgttgacctggcatgtctgaa
161	A A T L T M I G V A L F A V D L G M S E
541	catgaccgttcagatttattgacgaggacttttgataacaactacatcgtaagtacttg
181	H D R S D L L T R T F D N N Y I V K Y L
601	ggactcaacacatatgcagggtatagcttctatcagaccgaaaaggaaagtgcgacgcgc
201	G L N T Y A G Y S F Y Q T E K E S A T R
661	gcccaagcaagtagtagtatgaagagtgtgctagcctacctcaagaaaaccaggct

221 A Q A S S S D M K S V L A Y L K K N Q A

721 ggcgagaacgtcaaatactttggtaaagcgaaggcaagaacgtcttcgtgattcattg  
241 G E N V K Y F G K A K G K N V F V I H L

781 gaaagttccagcaatttttaattgattataaggtcgatggtaaggaagttaccccgaaac  
261 E S F Q Q F L I D Y K V D G K E V T P N

841 ctgaacaagttctatcatgataagagtactttgagtttgataatttctaccatcaagtg  
281 L N K F Y H D K S T L S F D N F Y H Q V

901 gcgcaagggaagacctctgatgctgaaatgatgatggaaaactctttgttggtttacca  
301 A Q G K T S D A E M M M E N S L F G L P

961 accgggtcagcgcgatgacgcagatgggacgtcgaacacgttccaggcagcgcagcaatc  
321 T G S A M T Q Y G T S N T F Q A A P A I

1021 ctgtcacaaaagggtatacactgcggcttccacggatgtggctagtttctggaat  
341 L S Q K G Y T T A A F H G D V A S F W N

1081 cgggataacgcgtataagtcgtgggggtataactacttcttacttcttactataaa  
361 R D N A Y K S W G Y N Y F F Y S S Y Y K

1141 gagaagtcagactacaatattggttatggcttgaaggataaaatcttctcaagactct  
381 E K S D Y N I G Y G L K D K I F F K D S

1201 gttaagtatttgagcaattaccacaaccgttctacgcaaagctgattacgttgacgaac  
401 V K Y L E Q L P Q P F Y A K L I T L T N

1261 cactatccatacgaattggataagaagaaccagtcgatcgataagacgacgaccggggat  
421 H Y P Y E L D K K N Q S I D K T T T G D

1321 tcaaccgttgatggctacgttcagacggcccattatcttgatcaagcctttgccgaattc  
441 S T V D G Y V Q T A H Y L D Q A F A E F

1381 attagtacttgaagaaggccggcttataagaatagtatgattgtgctttatggggat  
461 I S Y L K K A G L Y K N S M I V L Y G D

1441 cattatgggatttcaacaaccataaggetgccattgcacagttattgggtaaaaagtcg  
481 H Y G I S N N H K A A I A Q L L G K K S

1501 gtaacgagtttcgacttggctcaattccagaaagtaccatttatgattcattctgaagga  
501 V T S F D L A Q F Q K V P F M I H S E G

1561 atcaaggcggtattaaccacacgtatggtggtgaaattgatgcgttgccaacgatttt  
521 I K G G I N H T Y G G E I D A L P T I F

1621 gacctgttagggatcaagaacaagggtacatccagttcggaacggacttactgtcgaaa  
541 D L L G I K N K G Y I Q F G T D L L S K

1681 cagcataaccaaacagtggctttccggaacggggattttgtctcaccgacatatacgaag  
561 Q H N Q T V A F R N G D F V S P T Y T K

1741 atcagtgggacagtctatgattcgaagaccggtagaagtaaacggatatgacgacgaag  
581 I S G T V Y D S K T G K K L T D M T T K

1801 cagaaggatactgtcaaacagatgcaaatcatgtgacgacggaactctcactctctgat  
601 Q K D T V K Q M Q N H V T T E L S L S D

1861 cgggtcatccagggtgacttactacggttctacacgcctaagggttaagaaggtaaat  
621 R V I Q G D L L R F Y T P K G F K K V N

1921 aagtcggactatagttataagctgactaagaccctcaaatcattgaaagagatccaagct  
641 K S D Y S Y K L T K T L K S L K E I Q A

1981 gagaagaagacgagtgttctctcgaagcataagggcaaatcaacggagagtctgtataag  
661 E K K T S V L S K H K G K S T E S L Y K

2041 acggatgcaccagaactgtctagctcaagtgacagtagtagtagtcaagcagtagttct  
681 T D A P E L S S S S D S S S S S S S S S S

2101 gattaa  
701 D -



Fig. S1. Sequencing verification of the gene fragment of the digested plasmid.