Use of light-degradable aliphatic polycarbonate nanoparticles as drug carrier for photosensitizer

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1. Characterization of small molecules and polymers

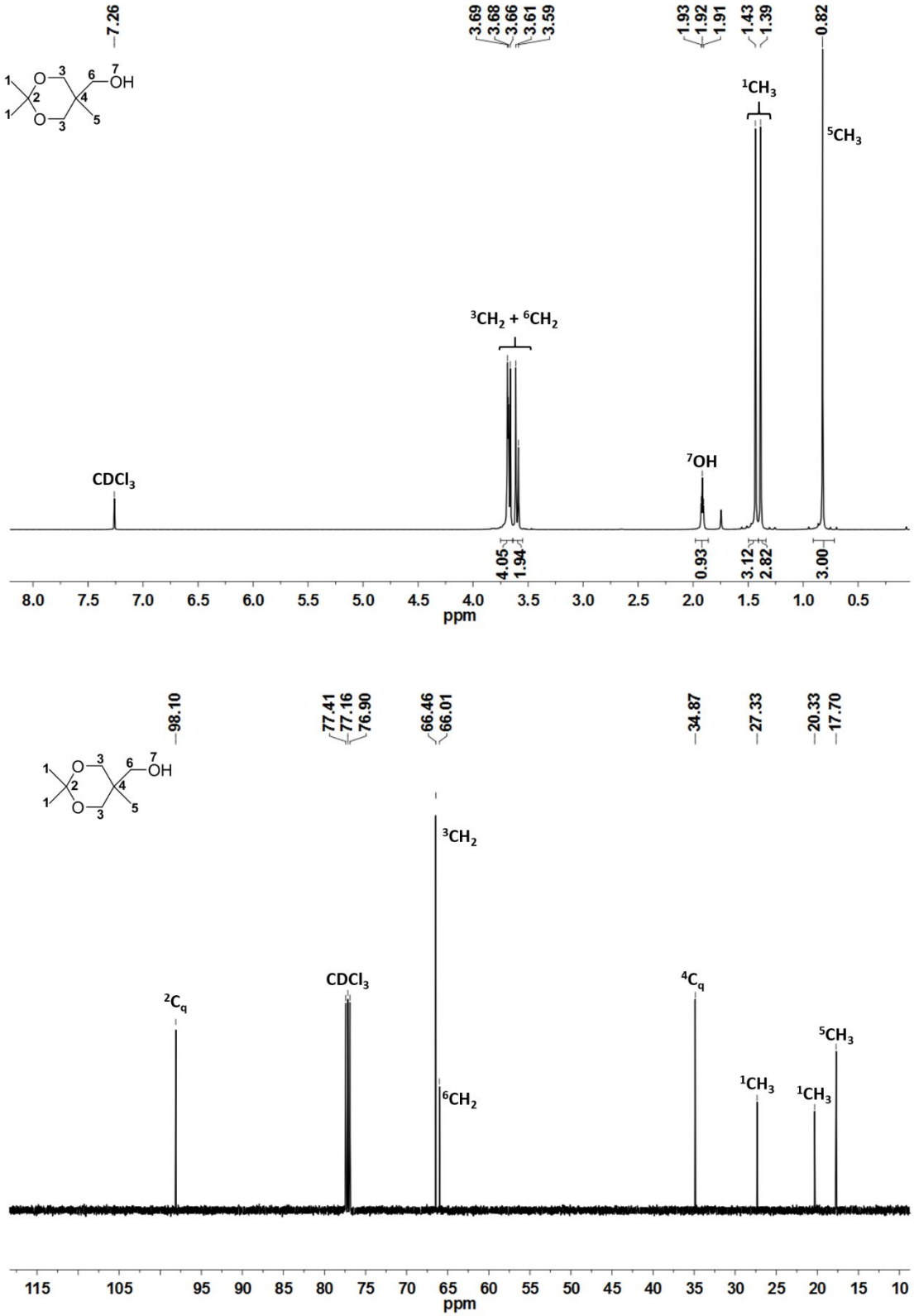

Figure S1. ^{1}H and ^{13}C NMR spectra of compound **1**

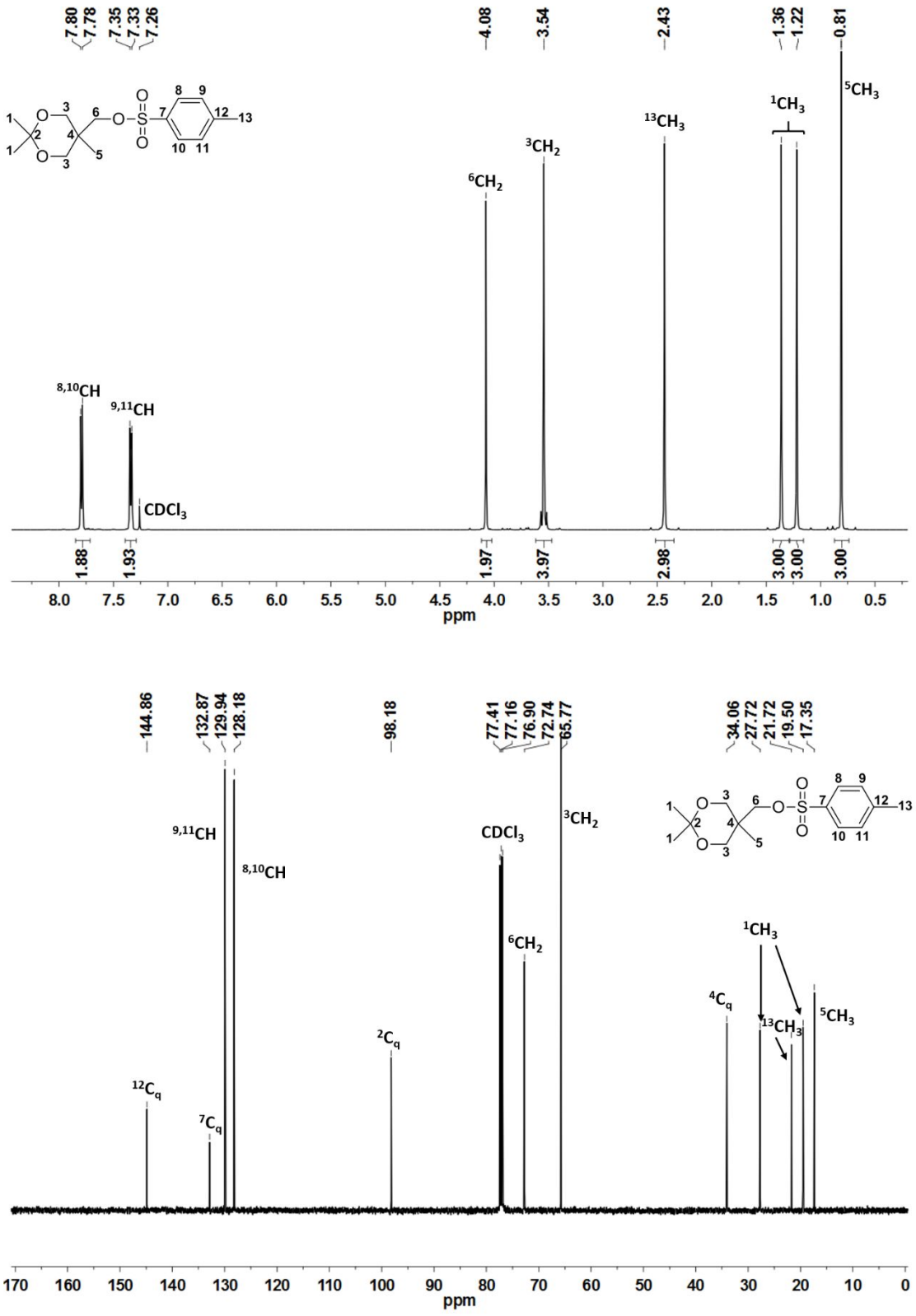

Figure S2. ^{1}H and ^{13}C NMR spectra of compound **2**

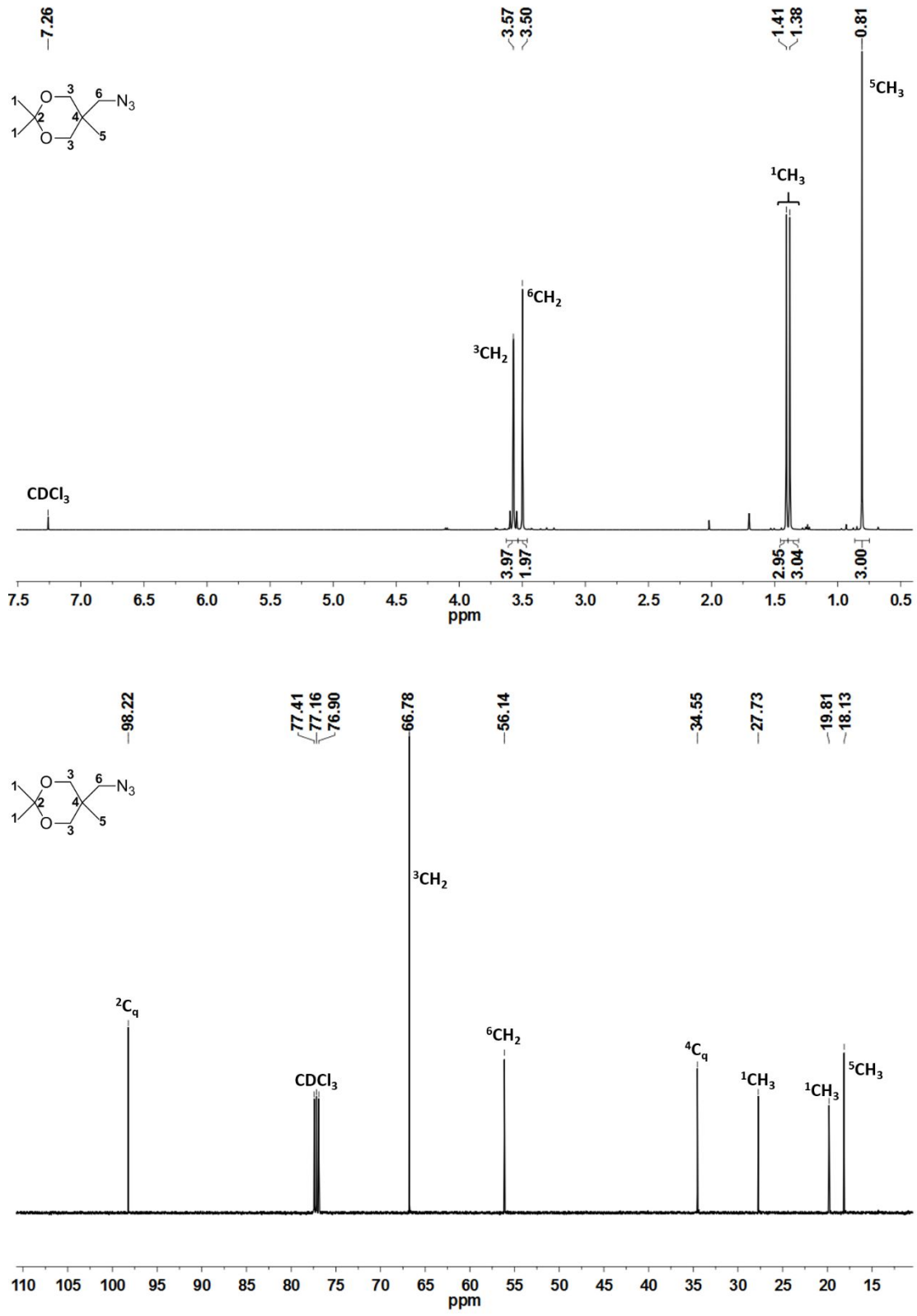

Figure S3. ^{1}H and ^{13}C NMR spectra of compound **3**

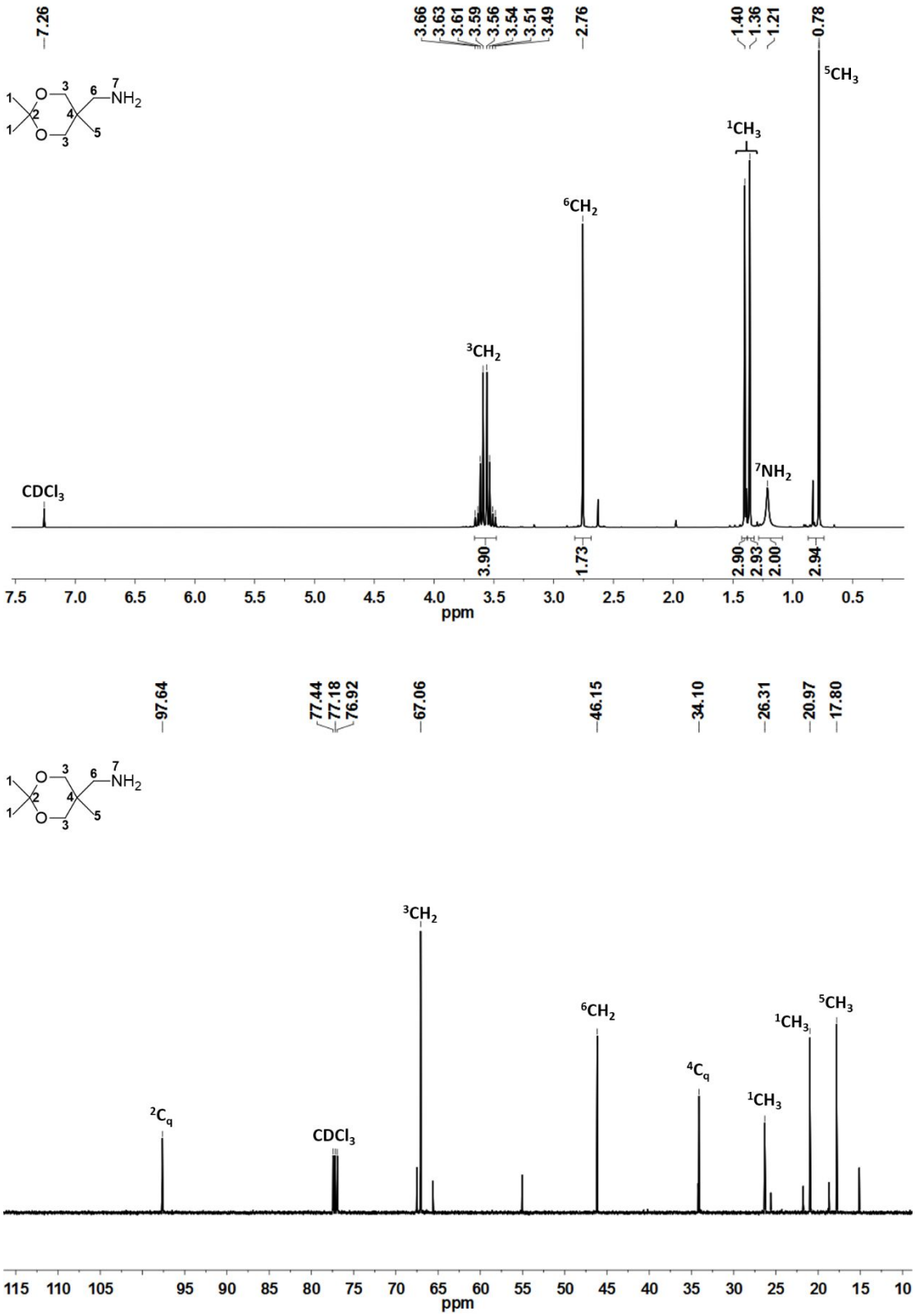

Figure S4. ^{1}H and ^{13}C NMR spectra of compound **4**

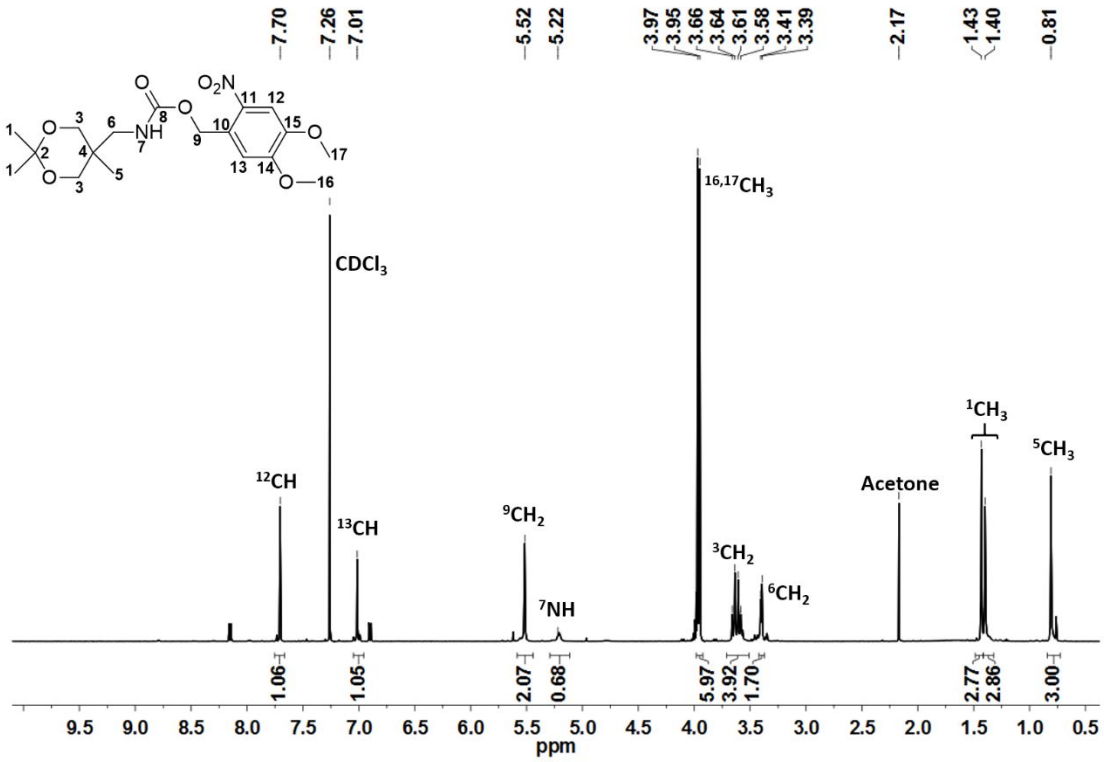

Figure S5. ^{1}H NMR spectrum of crude compound **5**

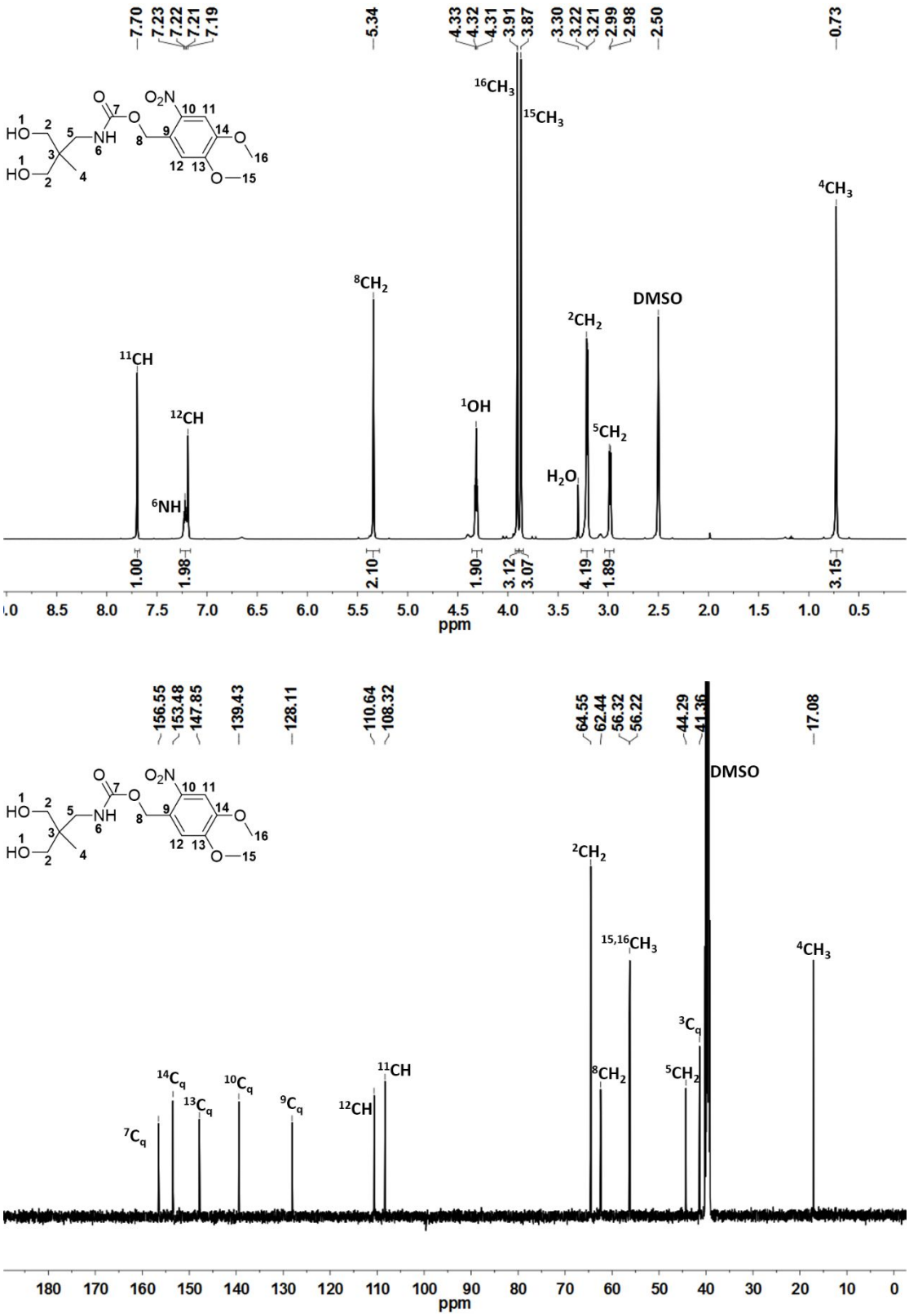

Figure S6. ^{1}H and ^{13}C NMR spectra of compound **6**

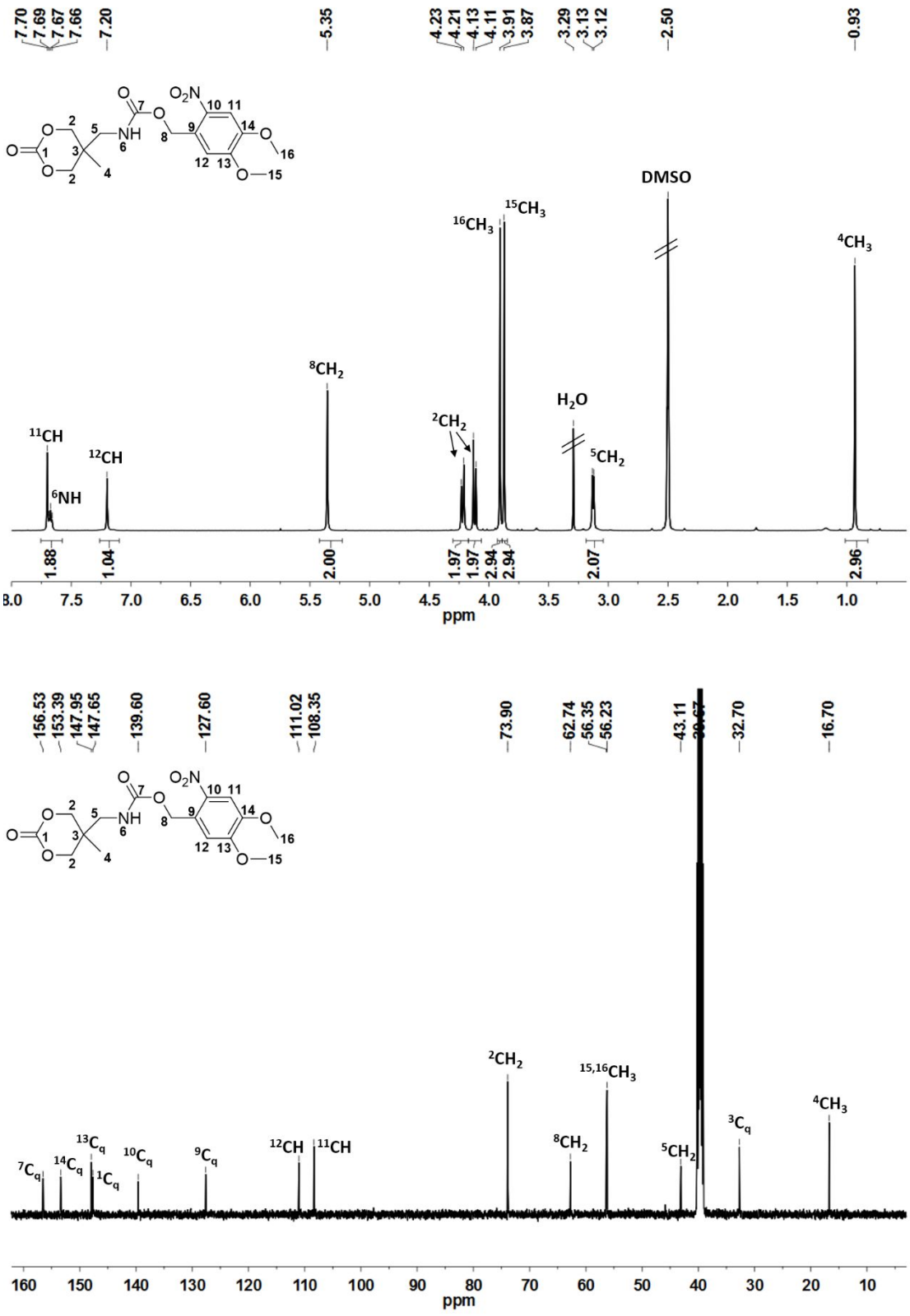

Figure S7. ^{1}H and ^{13}C NMR spectra of **LrM**

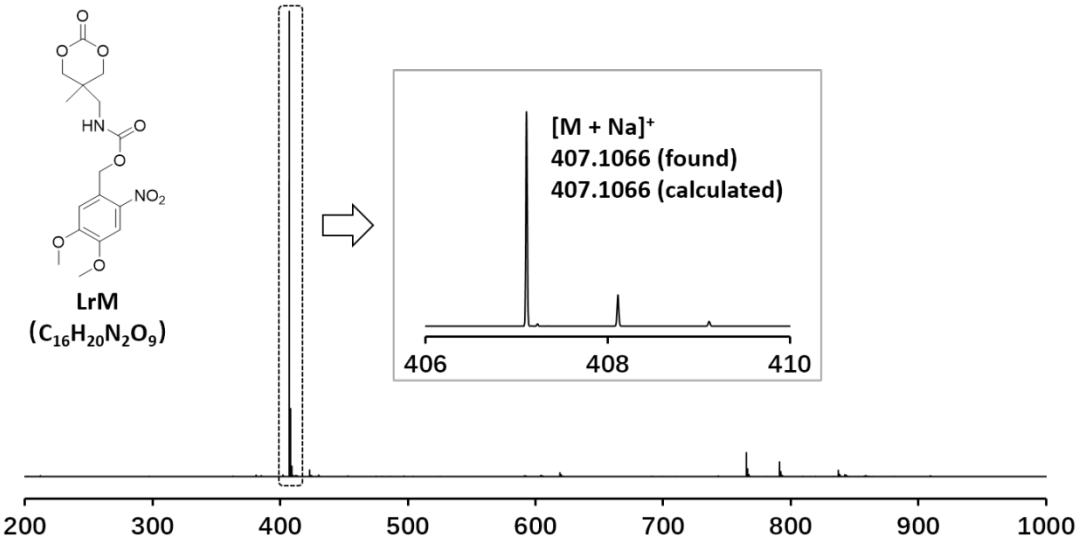

Figure S8. ESI-ToF mass spectrum of **LrM**

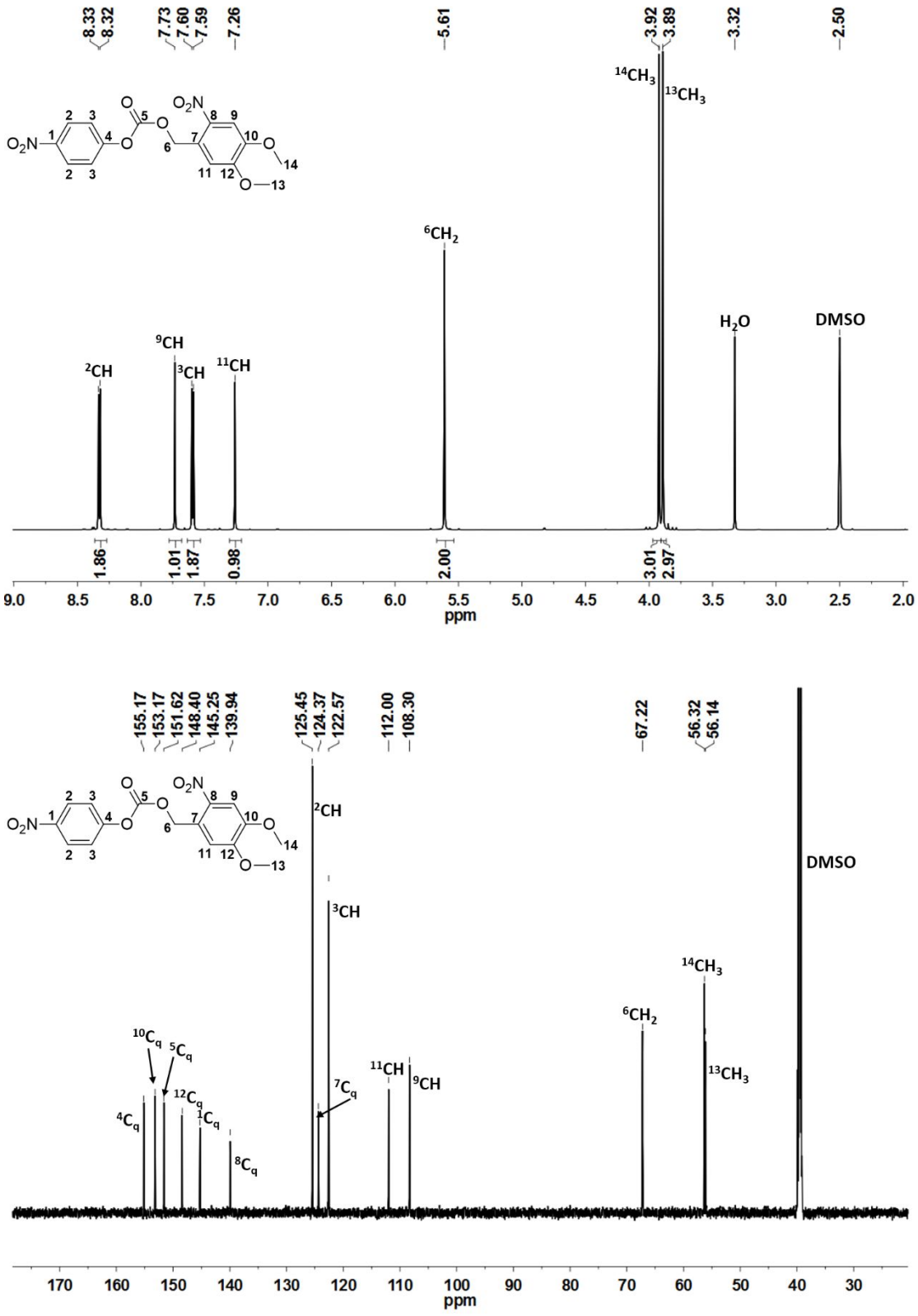

Figure S9. ^{1}H and ^{13}C NMR spectra of compound **7**

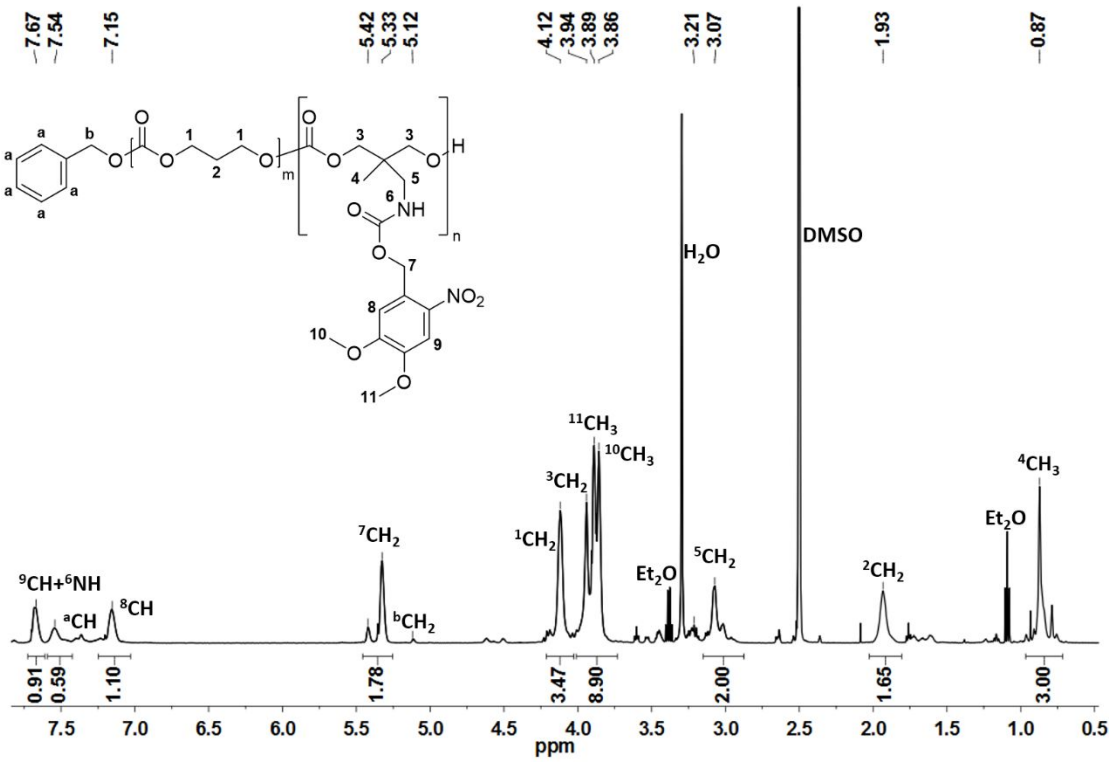

Figure S10. ^{1}H NMR spectrum of copolycarbonate **LrPC-2**

2. Ring-opening copolymerization of LrM with TMC

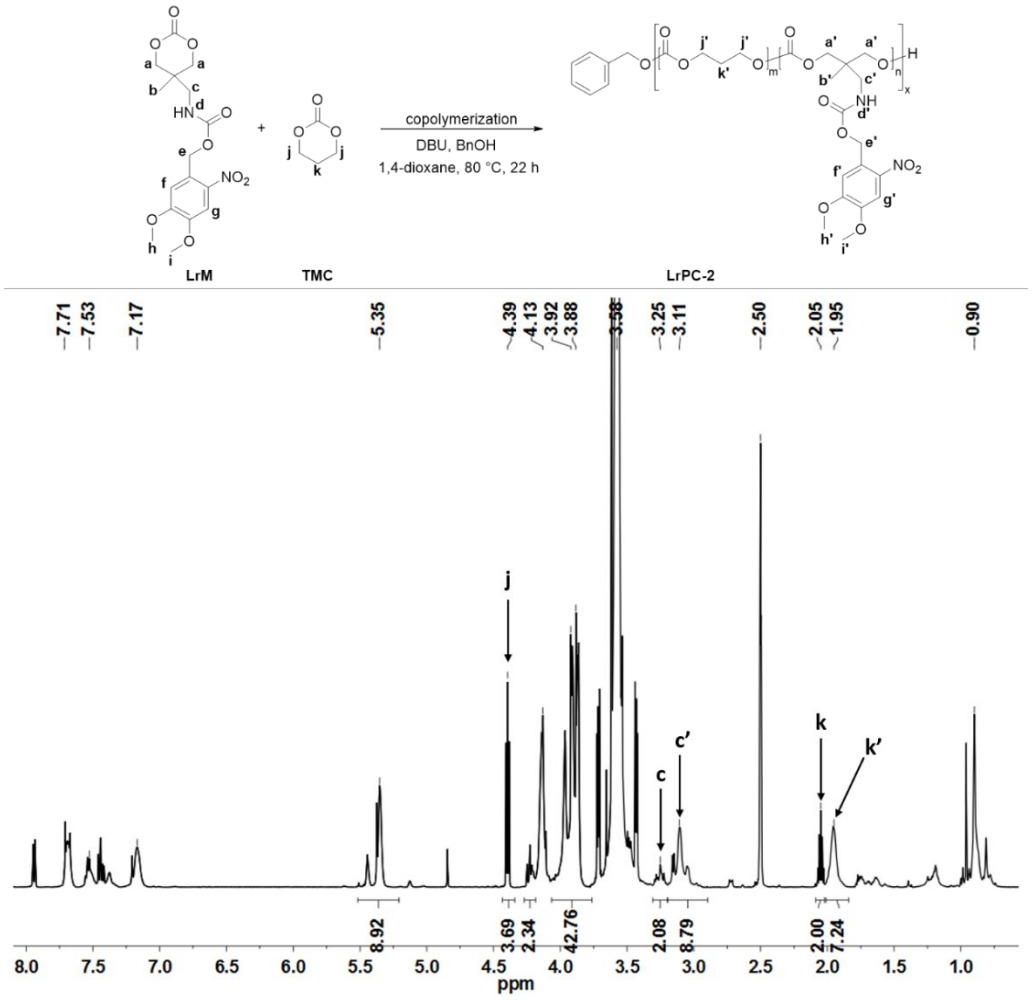

Figure S11. ^{1}H NMR spectrum of the sample taken out from the copolymerization mixture of **LrM** and TMC at 22 h.

Determination of Monomer conversions by NMR spectroscopy (Figure S15) Conversions of **LrM** and TMC were confirmed by calculation from the relative integrals of the monomer (2.05 ppm for TMC (**k**) and 3.25 ppm for **LrM** (**c**)) and copolymer (1.95 ppm for PTMC (**k'**) and 3.11 ppm for **LrPC**(**c'**)) peaks in ^{1}H NMR spectra.

$$\text{conv.(TMC, 22 h)} = \frac{I(k)}{I(k) + I(k')} \times 100\% = \frac{7.24}{2.00 + 7.24} \times 100\% = 79\%$$

$$\text{conv.(LrM, 22 h)} = \frac{I(c)}{I(c) + I(c')} \times 100\% = \frac{2.08}{2.08 + 8.79} \times 100\% = 81\%$$

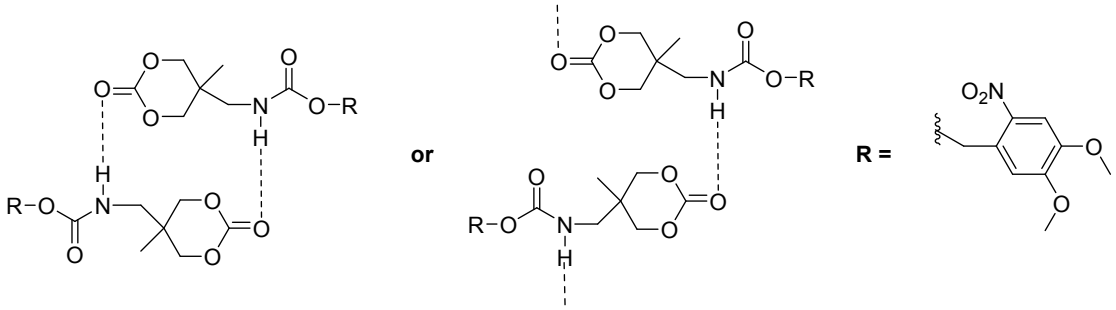

Figure S12. Possible intermolecular hydrogen bonding between **LrMs**

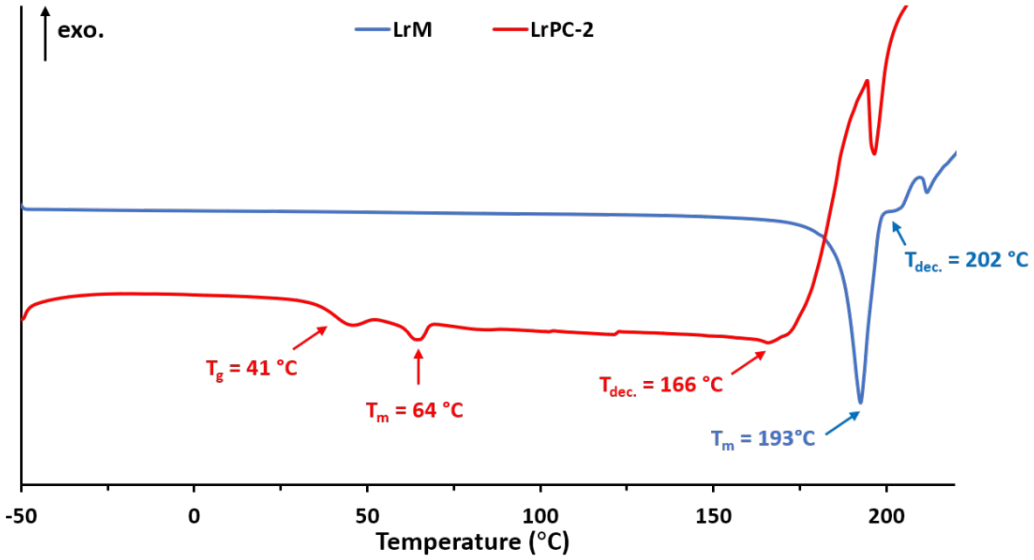

Figure S13. DSC traces of **LrM** and **LrPC-2** from first heating cycle at 10 °C/min

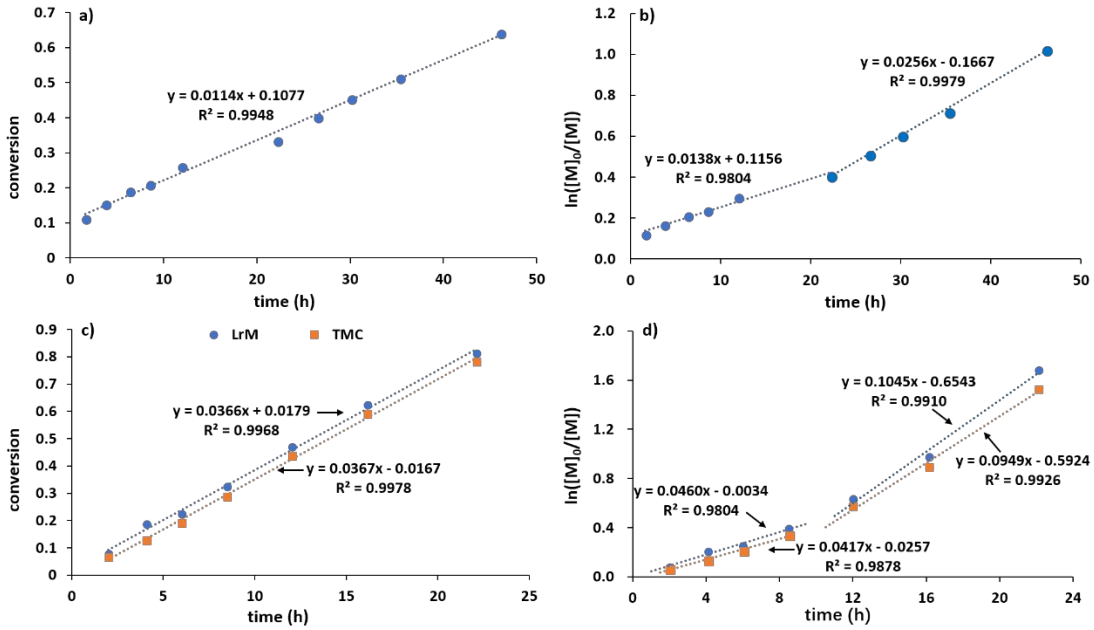

Figure S14. Kinetics of homopolymerization of **LrM** (a and b) and copolymerization of **LrM** with TMC (c and d) with linear equations

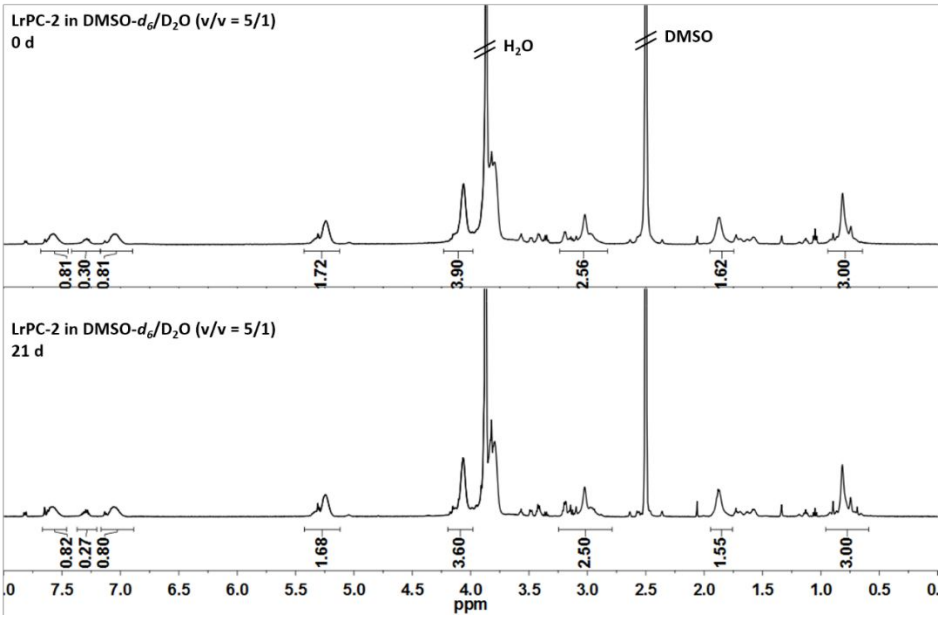

Figure S15. ^{1}H NMR spectrum of **LrPC-2** in DMSO/D_2O after 0 day and 21 day incubation at 37 °C

3. Light degradation of the LrM followed by NMR

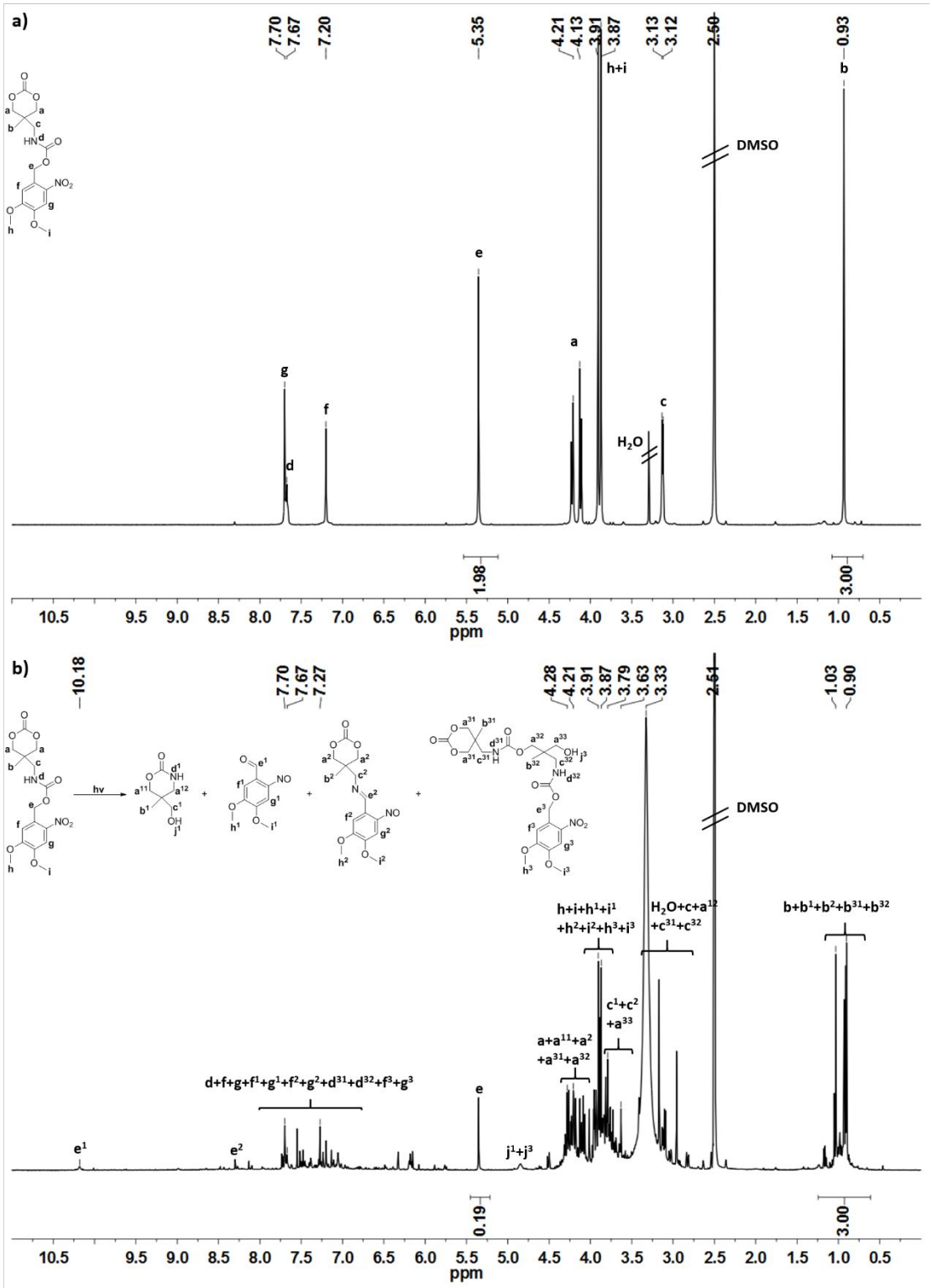

Figure S16. ^{1}H NMR spectrum of **LrM** before (a) and after (b) irradiation for 15 min