

## Supplementary Materials

Article title: Poly ADP-Ribosylation in a Plant Pathogenic Oomycete *Phytophthora infestans*: A Key Controller of Growth and Host Plant Colonisation

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The following Supporting Information is available for this article:

### Figure S1

Sequences of constructs for synthesis of dsRNAs

> dsRNA\_ PiPARP2 (nts1225–2037)

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CGATTGCCTACCGAGGTGCAGGACTTTTTGACGCTCGTTGCGGACCACACGGAGCTGTCGTATGCTTATA
CAGTCACAGACGAGCTGTTGGGGGACGCTATCATGAAGTTGCCACTCGGCCGTCTGTCCAAGACGACCA
TTAAACGGGGATACGAGACGCTGGAGGAGATTTACGAAGCGCTTATGAGTCGACAGGTGTCTCGAGCG
CGACTGTCGAACCTCAGTAGCCACTTCTACTCACTTATTCCGCACCATTCGCGTCTGGAAGTTATTGATAC
GATGGTGAAACTAGGCAAGAAGGTCCAGCTGATGGCTGAAGTCGGGGCGAGTGTGCGTGGGATGGTT
CACGAGTTTGTGGCTCGACGGTGTGCGTCGAGAACTACTTGGATGCGTGTTACGATTTGTTAGAGTGT
GAGCTGCAACCTGTGAAGAGCTCGGACCCCGATTTTGCCTAATTCAGACGTACATTCGTAACCTCCAAC
GCTGCGGGCGGAAGCAAGACCGATTGCAGTTGCTGTGCGTCTTCGCGTTGAGAAGCCCGAGCAGGAG
ACGCGCTTTGAGCCTTTCCGCACATTTACCAACCGACGGATTCTCTGGCATGGCAGCCACTTGGCGAACT
GGTTGGGCATCTTGTGCGAAGGGCTGCGTATCGCACCGCCTGAAGTTGCGTCGAATGGACGGACGTTT
GGTAAAGGACTGTACTTCACGGATAAAGTGACAAAGGCACAGGCGTATTGCCACTGCAGACCTACGAA
CGGCCATAATCAGTGTGTATTCGCGCTGAGTGAAGTGGCGTTGGGTGAGAGCAAG
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>dsRNA\_ PiPARP1 (nts 1594–2255)

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CTCATCTGCGACCCAGAGGTGGTGACGCGAGAAATGGCCAGCCTGAATGTGGACCTGAAGCGCTTTCC
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GCTCGGTAAACTGTCTGAAGGCGCAGATATCGCAGGGCTACGAAATCCTACAGCGCCTTTCAGCTGCATT  
GGAGGAGATGGAACAGCTGGCAACAGCTTCTGCTCCAGCCACGAAAGCCAAAGCTGGCGCGAAAAGTA  
GACGAAAGGCCAAGGCGAAAGCGAAGGGACCGACTGCAGCTACCACCAAAAGTCTGTCTGGCACTCCAA  
GCAGCGATCAAGTCGCTCTCCAGCGAGTTTTACTCGCTCATCCCGCACGATTTCTGGTCGCTCTTTGCCGC  
CAGCTATCGATACGATGGCAGATCTCAAAGTGAAGCTGGAGCTGCTCGAAGTGTCTGTCGAATCTGGAGA  
TCTCGCAGATGCTGCGGAAGCAAGAAGCCGAGAAACGGAGCGGACCTGCGATCCATCCTCTGGACATG  
CACTACAACATGCTCAACACGAACATGGAGCCGCTGAAAAAGCGCGGCAAGGAGTACAAGATCATCGA  
GAGATTTATCCAGAAGACCCACGGCGGTAGCAAGCTCAGTATCAACACAATTCTCAAGATTGCGCGTCC  
GGACGAAGACACCCACAAGGACGTGCTAGGATCTCTTGACAACCA

> dsRNA\_ PiPARG (nts 1–680)

GTTGCTGACGCGAGAGGAACGGGTGCGTTCCTCAAGGACGTCCTGCCGGAGATGGTGCGACTGGTG  
TGGAATGCCGCAAATGTTTGCTACTCCGCCGCACTATTGACGCCTCTGGAGACAGACAAACAGGTGG  
AAGGCAAAGCTCCACGTAAGTCTAACAGGACTCGAGTGGAGACGCAGACGCATCGGTTTACGAAGCTG  
GAGGTGCTGACACTCGTGTGTAGCTGCTTCTCGGCATTTCTCCTGACCAAGACATCGTCCAATGCGTCC  
AACTCGATGGCAGTCCGCAGAGCAAGAAAGCGGCACGCCGCGACAGTGAAGACGACGTCATCCAGTTC  
CCCTACTTCACAGCAGTTCGCATGTTCTCAGCTCCTGGAAATATGGGCCGAGTGGTTGTGCTGAAGGCG  
CAGAAGATCCGCTGTCTCTTGCAATACTTTTTGCGTGTGGTGCCACGTGCCATCTCCGAGCGTCCAGCGT  
TATCGACCGAGGTGATCGACTTTACTCGTGTTGGCGTCCACGTCCCACTTGCCCAAGGTGCGACTCAGTGC  
TGAGCGAACAACCTCAAGAACTGCTCACGATATTGTCGACTAGTGAGAGTAATACTGGTGCTACCGCGCA  
GATATGTCCCCCTCACTTACACGCTGCTCGATGCGTCTCGGACACGTTGATCGAAAATC

## Figure S2

Gene sequences

*P. infestans* strain VZR ViR21a

> PiPARG (partial sequence)

GTTGCTGACGCGAGAGGAACGGGTCGCGTTCTTCAAGGACGTCCTGCCGGAGATGGTGCGACTGGTGCTG  
TGGAAATGCCGCAAATGTTTGCTACTCCGCCGCCACTATTGACGCCTCTGGAGACAGACAAACAGGTGG  
AAGGCAAAGCTCCACGTACTGCTAACAGGACTCGAGTGGAGACGCAGACGCATCGGTTTACGAAGCTG  
GAGGTGCTGACACTCGTGTGTAGCTGCTTCTTCGGCATTCTCCTGACCAAGACATCGTCCAATGCGTCC  
AACTCGATGGCAGTCCGCAGAGCAAGAAAGCGGCACGCCGCGACAGTGAAGACGACGTCATCCAGTTC  
CCCTACTTCACAGCAGTTCGCATGTTCTCAGCTCCTGGAAATATGGGCCGAGTGGTTGTGCTGAAGGCG  
CAGAAGATCCGCTGTCTCTTGCAATACTTTTTGCGTGTGGTGCCACGTGCCATCTCCGAGCGTCCAGCGT  
TATCGACCGAGGTGATCGACTTTACTCGTGTTGGCGTCCACGTCCCACTTGCCCAAGGTCGACTCAGTGC  
TGAGCGAACAACACTCAAGAACTGCTCACGATATTGTCGACTAGTGAGAGTAATACTGGTGCTACCGCGCA  
GATATGTCCCCCTCACTTACACGCTGCTCGATGCGTCTCGGACACGTTGATCGAAAATCTGGACAGTCAT  
CTGCAGG

>PiPARP 2 (full sequence)

ATGAATCAGTGCATACAAACATCAAACTAAACGACTCCGACCCGGCCCAGGAGCACAGCAGACCCGCC  
ACCGCCGAAGAAGGGAGGAAGCCGCAGCCCCAGTTCAGTTCAGCCGCCGGAGCCGCAGACAGATAG  
ATACACTCAAGCGACGGATCGCCACGATGGCCAAGAAGCGTCGCGCGTCCACATCTTCTGCCCAGAAGG  
CGTCGCCTGCCGCTGCTGCCATGATCTCGTCGCCCTTCCCGTACCCTTCTCCGGCGACGCCAGTCGCTC  
GAGTCGCTTCAACTTGCCGCGCGTACACACGTCGCGTTTCGGGTGTGGCCGCCAGCACGCGCTCGCAGCT  
CACTGTGGCGCAGCTGCCTGTATTGTACCTCCACTCAAGAAACGCGTCACGTCGCGACGCAGCGCCAA  
AGCCGTCAAACTCCAGTTGCCAGACGACGACGTAGATGAAGACGAGAATGATGGTAGGACCAACTGCT

GCGTGCAACAGCGACACCGAGACGGAGGACGATGAAGAGAAGCTGCTGCTTATTAAACCTGATCCG  
TATCTGCCTGAGTCCTATCAACACCGAGCCGCGTACTCCGACACGCTGGGAGCTTCTACGACGCCATGC  
TCACTCGAGCGCGTGTCCACAACAACCACAGCGAGTTCATCGCGTTACAGGCGCTCGAGTTCGACAAGC  
AGTTCTATCTCTGGACCAGAGCTGGACGTGTCGGATGTGCAGGCAAGACGATGCTCACAGGCCCTTTCC  
CGAGTGCTGAGAAGGTCACACTCGAGTTCTGCACGTTGTTGCGATCCAATACCAACTGCGAGTGGGAGG  
AGCGTCATGCTCTGAGATACCAAGAAGGCAGCTACACGTGGATCGAGCTCGACTATTCAACTGGAACGC  
CGTATTCCGAGTCGCTAACATCGGCGCTGGCAGACAATCAGGGAGAAATGGACAACGCAGACAGTTTC  
CGAGACTTTGACCTGGTTCCGACGGCGTCTCCGCCGCTTCCGATGGCTCCGTCTAATACGCGCAAGCGAC  
GTCGAGCGGGTATATGGACGACGTA CTCACTGCAACGTCAACTTCGACCACGACTGCAACGTCCAGCA  
CCAGTGTACGACGGTCGCTGAGCAACCAGTTCGACTGGCTGTATGCAGGTTGAGACGGAGACACGGCC  
AGTGCAGCGTTACCGAGACTTCCACGTGCGCGTGTGCCACTGCGCCGCCGTGCGGATTGCCTACCGAG  
GTGCAGGACTTTTTGACGCTCGTTGCGGACCACACGGAGCTGTCGTATGCTTATACAGTCACAGACGAG  
CTGTTGGGGGACGCTATCATGAAGTTGCCACTCGGCCGTCTGTCCAAGACGACCATTAAACGGGGATAC  
GAGACGCTGGAGGAGATTTACGAAGCGCTTATGAGTCGACAGGTGTCTCGAGCGCGACTGTGGAACCT  
CAGTAGCCACTTCTACTCACTTATTCCGCACCATTGCGGTCTGGAAGTTATTGATACGATGGTGAACTA  
GGCAAGAAGGTCCAGCTGATGGCTGAAGTCGGGGCGAGTGTGCGTGGGATGGTTCACGAGTTTGTGG  
CTCGACGGTGTGCGTCGAGAACTACTTGGATGCGTGTTACGATTTGTTAGAGTGTGAGCTGCAACCTG  
TGAAGAGCTCGGACCCCGATTTTGCCTAATTCAGACGTACATTCGTA ACTCCA ACTGCTGCGGGCGGA  
AGCAAGACCGATTGCAGTTGCTGTCGGTCTTTCGCGTTGAGAAGCCCGAGCAGGAGACGCGCTTTGAGC  
CTTCCGCACATTTACCAACCGACGGATTCTCTGGCATGGCAGCCACTTGGCGAACTGGTTGGGCATCTT  
GTCGGAAGGGCTGCGTATCGCACCGCCTGAAGTTGCGTCGAATGGACGGACGTTTGGTAAAGGACTGT  
ACTTCACGGATAAAGTGACAAAGGCACAGGCGTATTGCCACTGCAGACCTACGAACGGCCATAATCAGT

GTGTATTTCGCGCTGAGTGAAGTGGCGTTGGGTGAGAGCAAGGAGATGCTCAACTCGGACGACAATGCC  
AAGCAGTTTGTGCACACAGGAGCTGGAGGGCGTGCGAAGGGAGCCTACTATCACAGCTGCAAAGGTGT  
GGGGTCGTGTCGTCCGGA CTCTGCTGGTGAAGTTGTGGATATCCACGGAGCCATTTGGCCCGTAGGGA  
AACCAGTCCAACCGGAGGAGCGAACGGGACTGCACCACAGCGAGTATATCATCTACAACCCAGCCAG  
ACTCGGATGCGCTACGTCGTGCTGGCAAGGAGTCCGTACTAA

> PiPARP 1 (full sequence)

ATGGCTCCTCAACAACAAGACACCCAAAGCGCGGGTACGAGCACCCTGCGTCTTCCATCGCGGAGAAG  
TCGGAGTCTGTTACTAAGCATAAGCCCATCAAGAACGCGCTCAATGATGAGGTCGAGCATTTGAGTTT  
GACCACCCTGAACTTCGCAGCGTTTTCCCCACAACCAAGCACGACCCAATTCCAGTGCTGCCGTACGAGG  
ACCGAGGACTGATGGCCGACTTGACGTTCAAGAATTTGCTCAAGGATGCCTCGGTGACGCACTTGTCGC  
CAAGGATCGGCACGGAAGTGTGCGGGCATTCAACTGCATCAGTTGACGAACGCGCAGCGCGATGAGCTT  
GCTCTACTGGTGTACACCGCGGCGTGATCTTTTTCCGTGAACAGGAGATTAATATTGAGCAGCAGCTCG  
ATCTTGGTCGGTACTACGGCCCACTGCACGTGCACCAGAATCTCGGTACCCGGAAGGGCACCCGTAG  
TGCTGGTGGTCGAGAACTCGGTGGGGGACAGTGACCGGATCATCAAACGCCAGCAGTACGACCCAGAC  
AACGTGTGGCACAGCGACGTTTTCAACGAGCGCCAACCTCCTTCGTACACAAGCTTCAAAGTGCTAACG  
AACCCTCCACTTGGAGGTGGCACGTTGTGGGCGTCCGCATACGAGGCTTACGAGCGCCTCACACCGCCG  
TTAAGACATTCATCGAGGGATTGACGGCGATTACAGCAGCAAGGCCCAAGCCGAGCGAGCAGGGAG  
ACGTGGACACACGATTTCGTGAGCTCCGGTGGAGTTCGAGCACCCGGTTGTACGCACCCACCCGGTAAC  
TGGTCGTAAGGCTCTATTTGTCAACCCCGCGTTCACCAGACGCATCCCGCAGCTCTCTTCTCGCGAGTCA  
GATGCGGTGCTCAAAGTTTTGTACAAGCACATCACGGAGGGCCACGAGTTCCAAGTTCGATTCCGCTGG  
ACCAAAAATGCTGCTGCGGTCTGGGATAATCACATCACGACTCACTTCGCGACGTTGACTACTTACCAG  
GCAACCGACACGCGGTTTCGAGTGACTACGAAAAAGAGATCCCCTACTTGGACGAAAGACCTTTCTCGT

CATTCTTCAATTGCGATCCAATGGCGTCAACTGCCACGATCGTCGACCCGCAAAGCTGCTGCAGCGCCAA  
TGCCGAGCTCTATCGCGACGGGGATGGCATGCGCTGGAGCTTCATGTTGAACTTAACGGACATTTCTTA  
CGGCACCTACGGCAACAACAAGTTCTACATGGGGCAGCTCATCGTAGACCGCGGGCGCTTCGTGGTCTT  
CCGCAAATGGGGCCGCGTGGGCGCCAAGACACCGCAGTCGAAAAGTGAAGTTCTACAGCAGCGTCGAAG  
AGGCTGAGTGGGCCTTCCAGAAGGTCTTCCAGTCGAAAAGCGGCAACAAGTGGCCGCTCACGGAGCCT  
TTTGTCCGCAAGAAAGGCAAATACTTCTCGTCGAGCTGGACGACGGAGAGCCCGAAGGATCATCTGCA  
GATGTTGAGGCGAAGGTGGAGGAAAAGCACGCAGTGGCGTCCAAACTGCCACGAGAAGTGCAAAGCA  
TCGTCCAGCTCATCTGCGACCCAGAGGTGGTGACGCGAGAAATGGCCAGCCTGAATGTGGACCTGAAG  
CGCTTTCCGCTCGGTAAACTGTCGAAGGCGCAGATATCGCAGGGCTACGAAATCCTACAGCGCCTTTCA  
GCTGCATTGGAGGAGATGGAACAGCTGGCAACAGCTTCTGCTCCAGCCACGAAAGCCAAAGCTGGCGC  
GAAAAGTAGACGAAAGGCCAAGGCGAAAGCGAAGGGACCGACTGCAGCTACCACCAAAAAGTCTGTGCG  
GCACTCCAAGCAGCGATCAAGTCGCTCTCCAGCGAGTTTTACTCGCTCATCCCGCACGATTTGGTTCGCT  
CTTTGCCGCCAGCTATCGATACGATGGCAGATCTCAAAGTGAAGCTGGAGCTGCTCGAAGTGTGTCGA  
ATCTGGAGATCTCGCAGATGCTGCGGAAGCAAGAAGCCGAGAAACGGAGCGGACCTGCGATCCATCCT  
CTGGACATGCACTACAACATGCTCAACACGAACATGGAGCCGCTGAAAAAGCGCGGCAAGGAGTACAA  
GATCATCGAGAGATTTATCCAGAAGACCCACGGCGGTAGCAAGCTCAGTATCAACACAATTCTCAAGAT  
TGCGCGTCCGGACGAAGACACCCACAAGGACGTGCTAGGATCTCTTGACAACCACATGTTGCTGTGGCA  
CGGCTCCCGTCTGTGCAATTTCTGTTGGCATTCTATCGCAGGGGCTGCGTATTGCCCCGCCTGAAGCTCCC  
AAGAACGGATATCAGTTCGGCAAGGGGGCAGTGTGCTGCTCGCAGACGTCGCACTGGGCACGCCGTT  
CAAGACTCCAAACGGCGAGTTTCTGGACTACAAGACGGTGAAAGAGCAACGCGGATGCGACAGCACAC  
ACGGACTTGGACGCATGGCACCGGCGGAAAATGAGTTCGAGACGCTGCCCCACGGCGTGGTTGTGCC  
GCCGGTACGCTGAAGGCAGTGGACGGTAACCAGTATTTGATGTACAACGAGTTCATCGTCTATCGCCGC

GAGCAGGTCCAAC T GCGCTATCTGGACGCGAATGGTGTGCGCTGGAGCTTCATGCTCAACTACACCAAC  
ATCTCGTTCGGGACGTATGGAAACAACAAATTCTACATGGTGCAGCTGATCCAGGTCGGCAATAACTTC  
ATGGTCTTCCGCAAGTGGGGACGCGTCGGAGCCAAAAACCCGAGCGCGCTCTGGAGCGCTACAACAC  
GTCGCTGGAGAAAGCGCAGGCGTCTTTTACGAAAAAGTTCTTGACAAGAGCGGTAATGCATGGCCATT  
GACAGGGCCGTTTGAGAAGGTGGAGGGCAAATACGTGCTCGTTGAACTGGACGACGAAGTGGCAGAA  
GAGGAGGAACAGATGAGCGACGTCGAGAAGGAAGAAGAAGAGGTGGCGTCGACTCTACACGAGACTG  
TCCAAGAAGTGTTGAAGATCTCGCGGGGTTACGCGTTGCTCCAGCAGCTCTCTGAAGTGGTCAAGGAAA  
TTGAAGATCTCAACAAGGTTGCTGCAAATACTCATGAGGCACCTCCTGCAAAGCGGACCGGAACACGAA  
GATCCACTCGGGTCAAACGAGCAGCCAAGCCAAATGCCGTGCAGATCCGCCGCTTAAAGGCTGGTCTGA  
AGACCCTTTCAAGCGAATTTTACACTCTGATTCCGCACGACTTCGGGCGAAACTTACCGCCCCGATCGA  
TTCGCTGGACGAGGTGAAGCTGAAGAGTGACTTGCTCGAGGTGCTGGCGAATATCGAGATTTGCGAGA  
AGTTGCAGGCTGAAAAGAAAAAGAATGCAAAGAAGAATGCCGGCGCTAAGCTGAACTCGCTCGACGCG  
CAGTACAACATGCTTAACGTCAAGATGGAGCCACTTCCTGAAGCTACCGAGGAATTCAGGATCATCGAA  
AAATACGTGGAGACCACGCACGCTCCGACCCACGTGCAGTATAAACTGCGGATAAAATCTGTTCTCAAG  
ATTGCGCGTCCGGATGAAGAAAAGTTCAAGGACGTTTTTTCAGTCCGTGAACAACCACAAGTTGTTGTGG  
CACGGGTCTCGCCTCTCGAACGTCATCGGTATCTTGTCTAAGGGCCTTCGCGTAGCCCCACCCGAGGCAC  
CAAACAACGGATACATGTTTCGGCAAAGGAGTGCGTGGAGATTACTTCACTGAGGTGGCTTTGGGTGCCC  
CCTACAAGGCTCAAGAAGCGGACGATCTGACGTATACAACCTTGAAGAAAACCAAGGGATGTGATAGT  
ACACACGGAGTTGGCCGCATGTCTGCCCTCGAAGAAGACTACGAGACCATGGAGGACGATGTGGTTGT  
TCCCATCGGTGAGTTAATGCCATCGGACGGCAGTGGCTCGTTGCTCTACAACGAGTTTATCGTGTACCGC  
CAGGAACAAGTGAAGTTGCGGTATCTGGTCAATCTCGACTTCCTATTCGAGGACGAGGAAGAGGAGGA  
GGCGTAG

**Table S1 Primers used for quantitative RT-PCR**

| Primer       | 5'-3' sequence          | Name                                                | Primer concentration (nM) | E (%) |
|--------------|-------------------------|-----------------------------------------------------|---------------------------|-------|
| PITG_04640-F | GGCCCCGTTGGTTTGTC       | <i>P. infestans</i> ef1a<br>elongation factor       | 300                       | 91.2  |
| PITG_04640-R | GCAGAGACTCGTGGTGCATCT   |                                                     |                           |       |
| PITG_11766-F | TCTCGCGCAAGGACTGGTA     | <i>P. infestans</i> 40S<br>ribosomal protein<br>S3a | 350                       | 97    |
| PITG_11766-R | CAGTTGCGCTCCGAGAAGAT    |                                                     |                           |       |
| dsPARP1-F    | TCGGAGTCTGTTACTAAGCATA  | dsPiPARP1                                           | 290                       | 90.3  |
| dsPARP1-R    | CTACAGGGTGCCCTTCCGGGTGA |                                                     |                           |       |
| PARP2-F      | CACTGTGGCGCAGCTGCCTGT   | dsPiPARP2                                           | 300                       | 95    |
| PARP2-R      | GCGATGAACTCGCTGTGGTT    |                                                     |                           |       |
| dsPARG-F     | TAGCTGCTTCTTCGGCATTTC   | dsPiPARG                                            | 320                       | 96    |
| dsPARG-R     | CCTGCAGATGACTGTCCAGA    |                                                     |                           |       |