Lactobionamide Surfactants with Hydrogenated, Perfluorinated or Hemifluorinated Tails: Physical-Chemical and Biochemical Characterization

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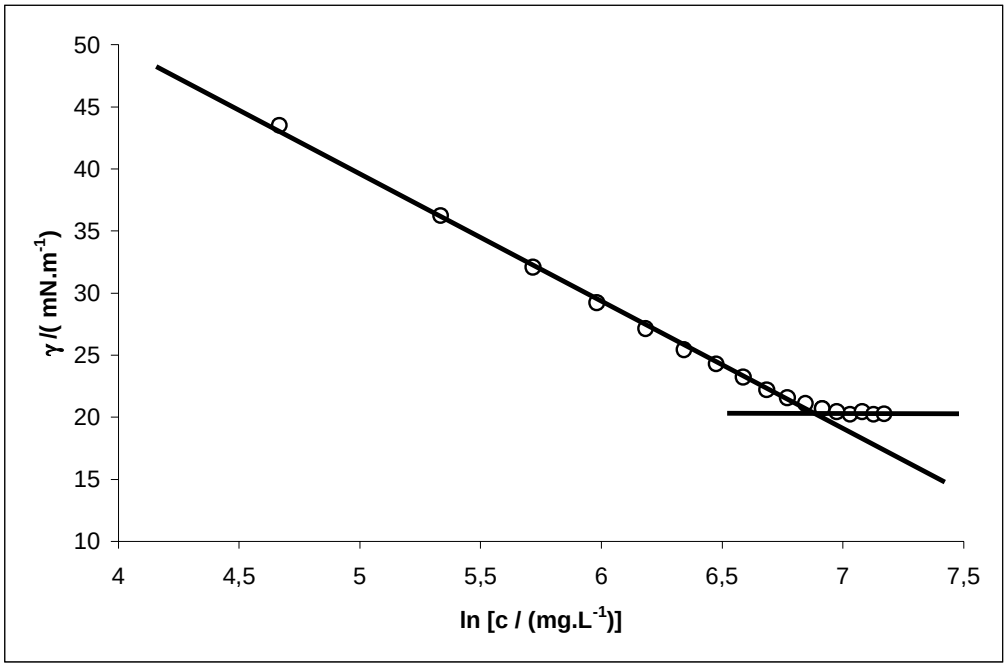
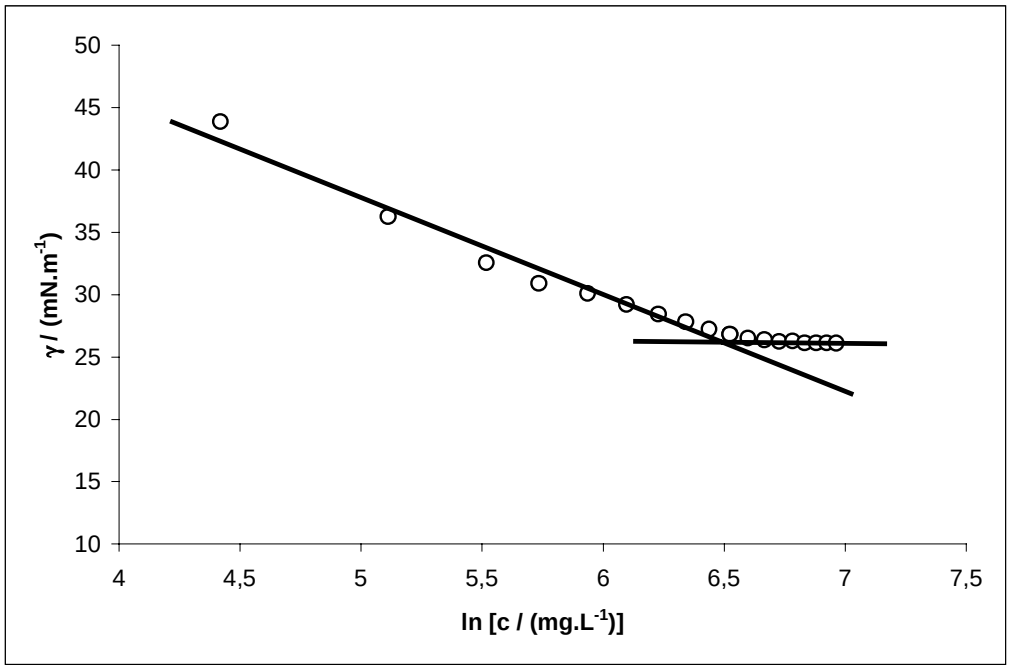
Parameters used in the c(s) analysis of sedimentation velocity :

We used $\bar{v}_{DDM}$ = 0.82 mL.g^{-1},[21] and $\bar{v}_{HF\text{-}Lac}$ = 0.617 mL.g^{-1} (this work) and, for the b_6*f*/DDM and b_6*f*/HF-Lac particles, $\bar{v}$ values intermediate between those for the protein and the surfactant, namely 0.8 and 0.65 mL.g^{-1}, respectively. We used *f/f*° values of 1.25 for H_{12}-Lac and the b_6*f*/surfactant particles and 1.15 for HF-Lac and F-Lac (see *Results*); ρ° = 0.998 g.mL^{-1} and η = 1.002 cp for water at 20°C, and ρ° = 1.007 g.mL^{-1} and η = 1.6 cp for our buffer at 4°C are tabulated values. For the most concentrated samples, particularly those of HF-Lac above 25 mM, better fits are obtained with higher values of *f/f*°, but the resulting *c(s)* distributions are only marginally affected; the plots of *c(s)* presented for HF-Lac at 25.6 and 38.4 mM use *f/f*° = 7. All *c(s)* distributions were calculated with a regularization procedure (confidence level of 0.7).

Figure S1: Tensiometric curves of F-Lac and HF-Lac

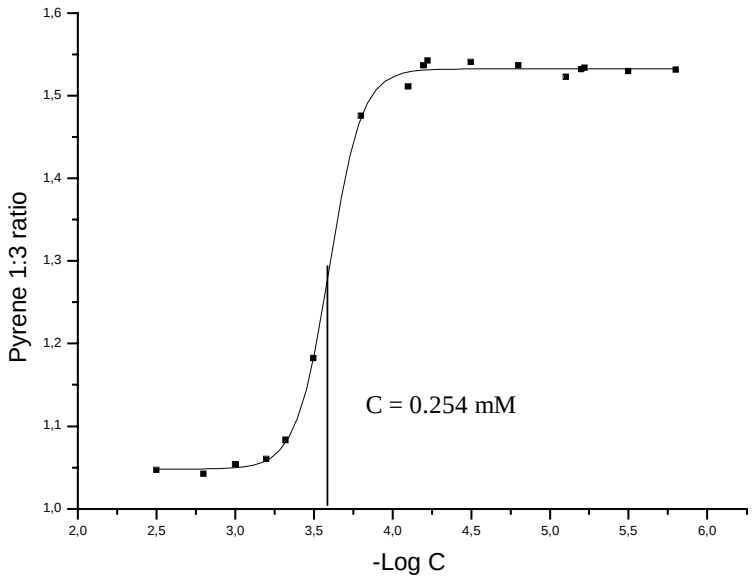


Plot of the surface tension of aqueous solution against the logarithm of surfactant concentration for F-Lac at 25°C.



Plot of the surface tension of aqueous solution against the logarithm of surfactant concentration for HF-Lac at 25°C.

Figure S2: Determination of H_{12}-Lac CMC by using fluorescence spectroscopy of pyrene in surfactant solutions.



Determination of H_{12}-Lac CMC by spectrofluorimetry,[1] using the partitioning of pyrene as a reporter of micelle formation. Plots of peak I/peak III fluorescence intensities of pyrene (1.6 μM) against decimal logarithm of surfactant concentration (expressed in M)

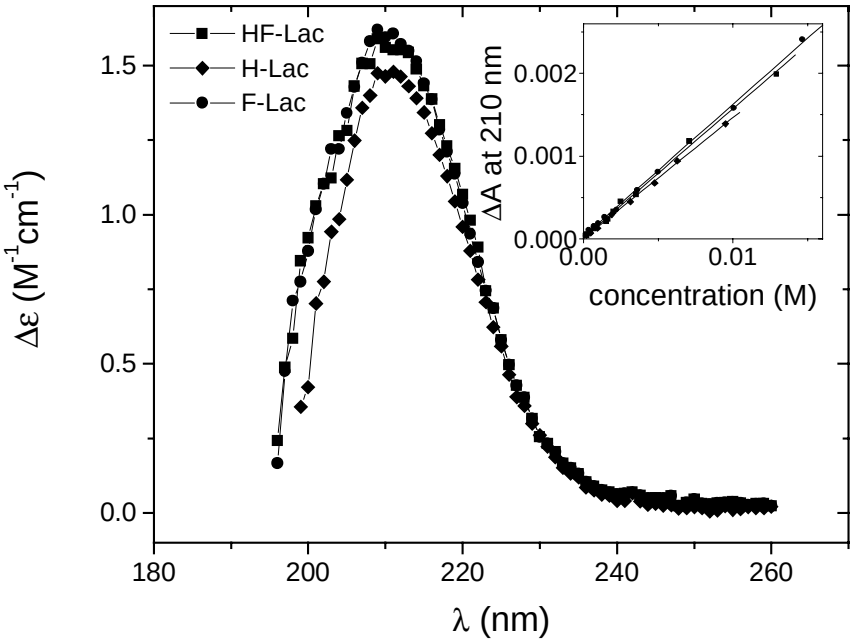


Figure S3: Circular dichroism of (■) HF-Lac, (♦) H_{12}-Lac, and (•) F-Lac.
Spectra at 2.5 mg/ml (main panel), and its dependency at 210 nm as a function of concentration (insert). CD measurements were done with a Jobin Yvon CD6 spectropolarimeter, at room temperature using quartz cells of optical path 0.1 cm. The spectra were recorded between 195 and 260 nm with intervals of 1 nm, integration times of 2 seconds and a constant band pass of 2 nm.

Reference cited

(1) Arai, T.; Takasugi, K.; Esumi, K. *Colloids Surf., A.* **1996**, *119*, 81-85.