

Figure legends for supplementary materials:

Supplementary Figure 1: Localization of junctional, trafficking and polarity

proteins in control and LKB1 -/- liver sections. Liver sections from control

(upper panels) or LKB1 -/- (lower panels) were stained with **A.** Claudin-3, **B.**

BSEP, **C.** b-catenin, **D.** Myosin Vb, **E.** Rab 11a, **F.** Par-3 and ZO-1 antibodies.

Scale bar: 10mm.

Supplementary Movie 1: IVM of biliary excretion in control mouse. Control

mouse was anesthetized and positioned on the microscope stage for IVM of the

liver as described in Materials and Methods. Blood flow and sinusoid space were

visualized with Qtracker 655 probe (20 μ l; red) that was injected systemically

prior to imaging. To measure biliary excretion, 0.2 mg/gr 6-CFDA (processed to

green 6-CF) was injected following the acquisition of the first z-stack. Movie is 10

fps.

Supplementary Movie 2: IVM of biliary excretion in LKB1 -/- mouse. LKB1 -/-

mouse was anesthetized and positioned on the microscope stage for IVM of the

liver as described in Materials and Methods. Blood flow and sinusoid space were

visualized with Qtracker 655 probe (20 μ l; red) that was injected systemically

prior to imaging. To measure biliary excretion, 0.2 mg/gr 6-CFDA (processed to

green) was injected following the acquisition of the first z-stack. Movie is 10 fps.

Supplementary Movie 3: TJs permeability and the paracellular pathway in

control mouse. Control mouse was anesthetized and positioned on the

microscope stage for IVM of the liver as described in Materials and Methods.

Movie shows volume rendering of the following probes: sinusoid space was

visualized with Qtracker 655 probe (20 nt; grey) that was injected systemically prior to imaging. For TJs permeability, 3kDa dextran (red) was injected following the acquisition of the first z-stack. Note that the both probes remain in the vasculature (hepatocytes are in the black, unlabeled space). Movie is 10 fps.

Supplementary Movie 4: TJs permeability and the paracellular pathway in

LKB1 ^{-/-} mouse. LKB1 ^{-/-} mouse was anesthetized and positioned on the microscope stage for IVM of the liver as described in Materials and Methods.

Movie shows volume rendering of the following probes: sinusoid space was visualized with Qtracker 655 probe (20 nt; grey) that was injected systemically prior to imaging. For TJs permeability, 3kDa dextran (red) was injected following the acquisition of the first z-stack. Note that while Qtracker remain in the vasculature, 3kDa dextran leaks out to the canaliculi area (unlabeled). Movie is 10 fps.

