Electronic Supplementary Material (ESI) for Polymer Chemistry.

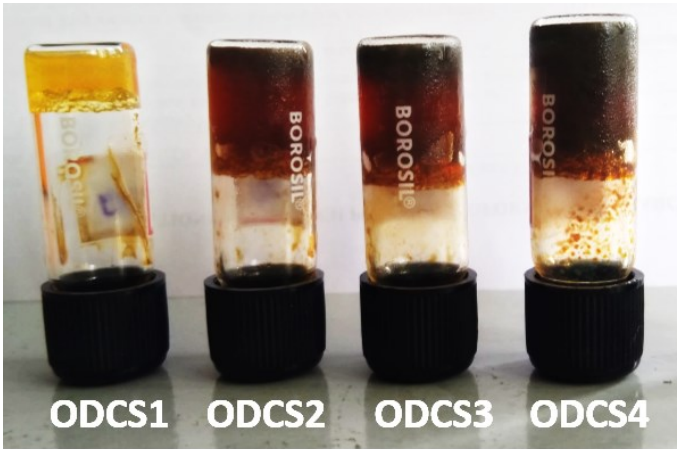
Supporting information

Development of Macroscopically Ordered Liquid crystalline hydrogel from Biopolymers with robust Antibacterial activity for controlled drug delivery applications

Reshma L. Raveendran [a], Thayyath S. Anirudhan [a,*]

[a] Department of Chemistry, University of Kerala, Kariavattom, Thiruvananthapuram-695581

Kerala, India.



Photograph of Nanosilver-Schiff base hydrogels (ODCS) with varying concentration of $AgNO_3$ (0.06 M, 0.08 M, 0.1 M and 0.15 M)

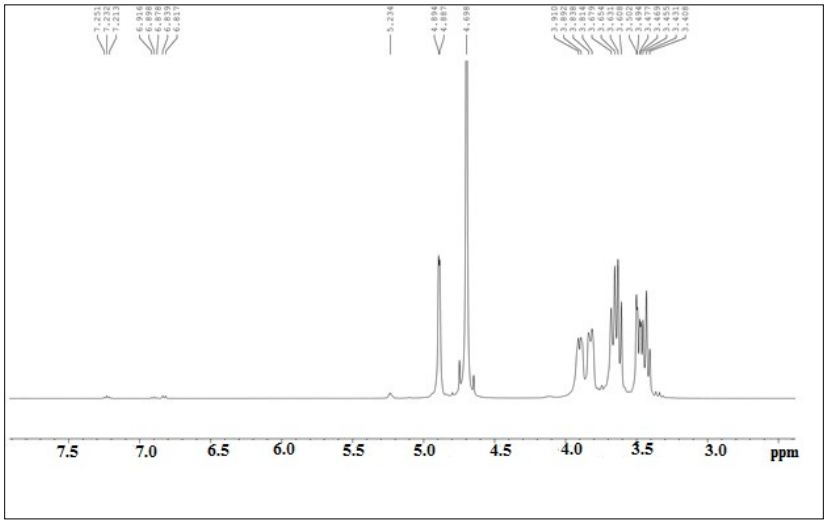


Figure S1 a. ^1H NMR spectra of Dextran.

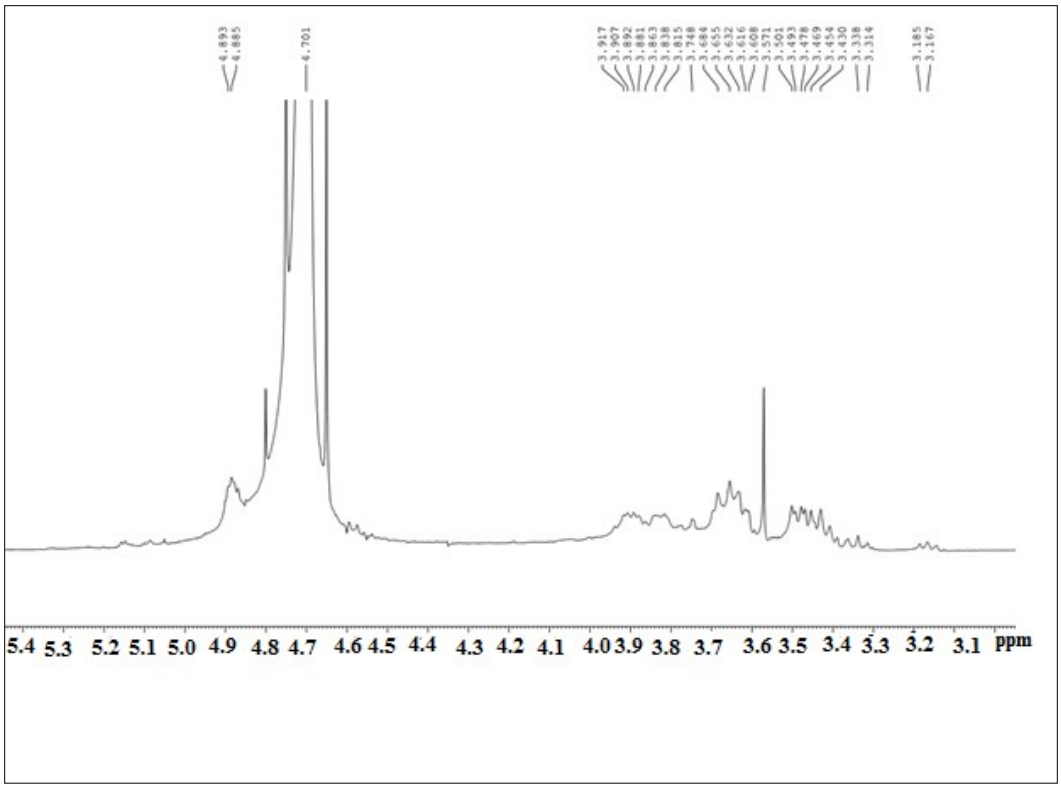


Figure S1 b. ^{1}H NMR spectra of Oxidized dextran

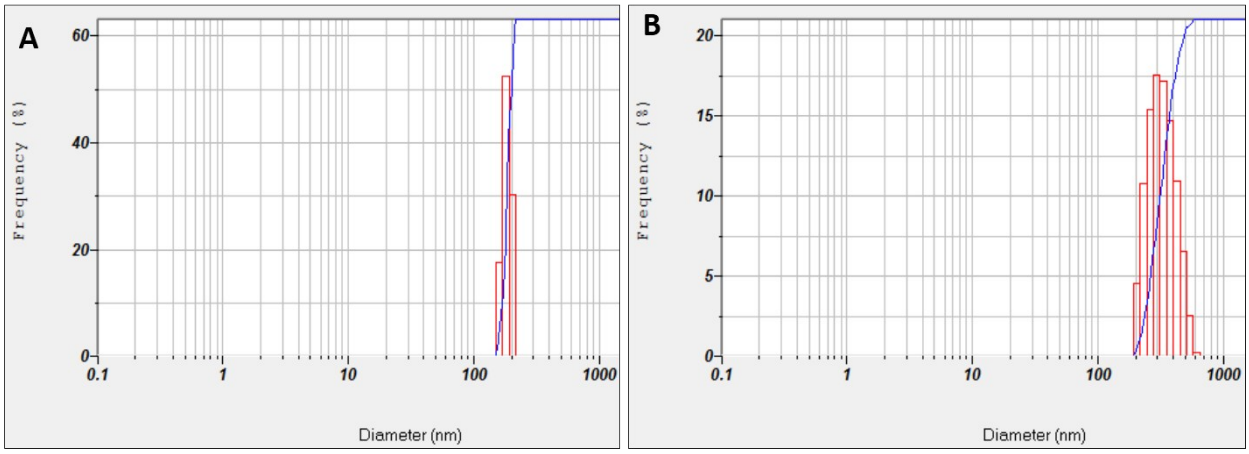


Figure S2. Dynamic Light Scattering studies of A) ODCS hydrogel B) Doxorubicin loaded ODCS hydrogel.

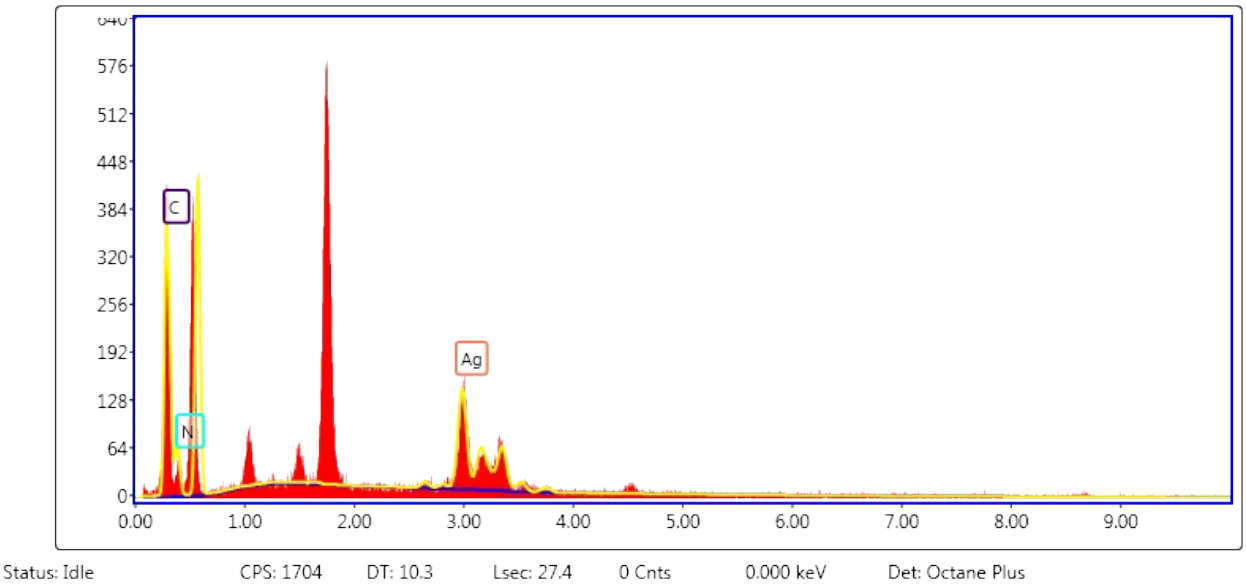


Figure S3. EDAX spectra of ODCS hydrogel.

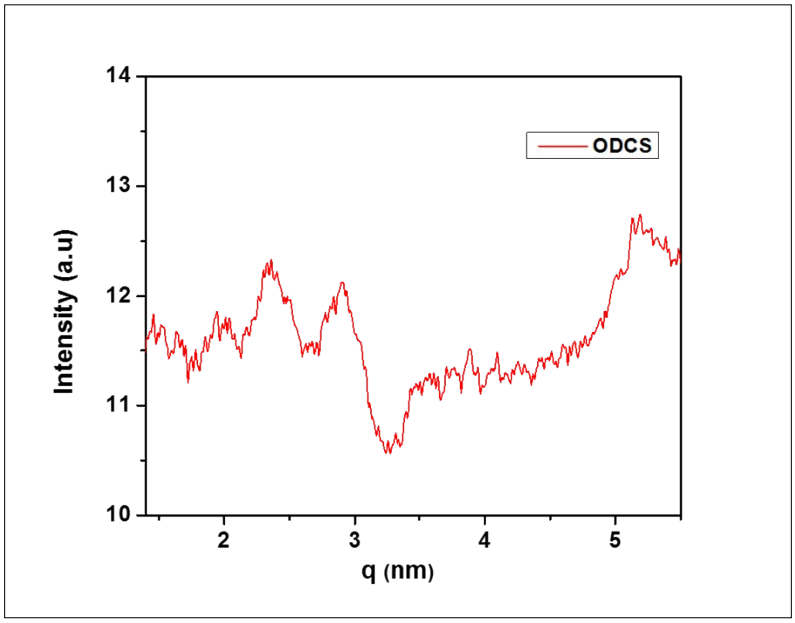


Figure S4. SAXS of ODCS hydrogel (d spacing calculated from the equation d= $\frac{2\pi}{q}$ where q is the scattering vector).

Table S1. Drug loading and drug encapsulation efficiency at pH 7.4.

Concentration of Doxorubicin Hydrochloride (10 mg/mL)	Drug loading efficiency (DLE) (%)	Drug Encapsulation Efficiency (DEE) (%)
10	23	32
25	35	41
50	58	62
75	88	91
100	91.6	93

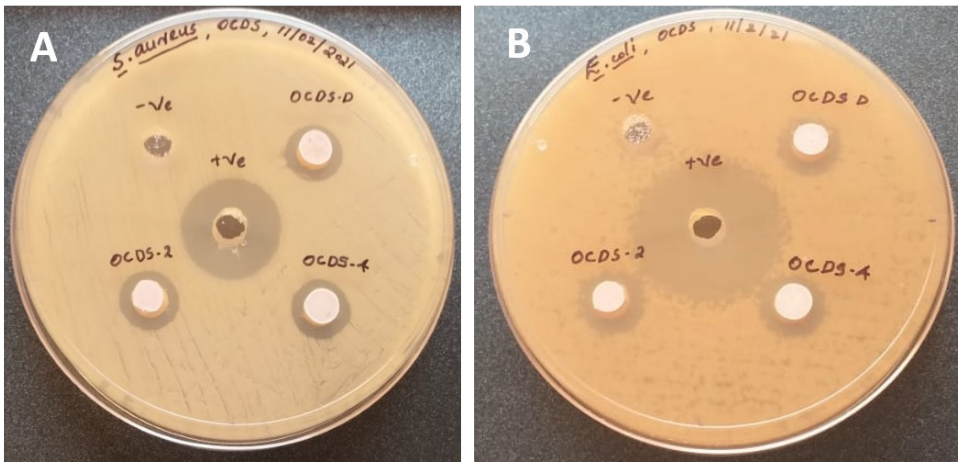


Figure S5. Agar well diffusion assay of ODCS hydrogels against Gram positive *S. aureus* and Gram negative *E.coli*.