Supplementary Material

Phenanthroline complexation enhances the cytotoxic activity of the VO-chrysin system

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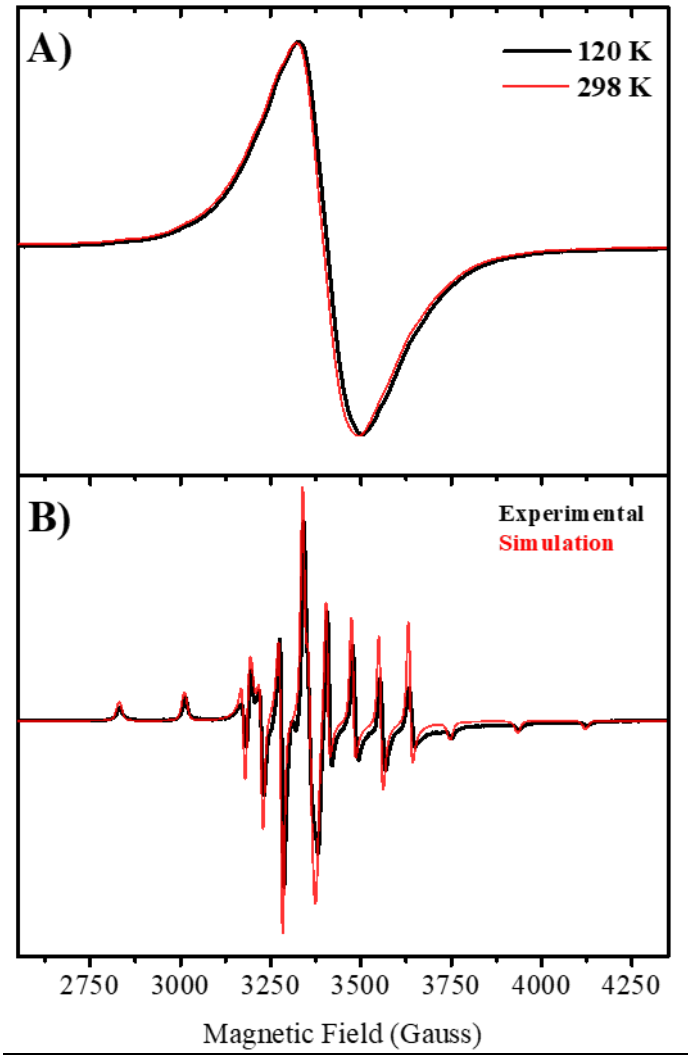

Figure S1. EPR spectrum of [VO(chrys)phenCl]. A) Powder sample at 120 K (black) and 298 K (red). B) Frozen DMSO solution EPR spectrum recorded at 120 K (black) together with simulation (red). EPR spectra of both powder and DMSO solution were recorded in a Bruker EMX-Plus spectrometer, equipped with a rectangular cavity. Experimental conditions: 100 kHz modulation field, 4 Gpp modulation amplitude and 2 mW microwave power. The spectra were baseline corrected using WinEPR Processing software (Bruker, Inc) and simulations were performed with the Easy Spin 5.2.3. toolbox based on MATLAB assuming an axial spin-Hamiltonian. The spin Hamiltonian parameters obtained were g_{II} = 1.941; A_{II} = 162.2 x 10^{-4} cm^{-1}; $g_{\perp}$ = 1.977; $A_{\perp}$ = 59.5 x 10^{-4} cm^{-1}.

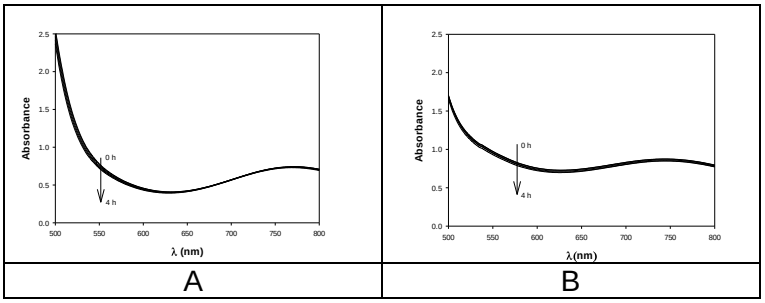

Figure S2. Spectral variation of a dissolution of [VO(chrys)phenCl] in A) DMSO, B) DMSO/H_2O 1/99 (1 x 10^{-2} M), during 4h.

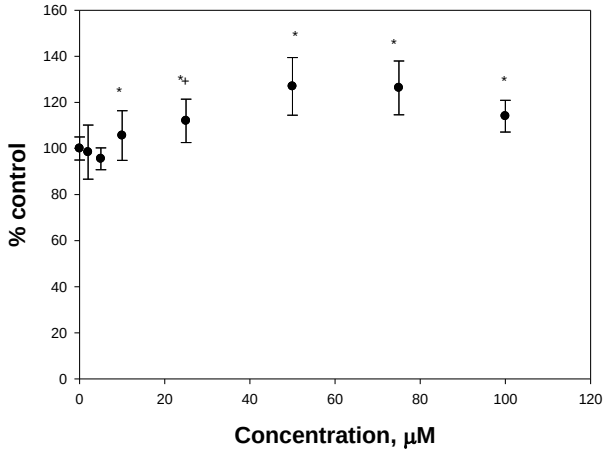

Figure S3. Cell viability assay at different of [VO(chrys)phenCl] concentrations after treatment for 24 h on HEK293 cells. The results are expressed as a percentage of the control level and represent the mean ± the standard error of the mean (SEM) from three separate experiments. * indicates significant values in comparison with the control level ($p < 0.05$).

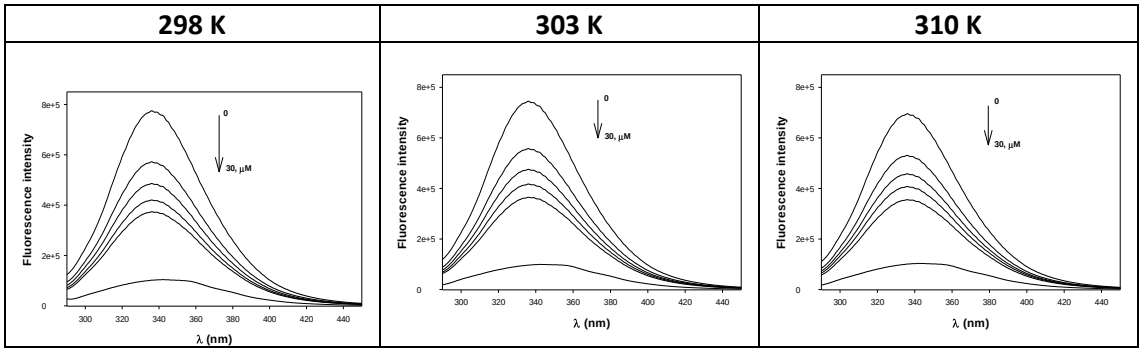

Figure S4. The fluorescence spectra of BSA at various temperatures for VOchrysphen (0, 4, 6, 8,10, 30 μM). λex = 280 nm, [BSA] = 6 μM.

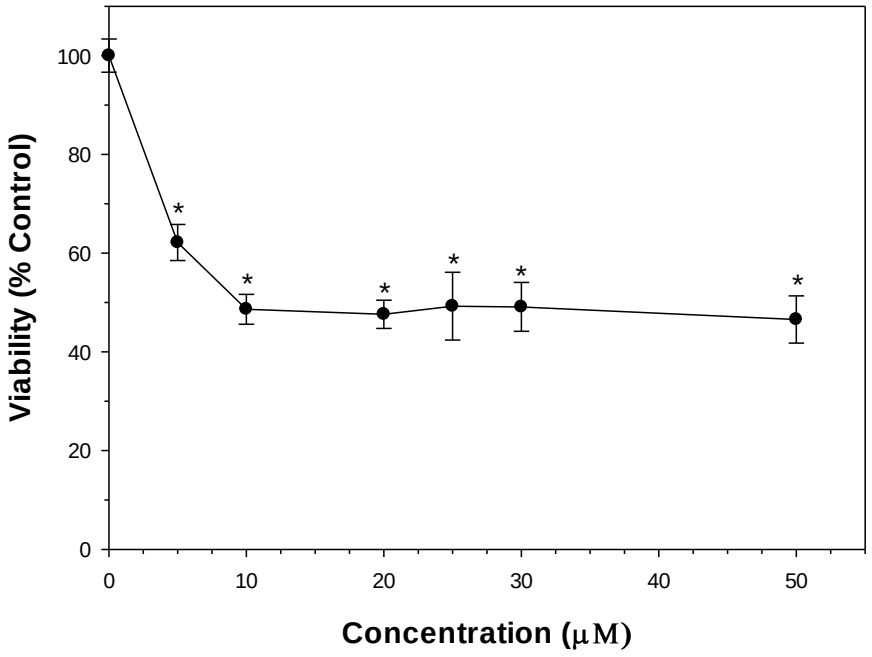

Figure S5. Cell viability assay of a mixture of sodium metavanadate, chrysin and phen (1:1:1), physiological pH at different concentrations after treatment for 24 h on A549 cells. The results are expressed as a percentage of the control level and represent the mean ± the standard error of the mean (SEM) from three separate experiments. * indicates significant values in comparison with the control level ($p < 0.05$).

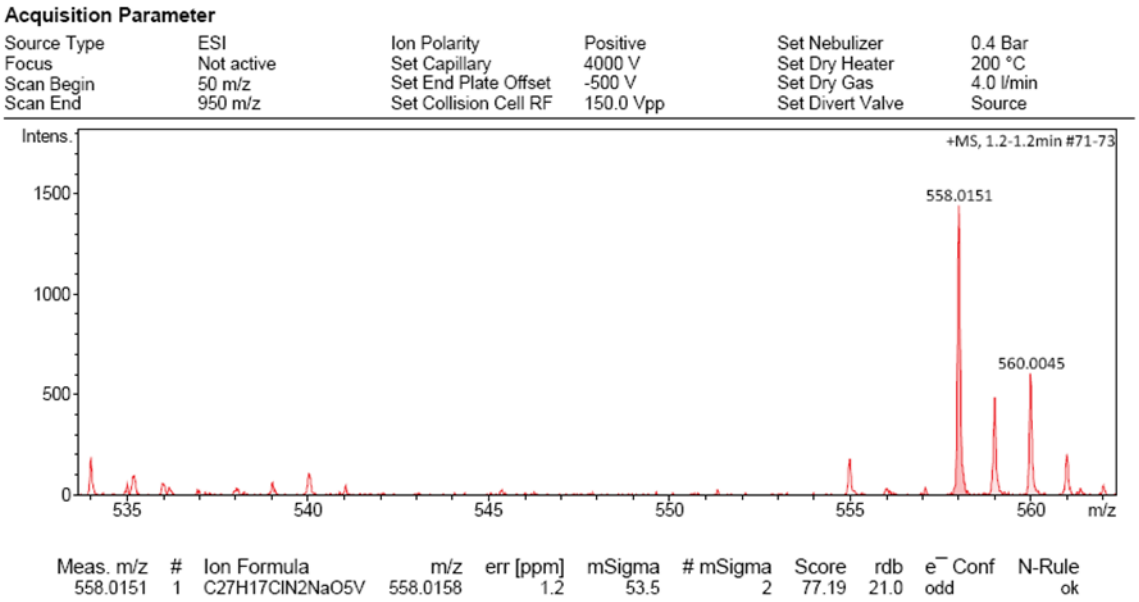

FIgure S6. Electrospray ionization–mass spectrometry (ESI-MS) spectrum of [VO(chrys)phenCl]