Supporting Information

Spectrolipidomics of glial cell lines: a deuterated probe for semiquantitative monitoring of cannabidiol-induced cholesterol modulation

K. Chrabąszcz*[1], T. Kossowski-Kołodziej[2], A. Panek[1] and K. Pogoda[1]

[1]Institute of Nuclear Physics, Polish Academy of Sciences
Radzikowskiego 152, 31-342 Krakow, Poland

[2]University of Warsaw, Faculty of Physics, Institute of Geophysics, Pasteura 5, 02-093, Warsaw, Poland

*corresponding author: karolina.chrabaszcz@ifj.edu.pl

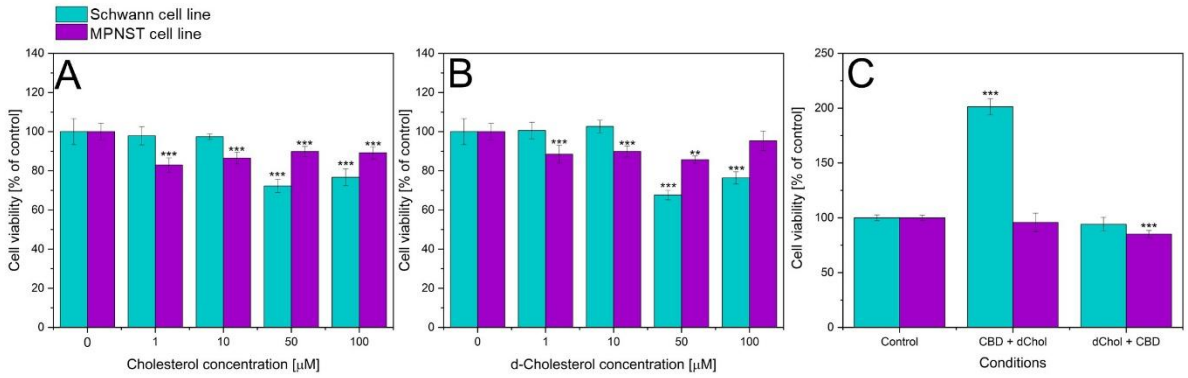

Figure S1. Results of the MTS assay for Schwann (turquoise) and MPNST (violet) cell lines: (A) different concentrations of cholesterol, (B) d_6-cholesterol, and (C) mixtures of 3 μM CBD with 50 μM d_6-cholesterol (***$p<0.001$, p**<0.01).

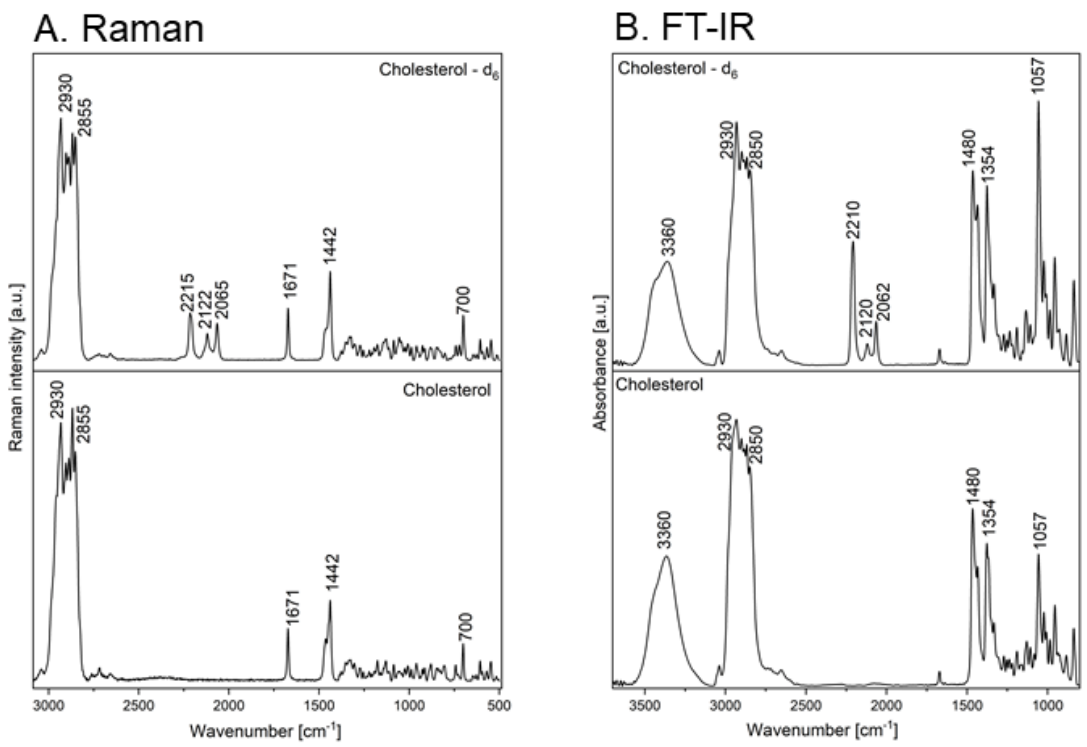

Figure S2. Comparison of cholesterol and d_6-cholesterol spectra acquired using (A) Raman and (B) FT-IR spectroscopy.

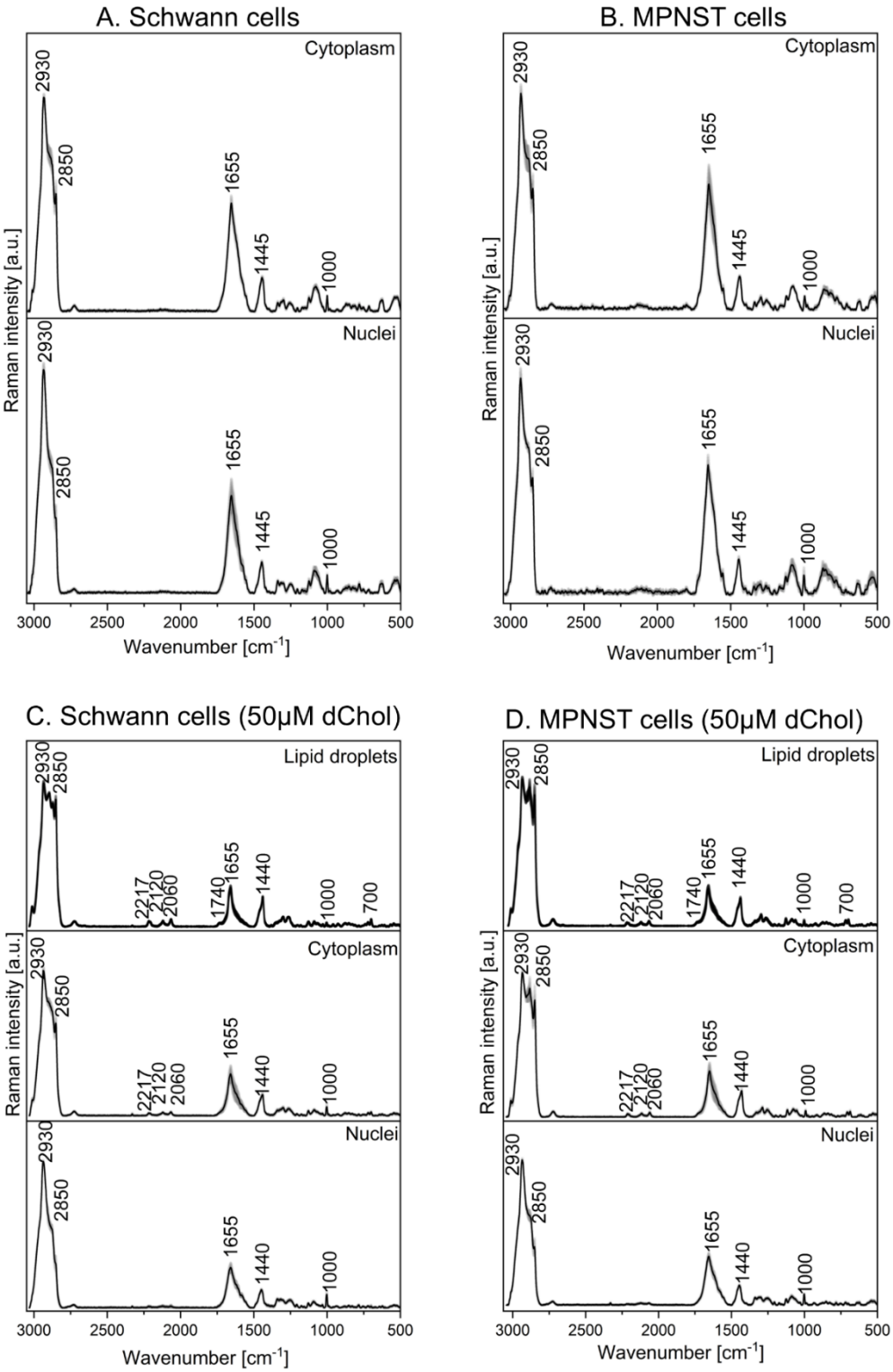

Figure S3. Mean Raman spectra of cytoplasm and nuclei obtained from single-cell cluster analysis for (A) Schwann and (B) MPNST cells. Following treatment with 50 μM d_6-cholesterol, in addition to the differentiation between cytoplasm and nuclei, lipid droplets containing visible C–D vibrational bands from the deuterated probe were also identified (C, D).

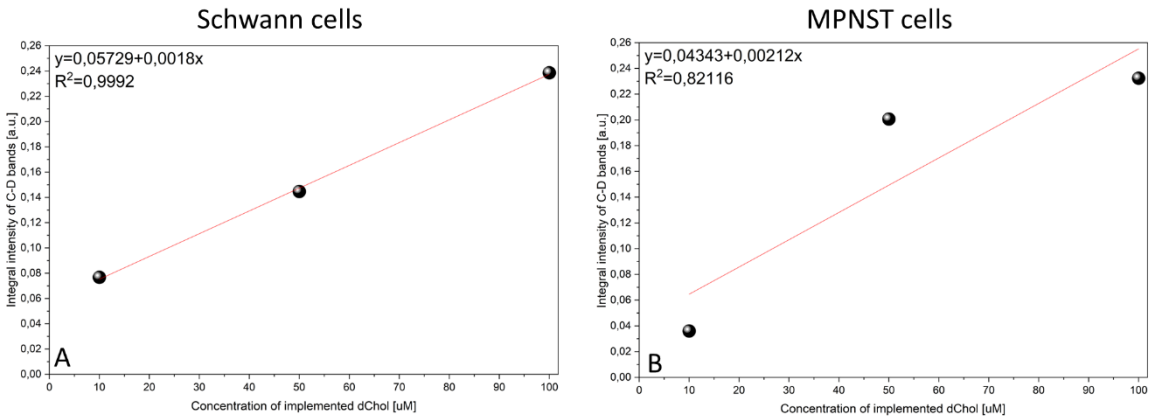

Figure S4. Linear dependence between the applied dChol concentrations and the integrated C–D band intensity in (A) Schwann and (B) MPNST cell lines.

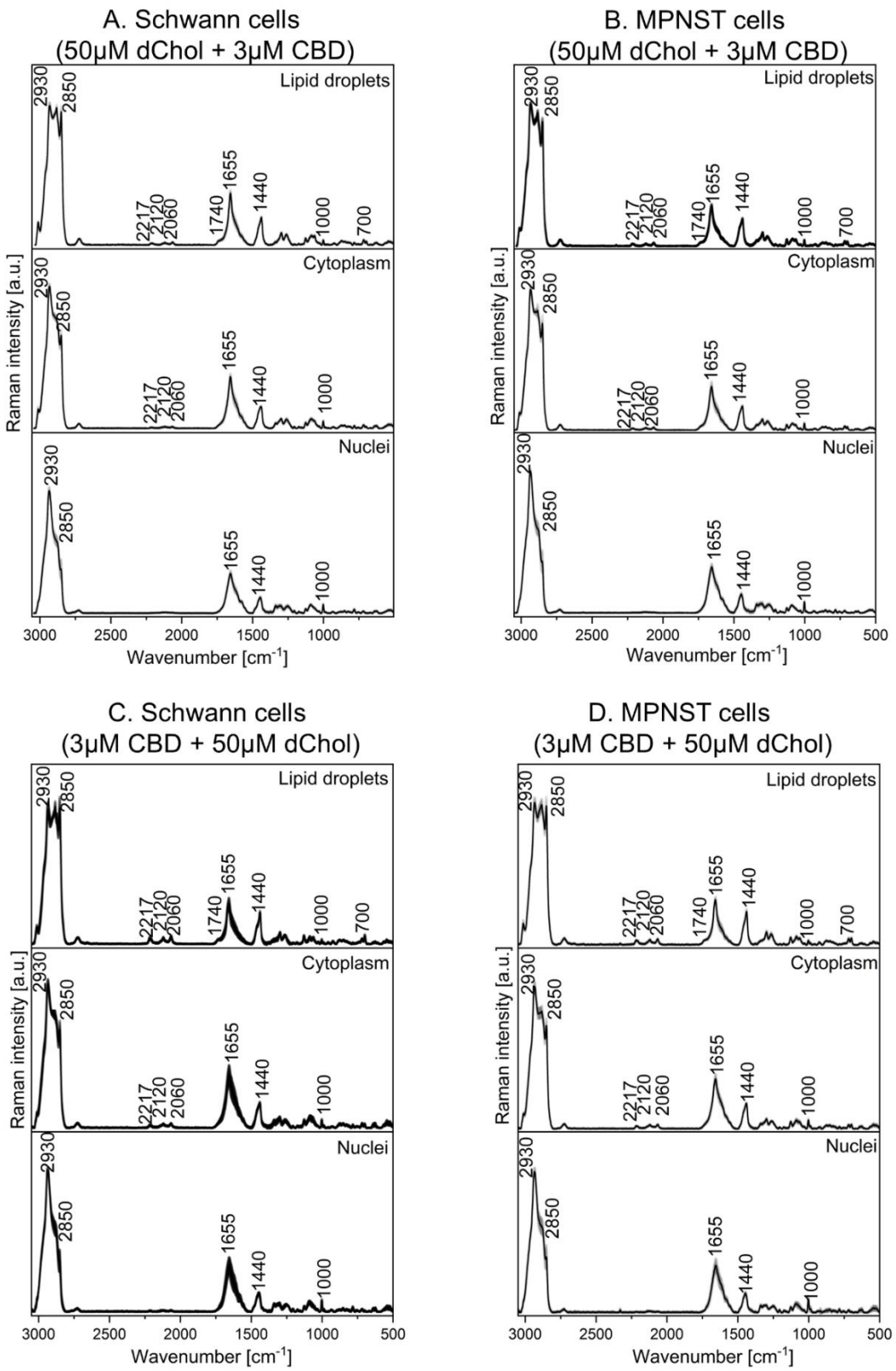

Figure S5. Mean Raman spectra of lipid droplets, cytoplasm, and nuclei obtained from single-cell cluster analysis of treated Schwann and MPNST cells. Spectral variations following treatment with (A, B) 50 μM d_6-cholesterol/3 μM CBD and (C, D) 3 μM CBD/50 μM d_6-cholesterol are presented.

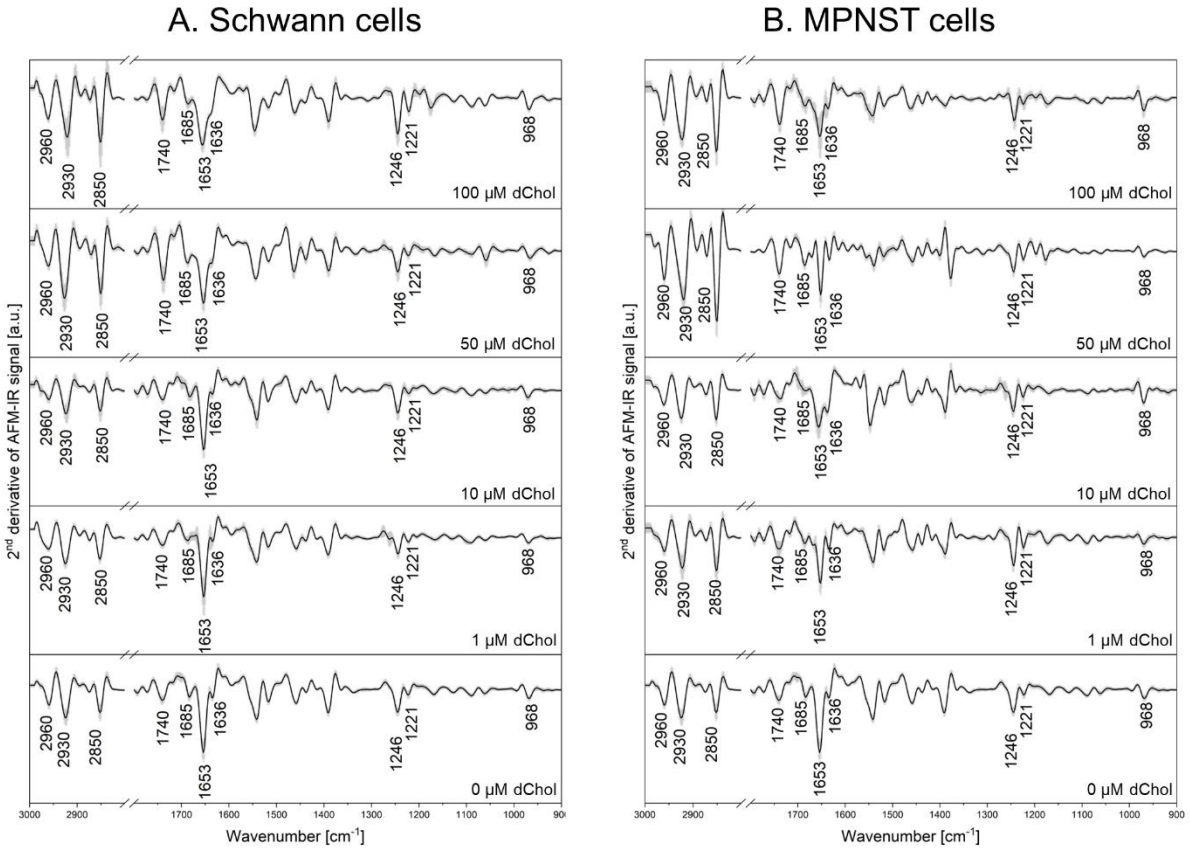

Figure S6. Comparison of second-derivative AFM-IR spectra collected for (A) Schwann and (B) MPNST cell lines treated with 1 µM, 10 µM, 50 µM, and 100 µM d_6-cholesterol.