

# **Endothelial cells from human and mouse with polycystic kidney disease are characterized by polyploidy and chromosome segregation defects through survivin down-regulation.**

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## **Supplemental Movies (Legend)**

### **Movie 1. Normal cell division in wild-type mouse endothelial cells.**

The movie shows several normal mitotic events. The movie was analyzed by superimposing phase contrast and Hoechst fluorescence images, which were taken every five minutes with 40X magnification.

### **Movie 2. Polyploidy formation in *Pkd1*<sup>-/-</sup> mouse endothelial cells.**

The movie shows that abnormal mitotic events lead to cell polyploidy. The *Pkd1*<sup>-/-</sup> cell is able to initiate metaphase of the mitotic phases. Unable to proceed to anaphase, the cell shows various membrane blabbing, followed by the formation of a cytomegalic cell with multiple nuclei. Images were captured every five minutes with 40X magnification.

### **Movie 3. Polyploidy formation in *Tg737*<sup>Orpk/Orpk</sup> mouse endothelial cells.**

The movie shows that abnormal mitotic events lead to cell polyploidy. The *Tg737*<sup>Orpk/Orpk</sup> cell is able to initiate metaphase of the mitotic phases. Afterwards, the cell shows abnormal segregation of chromosomes during anaphase, resulting in a large multi-nucleated cell. Images were captured every five minutes with 40X magnification.

### **Movie 4. Polyploidy formation in primary endothelial cells from an ADPKD patient.**

The movie shows that abnormal mitotic events lead to cell polyploidy. Human endothelial cells were obtained from a patient with polycystic kidney disease and subjected to functional and cellular characterizations. Similar to cilia mutant cells from the mouse, the human cell is able to initiate metaphase but fails to complete the mitotic phases. Unable to proceed to anaphase, the cell shows various membrane blabbing, followed by the formation of a cytomegalic cell with multiple nuclei. Of note is the presence of another multinucleated cell within the field of view. Images were captured every five minutes with 40X magnification.