

## Supplementary data

### Studies on the Japanese soil-borne wheat mosaic virus movement protein highlight its ability to bind plant RNA

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**Table S1: Primer sequences**

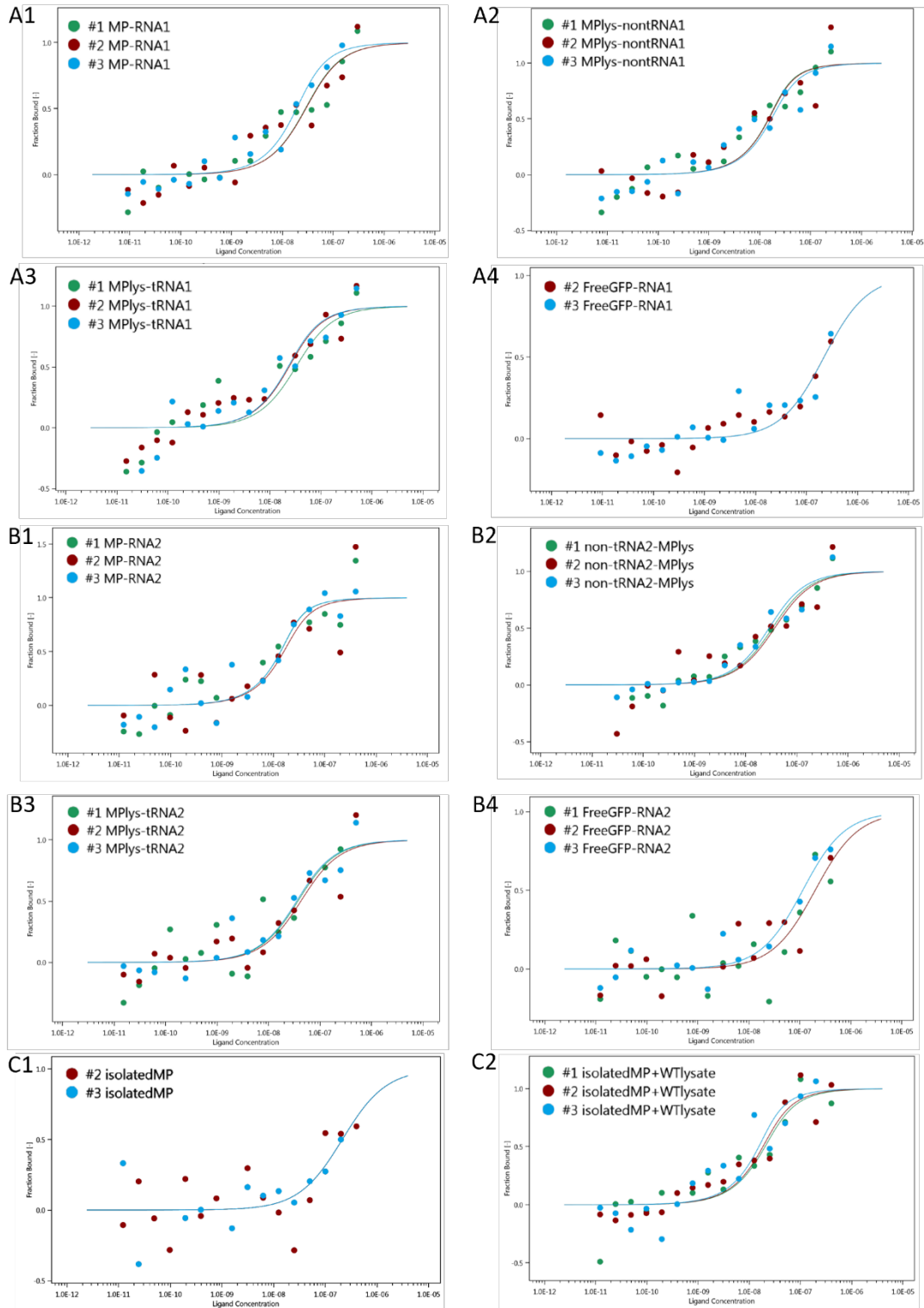
Primer name	Sequence 5'-3'	Determination
MP_GW_For1	GGG GAC AAG TTT GTA CAA AAA AGC AGG CTT AAA CAT GAC AAC TAA AGA TGT TTC	GATEWAY-cloning of MP <sup>JSBWMV</sup> , addition of attB-sites
MP_GW_Rev1	GGG GAC CAC TTT GTA CAA GAA AGC TGG GTC CAC TAT GTT TTC AGA GTC	GATEWAY-cloning of MP <sup>JSBWMV</sup> , addition of attB-sites
MP_fw_GG	TTA AGG TCT CGT TGC ATG ACA ACT AAA GAT GTT TCA AGT GAT TCC	GoldenGate cloning of MP <sup>JSBWMV</sup> :GFP into <i>E.coli</i> expression plasmid pET28a
eGFP_rev_GG	TTA AGG TCT CGA AGC TTA CTT GTA CAG CTC GTC CAT GC	GoldenGate cloning of MP <sup>JSBWMV</sup> :GFP into <i>E.coli</i> expression plasmid pET28a
eGFP_For	GGGG ACA AGT TTG TAC AAA AAA GCA GGC TTC ATG GTG AGC AAG GGC GAG	GATEWAY-cloning of free GFP
eGFP_Rev	GGGG AC CAC TTT GTA CAA GAA AGC TGG GTC TTA CTT GTA CAG CTC GTC CAT	GATEWAY-cloning of free GFP
MP_toRFP_NSp_For1	CCG AAG ATG CTC CCT GAA CA	Modification of pJS1
Bgl2_inRFP_NSp_Rev1	GAA GAT CTT TAG GCG CCG GTG G	Modification of pJS1
RNA2_for	GAT CTA ATA CGA CTC ACT ATA GTT GAG TGT TAA CTC TTC TTG	Full length RNA2 synthesis
RNA2_rev	CTC CGG TTC GGG GGG	RNA2 full length and tRNA-like structure-RNA2 synthesis
tRNA2_for	GAT CTA ATA CGA CTC ACT ATA TGT ATG TTC TGT TGA ACT ACT GT ATG	tRNA-like structure-RNA2 synthesis
tRNA1_for	GAT CTA ATA CGA CTC ACT ATA CAT AGT GTG ATT ATT ACT ATT ATG CTT T	tRNA-like structure-RNA1 synthesis
tRNA1_rev	CTC CGG TTC AGG GGG	tRNA-like structure-RNA1 synthesis
Non_tRNA1_for	GAT CTA ATA CGA CTC ACT ATA AGT CGT TAG ACT GCT TAA AG	non tRNA1-like-structure synthesis
Non_tRNA1_rev	TCA CAC TAT GTT TTC AGA GTC CAA	non tRNA1-like-structure synthesis
Non_tRNA2_for	GAT CTA ATA CGA CTC ACT ATA GTT GAG TGT TAA CTC TTC TTG	non tRNA2-like-structure synthesis
Non_tRNA2_rev	TCA CAG AGG TTT AGA CTT CCT T	non tRNA2-like-structure synthesis

Figure S1:



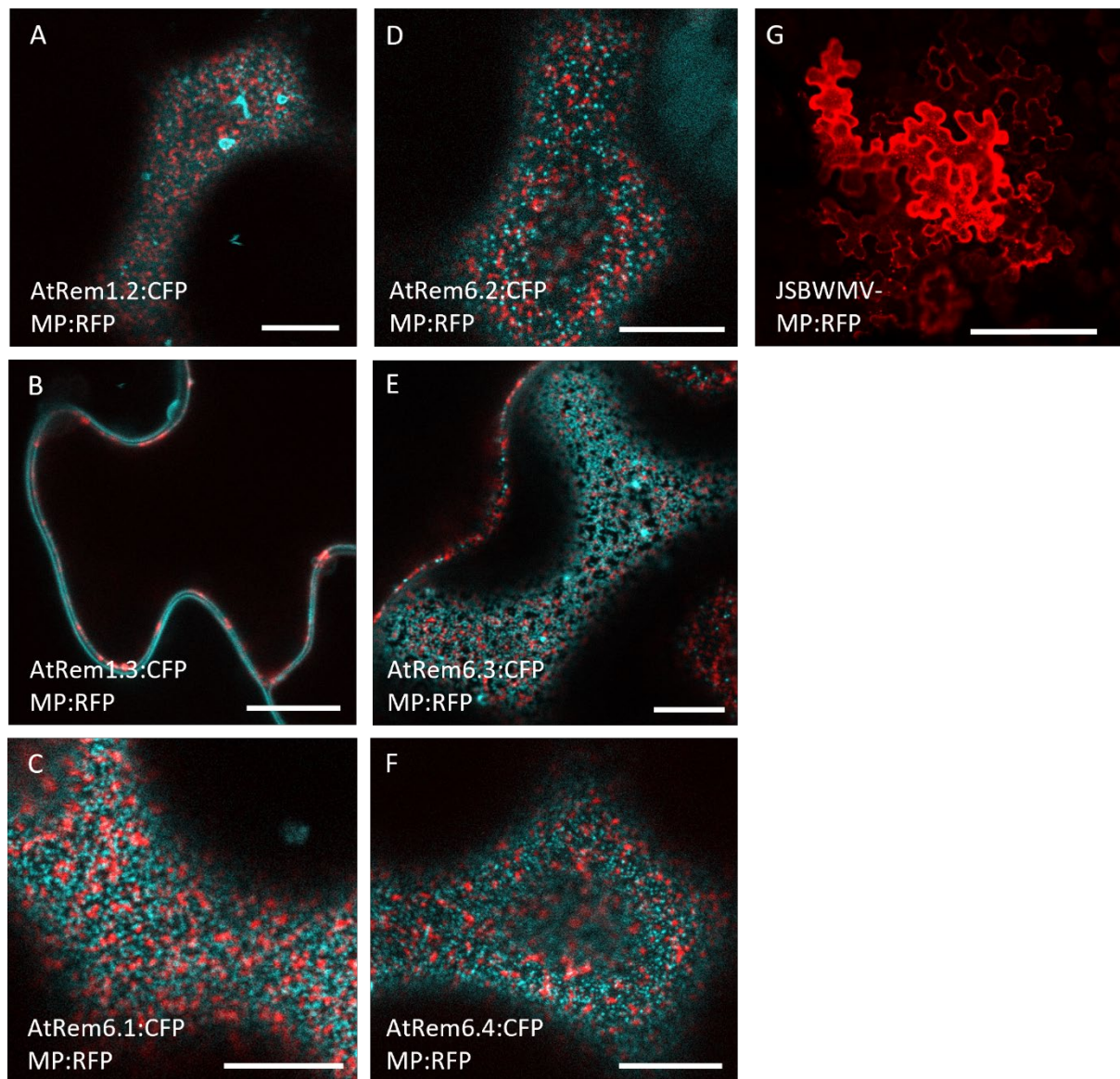
**Figure S1. JSBWMV forms visible infection sites on *Chenopodium quinoa* leaves at 17 °C but not at 24 °C.** *Chenopodium quinoa* leaves of five to six-week-old plants were infected with RNA in-vitro transcribed from pJS1 and pJS2 cDNA clones (Yamamiya and Shirako, 2000) and kept in the greenhouse with 16h light and 8h dark cycles and at least 200 W/m<sup>2</sup> light intensity either at 24°C or at 17°C. Multicellular infection sites visible as chlorotic spots were only obtained at 17°C. Pictures were taken 12 dpi.

**Figure S2:**



**Figure S2: Microscale thermophoresis binding curves for MP<sup>JBWMV</sup>:GFP or GFP, respectively to viral RNAs**

*N. benthamiana* leaf crude extracts expressing MP<sup>JSBWMV</sup> and GFP after agro-inoculation were used to analyze the binding affinity of **(A1)** MP<sup>JSBWMV</sup>:GFP to RNA1<sup>JSBWMV</sup>, **(A2)** MP<sup>JSBWMV</sup>:GFP to RNA1<sup>JSBWMV</sup>-non-tRNA, **(A3)** MP<sup>JSBWMV</sup>:GFP to tRNA1<sup>JSBWMV</sup>, **(A4)** GFP to RNA1<sup>JSBWMV</sup>, **(B1)** MP<sup>JSBWMV</sup>:GFP to RNA2<sup>JSBWMV</sup>, **(B2)** MP<sup>JSBWMV</sup>:GFP to RNA2<sup>JSBWMV</sup>-non-tRNA, **(B3)** MP<sup>JSBWMV</sup>:GFP to tRNA2<sup>JSBWMV</sup>, **(B4)** GFP to RNA2<sup>JSBWMV</sup>, **(C1)** MP<sup>JSBWMV</sup>:GFP isolated from bacteria to RNA2<sup>JSBWMV</sup>, **(C2)** MP<sup>JSBWMV</sup>:GFP to RNA2<sup>JSBWMV</sup> isolated from bacteria complemented with *N. benthamiana* leaf extract.



**Figure S3: MP<sup>JSBWMV</sup>:RFP localizes to membrane rafts.**

(A-F) MP<sup>JSBWMV</sup>:RFP was ectopically expressed in *N. benthamiana* epidermal cells via agroinoculation and co-expressed with different markers. (A-F) MP<sup>JSBWMV</sup>:RFP (red) co-expressed with (A) AtREM1.2:CFP (cyan); (B) AtREM1.3:CFP (cyan); (C) AtREM6.1:CFP (cyan); (D) AtREM6.2:CFP (cyan); (E) AtREM6.3:CFP (cyan); (F) AtREM6.4:CFP (cyan), remorins and MP<sup>JSBWMV</sup>:RFP localize in a patchy pattern at the cell periphery. The localizations do not overlap. Images taken two to five days post infiltration. Scale bars are 10 μm. (G) JSBWMV-MP:RFP infection site seven days after rub inoculation of RNA<sup>JSBWMV-MP:RFP</sup> into *N. benthamiana* epidermal cells. Scale bar is 200 μm.