Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B.

Supporting information

Biocompatible nanoparticles containing hydrophobic nickel-bis(dithiolene) complexes for NIR-mediated doxorubicin release and photothermal therapy

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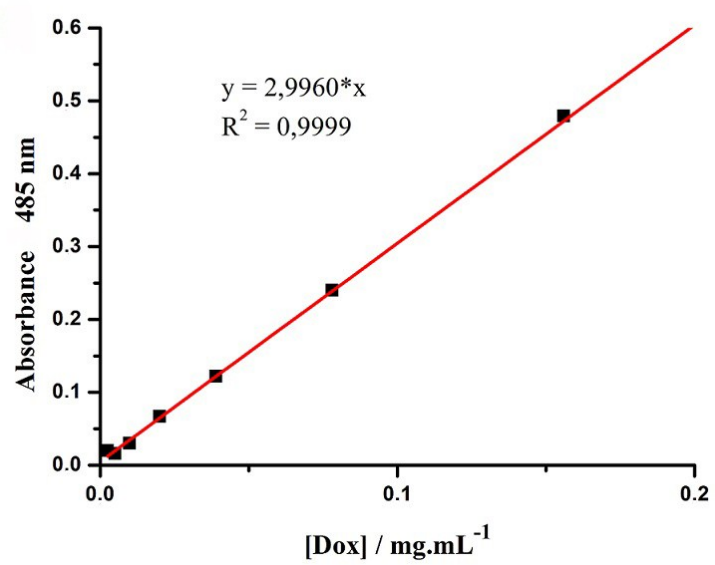

Figure S1. UV-vis absorption calibration curve of the Dox in a water/DMF (20/80) mixture.

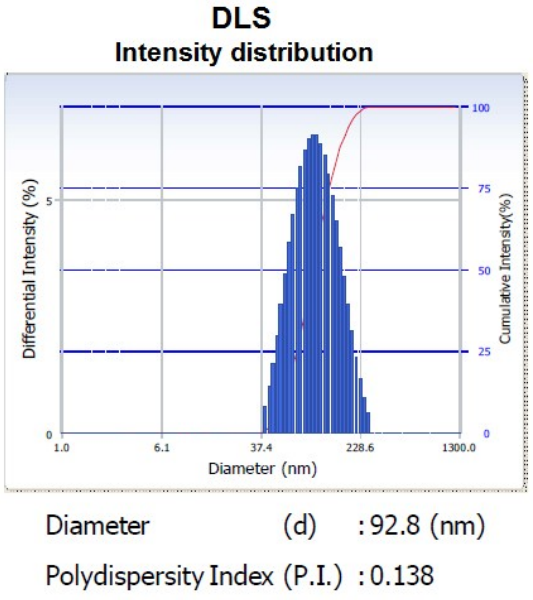

Figure S2. Dynamic light scattering results obtained on the suspension of empty PEG_{46}-*b*-$PMLABe_{77}$ NPs.

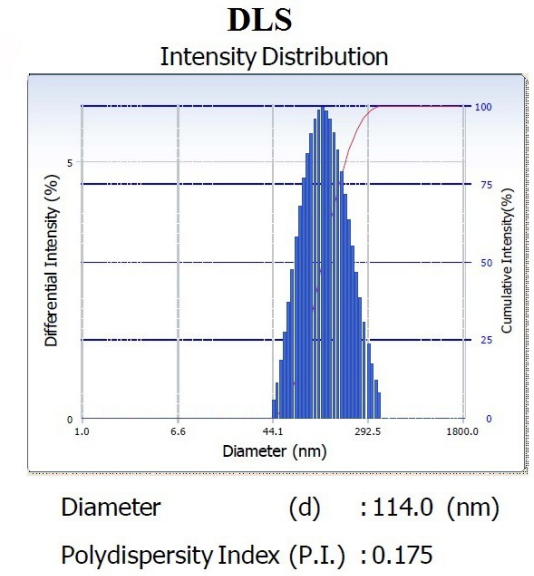

Figure S3. Dynamic light scattering results obtained on the NPs[Ni4C_{12}] suspension.

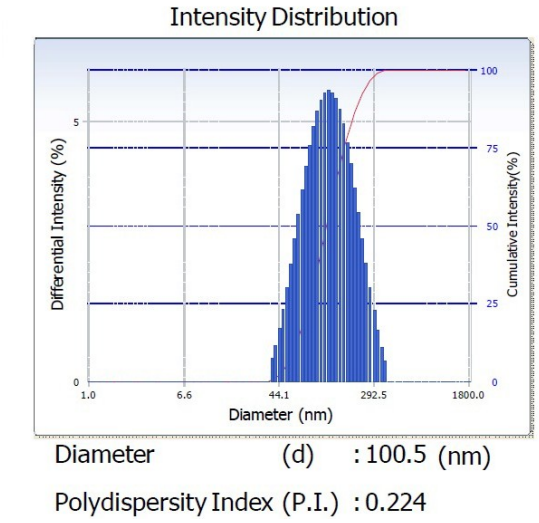

Figure S4. Dynamic light scattering results obtained on the NPs[Ni4C_{12},Dox] suspension.

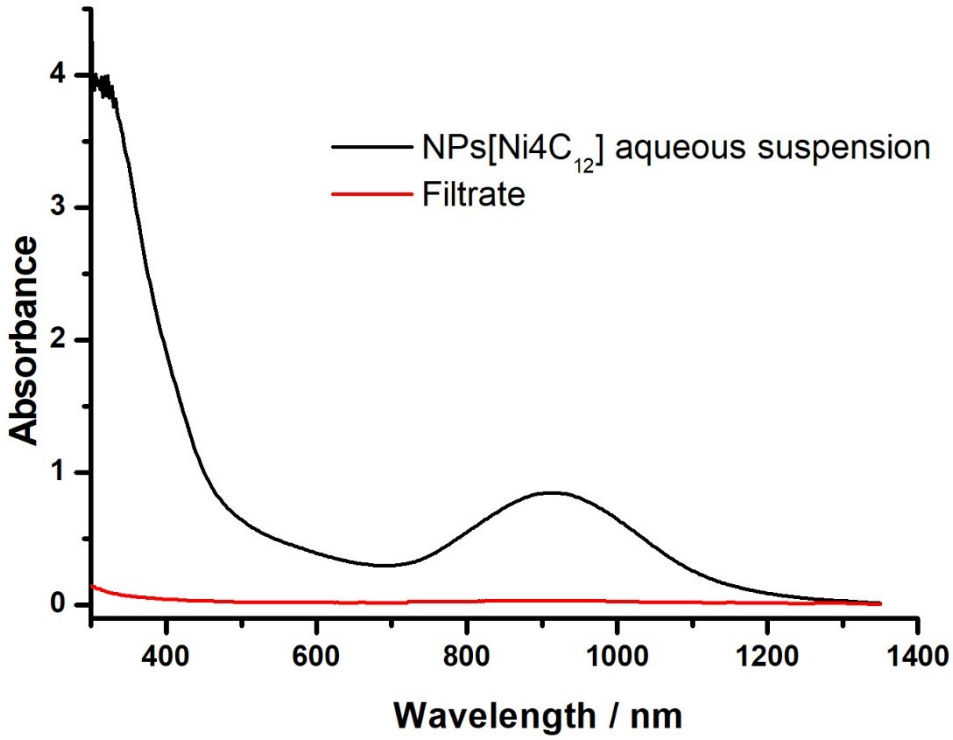

Figure S5. UV-vis-NIR absorption spectra of the filtrate and of the purified NPs[$Ni4C_{12}$] aqueous suspension.

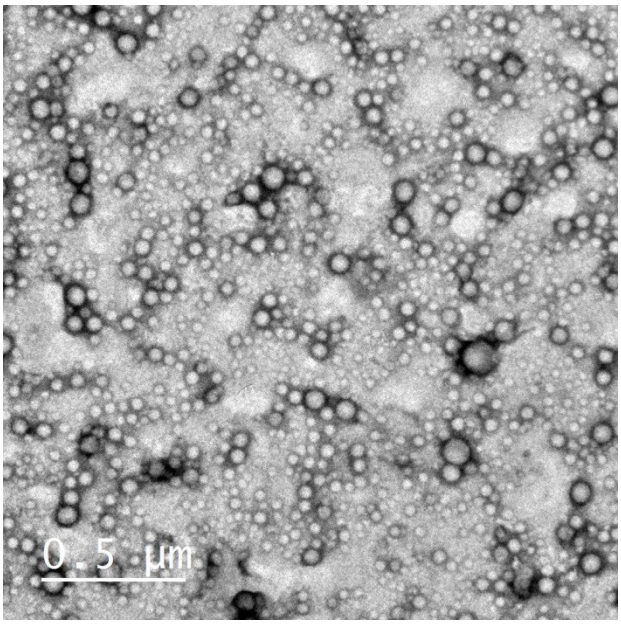

Figure S6. Image obtained by TEM of the empty NPs using a Jeol 2010 LaB6 apparatus operating under a voltage of 80 KeV. The sample was previously stained with 0.1v% of phosphotungstic acid.

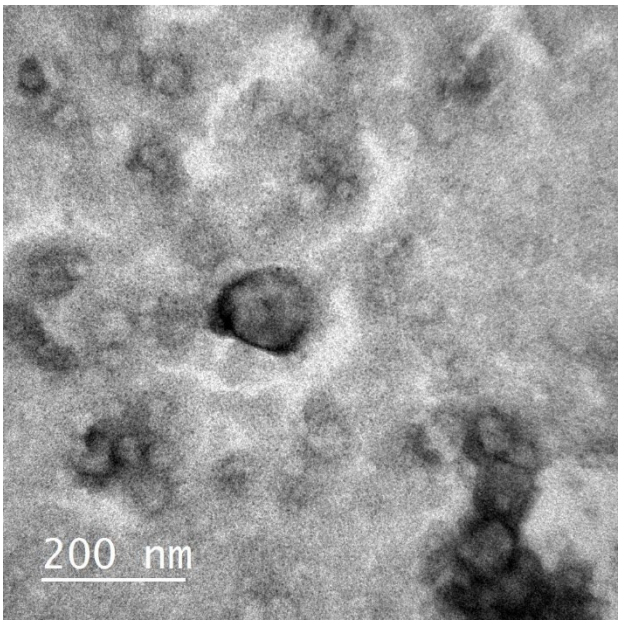

Figure S7. Image obtained by TEM of the NPs[$Ni4C_{12}$] after irradiation (940 nm, 5 min, 5 W/cm^2) using a Jeol 2010 LaB6 apparatus operating under a voltage of 80 KeV. The sample was previously stained with 0.1v% of phosphotungstic acid.

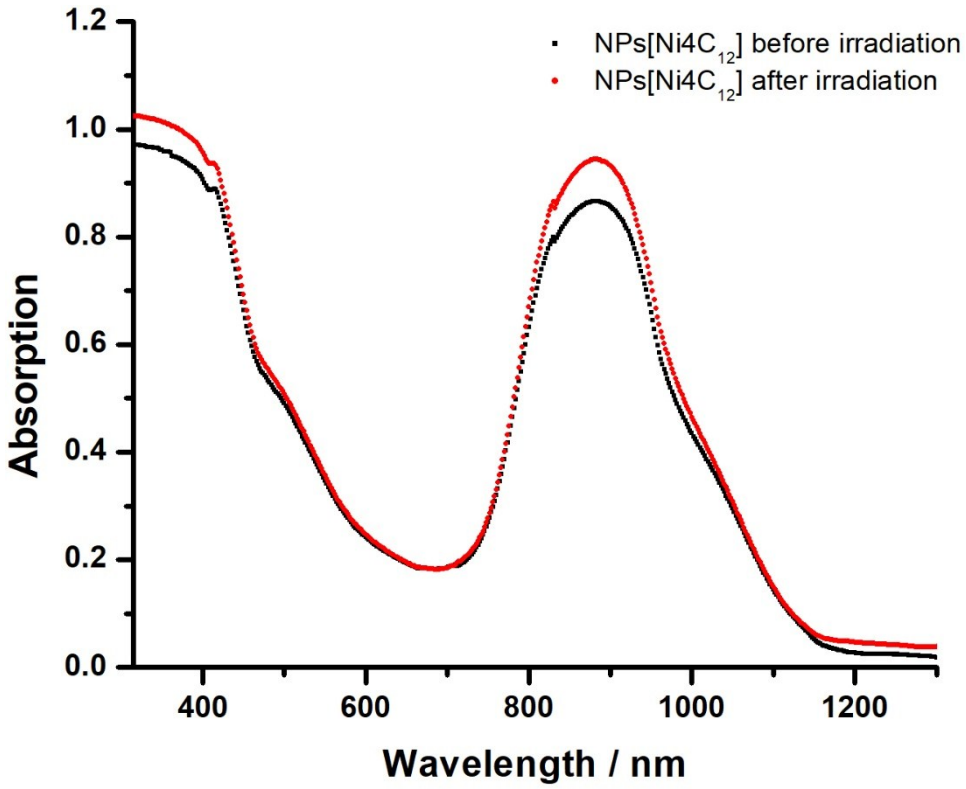

Figure S8. UV-vis-NIR absorption spectra of an aqueous suspension of NPs[Ni4C_{12}] before and after irradiation (940 nm, 5 min, 5 W/cm^2, C = 0.8 mg/mL). This slight increase in absorbance after irradiation is due to the evaporation of the solvent.

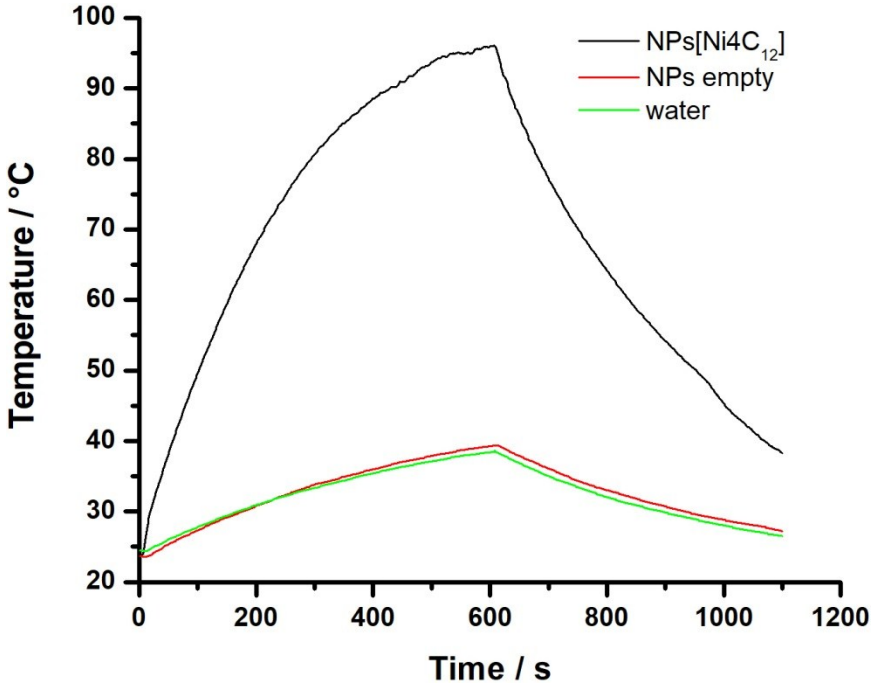

Figure S9. Temperature elevation measured after 5 min irradiation at 940 nm with a laser power density of 5W/cm^2 on pure water, an aqueous suspension of empty NPs and an aqueous suspension of NPs[Ni4C_{12}] (C = 2.5 mg/mL).

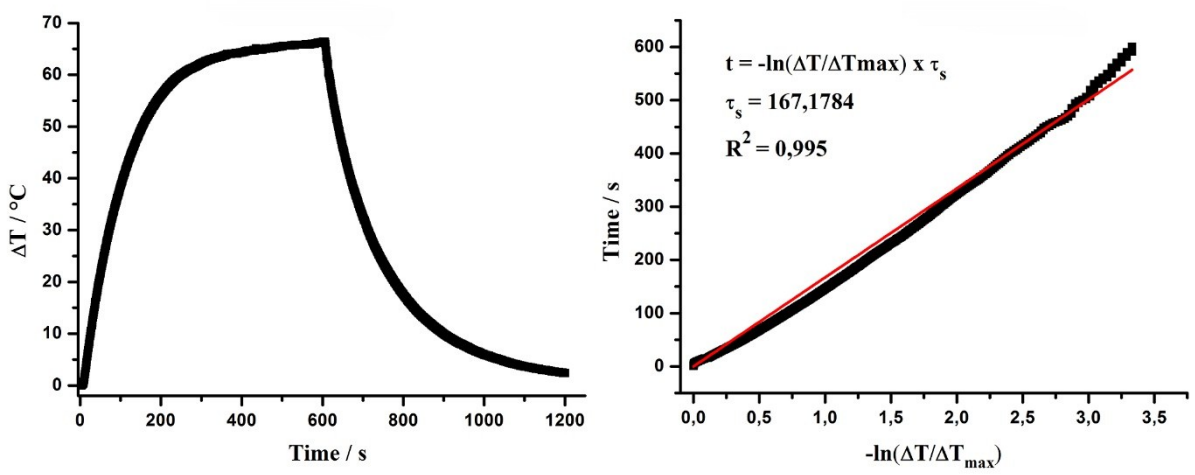

Figure S10. (Left) Temperature profile of the NPs[Ni4C$_{12}$] suspension in water (C= 2.5 mg.mL^{-1} of nanoparticules; C= 0.25 mg.mL^{-1} of Ni4C$_{12}$ complexes) when illuminated with a 940 nm laser (5 W.cm^{-2}) during 10 min and after turning off of the laser during 10 min; (Right) time constant for heat transfer is determined by applying the linear time from the cooling period (from 600 to 1200 s) versus negative natural logarithm of the driving force temperature.

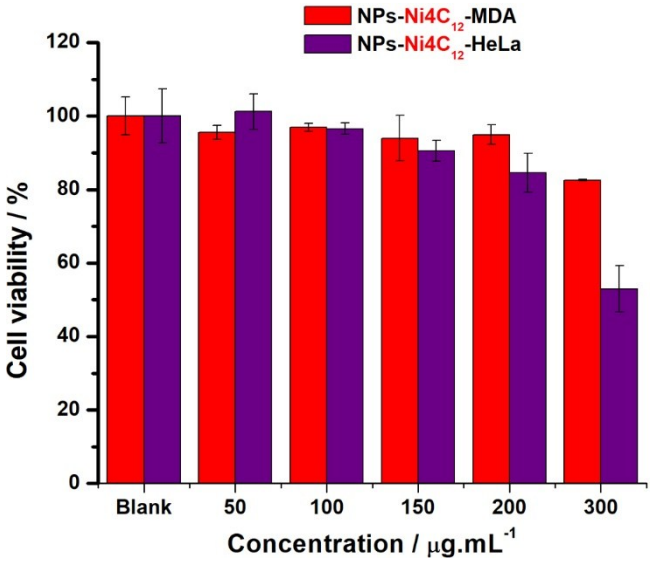

Figure S11. Cell viability of MDA-MB-231 and Hela cells as a function of concentrations of NPs[Ni4C$_{12}$].

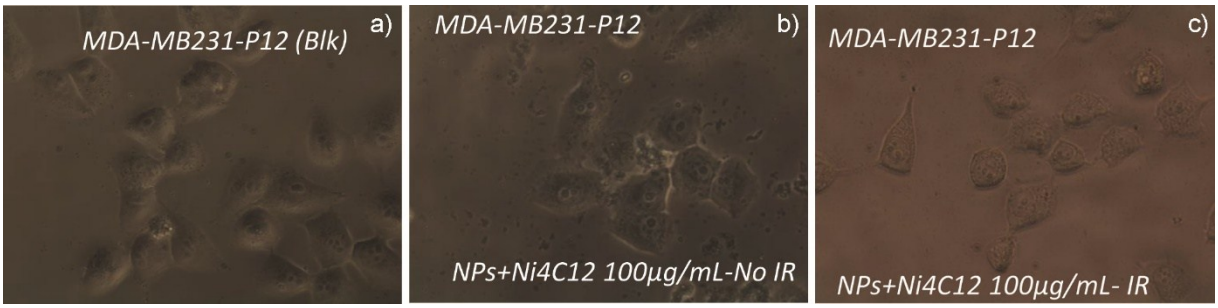

Figure S12. Images of the control MDA-MB-231 cells (a), MDA-MB-231 cells irradiated 5 min under a power density of 5 W.cm^{-2} without NPs[Ni4C$_{12}$] (b), MDA-MB-231 cells incubated with 100 µg.mL^{-1} of NPs[Ni4C$_{12}$] for 24 h before irradiation (c) (magnification X20).

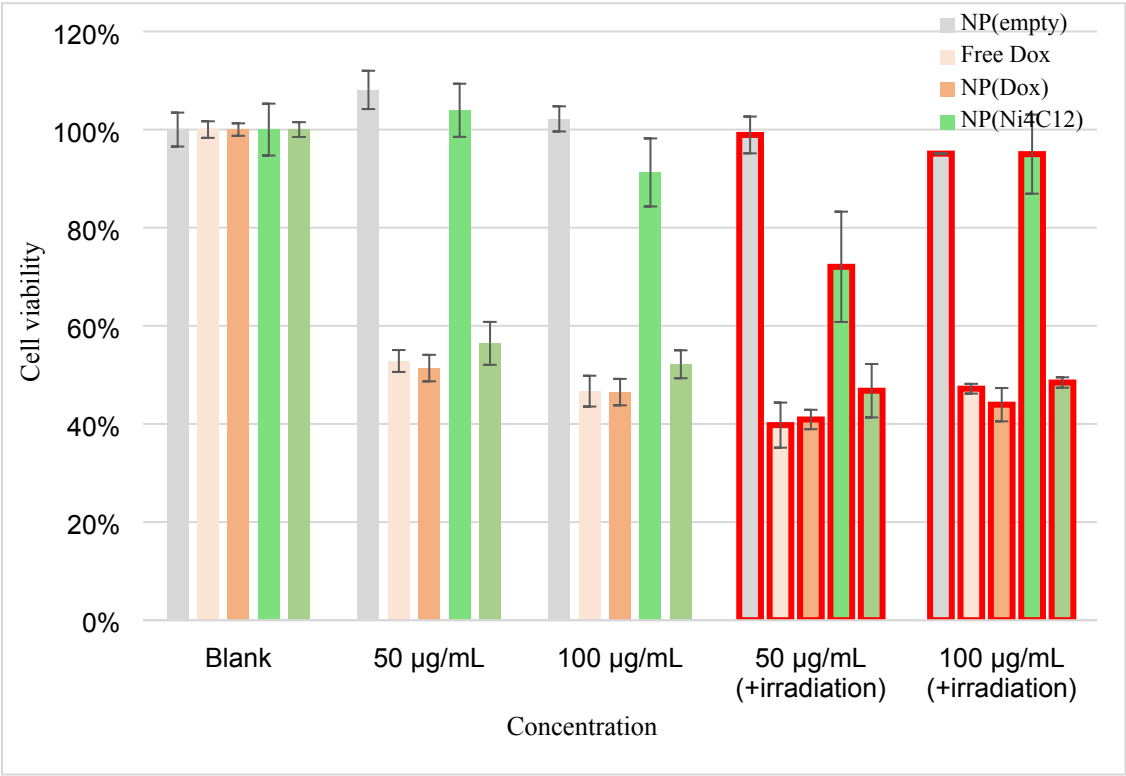

Figure S13. Relative cell viability of MDA-MB-231 cells incubated for 24h with various concentrations of empty NPs, free Dox, NPs[Dox], NPs[Ni4C$_{12}$] and NPs[Ni4C$_{12}$,Dox]. The cell wells have been washed after 24h incubation and irradiated or not (5 min, 5 W/cm^2, 940 nm) prior to MTT tests.