Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Supplementary Information

The anticancer peptide LL-III alters the physico-chemical properties of a model tumor membrane promoting lipid bilayer permeabilization

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Circular Dichroism (CD)

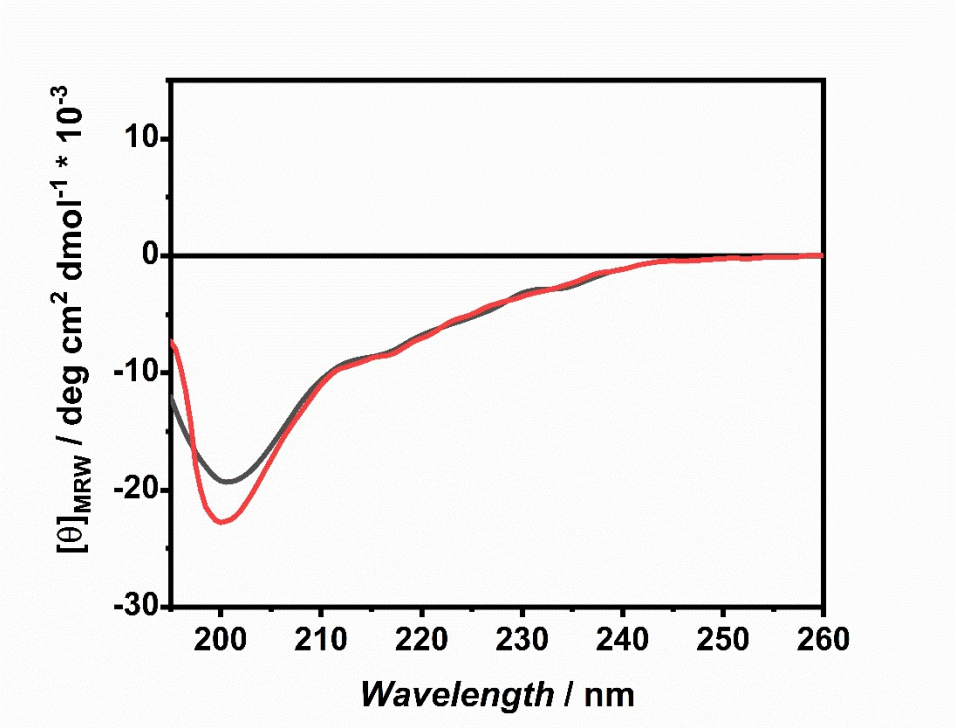

Figure S1. CD spectra of 15 μM LL-III in 10 mM Sodium Cacodylate pH 6.5 in the absence (black curve) and in the presence (red curve) of 1 mM $CaCl_2$ recorded at 25°C.

Fluorescence spectroscopy and circular dichroism

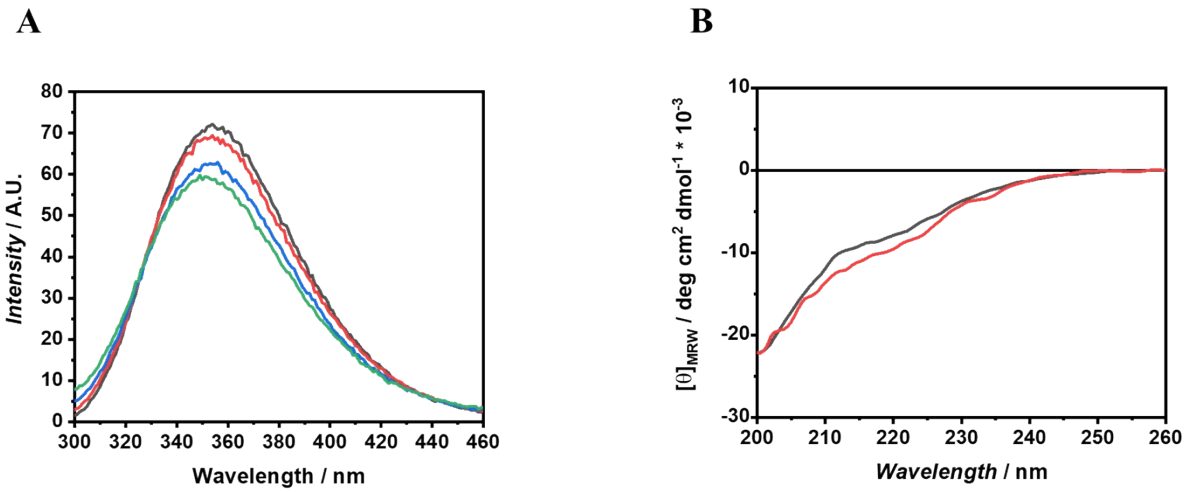

Figure S2. Emission spectra of LL-III alone (black curve) and in the presence of 0.2 (red curve), 0.6 (blue curve) and 1 mM (green curve) of POPC:Cholesterol 8:2 LUVs. The experiment was performed in Sodium Cacodylate buffer pH 7.0 + 1 mM $CaCl_2$ (A). Far-UV circular dichroism spectra of 15 µM LL-III alone (black curve) and in the presence of POPC/Cholesterol 8:2 LUVs at a lipid/peptide mole ratio of 100 (red curve). All the spectra were recorded at 25°C in 10 mM sodium cacodylate buffer pH 6.5 in the presence of 1 mM $CaCl_2$ (B).

Electron Paramagnetic Resonance (EPR)

Table S1. Acyl chain order parameter (S) and isotropic nitrogen hyperfine coupling constant (a'_N) for POPC/POPS in 10 mM sodium cacodylate pH 6.5

***n*PC-SL**	**S**	**a'_N**
5	0.631	15.15
7	0.590	15.14
10	0.489	14.64
14	0.208	13.80

Note: errors on S are ±0.004, errors on a'_N are ±0.04.

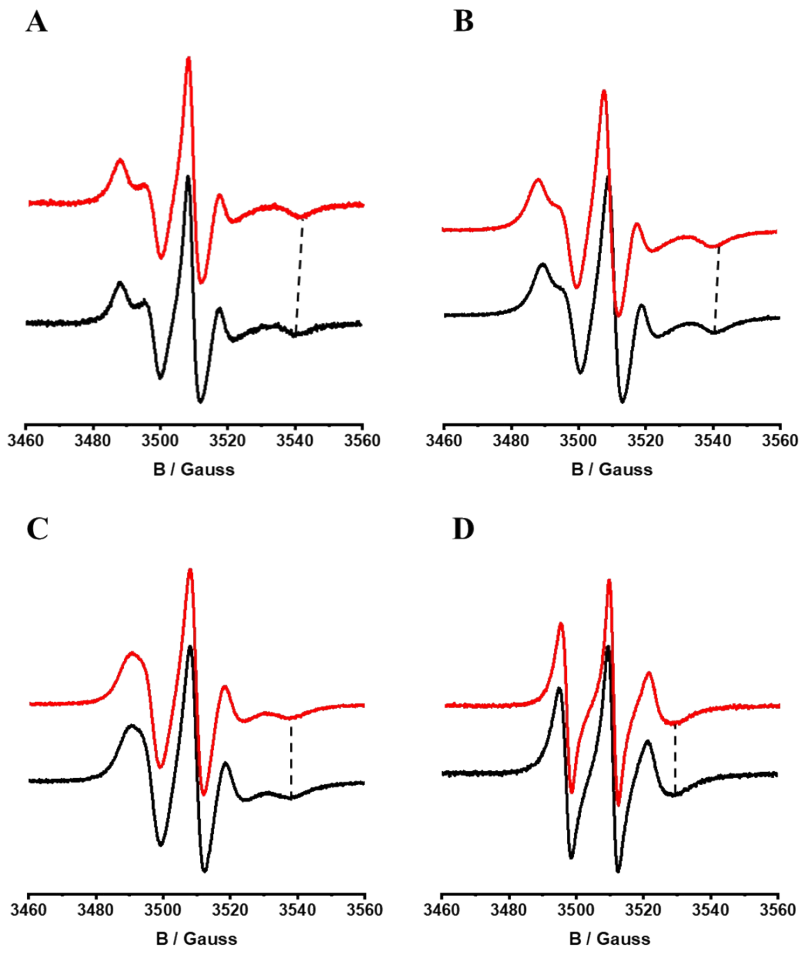

Figure S3. EPR spectra of 5PC-SL (A), 7PC-SL (B), 10PC-SL (C), 14PC-SL (D) of POPC/POPS alone (black curve) and in the presence of LL-III at a L/P ratio of 10 (red curve) in 10 mM sodium cacodylate pH 6.5. Dashed lines have been inserted as a guide to the eye to highlight the change of spectral features.

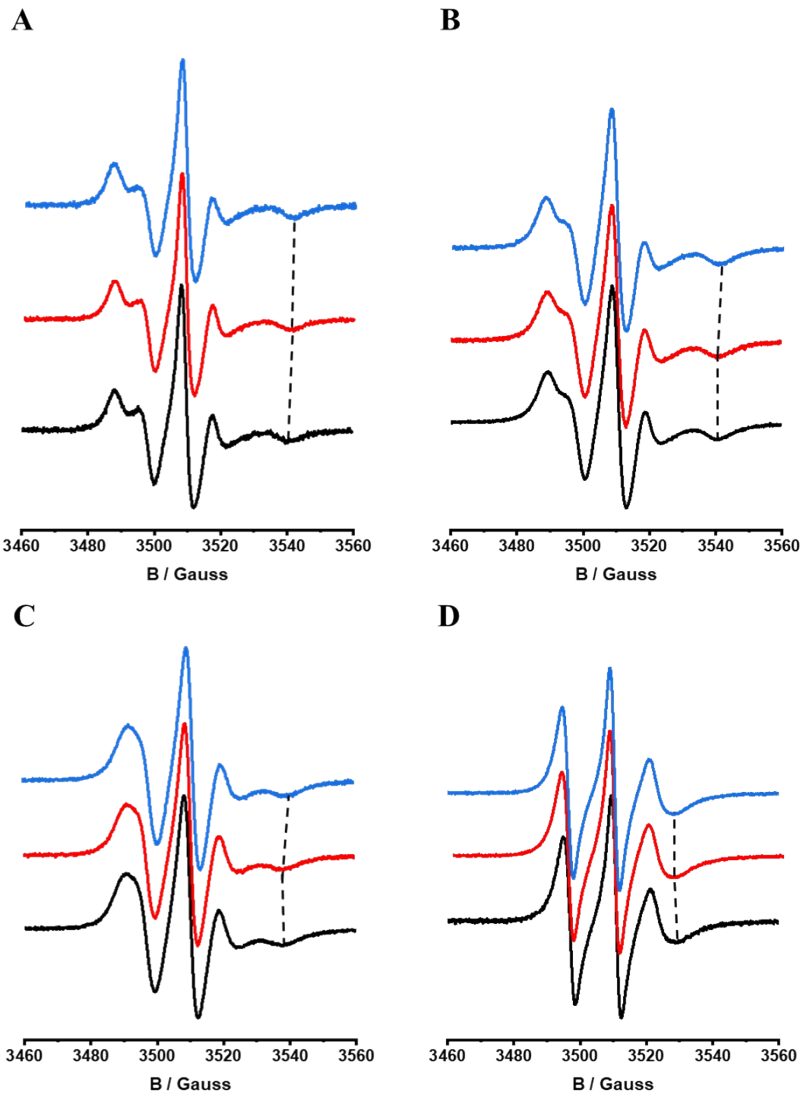

Figure S4. EPR spectra of 5PC-SL (A), 7PC-SL (B), 10PC-SL (C), 14PC-SL (D) of POPC/POPS alone (black curve), in the presence of 1 mM $CaCl_2$ (red curve) and in the presence of both 1 mM $CaCl_2$ and LL-III at a L/P ratio of 10 (blue curve) in 10 mM sodium cacodylate pH 6.5. Dashed lines have been inserted as a guide to the eye to highlight the change of spectral features.