Supporting Information

Facile synthesis of linear-dendritic cholesteryl-poly(ε-caprolactone)-b-(L-lysine)$_{G2}$ by thiol-ene and azide-alkyne “click” reactions

Irakli Javakhishvili,*, Wolfgang H. Binder, Susanne Tanner and Søren Hvilsted**

* Technical University of Denmark, Department of Chemical and Biochemical Engineering, Danish Polymer Centre, Building 423, DK-2800 Kgs. Lyngby, Denmark. Tel: +45 4525 2965. E-mail: sh@kt.dtu.dk

** Martin-Luther University Halle-Wittenberg, Faculty of Natural Sciences II / Institute of Chemistry, Lehrstuhl Makromolekulare Chemie, von Danckelmannplatz 4, D-06120 Halle (Saale), Germany; Tel: +49 (0) 345 55 25930.
Supplementary Material (ESI) for Polymer Chemistry
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Fig. S1 $^1$H and HSQC NMR spectra of 3

Fig. S2 $^1$H NMR spectrum of 5
Fig. S3 $^1$H NMR spectrum of 8
**Fig. S4** MALDI-TOF of 3
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Fig. S5 Data of MALDI-TOF and isotopic pattern simulation of the compound 3
Fig. S6 MALDI-TOF of 5
MS, 1\textsuperscript{st} series
(found : 3889.96)

Simulation, 1\textsuperscript{st} series
Simulated : 3889.3680
For n = 22

\[ C_{32}H_{52}O(C_{6}H_{10}O_{2})_{n=22}C_{41}H_{72}O_{13}N_{7}Na \]

MS, 2\textsuperscript{nd} series
(found : 3902.8)

Simulation, 2\textsuperscript{nd} series
Simulated : 3903.401
For n = 23 –minus 1x(Boc)

\[ C_{32}H_{52}O(C_{6}H_{10}O_{2})_{n=23}C_{36}H_{64}O_{11}N_{7}Na \]

MS, 3\textsuperscript{rd} series
(found : 3917.3)

Simulation, 3\textsuperscript{rd} series
Simulated : 3917.4173
For n = 24 –minus 2x(Boc)

\[ C_{32}H_{52}O(C_{6}H_{10}O_{2})_{n=24}C_{31}H_{56}O_{9}N_{7}Na \]

Fig. S7 Data of MALDI-TOF (top) and isotopic pattern simulation (bottom) of the compound 7
Fig. S8 Data of MALDI-TOF (top) and isotopic pattern simulation (bottom) of the compound 8
Simulation, 2nd series
Simulated: 3131.0
For \( n = 19 \) minus 4x(TFA)
\[ \text{C}_{32}\text{H}_{53}\text{OS} (\text{C}_{6}\text{H}_{10}\text{O}_2)_{n=19} \text{C}_{21}\text{H}_{40}\text{O}_5\text{N}_7\text{Li} \]

MS, 2nd series
(found: 3132.426)
Simulation, 2nd series
Simulated: 3130.7
For \( n = 15 \)
\[ \text{C}_{32}\text{H}_{53}\text{OS} (\text{C}_{6}\text{H}_{10}\text{O}_2)_{n=15} \text{C}_{29}\text{H}_{44}\text{O}_{13}\text{N}_7\text{F}_{12}\text{Li} \text{ (C}_{6}\text{H}_{11}\text{O}_2)_{n=25} \text{C}_{9}\text{H}_{16}\text{O}_3\text{N}_3\text{K} \]

MS, 2nd series
(found: 3132.426)
Simulation, 2nd series
Simulated: 3131.0
For \( n = 25 \)

Fig. S9 Data of MALDI-TOF (top) and isotopic pattern simulation (bottom) of the compound 8
MS, 3<sup>rd</sup> series
(found : 3118.572)

Simulation, 3<sup>rd</sup> series
Simulated:
For n = 21 –minus 2x(TFA)
\((C_6H_{11}O_2)n=21C_{25}H_{42}F_6O_9N_7H\)

MS, 4<sup>th</sup> series
(found : 3102.107)

Simulation, 4<sup>th</sup> series
Simulated : 3102.9
For n = 21
\(C_{32}H_{53}OS(C_6H_{10}O_2)n=21C_9H_{16}N_3O_3Li\)

Fig. S10 Data of MALDI-TOF (top) and isotopic pattern simulation (bottom) of the compound 8
Fig. S11 Data of MALDI-TOF (top) and isotopic pattern simulation (bottom) of the compound 8
Simulation, 7th series
Simulated : 3058.8
For n = 24
\( C_5H_7O(C_6H_{10}O_2)_{n=24}C_9H_{16}N_3O_3Na \)

Simulation, 8th series
Simulated : 3048.7
For n = 15 (M-K)^+
\( C_{32}H_{53}OS(C_6H_{10}O_2)_{n=15}C_{27}H_{43}O_{11}N_7F_9K \)

Simulation, 8th series
Simulated : 3048.0
For n = 22 − minus 4x(TFA)
\( C_6H_{11}O_2 \)_{n=22}C_{21}H_{39}O_5N_7Na_2

Fig. S12 Data of MALDI-TOF (top) and isotopic pattern simulation (bottom) of the compound 8