

Supplementary Information

Magnetically responsive polycaprolactone nanocarriers for application in the biomedical field: magnetic hyperthermia, magnetic resonance imaging, and magnetic drug delivery

Marta Szczęch¹, Davide Orsi², Natalia Łopuszyńska³, Luigi Cristofolini², Krzysztof Jasiński³,
Władysław P. Węglarz³, Franca Albertini⁴, Sami Kereïche⁵, Krzysztof Szczepanowicz^{1*}

¹Jerzy Haber Institute of Catalysis and Surface Chemistry, Polish Academy of Sciences, Krakow, Poland

²Department of Mathematical, Physical and Computer Sciences, University of Parma, Parma, Italy

³Henryk Niewodniczański Institute of Nuclear Physics, Polish Academy of Sciences, Krakow, Poland

⁴Institute of Materials for Electronics and Magnetism, National Research Council (CNR), Parma, Italy

⁵Institute of Biology and Medical Genetics, First Faculty of Medicine, Charles University, Prague, Czech Republic

* Correspondence: Krzysztof Szczepanowicz

Tel.: +48126395121

Fax: +48124251923

E-mail: ncszczep@cyf-kr.edu.pl

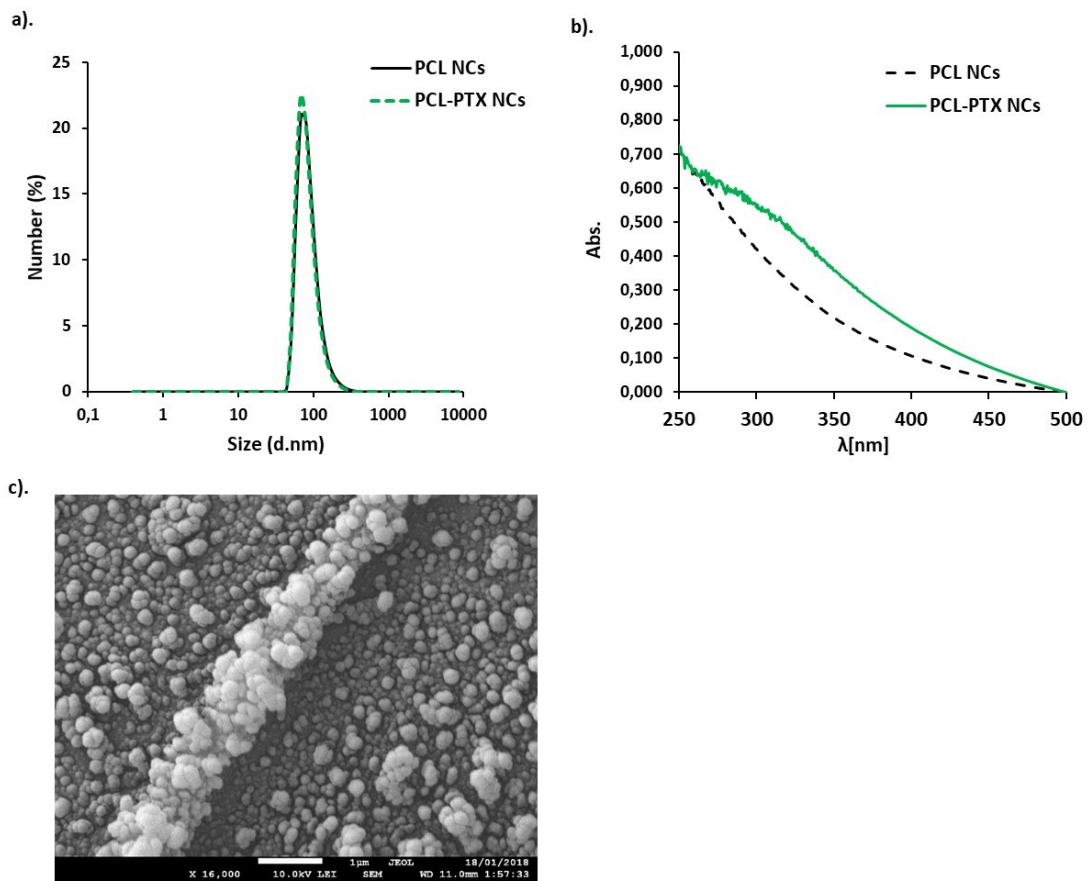


Figure S1. Characterization of PCL-based nanocarriers a) Size distribution measured by DLS, b) UV-Vis spectra of the PCL and PTX-loaded PCL NCs, c) PCL NCs cryo-SEM image.

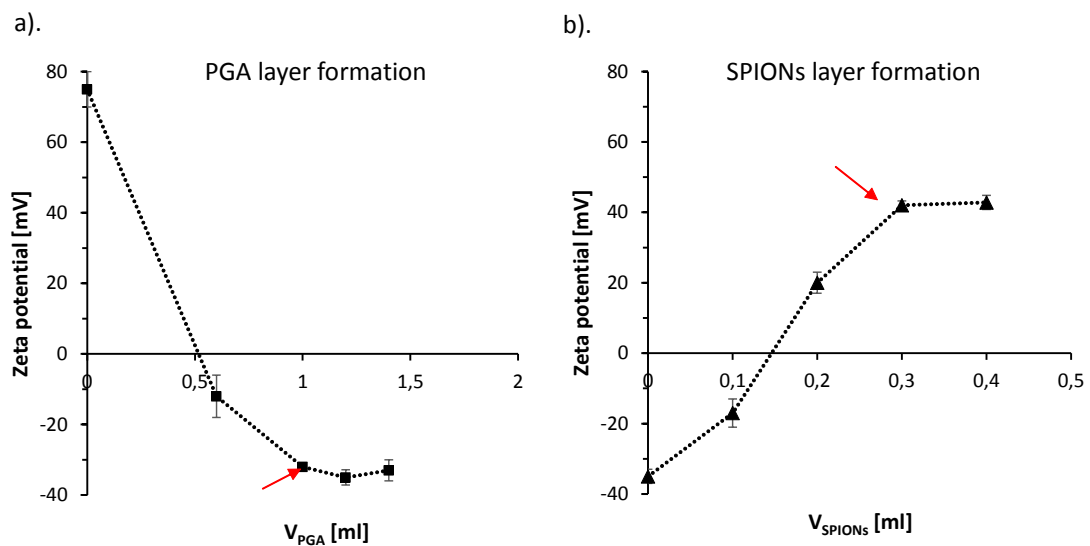


Figure S2. Zeta potential measurements a) Changes of the zeta potential during the formation of the PGA layer. The condition marked by an arrow indicates the first stable sample after overcharging, b) Changes of the zeta potential during the formation of the SPIONs layer. The condition marked by an arrow indicates the first stable sample after overcharging.

Table S1. Effects due to magnetic rf irradiation on sample MN-PCL NCs, characterized by DLS (Brookhaven 90plus instrument). The loss of contrast indicates the appearance of a fraction of small (size < 1 nm) diffusing object within the suspension. Cumulant analysis does not show a change in the average size and polydispersity of the sample.

Sample	Contrast	Average Size	PDI
Control	0.731 ± 0.004	118	0.165
Irradiated 25 mT, 429 kHz	0.649 ± 0.004	120	0.17