

Description of Additional Supplementary Files:

Supplementary Data 1: RT-qPCR of *PiAA7A-E* in *P. infestans* infecting potato leaves at 24, 48 and 72 hpi.

Supplementary Data 2: Summary of kinetic parameters for *PiAA7A-D* (calculated using Prism).

Supplementary Data 3: RT-qPCR of *PiAA7A* and mScarlet tagged *PiAA7A* during infection of *Nicotiana benthamiana*.

Supplementary Data 4: RT-qPCR of *PiAA7A-E* in silenced *P. infestans* lines.