

Supplementary movie legends

Movie 1. Endoplasmic MT dynamics

GFP-tubulin expressed in a protonemal cell was imaged every 3 s with oblique illumination fluorescence microscopy. Bar, 5 μm .

Movie 2. MT severing

GFP-tubulin was imaged every 3 s. A MT was severed at time 0 (arrow).

Movie 3. Branching MT nucleation

Five examples of branching MT nucleation as revealed by GFP-tubulin imaging. The branching points are marked with arrowheads. The branch angle was variable. In the right-most cell, the daughter MT moved along the mother MT. Bar, 2 μm .

Movie 4. Cytoplasmic MT nucleation

Two examples of cytoplasmic MT nucleation. A MT emerged in the cytoplasm. Bar, 2 μm .

Movie 5. MT depolymerisation-regrowth assay

Protonemal cells expressing GFP-tubulin were treated with oryzalin, a MT destabilising drug, followed by drug wash-out at time 0. MTs reappeared after several min, mostly through cytoplasmic nucleation (red) and sometimes by branching nucleation (yellow). Bar, 5 μm .

Movie 6. MT regrowth with a stable MT

Protonemal cells expressing GFP-tubulin were treated with oryzalin, a MT destabilising drug, followed by drug wash-out at time 0. In this sample, a MT was resistant to oryzalin. However, the MT reappearance occurred mostly through cytoplasmic nucleation (red) and rarely by branching nucleation (yellow). Bar, 5 μm .

Supplemental Data. Nakaoka et al. (2015). Plant Cell 10.1105/tpc.114.134817

Movie 7. Organelle-independent MT nucleation

MT regrowth assay in the transgenic lines expressing mCherry- or mRFP-tagged organelle markers (magenta). Chloroplasts were autofluorescent. Green; GFP-tubulin. Bar, 5 μ m.

Movie 8. γ -Tubulin dynamics

γ -Tubulin-Citrine was imaged every 200 ms. Punctate signals with diffusional motion (black and red) and no movement (blue) were observed. Bar, 5 μ m.

Movie 9. γ -Tubulin-dependent MT nucleation

γ -Tubulin-Citrine and mCherry-tubulin were imaged during MT regrowth. Three examples of MT nucleation from a γ -tubulin-Citrine dot are marked with white arrows. Bar, 5 μ m.