Supplementary Materials for

Leiomodin 2 is a processive pointed-end elongator of actin filaments

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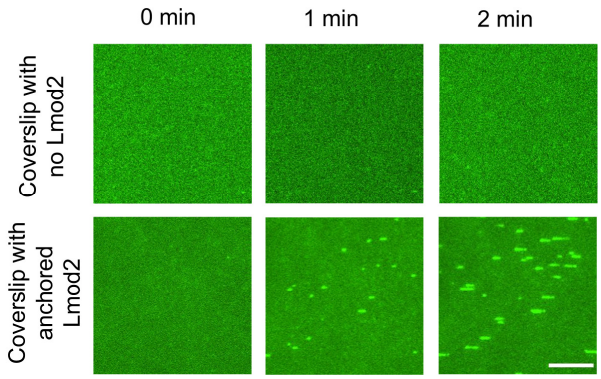
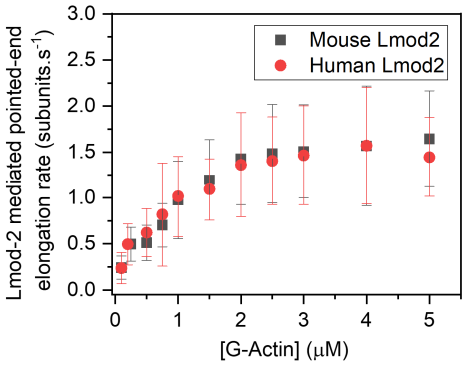
The PDF file includes:

Supplementary Figs. 1 to 5

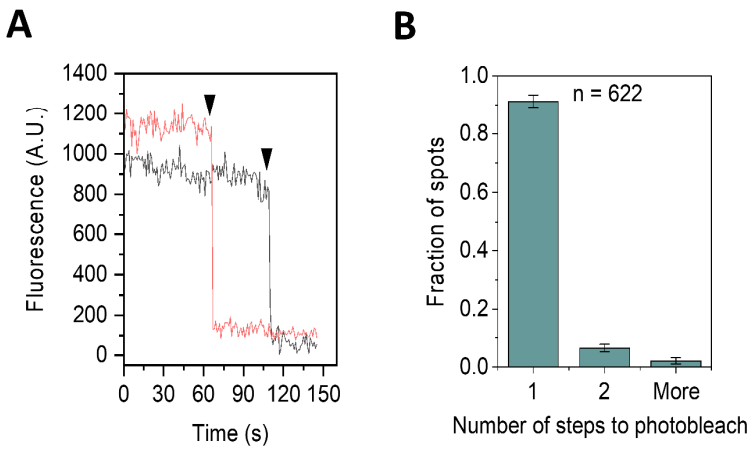


Supplementary Fig. 1. Coverslip-anchored Lmod2 nucleates actin filaments in presence of G-actin.

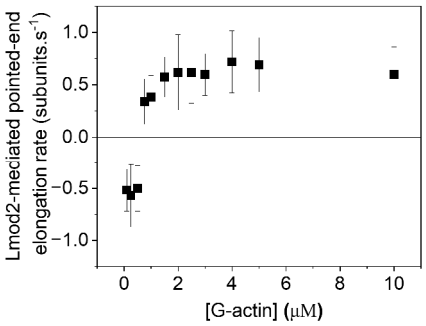
Representative time-lapse mF-TIRF images showing actin filaments (green) nucleating and subsequently elongating from a coverslip surface functionalized with Lmod2 WT (bottom), whereas no filament nucleation is observed on a coverslip not functionalized with Lmod2 (top). Alexa 488–labeled G-actin (0.5 μM) was present in the flow throughout the experiment. Scale bar, 10 μm.



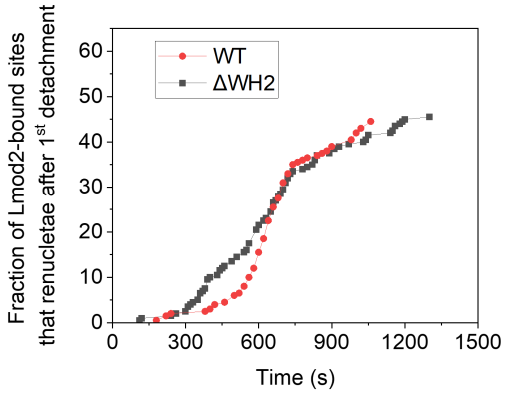
Supplementary Fig. 2. Comparison of rate of PE elongation by mouse and human Lmod2. Rate of elongation of mouse and human Lmod2-bound PEs (mean ± sd) as a function of G-actin concentration. Number of filaments analyzed per condition: Mouse Lmod2, from low to high [G-actin]: 7, 47, 51, 54, 54, 48, 53, 52, 55, 54, 56, 54; Human Lmod2, from low to high [G-actin]: 7, 41, 43, 44, 27, 18, 65, 50, 67, 31, 23. All experiments were performed at least three independent times, and yielded similar results. Data shown are from one experiment. Source data are provided as a Source Data file.



Supplementary Fig. 3. Step-photobleaching tests confirm labeled Lmod2 is monomeric. (**A**) Representative step photobleaching traces for surface-immobilized 549-Lmod2 molecules. Traces offset for clarity. Arrowheads denote photobleaching events. (**B**) Fractions (± se) of surface-immobilized 549-Lmod2 molecules with the indicated number of bleaching steps measured for n = 622 molecules. All experiments were performed at least three independent times, and yielded similar results. Data shown are from one experiment. Source data are provided as a Source Data file.



Supplementary Fig. 4. Effect of excess profilin on PE elongation by Lmod2. Rate of elongation of Lmod2-bound PEs (mean ± sd) as a function of G-actin concentration in the presence of 3 μM excess profilin (above G-actin concentration). Number of filaments analyzed per condition (from low to high G-actin): 10, 17, 23, 17, 35, 61, 27, 68, 51, 51, 53, 19. All experiments were performed at least three independent times, and yielded similar results. Data shown are from one experiment. Source data are provided as a Source Data file.



Supplementary Fig. 5. Lmod2 WT and ΔWH2 display similar renucleation efficiencies. Fraction of Lmod2-bound sites on the coverslip that renucleate a new filament after dissociation of the first filament nucleated at that site as a function of time in the presence of 0.5 µM Alexa-488 G actin. 200 filaments were analyzed for each condition. All experiments were performed at least three independent times, and yielded similar results. Data shown are from one experiment. Source data are provided as a Source Data file.