

SUPPLEMENTARY INFORMATION

Neutralization of ionic interactions by dextran-based single-chain nanoparticles improves tobramycin diffusion into a mature biofilm

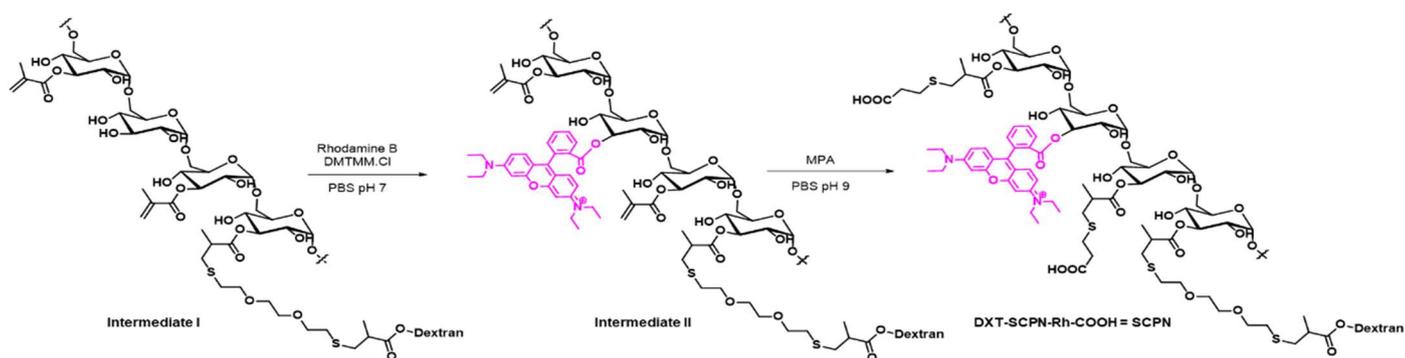
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Physico-chemical properties of pharmagrade dextran 40 kDa used as precursor for the synthesis of DXT-SCPNs

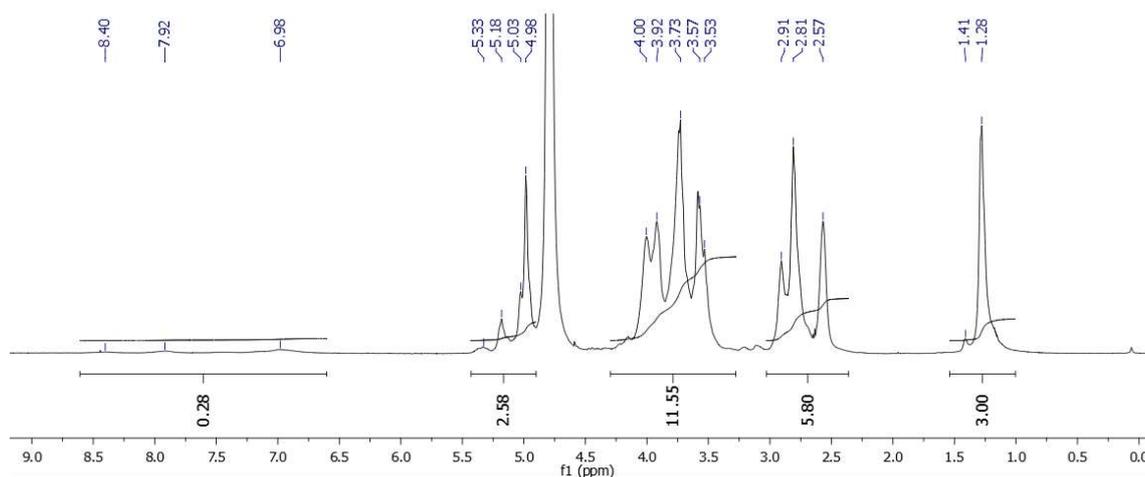
Dh (DLS, 10 mg/mL in PBS) = 11 ± 1 nm, PdI = 0.19 ± 0.05

Data from batch release certificate: Mw = 42208 Da, Mw/Mn = 1.3

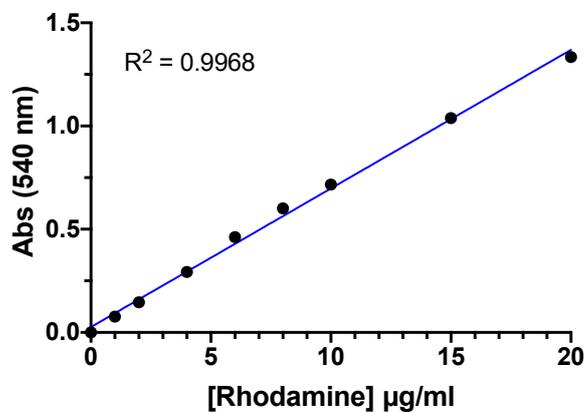
Supplementary Figure 1. Functionalization of DXT-SCPN with Rhodamine and 3-mercaptopropionic acid (MPA). DXT is a branched polymer but is drawn as linear for reasons of clarity.



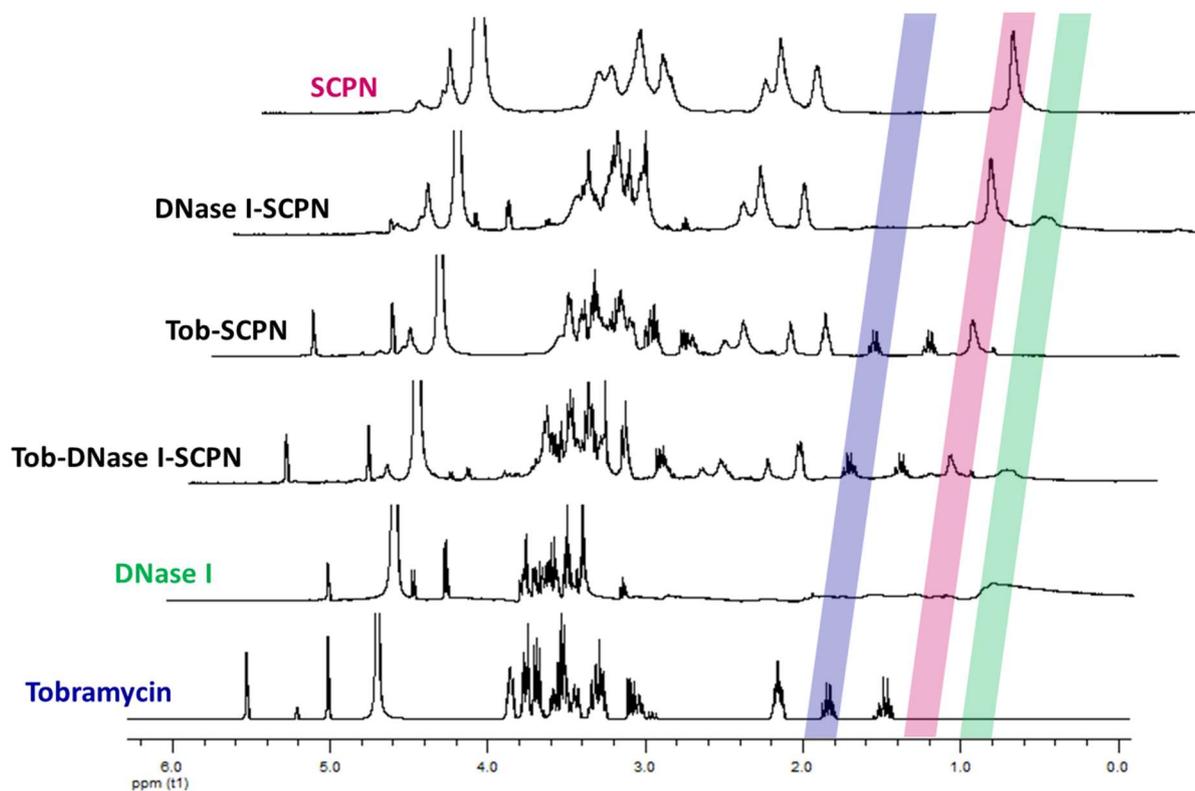
Supplementary Figure 2. ^1H NMR spectrum of rhodamine-labelled SCPN in D_2O



Supplementary Figure 3. UV-vis calibration curve for Rhodamine B in PBS.



Supplementary Figure 4. ^1H NMR spectra of SCPN, DNase I-SCPN, Tob-SCPN, Tob-DNase I-SCPN, DNase I, and Tobramycin in D_2O .



Supplementary Table 1. Percentage of dead bacteria biomass (stained in red in the Live/Dead BacLight Bacterial Viability Kit) in the total biofilm biomass of the 72-hour-old biofilms of *P. aeruginosa* treated for 16 hours with 0.26 µg/ml DNase I and/or 2 µg/ml tobramycin and with nanoformulation containing SCPN with the corresponding concentration of both actives. Refer to figure 2 for microscopic images.

	CONTROL	SCPN	Tob + DNase I	Tob + DNase I SCPN	Tob	Tob SCPN	DNase I	DNase I SCPN
% Dead biomass / Total biomass	5,57 % ± 0,86	5,67 % ± 0,32	9,75 % ± 0,64	12,44 % ± 0,13	9,56 % ± 0,47	12,29 % ± 0,61	7,14 % ± 0,52	8,54 % ± 0,26