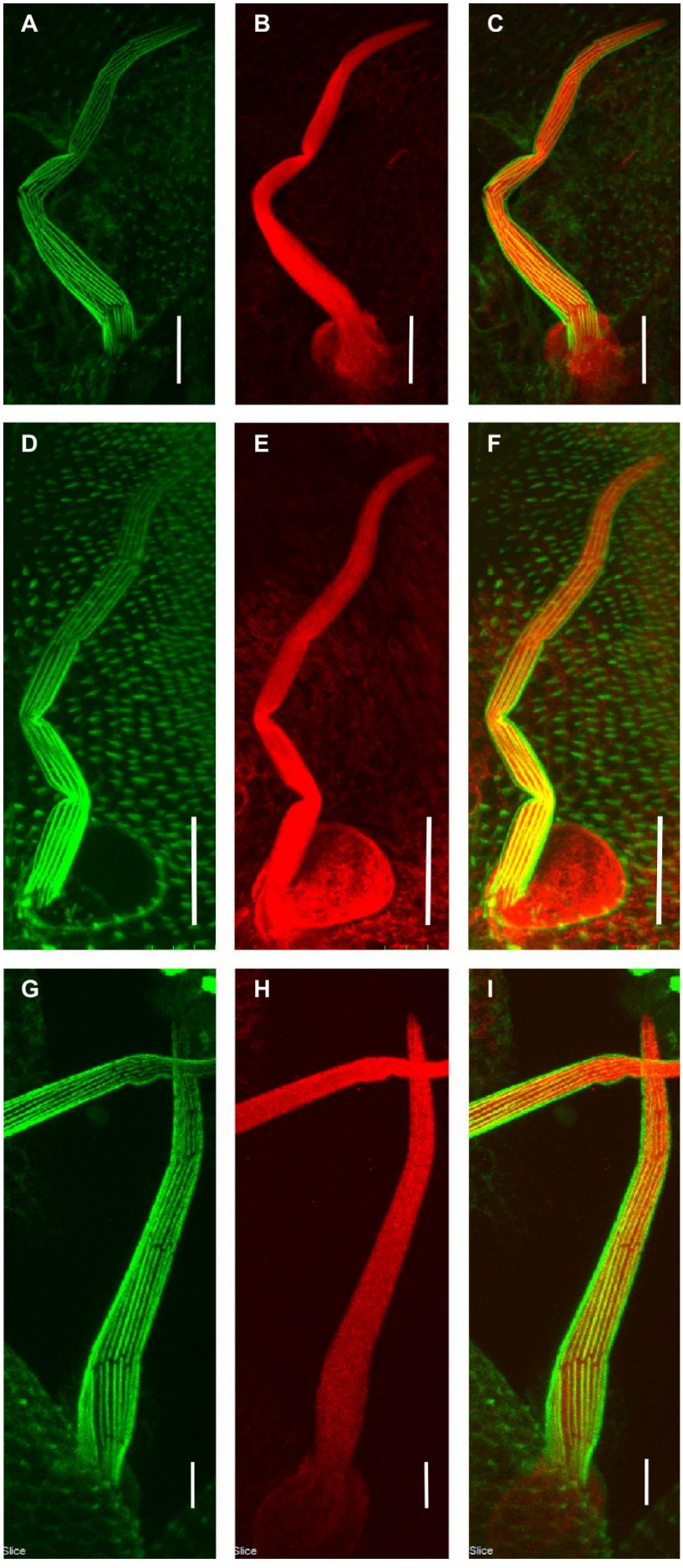
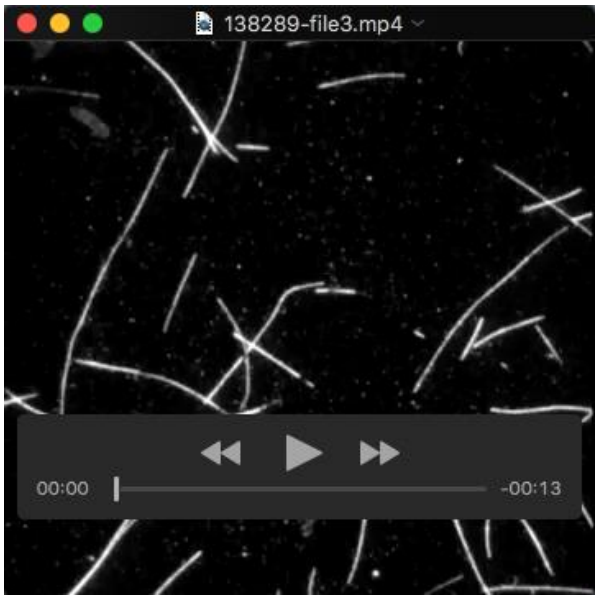


Supplemental Figure 1. *Glued* and *Miro* mutants show no defects in actin and stable microtubule organization.

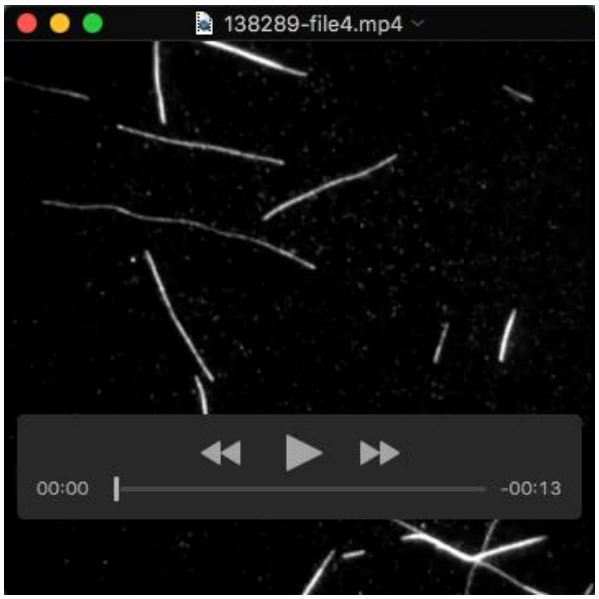
Confocal projections of bristles from wild type, scale bar 20 µm (A-C), *neur-Gal4-UAS-p150-delta96B*^{51645}, scale bar 20 µm (D-F) and *neur-Gal4-UAS-Miro-RNAi*^{106683}, scale bar 10 µm (G-I) pupae stained with Oregon green-phalloidin (green) and with anti-acetylated-tubulin antibodies (red). No obvious defects in stable microtubule localization pattern were detected in both mutants.



Supplemental Movie 1 - Microtubule gliding assay with wild type (DYNC1H1) immobilised recombinant human dynein.

Representative time-lapse movie of gliding of 543-labelled microtubules by surface-immobilised GFP-dynein with GFP antibodies (GFP channel not shown).

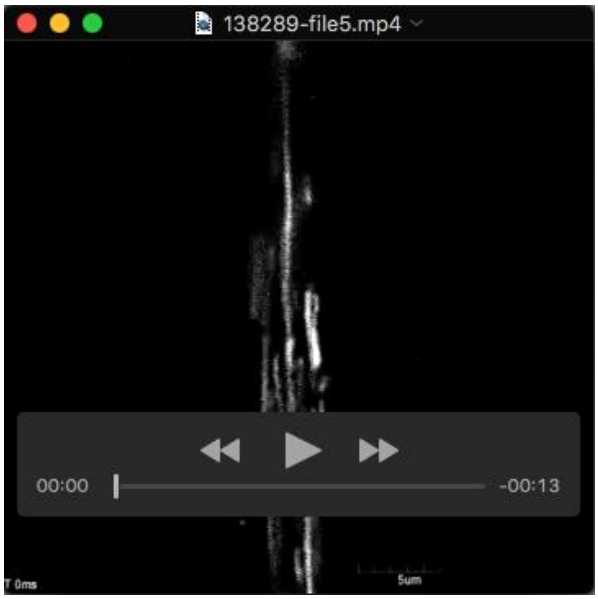
This assay was performed in 30 mM HEPES, 5 mM MgSO4, 1 mM DTT, 1 mM EGTA, 40 μM taxol, 1 mg/ml α -casein, 2.5mM ATP, pH 7.0).



Supplemental Movie 2 - Microtubule gliding assay with mutant (DYNC1H1$^{D/V}$) immobilised recombinant human dynein.

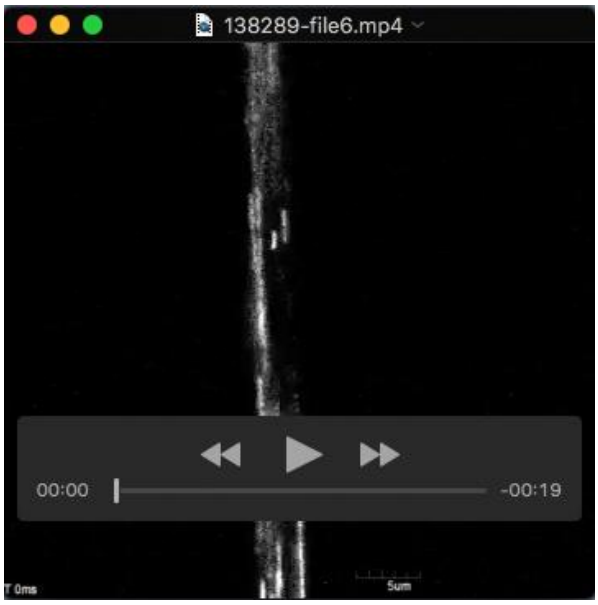
Representative time-lapse movie of gliding of 543-labelled microtubules by surface-immobilised GFP-dynein with GFP antibodies (GFP channel not shown).

This assay was performed in 30 mM HEPES, 5 mM MgSO4, 1 mM DTT, 1 mM EGTA, 40 µM taxol, 1 mg/ml á-casein, 2.5mM ATP, pH 7.0).



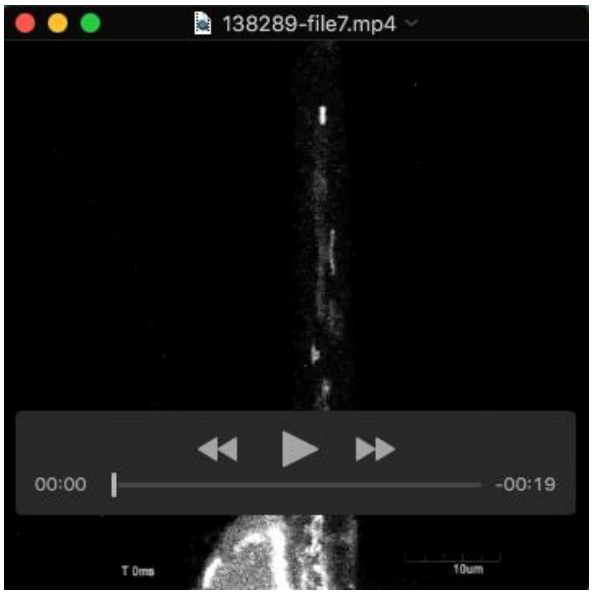
Supplemental Movie 3. Mitochondria tracking in a developing wild type bristle cell.

Tracking of the mitochondrial reporter *Neur-Gal4-Mito-GFP* in the middle part of a developing wild type bristle cell, using time-lapse confocal microscopy.



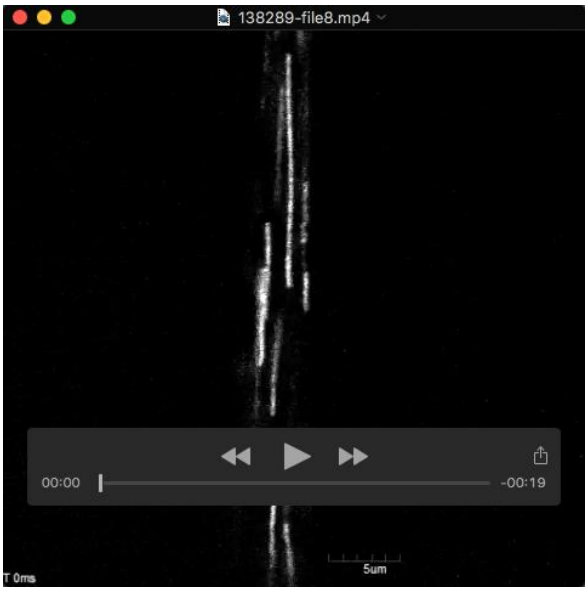
Supplemental Movie 4. Mitochondria tracking in a developing *Miro-RNAi* bristle cell.

Tracking of the mitochondrial reporter *Neur-Gal4-Mito-GFP* in the middle part of a developing *neur-Gal4-UAS-Miro-RNAi*^{106683} bristle cell, using time-lapse confocal microscopy.



Supplemental Movie 5. Mitochondria tracking in a developing *Milton-RNAi* bristle cell.

Tracking of the mitochondrial reporter *Neur-Gal4-Mito-GFP* in the middle part of a developing *neur-Gal4-UAS-Milton-RNAi*^{44477} bristle cell, using time-lapse confocal microscopy. An overall decrease in mitochondrial density was seen, although no significant change in net mitochondrial velocity was noted.



Supplemental Movie 6. Mitochondria tracking in a developing *Glued-DN* bristle cell.

Tracking of the mitochondrial reporter *Neur-Gal4-Mito-GFP* in the middle part of a developing *neur-Gal4-UAS-p150-delta96B*^{51645} bristle cell, using time-lapse confocal microscopy.

Supplemental table 1. Mitochondrial movement parameters in *Miro-RNAi*^{iai}. Mutant parameters found to be significantly different from those of the wild type are marked with an asterisk.

Table 1. Mitochondrial transport parameters in *Drosophila* bristles		
Genotype	*Miro-RNAi*^{iai}	
Movement directionality	Anterograde	Retrograde
No. of pupae	4	
No. of bristles	12	
No. of moving mitochondria	214	34
Directionality proportion (%)	**86.29±3.71***	**13.70±1.89***
Velocity (μm/sec)	3.31±0.6	2.46±1.15
Flux	2.70±2.79	**0.42±0.44***