

Supporting Information

Molecular farming of fluorescent virus-based nanoparticles for optical imaging in plants, human cells and mouse models

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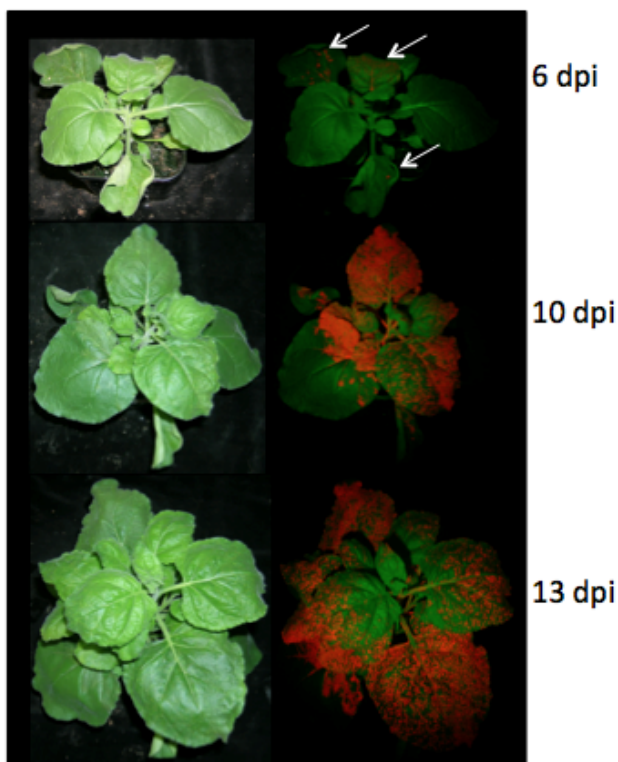
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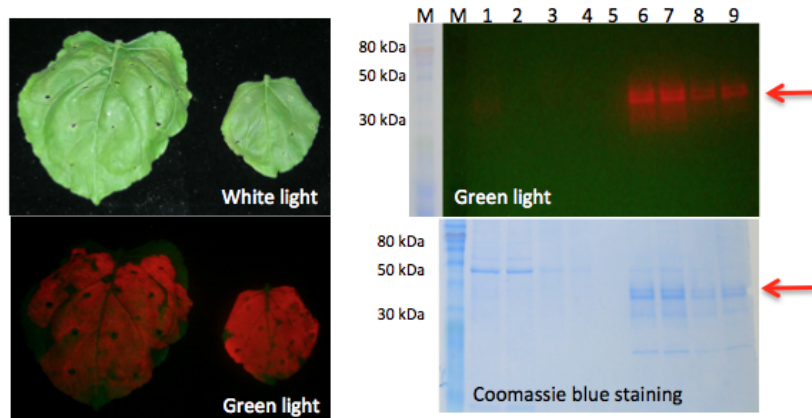
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Supporting Figure S1: Plants infected with 10 μg pTCXIIc (encoding mCherry-PVX) per leaf by mechanical inoculation. The plants were monitored under a green light (515-nm LCD lamp KL2500, Leica, Wetzlar, Germany) and a red filter.



Supporting Figure S2: Left panel: Leaves expressing mCherry protein; mCherry was transiently expressed using the pTRAcK-ERH-mCherry-his6 vector. The leaves were photographed under white light and green light (515-nm LCD lamp KL2500, Leica, Wetzlar, Germany). Right panel: Gel electrophoresis of purified mCherry fractions from IMAC using a Ni-NTA agarose (Qiagen) column: M: P7711S ladder (NEB), 1: plant sap 1:10 in PBS, 2: flow through I, 3: flow through II, 4: wash fraction I, 5: wash fraction II, 6: elution 1 I, 7: elution 1 II, 8: elution 2 I, 9: elution 2 II, I: column 1, II: column 2. The red arrow indicates mCherry protein dimers (the samples were not denatured by heat to conserve fluorescence properties, therefore dimers are observed; the molecular weight of a single mCherry protein is 28 kDa).

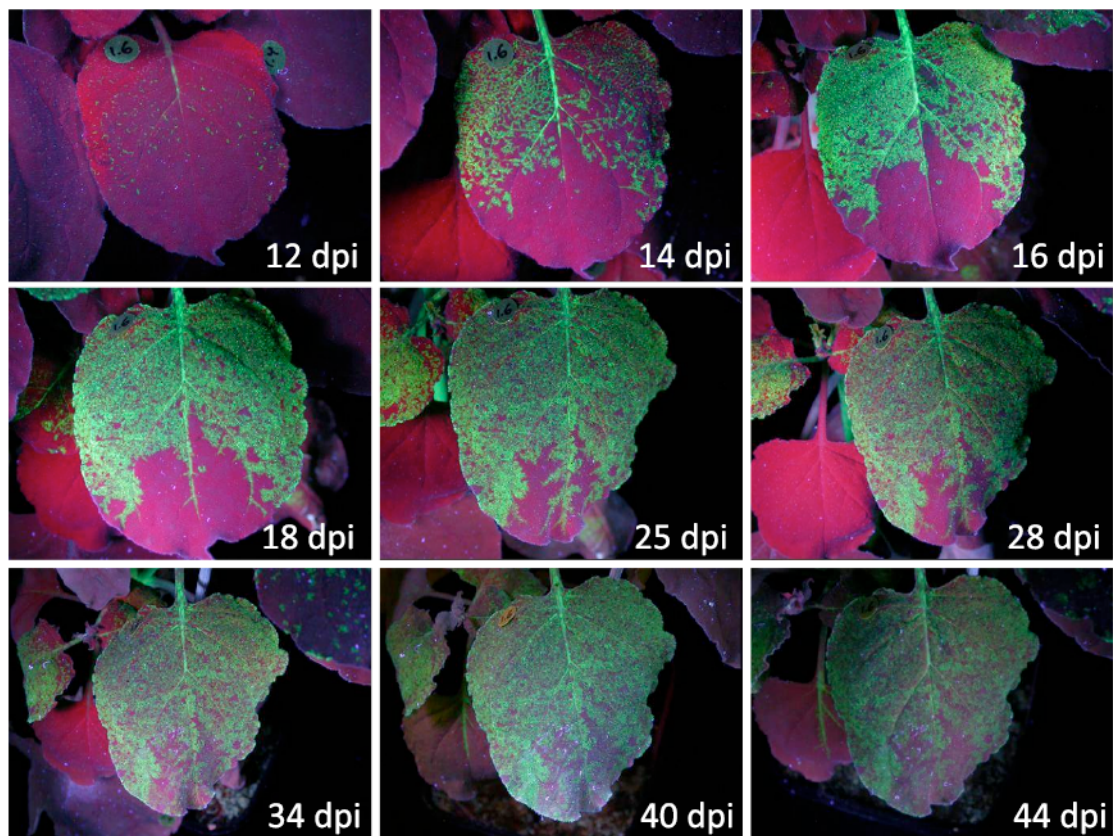


Figure S3: Time course of a *N. benthamiana* sink leaf inoculated with pCX1 (encoding GFP-PVX): dpi = days post-inoculation.

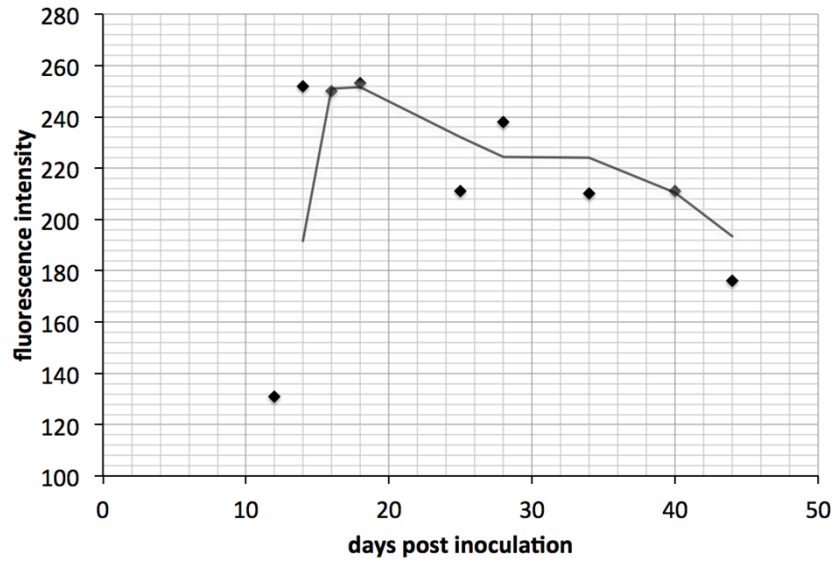


Figure S4: Relative fluorescence intensity over time as determined using ImageJ software and the measurement tool 'plot profile'. Green fluorescence intensity was measured in infected sink leaves (see Figure S3).

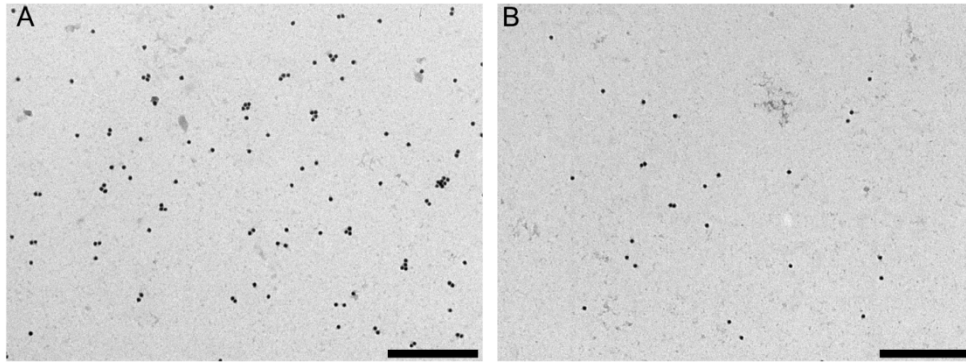


Figure S5: ISEM grids with A = GFP-PVX captured with α -mCherry, detected with α -PVX, B = mCherry-PVX captured with α -GFP, detected with α -PVX. Scale bars = 500 nm. No particles were detected indicating that the antibodies are specific, no cross-reactivity was observed.