

## Supplemental figure 1

Images of stably transformed *Arabidopsis* plants expressing *AtPEX10-eYFP* (B, magenta) and GFP-SKL (C, green) clearly show *AtPEX10-eYFP* is located to the rim of the peroxisome (arrowhead) with GFP-SKL in the peroxisome matrix.

Images from stably transformed *Arabidopsis* (D) and tobacco (E) plants expressing *AtPEX10-eYFP* show the fusion protein in punctate structures. There is also diffuse fluorescence throughout the cell reminiscent of a cytosolic location. (See supplementary movie 1 for movement of punctate structures).

Images taken from stably transformed *Arabidopsis* (F-I) and tobacco (J-L) plants expressing *AtPEX2-eYFP* show the fusion protein is present in punctate motile structures (see arrowhead). Cells also display diffuse fluorescence throughout the cell which is characteristic of a cytosolic location.

Scale bar 2 $\mu$ m for A-C, 10 $\mu$ m for D-E and 5 $\mu$ m for F-L.

## Supplemental movie 1 caption

Time lapse images taken of leaf epidermal cells from a stably transformed *Arabidopsis* plant expressing *AtPEX10-eYFP*. Plastids are shown in green, *AtPEX10-eYFP* is in magenta and scale bar is 5  $\mu$ m. There is a 7.1 second gap between frames.

## Supplemental movie 2 caption

Time lapse images taken of tobacco leaf epidermal cells transiently expressing ST-CFP (green) and *AtPEX10-eYFP* (magenta) 30 minutes after treatment with BFA (100  $\mu$ g / ml). Scale bar is 10  $\mu$ m and there is a 15.7 second gap between frames.