

## Supplemental movie legends:

**Movie S1** – Effects of the myosin tail overexpression on the trafficking of Golgi stacks (green) and peroxisomes (magenta) in the leaf epidermal cells of *N. benthamiana*. Single frames from this movie are shown in Fig. 2A.

**Movie S2** - Effects of the myosins VIII-2 and VIII-B tail overexpression on trafficking of Golgi stacks (green) and peroxisomes (magenta) in the leaf epidermal cells of *N. benthamiana*.

**Movie S3** – Effects of the myosin globular tail domain (GTD) overexpression on trafficking of the Golgi stacks (green) in the leaf epidermal cells of *N. benthamiana*.

**Movie S4** – Effects of the myosin tail overexpression on trafficking of mitochondria (green) in the leaf epidermal cells of *N. benthamiana*. Single frames from this movie are shown in Fig. 3A.

**Movie S5** – Effects of the systemic RNAi of the myosins XI-2 and XI-K on the trafficking of Golgi stacks (green) and peroxisomes (magenta) in the leaf epidermal cells of *N. benthamiana*. Single frames from this movie are shown in Fig. 4A.

**Movie S6** – Effects of the local RNAi of the myosins XI-2 and XI-K on the trafficking of mitochondria (green) in the leaf epidermal cells of *N. benthamiana*. Single frames from this movie are shown in Fig. 4B.