

Supporting information for “Microfluidic-Assisted Formulation of ϵ -Polycaprolactone Nanoparticles and Evaluation of Their Properties and In Vitro and Cell Uptake”

Ewa Rybak ^{1,*}, Piotr Kowalczyk ¹, Sylwia Czarnocka-Śniadała ², Michał Wojasiński ¹, Jakub Trzcinski ^{1,3,†} and Tomasz Ciach ^{1,2,†}

¹ Faculty of Chemical and Process Engineering, Warsaw University of Technology, Waryńskiego 1, 00-645 Warsaw, Poland; piotr.kowalczyk.dokt@pw.edu.pl (P.K.); michal.wojasinski@pw.edu.pl (M.W.); jakub.trzcinski@pw.edu.pl (J.T.); tomasz.ciach@pw.edu.pl (T.C.)

² Nanosanguis S.A., Rakowiecka 36, 02-532 Warsaw, Poland; s.czarnocka@nanogroup.eu

³ Centre for Advanced Materials and Technologies CEZAMAT, Warsaw University of Technology, Poleczki 19, 02-822 Warsaw, Poland

* Correspondence: ewa.rybak.dokt@pw.edu.pl

† These authors contributed equally to this work.

Table S1. Mean diameter and PDI of blank NPs. Size and polydispersity index (PDI) of PCL NPs measured by dynamic light scattering (DLS).

| | Dropwise | | Microfluidic device | |
|-----------------------|-----------------------------|-------------------|-----------------------------|-------------------|
| PCL concentration [%] | Mean diameter \pm SD [nm] | PDI [-] | Mean diameter \pm SD [nm] | PDI [-] |
| 0.1 | 122 \pm 2 | 0.183 \pm 0.010 | 122 \pm 1 | 0.147 \pm 0.010 |
| 0.5 | 150 \pm 4 | 0.090 \pm 0.008 | 140 \pm 2 | 0.150 \pm 0.007 |
| 1.0 | 189 \pm 2 | 0.146 \pm 0.016 | 121 \pm 4 | 0.140 \pm 0.008 |
| 2.0 | 171 \pm 3 | 0.187 \pm 0.011 | 184 \pm 1 | 0.060 \pm 0.006 |
| 5.0 | 139 \pm 2 | 0.252 \pm 0.010 | 188 \pm 3 | 0.123 \pm 0.020 |

Table S2. Comparison of dye-loaded NP characteristics formulated with analyzed methods. Size and polydispersity index (PDI) of PCL NPs with dye measured by dynamic light scattering (DLS).

| | Dropwise | | Microfluidic device | |
|-----------------------|-----------------------------|-------------------|-----------------------------|-------------------|
| PCL concentration [%] | Mean diameter \pm SD [nm] | PDI [-] | Mean diameter \pm SD [nm] | PDI [-] |
| 0.1 | 159 \pm 3 | 0.424 \pm 0.069 | 167 \pm 5 | 0.201 \pm 0.003 |
| 0.5 | 136 \pm 5 | 0.585 \pm 0.008 | 130 \pm 2 | 0.199 \pm 0.004 |
| 1.0 | 151 \pm 0 | 0.653 \pm 0.002 | 127 \pm 3 | 0.180 \pm 0.009 |
| 2.0 | 185 \pm 4 | 0.154 \pm 0.006 | 141 \pm 5 | 0.146 \pm 0.013 |
| 5.0 | 106 \pm 2 | 0.609 \pm 0.004 | 193 \pm 2 | 0.214 \pm 0.007 |

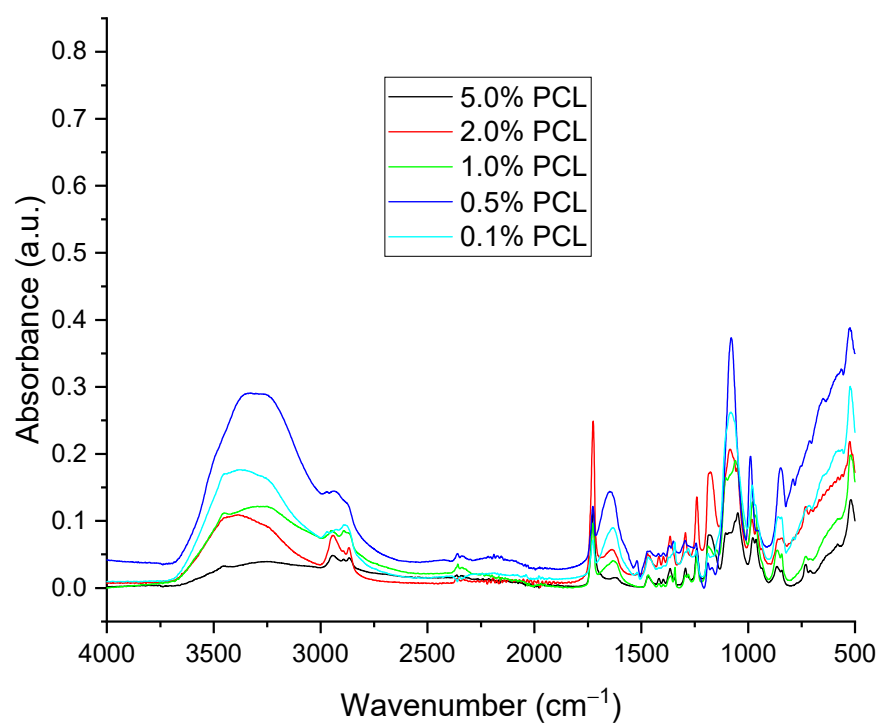


Figure S1. FTIR spectrum of dye-loaded NPs formulated with different amounts of PCL.