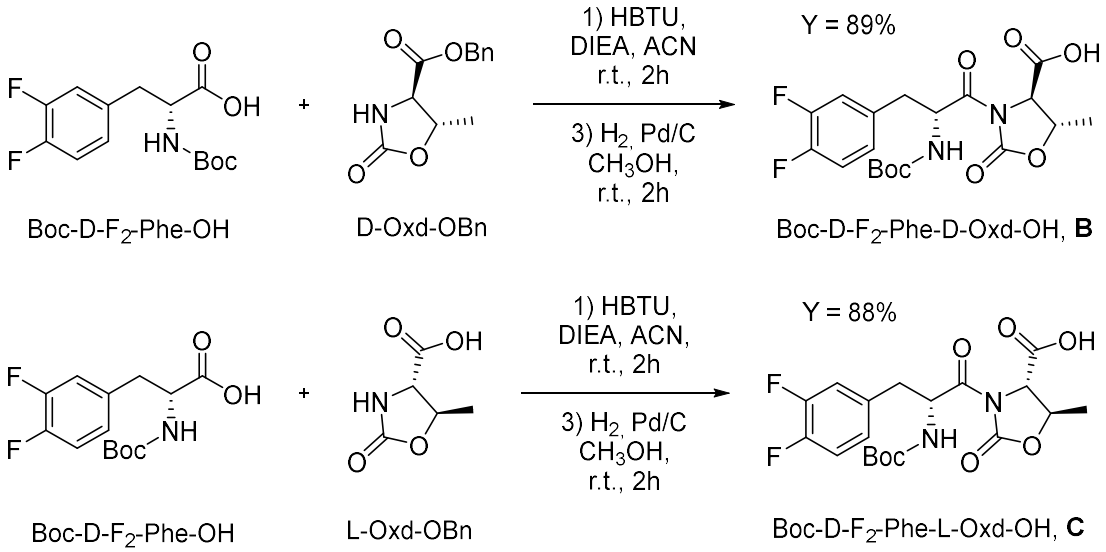
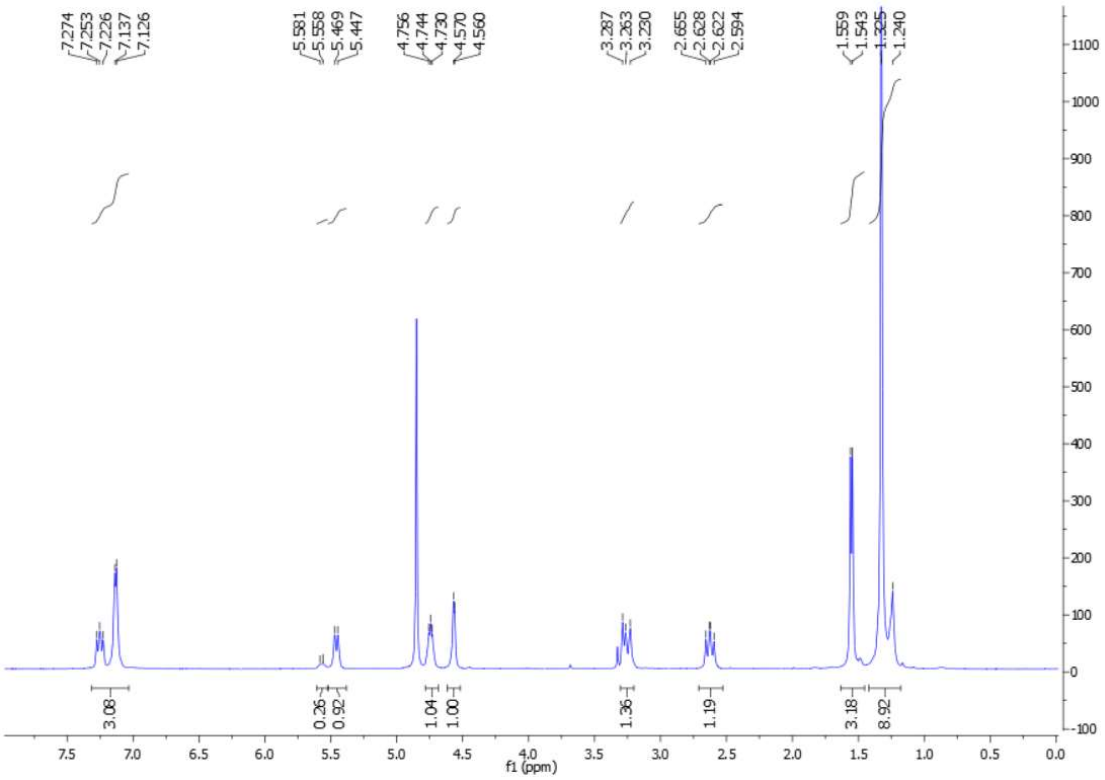
# Supplementary Materials

## Contents

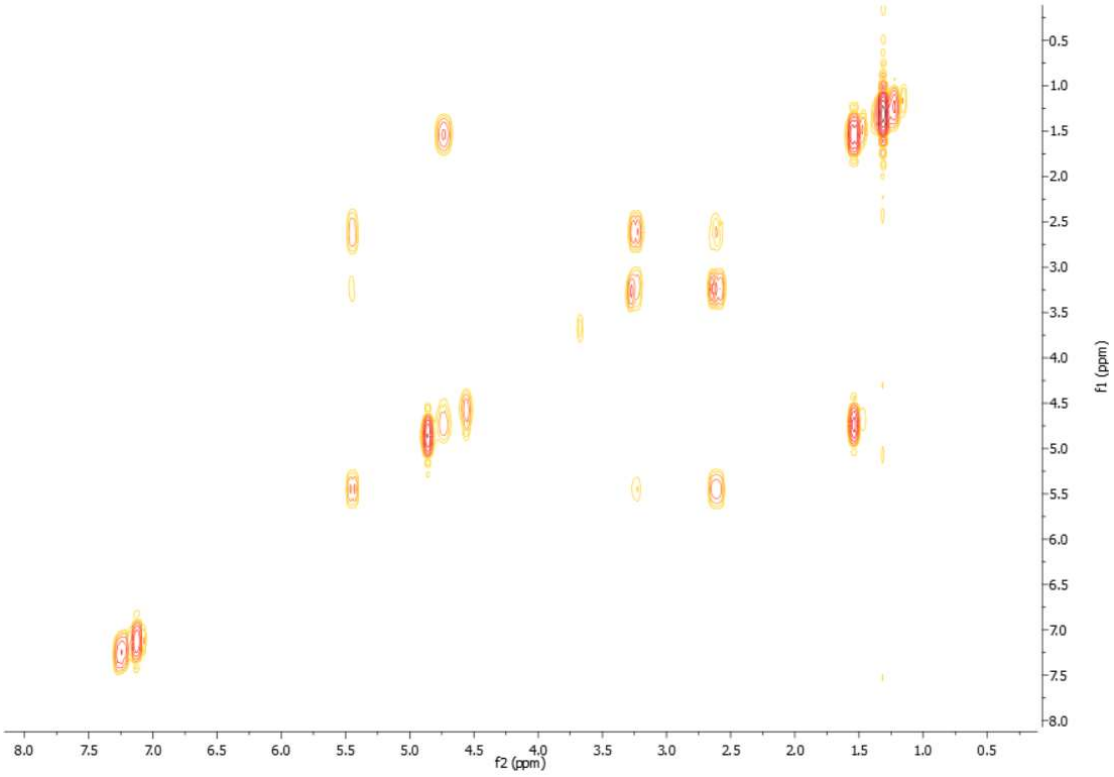



**Scheme 1**. Synthesis of Boc-D-$F_2$-Phe-D-Oxd-OH **B** and Boc-D-$F_2$-Phe-L-Oxd-OH **C**, with yields after flash chromatography.

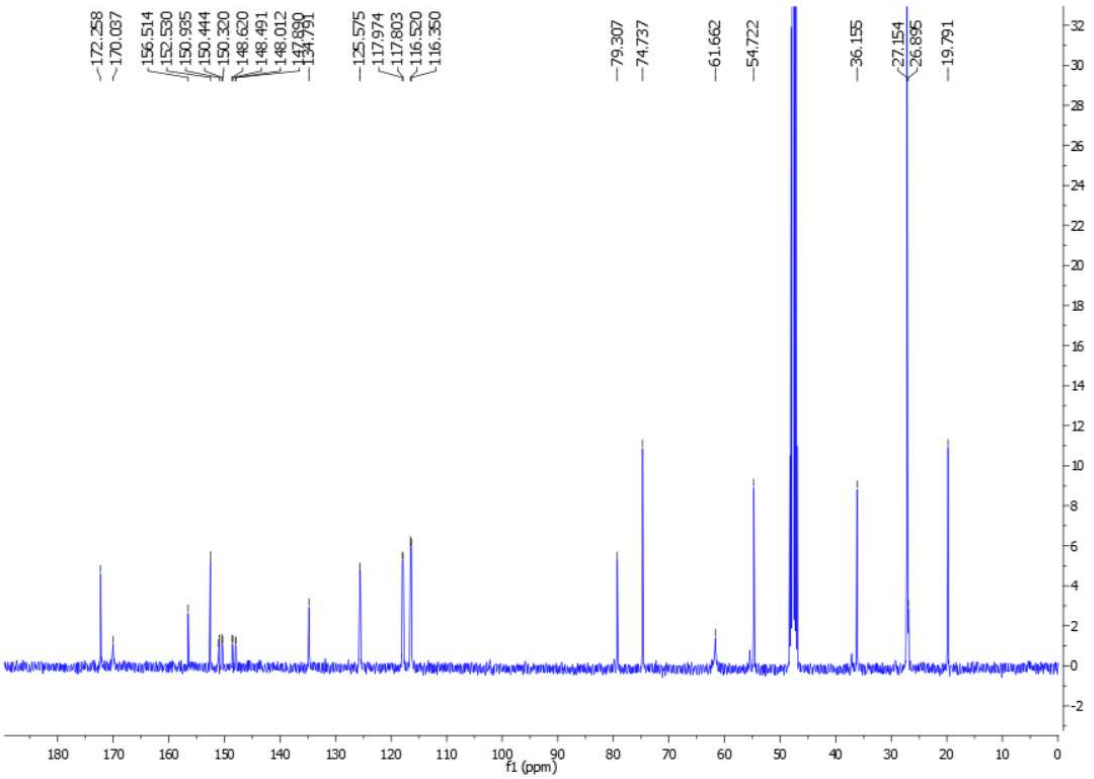
$^{1}$H NMR spectrum of Boc-D-$F_2$-Phe-Oxd-OH **B** in $CD_3OD$



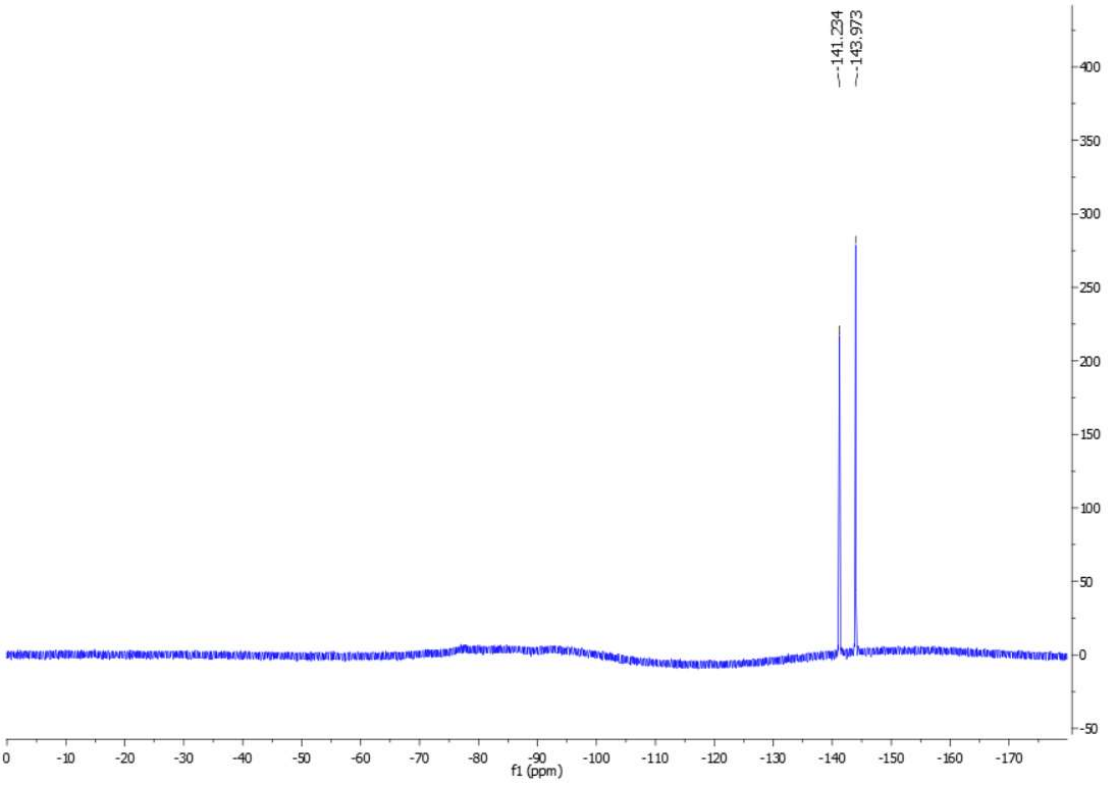

COSY spectrum of Boc-D-$F_2$-Phe-D-Oxd-OH **B** in $CDCl_3$



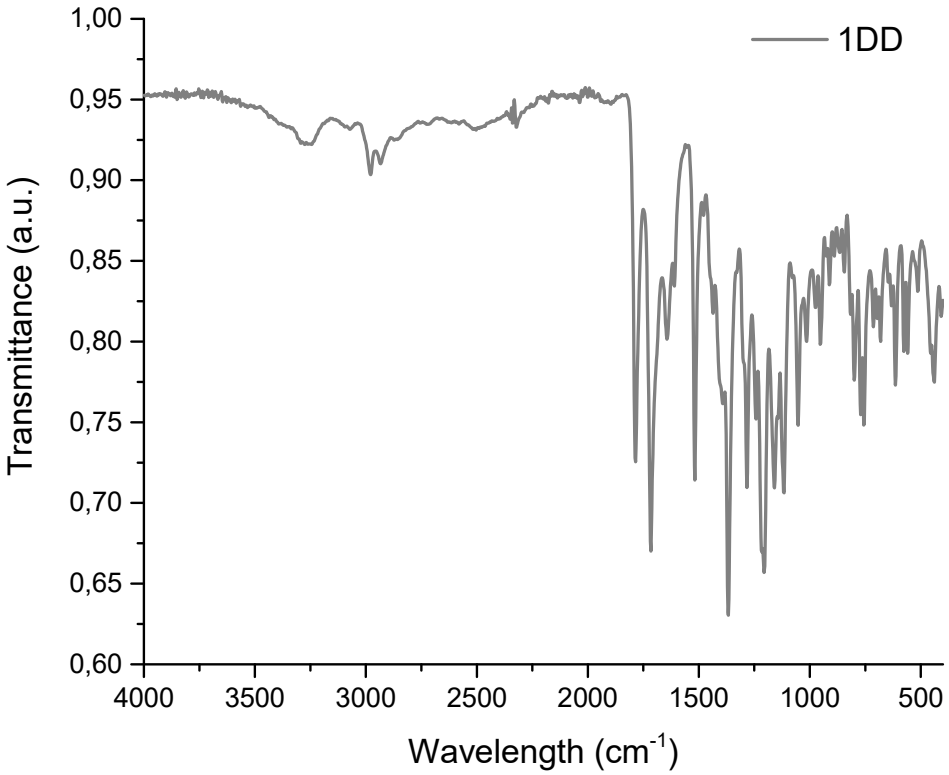
$^{13}$C NMR spectrum of Boc-D-$F_2$-Phe-D-Oxd-OH **B** in $CD_3OD$



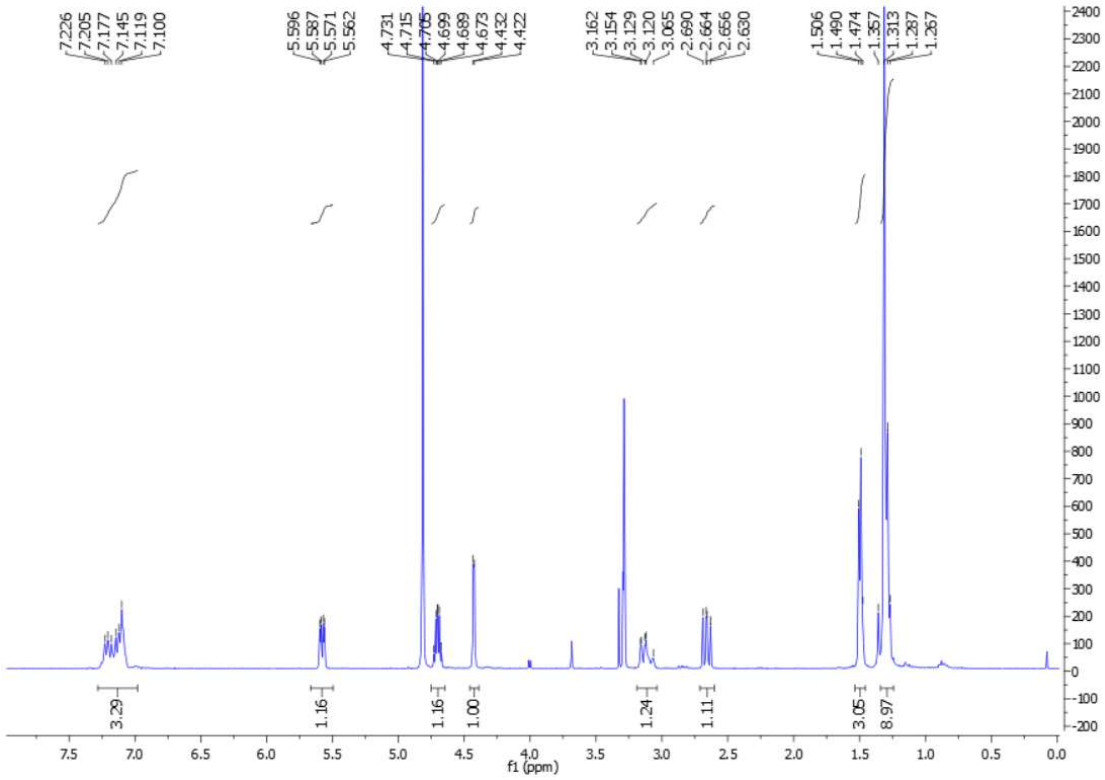

$^{19}$F NMR spectrum of Boc-D-$F_2$-Phe-D-Oxd-OH **B** in $CDCl_3$



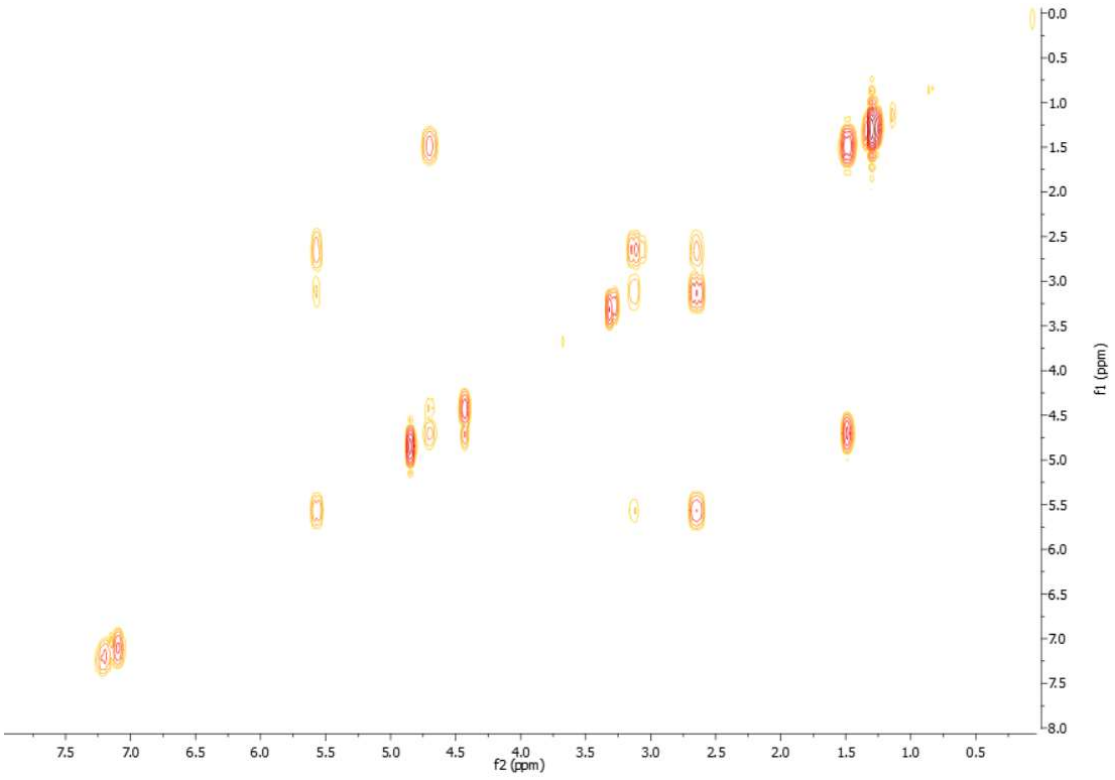
IR-ATR spectrum of Boc-D-$F_2$-Phe-D-Oxd-OH **B**



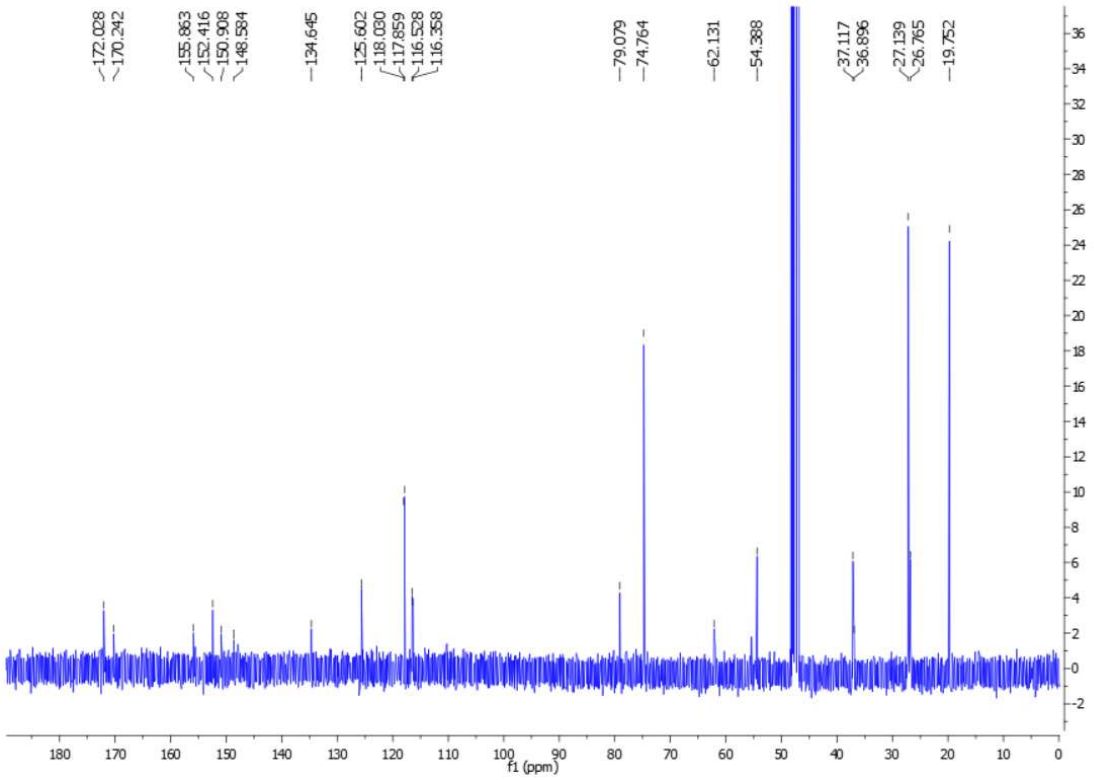
$^{1}$H NMR spectrum of Boc-D-$F_2$-Phe-L-Oxd-OH **C** in $CD_3OD$



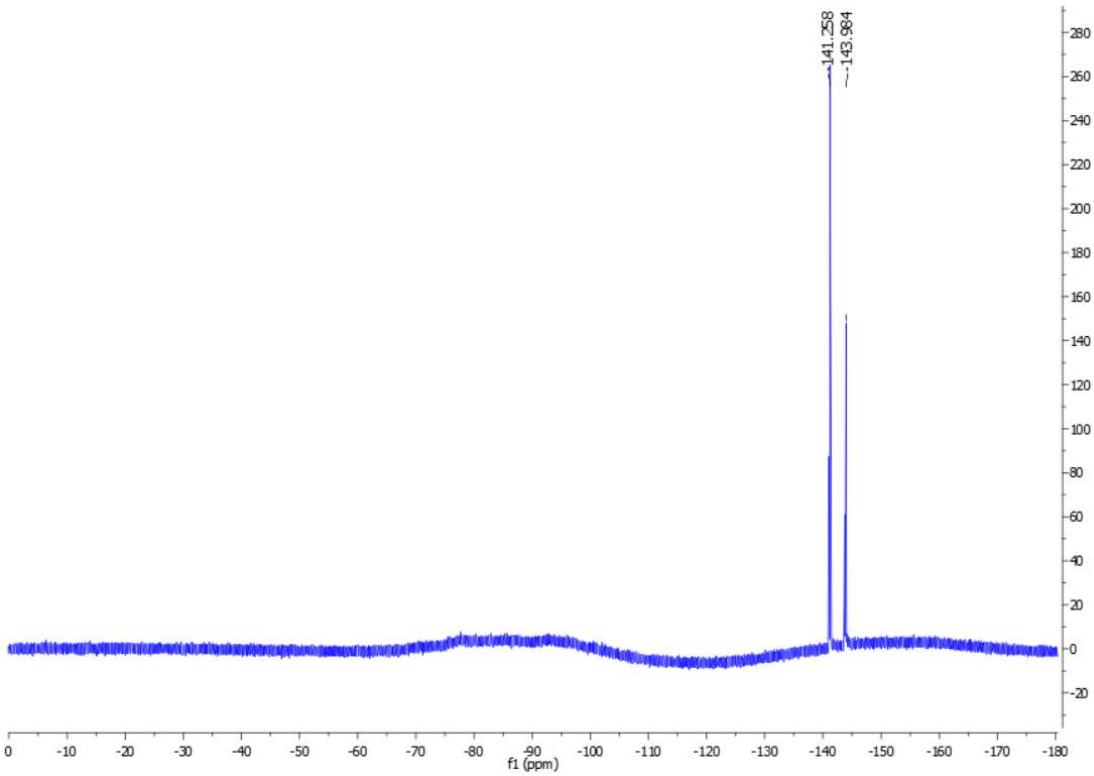

COSY spectrum of Boc-D-$F_2$-Phe-L-Oxd-OH **C** in $CDCl_3$



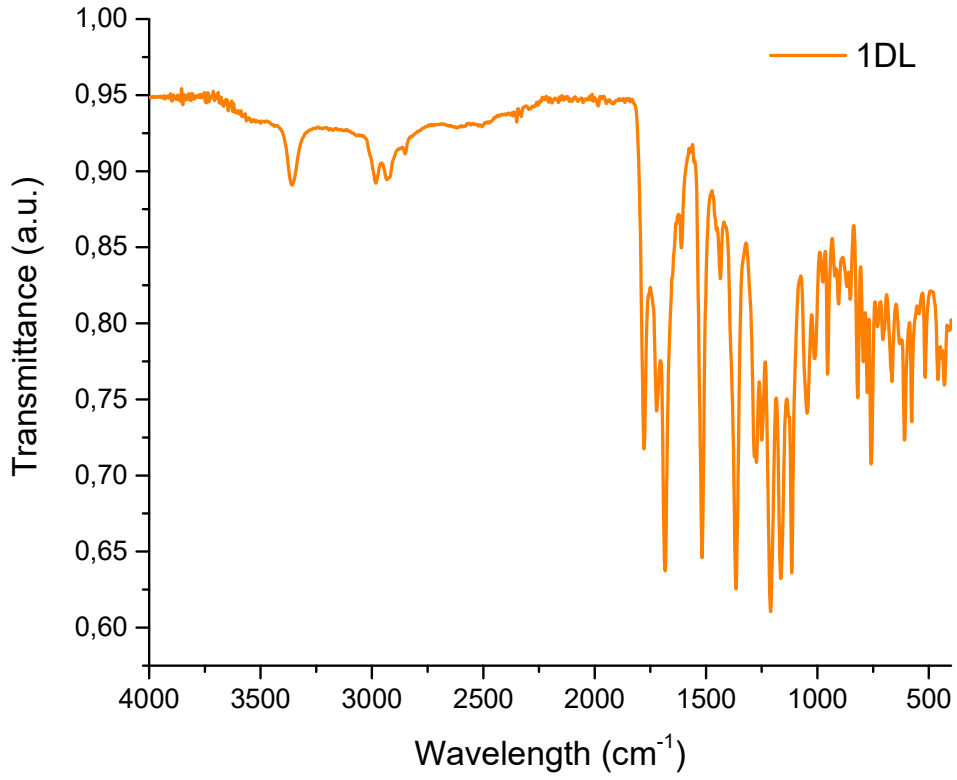
$^{13}$C NMR spectrum of Boc-D-$F_2$-Phe-L-Oxd-OH **C** in $CD_3OD$




$^{19}$F NMR spectrum of Boc-D-$F_2$-Phe-L-Oxd-OH **C** in $CDCl_3$



IR-ATR spectrum of Boc-D-$F_2$-Phe-L-Oxd-OH **C**



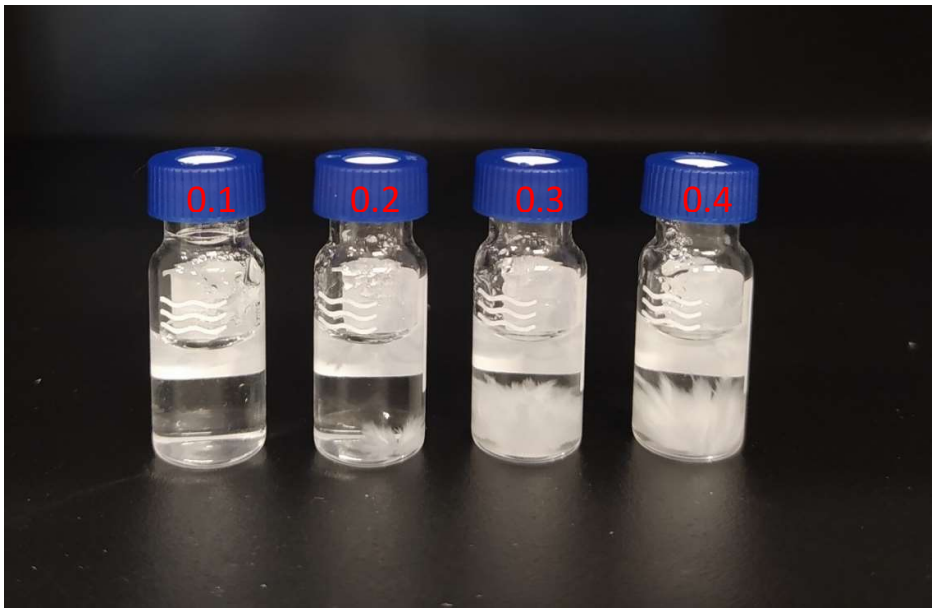



**Figure S1.** Analysis of the minimum gelation concentration (MGC) need to form hydrogels from **A**: from left to right: 0.1% w/w concentration; 0.2% w/w concentration; 0.3% w/w concentration; 0.4% w/w concentration.

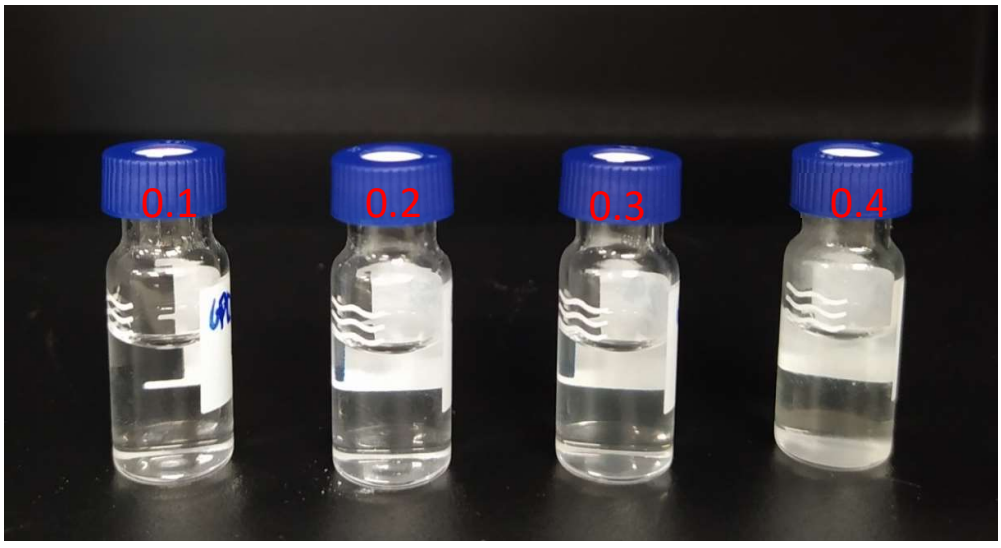



**Figure S2.** Analysis of the minimum gelation concentration (MGC) need to form hydrogels from **C**: from left to right: 0.1% w/w concentration; 0.2% w/w concentration; 0.3% w/w concentration; 0.4% w/w concentration.

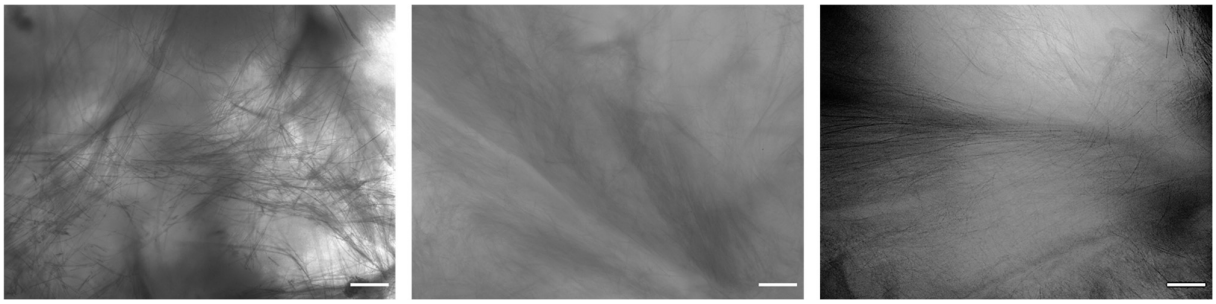


**Figure S3.** From left to right, hydrogel images of **1**, **2** and **3** obtained with an optic microscope with a 10x magnification. Scalebar: 100 μm.

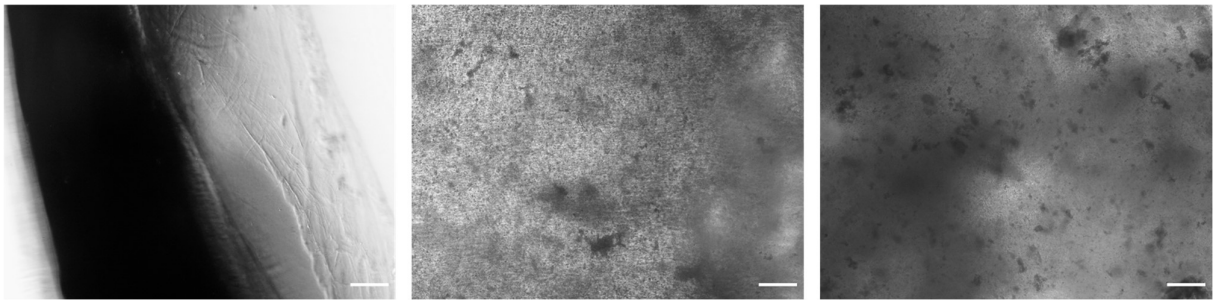


**Figure S4.** From left to right, hydrogel images of **7**, **8** and **9** obtained with an optic microscope with a 40x magnification. Scalebar: 25 μm.

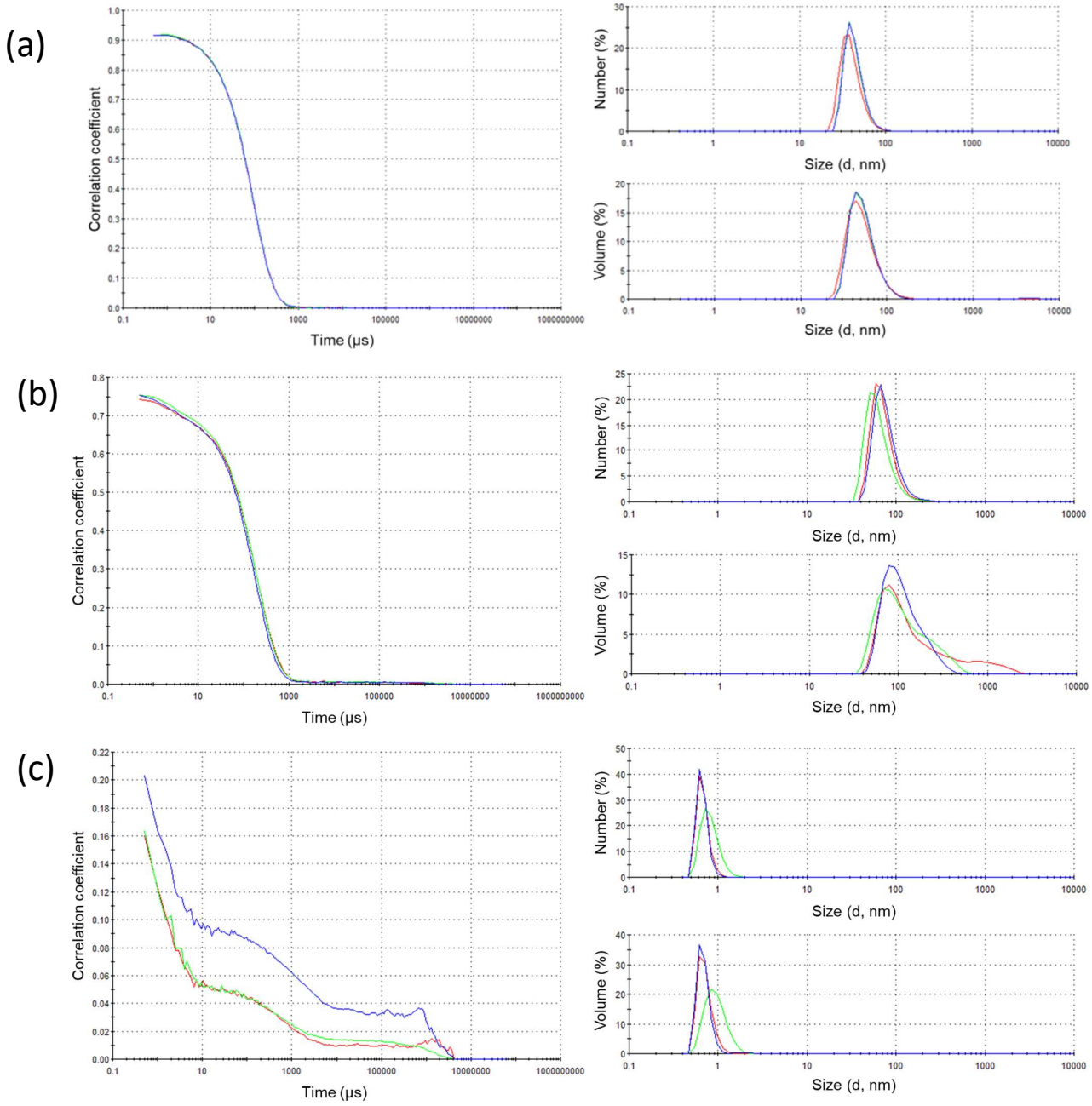



**Figure S5.** From top to bottom, DLS correlation coefficient, number and volume analysis of particles after filtration: (a) solution **4**; (b) solution **5**; (c) solution **6**.

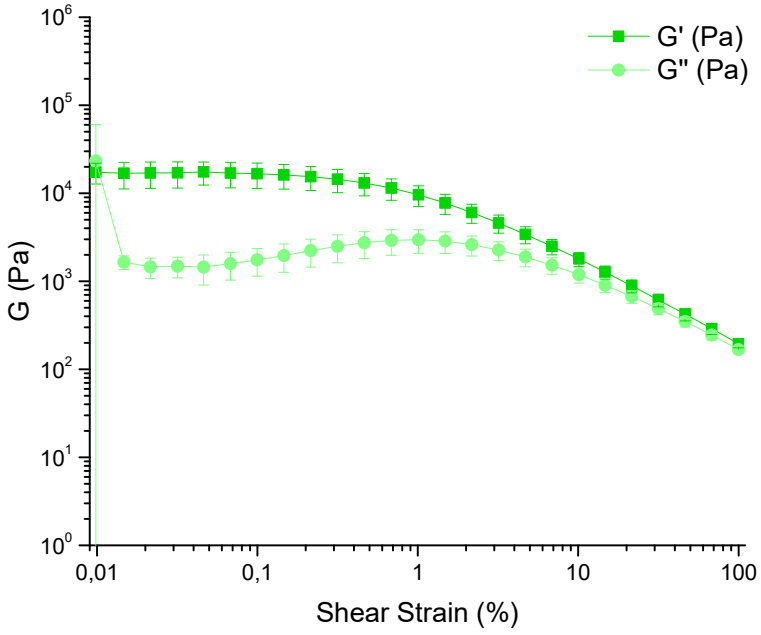



**Figure S6.** Amplitude sweep analysis of hydrogel **1**.

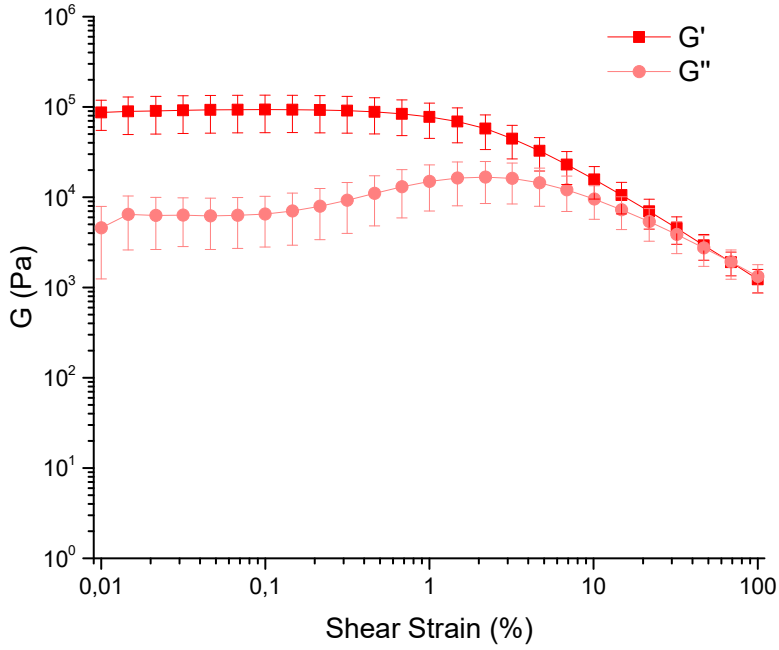



**Figure S7.** Amplitude sweep analysis of hydrogel **2**.

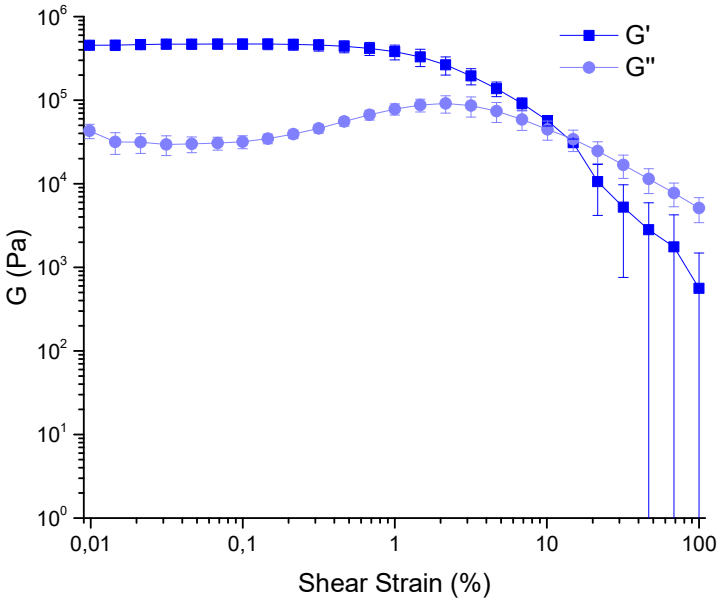



**Figure S8.** Amplitude sweep analysis of hydrogel **3**.

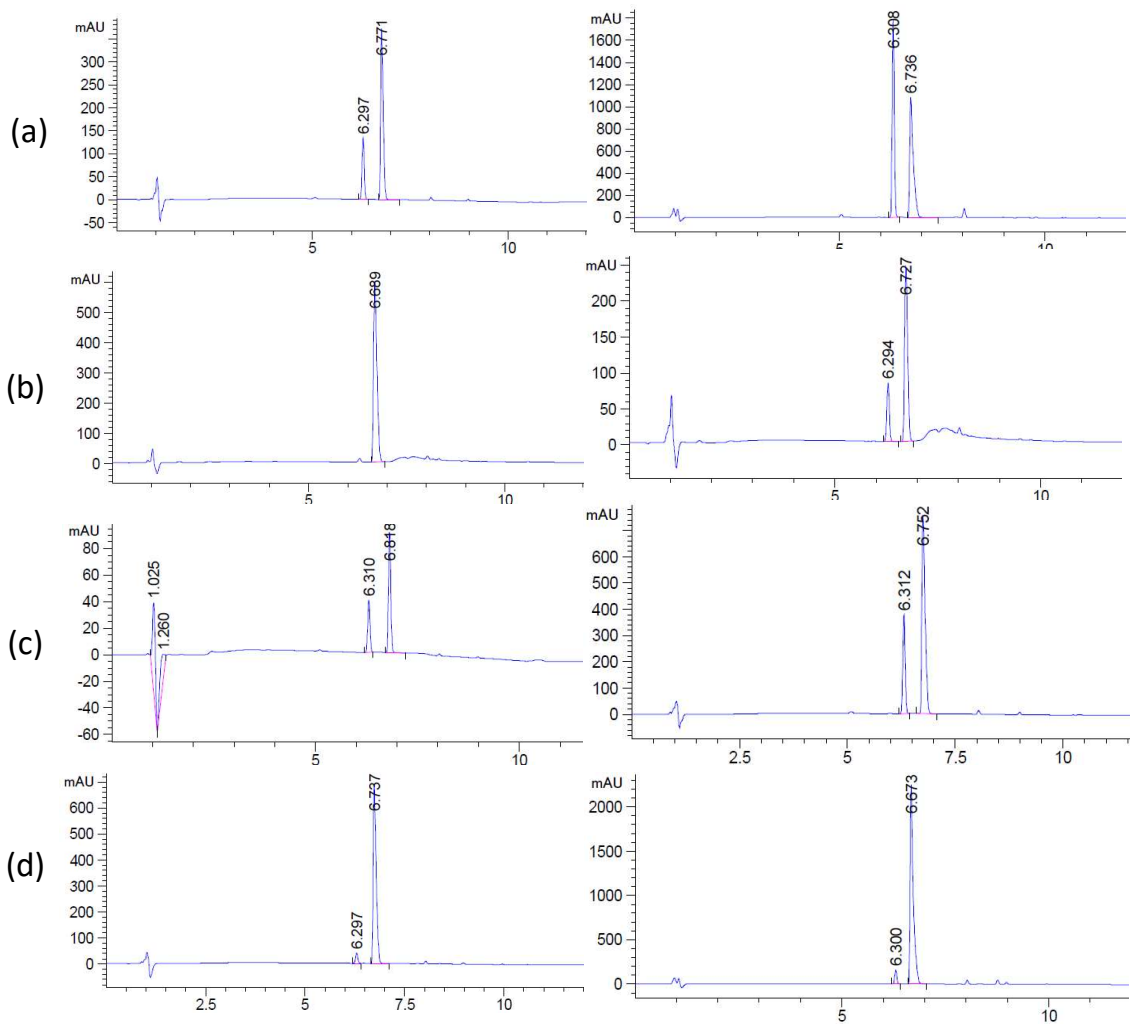



**Figure S9.** HPLC-MS analysis of gelators **B** and **C** before (left) and after (right) the addition of GdL: (a) gelator **B** (0.5 w/w concentration) in NaOH (no gel is formed); (b) gelator **B** (0.5% w/w concentration) in PBS (no gel is formed); (c) gelator **C** (0.5 w/w concentration) in NaOH (gel is formed); (d) gelator **C** (0.5% w/w concentration) in PBS (gel is formed). Retention times: gelator A (after hydrolysis) = 6.3 min; gelator B = 6.7 min; gelator C = 6.7 min.

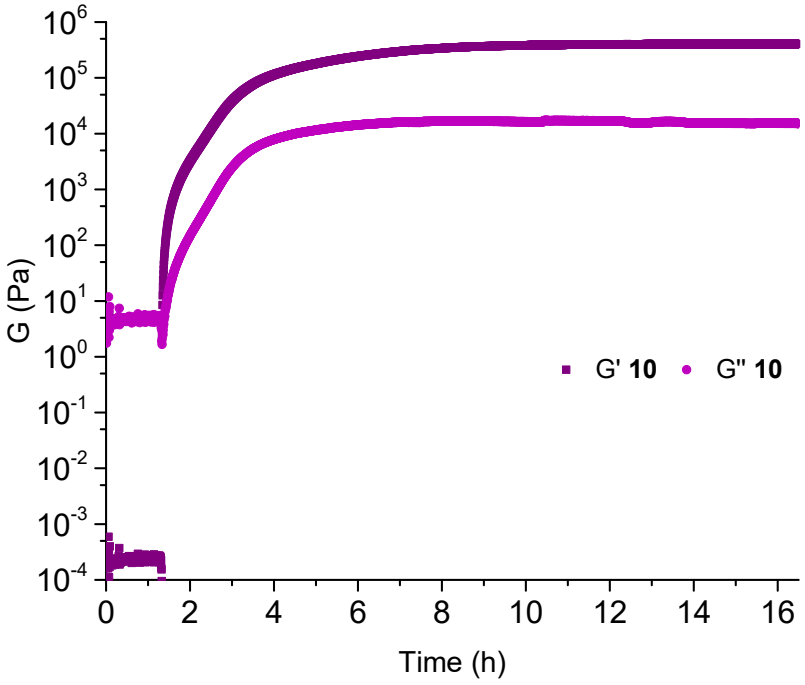



**Figure S10.** Time sweep analysis of hydrogel **10**.

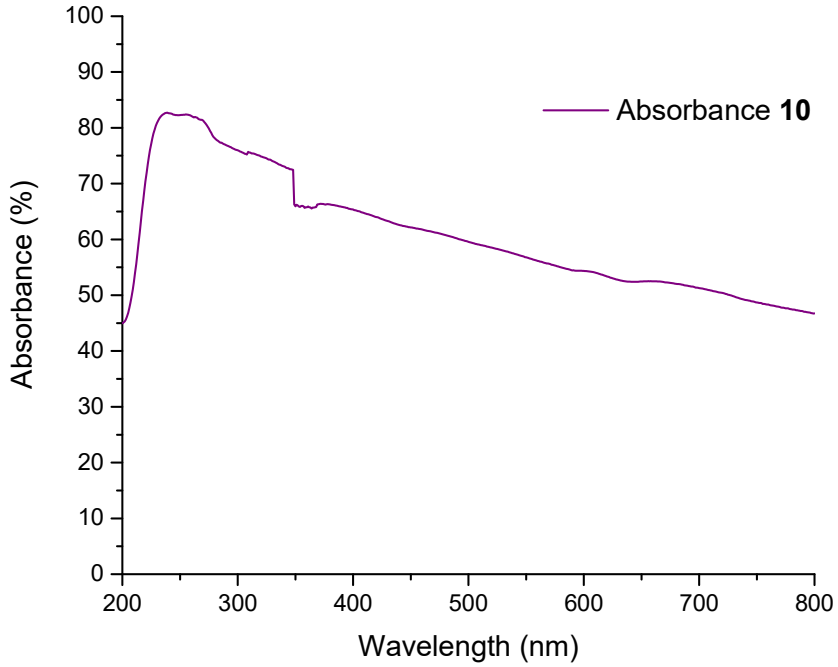



**Figure S11.** Absorbance spectrum of hydrogel **10**, collected using an optical path of 1.0 cm cuvette at 10 nm/s with a Cary300 UV-Vis double beam spectrophotometer, having a cuvette full of water as a reference.

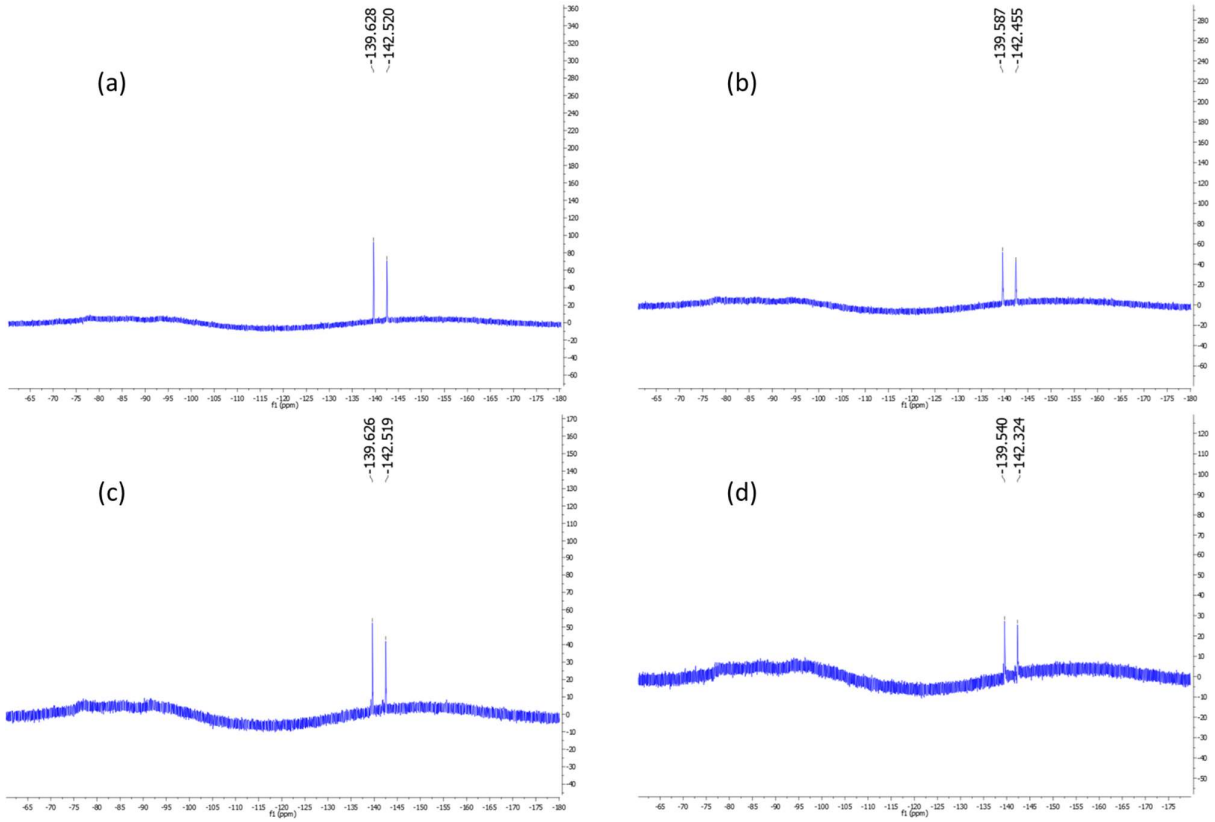



**Figure S12**. $^{19}$F-NMR spectra registered in $D_2O$ of gelator **A** (a) before the gelation process and (b) afterwards and gelator **C** (c) before the gelation process and (d) afterwards.