

# Synthesis and characterization of perfluoro-*tert*-butyl semifluorinated amphiphilic polymers and their potential application in hydrophobic drug delivery.

Sarah Decato,<sup>a</sup> Troy Bemis,<sup>a</sup> Eric Madsen<sup>a</sup> and Sandro Mecozzi<sup>b</sup>

## Supporting Information

### Table of Contents

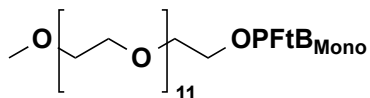
<sup>1</sup> H-NMR spectrum for mPEG <sub>550</sub> -OMs.	Page 3
<sup>1</sup> H-NMR spectrum for mPEG <sub>550</sub> -OPFtB <sub>Mono</sub>	Page 4
<sup>19</sup> F-NMR spectrum for mPEG <sub>550</sub> -OPFtB <sub>Mono</sub>	Page 5
MS spectrum and HPLC trace for mPEG <sub>550</sub> -OPFtB <sub>Mono</sub>	Page 6
<sup>1</sup> H-NMR spectrum for mPEG <sub>1k</sub> -OPFtB <sub>Mono</sub>	Page 7
<sup>19</sup> F-NMR spectrum for mPEG <sub>1k</sub> -OPFtB <sub>Mono</sub>	Page 8
MS spectrum and HPLC trace for mPEG <sub>1k</sub> -OPFtB <sub>Mono</sub>	Page 9
<sup>1</sup> H-NMR spectrum for mPEG <sub>2k</sub> -OPFtB <sub>Mono</sub>	Page 10
<sup>19</sup> F-NMR spectrum for mPEG <sub>2k</sub> -OPFtB <sub>Mono</sub>	Page 11
MS spectrum and HPLC trace for mPEG <sub>2k</sub> -OPFtB <sub>Mono</sub>	Page 12
<sup>1</sup> H-NMR spectrum for mPEG <sub>1k</sub> -OPFtB <sub>Tri</sub>	Page 13
<sup>19</sup> F-NMR spectrum for mPEG <sub>1k</sub> -OPFtB <sub>Tri</sub>	Page 14
MS spectrum and HPLC trace for mPEG <sub>1k</sub> -OPFtB <sub>Tri</sub>	Page 15
<sup>1</sup> H-NMR spectrum for mPEG <sub>2k</sub> -OPFtB <sub>Tri</sub>	Page 16
<sup>19</sup> F-NMR spectrum for mPEG <sub>2k</sub> -OPFtB <sub>Tri</sub>	Page 17
MS spectrum and HPLC trace for mPEG <sub>2k</sub> -OPFtB <sub>Tri</sub>	Page 18

<sup>1</sup> H-NMR spectrum for compound <b>2</b>	Page 19
<sup>13</sup> C-NMR spectrum for compound <b>2</b>	Page 20
<sup>1</sup> H-NMR spectrum for compound <b>3</b>	Page 21
<sup>13</sup> C-NMR spectrum for compound <b>3</b>	Page 22
<sup>19</sup> F-NMR spectrum for compound <b>3</b>	Page 23
Enhanced contrast TEM image for micelles formed by mPEG <sub>1k</sub> -OPFtB <sub>Tri</sub>	Page 24
T <sub>1</sub> and T <sub>2</sub> relaxation curves for mPEG <sub>1k</sub> -OPFtB <sub>Tri</sub> and mPEG <sub>2k</sub> -OPFtB <sub>Tri</sub>	Page 25

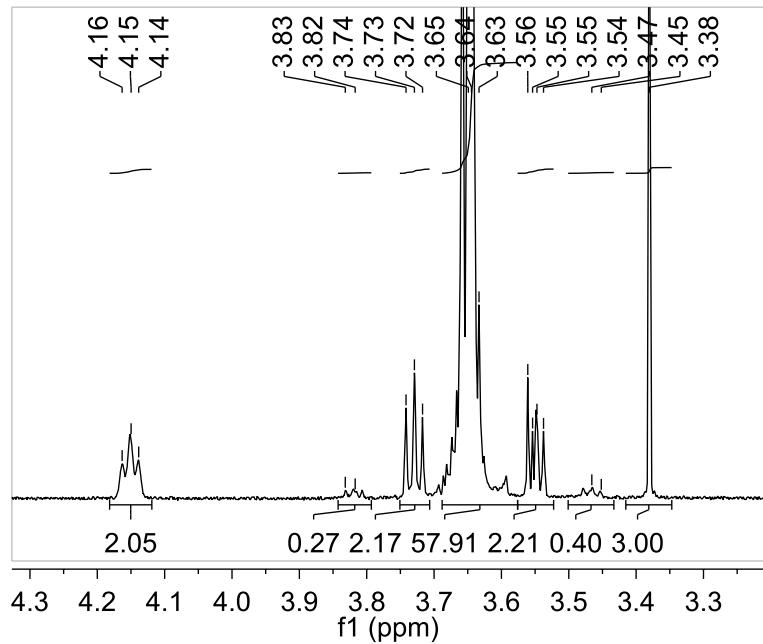


# <sup>1</sup>H-NMR (CDCl<sub>3</sub>, 400 MHz)

PROTON  
sed-l-19-lyop\_25May2011



mPEG<sub>550</sub>-OPFtB<sub>Mono</sub>



4.16  
4.15  
4.14  
3.83  
3.82  
3.74  
3.73  
3.72  
3.65  
3.64  
3.63  
3.56  
3.55  
3.55  
3.54  
3.47  
3.45  
3.38  
1.61

4.3 4.2 4.1 4.0 3.9 3.8 3.7 3.6 3.5 3.4 3.3  
f1 (ppm)

CHCl<sub>3</sub>

H<sub>2</sub>O

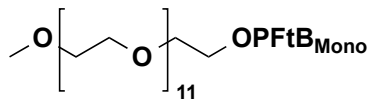
TMS

2.05 0.27 2.17 57.91 2.21 0.40 3.00 15.83

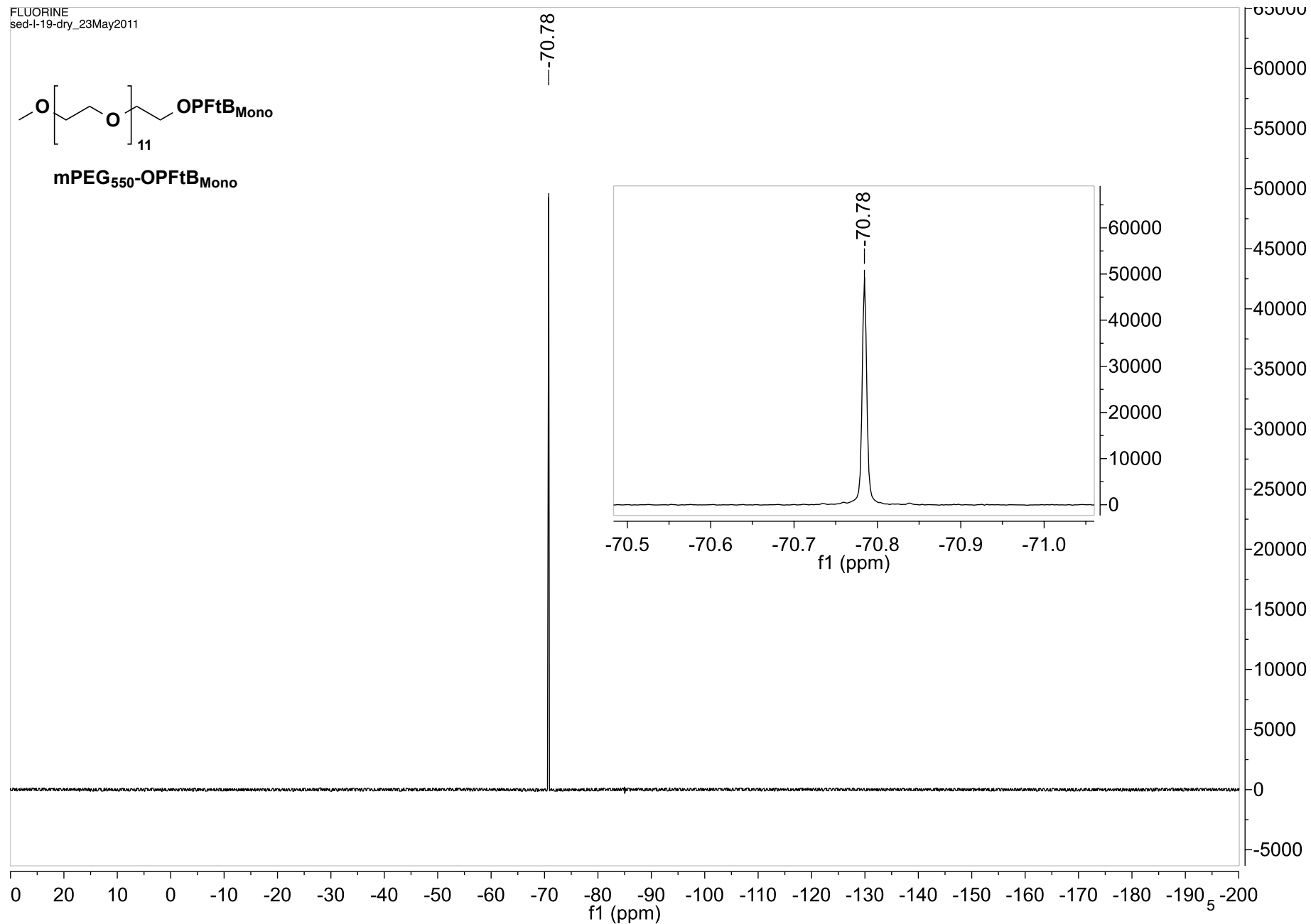
13 12 11 10 9 8 7 6 5 4 3 2 1 0 -1  
f1 (ppm)

# $^{19}\text{F}$ -NMR ( $\text{CDCl}_3$ , 400 MHz)

FLUORINE  
sed-l-19-dry\_23May2011



mPEG<sub>550</sub>-OPFtB<sub>Mono</sub>

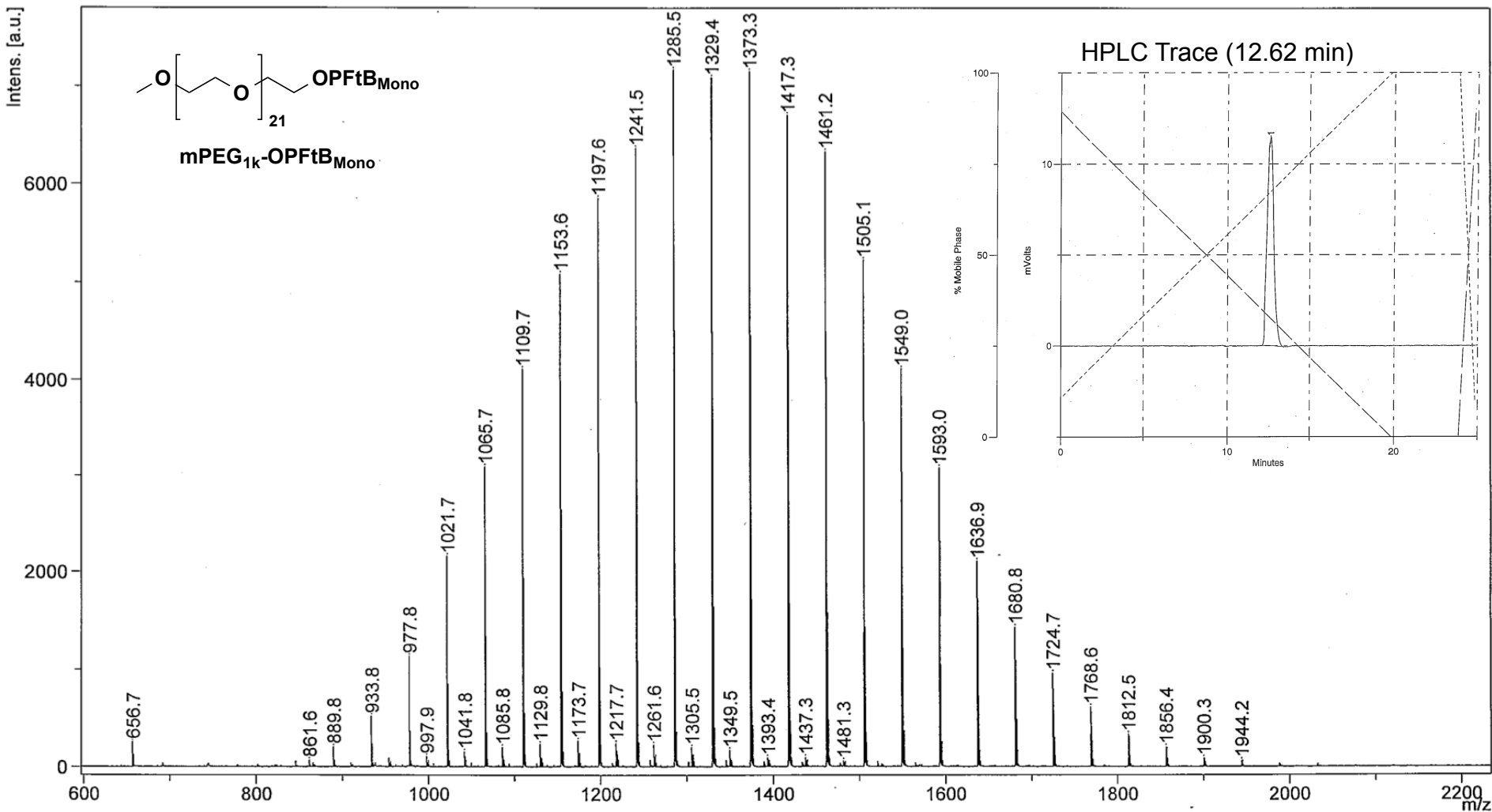








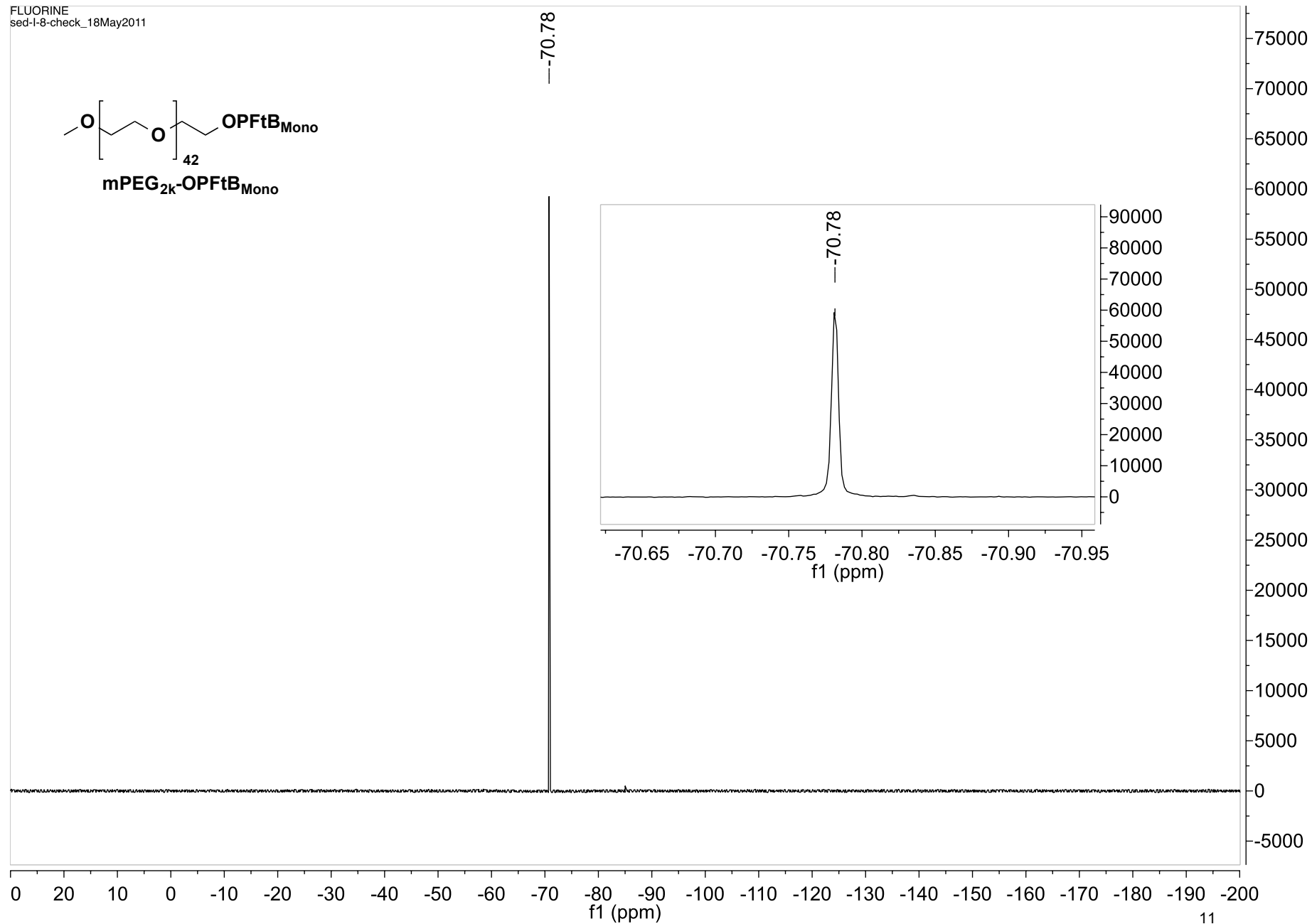
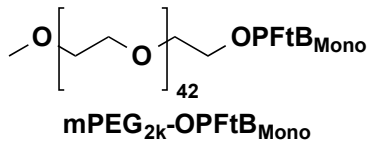






$^{19}\text{F}$ -NMR ( $\text{CDCl}_3$ , 400 MHz)

FLUORINE  
sed-l-8-check\_18May2011





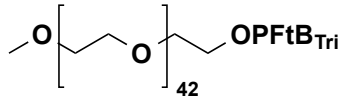




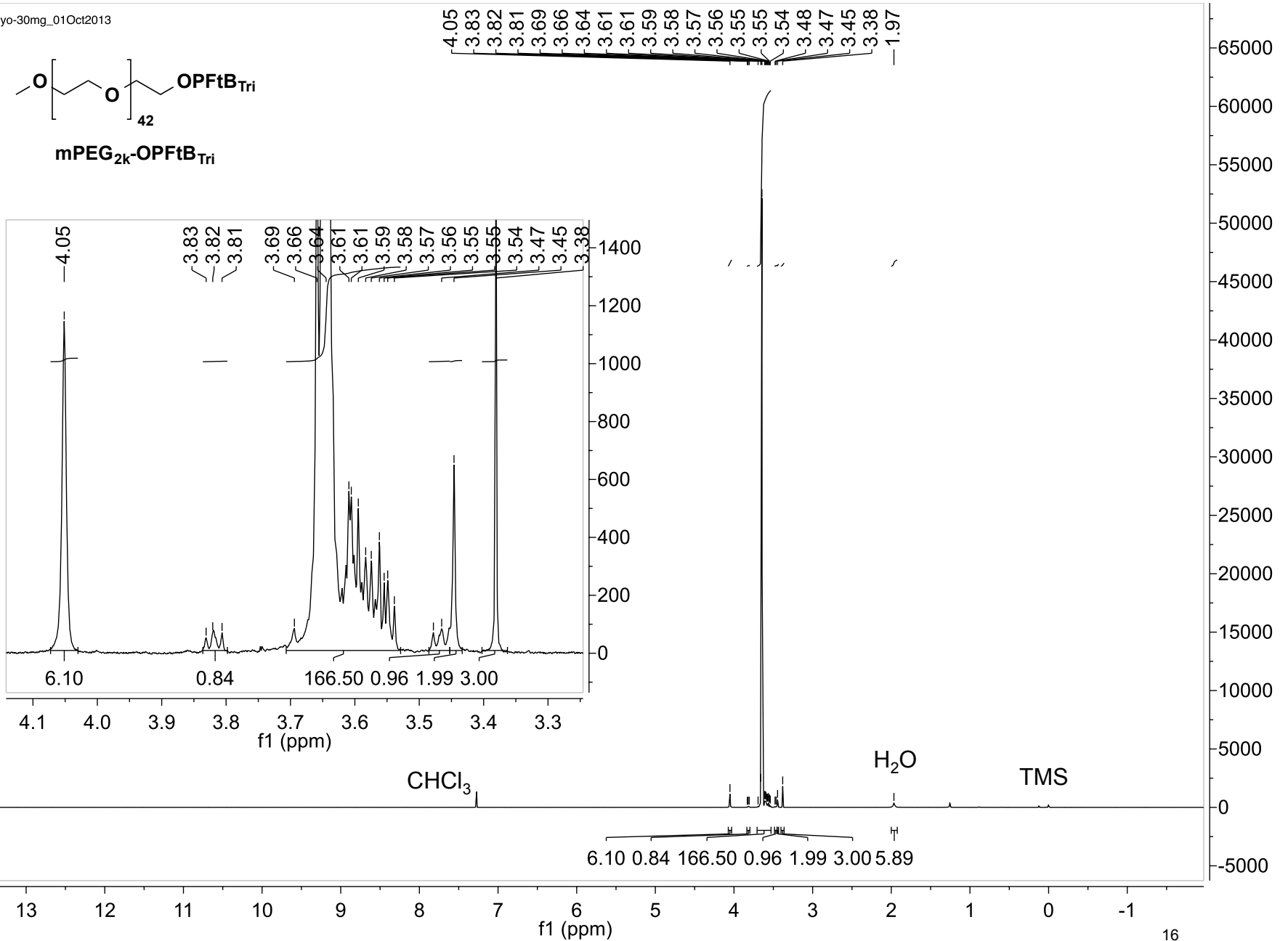


# $^1\text{H-NMR}$ ( $\text{CDCl}_3$ , 400 MHz)

PROTON  
TAB-I-34-lyo-30mg\_01Oct2013



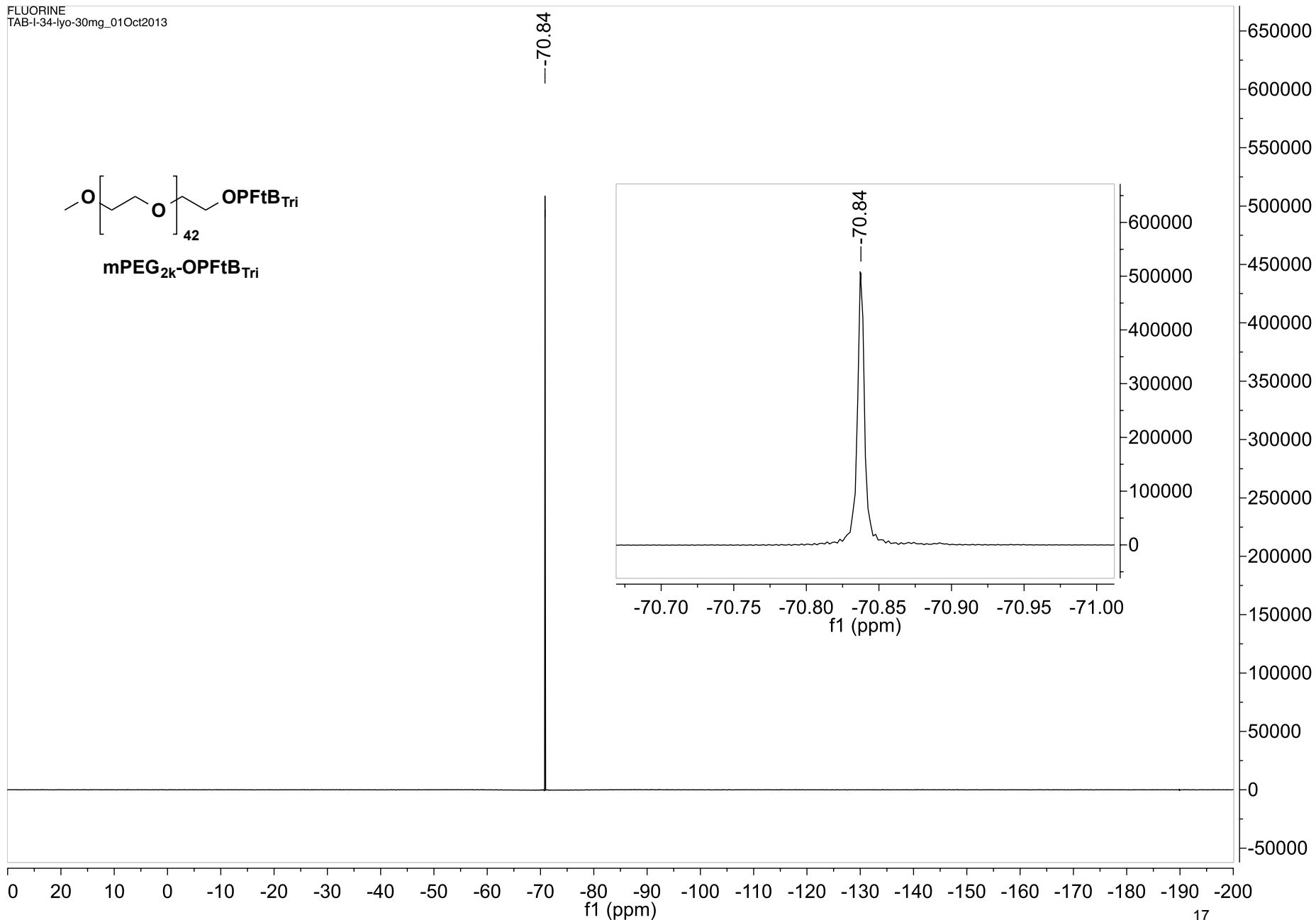
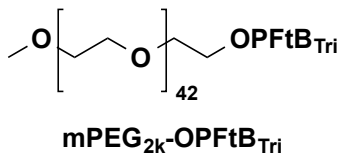
mPEG<sub>2k</sub>-OPFtB<sub>Tri</sub>

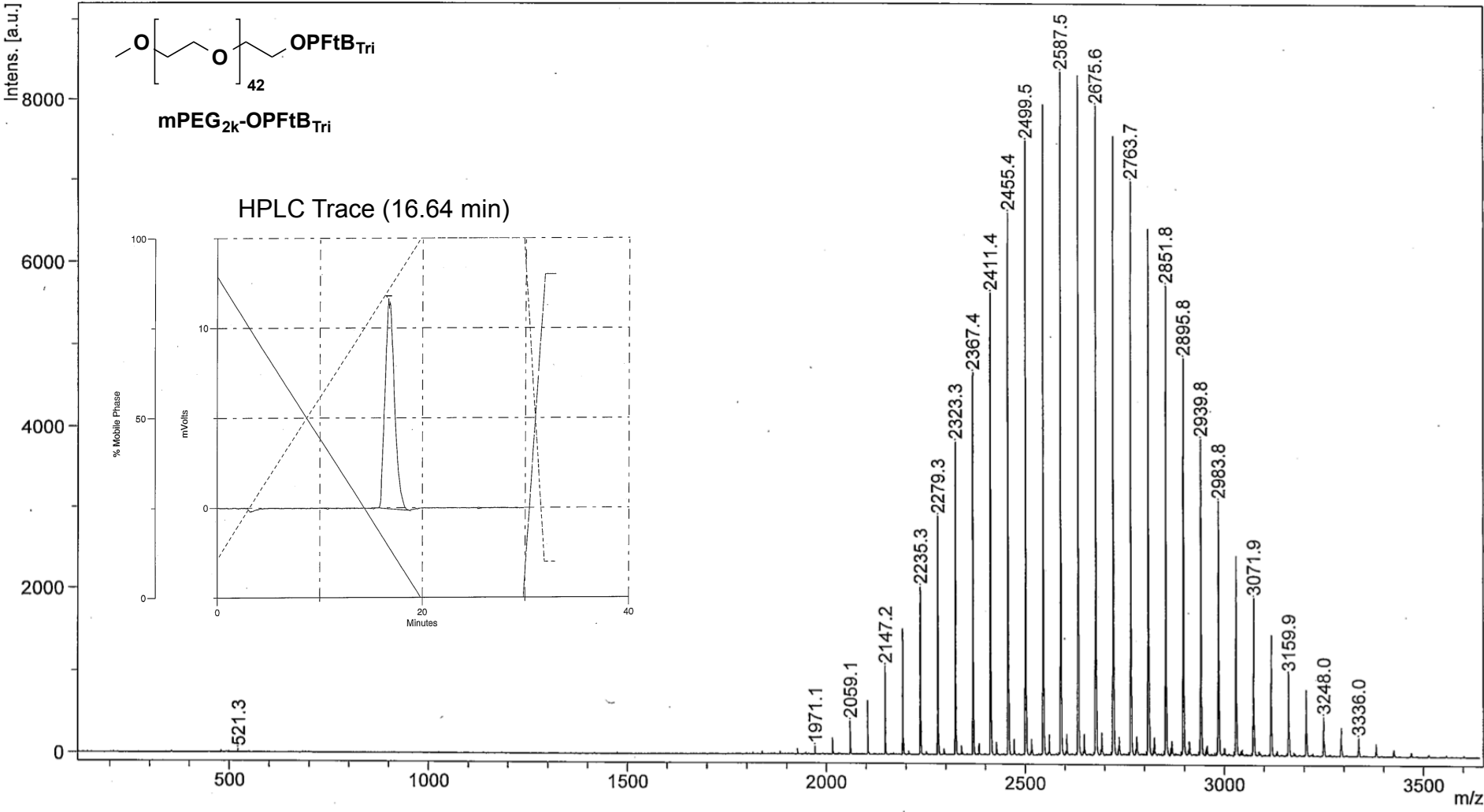




<sup>19</sup>F-NMR (CDCl<sub>3</sub>, 400 MHz)

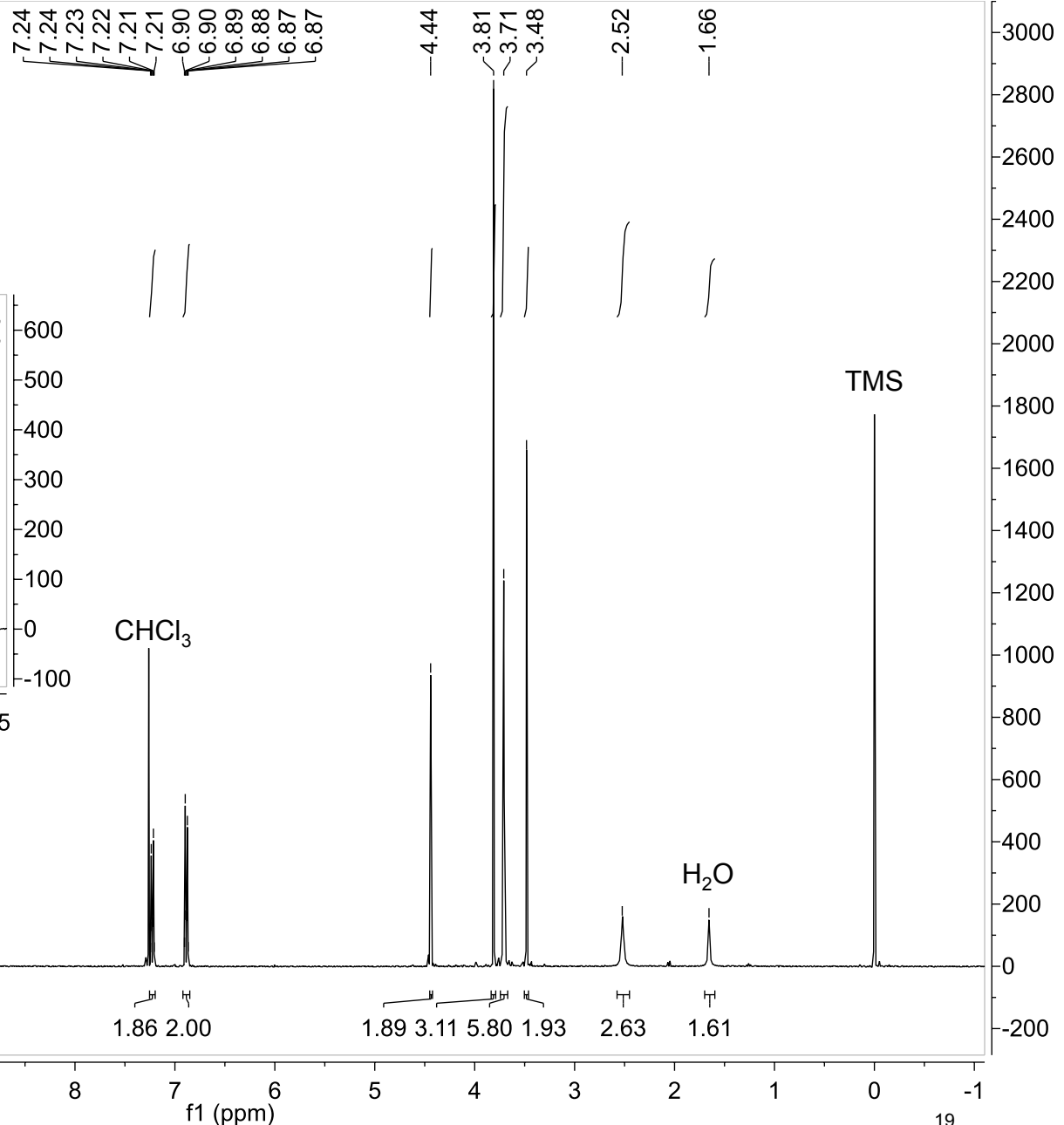
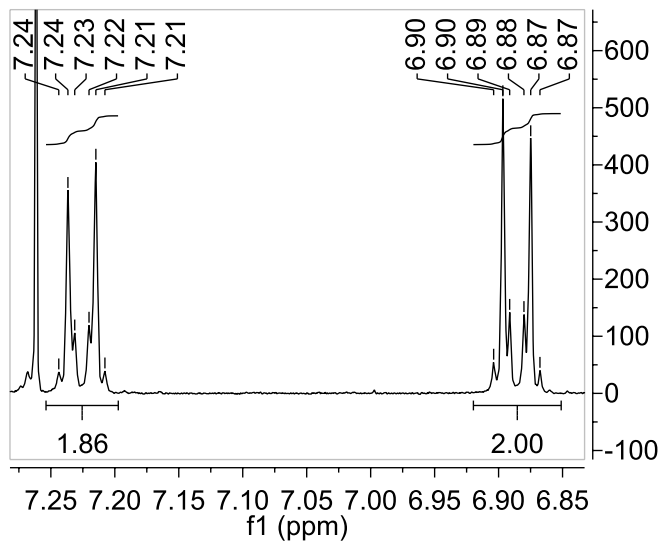
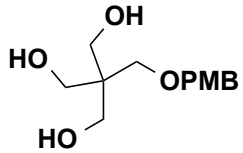
FLUORINE  
TAB-I-34-lyo-30mg\_01Oct2013





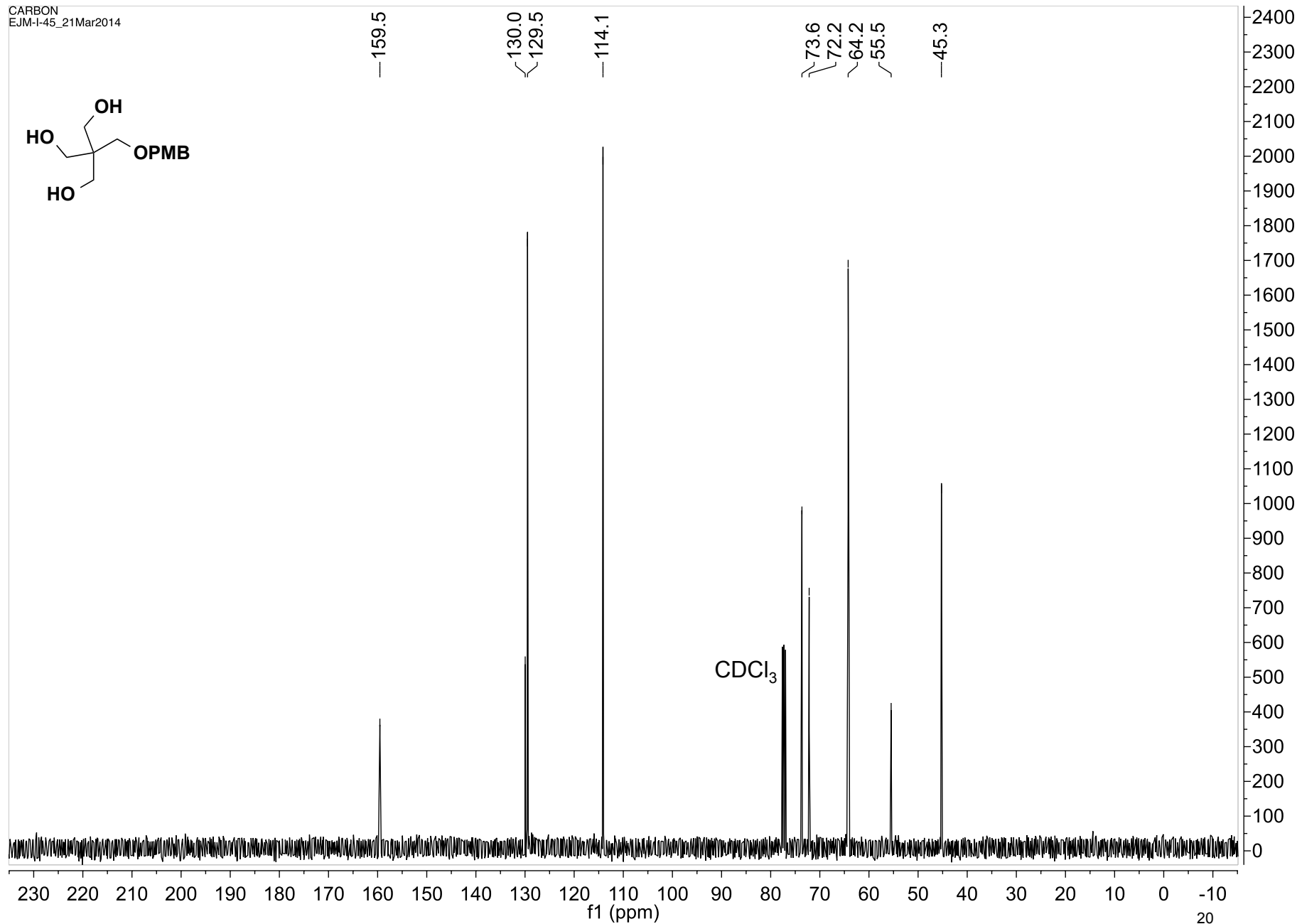
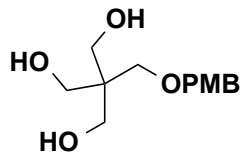
# <sup>1</sup>H-NMR (CDCl<sub>3</sub>, 400 MHz)

PROTON  
EJM-I-22A\_06Sep2013



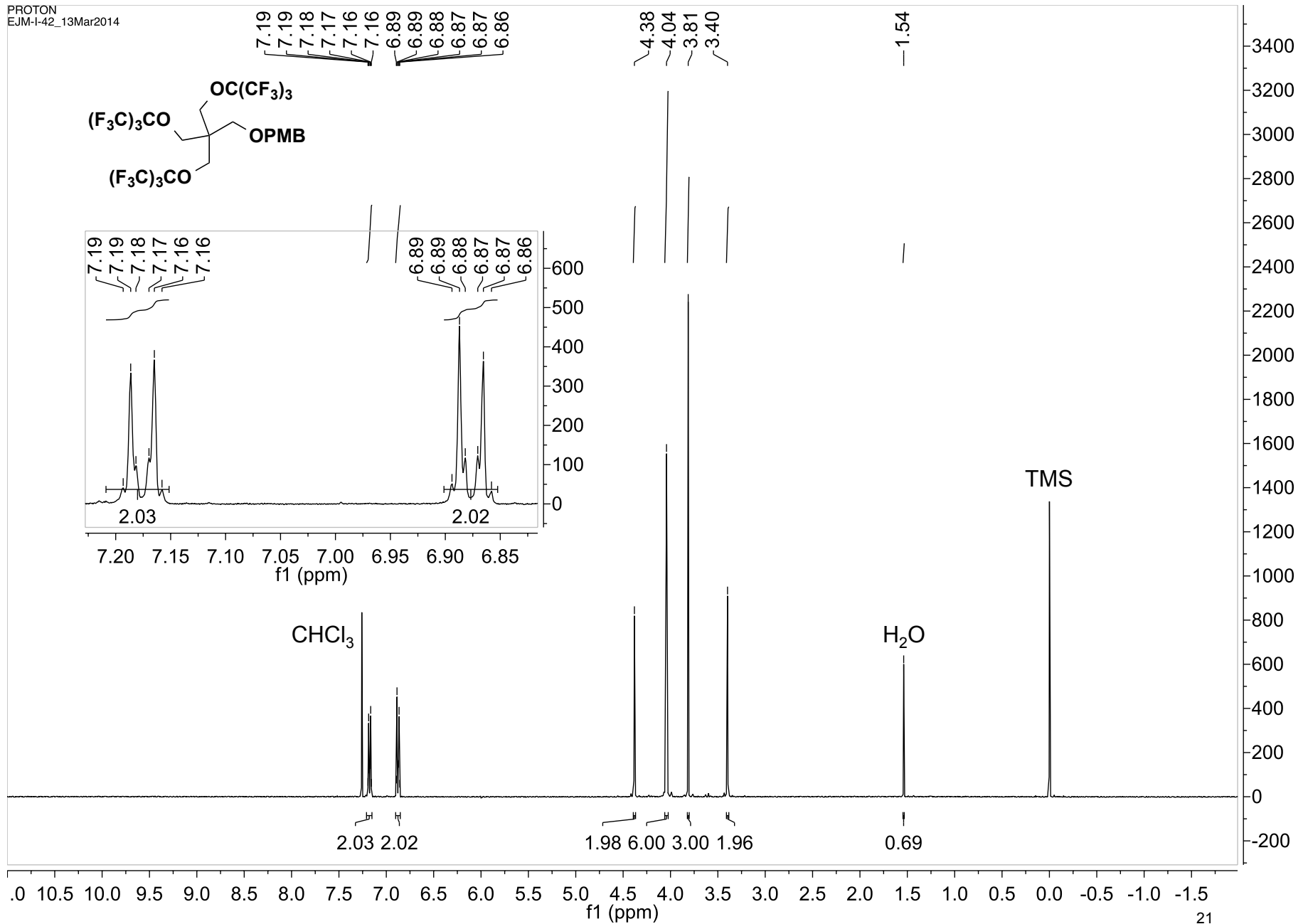
$^{13}\text{C}\{^1\text{H}\}$ -NMR ( $\text{CDCl}_3$ , 100 MHz)

CARBON  
EJM-I-45\_21Mar2014



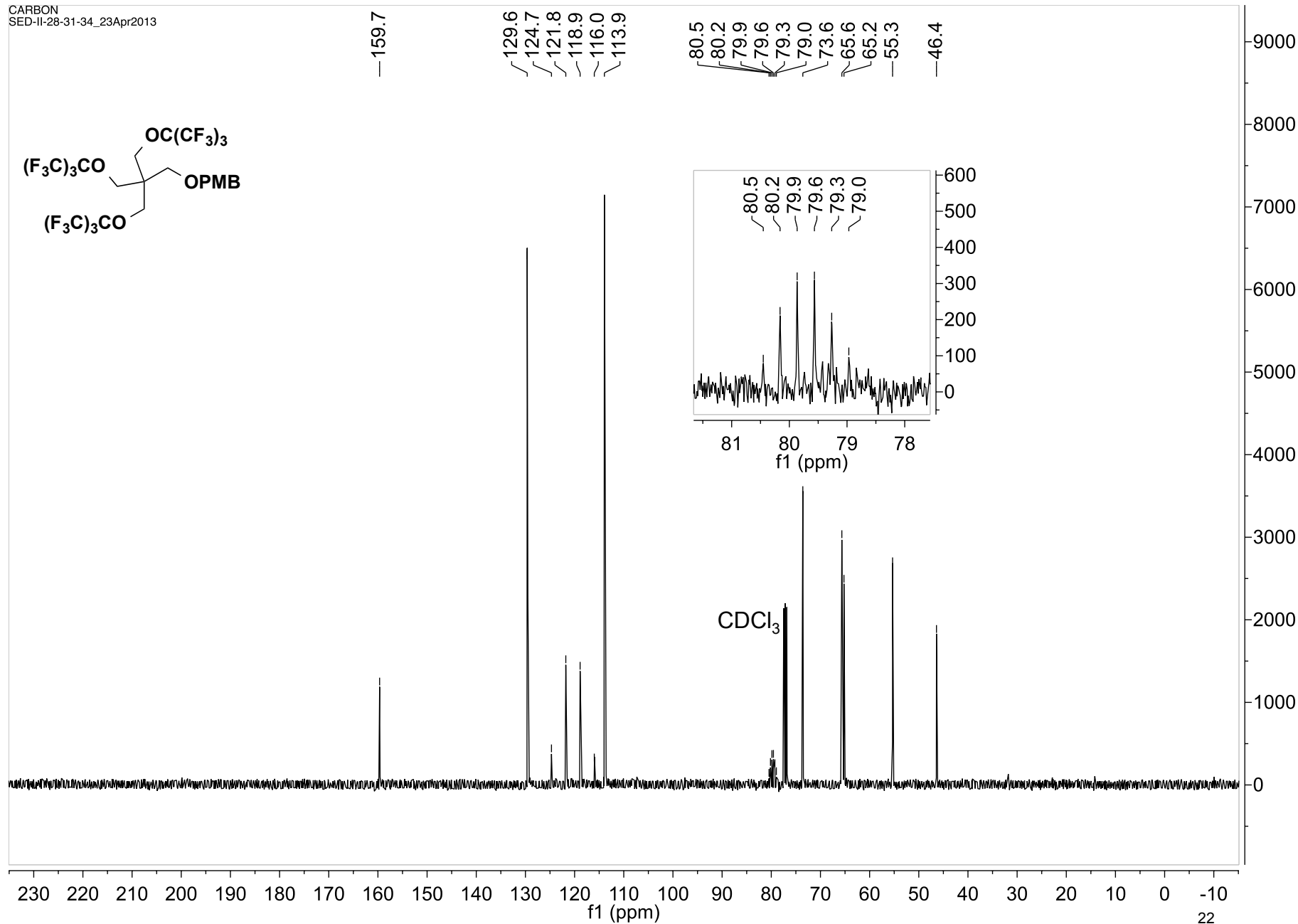
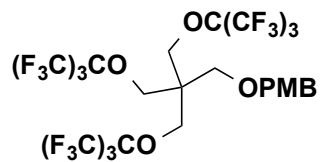
# $^1\text{H-NMR}$ ( $\text{CDCl}_3$ , 400 MHz)

PROTON  
EJM-I-42\_13Mar2014



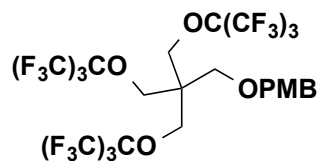
$^{13}\text{C}\{^1\text{H}\}$ -NMR ( $\text{CDCl}_3$ , 100 MHz)

CARBON  
SED-II-28-31-34\_23Apr2013

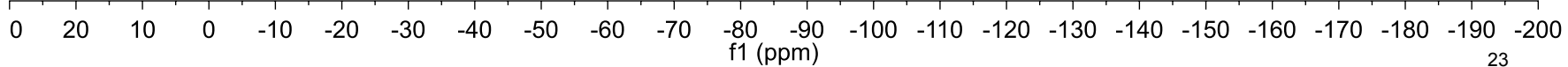
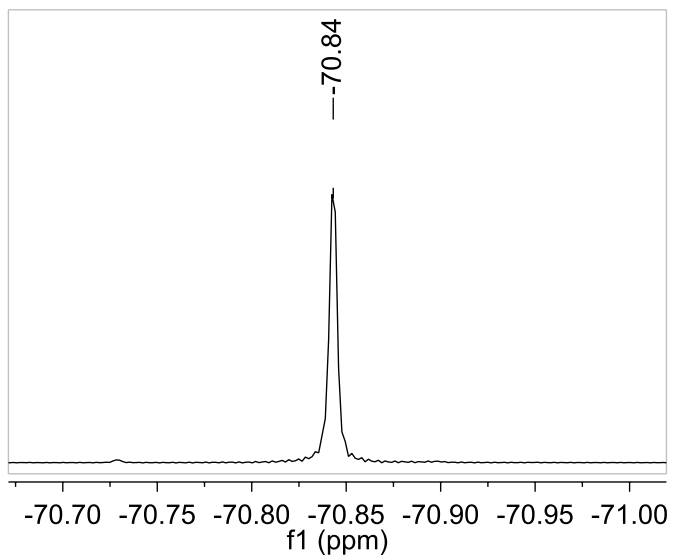


<sup>19</sup>F-NMR (CDCl<sub>3</sub>, 400 MHz)

FLUORINE  
EJM-I-42\_13Mar2014

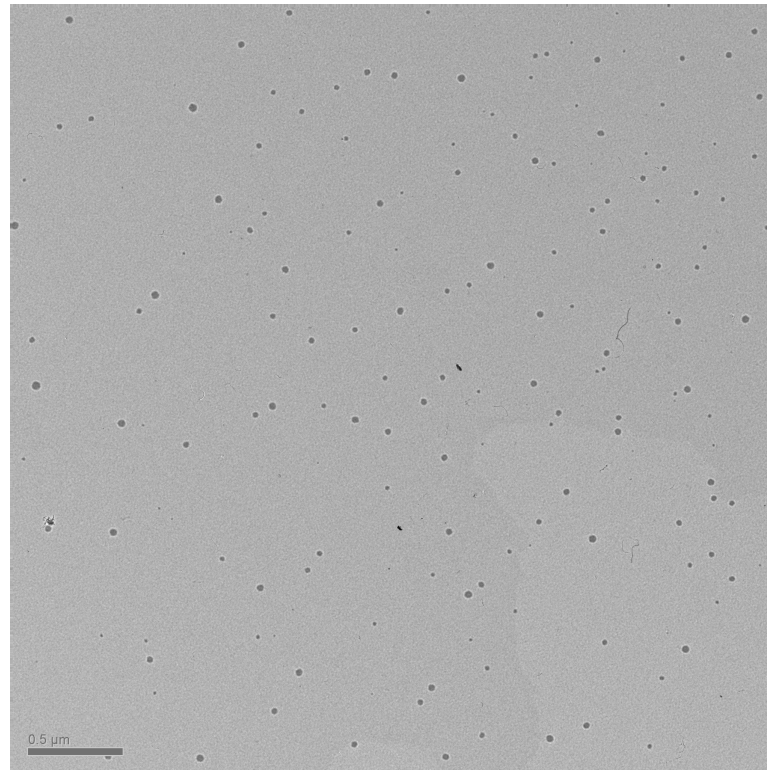


--70.84



# Enhanced contrast TEM image

Contrast has been increased uniformly over the entire image for clarity.

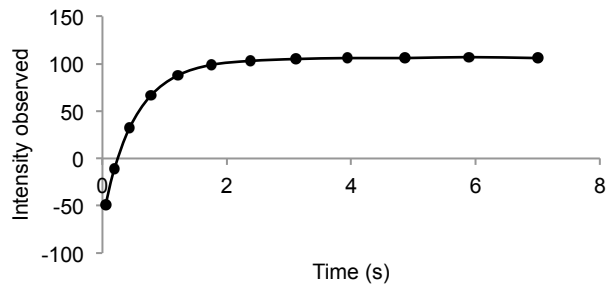


TEM image of mPEG<sub>1k</sub>-OPFtB<sub>TRI</sub> micelles, scale bar: 0.5 μm.  
Due to difficulties in achieving contrast, an aqueous solution of polymer was dried and then imaged.

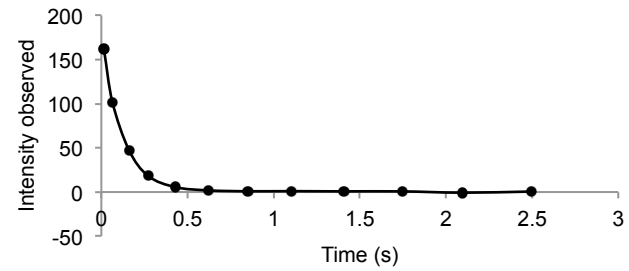


# mPEG<sub>1k</sub>-OPFtB<sub>TRI</sub>

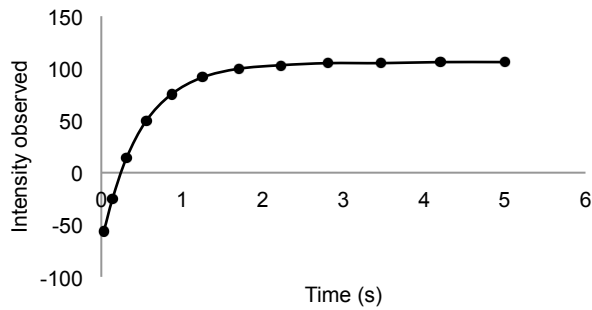
**T<sub>1</sub> : mPEG<sub>1k</sub>PFtB<sub>TRI</sub>**



**T<sub>2</sub> : mPEG<sub>1k</sub>PFtB<sub>TRI</sub>**



**T<sub>1</sub> : mPEG<sub>2k</sub>PFtB<sub>TRI</sub>**



**T<sub>2</sub> : mPEG<sub>2k</sub>PFtB<sub>TRI</sub>**

