

**Changes induced by Non-Alcoholic Fatty Liver disease
in liver sinusoidal endothelial cells and hepatocytes:
spectroscopic imaging of single live cells**

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Supplementary Materials

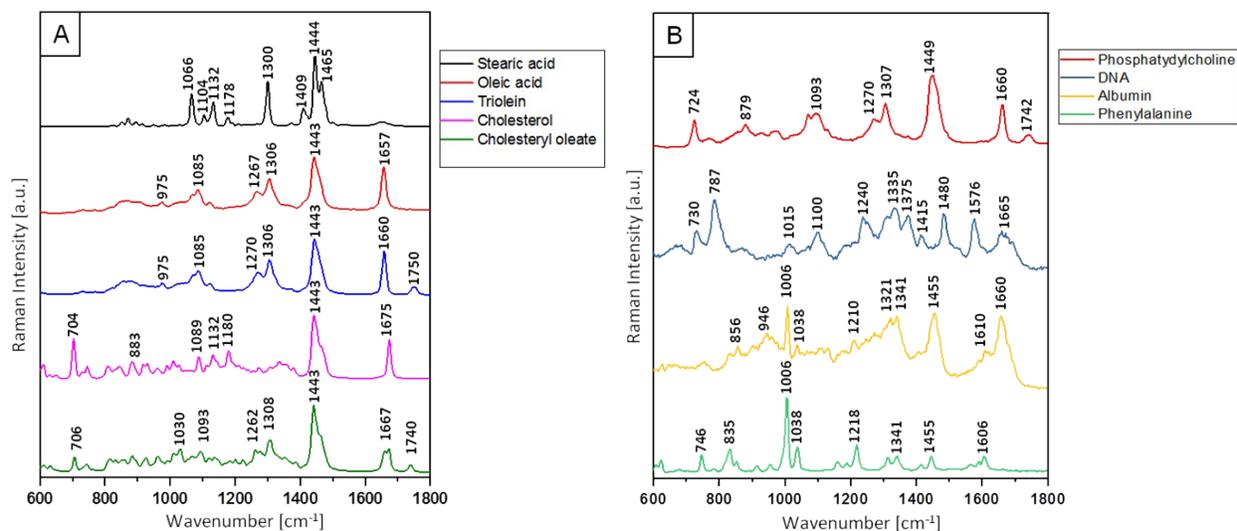


Fig. S1. Raman spectra of selected standards: **(A)** stearic acid (saturated lipid), oleic acid (unsaturated lipid), triolein (triglyceride), cholesterol, cholesteryl oleate (cholesterol ester), **(B)** phosphatidylcholine (phospholipid), DNA (nucleic acid), albumin (protein), phenylalanine (aminoacid); the most prominent bands are signed.

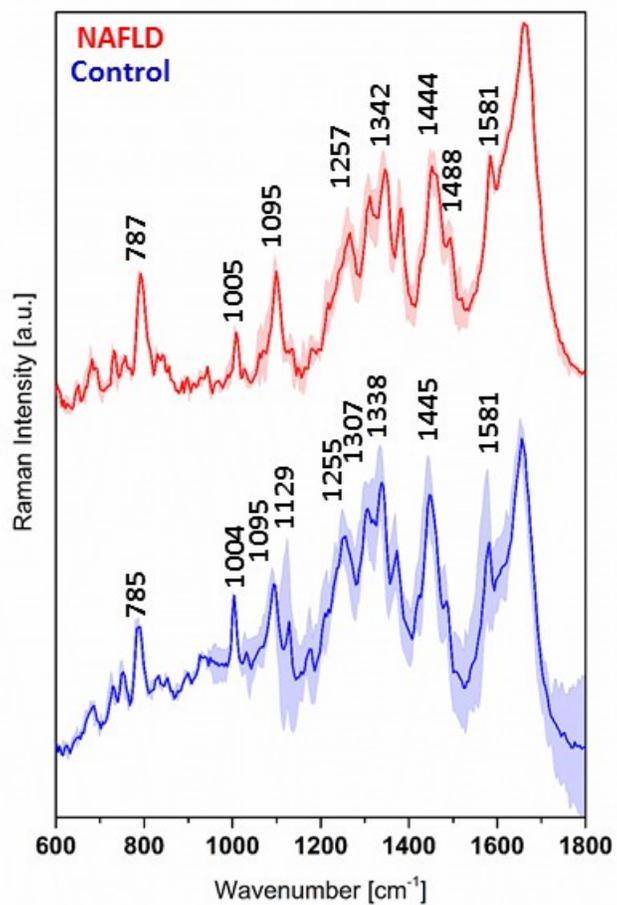


Fig. S2. Average Raman spectra (along with standard deviation) of cell nuclei from all studied hepatocytes from healthy (in **blue**) and NAFLD-affected (in **red**) mice in the range 600 – 1800 cm⁻¹ with marked most prominent bands.

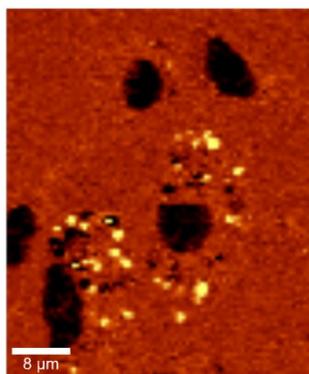


Fig. S3. Distribution of phospholipids on the basis of integration of Raman marker band located at 1080 cm^{-1} (range of integration: $1060 - 1090\text{ cm}^{-1}$) in NAFLD-affected hepatocytes, confirming their presence in LDs (compare with Figure 2).

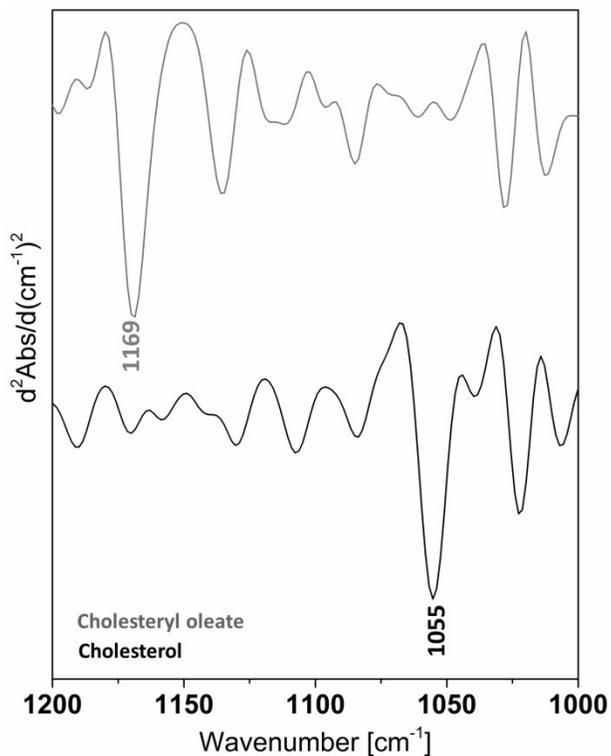


Fig. S4. 2nd derivatives of FT-IR spectra of cholesterol (in **black**) and cholesteryl oleate (in **gray**) in the range $1200 - 1000\text{ cm}^{-1}$ with marked characteristic bands. Notice the presence of intense band at 1055 cm^{-1} for free form of cholesterol and its absence for esterified form of cholesterol.

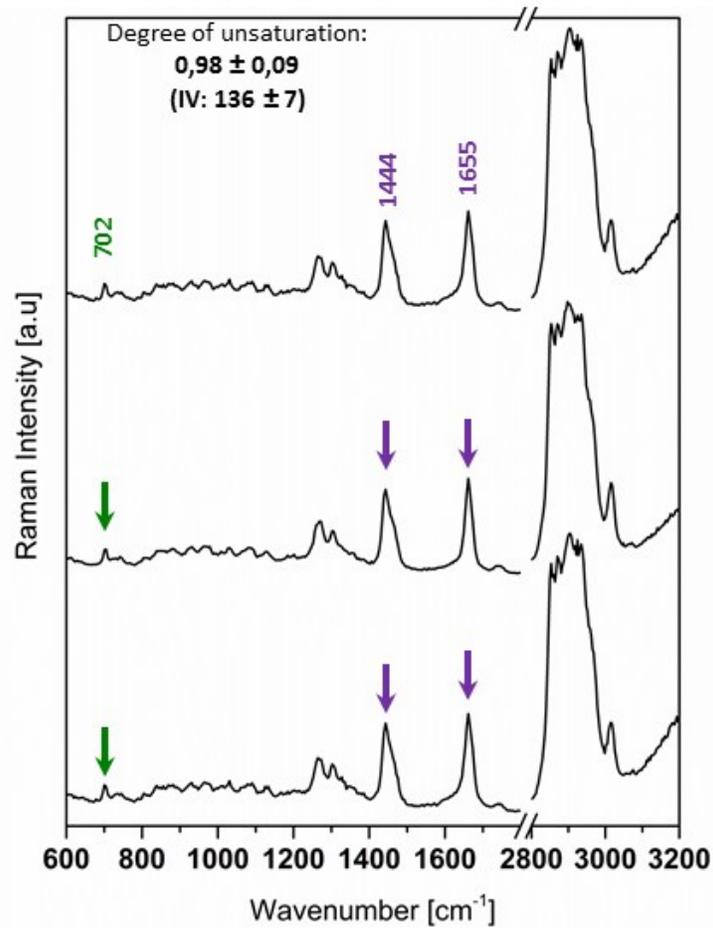


Fig. S5. Spectra of LBs from three different hepatocytes, originating from three different livers of NAFLD-affected mice in the range 600 – 3200 cm⁻¹. **Green arrows** indicate the band at 702 cm⁻¹ from cholesterol and/ or its esters. **Purple arrows** mark bands used for calculation of the degree of unsaturation. Clearly visible reproducibility of LBs composition. Iodine value (degree of unsaturation) of LDs within NAFLD-affected hepatocytes is 136 ± 7 .

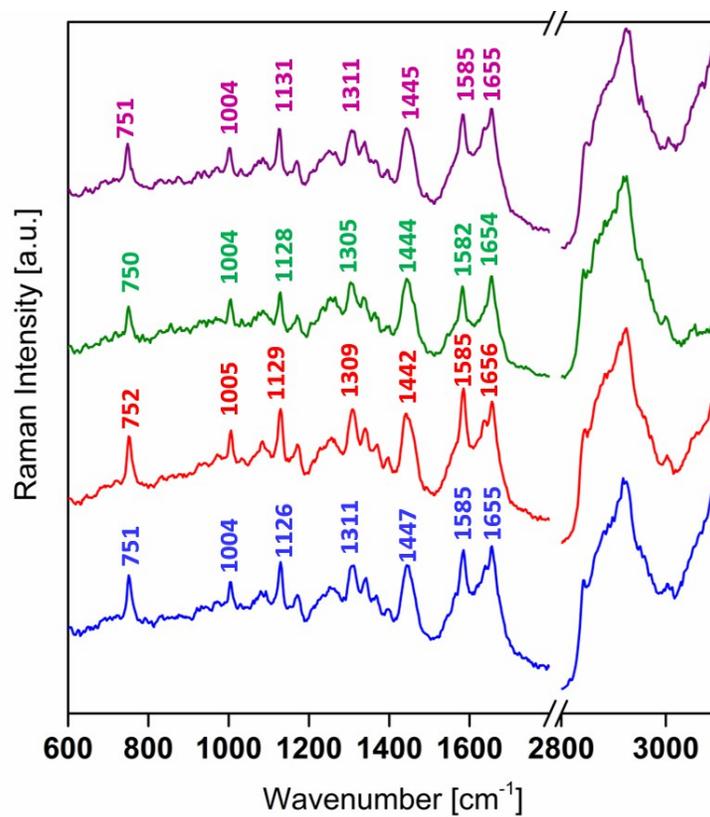


Fig. S6. Spectra of four different hepatocytes, originating from four different livers of control mice in the range 600 – 3200 cm⁻¹.