

Interaction between Pharmaceutical Drugs and Polymer-Coated Fe₃O₄ Magnetic Nanoparticles with Langmuir Monolayers as Cellular Membrane Models

Sara Natalia Moya Betancourt ^{1,2}, Candelaria Inés Cámara ^{1,2} and Julieta Soledad Riva ^{1,2,*}

¹ Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET). Instituto de Fisicoquímica y Química Inorgánica de Córdoba (INFIQC) 5000 Córdoba, Argentina

² Departamento de Fisicoquímica. Facultad de Ciencias Químicas, Universidad Nacional de Córdoba. Haya de la Torre y Medina Allende, Ciudad Universitaria, 5000 Córdoba, Argentina

* Correspondence: Julieta.riva@unc.edu.ar

Supporting Information

S1. Results

S1.1. Elastic modulus for MNPs:DSPA mixtures monolayer containing HTFPZ⁺ or DCFN⁻ in the subphase

The changes in C_s^{-1} of DSPA monolayers at different MNPs volume for mixed monolayer in presence of HTFPZ⁺ or DCFN⁻ in the subphase are shown in Figures S1 and S2, respectively. In presence of increasing amount of MNPs, the of C_s^{-1} values became progressively smaller. As the collapse pressure decrease in the isotherms, also the surface pressure of C_s^{-1} decrease.

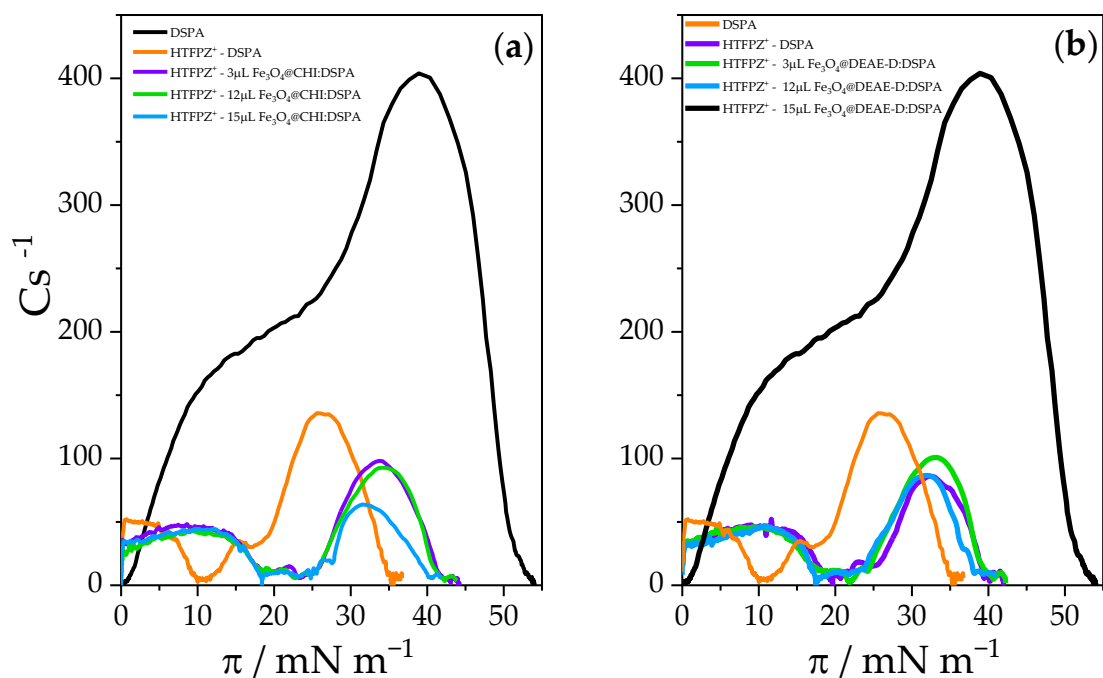


Figure S1. CS^{-1} as a function of pressure (π) for (a) $\text{Fe}_3\text{O}_4@CHI:DSPA$ and (b) $\text{Fe}_3\text{O}_4@DEAE-D:DSPA$, calculated from π -A isotherms using Equation (1). Subphase composition: HTFPZ⁺ in LiCl 10 mM and LiCl 10 mM for black line.

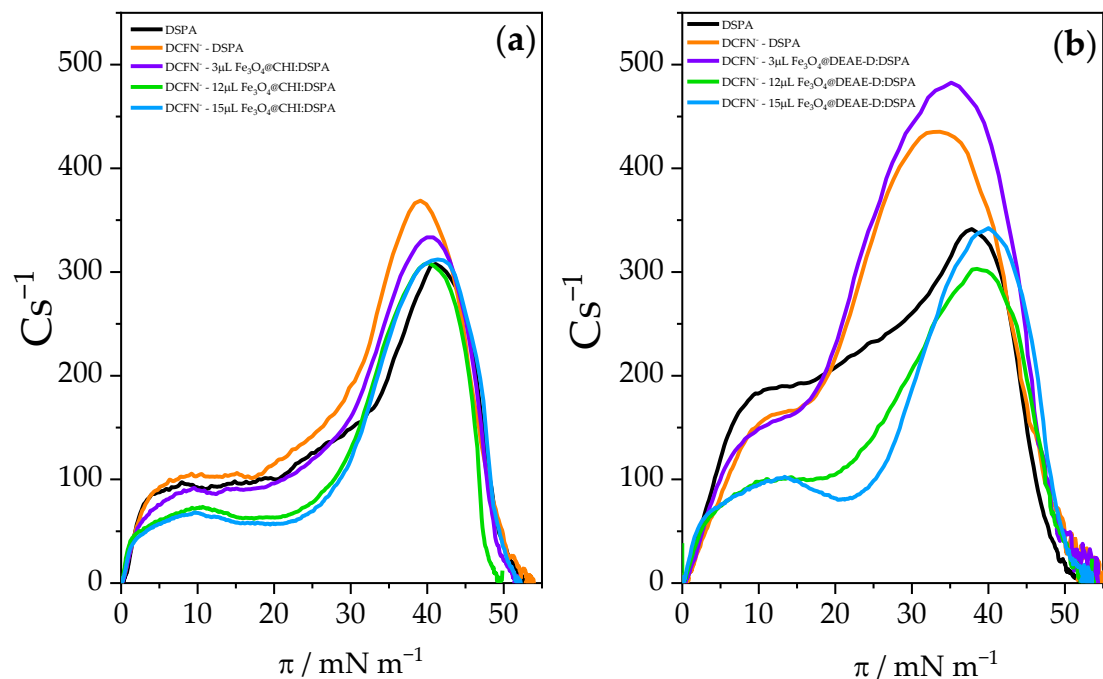


Figure S2. CS^{-1} as a function of pressure (π) for (a) $\text{Fe}_3\text{O}_4@CHI:DSPA$ and (b) $\text{Fe}_3\text{O}_4@DEAE-D:DSPA$, calculated from π -A isotherms using Eq. (1). Subphase composition: DCFN⁻ in LiCl 10 mM and LiCl 10 mM for black line.