

Supporting Information

Facile Terminal Functionalization of Peptides by Protease-Catalyzed Chemoenzymatic Polymerization Toward Synthesis of Polymeric Architectures Consisting of Peptides

Kousuke Tsuchiya and Keiji Numata**

Biomacromolecules Research Team, RIKEN Center for Sustainable Resource Science, 2-1 Hirosawa, Wako, Saitama 351-0198, Japan.

Table of contents

Supplementary figures (Fig. S1-S13)	2-14
-------------------------------------	------

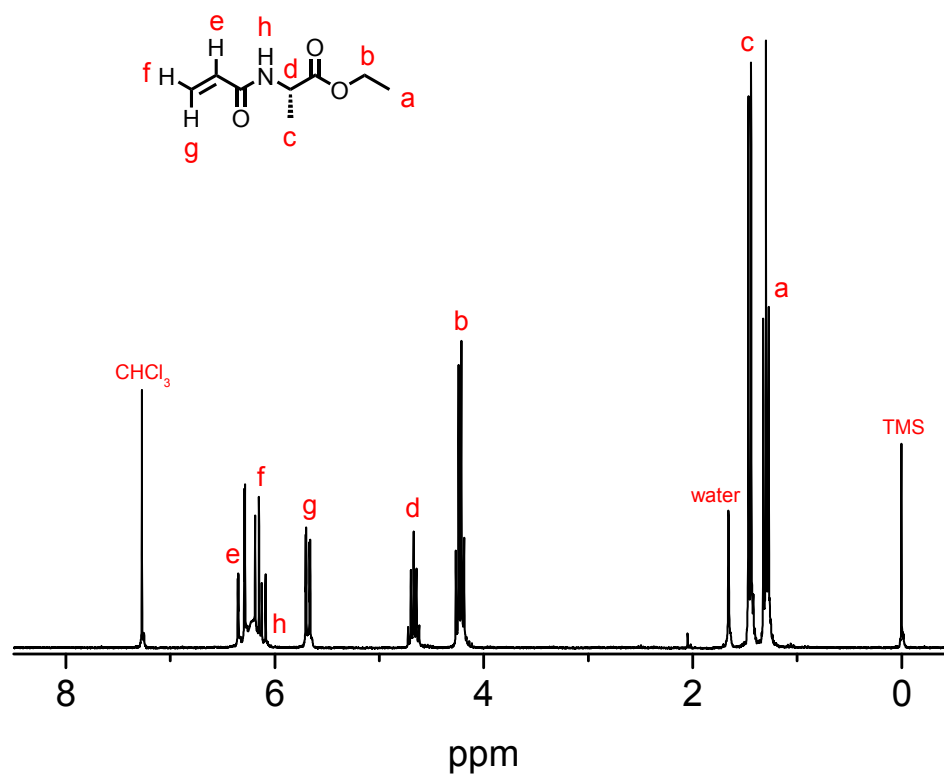


Fig. S1 ^1H NMR spectrum of acrylamide terminal modifier **1** in CDCl_3 .

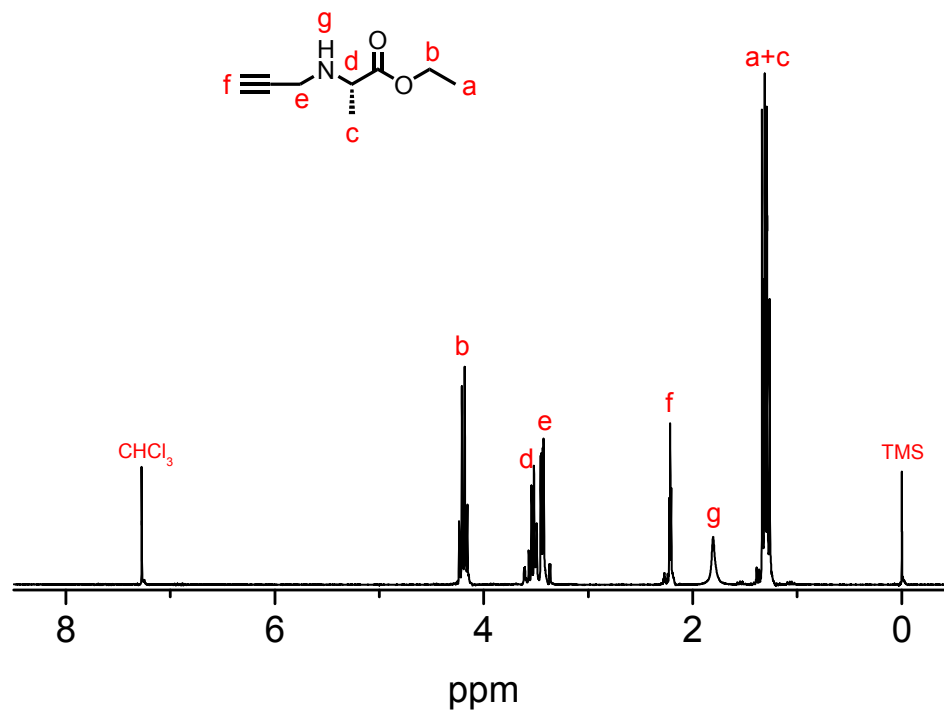


Fig. S2 ^1H NMR spectrum of alkyne terminal modifier **2** in CDCl_3 .

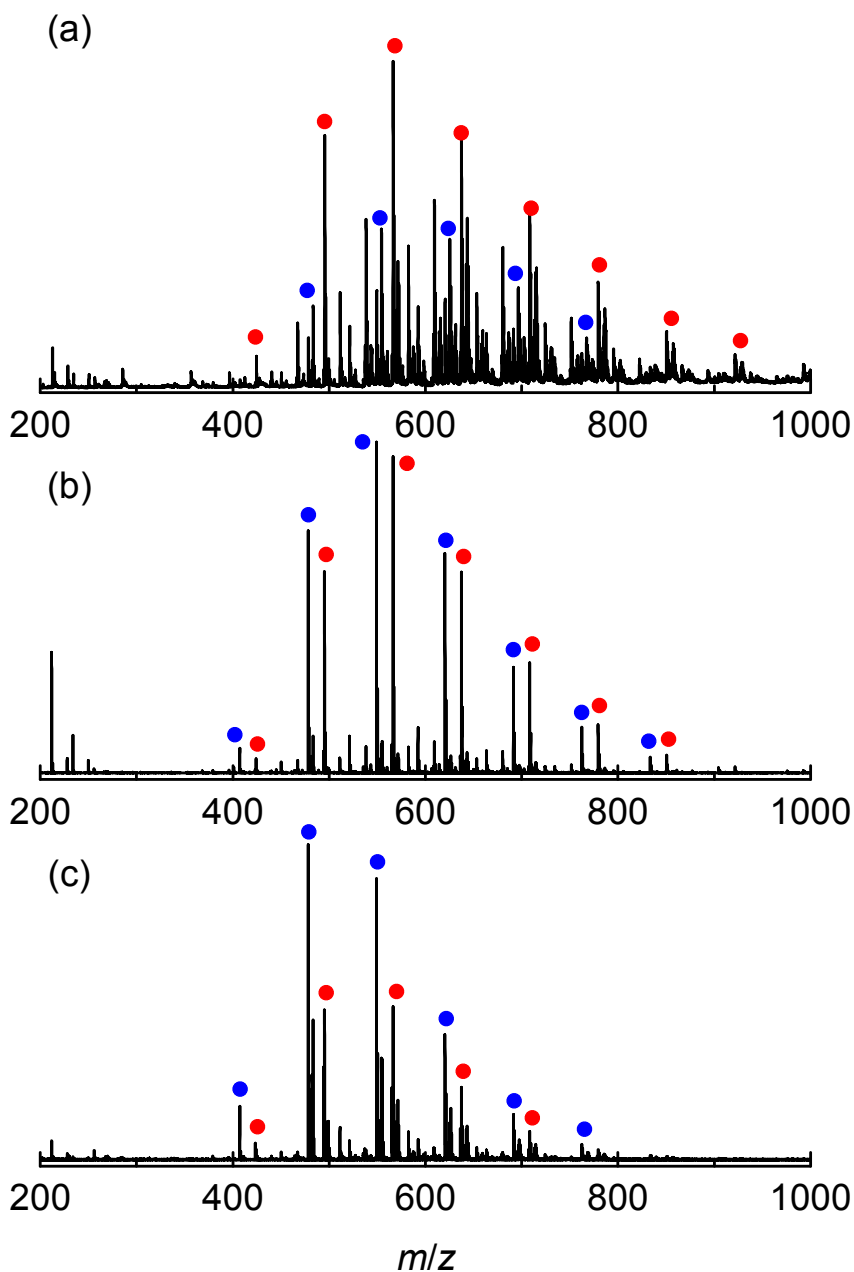


Fig. S3 MALDI-TOF MS spectra of polyAla synthesized by papain-catalyzed polymerization in the presence of **1** at the feed ratio of (a) monomer/**1** = 1/0.1, (b) monomer/**1** = 1/0.3, and (c) monomer/**1** = 1/0.5. Peaks derived from the polyAla modified with and without an acrylamide moiety at the N-terminus are labeled with blue and red circles, respectively.

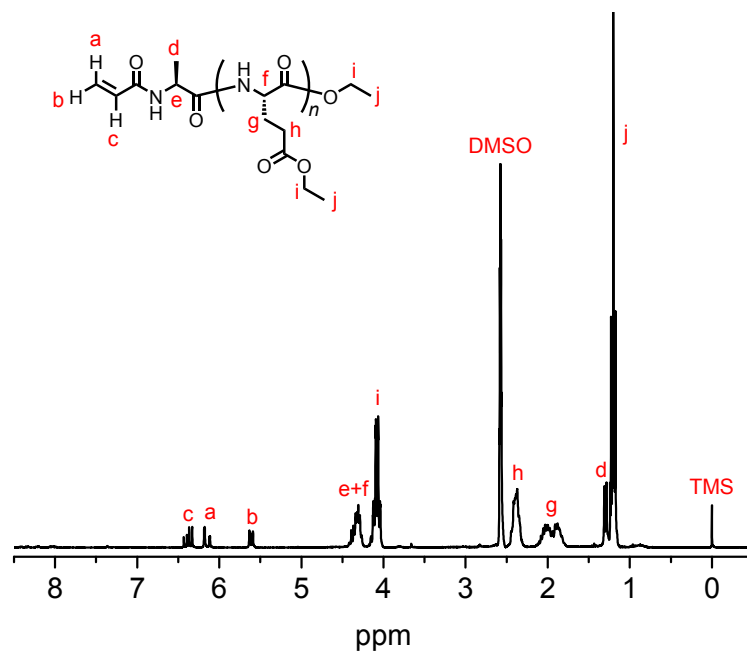


Fig. S4 ^1H NMR spectrum of acrylamide-terminated polyGlu in $\text{DMSO-}d_6/\text{TFA-}d$ (5/1 volume ratio).

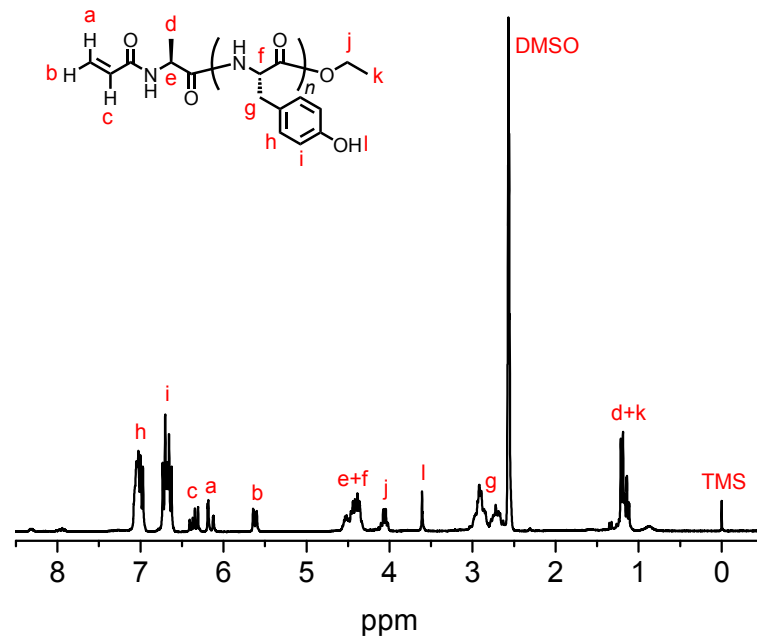


Fig. S5 ¹H NMR spectrum of acrylamide-terminated polyTyr in DMSO-d₆/TFA-d D₂O (5/1 volume ratio).

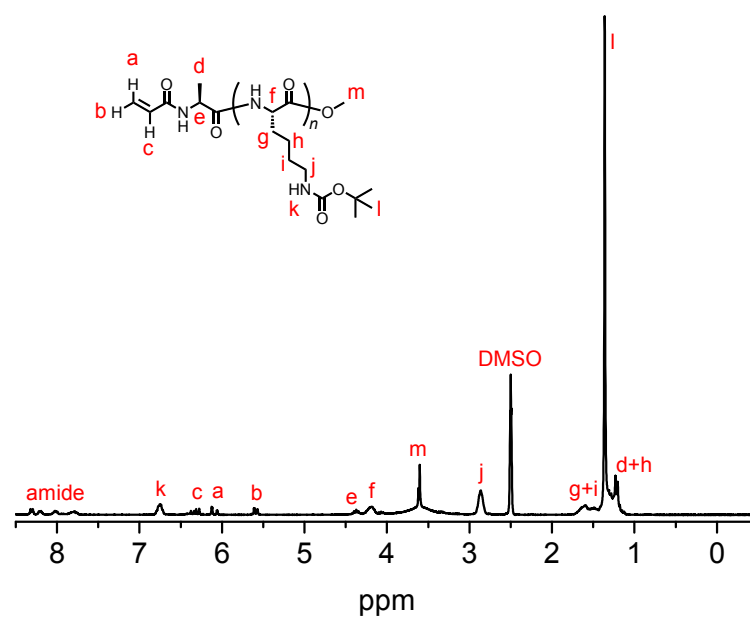


Fig. S6 ^1H NMR spectrum of acrylamide-modified poly(Boc-Lys) in $\text{DMSO-}d_6$.

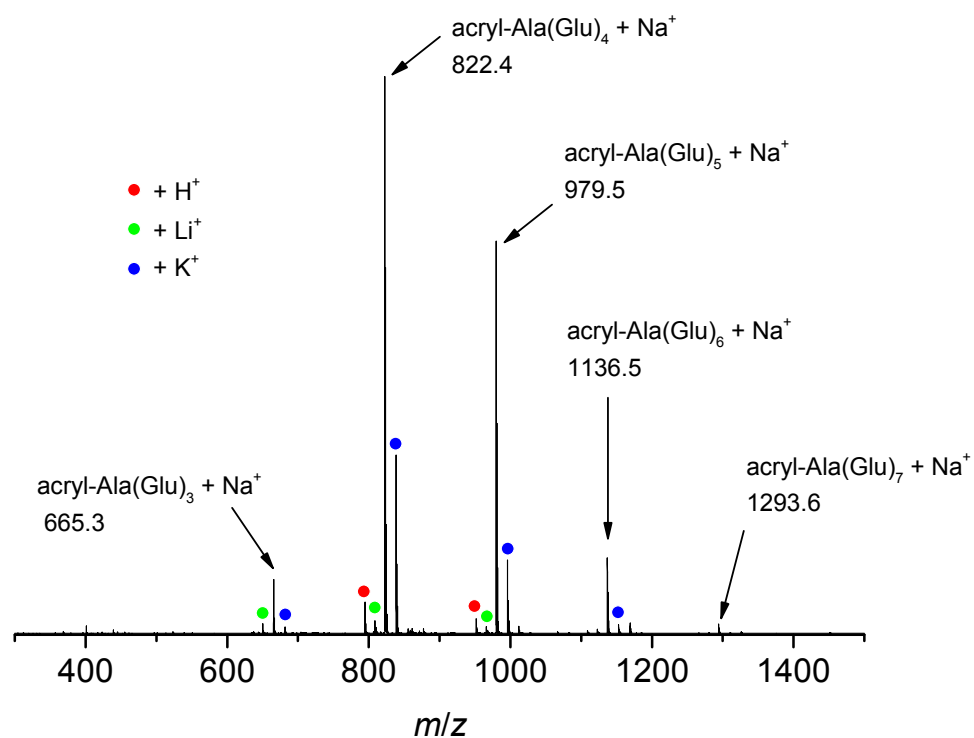


Fig. S7 MALDI-TOF MS spectrum of acrylamide-modified polyGlu. Filled circles indicate the peaks derived from the adducts with different ions.

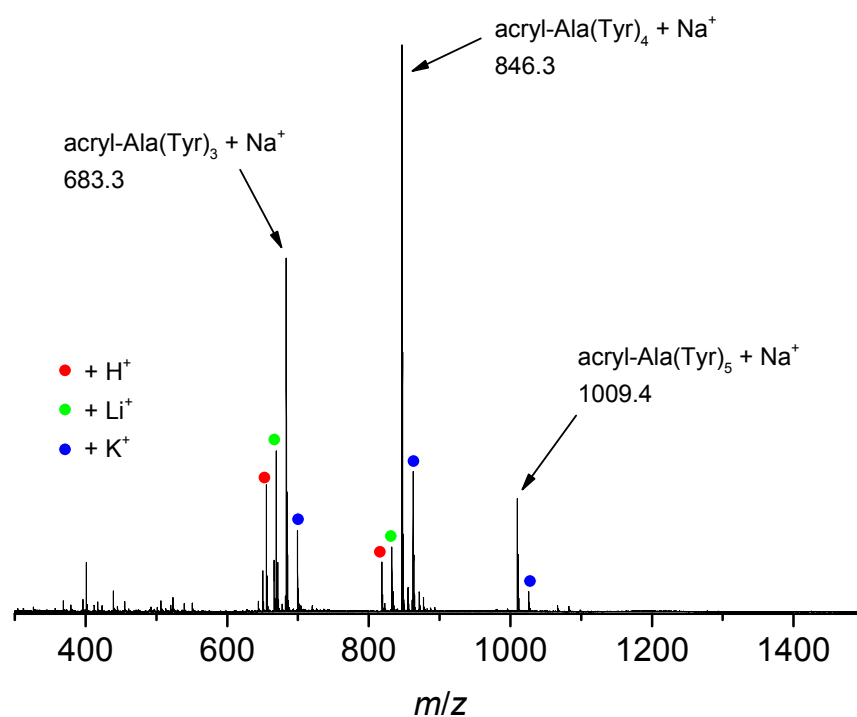


Fig. S8 MALDI-TOF MS spectrum of acrylamide-modified polyTyr. Filled circles indicate the peaks derived from the adducts with different ions.

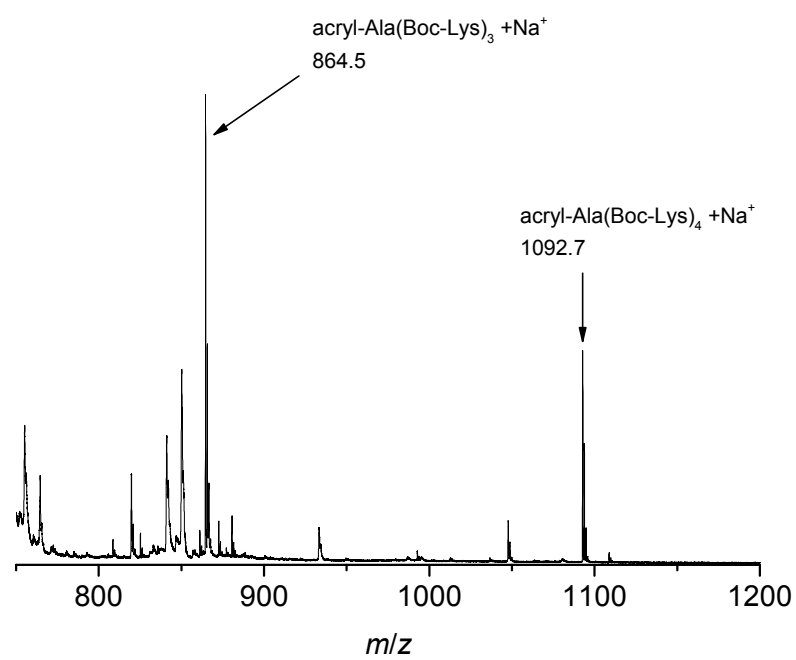


Fig. S9 MALDI-TOF MS spectrum of acrylamide-modified poly(Boc-Lys).

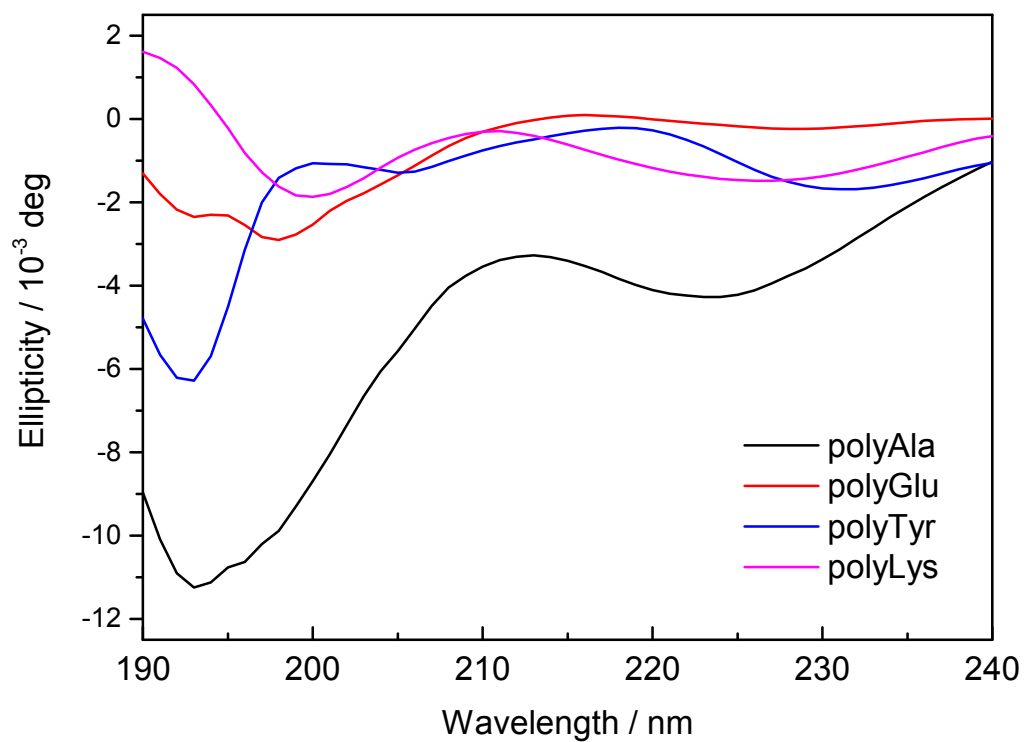


Fig. S10 CD spectra of acrylamide-terminated polypeptides in 1,1,1,3,3,3-hexafluoro-2-propanol (100 μ M).

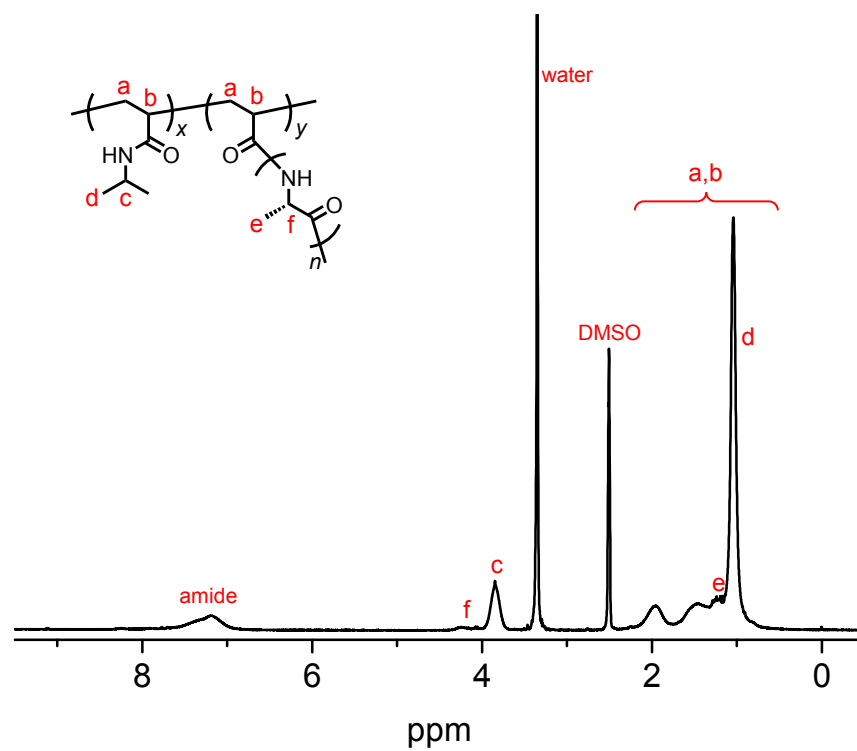


Fig. S11 ^1H NMR spectrum of poly(NIPAm-g-Ala) in $\text{DMSO-}d_6$.

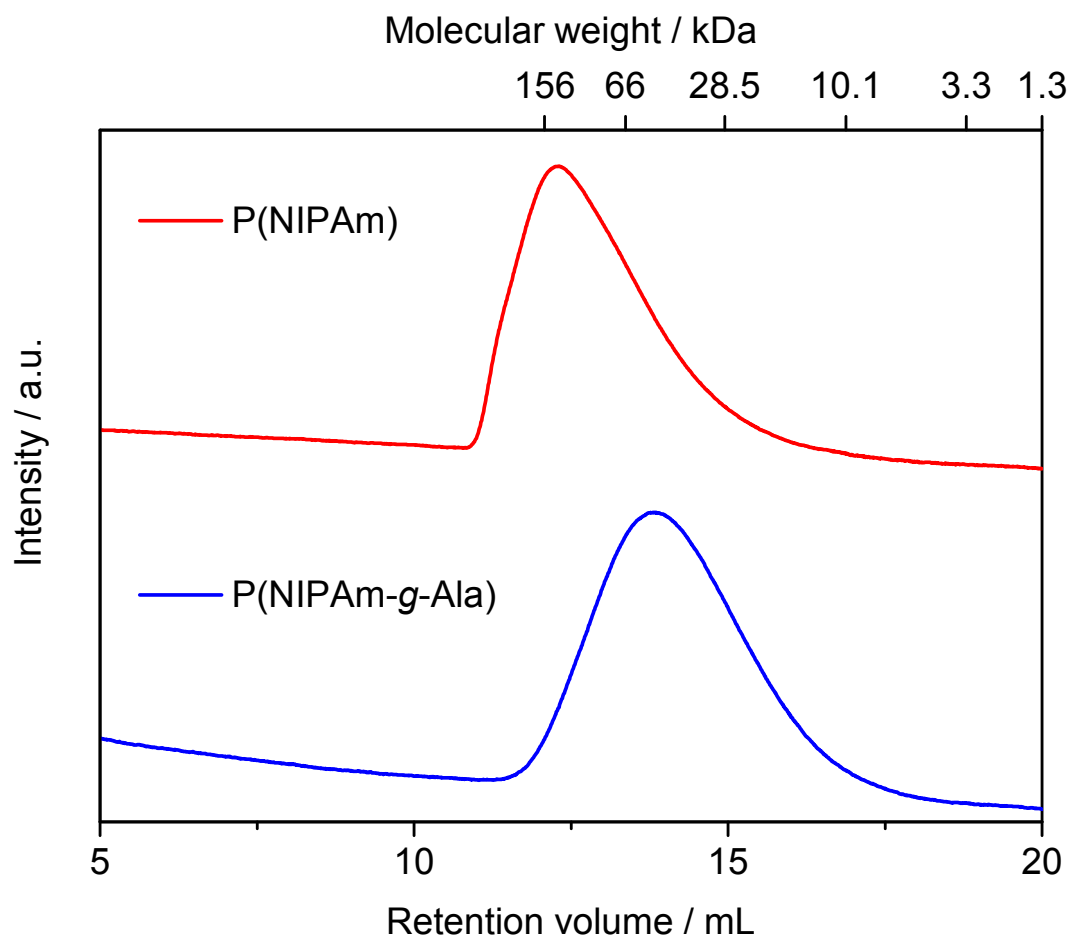


Fig. S12 GPC traces of poly(NIPAm) and poly(NIPAm-g-Ala) eluted with NMP containing 10 mM LiBr. A series of molecular weights on the upper x axis are obtained from polystyrene standards.

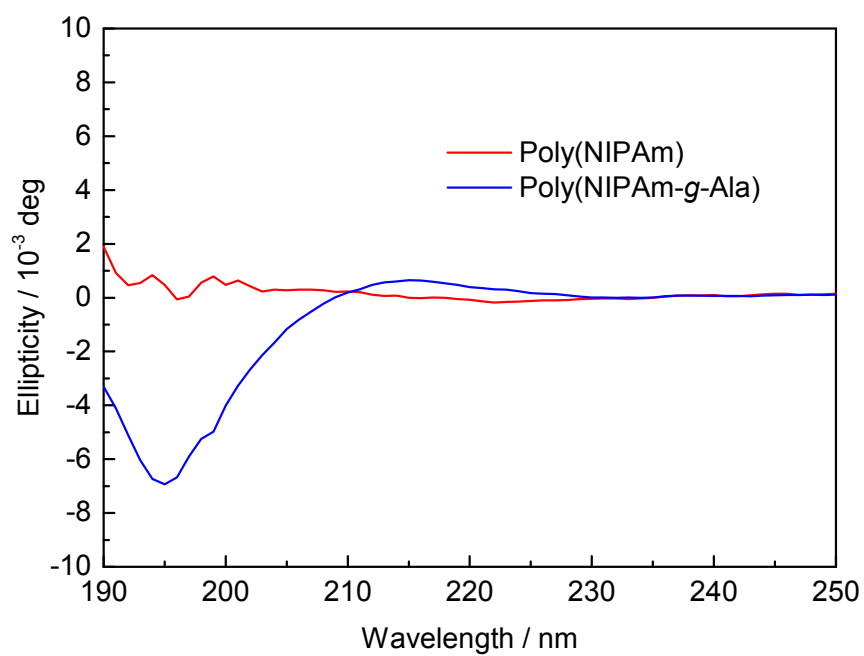


Fig. S13 CD spectra of poly(NIPAm-g-Ala) and poly(NIPAm) in water at 25 °C (0.05 wt%).