Electronic Supplementary Material (ESI) for Soft Matter.

Supplementary Information

Effects of resveratrol on the structure and fluidity of lipid bilayers: a membrane biophysical study.

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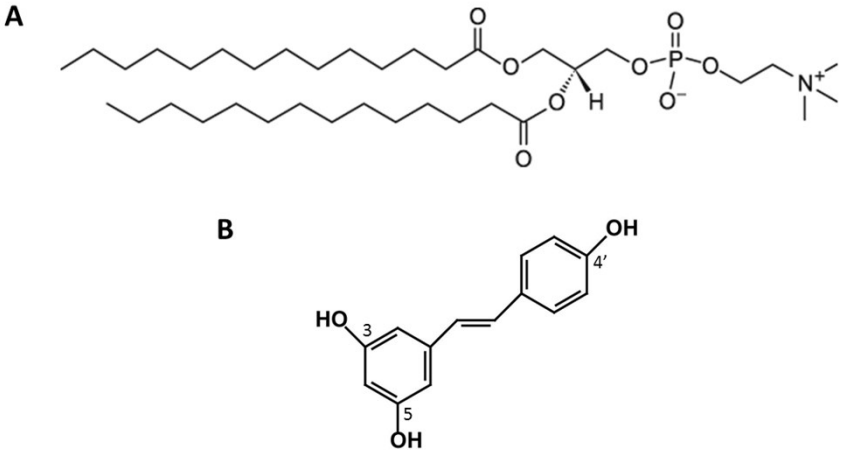
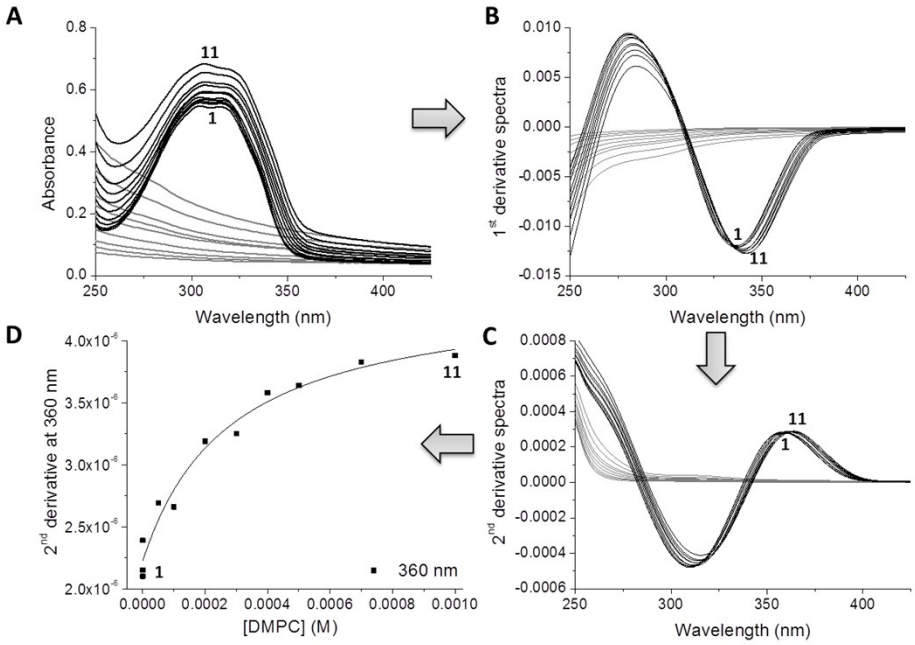
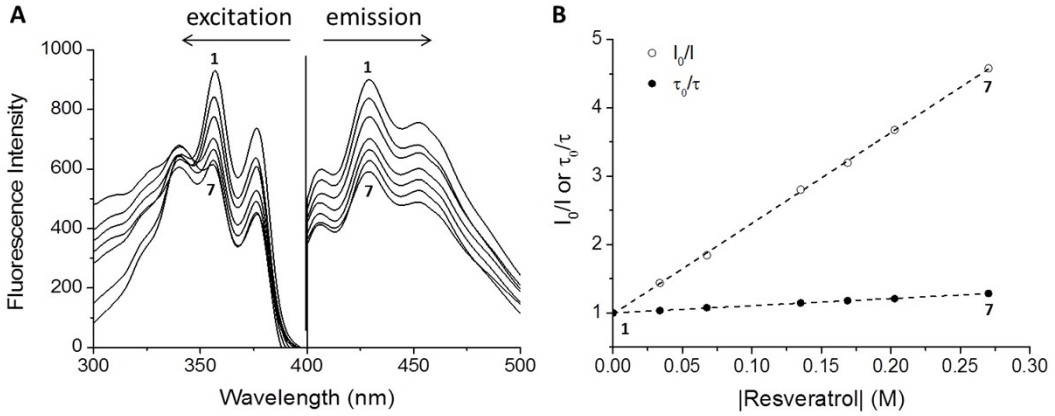


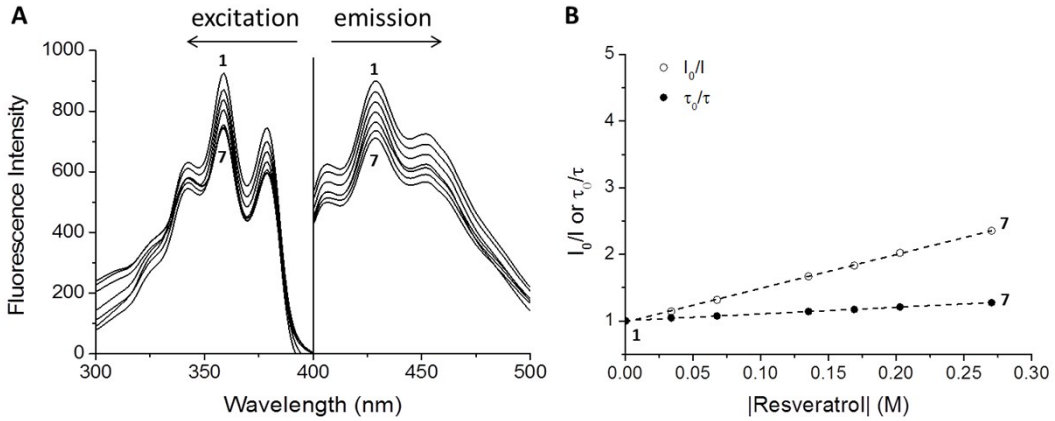
Supplementary Figure 1 – Chemical structures of the intervenient species in this study. (A) 1,2-dimyristoyl-*sn*-glycero-3-phosphocholine – DMPC; (B) *trans*-resveratrol.



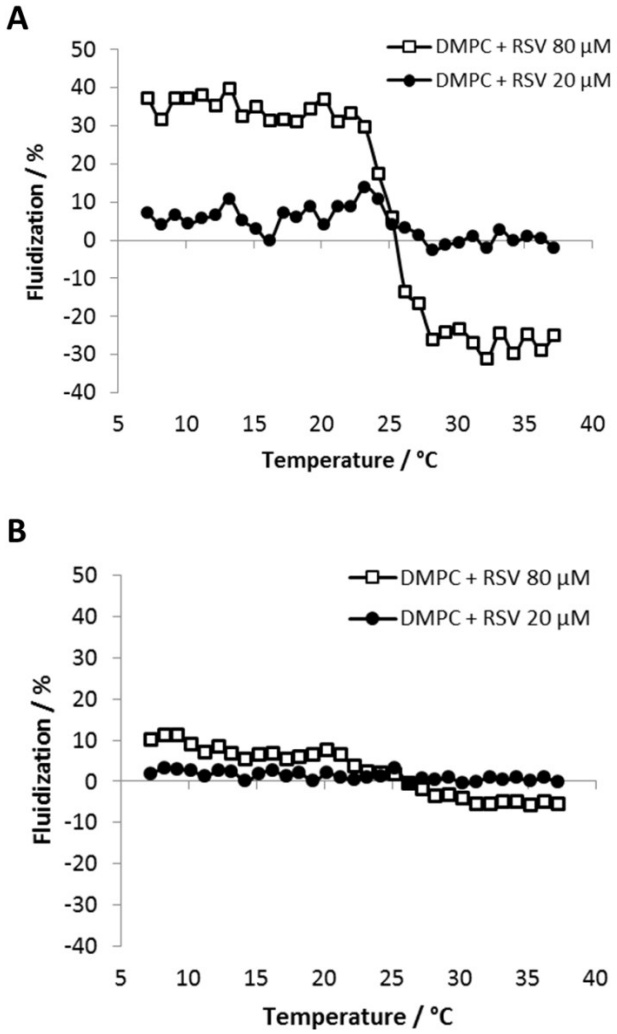
Supplementary Figure 2 – Absorption spectra (A), first-derivative (B), and second-derivative (C) of resveratrol (20 µM) incubated in LUVs of DMPC (black lines) and LUVs of DMPC without resveratrol (gray lines) at increasing lipid concentrations (from 1 to 11) in phosphate buffer at physiological conditions (pH 7.4, 37°C). The curve (D) represents the fitting curve to experimental second-derivative spectrophotometric data as a function of DMPC concentration, using a nonlinear least-squares regression method at wavelength 360 nm where the scattering is eliminated.



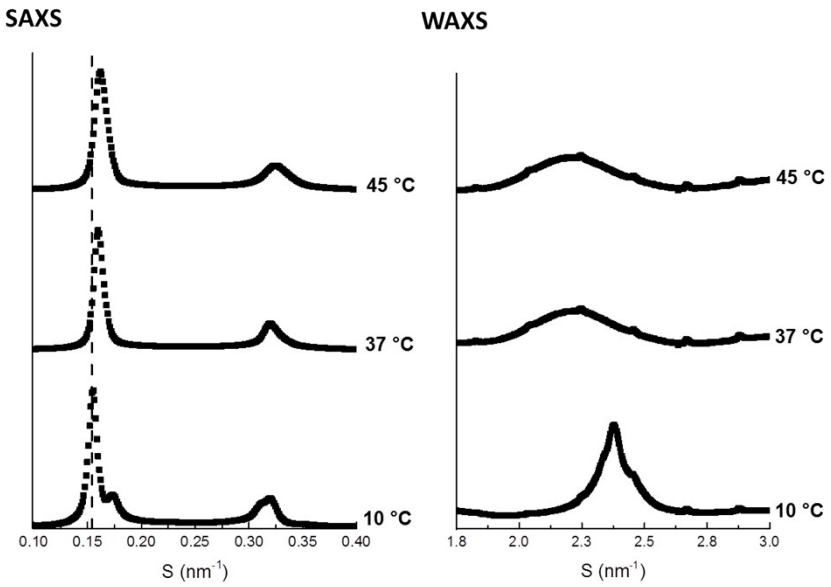
Supplementary Figure 3 – Excitation and emission spectra of fluorescence quenching (A) and Stern-Volmer plots (B) of the probe DPH in LUVs of DMPC at physiological conditions (pH 7.4, 37°C) by increasing concentration of resveratrol (from 1 to 7). **Note:** In B open symbols (○) represent Stern-Volmer plot obtained by steady-state fluorescence measurements (I_0/I) and solid symbols (●) represent Stern-Volmer plot obtained by lifetime fluorescence measurements (τ_0/τ).



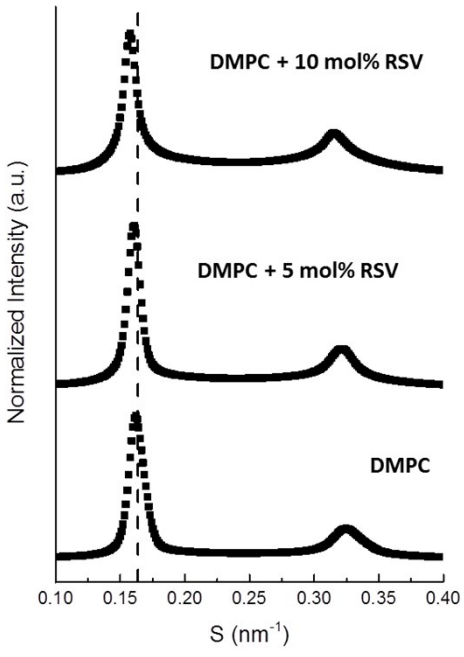
Supplementary Figure 4 – Excitation and emission spectra of fluorescence quenching (A) and Stern-Volmer plots (B) of the probe TMA-DPH in LUVs of DMPC at physiological conditions (pH 7.4, 37°C) by increasing concentrations of resveratrol (from 1 to 7). **Note:** In B open symbols (○) represent Stern-Volmer plot obtained by steady-state fluorescence measurements (I0/I) and solid symbols (●) represent Stern-Volmer plot obtained by lifetime fluorescence measurements (τ0/τ).



Supplementary Figure 5 – Percentage of fluidization and stiffening effect detected as a function of temperature in the presence of resveratrol 20 µM (●) and 80 µM (□) in DMPC liposomes, at pH 7.4.



Supplementary Figure 6 – Temperature-dependent small- and wide-angle X-ray diffraction patterns (SAXS and WAXS) of DMPC at pH 7.4.



Supplementary Figure 7 – Small-angle X-ray diffraction patterns (SAXS) of DMPC in the absence and in the presence of 5 and 10 mol% of resveratrol at 37 °C and pH 7.4.