

Supplemental material

Movie M1

N-WASP-coated beads in gelsolin-free motility medium supplemented with 750 nM twinfilin. Elapsed time is in min:s. Beads move at 5 $\mu\text{m}/\text{min}$. Scale bar = 25 μm .

Movie M2 : Effect of 0.3 μM twinfilin on processive filament assembly from profilin-actin catalyzed by bead-bound FH1FH2.

An FH1FH2 coated bead (6 μm in diameter) was placed in 0.4 μM rhodamine F-actin, 4 μM profilin and 310 nM twinfilin. Duration : 44 minutes.

Figure S1. The C-terminal domain of twinfilin has no capping activity.

The C-ter ADF-H domain of twinfilin does not change the morphology of the comets nor the velocity of the beads (compare top and middle panels), and does not promote bead movement when it is added to the gelsolin-free medium (bottom panel: note the non polarized aster pattern). Scale bar = 50 μm .

Figure S2. Yeast and Drosophila twinfilins do not replace gelsolin in the motility medium.

Gelsolin-free motility medium was supplemented with mouse twinfilin, yeast twinfilin, and Drosophila twinfilin, from top to bottom respectively. Images were acquired after 1 hour. Beads move with actin tails in the presence of mouse twinfilin only.

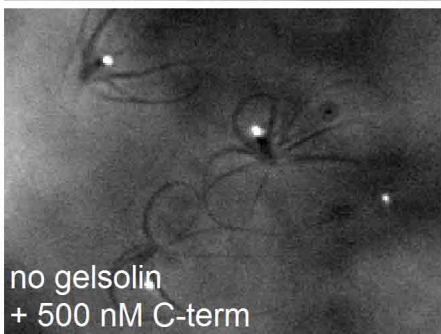
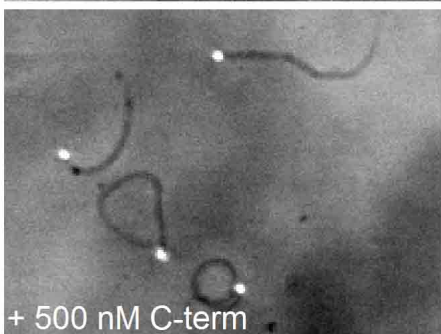
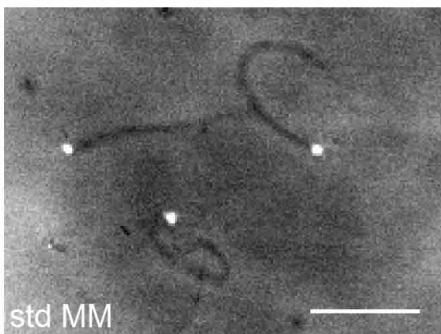
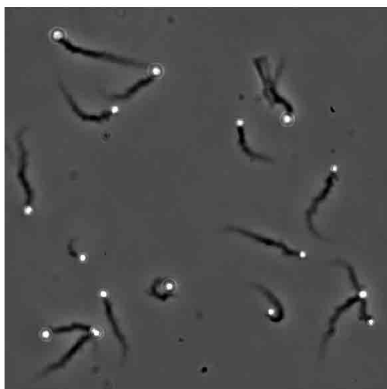
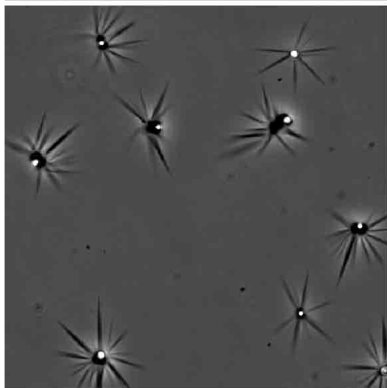


Figure S1

mouse
twinfilin



yeast
twinfilin



Drosophila
twinfilin

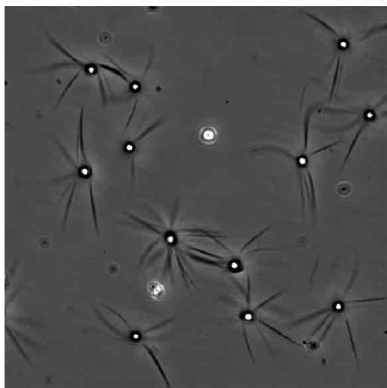


Figure S2