**Supplementary Information:**

**Supplementary Figure Legends:**

**Fig.S1. VE-cadherin expression in isolated endothelial cells.** Wild type (WT), Tg737 $^{orpk/orpk}$ (Tg737) and pkd1 $^{-/-}$ (pkd1) cultured on cover glasses were fixed and immunostained for endothelial marker VE-cadherin (CD144, green) and DAPI (nuclei, blue).

**Fig.S2. Primary cilia expression in endothelial cells.** Confocal fluorescence images of endothelial cells immunostained for the presence of primary cilia (acetylated alpha-tubulin). Note, the absence of cilia in Tg737$^{orpk/orpk}$ cells. Inset a high magnification view of primary cila (green) and nuclei (red) stained with propidium iodide. Images shown are representative from at least three independent experiments.

**Fig.S3: Primary cilia deficiency results in decreased focal adhesion assembly.** Quantitative analysis of focal adhesion number (A) and relative area of FA's (B) in wild type, Tg737$^{orpk/orpk}$ and pkd1$^{null/null}$ endothelial cells. The number of FAs in addition to total FA area was decreased in primary cilia deficient Tg737$^{orpk/orpk}$ cells compared to the WT, while increased in pkd1$^{null/null}$ cells. The results shown are mean ± SEM from 3 independent experiments.

**Fig.S4. Primary cilia orientation is in the direction of cell migration.** A) Fluorescent micrograph of Wild type cells showing the orientation of primary cilia in the direction of cell migration (arrow) at the wound edge. Confluent monolayers of wild type endothelial cells were wounded and fixed after 12 h. The cells were permeabilized and stained with acetylated-tubulin (arrow heads) to visualize primary cilia. B) Photomicrograph showing the same area in A.

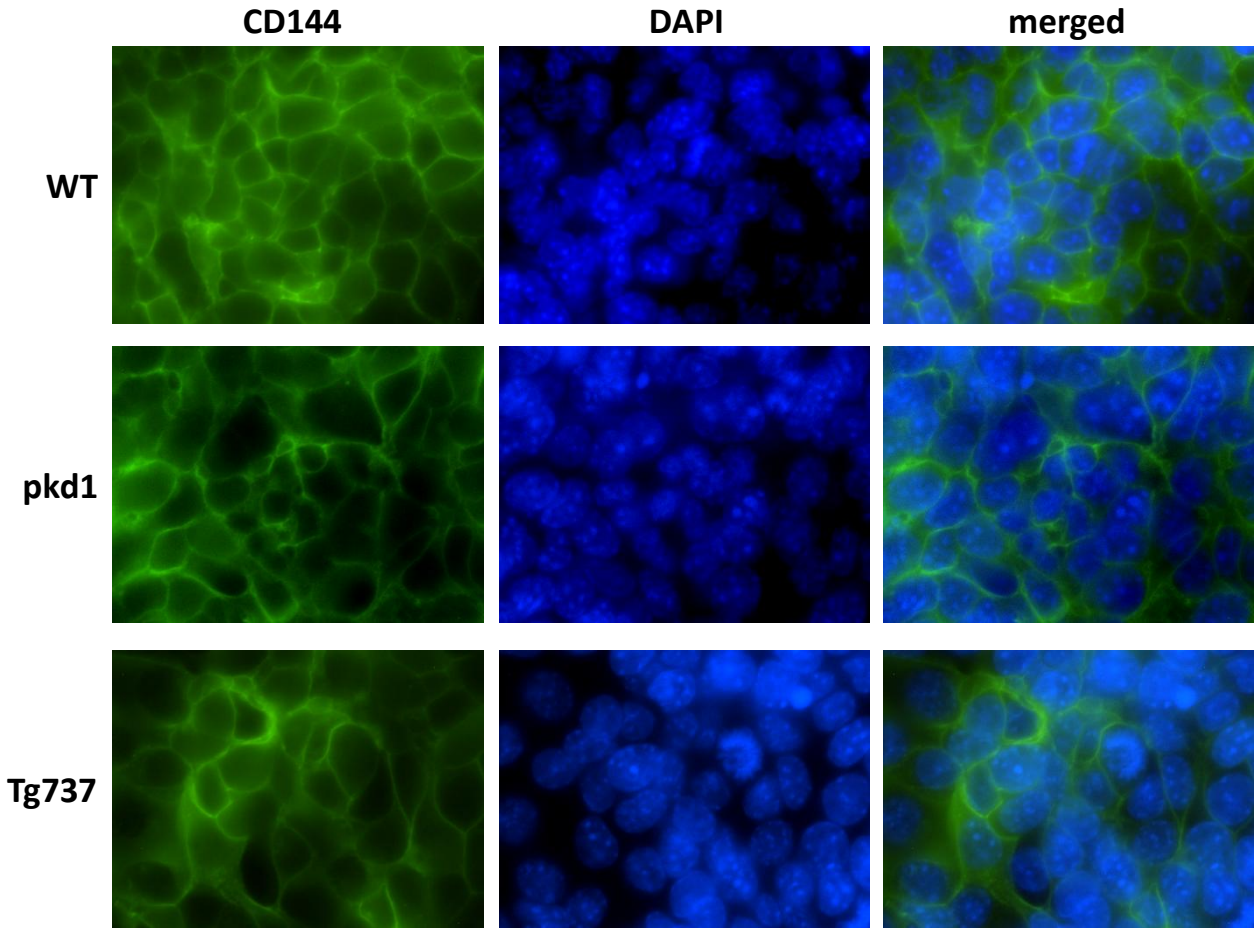



Fig.S1

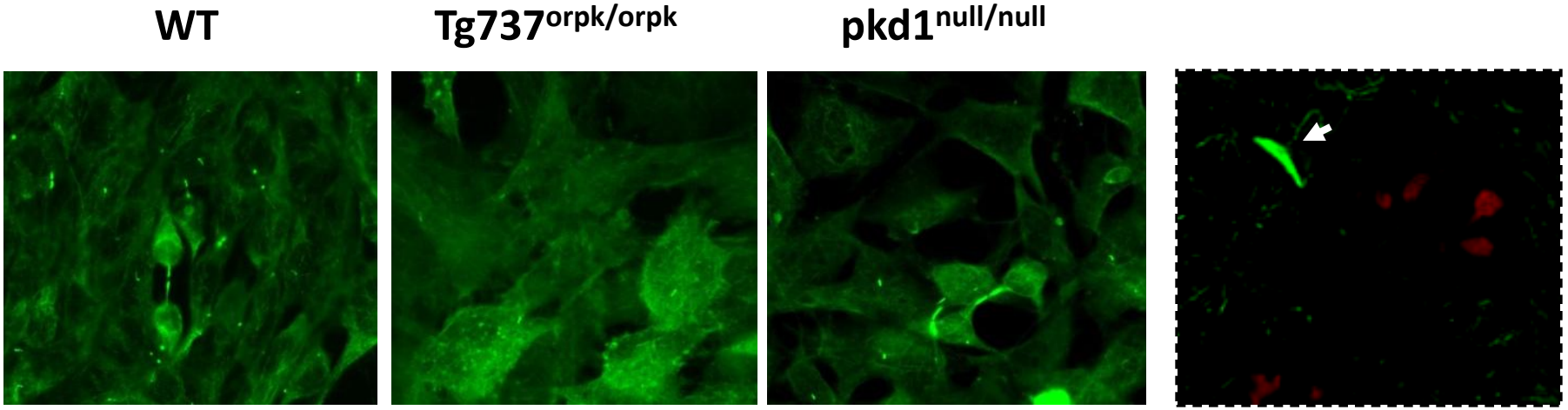
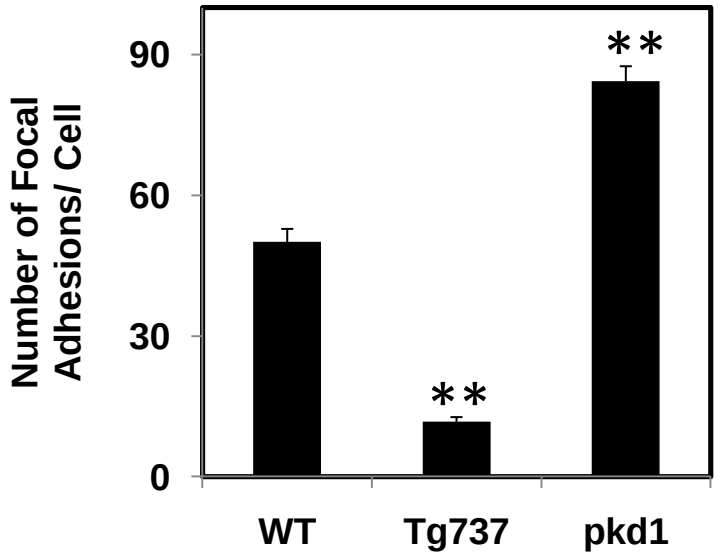



Fig.S2

A


Number of Focal Adhesions/ Cell
90
60
30
0
**
**
WT
Tg737
pkd1

B

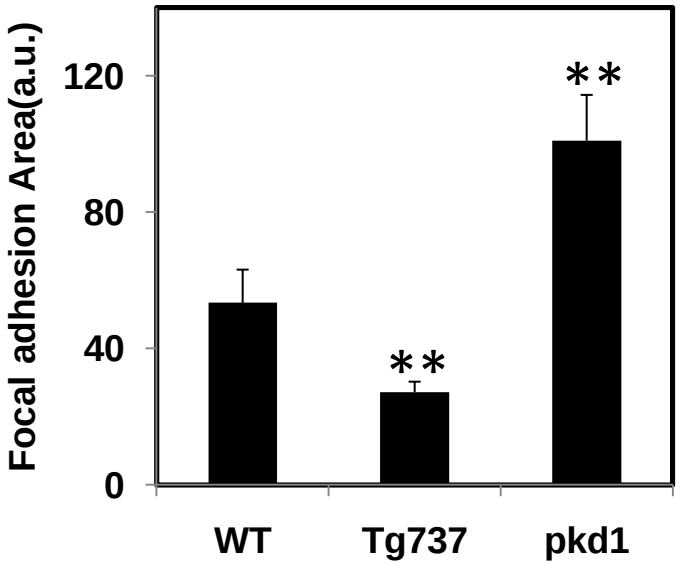

Focal adhesion Area(a.u.)
120
80
40
0
**
**
WT
Tg737
pkd1

**Fig.S3**

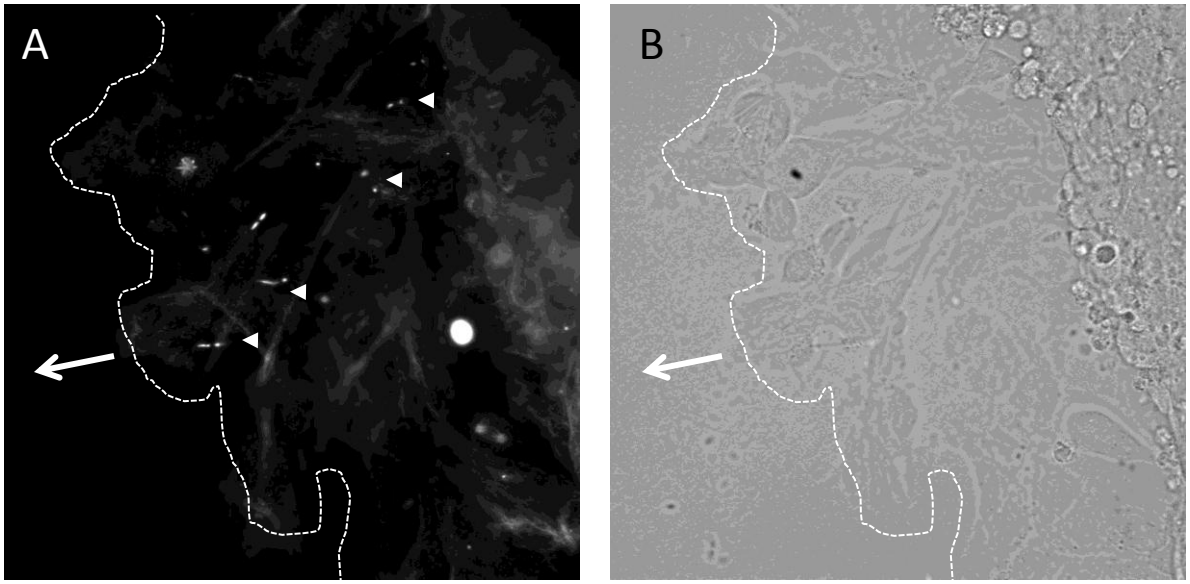



**Fig.S4**