Figure 4. Localization of GFP-tagged DRP1A, DRP1C and DRP1E in BY-2 cells.

A-C). Association of DRP1A with microtubules and the forming cell plate. (A), In the G1 phase cell DRP1A is associated with the strand-like structures distributed only in the cortex region of the cell. (B), In the S phase cell the nuclear (N) is centralized and DRP1A is distributed on strand-like structures that initiate from the perinuclear region and extend along the cytoplasmic strands towards the cell cortex. (C), In the metaphase cell DRP1A is found on the spindles (SPD). From late metaphase to early anaphase, DRP1A is associated with the phragmoplast including the two sets of microtubule arrays and the forming cell plate (CP).

D-F). Association of DRP1C with microtubules and the forming cell plate. In the G1 cell (D; G1), DRP1A is associated with the cortical microtubules. However, such association does not appear to be as tight as that of DRP1A (A). In the mid phase cell (D; Mid), DRP1C is associated with the mitotic spindle (SPD) and is also distributed as punctate structures throughout the cell. At anaphase (E), DRP1C is largely targeted to the forming cell plate (CP). When the 3-D confocal image in E is turned -30° around the X-axis and the phragmoplast region is amplified (F), DRP1C is largely located on the edges of the cell plate, forming a ring-like structure.

G-I). Localization of GFP-DRP1E fusion protein in transgenic BY-2 cells. G). Side view of the cell plate (CP) of an anaphase cell. N, daughter nuclei. H). Front view of the cell plate (CP) of a similar cell as in A. I) Confocal image of DRP1E localization. Note that it is localized to the disk-like structure of an early cell plate filled with the tubular-network.