Electronic Supplementary Material (ESI) for Soft Matter.

Supplementary Information for

Effect of pH, Temperature and Shear on the Structure-Property Relationship of Lamellar Hydrogels from Microbial Glucolipids Probed by *in-situ* Rheo-SAXS

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Figs. S1 to S2

Video 1 and Video 2 are downloadable at the editor's website.

Figure S 1 – Rheo-SAXS apparatus used at the BM29B beamline at ESRF synchrotron (Grenoble, France). A MCR 501 rheometer (Anton Paar, Graz, Austria) equipped with a Couette polycarbonate cell (imposed gap = 1 mm) is employed. A radial configuration is used during the Rheo-SAXS study.

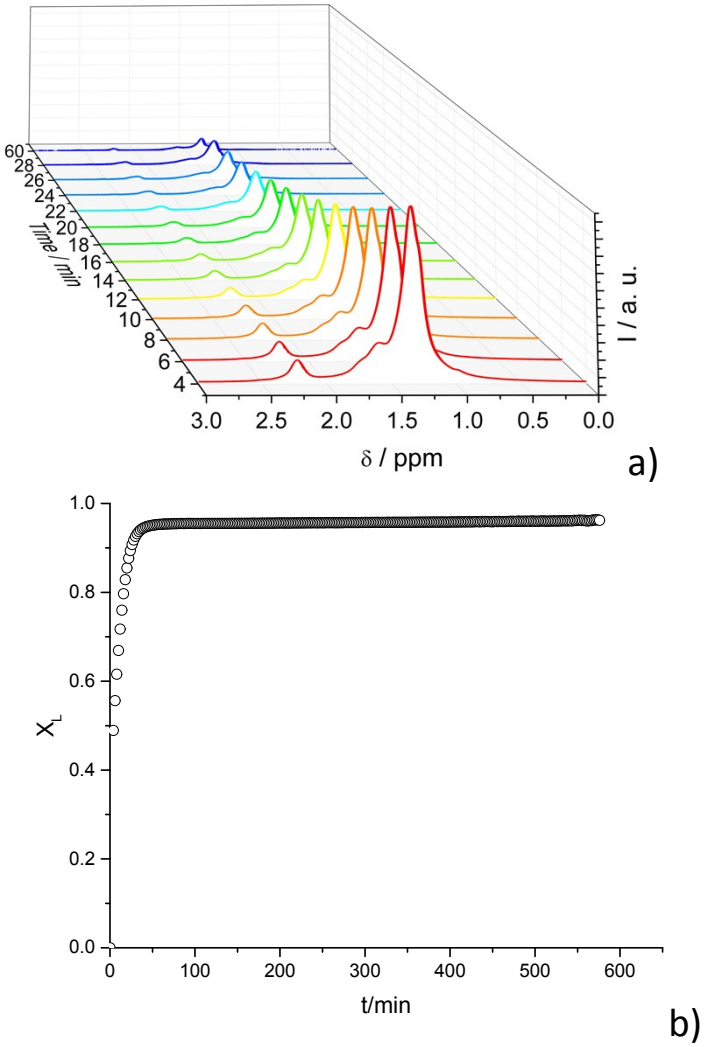

Figure S 2 – Time-resolved ^{1}H solution NMR recorded during the sol-to-gel (micellar-to-lamellar) transition of G-C18:0 glucolipid ($C_{G\text{-}C18:0}$= 5 wt%) upon acidification (initial pH 11, [GDL]= 100 mM, solvent: D_2O). a) Plot of the 1D ^{1}H NMR spectra in the 3 < δ/ppm < 0 range within one hour from GD addition. Attribution: α-CH_2, $\delta_{R\text{-}CH2C\underline{H2}COOH}$= 2.23 ppm; β-$CH_2$, $\delta_{R\text{-}C\underline{H2}CH2COOH}$= 1.61 ppm; aliphatic chain, $\delta_{\underline{R}\text{-}CH2CH2COOH}$= 1.34 ppm. b) Time evolution of the molar fraction of G-C18:0 glucolipid ($C_{G\text{-}C18:0}$= 5 wt%) in the lamellar phase X_L= 1-X_M, where X_M, the micellar fraction, is obtained by the normalized integral of the ^{1}H NMR signal of G-C18:0 in the interval 3 < δ/ppm < 0. ^{1}H NMR is only sensitive to the compound in the micellar environment.