

## Supporting Information

### Facile synthesis of linear-dendritic cholesteryl-poly( $\epsilon$ -caprolactone)-*b*- (L-lysine)<sub>G2</sub> by thiol-ene and azide-alkyne “click” reactions

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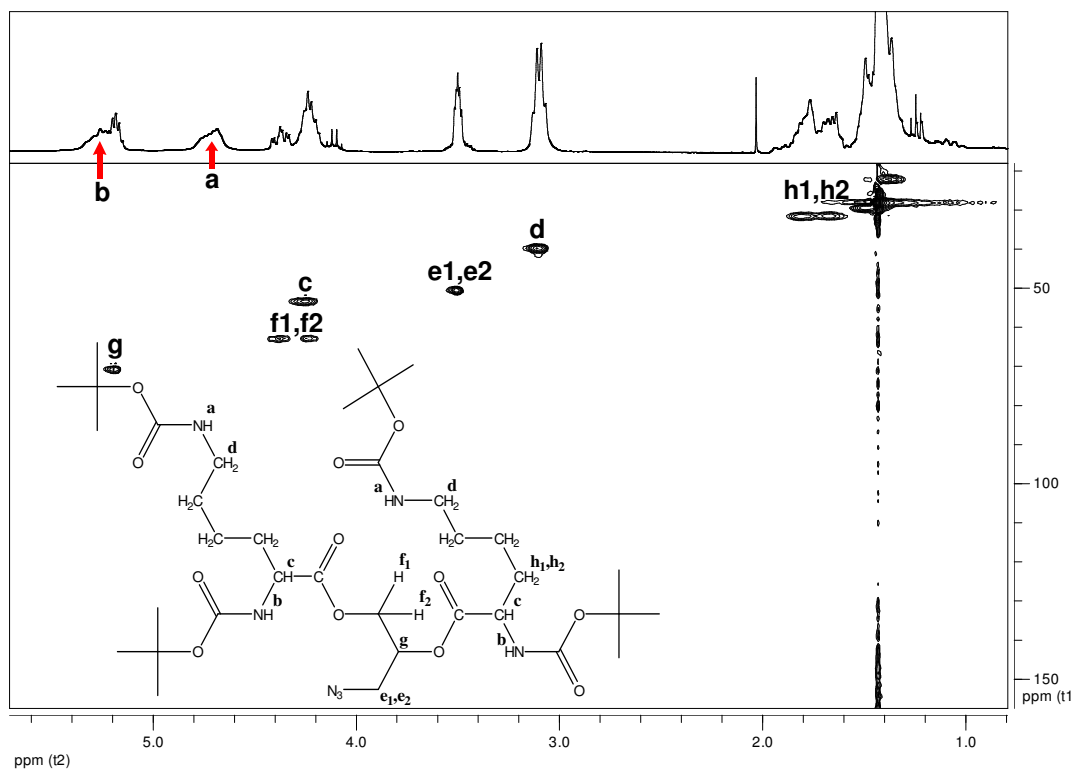


Fig. S1  $^1\text{H}$  and HSQC NMR spectra of **3**

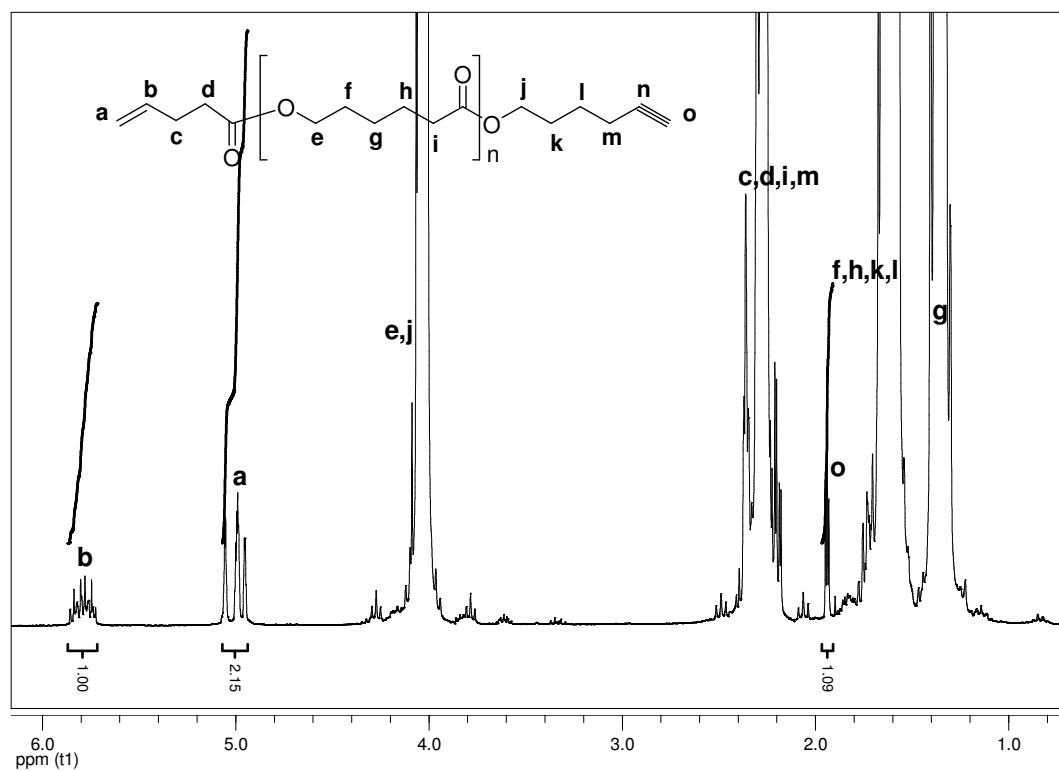


Fig. S2  $^1\text{H}$  NMR spectrum of **5**

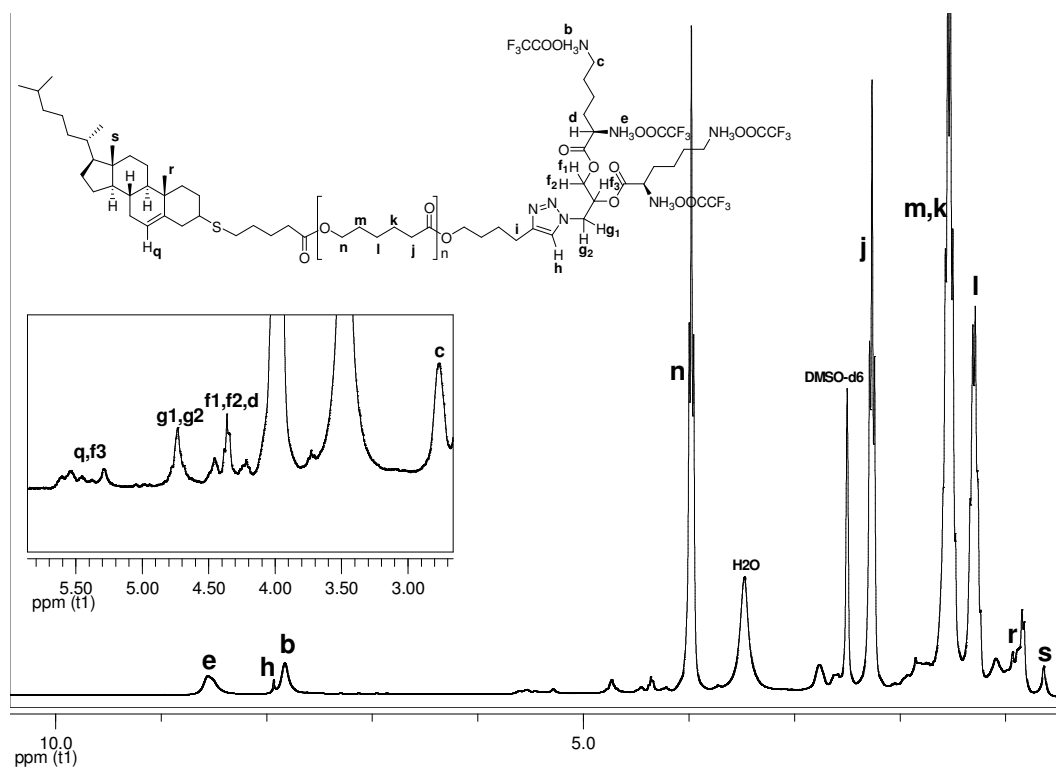


Fig. S3 <sup>1</sup>H NMR spectrum of **8**

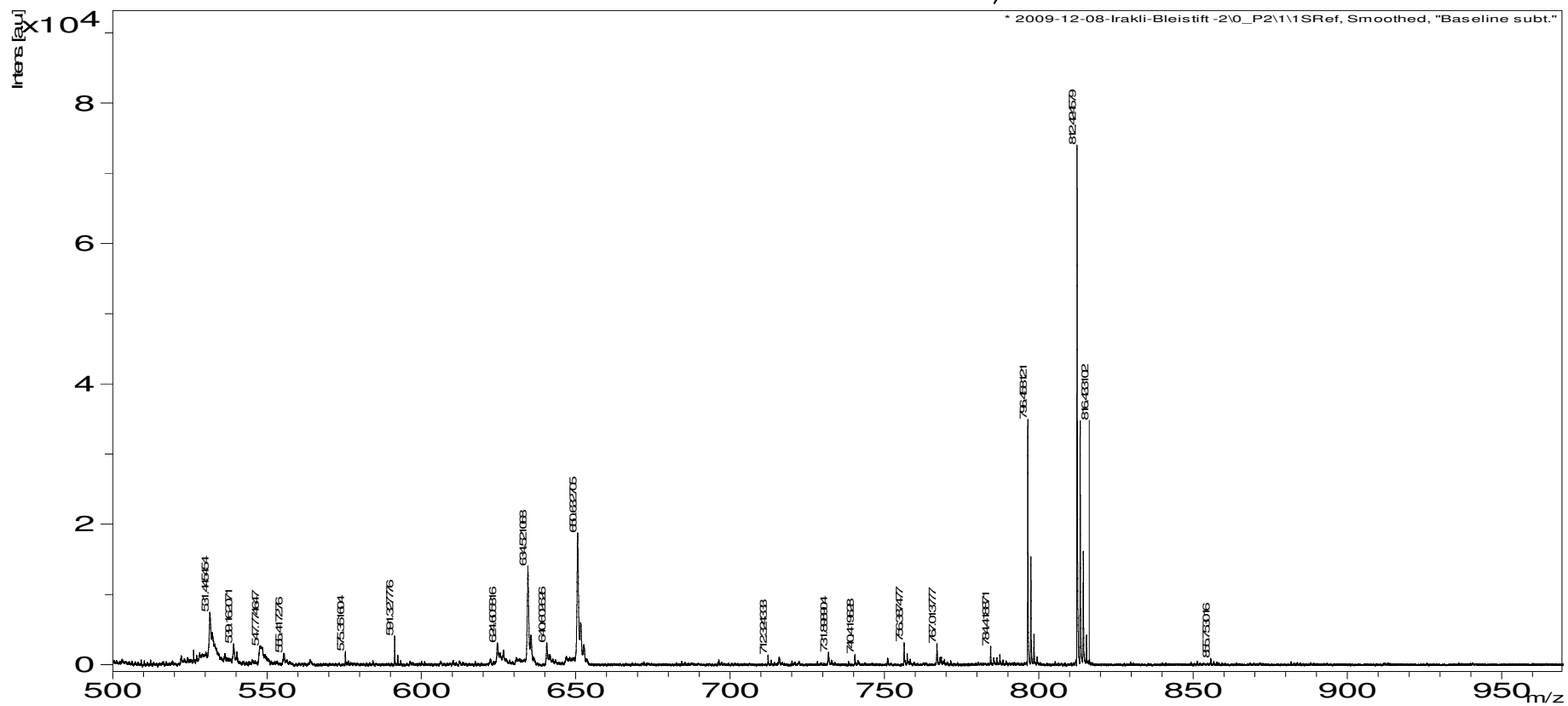
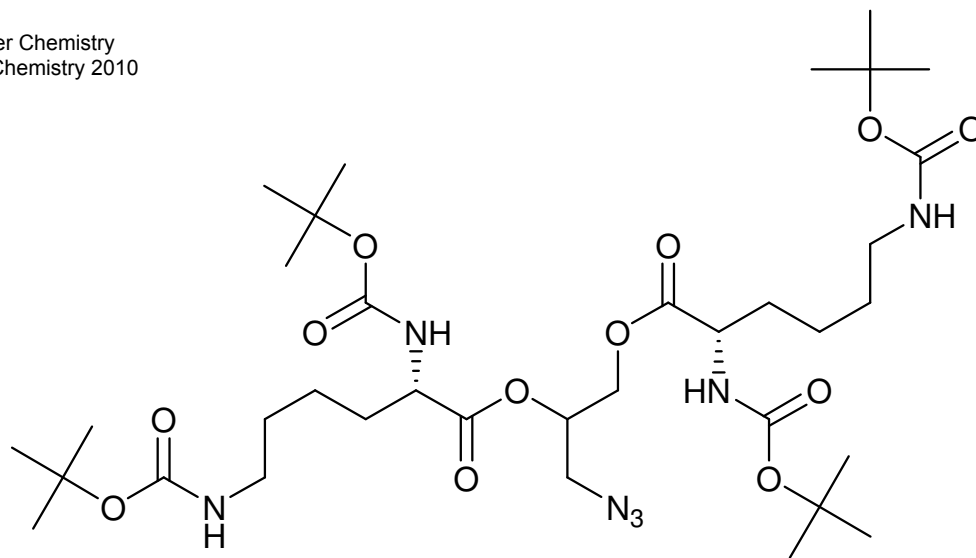
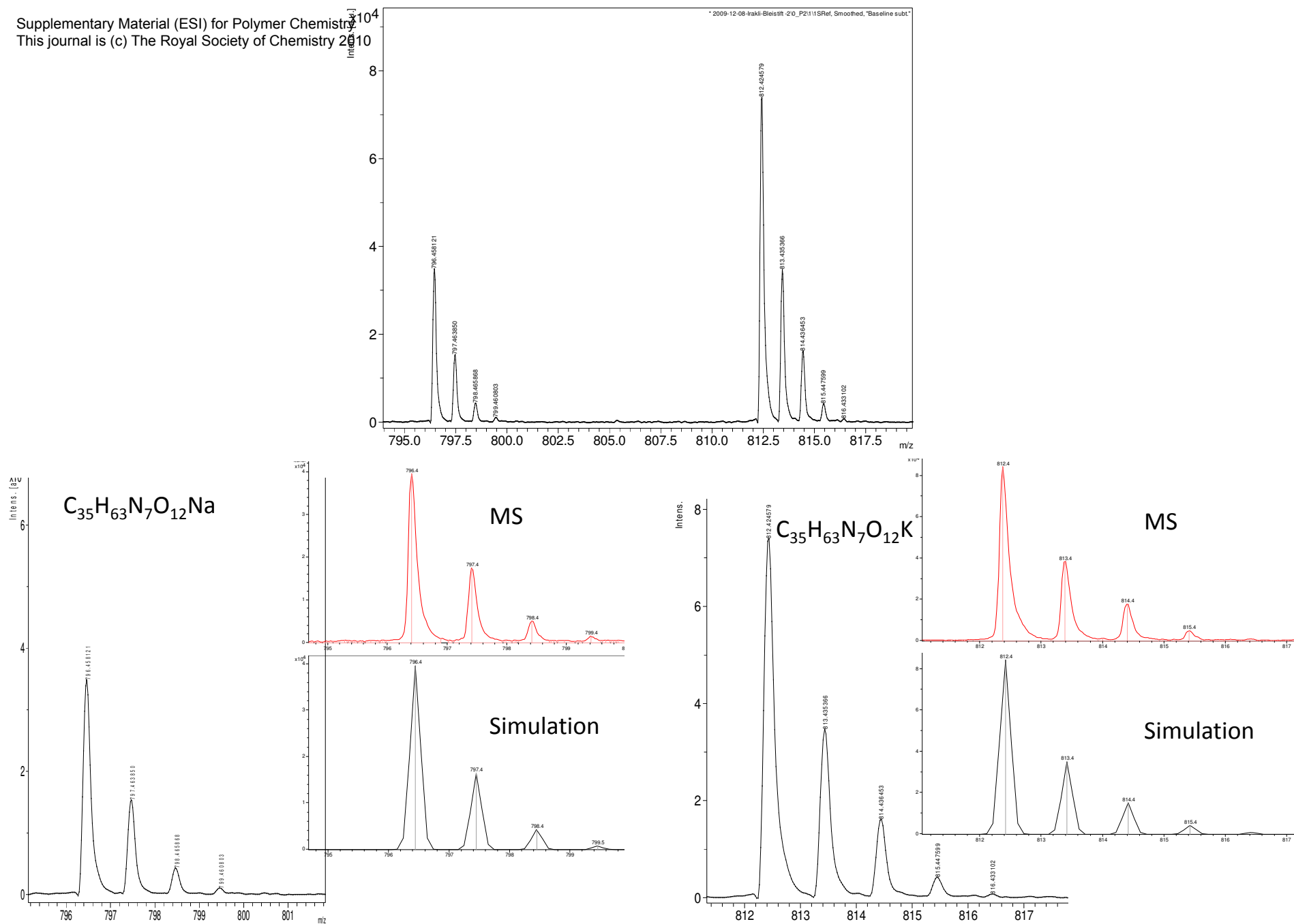


Fig. S4 MALDI-TOF of 3



**Fig. S5** Data of MALDI-TOF and isotopic pattern simulation of the compound **3**

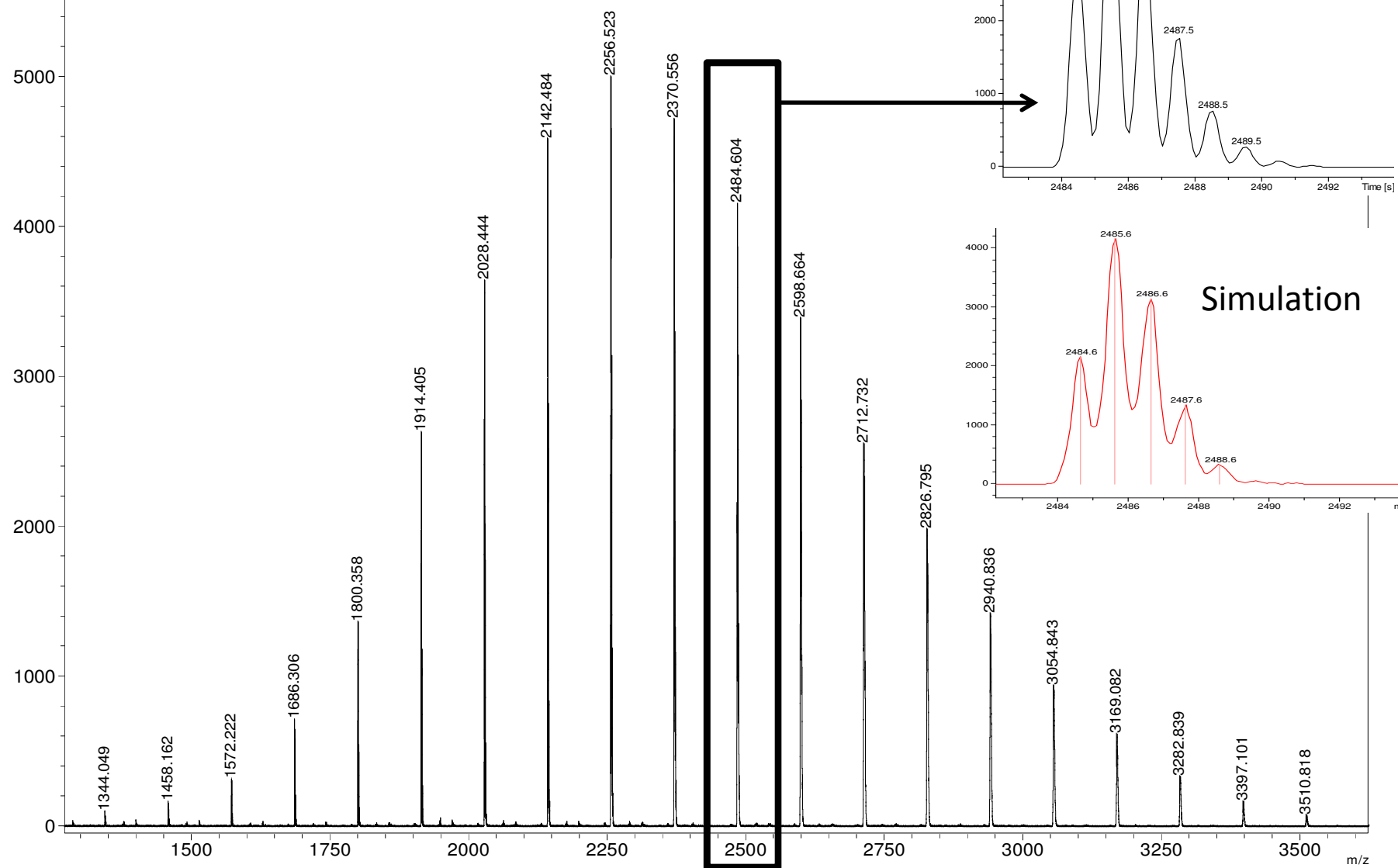
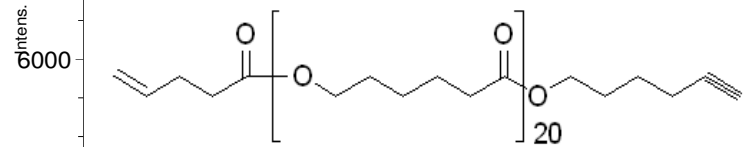
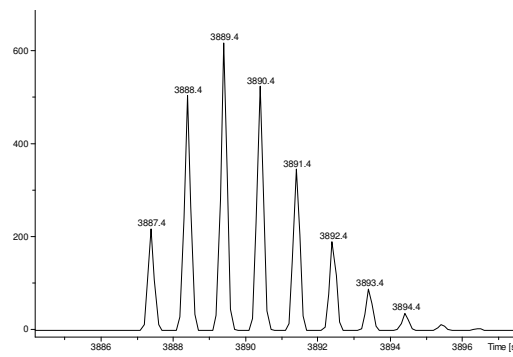
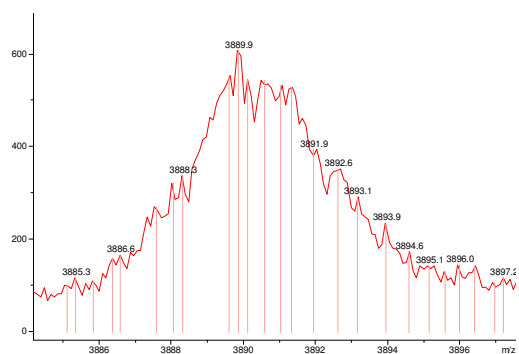


Fig. S6 MALDI-TOF of 5

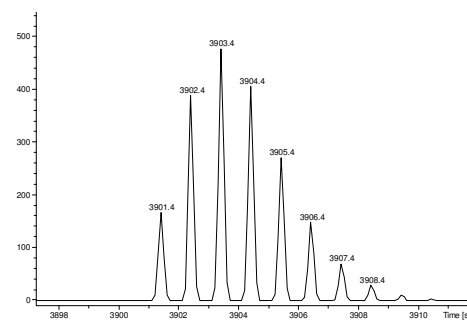
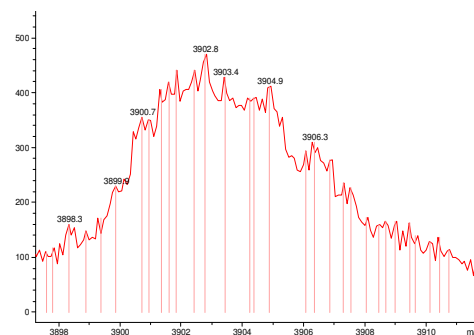
### MS, 1<sup>st</sup> series (found : 3889.96)

Simulation, 1<sup>st</sup> series  
Simulated : 3889.3680  
For n = 22  
 $C_{32}H_{52}O(C_6H_{10}O_2)_{n=22}C_{41}H_{72}O_{13}N_7Na$



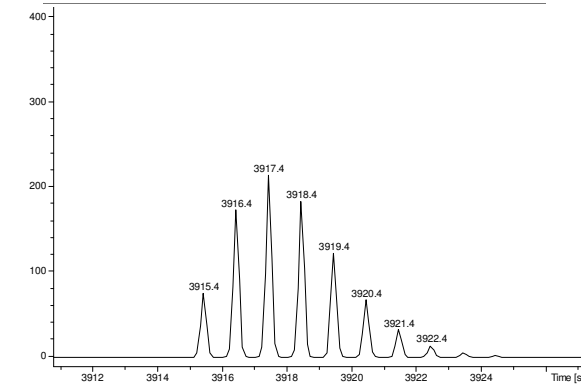
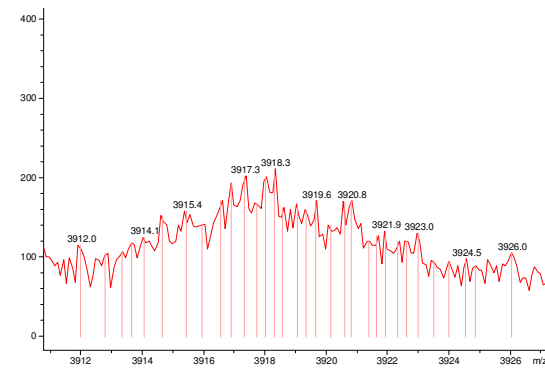
### MS, 2<sup>nd</sup> series (found : 3902.8)

Simulation, 2<sup>nd</sup> series  
Simulated : 3903.401  
For n = 23 –minus 1x(Boc)  
 $C_{32}H_{52}O(C_6H_{10}O_2)_{n=23}C_{36}H_{64}O_{11}N_7Na$



### MS, 3<sup>rd</sup> series (found : 3917.3)

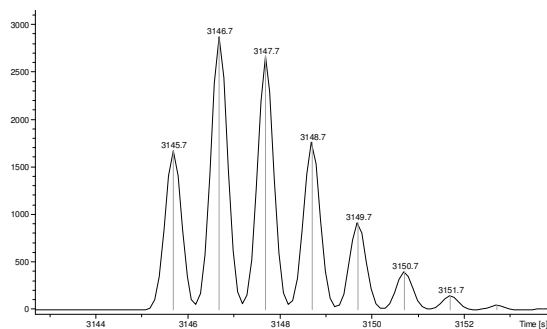
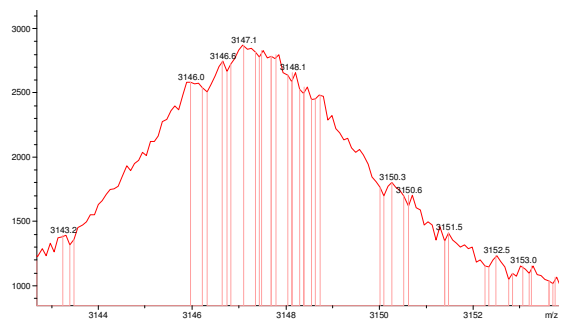
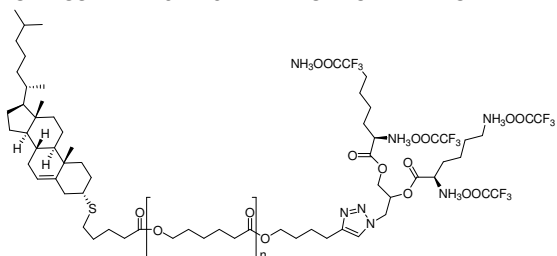
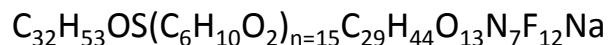
Simulation, 3<sup>rd</sup> series  
Simulated : 3917.4173  
For n = 24 –minus 2x(Boc)  
 $C_{32}H_{52}O(C_6H_{10}O_2)_{n=24}C_{31}H_{56}O_9N_7Na$



**Fig. S7** Data of MALDI-TOF (top) and isotopic pattern simulation (bottom) of the compound **7**

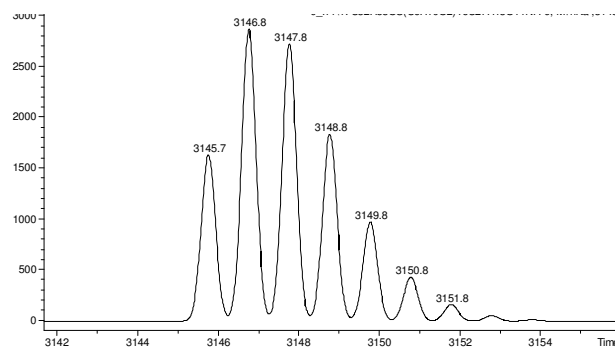
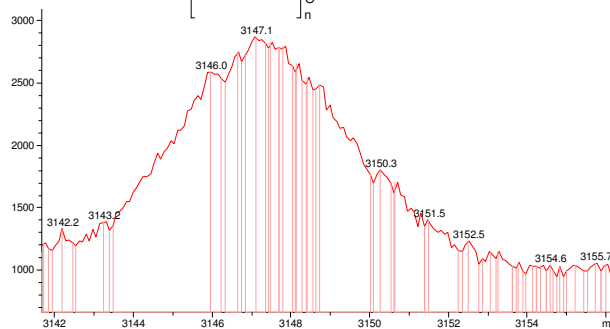
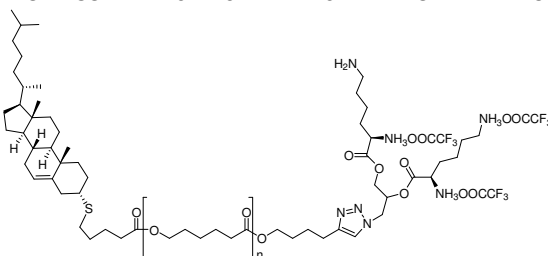
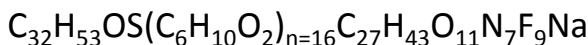
**MS, 1<sup>st</sup> series**  
 (found : 3147.082)

Simulation, 1<sup>st</sup> series  
 Simulated : 3146.7  
 For n = 15



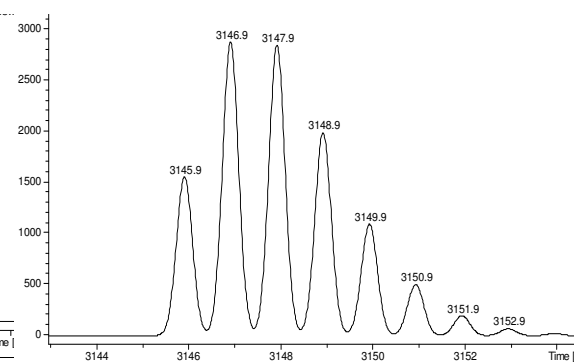
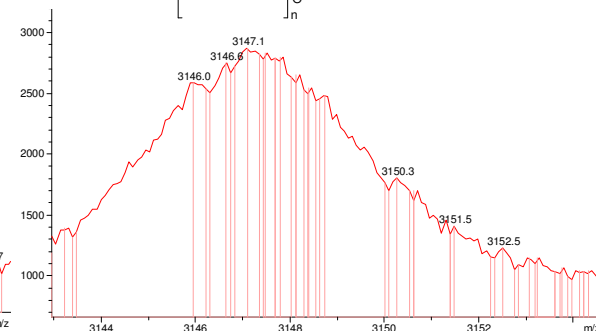
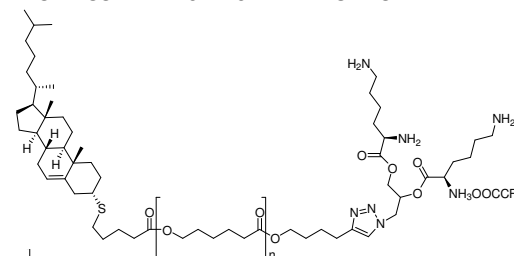
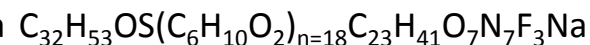
**MS, 1<sup>st</sup> series**  
 (found : 3147.082)

Simulation, 1<sup>st</sup> series  
 Simulated : 3146.8  
 For n = 16 –minus 1x(TFA)



**MS, 1<sup>st</sup> series**  
 (found : 3147.082)

Simulation, 1<sup>st</sup> series  
 Simulated : 3146.9  
 For n = 18 –minus 3x(TFA)

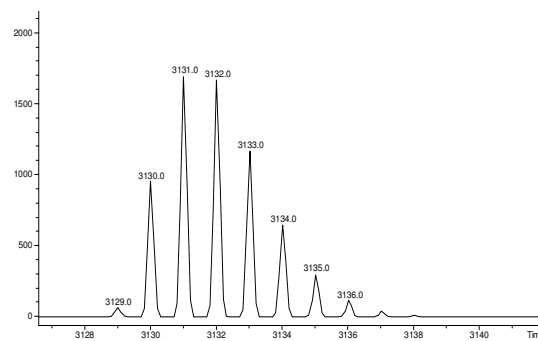
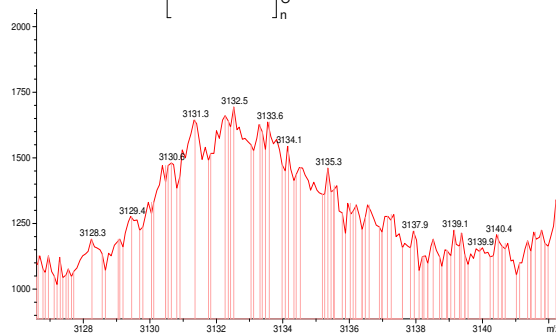
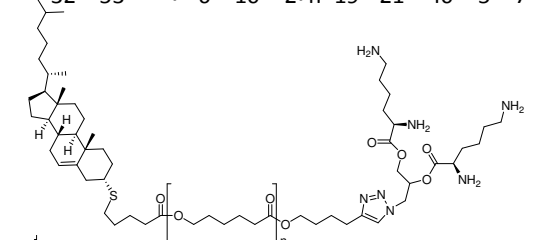
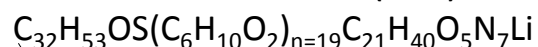


**Fig. S8** Data of MALDI-TOF (top) and isotopic pattern simulation (bottom) of the compound **8**



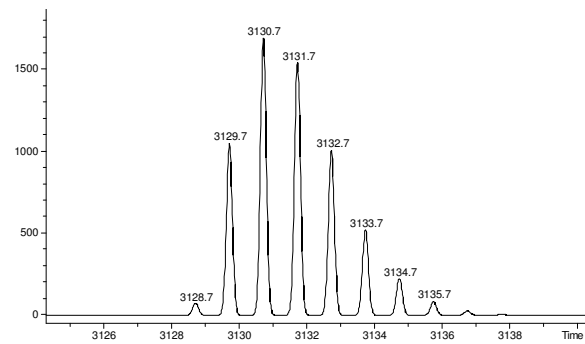
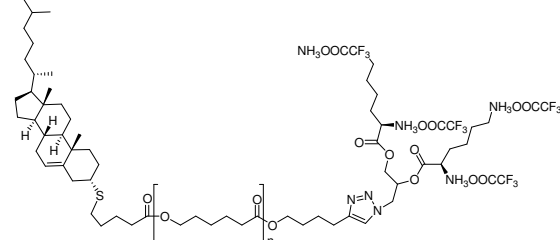
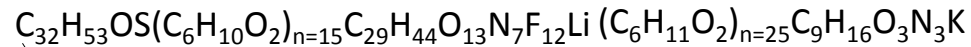
**MS, 2<sup>nd</sup> series**  
 (found : 3132.426)

Simulation, 2<sup>nd</sup> series  
 Simulated : 3131.0  
 For n = 19 –minus 4x(TFA)



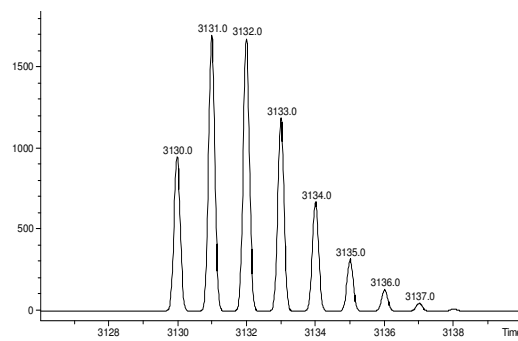
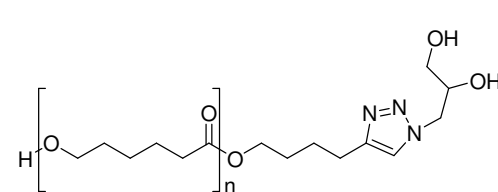
**MS, 2<sup>nd</sup> series**  
 (found : 3132.426)

Simulation, 2<sup>nd</sup> series  
 Simulated : 3130.7  
 For n = 15



**MS, 2<sup>nd</sup> series**  
 (found : 3132.426)

Simulation, 2<sup>nd</sup> series  
 Simulated : 3131.0  
 For n = 25



**Fig. S9** Data of MALDI-TOF (top) and isotopic pattern simulation (bottom) of the compound **8**

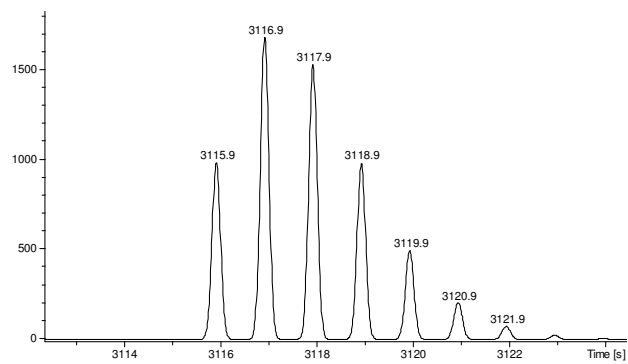
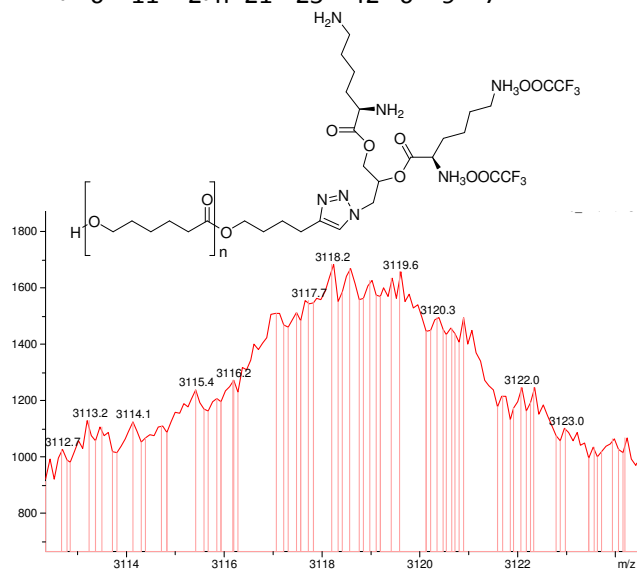
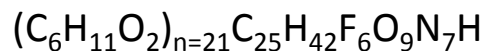
### MS, 3<sup>rd</sup> series

(found : 3118.572)

Simulation, 3<sup>rd</sup> series

Simulated :

For n = 21 –minus 2x(TFA)



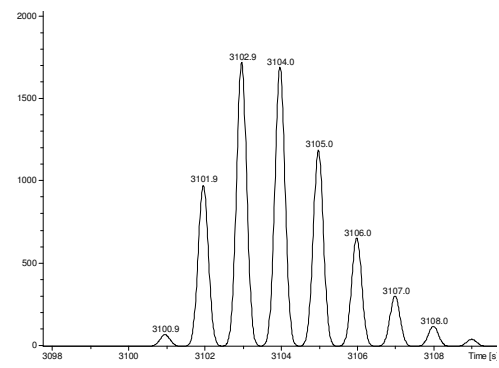
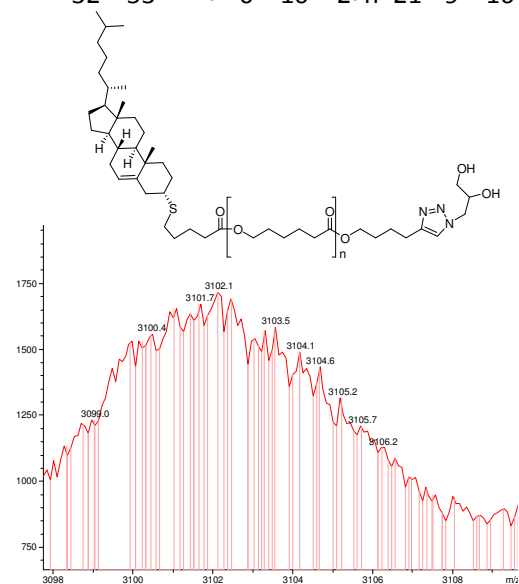
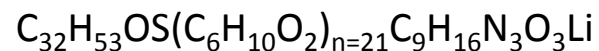
### MS, 4<sup>th</sup> series

(found : 3102.107)

Simulation, 4<sup>th</sup> series

Simulated : 3102.9

For n = 21



**Fig. S10** Data of MALDI-TOF (top) and isotopic pattern simulation (bottom) of the compound **8**

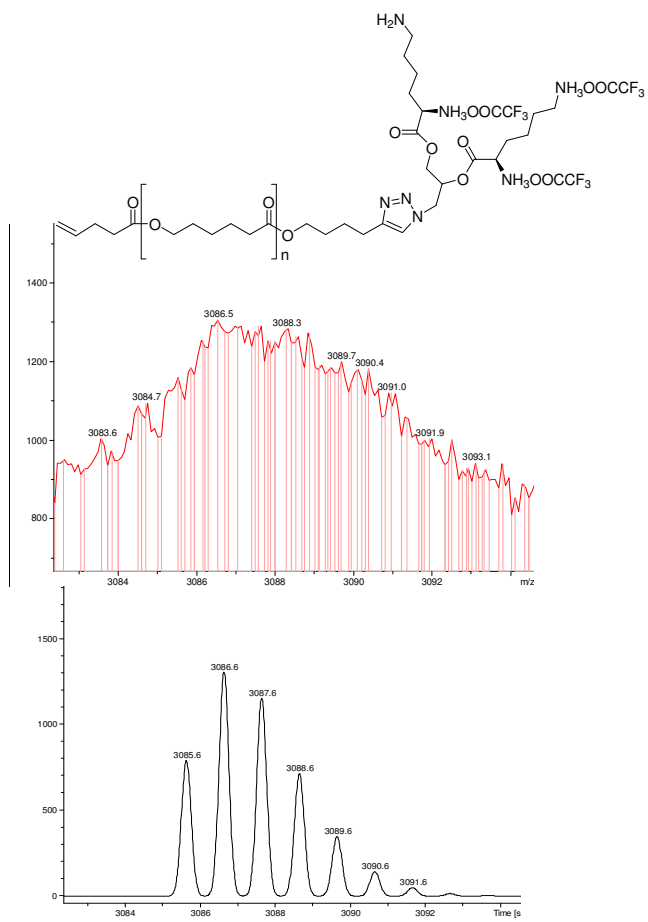
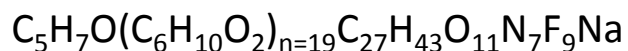
### MS, 5<sup>th</sup> series

(found : 3087.556)

Simulation, 5<sup>th</sup> series

Simulated : 3086.6

For n = 19 –minus 1x(TFA)-minus (Chol+Thiol)



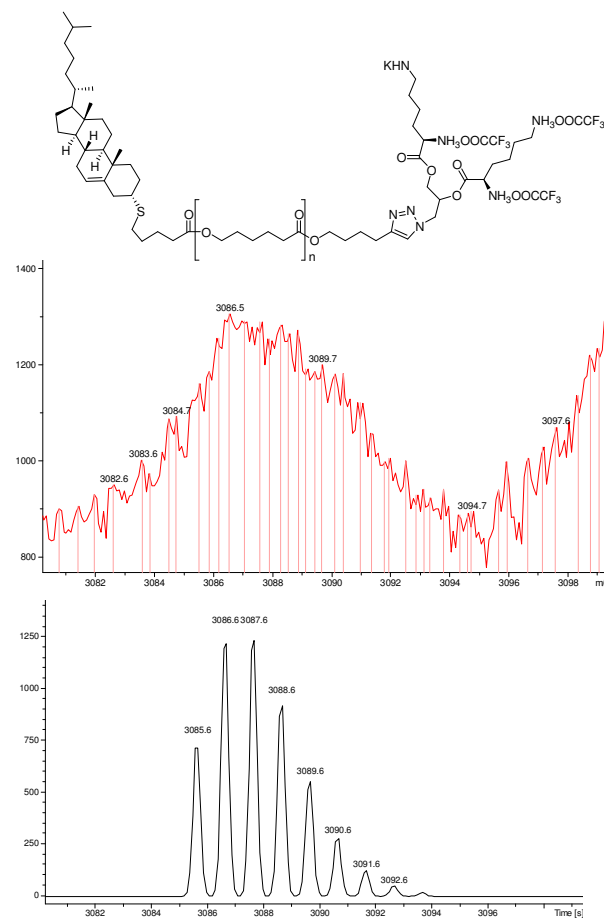
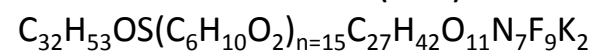
### MS, 5<sup>th</sup> series

(found : 3087.556)

Simulation, 5<sup>th</sup> series

Simulated : 3086.6

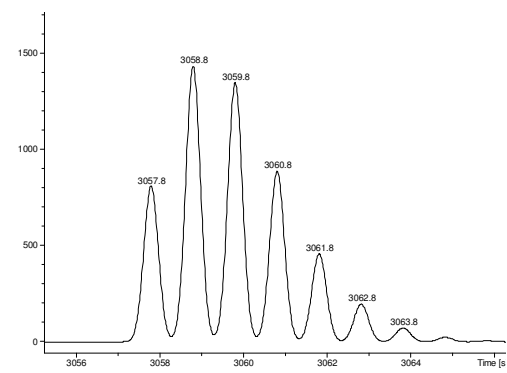
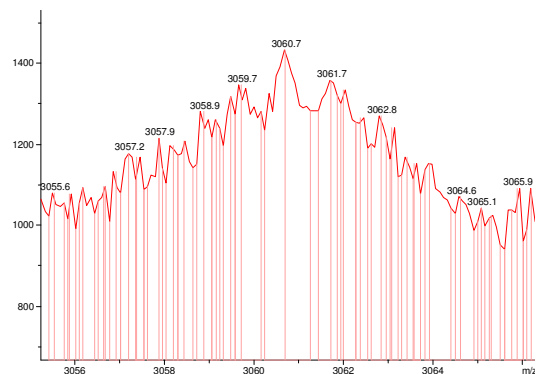
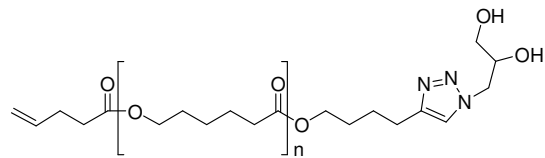
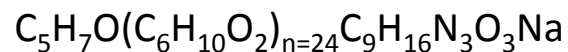
For n = 15 –minus 1x(TFA)



**Fig. S11** Data of MALDI-TOF (top) and isotopic pattern simulation (bottom) of the compound **8**

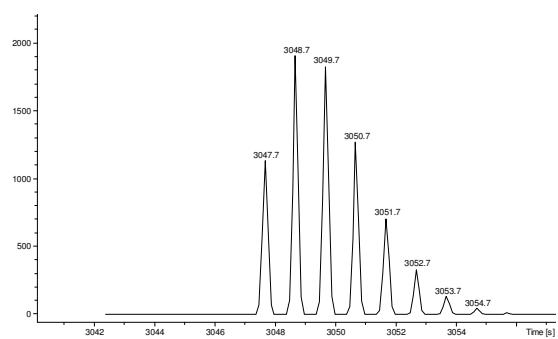
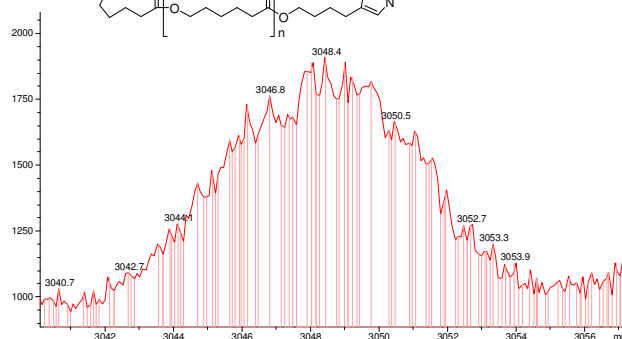
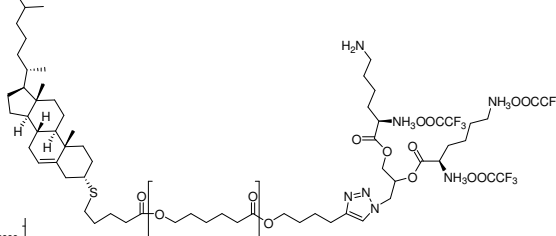
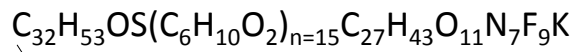
**MS, 7<sup>th</sup> series**  
(found : 3060.587)

Simulation, 7<sup>th</sup> series  
Simulated : 3058.8  
For n = 24



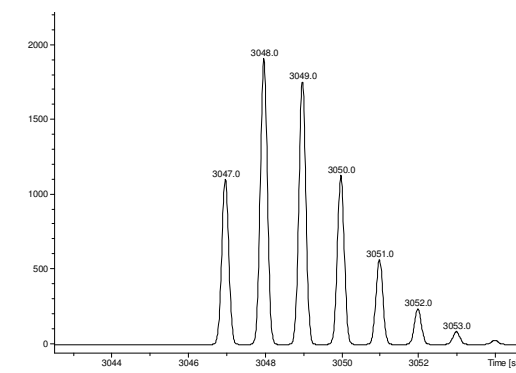
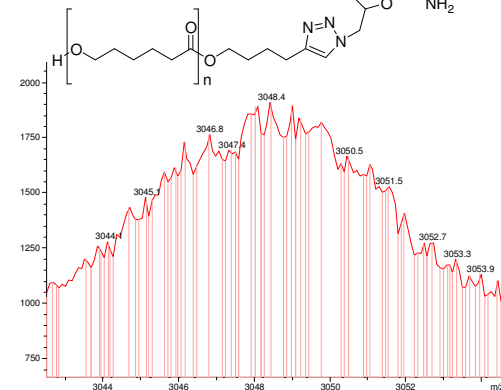
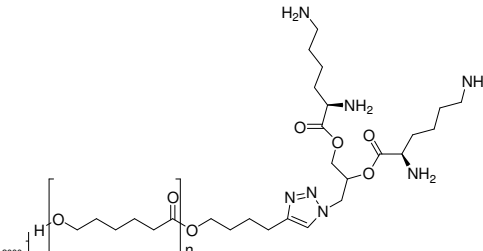
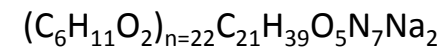
**MS, 8<sup>th</sup> series**  
(found : 3048.920)

Simulation, 8<sup>th</sup> series  
Simulated : 3048.7  
For n = 15 (M-K)<sup>+</sup>



**MS, 8<sup>th</sup> series**  
(found : 3048.920)

Simulation, 8<sup>th</sup> series  
Simulated : 3048.0  
For n = 22 –minus 4x(TFA)



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