



**Figure S4:** Cellular localization of EGFP fluorescence emitted by TuYV-RT<sub>GFP</sub> inoculated to plants by agroinoculation. (a)-(b) Non-inoculated leaves of *N. benthamiana* were observed with an epifluorescence macroscope directly on whole plants without destructive sampling. Observations were performed in similar conditions on plant material infiltrated with pbin-Ø (last two columns on the right). Merge images of the bright field and GFP emission are also shown (second and fourth column). (c) Longitudinal section of a petiole from non-inoculated leaves of *M. perfoliata* infected with TuYV-RT<sub>GFP</sub>; (d) veins extracted from non-inoculated leaves of *A. thaliana* infected with TuYV-RT<sub>GFP</sub>. Observations in (c)-(d) were done using an epifluorescence microscope and correspond to optical sections obtained with structured illumination (ApoTome, Zeiss). Observations were made in similar conditions on plant material infiltrated with pbin-Ø (last two columns on the right). The merge images of the bright field and GFP emission are shown (second and fourth column). Scale bars are 500 µm for (a)-(b) and 100 µm for (c)-(d).