

Current Biology, Volume 27

Supplemental Information

**Enhanced Depolymerization of Actin Filaments
by ADF/Cofilin and Monomer Funneling by Capping
Protein Cooperate to Accelerate Barbed-End Growth**

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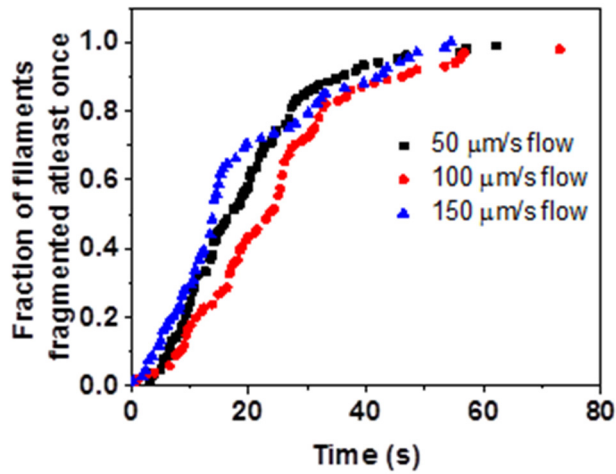


Figure S1. ADF-induced fragmentation is not affected by flow (in range of flow-rates used here). Related to Figure 1.

Frequency of ADF-induced fragmentation (at 5 μM ADF) was seen to be independent of the flow-rate in the range 50 $\mu\text{M/s}$ to 150 $\mu\text{M/s}$ flows ($n = 100$ filaments). ADF-induced depolymerization and fragmentation measurements were carried out at around 50 $\mu\text{M/s}$ flow rates.

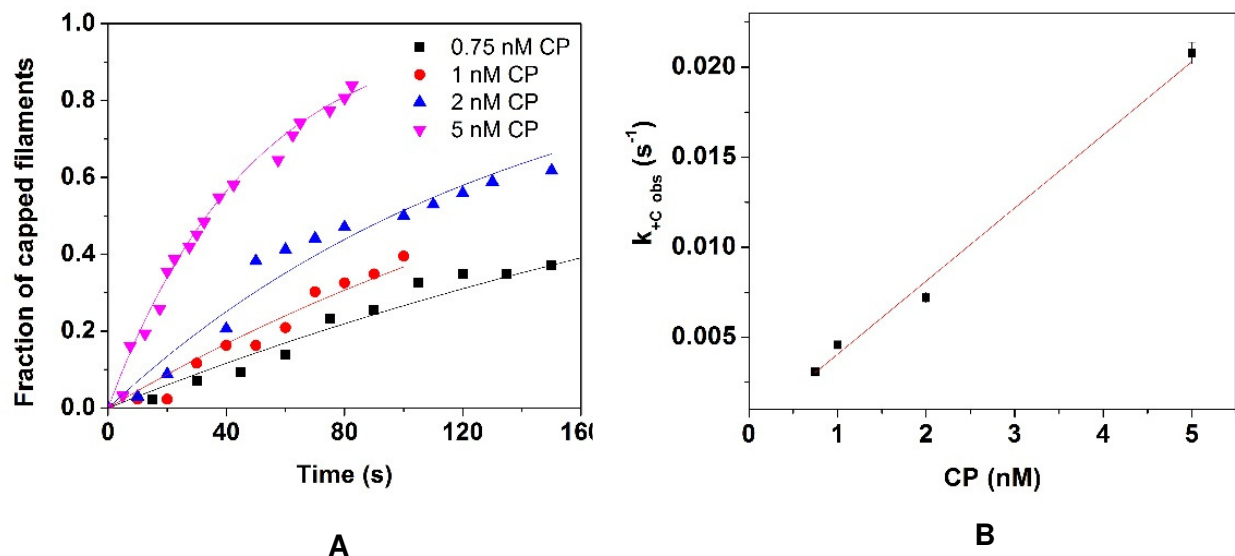


Figure S2. Measurement of the association rate constant of CP to the barbed end (k_{+C}). Related to Figure 3.

(A) Measurement of association rate constant for CP for tracer barbed end. Increase in fraction of barbed ends being capped by Capping Protein ($B + C \rightarrow BC$) in the presence of 0.75 nM (black), 1 nM (red), 2 nM (blue) and 5 nM (magenta) CP. Symbols are actual data and lines are exponential fits ($n = 30\text{-}40$ filaments). **(B)** Linear fit of the relationship between observed on-rate of CP on CP concentration gives $k_{+C} = 4.06 \pm 0.17 \mu\text{M}^{-1} \cdot \text{s}^{-1}$.