TABLE 2 Actin assembly at the lamellipodial margin

Parameter	Mean (±SD)
Rate of rearward transport of actin meshwork in fibroblast lamellipodia (V)*	13.8 μm/min
Length increment per monomer for F-actin (l_0)#	2.72 nm/monomer
Mean acute angle subtended by actin filaments and lamellipodium margin (θ)	64.7 ± 16.5°
Rate of assembly of F-actin at the leading edge ($da/dt = V/l_0 \sin\theta$)	97 ± 16 monomers/filament/s
G-actin concentration ($\mathcal{G}$) at the leading edge ($da/dt = k_{on}\mathcal{G} - k_{off}$)§	8.5 ± 1.4 μM
Area density of F-actin at lamellipodial margin (dL/dS) (this study)	278 ± 106 μm of F-actin/μm^2
Thickness of living lamellipodium ($\mathcal{T}$) (this study)	176 ± 14 nm
F-actin density at lamellipodial margin $(dL/dS)/\mathcal{T}$	1580 ± 613 μm of F-actin/μm^3
Rate of F-actin assembly per μm of lamellipodial margin ($\mathcal{Q} = V(dL/dS)$)	3840 ± 1460 μm/min
Rate of actin monomer assembly per μm of margin ($\mathcal{M} = \mathcal{Q}/l_0$)	23,500 ± 8940 monomers/s
Number of barbed ends supporting actin assembly per μm of margin ($m = \mathcal{M}/(da/dt) = dL/dS \times \sin\theta$)	241 ± 100
Gradient in $\mathcal{G}$ at leading edge required to sustain actin assembly ($d\mathcal{G}/dx$)¶	≥7.28 ± 2.90 μM/μm
Density of barbed ends associated with front face of lamellipodium ($m/\mathcal{T}$)	1370 ± 578 /μm^2
Estimated stall force for the barbed end of a rigid, anchored actin filament (f)‖	7.7 ± 1.3 pN
∴ Stall force for a 10 μm-wide lamellipodium ($\mathcal{F} = 10 \times m \times f$)	18.6 ± 8.3 nN
∴ Stall pressure for a lamellipodium ($P = \mathcal{F}/10\mathcal{T}$)	10.5 ± 4.8 kPa

*Fisher et al. (1988).
#Egelman (1985).
§Pollard (1986).
¶Lanni and Ware (1984), Luby-Phelps et al. (1987).
‖Hill (1981); Peskin et al. (1993).

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