

## Supporting Information

# Responsive hydrogel binding matrix for dual signal amplification in fluorescence affinity biosensors and peptide microarrays

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Polymer synthesis:

- 2-Azidoethylamine:

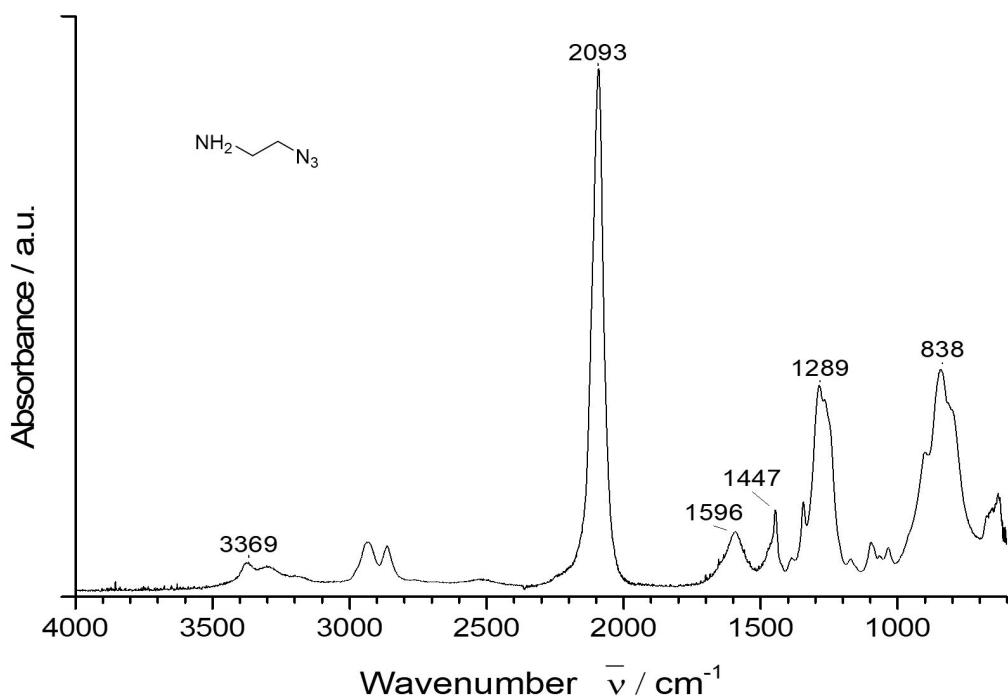


Figure S1: IR spectrum of 2-azidoethylamine

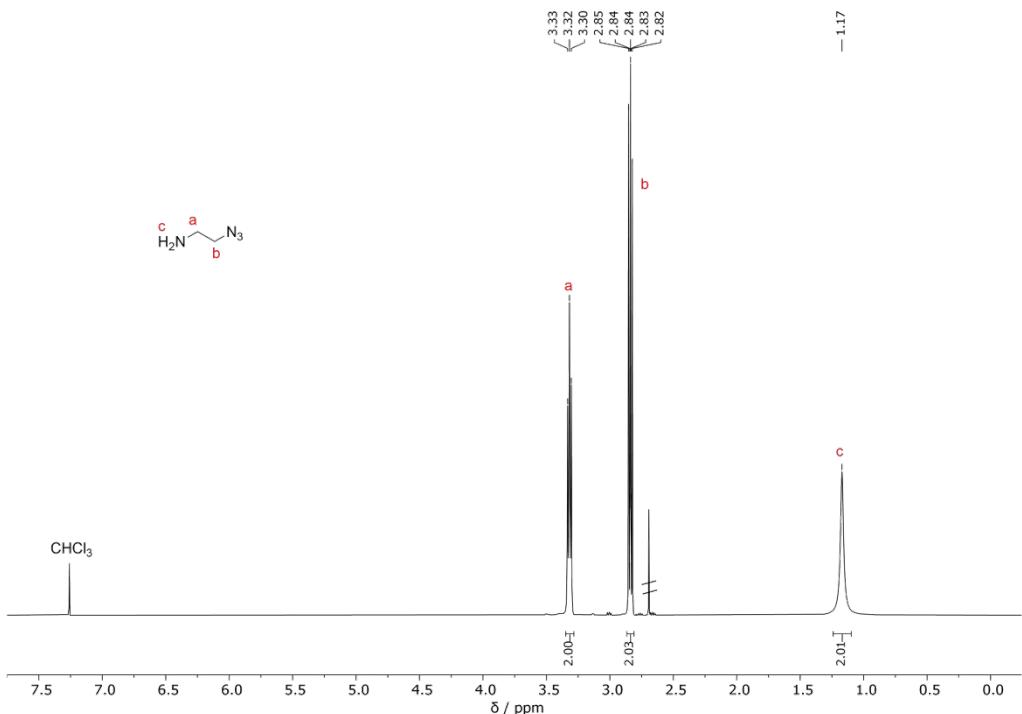


Figure S2:  $^1\text{H}$  NMR spectrum (400 MHz) of 2-azidoethylamine recorded in  $\text{CDCl}_3$ .

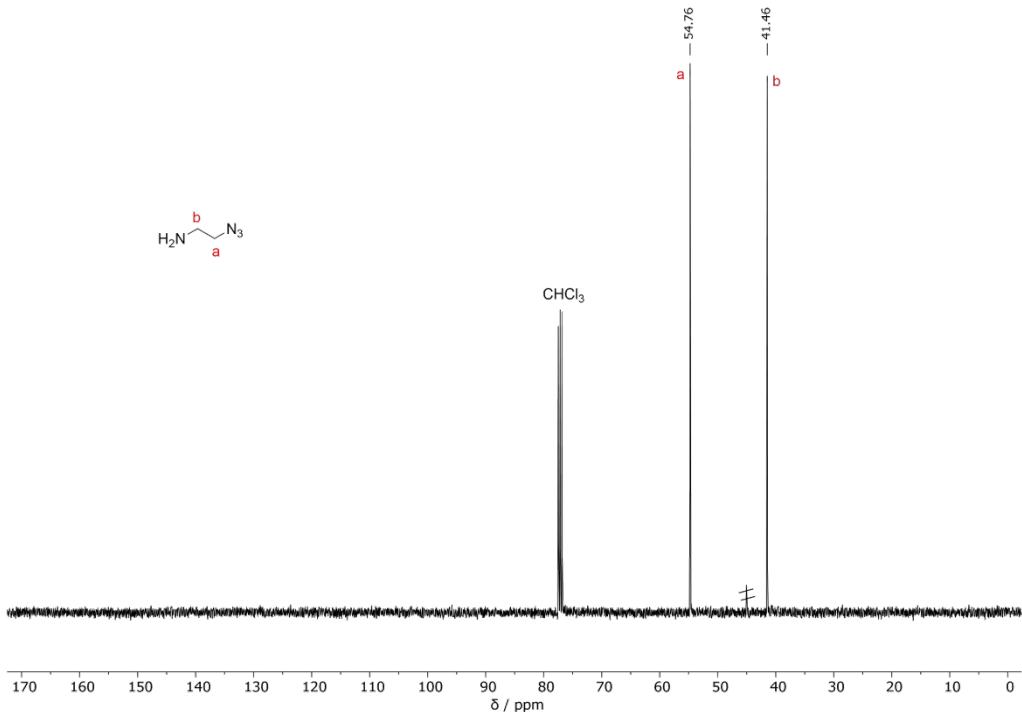


Figure S3:  $^{13}\text{C}$  NMR spectrum (101 MHz) of 2-azidoethylamine recorded in  $\text{CDCl}_3$ .

- Benzophenone-disulfide BP-S<sub>2</sub>:

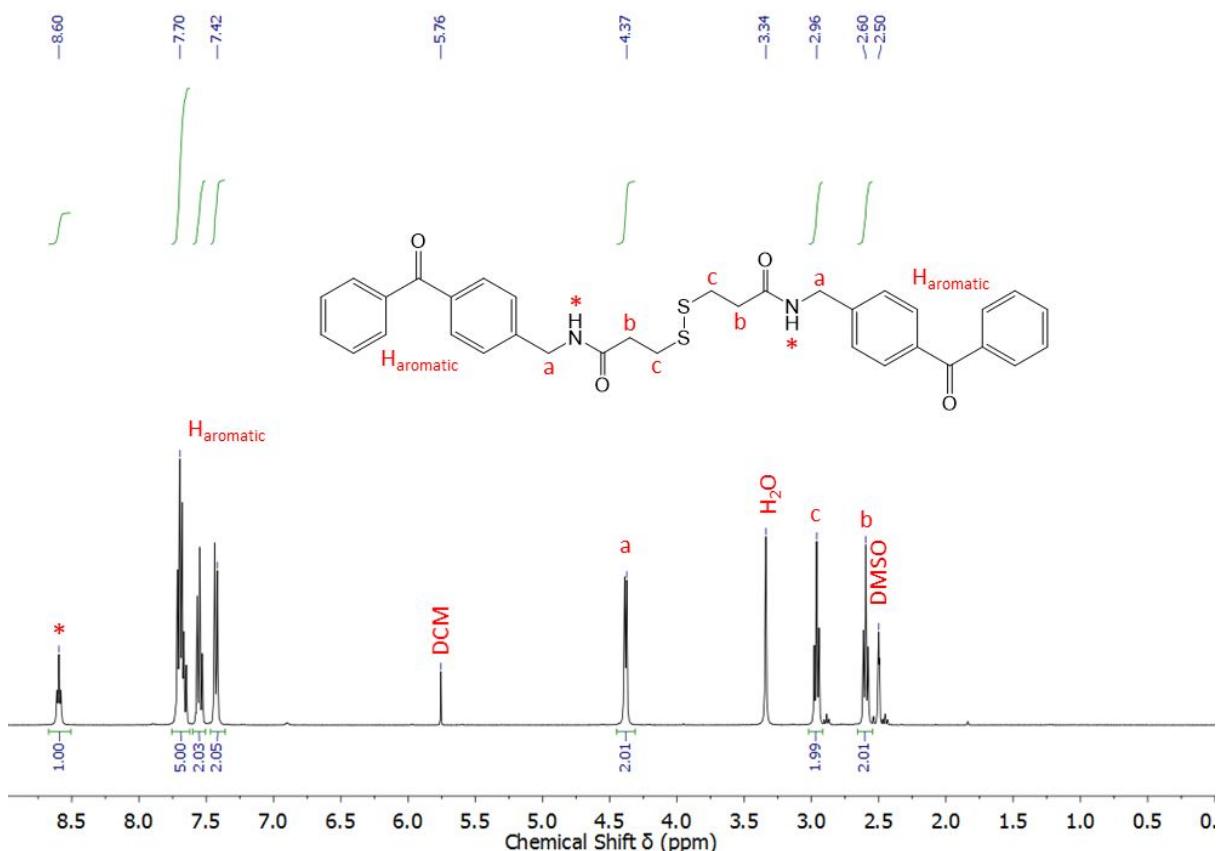


Figure S4: <sup>1</sup>H NMR spectrum of 3,3'-disulfanediylibis[N-(4-benzoylbenzyl)propanamide] recorded in DMSO-d<sub>6</sub>.

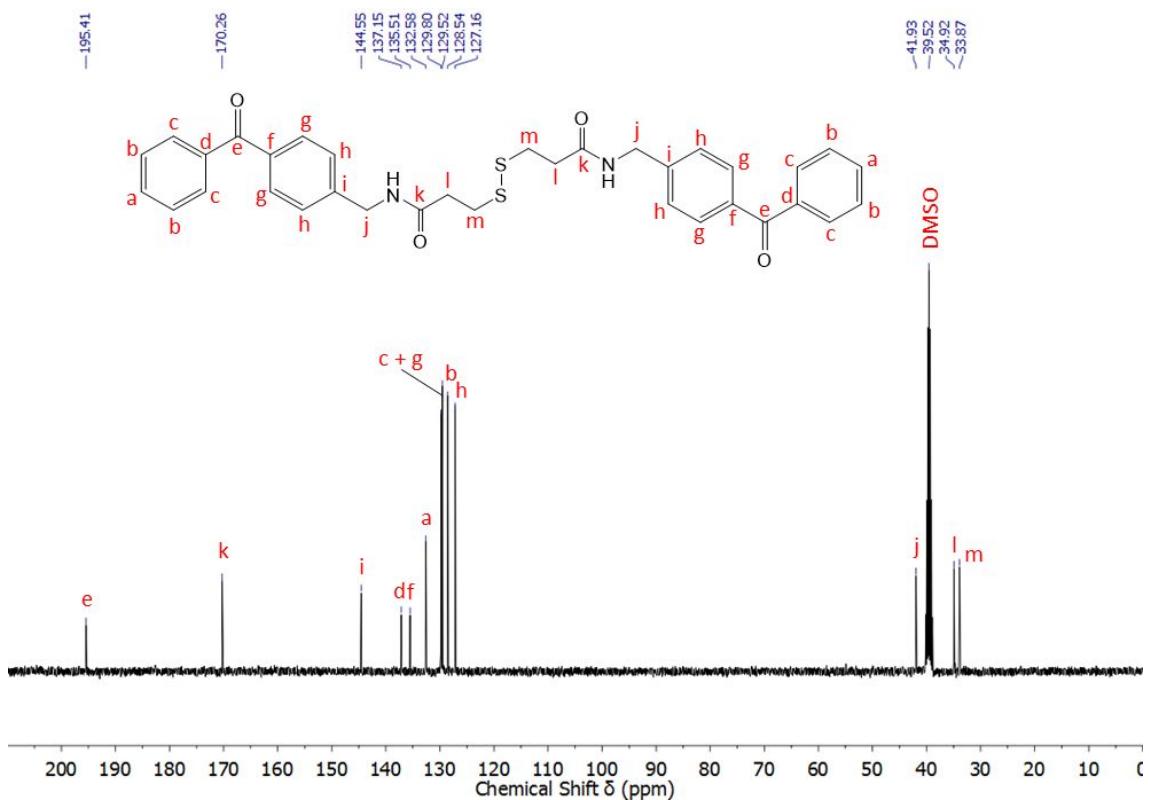


Figure S5:  $^{13}\text{C}$ -NMR spectrum of 3,3'-disulfanediylbis(N-(4-benzoylbenzyl)propanamide) (DMSO).

- pNIPAAm-based terpolymer:

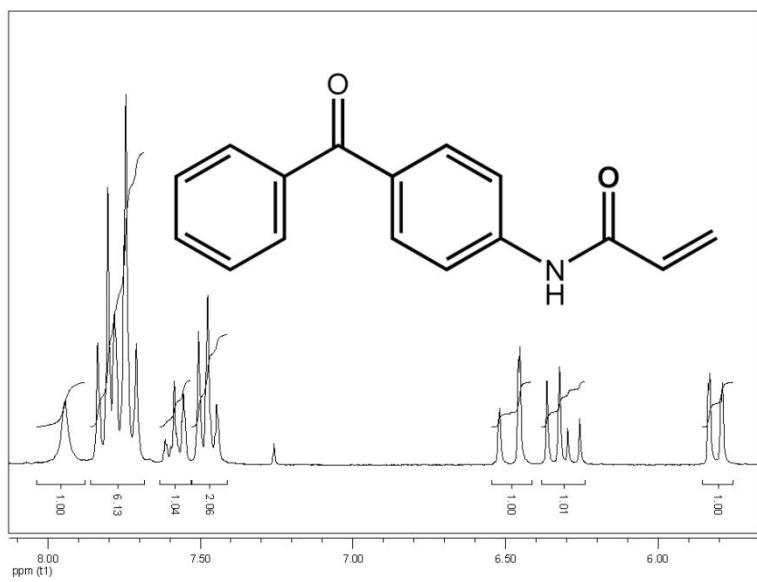


Figure S6:  $^1\text{H}$ -NMR of 4-benzophenylacrylamide.

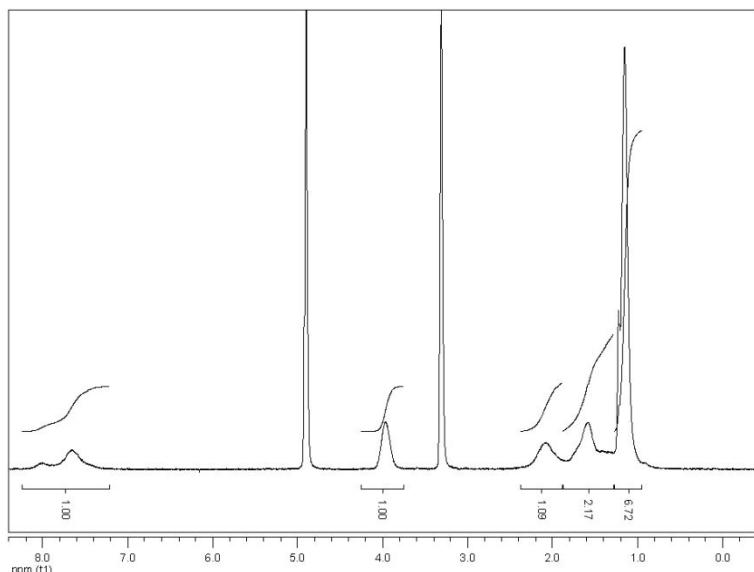


Figure S7:  $^1\text{H}$ -NMR of pNIPAAm-based terpolymer *N*-isopropylacrylamide, methacrylic acid, and *N*-(4-benzoylphenyl)acrylamide (94:5:1 ratio) in *d*-methanol.

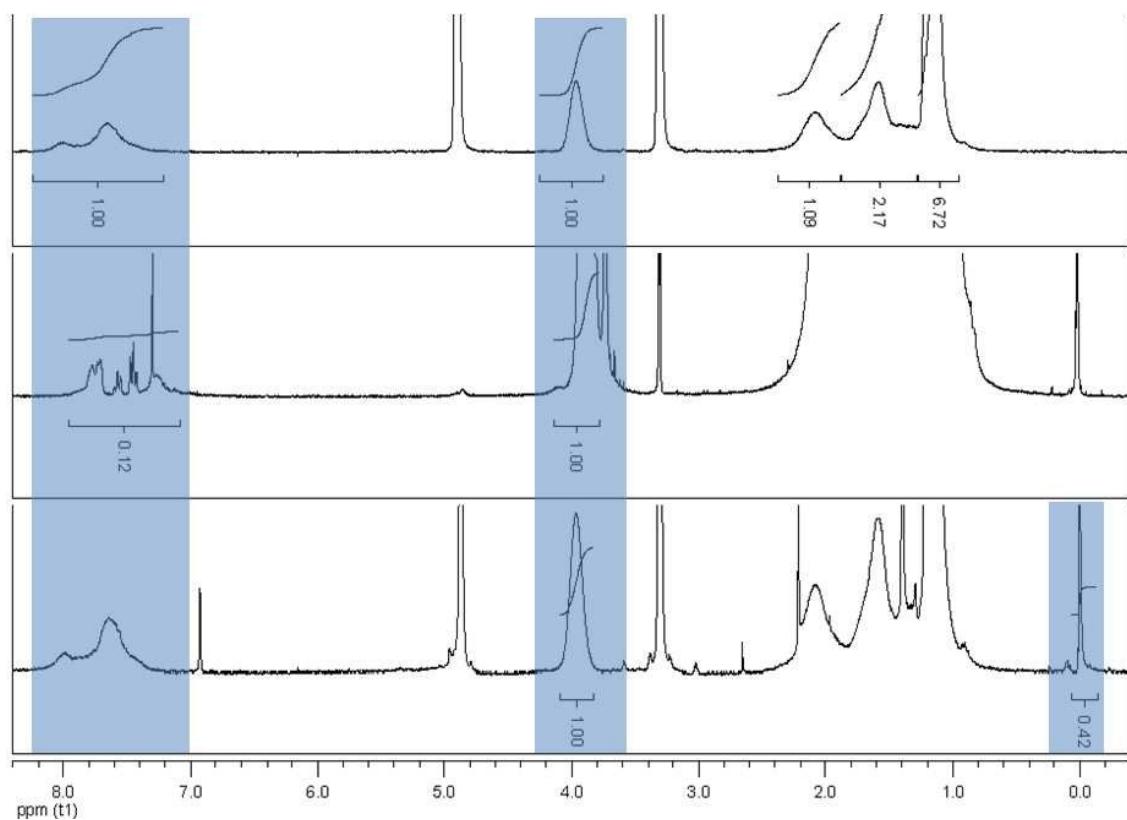


Figure S8: Comparison of  $^1\text{H}$ -NMR spectra of the terpolymer measured in *d*-methanol (top), after addition of  $\text{D}_2\text{O}$  and *d*-chloroform (middle), and after preparation of the TMS-ester (bottom, measured in *d*-methanol).

- poly(2-ethyl-2-oxazoline) (pOx):

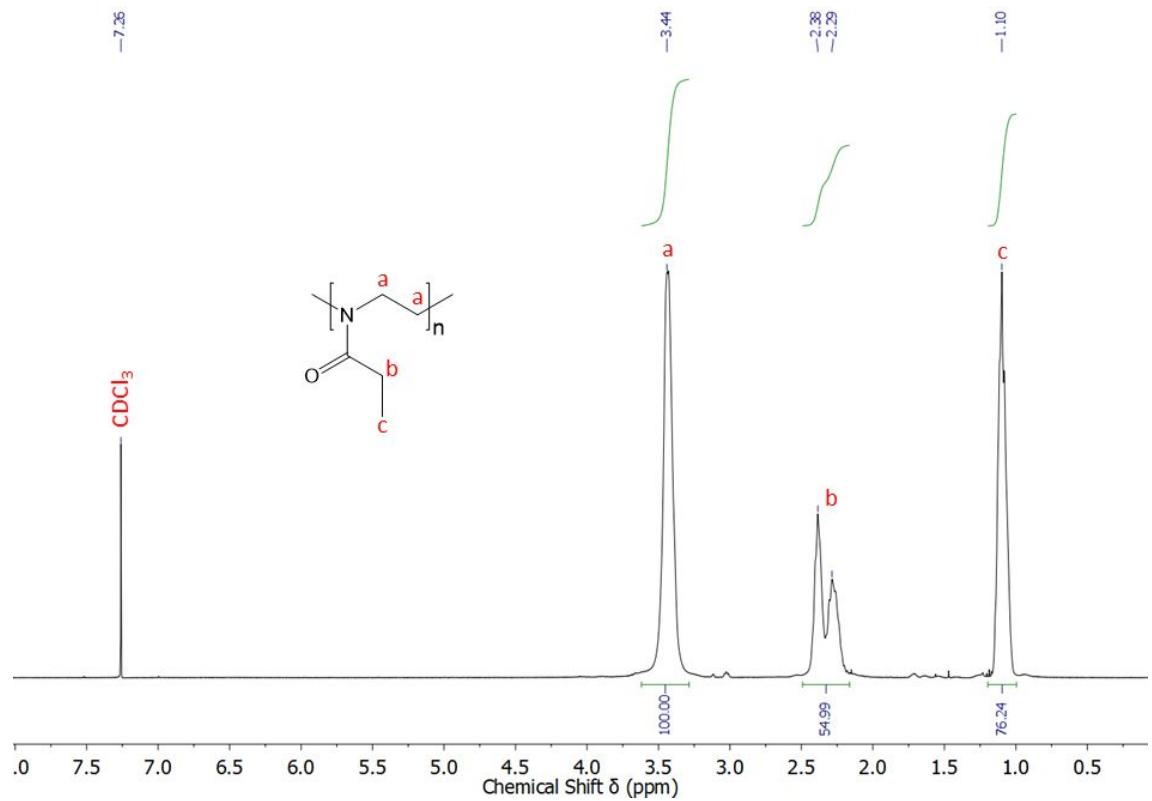


Figure S9:  $^1\text{H}$ -NMR spectrum of poly(2-ethyl-2-oxazoline) ( $\text{CDCl}_3$ ).