

## Supplementary Information for

### **Lyotropic Liquid-Crystalline Phases of Sophorolipid Biosurfactants**

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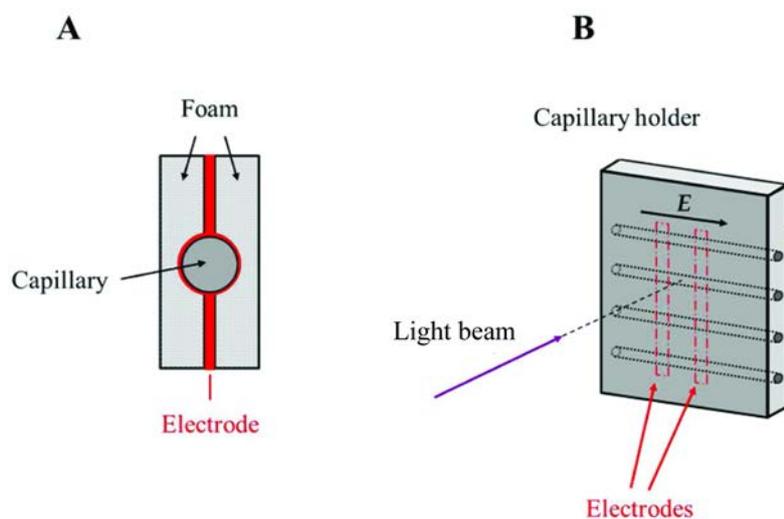


Figure S1 – Schematic of the electro-optic cell used for in-situ optical microscopy. A: side-view cut, close-up, of the capillary holder; B: perspective view of the capillary holder that can fit four capillaries simultaneously (adapted from E.Paineau et al, J. Phys. Chem. B, 116, 13516 (2012)).

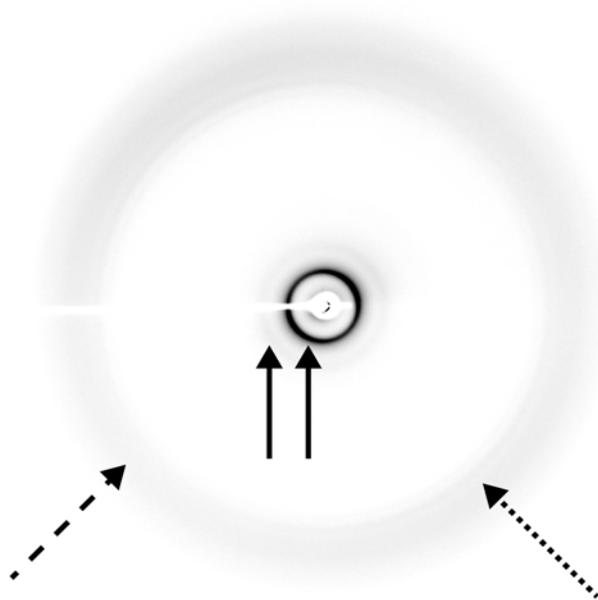


Figure S2 - X-ray scattering pattern of compound (2) at 80 wt%. At small scattering angles, the solid arrows point to the (10) and (11) reflections of the columnar hexagonal lattice whereas the dashed arrow points to the wide-angle diffuse scattering ring. The dotted arrow points to a faint yet sharp diffraction ring that suggests the presence of a small proportion of crystalline phase in equilibrium with the mesophase.

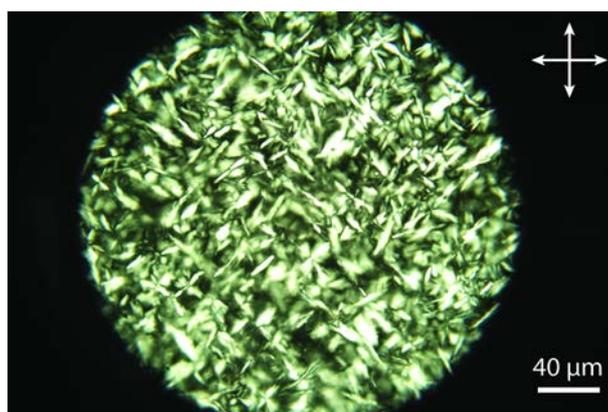


Figure S3 - Polarized-light microscopy image of a sample of aqueous mixture at 80 wt% of compound (3) in a flat glass capillary. The texture is liquid-crystalline but does not allow for unambiguous phase identification. (The white cross represents the polarizer and analyzer.)

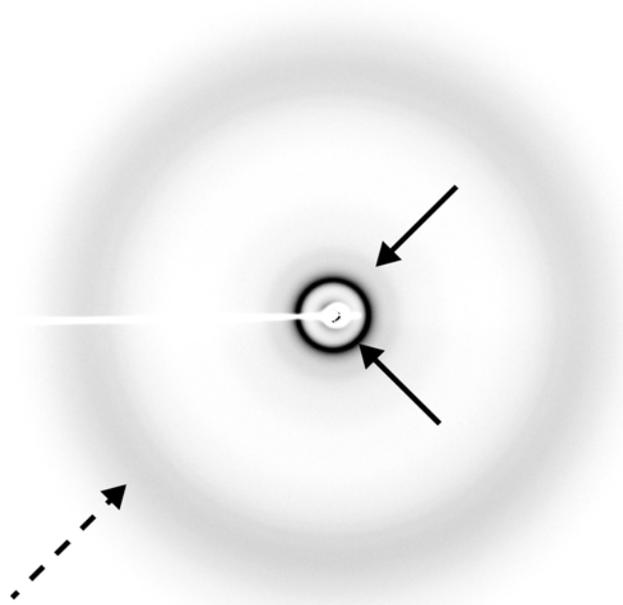


Figure S4 - X-ray scattering pattern of compound (3) at 70 wt%. At small scattering angles, the solid arrows point to the (10) and (11) reflections of the columnar hexagonal lattice whereas the dashed arrow points to the wide-angle diffuse scattering ring.

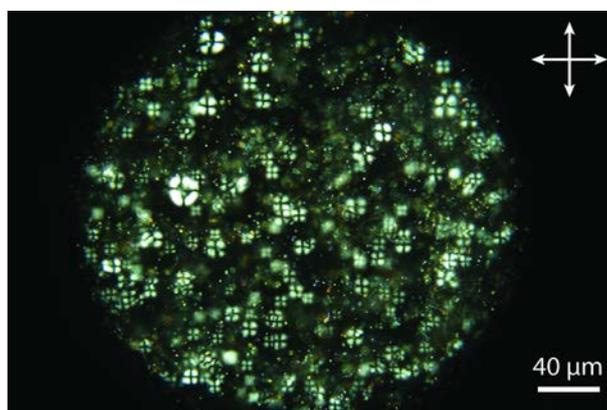
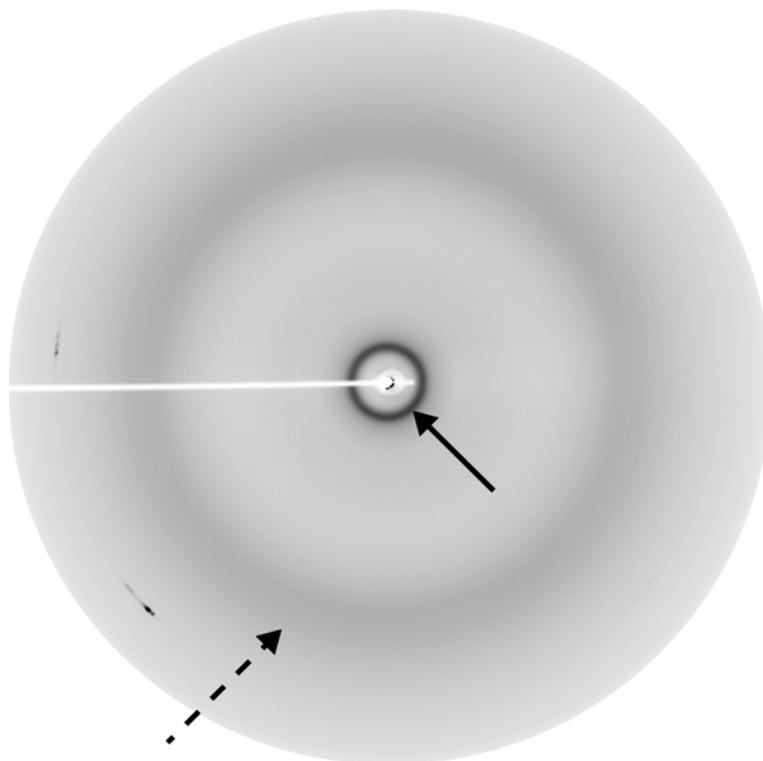


Figure S5 - Polarized-light microscopy image of a sample of aqueous mixture at 70 wt% of compound (4) in a flat glass capillary. The texture shows the coexistence of small birefringent droplets with an isotropic liquid matrix. (The white cross represents the polarizer and analyzer.)



**Figure S6 - X-ray scattering pattern of compound (4) at 70 wt%. At small scattering angles, the solid arrow point to a rather sharp reflection whereas the dashed arrow points to the wide-angle diffuse scattering ring.**