Impact of the motor and tail domains of class III myosins on regulating the formation and elongation of actin protrusions

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Supplemental Video 1-4 Legend:

Filopodia dynamics of COS7 cells transfected with MYO3A, MYO3A,Δ31, MYO3A,Δ34 and MYO10 constructs. COS7 cells transfected with (1) GFP-MYO3A, (2) GFP-MYO3A,Δ31, (3) GFP-MYO3A,Δ34 and (4) GFP-MYO10 were imaged using time-lapsed microscopy using a TiE inverted fluorescence microscope (Nikon Instruments). Image acquisition was managed through NIS-Elements software (Nikon Instruments). GFP-MYO3A expressing COS7 cells led to formation of robust and lengthy filopodia which remained stable for longer times compared to short and highly unstable filopodia formed by GFP-MYO3A,Δ31 and GFP-MYO3A,Δ34 expressing COS7 cells. Whereas, GFP-MYO10 expressing cells demonstrated filopodia with rapid dynamics (faster extension and retraction velocity compared to MYO3A). MYO3A (Movie-1) and MYO3A,Δ31 (Movie-2) were recorded at 0.5 frames per seccond (fps); MYO3A,Δ34 (Movie-3) was recorded at 1 fps; MYO10 (Movie-4) was recorded at 0.33 fps. Video 1-3 were compressed at 30 fps and Video 4 was compressed at 20 fps.