

- ***Supplementary videos 1 – 6 and 11 – 17:***

EB3-tdTomato (growing microtubule plus-ends, grayscale) with marked tracks (red); interval, 0.5 ms; duration, 1 min; playback, 5 fps.

- ***Supplementary videos 7 – 10:***

Fluo-4 (intracellular calcium, “Red Fire” LUT applied); interval, 10 min; duration 60 min; playback, 25 fps; scale bar, 100  $\mu\text{m}$ .