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

SUPPLEMENTARY INFORMATION

Surfactant-free polymeric nanoparticles composed of PEG, cholic acid and a sucrose moiety

Carina I. C. Crucho,*[a] M. Teresa Barros *[a]

[a] *REQUIMTE/CQFB, Departamento de Química, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, 2829-516 Caparica, Portugal Fax: +351212948550; Tel: +351212948355;*

E-mail: mtb@fct.unl.pt; cic17468@campus.fct.unl.pt

1. MALDI TOF mass spectra of the Suc-PEG-Chol conjugates 10 and 11

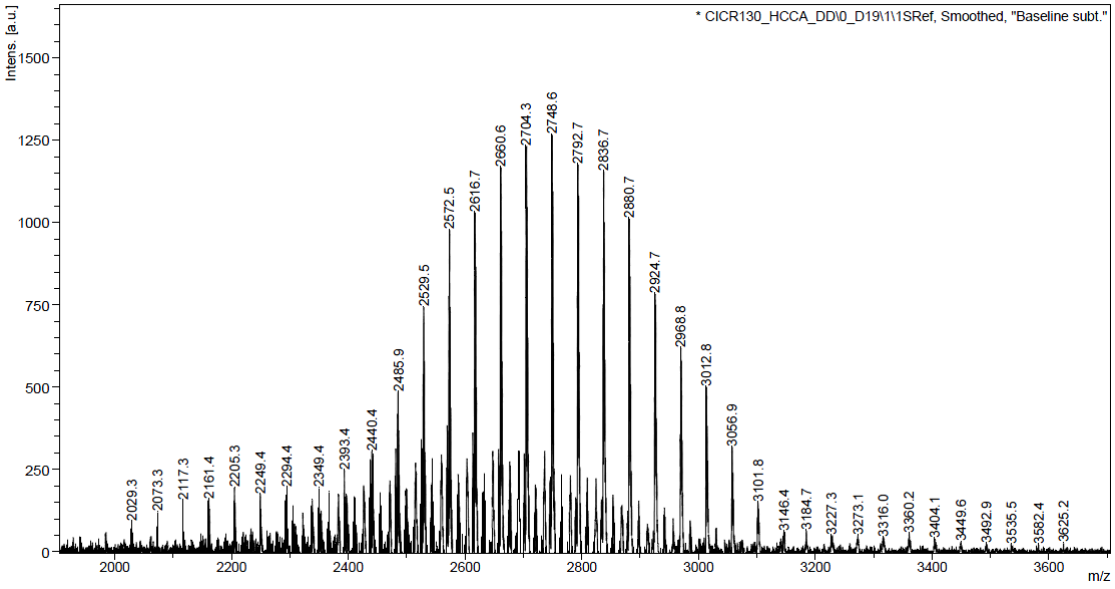

Fig. S 1 - Matrix-assisted laser desorption ionization time-of-flight (MALDI-TOF) of the Suc-PEG_{2000}-Chol **(10)** on a Bruker Autoflex with α-cyano-4-hydroxycinnamic acid (4-HCCA) matrix.

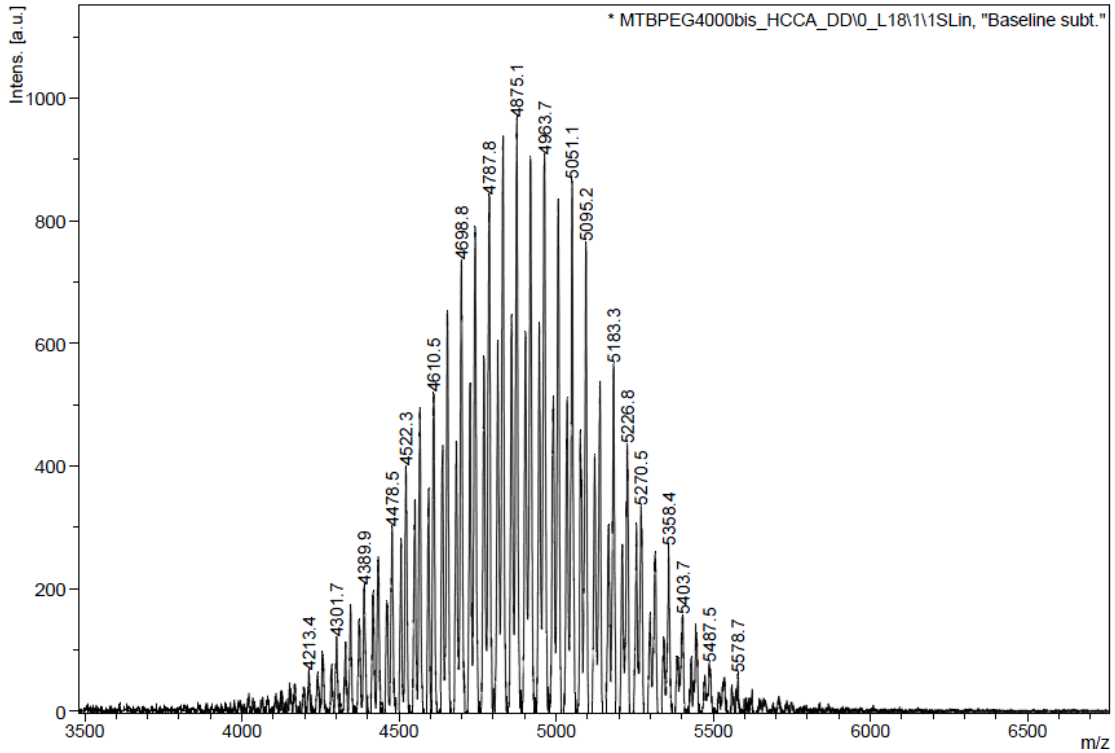

Fig. S 2 - Matrix-assisted laser desorption ionization time-of-flight (MALDI-TOF) of the Suc-PEG_{4000}-Chol **(11)** on a Bruker Autoflex with α-cyano-4-hydroxycinnamic acid (4-HCCA) matrix.

2. DSC of the Suc-PEG-Chol conjugates 10 and 11

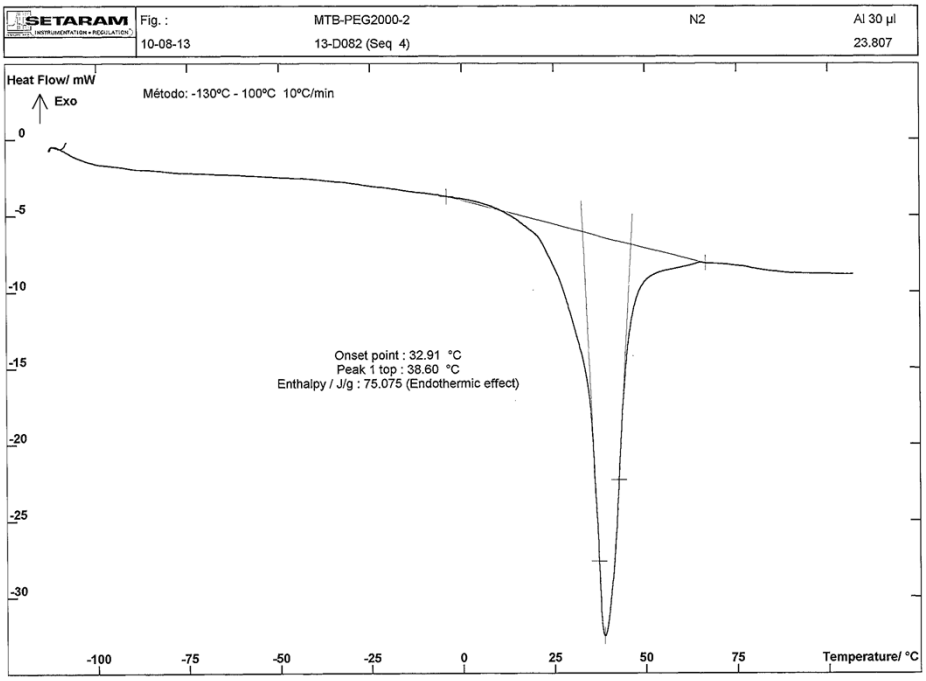

Fig. S 3 – Differential scanning calorimetry (DSC) of Suc-PEG$_{2000}$-Chol (**10**).

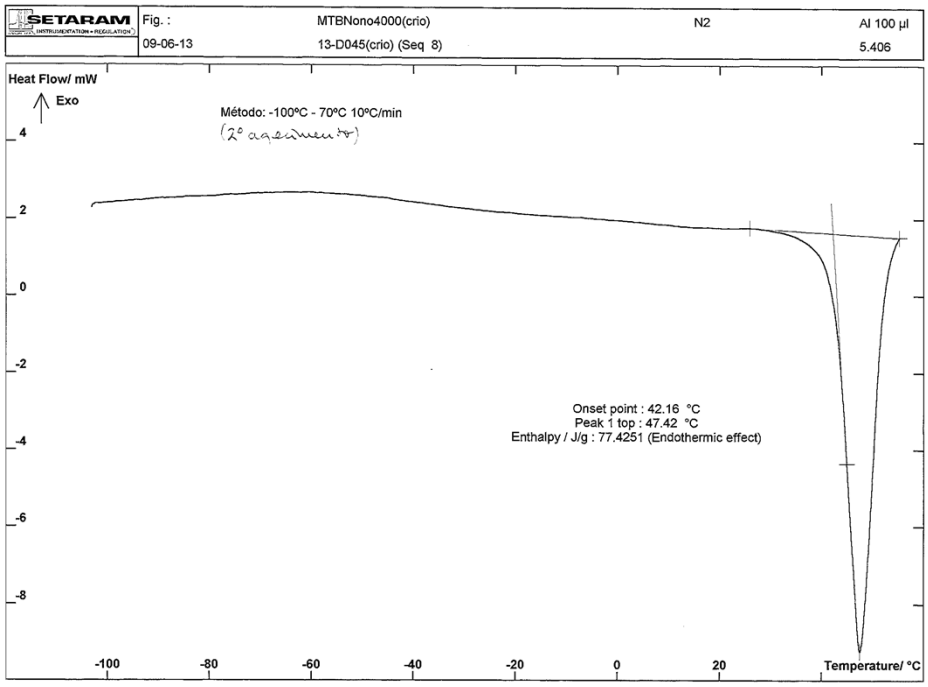

Fig. S 4 – Differential scanning calorimetry (DSC) of Suc-PEG$_{4000}$-Chol (**11**).

3. Determination of critical aggregation concentration (CAC) for Suc-PEG$_{4000}$-Chol conjugate

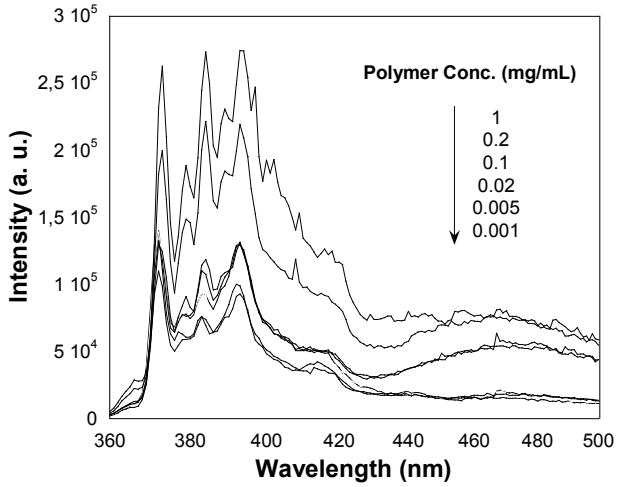

Fig. S 5 - Fluorescence emission spectra of pyrene/Suc-PEG$_{4000}$-Chol against concentration of Suc-PEG$_{2000}$-Chol in distilled water.

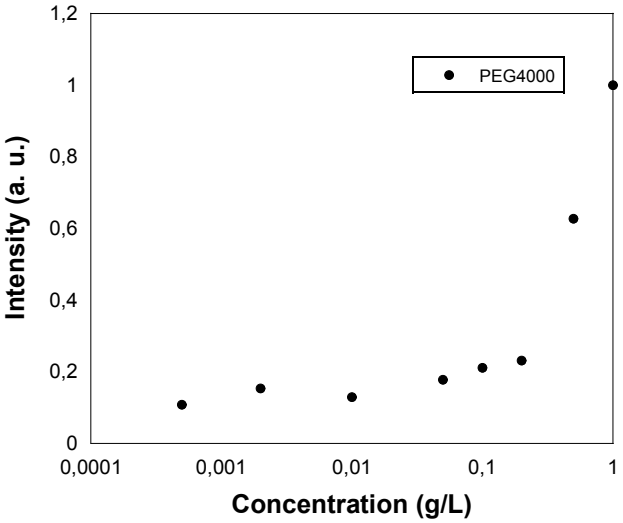

Fig. S 6 - Plots of the area of the pyrene emissions spectra vs. Suc-PEG$_{4000}$-Chol polymer concentration.

4. Particle size distributions of Suc-PEG-Chol nanoparticles

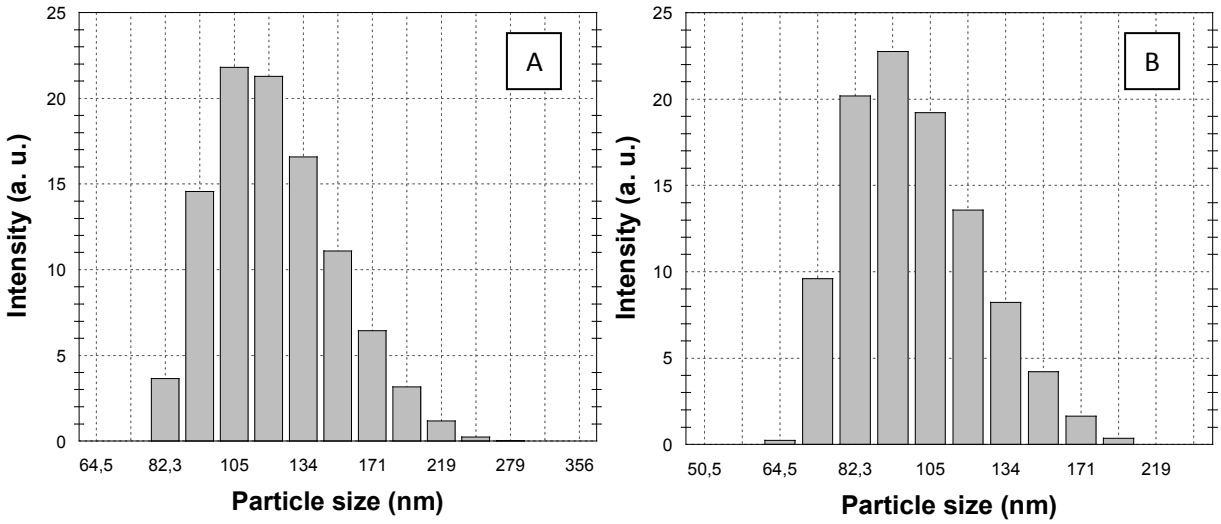

Fig. S 7 – Particle size distributions of Suc-PEG-Chol nanoparticles. (A) Suc-PEG_{2000}-Chol, (B) Suc-PEG_{4000}-Chol.

5. AFM images of Suc-PEG-Chol nanoparticles

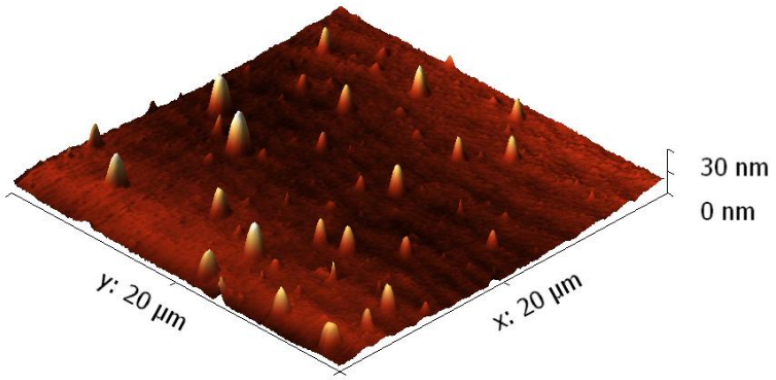

Fig. S 8 - AFM height image of Suc-PEG_{4000}-Chol nanoparticles from a PNPs solution of 0.1mg/mL.

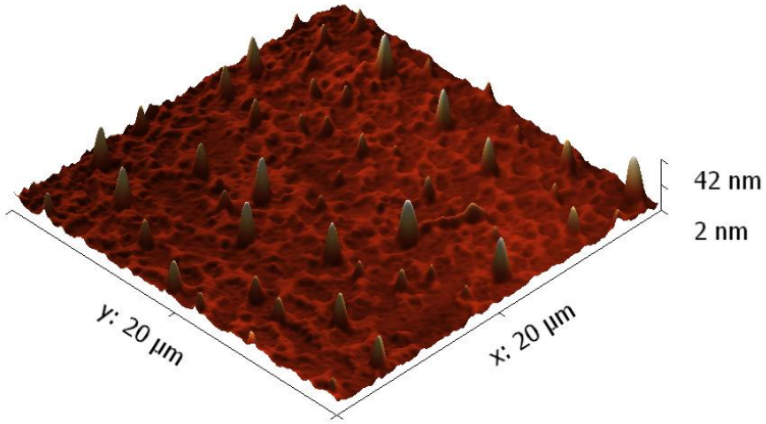

Fig. S 9 - AFM height image of Suc-PEG_{2000}-Chol nanoparticles from a PNPs solution of 0.1mg/mL.

6. ^{1}H-NMR spectrum of Suc-PEG$_{4000}$-Chol (11) in D_2O

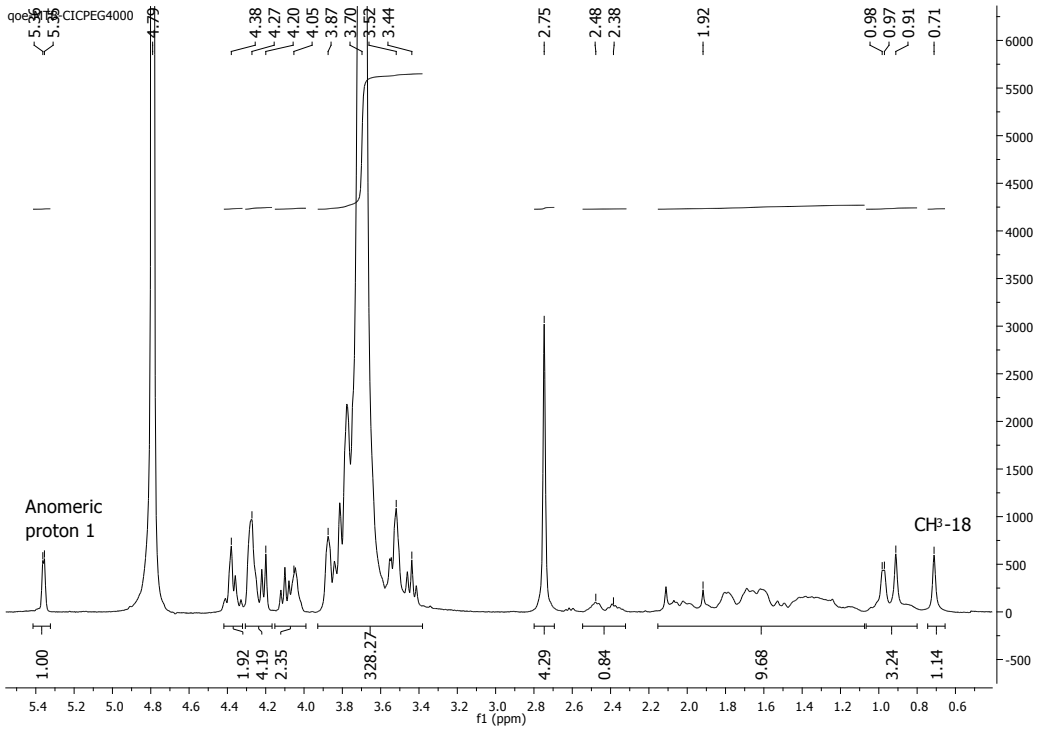

Fig. S 10 - ^{1}H-NMR spectrum of Suc-PEG$_{4000}$-Chol (**11**) in D_2O.

7. ^{1}H-NMR spectrum of 1',2,3,3',4,4',6-Hepta-O-benzyl-6´-O-succinyl-sucrose (2) in $CDCl_3$

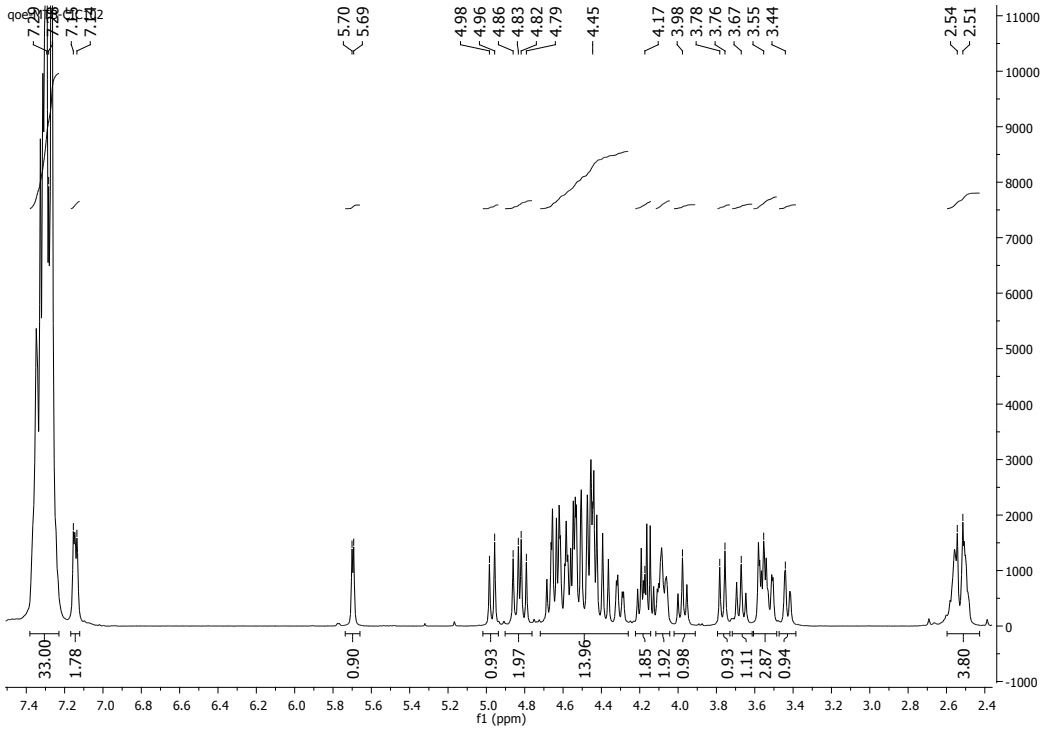

Fig. S 11 - ^{1}H-NMR spectrum of 1',2,3,3',4,4',6-Hepta-O-benzyl-6´-O-succinyl-sucrose (**2**) in $CDCl_3$.

8. ^{1}H-NMR spectrum of Methyl 3α,7α,12α-trihydroxy-5β-cholan-24-ate (3) in $CDCl_3$

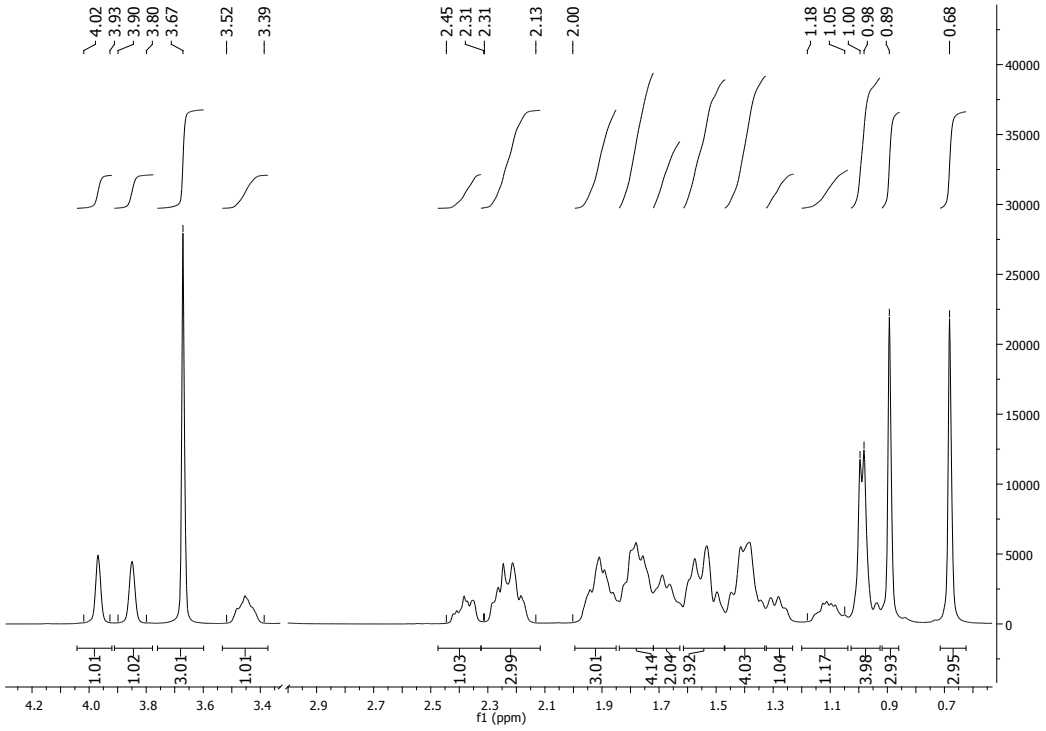

Fig. S 12 - ^{1}H-NMR spectrum of Methyl 3α,7α,12α-trihydroxy-5β-cholan-24-ate (**3**) in $CDCl_3$.

9. ^{1}H-NMR spectrum of Methyl 3α-*O*-benzyl, 7α, 12α-dihydroxy-5β-cholan-24-oate (4) in $CDCl_3$

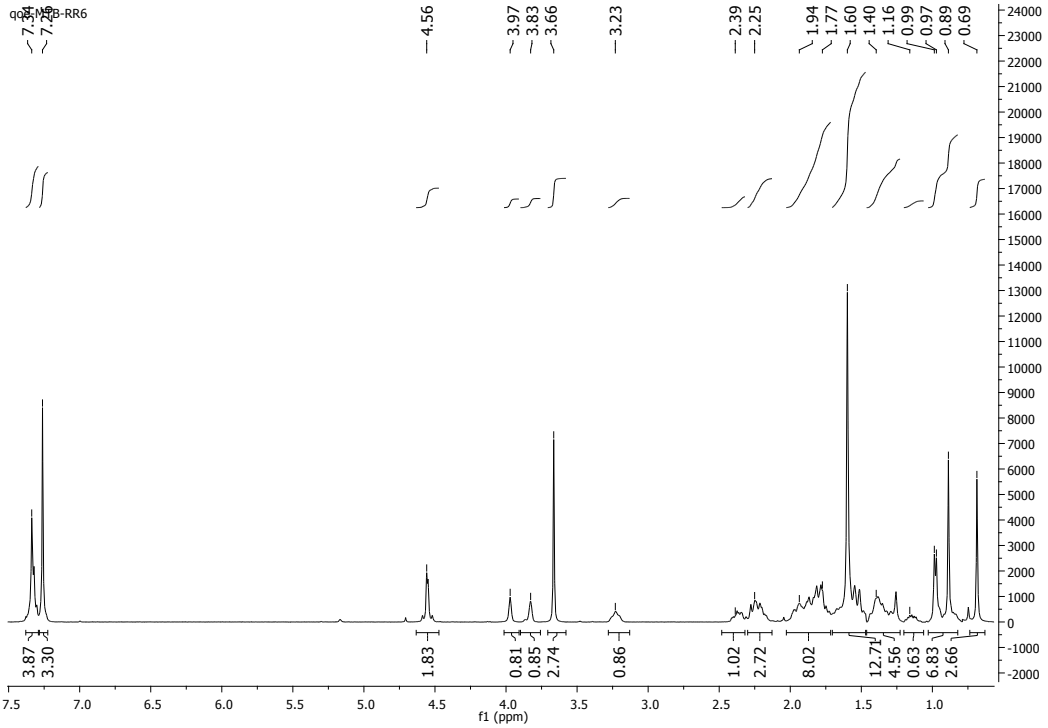

Fig. S 13 - ^{1}H-NMR spectrum of Methyl 3α-*O*-benzyl, 7α, 12α-dihydroxy-5β-cholan-24-oate (**4**) in $CDCl_3$.

10. ^{1}H-NMR spectrum of 3α-*O*-benzyl, 7α, 12α-dihydroxy-5β-cholic acid (5) in $CDCl_3$

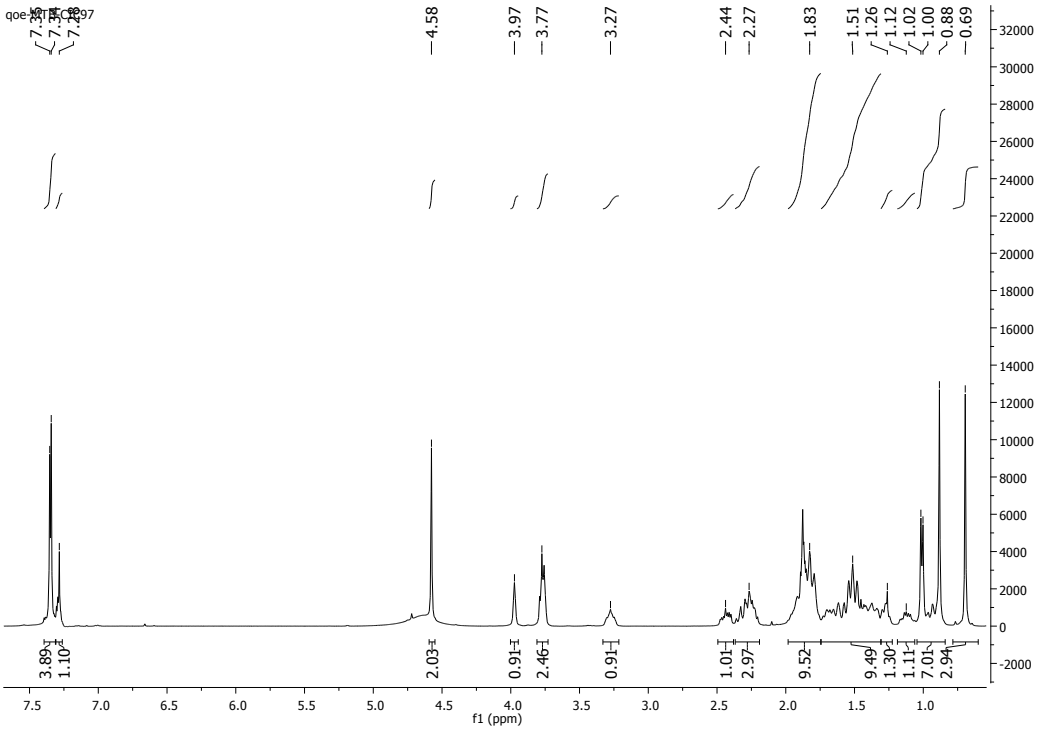

Fig. S 14 - ^{1}H-NMR spectrum of 3α-*O*-benzyl, 7α, 12α-dihydroxy-5β-cholic acid (**5**) in $CDCl_3$.

11. HMQC spectrum of 3α-*O*-benzyl, 7α, 12α-dihydroxy-5β-cholic acid (5) in $CDCl_3$

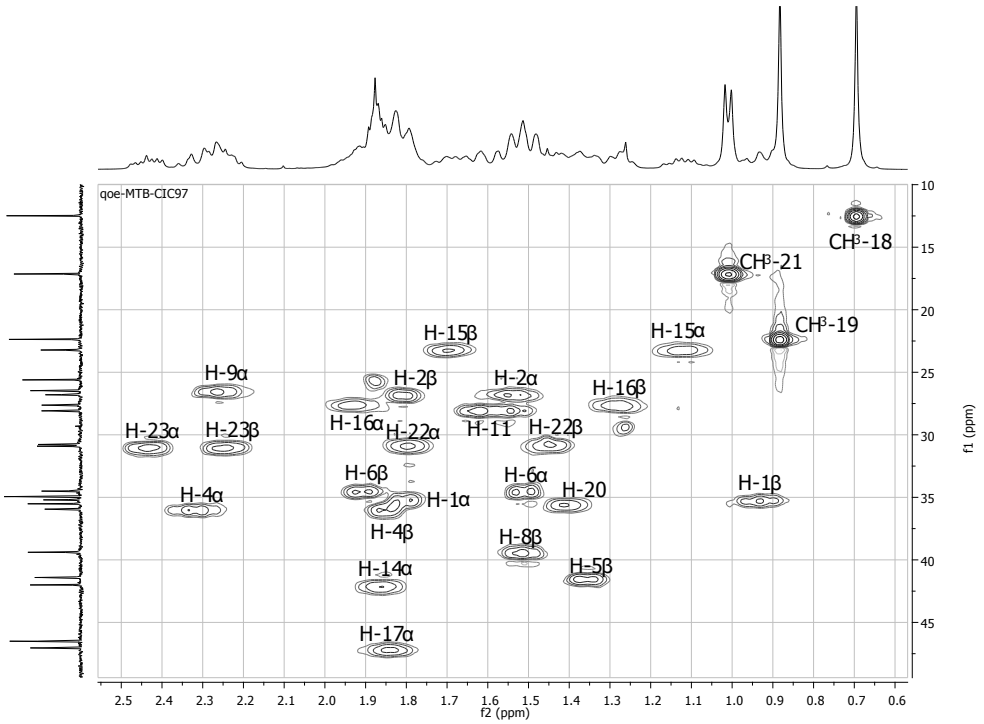

Fig. S 15 - HMQC spectrum of 3α-*O*-benzyl, 7α, 12α-dihydroxy-5β-cholic acid (**5**) in $CDCl_3$.

12. ^{1}H-NMR spectrum of Benzylated Suc-PEG$_{2000}$-OH (6) in CDCl$_3$

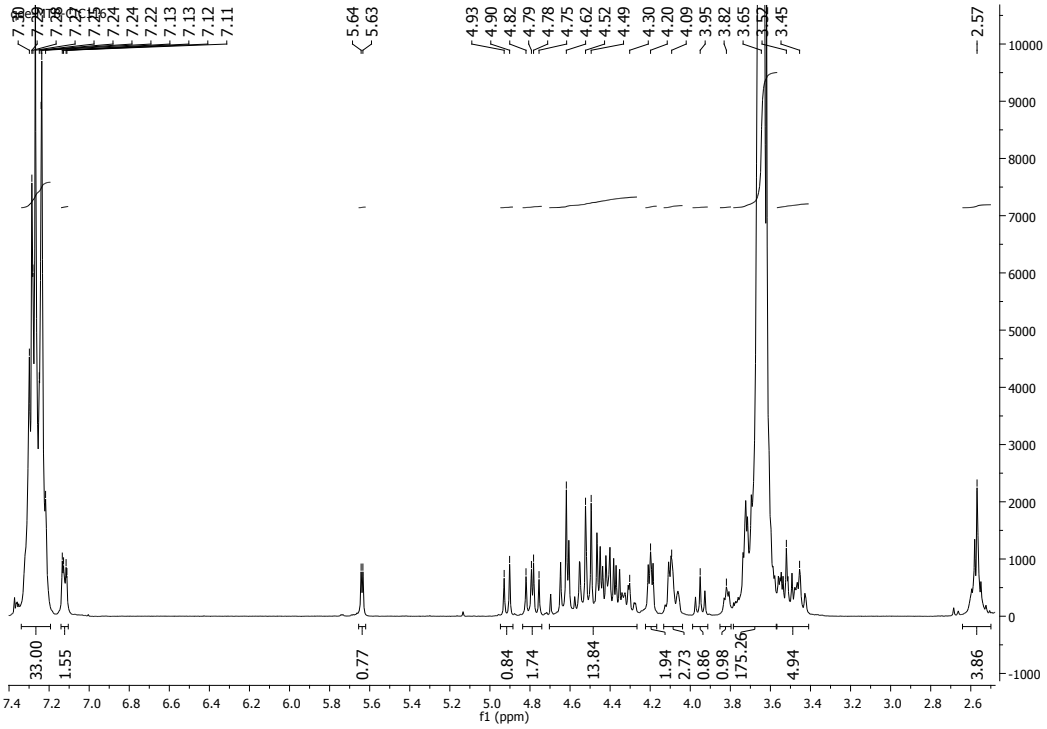

Fig. S 16 - ^{1}H-NMR spectrum of Benzylated Suc-PEG$_{2000}$-OH (**6**) in CDCl$_3$.

13. ^{1}H-NMR spectrum of Benzylated Suc-PEG$_{4000}$-OH (7) in CDCl$_3$

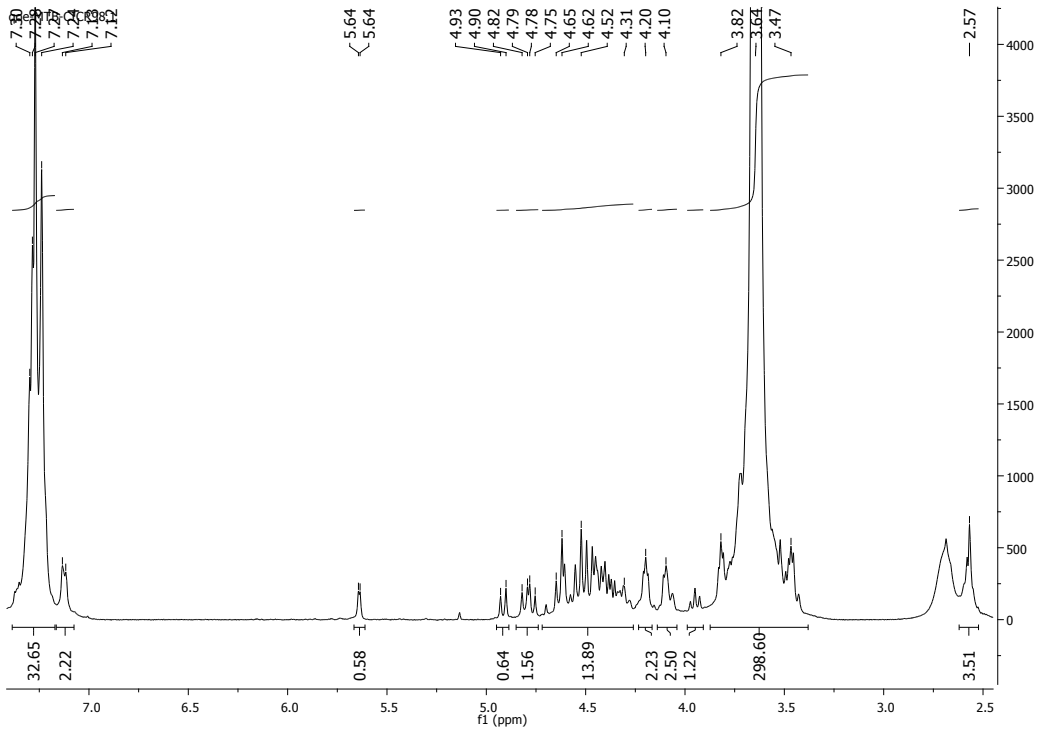

Fig. S 17 - ^{1}H-NMR spectrum of Benzylated Suc-PEG$_{4000}$-OH (**7**) in CDCl$_3$.

14. ^{1}H-NMR spectrum of Benzylated Suc-PEG$_{2000}$-Chol (8) in CDCl$_3$

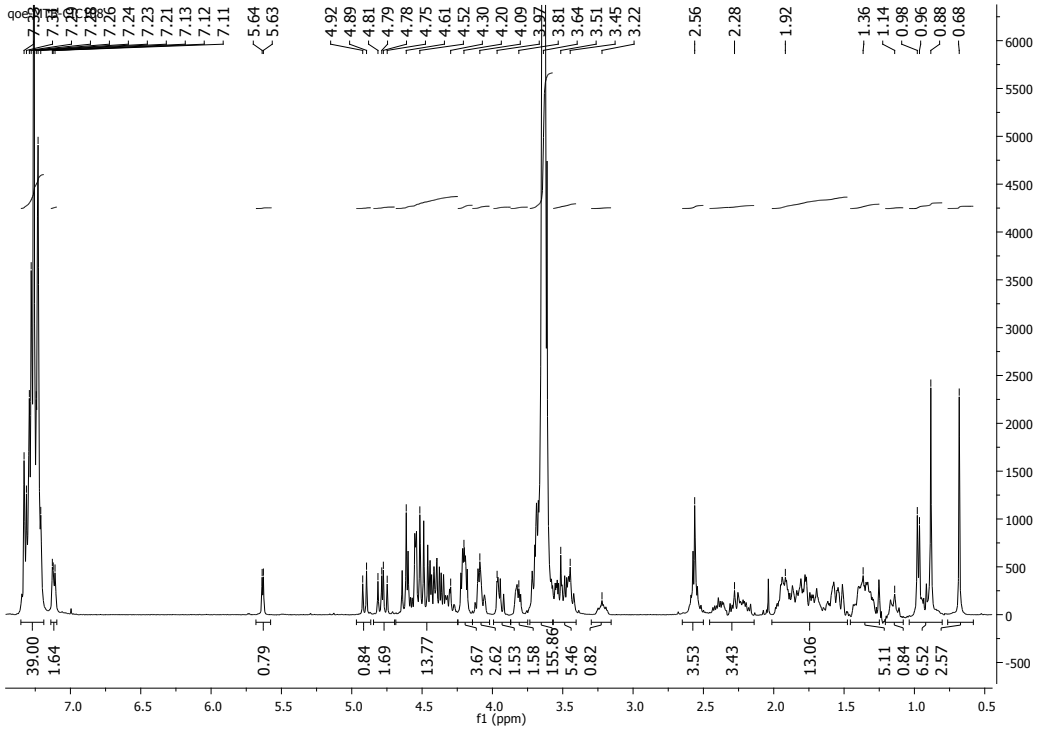

Fig. S 18 - ^{1}H-NMR spectrum of Benzylated Suc-PEG$_{2000}$-Chol (**8**) in CDCl$_3$.

15. ^{1}H-NMR spectrum of Benzylated Suc-PEG$_{4000}$-Chol (9) in CDCl$_3$

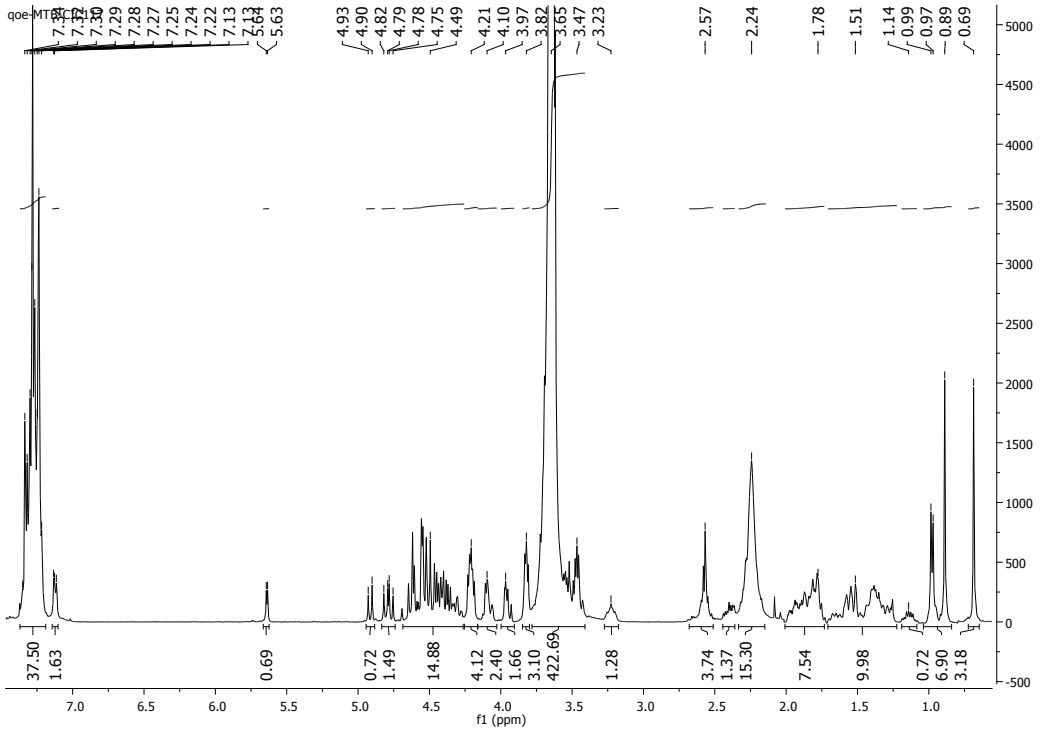

Fig. S 19 - ^{1}H-NMR spectrum of Benzylated Suc-PEG$_{4000}$-Chol (**9**) in CDCl$_3$.

16. ^{1}H-NMR spectrum of Suc-PEG$_{2000}$-Chol (10) in DMSO-*d6*

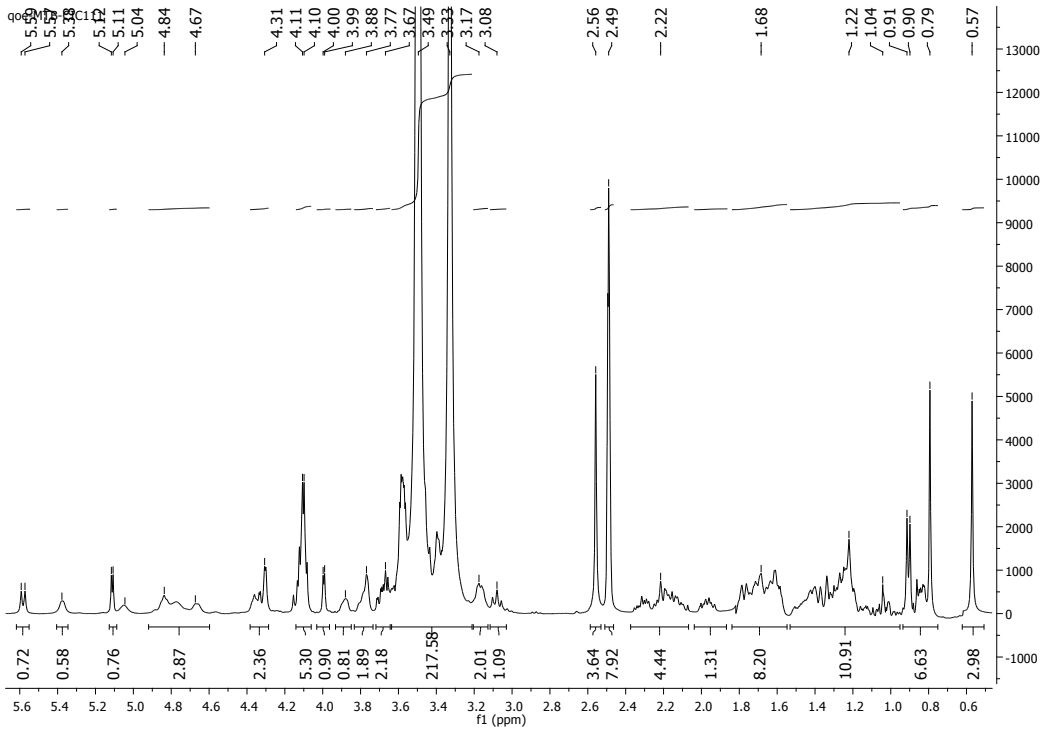

Fig. S 20 - ^{1}H-NMR spectrum of Suc-PEG$_{2000}$-Chol (**10**) in DMSO-*d6*.

17. ^{1}H-NMR spectrum of Suc-PEG$_{4000}$-Chol (11) in DMSO-*d6*

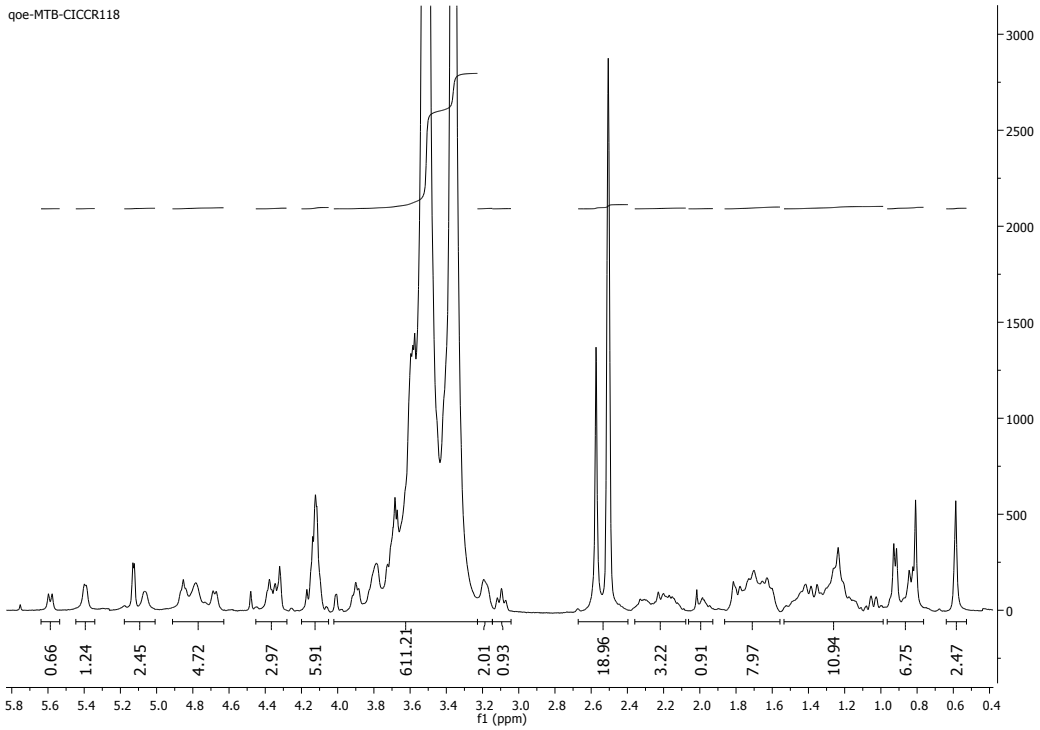

Fig. S 21 - ^{1}H-NMR spectrum of Suc-PEG$_{4000}$-Chol (**11**) in DMSO-*d6*.