

In Situ Monitoring of Drug Precipitation from Digesting Lipid Formulations Using Low-Frequency Raman Scattering Spectroscopy

Malinda Salim ^{1,†}, Sara J. Fraser-Miller ^{2,†}, Kārlis Bērziņš ^{2,3}, Joshua J. Sutton ², Keith C. Gordon ² and Ben J. Boyd ^{1,3,*}

¹ Drug Delivery, Disposition and Dynamics, Monash Institute of Pharmaceutical Sciences, Monash University (Parkville Campus), 381 Royal Parade, Parkville, VIC 3052, Australia; malinda.salim@monash.edu

² Te Whai Ao-Dodd-Walls Centre for Photonic and Quantum Technologies, Department of Chemistry, University of Otago, Dunedin 9016, New Zealand; sara.miller@otago.ac.nz (S.J.F.-M.); karlis.berzins@sund.ku.dk (K.B.); j.sutton94@protonmail.com (J.J.S.); keith.gordon@otago.ac.nz (K.C.G.)

³ Department of Pharmacy, University of Copenhagen, Universitetsparken 2, 2100 Copenhagen, Denmark

* Correspondence: ben.boyd@monash.edu; Tel.: +61-3-99039112; Fax: +61-3-99039583

† These authors contributed equally to this work.

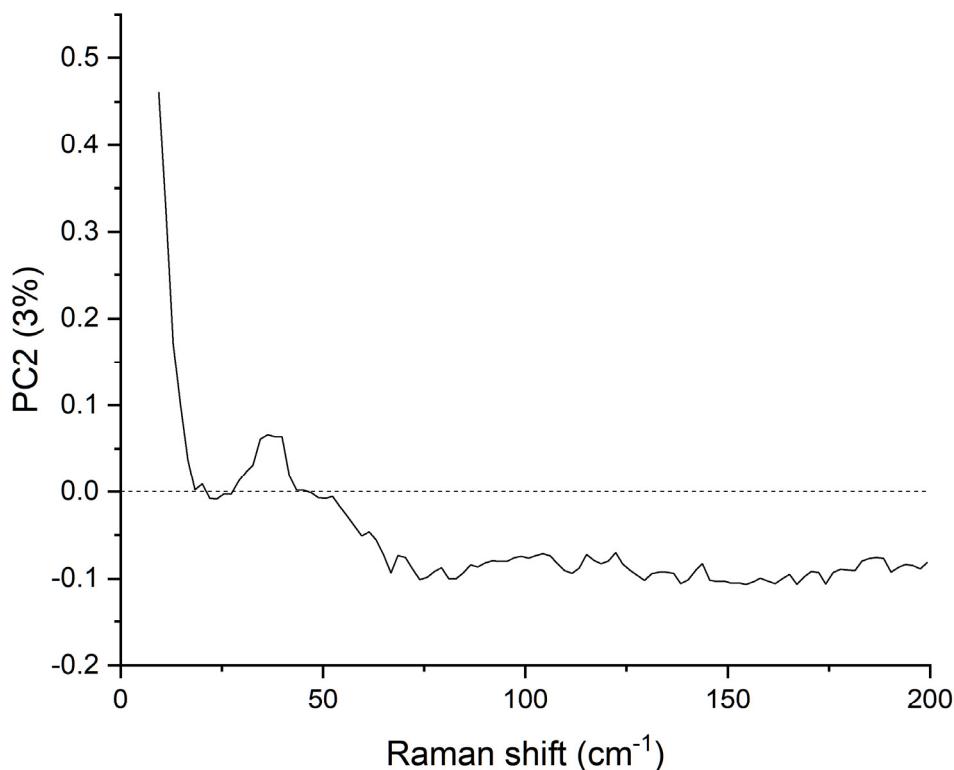


Figure S1. Loadings plot for PC2 based on the low-frequency region ($8\text{-}200\text{ cm}^{-1}$).

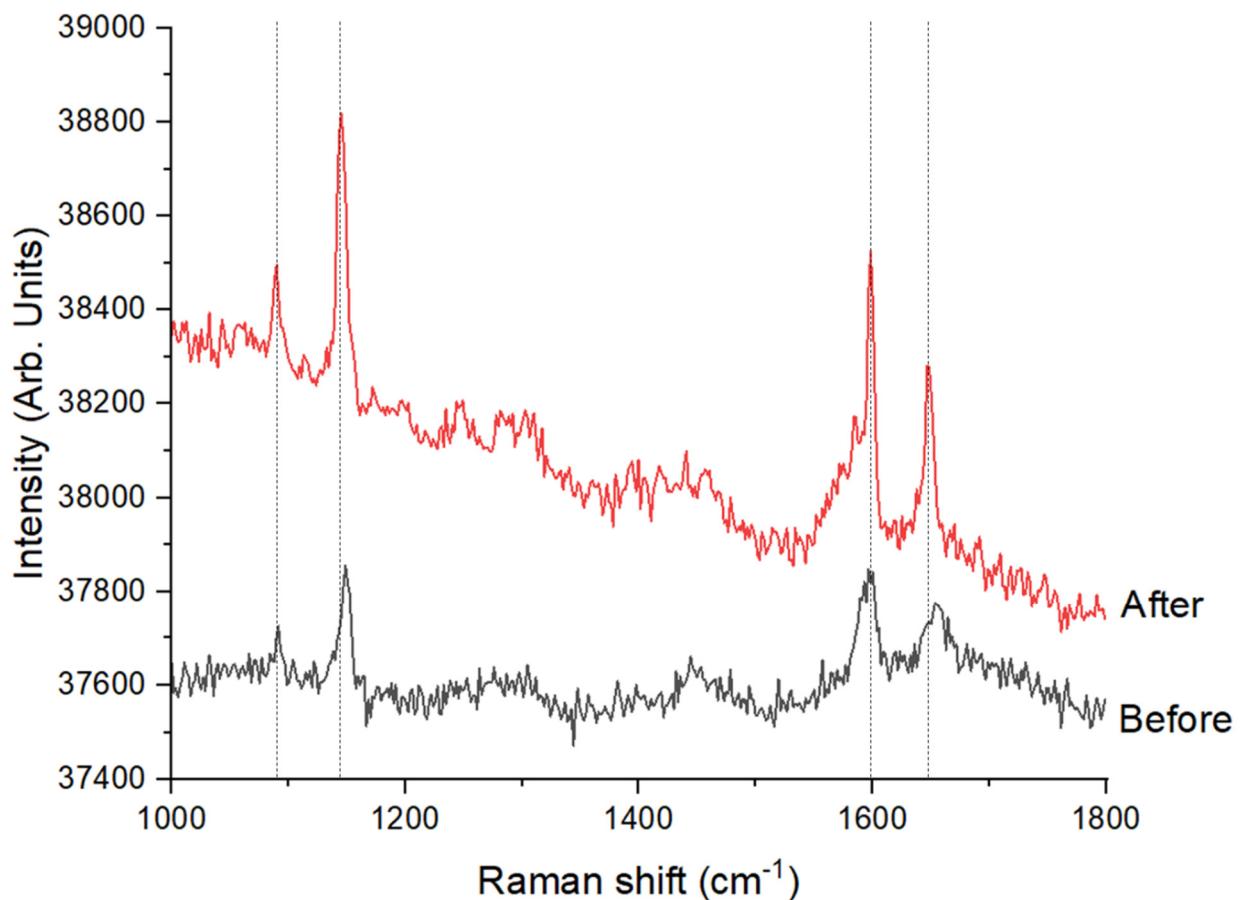


Figure S2. Mid-frequency Raman spectra of medium chain self-nanoemulsifying drug delivery system (MC-SNEDDS) before digestion (2 mins prior to lipase injection) and after digestion.