Uniform activation
Gaussian curvature-dependent activation
Spatial dependence of MreB activation
After MreB motion
a
b
c
d
Filament concentration
0×
2×
k
bundles (simulations and interpolated curves)
Free energy change due to binding, ΔE (kT)
–100
–200
–300
–400
–500
–499
–500
–501
–502
–503
soft filaments
bundles [Eq. (S10)]
–90°
–45°
0°
45°
90°
Binding angle θ – 90°
0
20
Membrane height (nm)
e
Spatial dependence of MreB activation
g
Spatial dependence of MreB activation, R = 10
i
After MreB motion, soft filaments (B = 1.0 × 10^-26 J·m)
f
After MreB motion (B = 1.5 × 10^-25 J·m)
h
After MreB motion, R = 10 (B = 1.5 × 10^-25 J·m)
j
After MreB motion, bundles (B = 1.5 × 10^-23 J·m)
Gaussian curvature coupling, γ/k0
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0 1 2 3 4 5 6 7 8 9 10 ∞
Intrinsic filament twist, |ω0 a|
1.0 1.2 1.4 1.6 1.8 2.0 2.2 2.4 2.6 2.8 3.0
1.00 1.05 1.10 1.15 1.20 1.25 1.30
Ratio of concentrations