Supplemental Digital Content 1

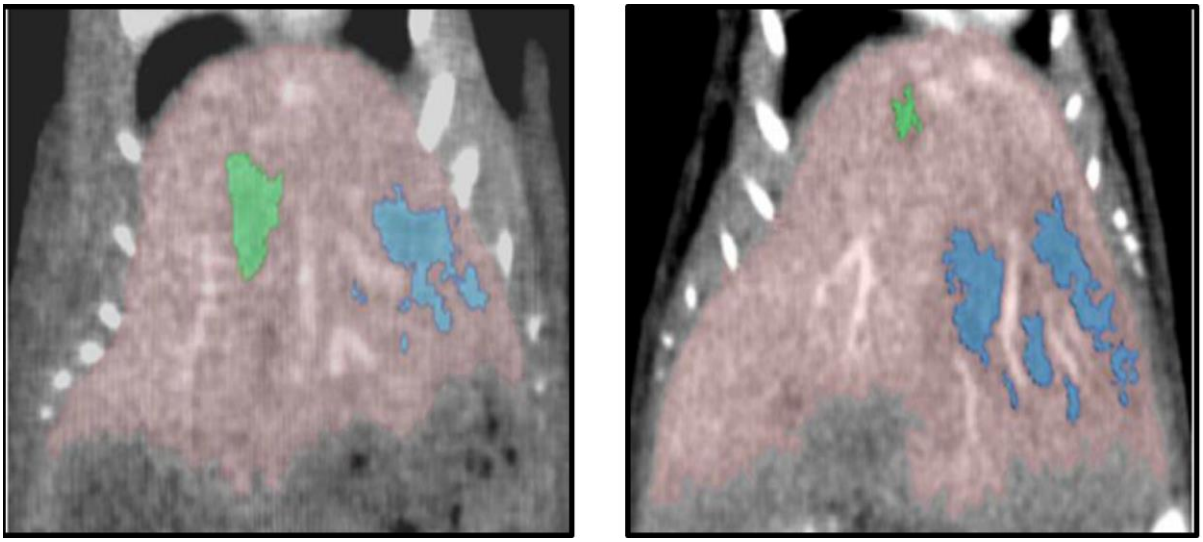

Fig. 1. Animals were subjected to ischemia (45 min) and reperfusion of the left liver lobe (24 h, 21% or 60% oxygen) and thereafter received Fenestra VC ™. Fenestra VC is a 20% (w/v) oil-in-water lipid emulsion formulation containing an iodinated triglyceride (glyceryl-2-oleoyl-1,3-di-7-(3-amino-2,4,6-triiodophenyl)-heptanoate (DHOG)) and which is modified by the addition of methoxy-polyethylenglycol (PEG)1-2-distearyl phosphatidylethanolamine that provides long-lasting contrast enhancement in microCT imaging of the vascular and hepatobiliary bed. The formulation is iso-smolar with plasma. It was injected intravenously by a 27G Butterfly catheter (tail vein) at a dose of 0,825 mg per g mouse body weight 2,5 hours prior to imaging. Reconstructed images were analyzed using Amira v3.1 software (TGS, Computer Systems, Inc., San Diego, CA). The images were segmented and labelled into categories of viable liver (marked as bright brown color), ischemia (marked as blue color), vessels (bright white) and gall bladder (marked in green color) as seen in this representative saggital microCT slice. Segmented areas were identified by Hounsfield Units (HU) with each region having its own distinctive set of numbers. After imaging, the left liver lobe was resected for H&E staining and microscopy. By that, it was repeatedly shown (n = 5), that the contrast enhanced computed tomography images and the respective histopathological analyses of the same mouse correspond to each other. The lack of contrast enhancement in

necrotic tissue resulted in mean HU of 54 (SD 22) reflecting necrotic/metabolic silent tissue. Tissues taking up Fenestra and hence had much higher density (mean 140 HU, SD 33) reflected viable parenchyma, also confirmed postmortem by histology (data not shown).

Table 1. Liver Transaminase after Moderate Hyperoxia

| | GPT | |
|---|---|---|
| Group-comparison | 21% | 30% |
| Values in U/l (MV ± SD) | 1,810 ± 778 | 2,586 ± 841 |
| *P*-value | | n.s. |

Glutamate-pyruvate-transaminase (GPT) blood concentrations after 45 min of ischemia and 24 h of reperfusion, either under normoxic (21%) or moderate hyperoxic (30%) conditions. The values of GPT indicated slightly more damage in the hyperoxygenation group, however, the differences between the two groups missed the level of significance (n = 10-16, exactly age-matched, n.s. $p = 0.059$).

Table 2. Ischemic Liver Volume

| | Ischemic Liver Volume of the Left Liver Lobe | |
|---|---|---|
| Group-comparison | 21% | 60% |
| Values in $mm^3$ (MV ± SEM) | 46.64 (±14.23) | 66,91 (±16,42) |
| *P*-value | | <0.05 # |

Quantification of damaged liver volume by micro computed tomography of mice after 45 minutes of ischemia and 24 h of reperfusion, either under normoxic (21%) or hyperoxic (60%) conditions. Mice received thereafter Fenestra VC ™. On the basis of the difference of the intensity (hounsefield units) of damaged v.s. viable liver tissue (please see also supplemental fig. 1 legend) and by identification and exclusion of the vessels branching in the 3D view (not shown) the volume of nonfunctional liver was assessed within the left liver lobe that was subjected to ischemia and reperfusion. After 45 min of ischemia and 24 h of reperfusion in hyperoxic (60%) conditions a significant increase in damaged liver tissue volume could be determined *in vivo* as compared to the volumes determined under 21% oxygen atmosphere (measured in cubic-millimeters; $mm^3$, ($p$ <0.05; n = 5 per group). Values displayed as MV ± SEM. # indicates the significance of difference.