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Supplemental information

Nonmuscle myosin 2 filaments are processive in cells

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SUPPLEMENTARY MATERIAL

Table 1

Construct	Retrograde Velocity (nm/s)	# of Retrograde Events	R^2 of fit	Anterograde Velocity (nm/s)	# of Anterograde Events	R^2 of fit
EGFP-RLC	-34.5 ± 14.0	1241	0.900	61.8 ± 31.7	1343	0.576
2A-Halo	-50.1 ± 16.3	5296	0.934	71.0 ± 35.0	1826	0.854
2B-Halo	-57.3 ± 19.8	4436	0.942	57.5 ± 21.7	888	0.859
Profilin-OE	-37.1 ± 14.4	1848	0.927	53.1 ± 25.9	1012	0.903
GFP Control	-38.0 ± 12.7	1418	0.961	51.8 ± 22.5	783	0.881

MOVIE LEGENDS**Movie S1**

CAD cell expressing RLC-iRFP from Fig. 1A. Scale bar is 5 μ m and time is in mm:ss. Cell was imaged at 3 Hz and playback is at 30 fps.

Movie S2

CAD cell expressing RLC-iRFP region of interest from Fig. 1C. Cell was imaged at 3 Hz and playback is at 30 fps.

Movie S3

CAD cell expressing RLC-iRFP and FTractin-Neon from Fig. 1F. Scale bar is 5 μ m and time is in mm:ss. Cell was imaged at 1.5 Hz and playback is at 30 fps.

Movie S4

CAD cell expressing RLC-iRFP and FTractin-Neon region of interest from Fig. 1G. Cell was imaged at 1.4 Hz and playback is at 15 fps.

Movie S5

CAD cell expressing EGFP-NM2A from Fig. 2A. Scale bar is 5 μ m and time is in mm:ss. Cell was imaged at 3 Hz and playback is at 40 fps.

Movie S6

CAD cell expressing EGFP-NM2A and FTractin-mApple from Fig. 2D. Scale bar is 5 μ m and time is in mm:ss. Cell was imaged at 1.25 Hz and playback is at 15 fps.

Movie S7

CAD cell expressing NM2A-Halo treated with JL at time $t=0$, from Fig. 3B,D. Scale bar is 5 μ m and time is in mm:ss. Cell was imaged at 2 Hz and playback is at 30 fps.

Movie S8

CAD cell with either PFN1-KO (left), GFP-control (middle) or GFP-PFN1 (right) expressing NM2A-Halo from Fig. 4A,C,E. Scale bar is 5 μ m and time is in mm:ss. Cell was imaged at 5 Hz and playback is at 30 fps.

Movie S9

CAD cell expressing NM2A-Halo (top) or NM2B-Halo (bottom) from Fig. 5D,G. Scale bar is 2 μ m and time is in mm:ss. Cell was imaged at 2 Hz and playback is at 30 fps.

Movie S10

Subnuclear stress fibers imaged in a primary EGFP-NM2A knock-in MEF from Fig. 6A. Scale bar is is 5 μm and time is in mm:ss. Cell was imaged at 1 Hz and playback is at 20 fps.

Movie S11

Ventral lamella imaged in a primary EGFP-NM2A knock-in MEF from Fig. 6C. Scale bar is is 5 μm and time is in mm:ss. Cell was imaged at 0.4 Hz and playback is at 20 fps.