Supplementary Materials

Data S1. Fasta format sequences of artificial miRNA expression vector pAMIR–PLRV derived from pK7LIC1.0.

>**pAMIR-PLRV**

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ATTCCTAAAACCAAAATCCAGTGACCTGCAGGCATGCGACGTCGG

* Sequences with a yellow background are AMIR sequences and those with a blue background are connector sequences.

Table S1. Primer sequences used in AMIR synthesis.

Gene ID (backbone)	Primer ID	Primer Sequences
AMIR3a (AMIR171v1)	YRPD0001	ACA**ACTAGT**CCAGGGCGCCCTCACCAAACAAAACCTCACAATGAGAGAGTCCCTGT SpeI
	YRPD0107	GTGTGTGGTCAGGTAAGAAAGGATTCTCATCCGCAATCCAGAACAGGGACTCTCTCA
	YRPD0003	TTCTTACCTGACCACACACGTAGATATACATTATTCTCTCATGATTAA
	YRPD0108	ATTATTCTCTCATGATTAAAGGATTCTCCTCCGCAACCCAGATCAGTACTCTCTCGTCAA
	YRPD0005	ATTCGCCGCCAAGCTCTTATGTGTGATTACTTACTTTGGTTGACGAGAGAGTACTGA
AMIRCP (AMIR164v1)	YRPD0006	AAGAGCTTGGCGGCGAATCACCAAACCTCCACCAACAATGGGTGAGATTCTCCAT
	YRPD0109	ATTTCGTGTTTGTTGGTTACAGACTGTCCGGCATTCAAGAGAATGGAGAATCTCACC
	YRPD0008	AACCAACAAACACGAAATCCGTCACATTTGCTTATT
	YRPD0110	CCGTCACATTTGCTTATTACAGACTGTCAGGCATTCCAGAGAATGAGCACTTCACCCCAA
	YRPD0010	GGCGGACTGGGTGCTCAGAGTTCTGTTGGGTAATGGTATTGGGGTGAAGTGCTCAT
AMIRP1 (AMIR171v2)	YRPD0011	CTGAGCACCCAGTCCGCCCACCACCGTCACAGCCAAATACACAGAGTCCCTGT
	YRPD0111	GTGTGTGGTCAGAAGTGAATTGCTCGGTTGTATAACCAGAGAACAGGGACTCTGTGT
	YRPD013	TCACTTCTGACCACACACAAGTATTATATATACAGTCTCTACTTTA
	YRPD0112	TATACAGTCTCTACTTTAATTGCTCGGTCGTATAACAAGAGATCAGTACTCTGTGTAACA
	YRPD0015	GATATAGACGTTGTGGCTGGGTAGAATGTTTGCGGTTTGTGTTACACAGAGTACTGA
AMIRP0 (AMIR164v2)	YRPD0016	AGCCACAACGTCTATATCCACCACACCCACAAACTACTCGGCACAGAATGACGAT
	YRPD0113	ATTTCGTGAGTTTTGGTTATCGGTTGTATAACCAGCTTGAGAATCGTCATTCTGTGC
	YRPD0018	AACCAAAACTCACGAAATCCGTCTACAGTTCTTATT
	YRPD0114	CCGTCTACAGTTCTTATTATCGGTTGTACAACCAGCCTGAGAATCTCCTCTTGTGCCAAA
	YRPD0020	TGATTAGTTGGGATTGATGGTTTGGCACAAGAGGAGAT
GUS4	YRPD0051	ATCAATCCCAACTAATCAAGGGCGTCGGGTCGAGTGGCAGTGAAGGGCGAAC
	YRPD0052	AAT**CTCGAG**TGC**TCTAGA**AGTCGAGCATCTCTTCAGCG XhoI XbaI

Sequences with a yellow background are primer sequences designed in AMIRdesigner; sequences with a blue background are connector sequences added for cluster AMIR and GUS sequences by fusion PCR; sequences in bold and underlined encode restriction sites, as indicated below the lines.

Table S2 The primers used to construct miRNA sensor vector PMS4–amiRCP.

Primer ID	Primer sequence (5′-3′)
Anti-AMIRCP_F	TCGAGTCTCAGACTGTCCGGCATTCAAGAT
Anti-AMIRCP_R	CTAGATCTTGAATGCCGGACAGTCTGAGAC

Letters in bold blue form a 5' overhang compatible with XhoI and XbaI digested vector DNA; underlined sequences are complementary in the F and R primers; letters of the F primer and R primer in red encode the amiRCP binding site and its complementary sequences, respectively.

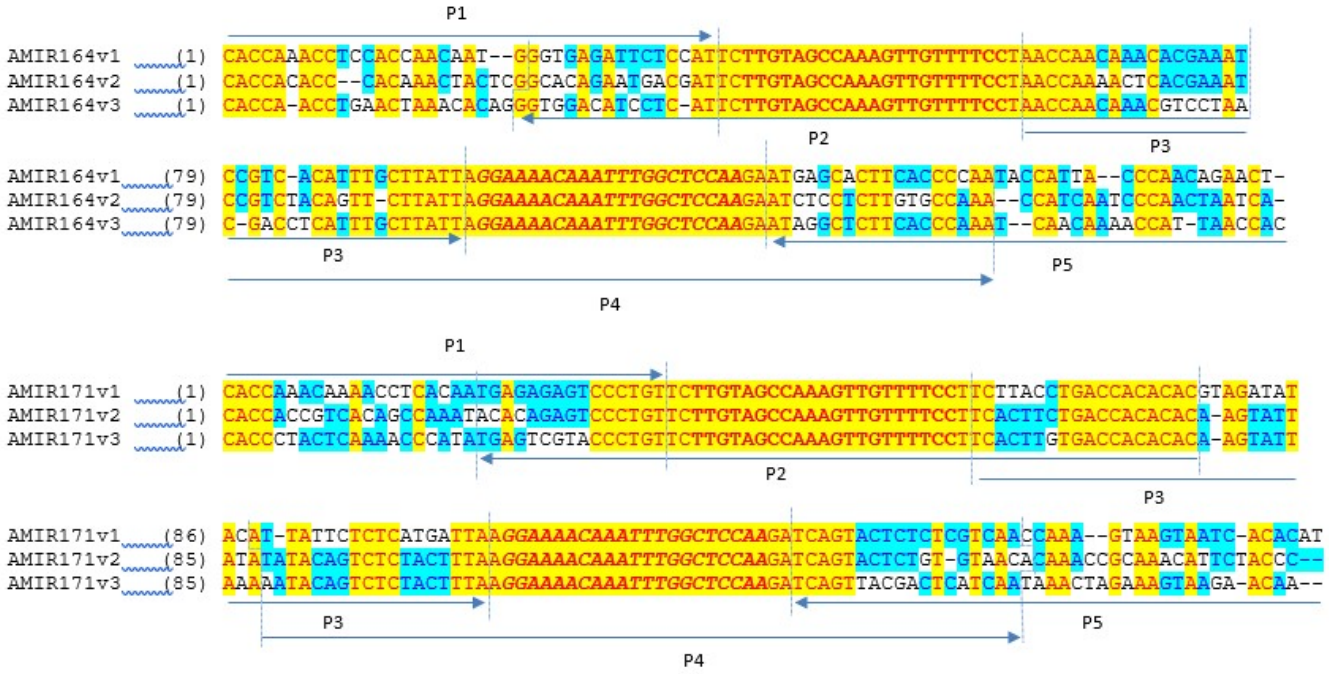

Figure S1 Sequence alignments of artificial miRNA precursors. Arrows represent primers P1 to P5, with forward primers pointing to the right and reverse primers pointing to the left. Dashed lines indicate the ends of each primers.

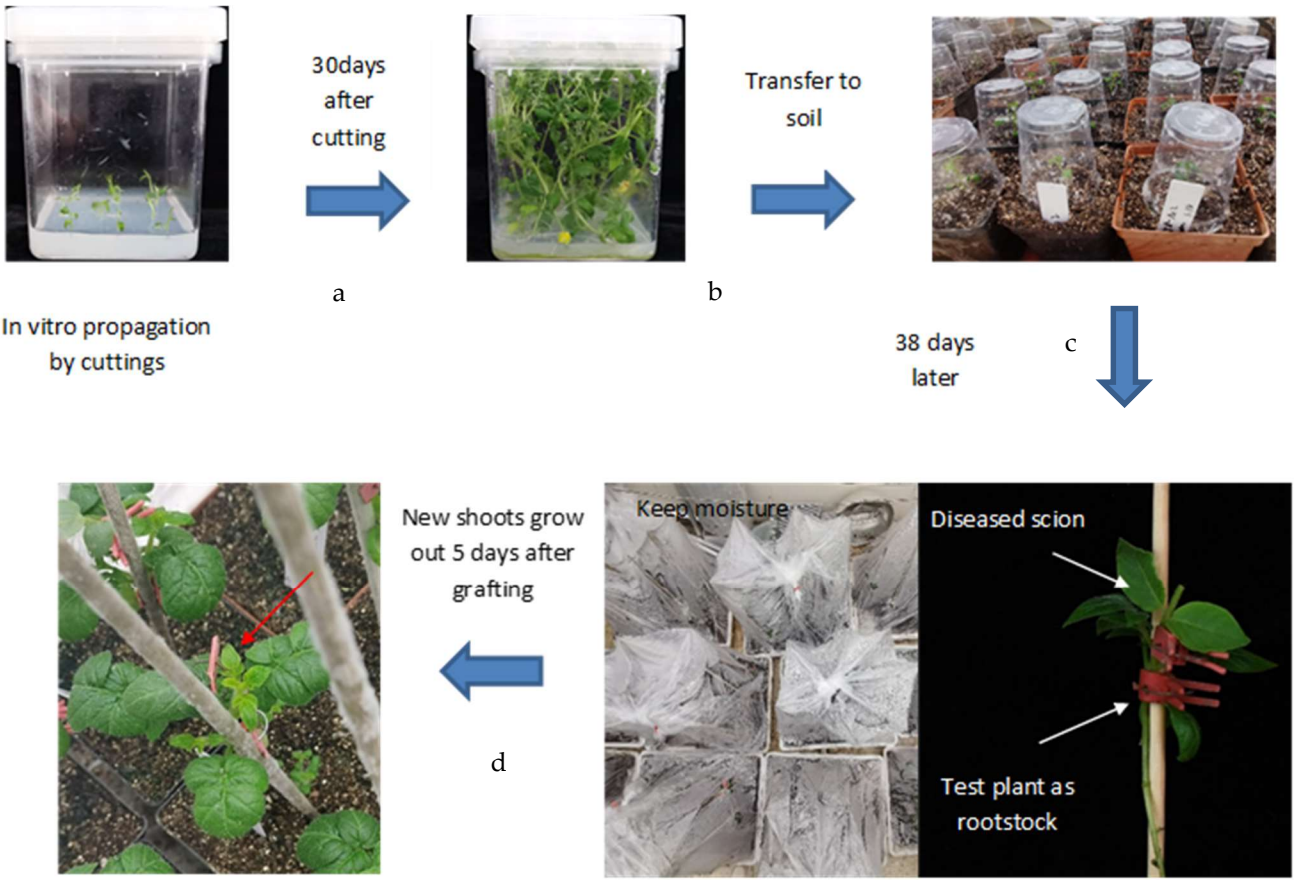

Figure S2. Workflow for graft inoculation on potato plants. a) Grow potato seedlings from cutting for 30 days in tissue culture medium; b) transfer potato seedlings to soil; c) 38 days later, transfer potato seedlings to soil, graft diseased scion onto the potato seedlings and retain moisture using plastic cover; d) continue to grow grafted potato plants to allow new shoots to grow.

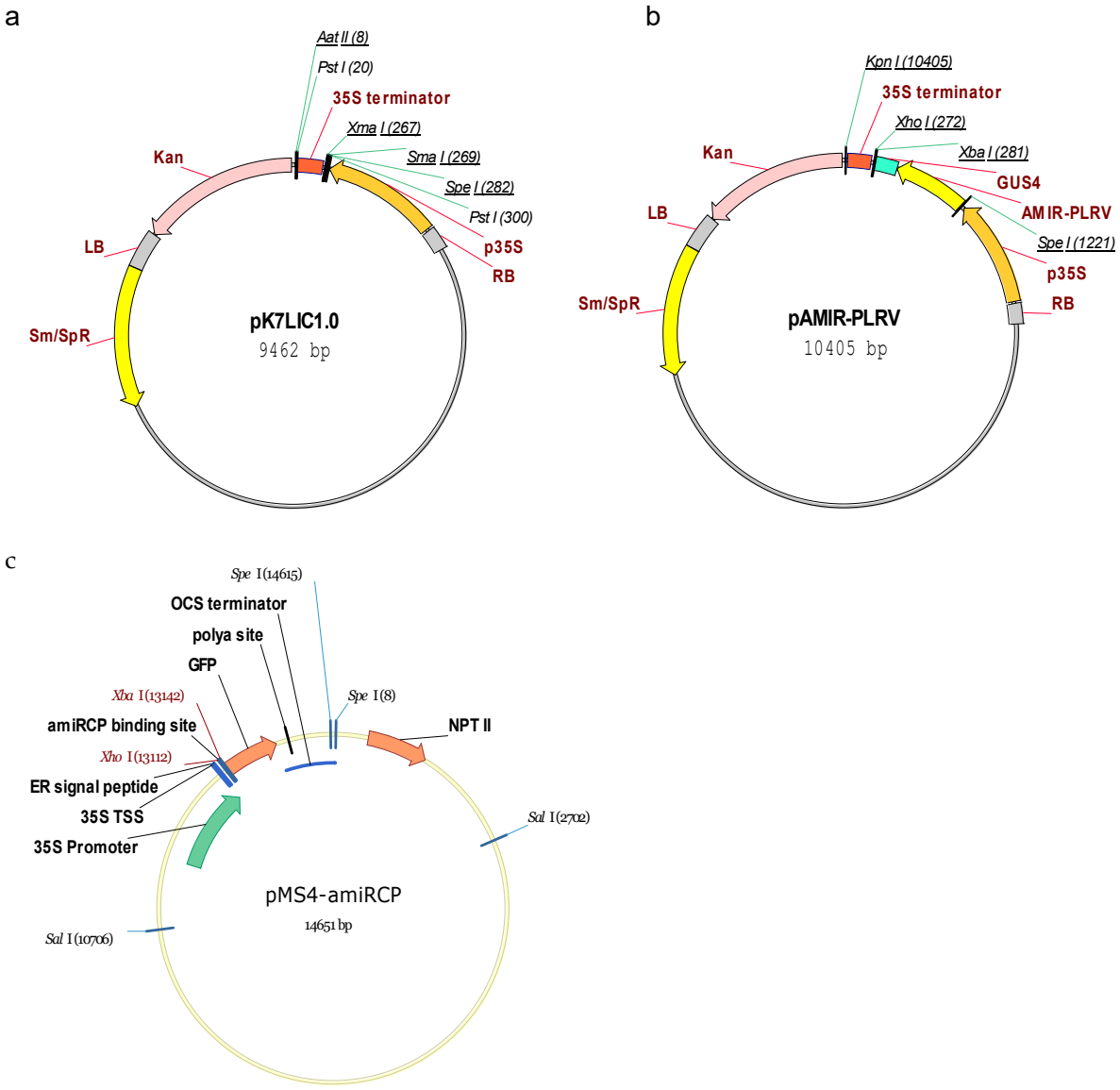

Figure S3. Restriction maps of vectors used in this study. a) Vector pK7LIC1.0 was derived from gateway vector pK7WGF2 (VIB—UGent Center for Plant Systems Biology), replacing its LR recombination unit and eGFP with ligation-independent cloning (LIC) sequences. The LIC sequences are split by a SmaI site. SpeI and PstI sites are placed next to the LIC sequences. b) pAMIR–PLRV. The AMIR–PLRV cluster and GUS spacer sequences are shown as yellow arrows and a blue square between the 35S terminator (red square) and 35S promoter (dark yellow arrow). c) pMS4–amiRCP. The amiRCP binding site is flanked by XhoI and XbaI restriction sites.