

Supplement of

Dynamics and organization of actin-labelled granules as a rapid transport mode of actin cytoskeleton components in Foraminifera

Jan Goleń et al.

Correspondence to: Jan Goleń (ndgolen@cyf-kr.edu.pl)

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Movie S1: time lapse imaging showing flattened lamellipodia of living *Ammonia* sp. attached to glass. Note weak but not uniform actin-labelling following all membranous surfaces of pseudopodial structures. Linear structures seen at the beginning of time lapse imaging were subsequently transformed into ring structure. Images were obtained with *Zeiss Axio Observer Z.1*. Scale bar 20 μm .

Movie S2: time lapse showing actin-labelled granules (ALG) and mitochondria in cross-section of newly formed chamber in *Amphistegina lessonii* during biomineralization of a newly build chamber (pores are already visible in transmitted light). ALG and mitochondria do not show co-localization. Fig.3. is based on the first frame of this time lapse. Images were obtained with a Leica SP5 inverted confocal microscope. Scale bar 10 μm .

Movie S3: time lapse showing actin-labelled granules (ALG) in thick pseudopodial tread of *Amphistegina lessonii*. ALGs are moving bi-directionally along the pseudopodium stretching bi-directionally from upper right corner of the image towards bottom left corner of the image. Cell body was outside of field of view in upper right side. Note that ALGs tends to move outward within the cortical part of the pseudopodium and inward in its core. Images were obtained with *Zeiss Axio Observer Z.1*. Scale bar 10 μm .

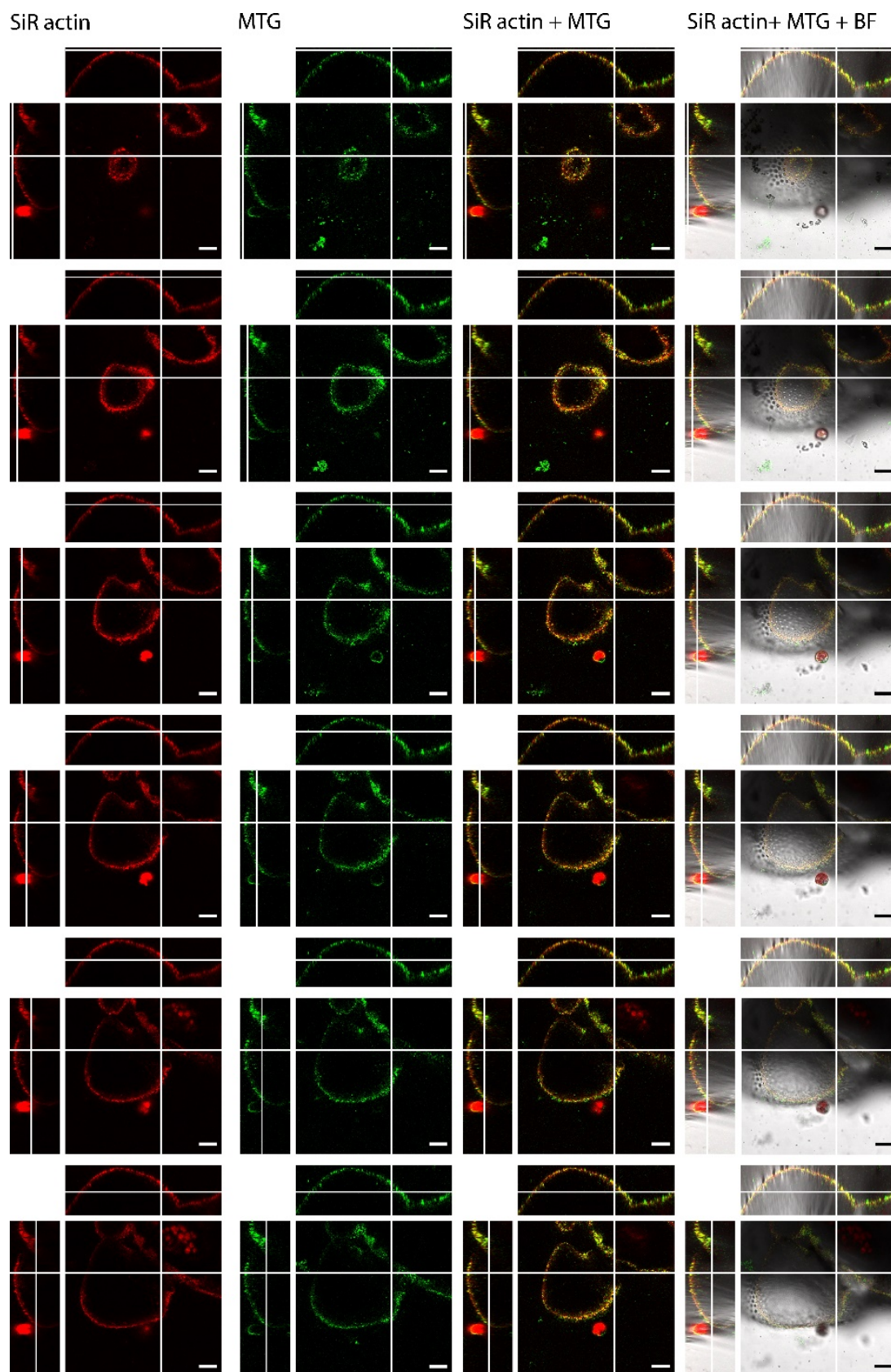


Figure S1: Overview of the organisation of actin and mitochondria in lamellipodia during biomineralisation of a chamber. Six z-position form z stack. First column (SiR actin) presents fluorescent channel showing actin cytoskeleton stained with SiR actin, second column (MTG presents localization of mitochondria stained with Mitotracker Green fluorescent probe, third column (SiR actin + MTG) presents overlap between first two channels, fourth column (SiR actin + MTG + BF) presents overlap of both fluorescent channels with bright field image. Images were obtained with Leica SP5 inverted confocal microscope. Scale bar 10 μ m.

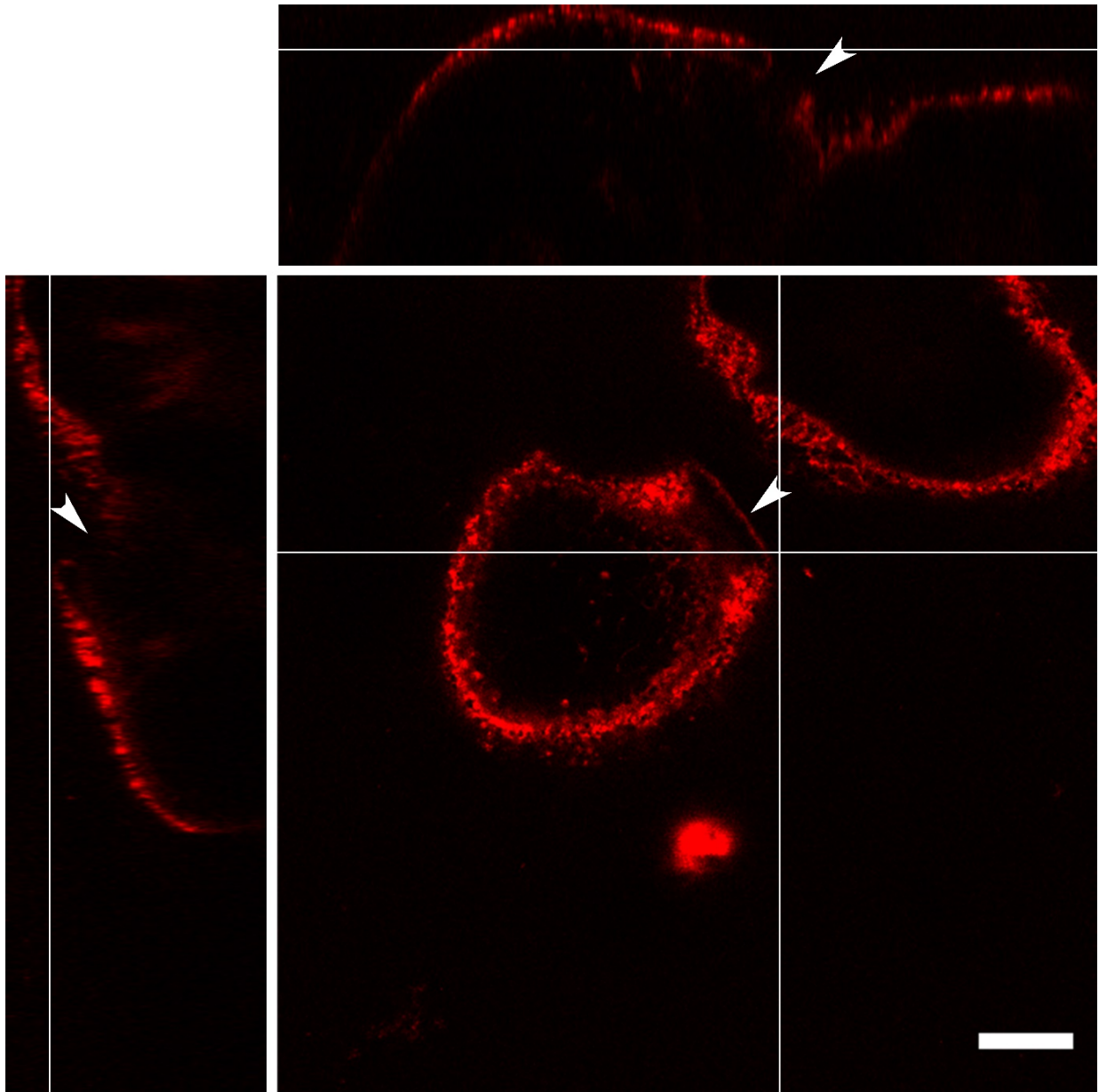


Figure S2: Organisation of actin during chamber biomineralisation. Cross section and orthogonal projections. Arrowheads indicate aperture of new chamber. Images were obtained with *Leica SP5* inverted confocal microscope. Scale bar 20 μm .

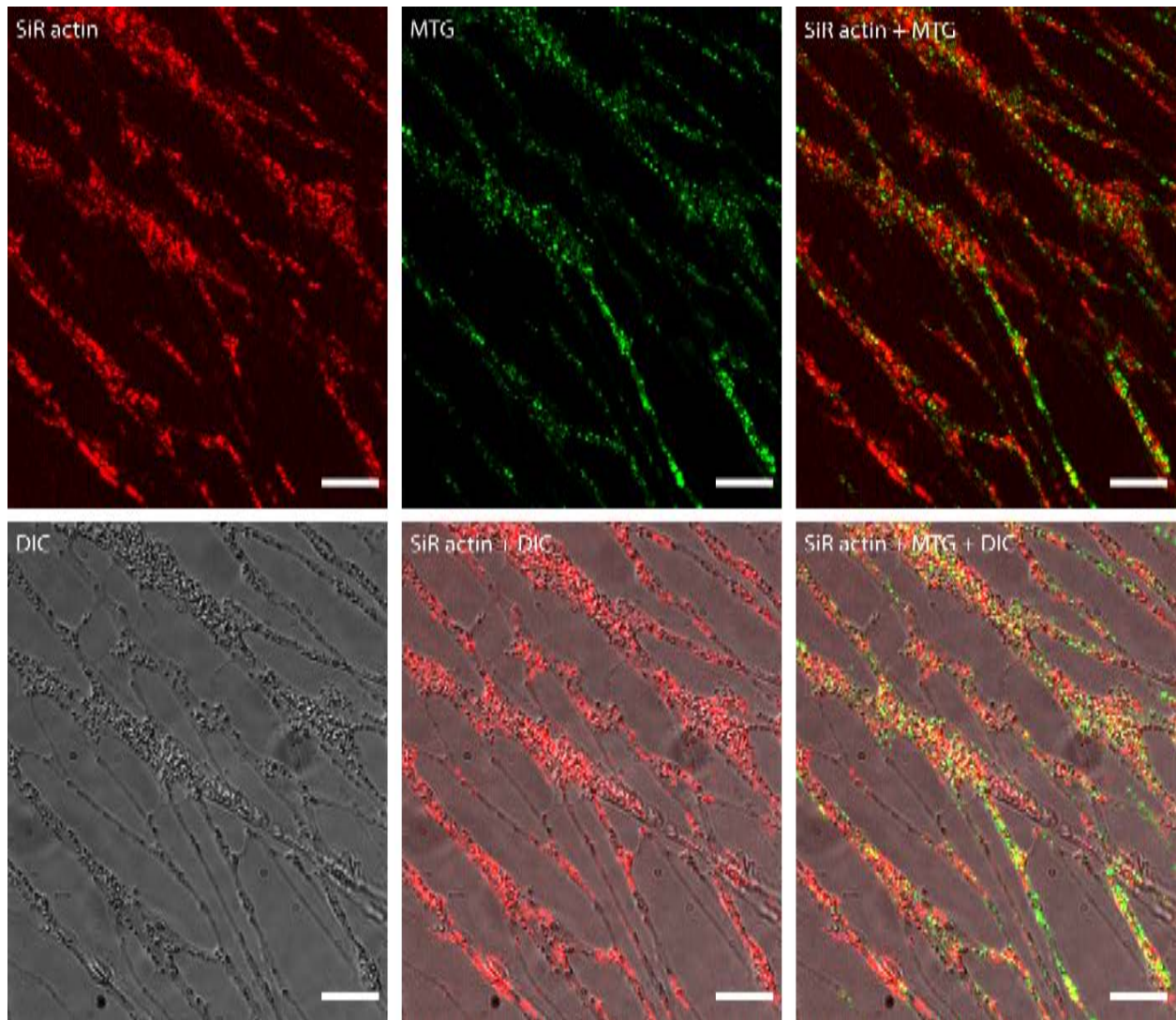


Figure S3: Actin-labelled granules (ALG) and mitochondria within reticulopodia. MTG stands for Mitotracker Green fluorescent probe. Images (optical sections) obtained with *Zeiss Axio Observer Z.1.* with *ApoTome.2.* Scale bar 10 μm .

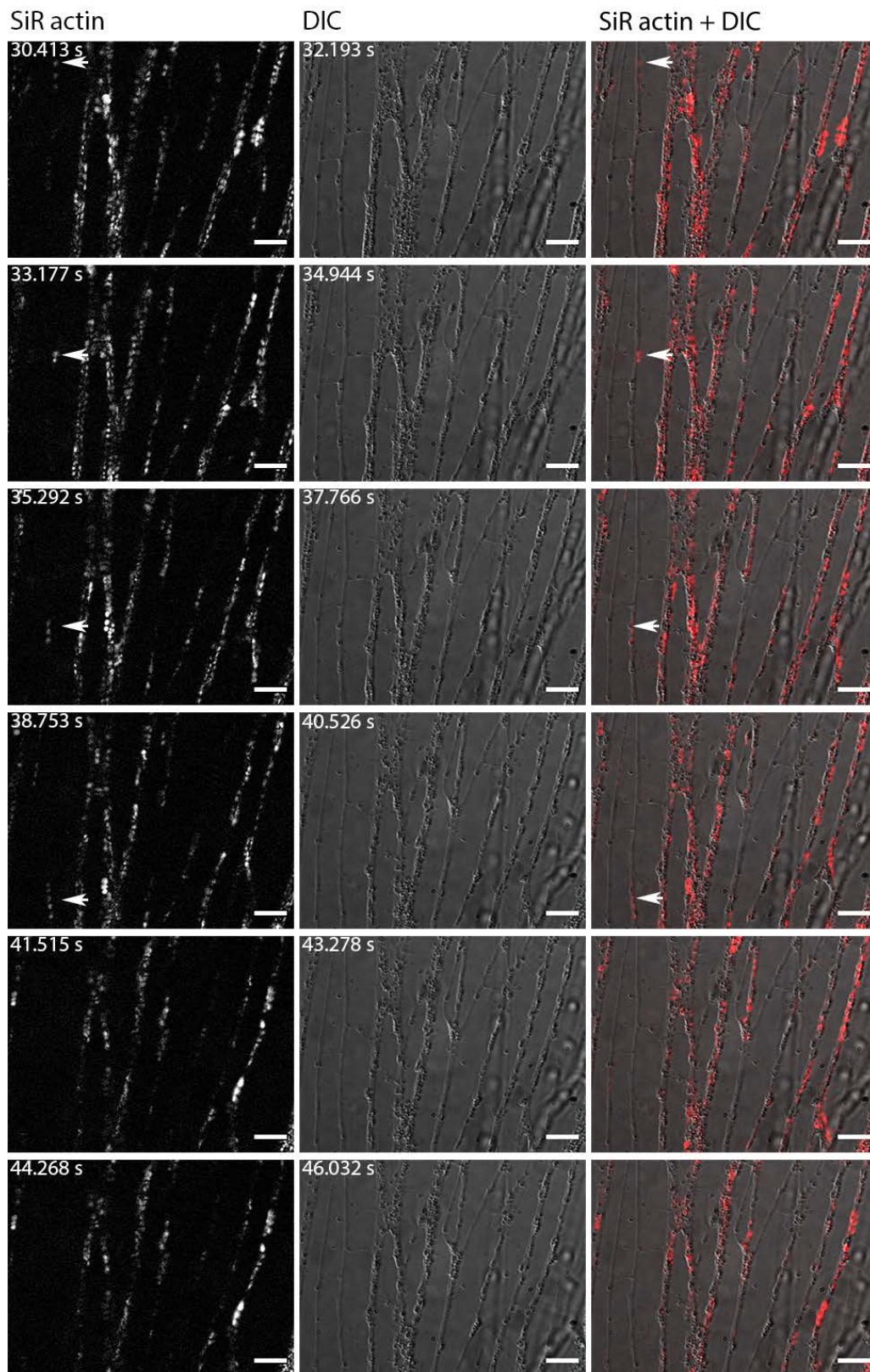


Figure S4: Dynamics of actin-labelled granules (ALG) in reticulopodia of living *Amphistegina lessonii*. Six frames of time lapse. Entire time laps available in supplementary materials. Right column: actin stained with SiR actin; middle column: DIC; right column: overlay of fluorescent and DIC channels. Arrows indicate granule moving along one pseudopodium. Numbers in top right corner of each image of SiR actin and DIC channel indicate relative time from the beginning of the recording of time lapse in seconds. The structure of the reticulopodial network was relatively stable during recording of the time lapse. Movement (velocity and direction) of actin granules is independent from the movement of reticulopodia. Images obtained with Zeiss Axio Observer Z.1. equipped with ApoTome.2. Scale bar 10 μ m.

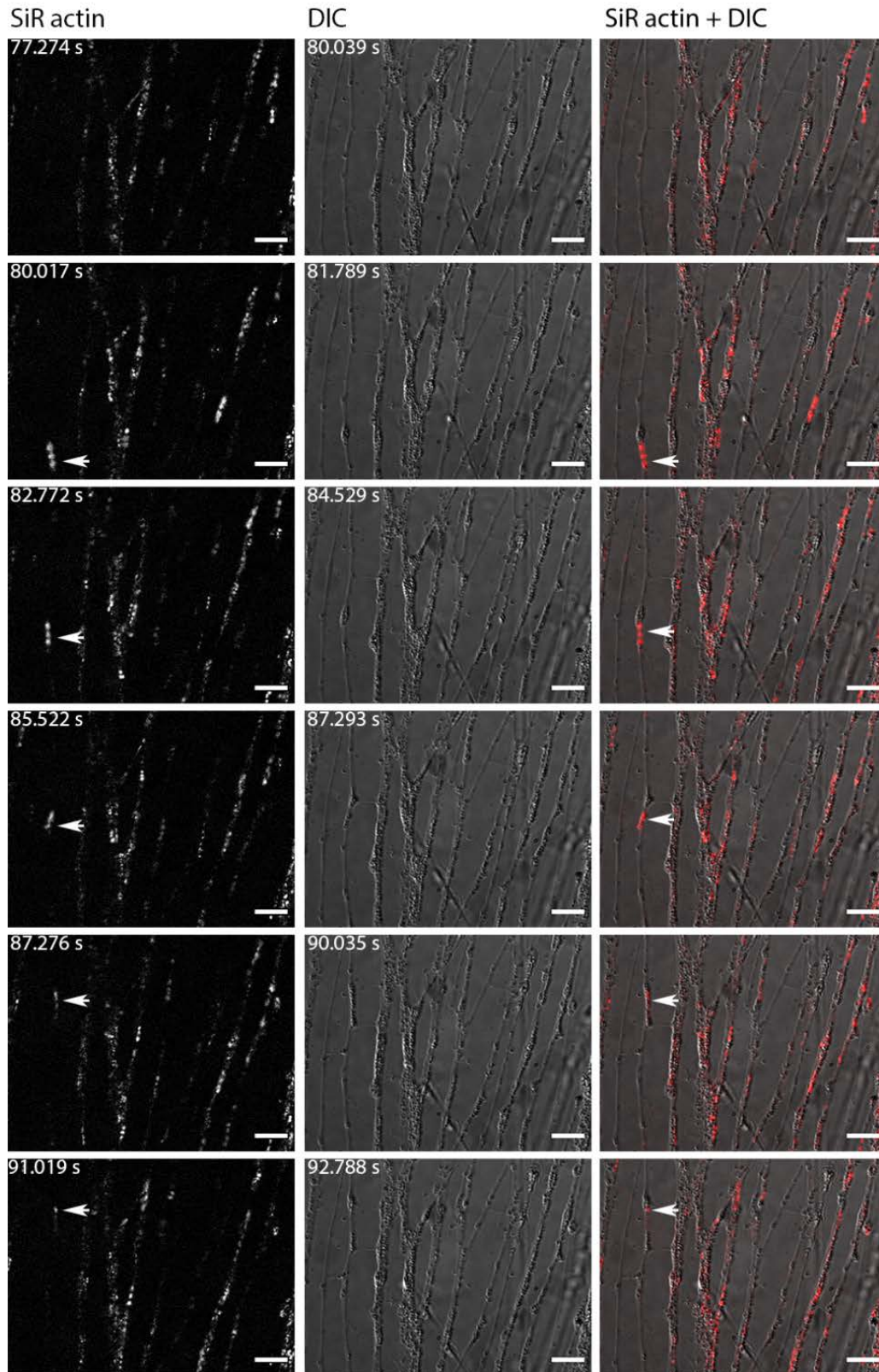


Figure S5: Dynamics of actin-labelled granules (ALGs) in reticulopodia of living *Amphistegina lessonii*. Another six frames of the same time lapses in Fig.7. Entire time laps available in supplementary materials. Right column: actin stained with SiR actin; middle column: DIC; right column: overlay of fluorescent and DIC channels. Arrows indicates granule moving along the same pseudopodium as in Fig.7., but in the opposite direction. Numbers in top right corner of each image of SiR actin and DIC channel indicate relative time form the beginning of the recording of time lapse in seconds. The structure of reticulopodial network was relatively stable during recording of the time lapse. Movement (velocity and direction) of actin granules is independent from the movement of reticulopodia. Images obtained with Zeiss Axio Observer Z.1. equipped with ApoTome.2. Scale bar 10 μ m.