

Supplementary Table S1. Primers used in this study.

Function	Primer Name	Primer Sequence (5'-3')
RACE	5' RACE-GSP1	CCGACAGAGCCCTTATCTTATT
	5' RACE-GSP2	GAAAGGAGCAGTGGTGTCTTT
	5' RACE-nested GSP	GGATGTTATGATACGAGCCTTT
	3' RACE-GSP1	GCCTATCATCAGTTGGTCTTACTTT
	3' RACE-nested GSP	GGACGTATCATATAGTTCTCGGTATT
Gene expression	PsMV2-T-F	CCCCTGTCCACGTAATGTGGACAACTCCTA
	PsMV2-T-R	GCCCTTGTCCCCAGTAATGGGGACAACGCT
	PsMV2-RdRp-F	CACCTCTCCACTAAGGCG
	PsMV2-RdRp-R	GATTGGGAAAGGGCTATGCT
BSMV-HIGS	BSMV-PsMV2-1as-F	TTTTTAGCTAGCTGATTAATTAAGGAC CCGATTAAAGCACGA
	BSMV-PsMV2-1as-R	TCCGTTGCTAGCTGAGCGGCCGCAGAAT TCGGAGGGCATCACC
	BSMV-PsMV2-2as-F	TTTTTAGCTAGCTGATTAATTAACCCGTT ATGGGAAGATTCCGT
	BSMV-PsMV2-2as-R	TCCGTTGCTAGCTGAGCGGCCGCATACT CTCTCGCCAGGTCGT
Overexpression in <i>N. benthamiana</i>	PsMV2-PVX-RdRp-F	AGGTCAGCACCAGCTAGCATCGATCACCTCTCCACTAAG GCGGG
	PsMV2-PVX-RdRp-R	CTTAACCGTTCATCGGCGGTGACGATTGGGAAAGGGCT ATGCTCC
	PVX-F	CAATCACAGTGTGGCTTGC
	PVX-R	GACCCTATGGGCTGTGTTG
qRT-PCR	Q-PsMV2-F	ATCTAACGGCTGCGACTGAC
	Q-PsMV2-R	GCCCTACGGCATAACCGAATC
	TaEF1-F	TGGTGTCAATCAAGCCTGGTATGGT
	TaEF1-R	ACTCATGGTGCATCTCAACGGACT
	PstEF1-F	TTCGCCGTCCGTGATATGAGACAA
	PstEF1-R	ATGCGTATCATGGTGGTGGAGTGA

Supplementary Table S2. Virus names and viral protein accession numbers used for phylogenetic analysis.

Family and Genus	Virus	RdRp
		Accession No.
<i>Mitoviridae</i> <i>Unuamitovirus</i>	Puccinia striiformis mitovirus 2	OQ263177.1
	Cronartium ribicola mitovirus 1	AMQ67414.1
	Sclerotinia sclerotiorum mitovirus 9	AHF48625.1
	Hymenoscyphus fraxineus mitovirus 1	AZG04326.1
	Sclerotinia sclerotiorum mitovirus 15	AHF48631.1
	Puccinia striiformis mitovirus 1	AZY91986.1
	Fusarium circinatum mitovirus 1	AKK23542.1
	Fusarium globosum mitovirus 1	BAQ36629.1
	Fusarium coeruleum mitovirus 1	BAQ36630.1
	Fusarium poae mitovirus 2	UWK02074.1
	Thielaviopsis basicola mitovirus	AAZ95420.1
	Sclerotinia sclerotiorum mitovirus 4	AGC24233.1
	Leptosphaeria biglobosa mitovirus 1	AVZ65960.1
	Ophiostoma mitovirus 4	NP_660179.1

<i>Duamitovirus</i>	Helicobasidium mompa mitovirus 1-18	BAD72871.1
	Sclerotinia sclerotiorum mitovirus 3	AGC24232.1
	Ophiostoma mitovirus 3a	CAA06228.1
	Sclerotinia homoeocarpa mitovirus	AAO21337.1
	Botrytis cinerea mitovirus 1	QLF49185.1
	Ophiostoma mitovirus 3b	CAJ32468.1
	Ophiostoma mitovirus 1a	CAJ32466.1
	Tuber aestivum mitovirus	AEG79311.1
	Ophiostoma mitovirus 1b	CAJ32467.1
	Ophiostoma mitovirus 1c	AGT55876.1
<i>Kvaramitovirus</i>	Ophiostoma mitovirus 7	AGT55877.1
<i>Triamitovirus</i>	Rhizoctonia solani mitovirus 39	QIS79099.1
	Rhizoctonia solani mitovirus 30	QDW65420.1
	Rhizoctonia solani mitovirus 23	QDW65458.1
	Rhizoctonia mitovirus 1 RS002	AHL25281.1
	Geopora sumneriana mitovirus 1	QDM55307.1
<i>Narnaviridae</i>	Tuber excavatum mitovirus	AEP83726.1
	Rhizophagus sp. RF1 mitovirus	BAJ23143.2
	Saccharomyces 20S RNA narnavirus	AAC98925.1
	Saccharomyces 23S RNA narnavirus	UQB84404.1

Supplementary Table S3. Information of BLASTp search results of the RNA-dependent RNA polymerase (RdRp) of *Puccinia striiformis* mitovirus 1.

Taxon	Viruse Name	Accession	Query Cover (%)	Identity (%)	E-Value
<i>Unuamitovirus</i>	Cronartium ribicola mitovirus 1	AMQ67414.1	99	391/807 (48%)	0
	Puccinia striiformis mitovirus 1	AZY91986.1	81	192/670 (29%)	2e-56
	Helicobasidium mompa mitovirus 1-18	BAD72871.1	79	202/644 (31%)	1e-68
	Sclerotinia sclerotiorum mitovirus 9	AHF48625.1	54	146/442 (33%)	2e-54
	Sclerotinia sclerotiorum mitovirus 15	AHF48631.1	54	157/444 (35%)	1e-59
<i>Duamitovirus</i>	Botrytis cinerea mitovirus 1	QLF49185.1	52	149/468 (32%)	4e-48
	Tuber aestivum mitovirus	AEG79311.1	24	77/220 (35%)	4e-33
	Sclerotinia sclerotiorum mitovirus 3	AGC24232.1	52	138/434 (32%)	1e-36
	Ophiostoma mitovirus 3a	CAA06228.1	51	129/445 (29%)	6e-34
<i>Kvaramitovirus</i>	Ophiostoma mitovirus 7	AGT55877.1	43	87/371 (23%)	3e-23
<i>Triamitovirus</i>	Tuber excavatum mitovirus	AEP83726.1	37	103/305 (34%)	3e-40
	Rhizoctonia mitovirus 1 RS002	AHL25281.1	51	127/425 (30%)	2e-45
	Rhizoctonia solani mitovirus 39	QIS79099.1	37	101/307 (33%)	1e-35
	Rhizoctonia solani mitovirus 23	QDW65458.1	38	102/315 (32%)	1e-38
	Geopora sumneriana mitovirus 1	QDM55307.1	46	116/383 (30%)	1e-37

Supplementary Table S4. RT-PCR detection of PsMV2 in 20 *Pst* samples collected in different regions in China (11 different provinces) and in 10 *Pst* samples from 10 other countries.

Source	Sample Number (Strain)	Detection Rate (%)
Hubei	48-16	100%
	47-17	
Guizhou	GZ-3-1	
	GZ-43-1	

Sichuan	MY-31
	MY-12-2
Henan	LSN-11-6
	LSN-6-10
Yunnan	17-1
	18-7
Shandong	2-3-5
	3-16
Xinjiang	XJ-1
Gansu	GS-1
	GS-2
Qinghai	QH-1
Ningxia	NX-1
	NX-2
Shaanxi	YL-1
	YL-2
Egypt	EGY11
America	US10
Denmark	DEN1
Chile	CHI5
Liechtenstein	LIE13
Australian	AUS14
Turkey	TUR6
Nepal	NEP13
Germany	GER2
Israel	ISR11
