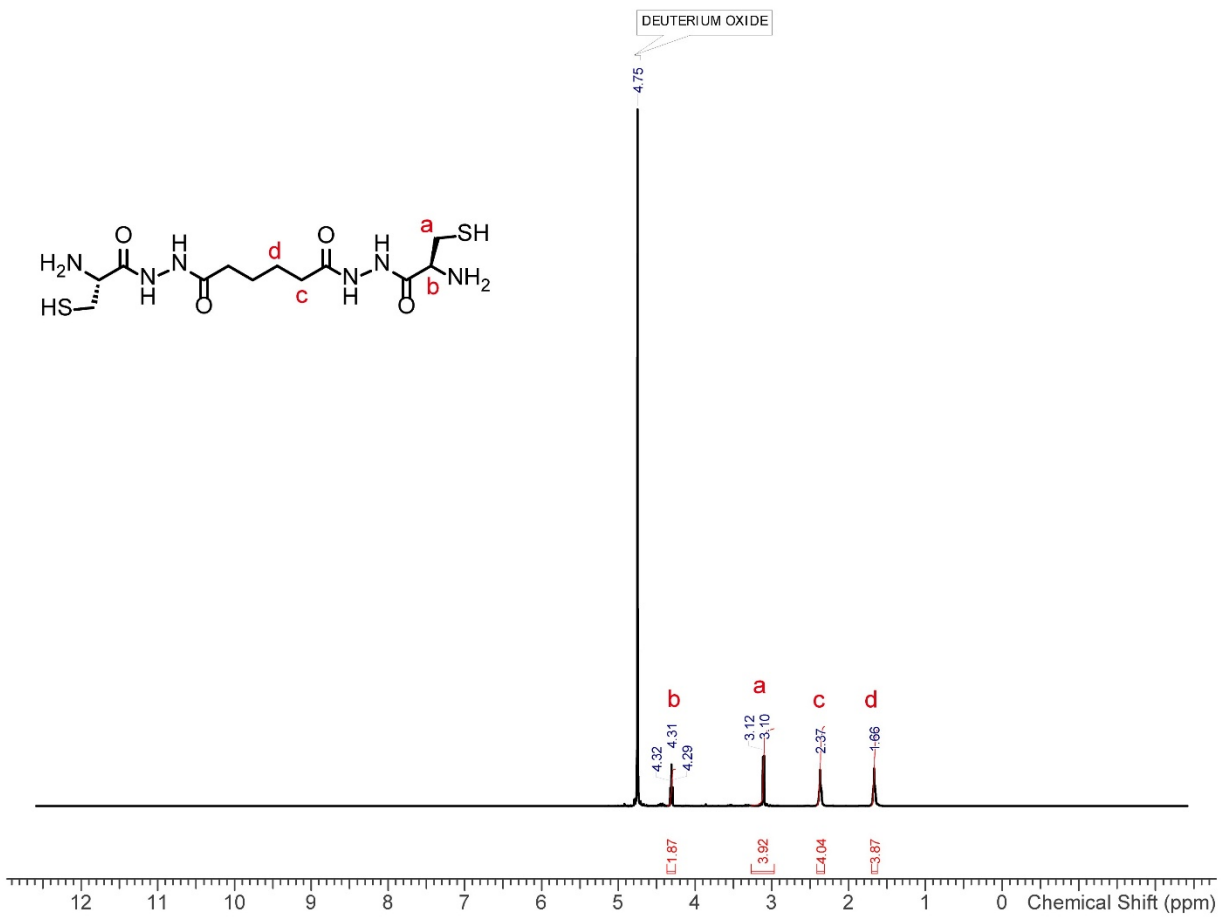


## Supplementary Information

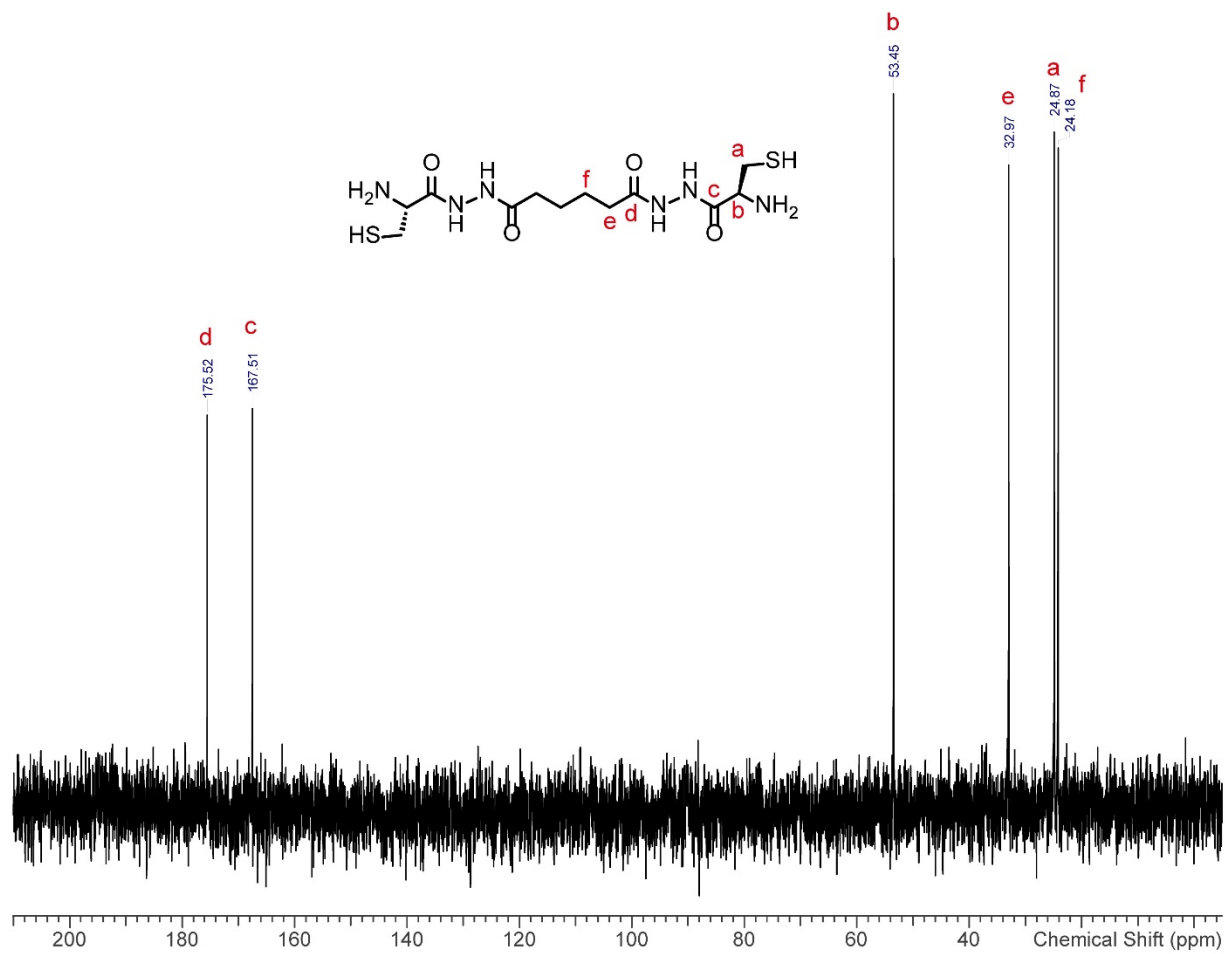
# Chemically triggered rapid degradation of tetra-PEG gels cross-linked with a diacylhydrazine-containing cross-linker

*Satsuki Sekiguchi, Takamasa Sakai, Kousuke Tsuchiya\**

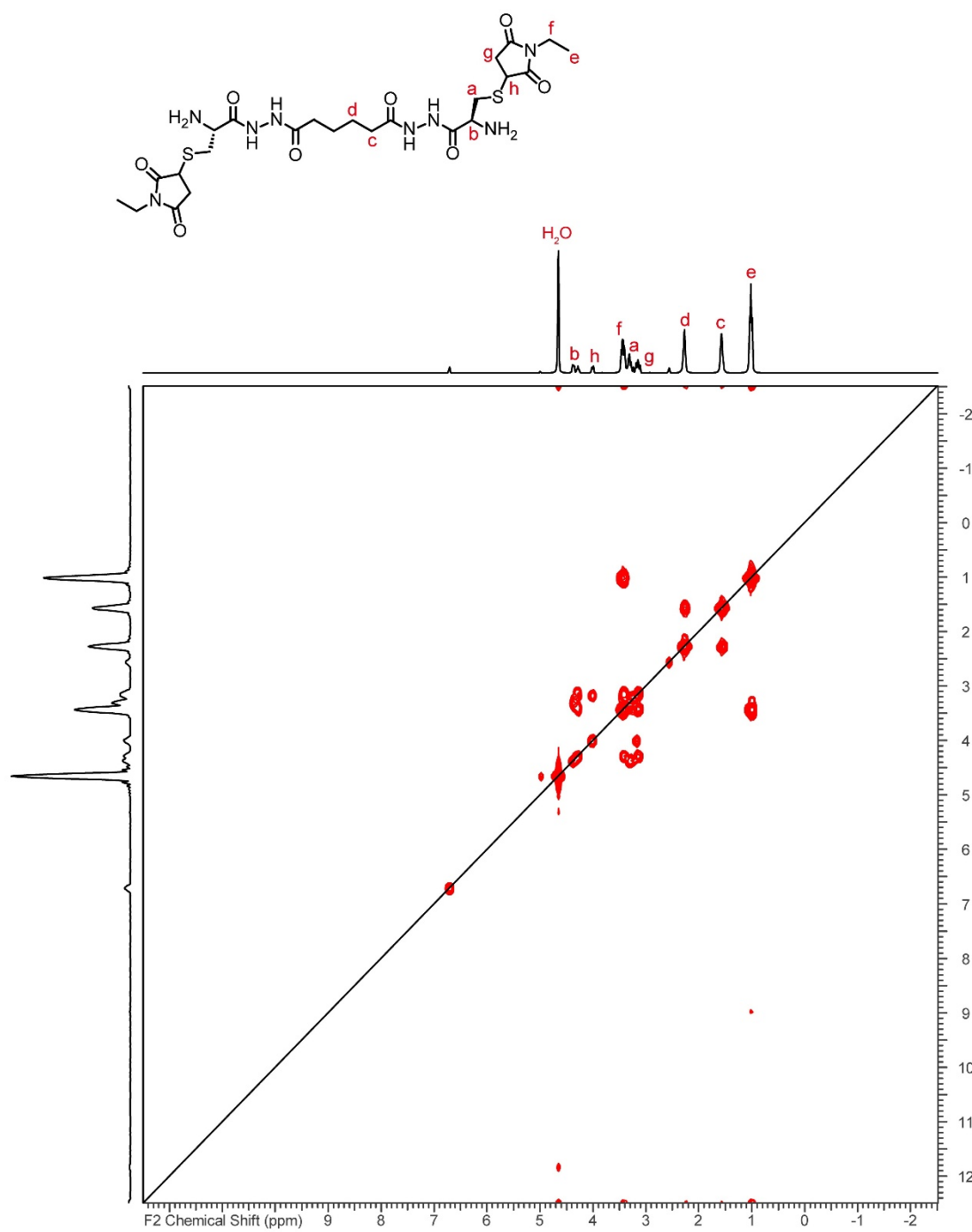
<sup>1</sup> Department of Chemistry and Biotechnology, Graduate School of Engineering, The University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo 113-8656, Japan.



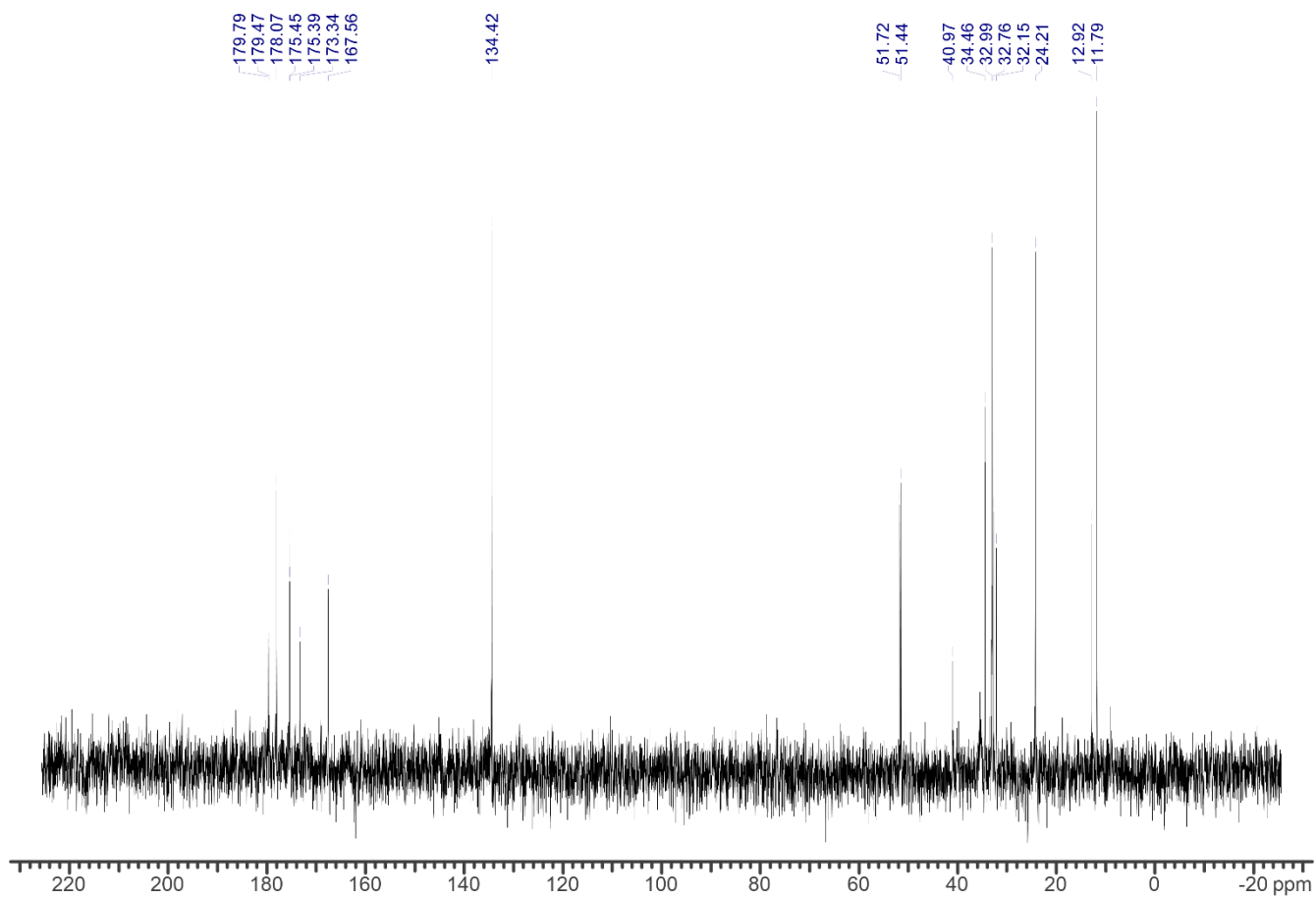
**Figure S1.**  $^1\text{H}$  NMR spectrum of DCH in  $\text{D}_2\text{O}$ .



**Figure S2.** <sup>13</sup>C NMR spectrum of DCH in D<sub>2</sub>O.



**Figure S3.**  $^1\text{H}$ - $^1\text{H}$  COSY NMR spectrum of the product in  $\text{D}_2\text{O}$  for the model reaction between the cross-linker DCH and *N*-ethylmaleimide.



**Figure S4.**  $^{13}\text{C}$  NMR spectrum of the product in  $\text{D}_2\text{O}$  for the model reaction between the cross-linker DCH and *N*-ethylmaleimide.

**Movie S1.** Degradation behavior of tetraPEG-gel containing DCH units in 5 wt% NaClO aqueous solution.

**Movie S2.** Degradation behavior of tetraPEG-gel containing DCH units in 1 wt% NaClO aqueous solution.

**Table S1.** The degradation behavior of cylindrical tetraPEG gel containing DCH units in diluted NaClO solutions below 0.025 wt%.

Run	NaClO concentration ( $10^{-3}$ wt%)	NaClO dilution rate	Result
1	25	×200	solution (> 12 h)
2	12.5	×400	solution (> 12 h)
3	6.25	×800	solution (> 12 h)
4	3.125	×1600	no bulk degradation (up to 10 days)
5	1.563	×3200	no bulk degradation (up to 10 days)
6	0.781	×6400	no bulk degradation (up to 10 days)
7	0	(control)	no bulk degradation (up to 10 days)