

Table 1. Definition of symbols and parameter values.

Symbol	Definition	Value
δ	Bead displacement per added monomer	2.7 nm
a	ActA arm length, from bead surface to the site C_0	$3\delta = 8.1$ nm
b	Spherical and cylindrical field radius	$\delta = 2.7$ nm
d	Half-length of the ActA “rod”	$\delta = 2.7$ nm
R	Bead radius	25 nm
G	Free-actin concentration	$3.6 \mu\text{M}$
α	Monomer attachment rate	31 s^{-1}
β	Monomer detachment rate	1.4 s^{-1}
η	Viscosity of solution	$2.4 \eta_{\text{water}}$
D_t	Translational diffusion constant	$3.7 \times 10^{-12} \text{ m}^2/\text{s}$
D_r	Rotational diffusion constant	4400 s^{-1}
T	Absolute temperature	300 K
E_{well}^0	Depth of spherical potential well	varies
E_{cyl}^0	Depth of cylindrical field	varies
f_0	Characteristic force scale	$k_B T / \delta \approx 1.5$ pN
v_m	Free filament elongation rate	$\alpha \delta$
v_d	Filament depolymerization rate	$\beta \delta$