colloids and interfaces

Supplementary Materials

Microrheology to Understand the Viscosity Behavior of a Sophorolipid Biosurfactant

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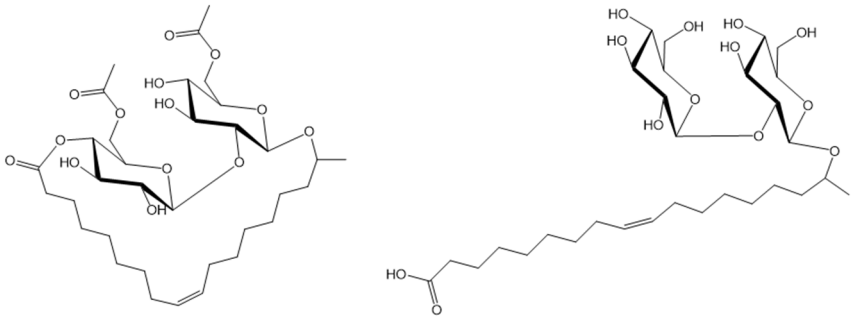

Figure S1. Chemical structures of different Sophorolipid types left) lactone (fully acetylated, right) acidic (deacetylated) form of SL.

Table S1. Particle size (D:Diameter) and polydispersity index (PDI) of SL from DLS.

Conc. %(w/w)	D/nm pH 3	PDI pH 3	D/nm pH 8	PDI pH 8
5	12.3	0.05	4.50	0.07
10	18.0	0.05	5.22	0.16
15	22.9	0.10	5.64	0.11
20	28.7	0.10	6.78	0.17
30	36.3	0.20	10.1	0.25
40	43.8	0.16	15.7	0.22

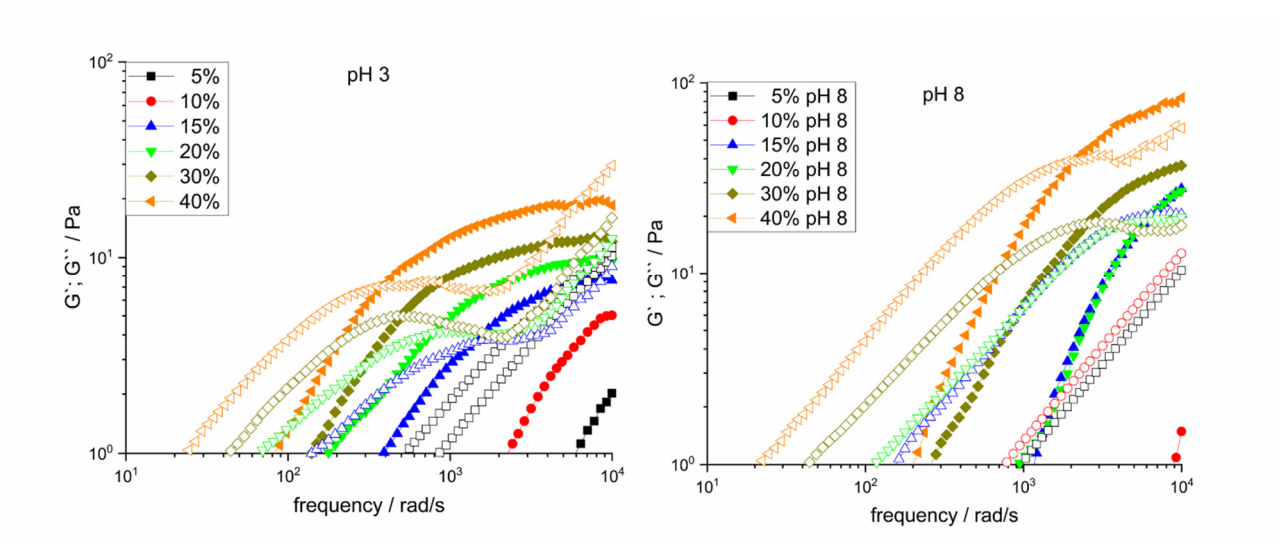

Figure S2. Evolution of frequency response of G′ (filled), G″ (open symbols) of Sophorolipid (SL) in water at different concentrations (mass %) at left) pH 3 right) pH 8.

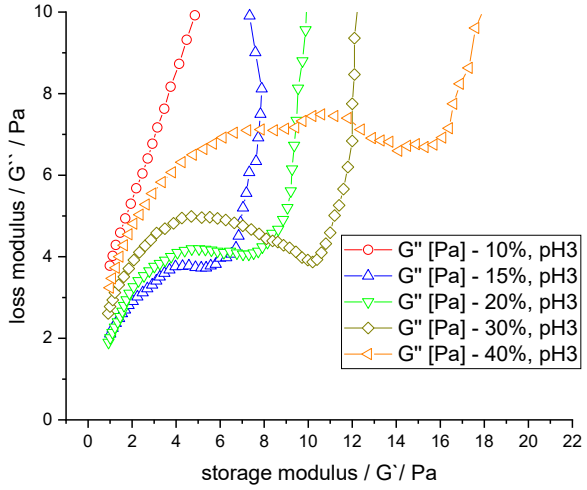

Figure S3. Cole-Cole plot of loss modulus vs storage modulus for different concentration of Sophorolipid at pH 3.

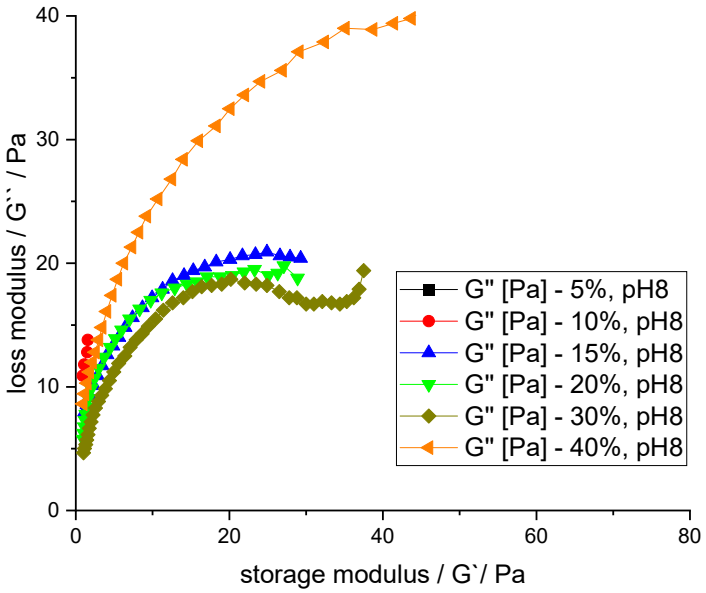

Figure S4. Cole-Cole plot of loss modulus vs storage modulus for different concentration of Sophorolipid at pH 8.

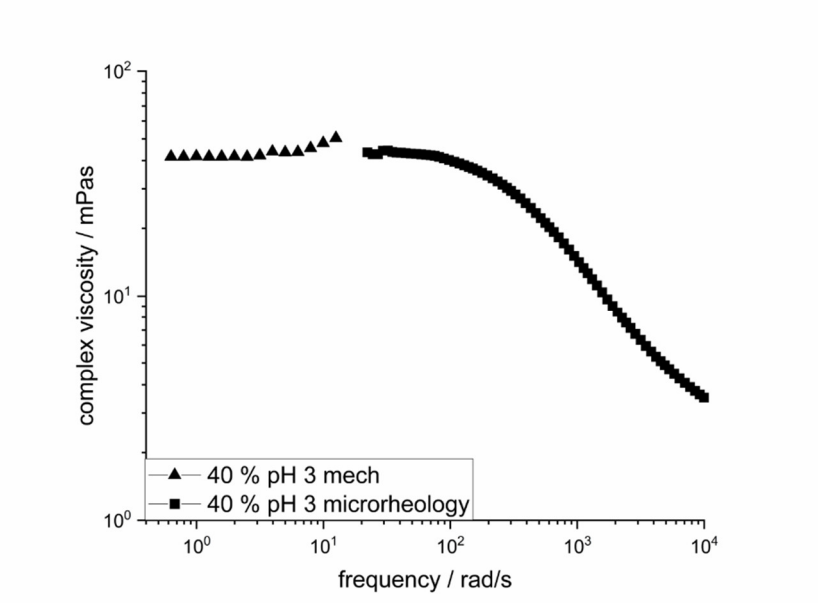

Figure S5. Complex viscosity from combination of classical rheology and microrheology, 40 % SL pH 3.

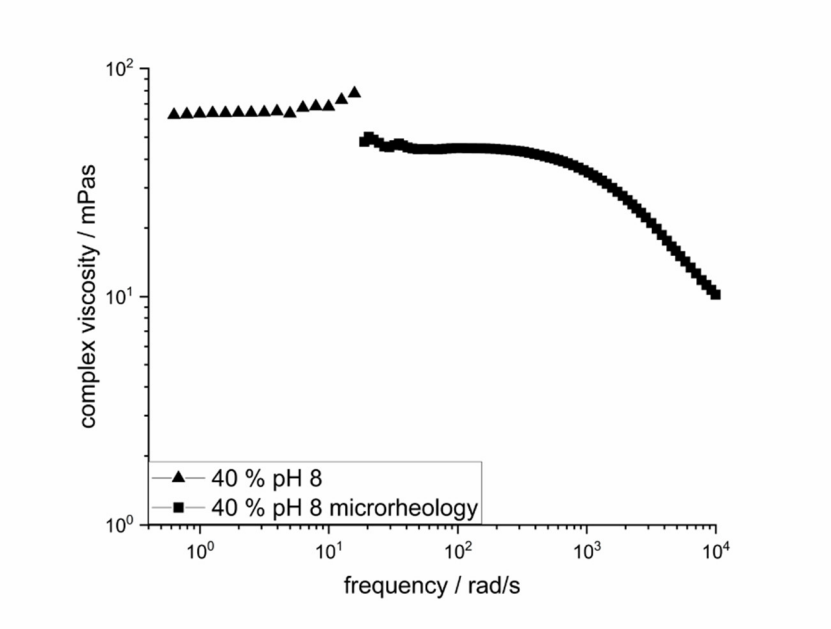

Figure S6. Complex viscosity from combination of classical rheology and microrheology, 40 % SL pH 8.

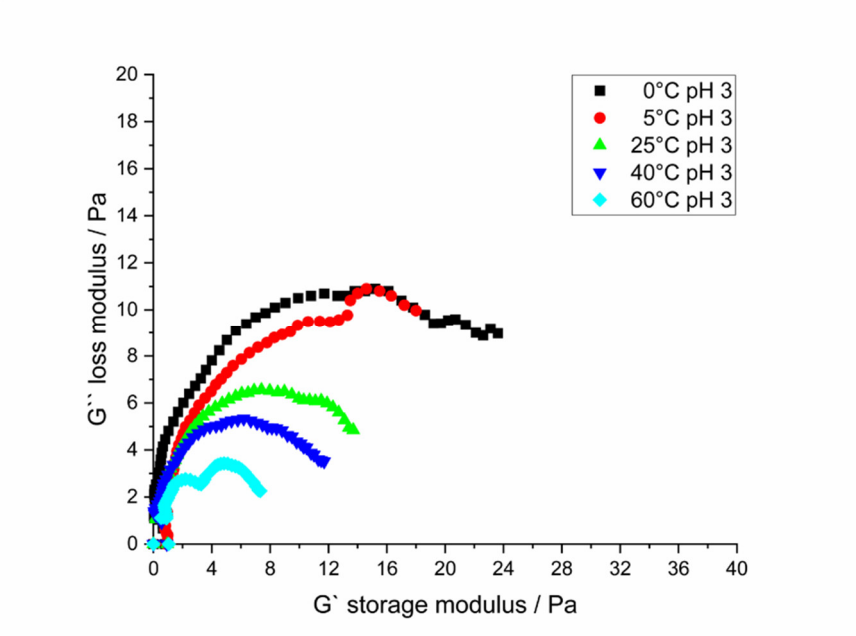

Figure S7. Cole-Cole plot of loss modulus vs storage modulus for 40 % SL pH 3 for different temperatures.

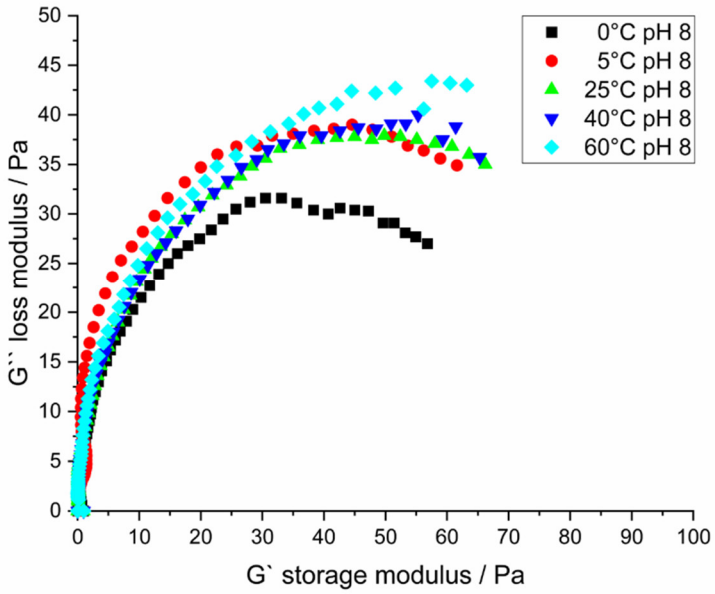

Figure S8. Cole-Cole plot of loss modulus vs storage modulus for 40 % SL pH 8 for different temperatures.