

Supporting Information

**Reversible photo-cross-linking of GCN4 peptide  
containing 3-cyanovinylcarbazole amino acid to  
double-stranded DNA**

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**Compound 2**

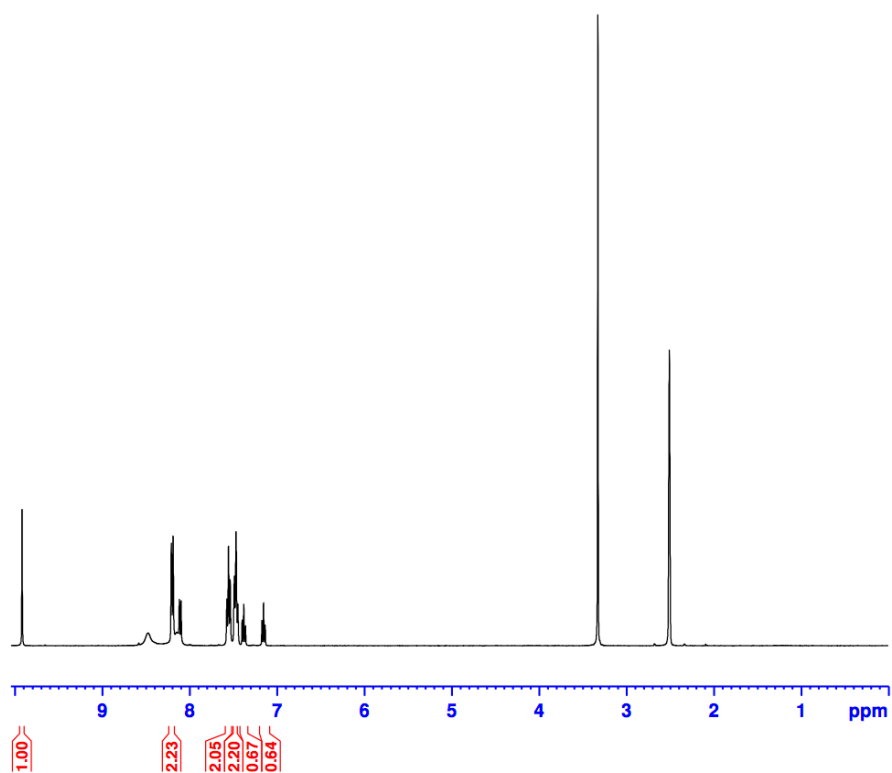


Figure S1. <sup>1</sup>H-NMR spectra of compound 2

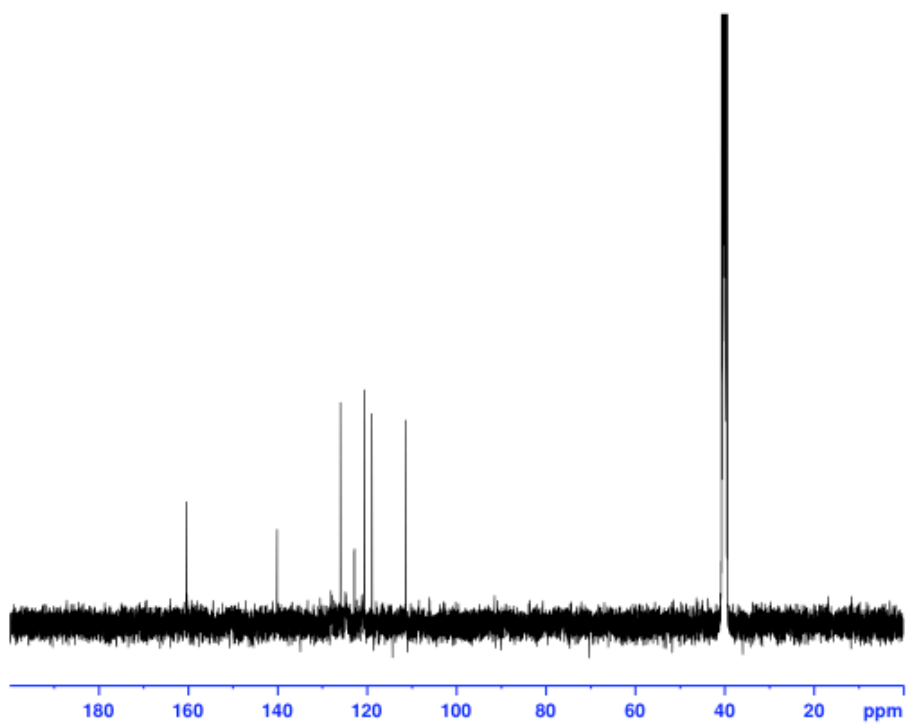


Figure S2. <sup>13</sup>C-NMR spectra of compound 2

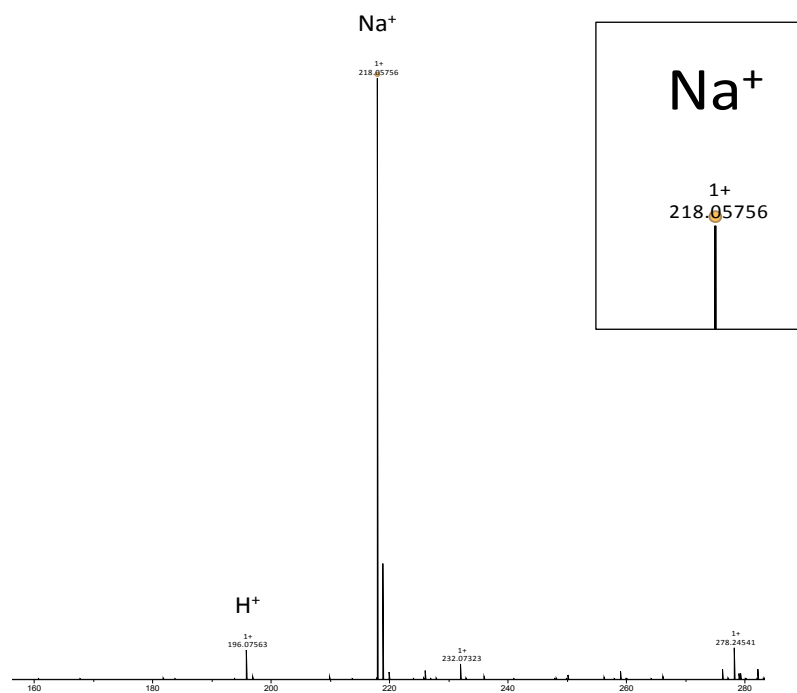


Figure S3. ESI spectra of compound **2**. Found: 218.0575, Calcd. [M+Na]<sup>+</sup>:218.0581

### Compound 3

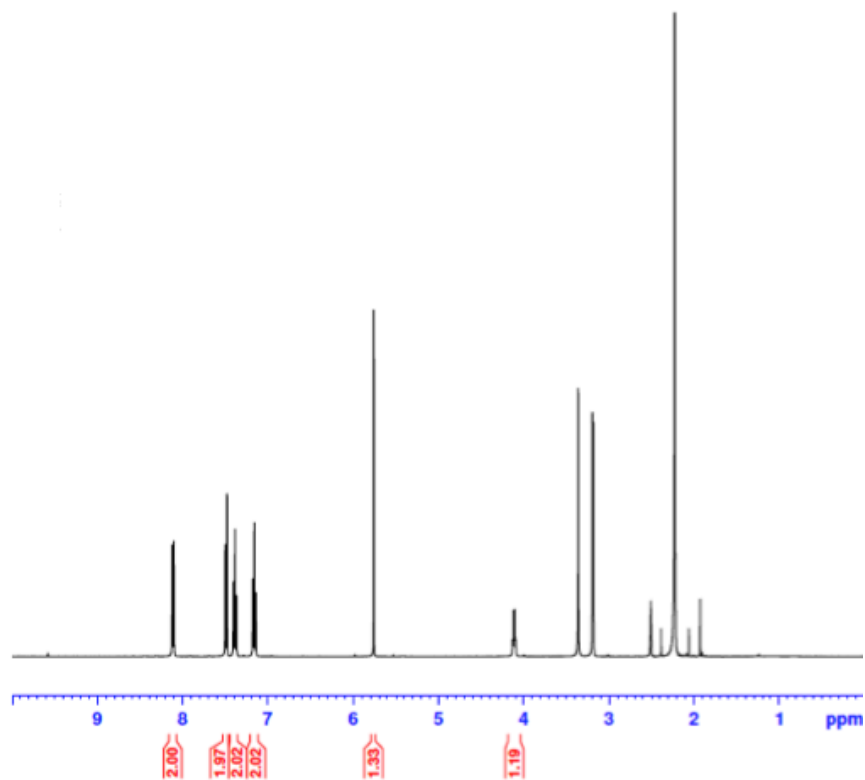


Figure S4. <sup>1</sup>H-NMR spectra of compound **3**

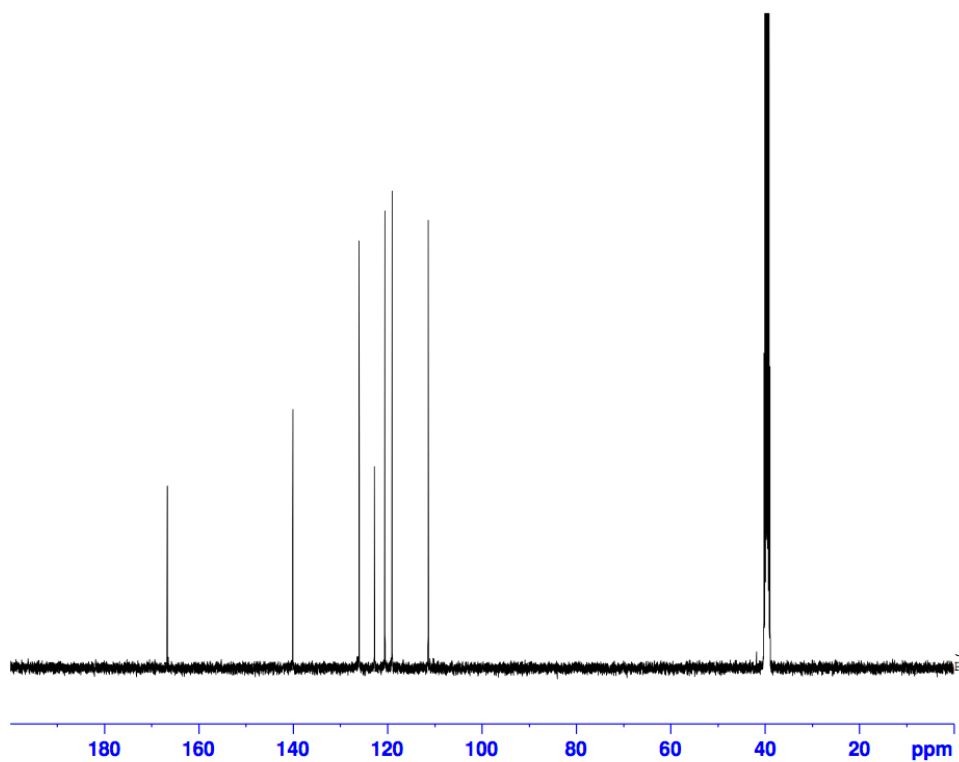


Figure S5. 13C-NMR spectra of compound **3**

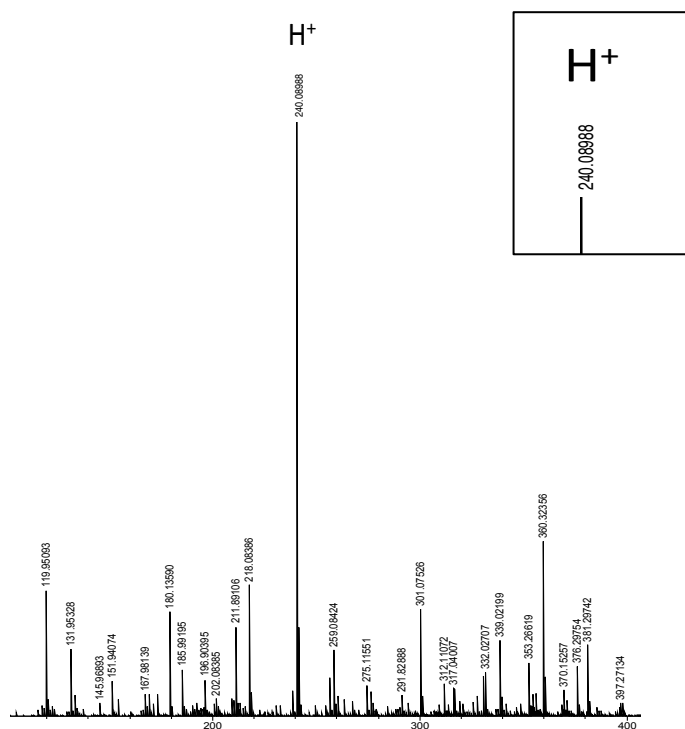


Figure S6. ESI spectra of compound **3**, Found:240.0898, Calcd.[M+H]<sup>+</sup>:240.0898

**Compound 4**

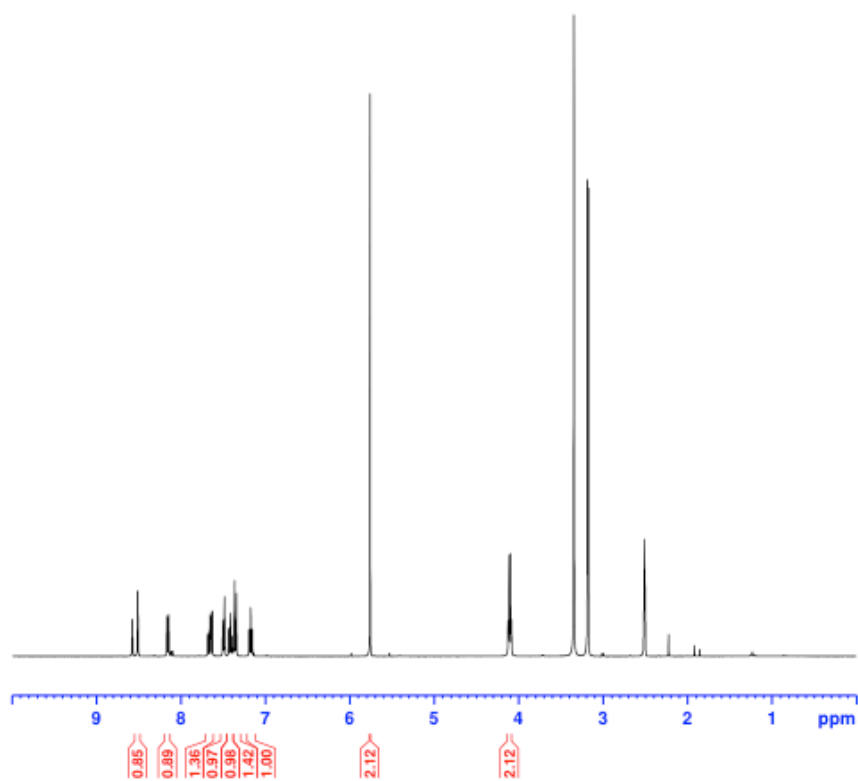


Figure S7. <sup>1</sup>H-NMR spectra of compound 4

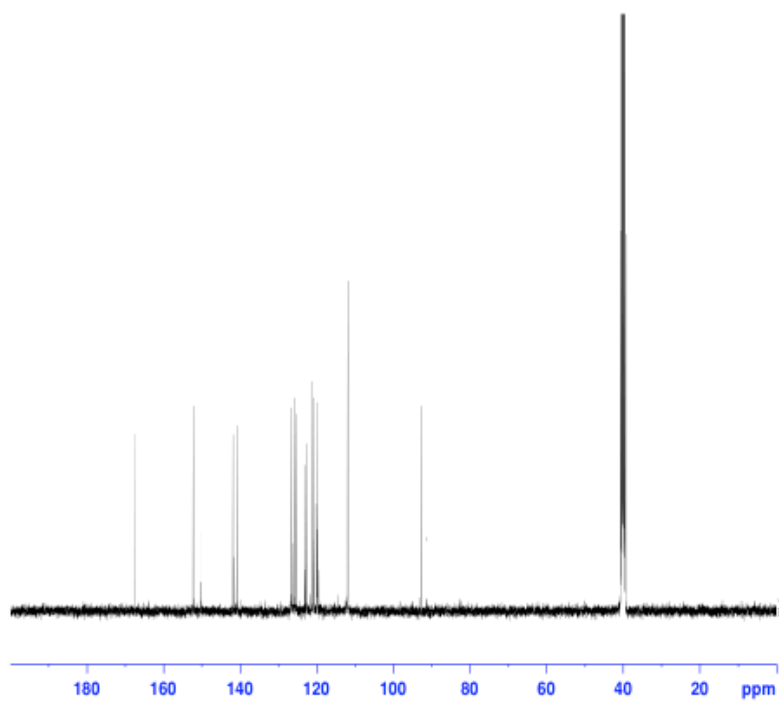
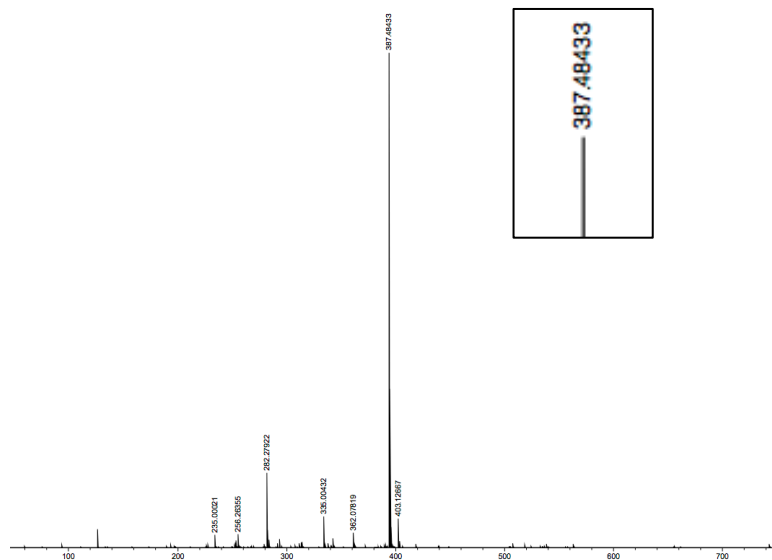
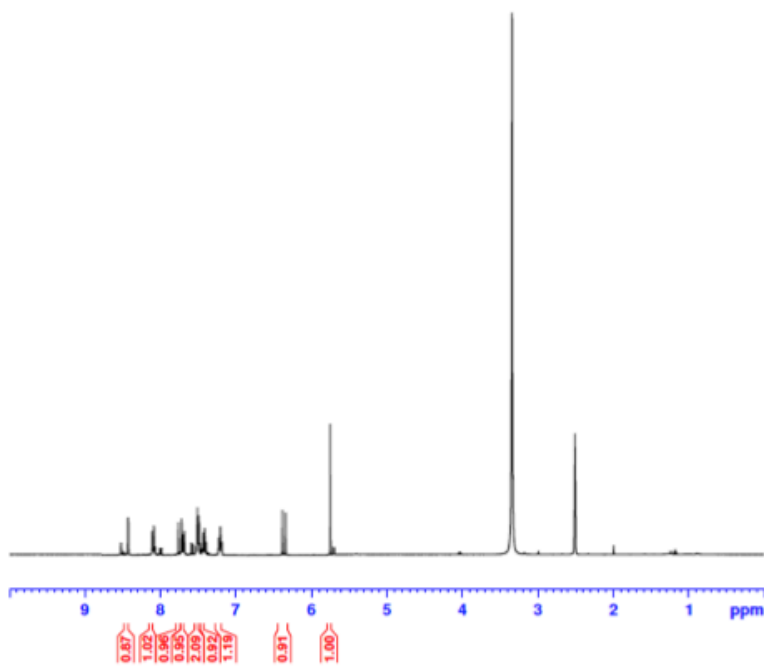


Figure S8. <sup>13</sup>C-NMR spectra of compound 4

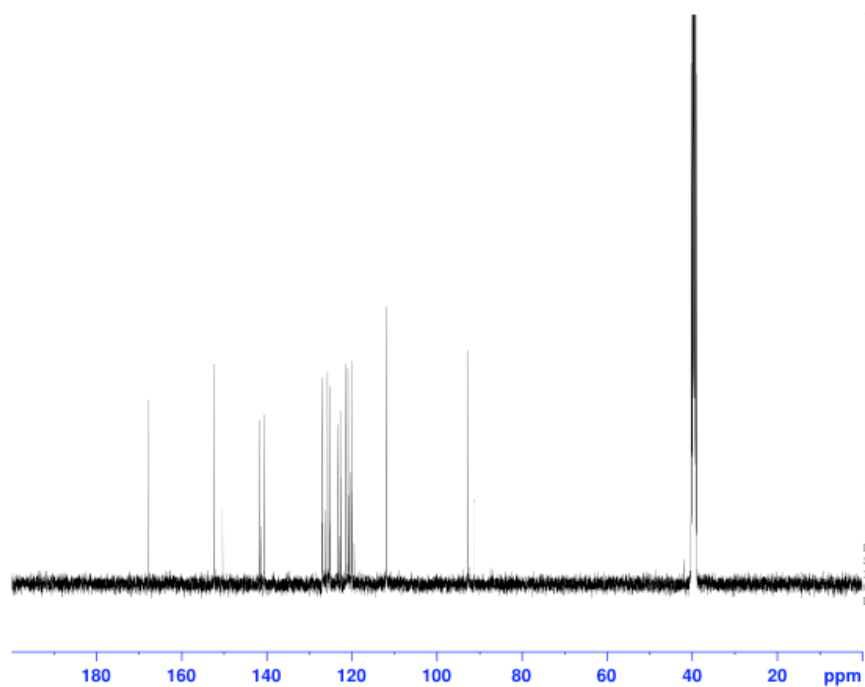


**Figure S9.** ESI spectra of compound **4** Found 387.4351, Calcd.[M+Na]<sup>+</sup>:388.9762

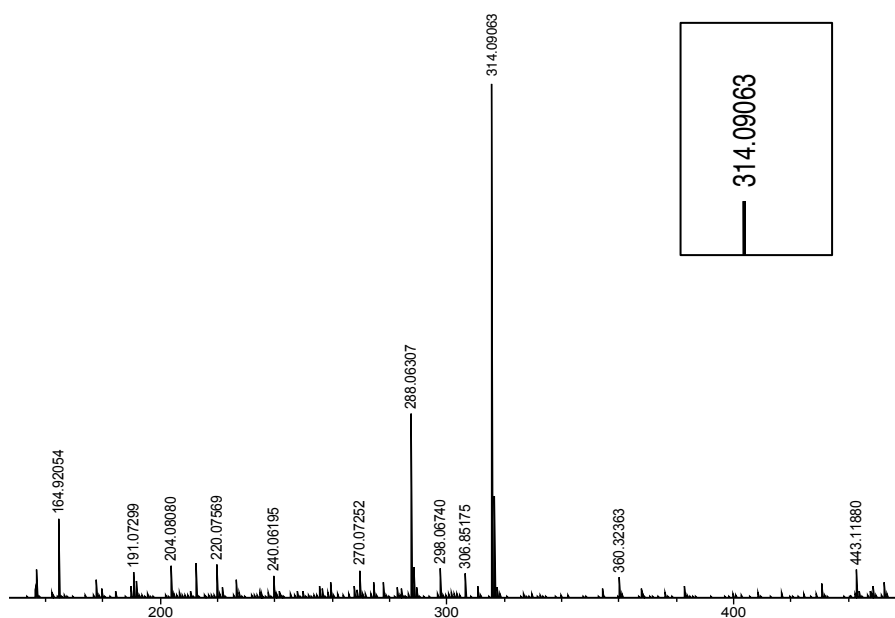
**Compound 5**



**Figure S10.** <sup>1</sup>H-NMR spectra of compound **5**

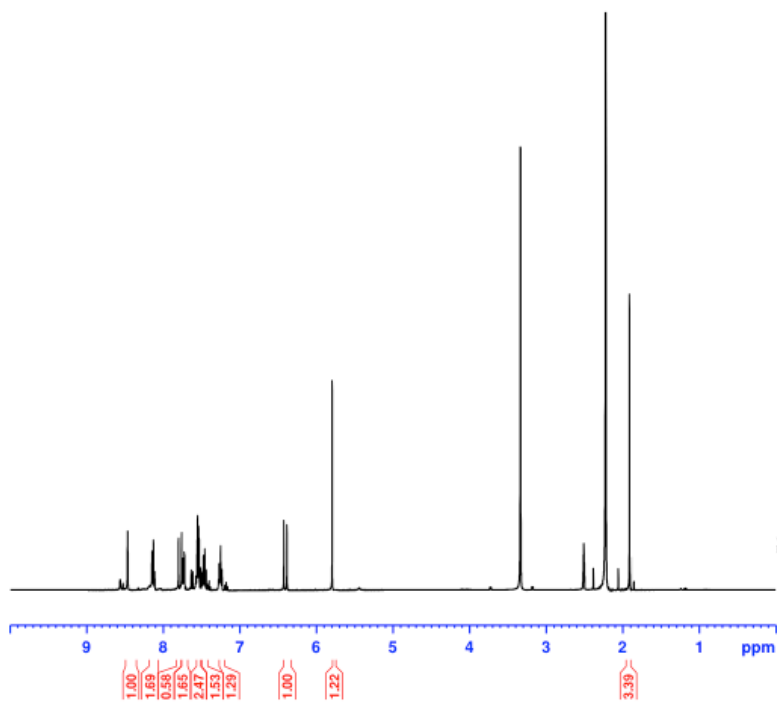


**Figure S11.** <sup>13</sup>C-NMR spectra of compound **5**

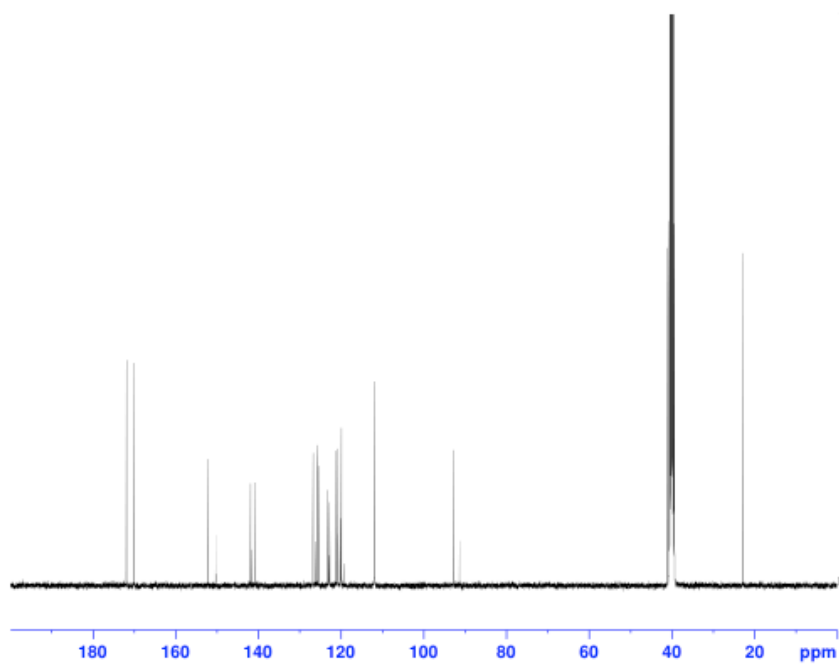


**Figure S12.** ESI spectra of compound **5** Found 314.0906, Calcd.  $[M+Na]^+$ : 314.0827

**Compound 6**

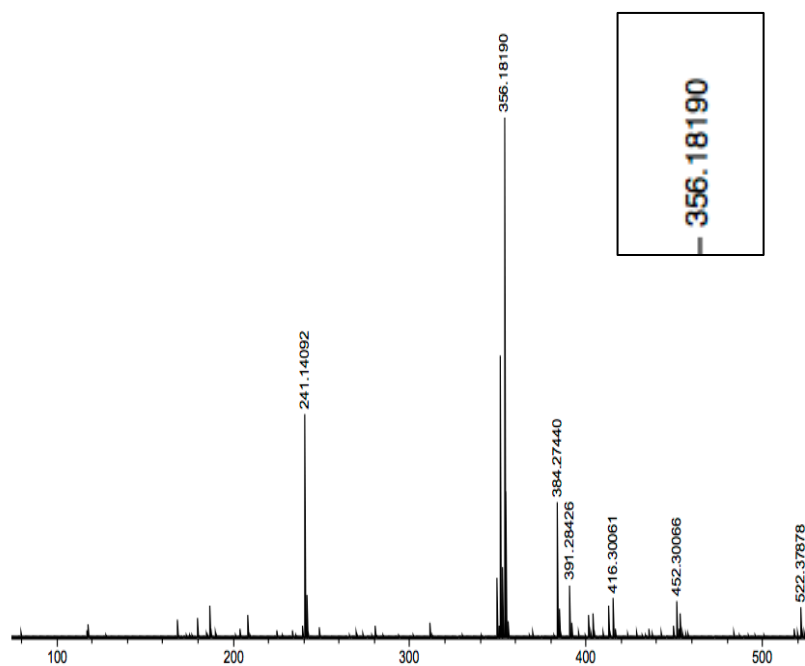


**Figure S13.** <sup>1</sup>H-NMR spectra of compound 6



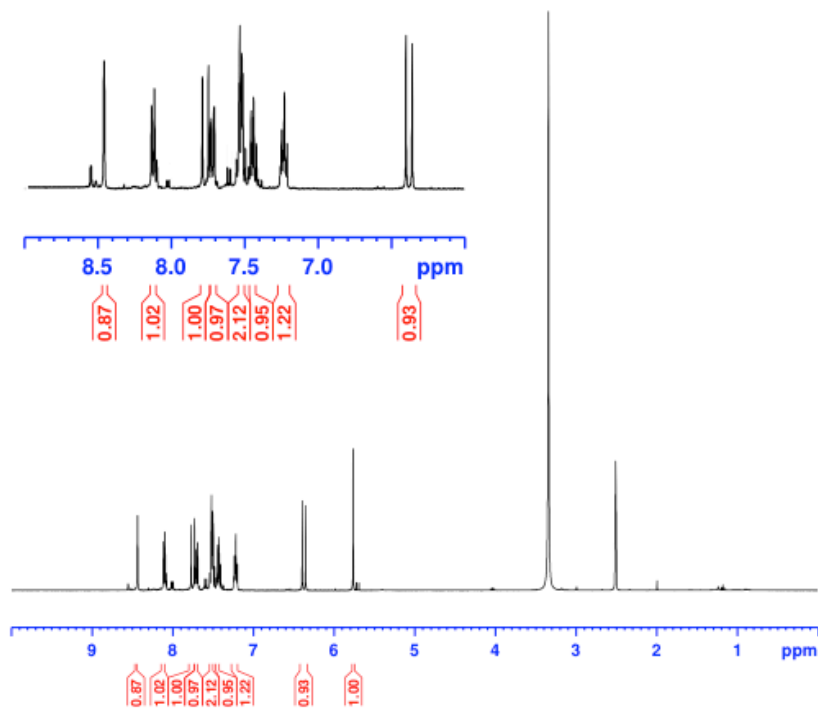
**Figure S14.** <sup>13</sup>C-NMR spectra of compound 6



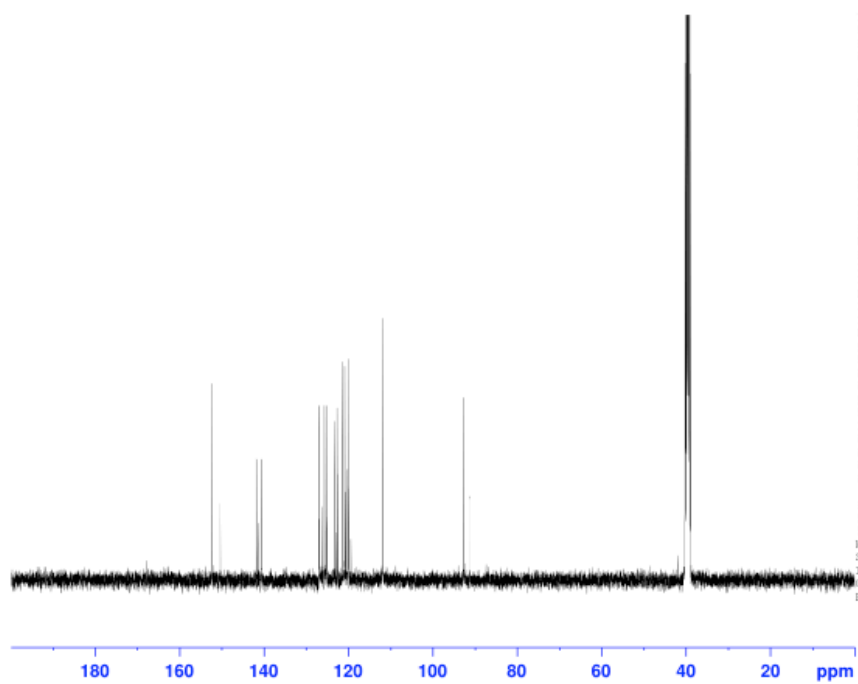


**Figure S15.** ESI spectra of compound **6** Found 356.1819, Calcd. $[M+H]^+$ :356.1011

**Compound 7**



**Figure S16.**  $^1H$ -NMR spectra of compound **7**



**Figure S17** <sup>13</sup>C-NMR spectra of compound **7**

## MALDI-TOF-MS analysis of GCN4 peptide dimer

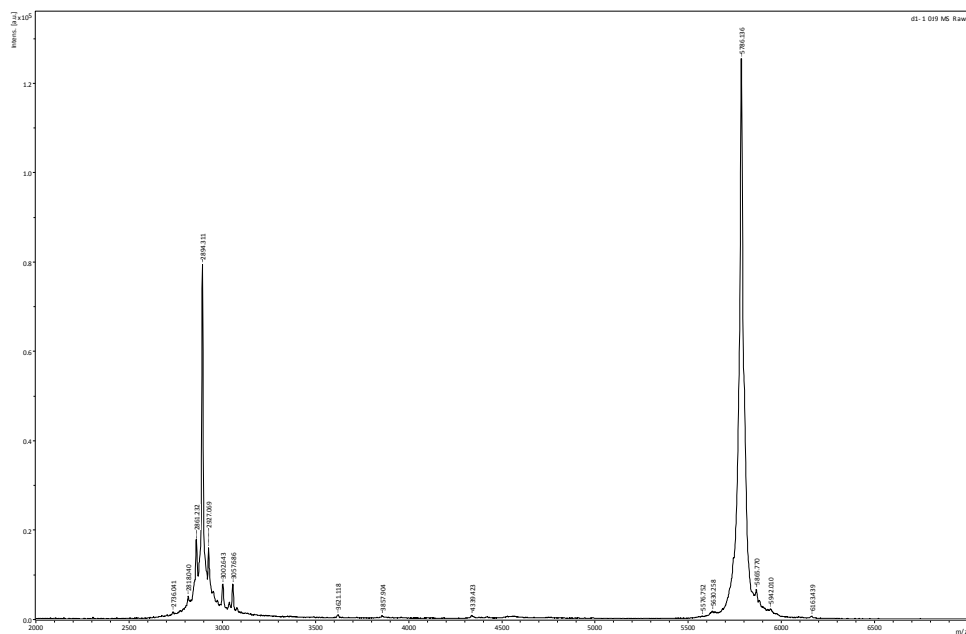


Figure S18. MALDI-TOF-MS analysis of GCN4 peptide dimer

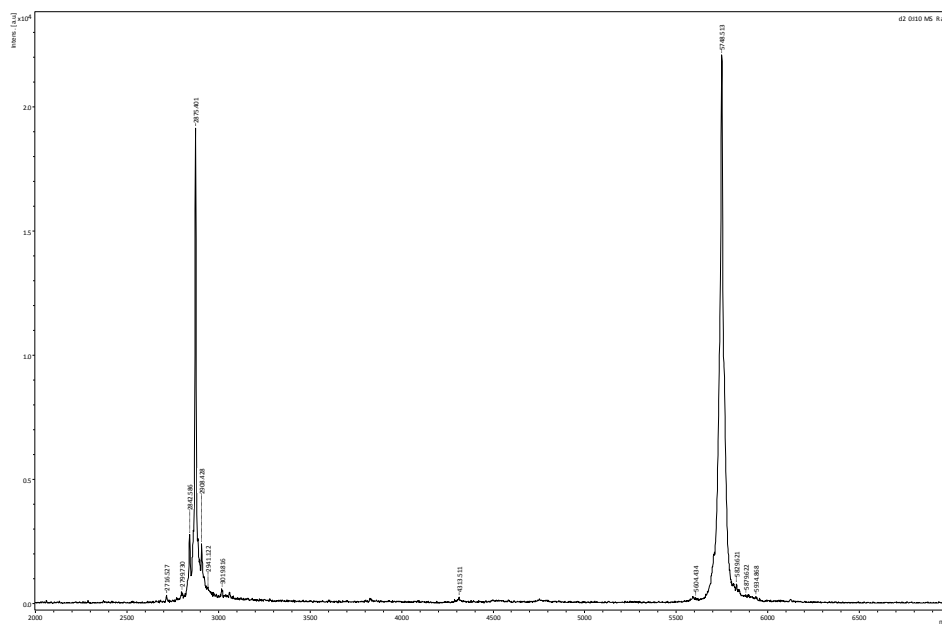


Figure S19. MALDI-TOF-MS analysis of peptide 1 dimer

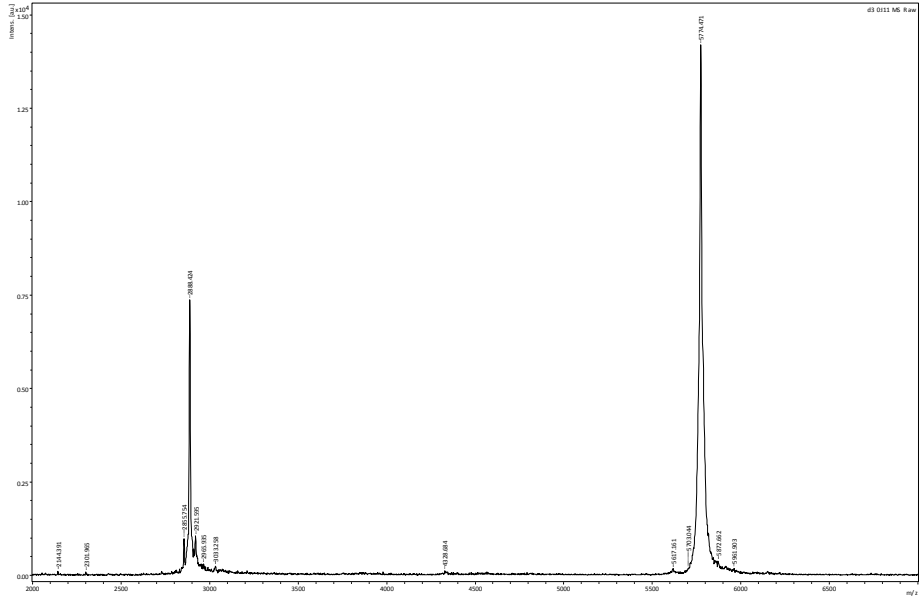


Figure S20. MALDI-TOF-MS analysis of peptide 2 dimer

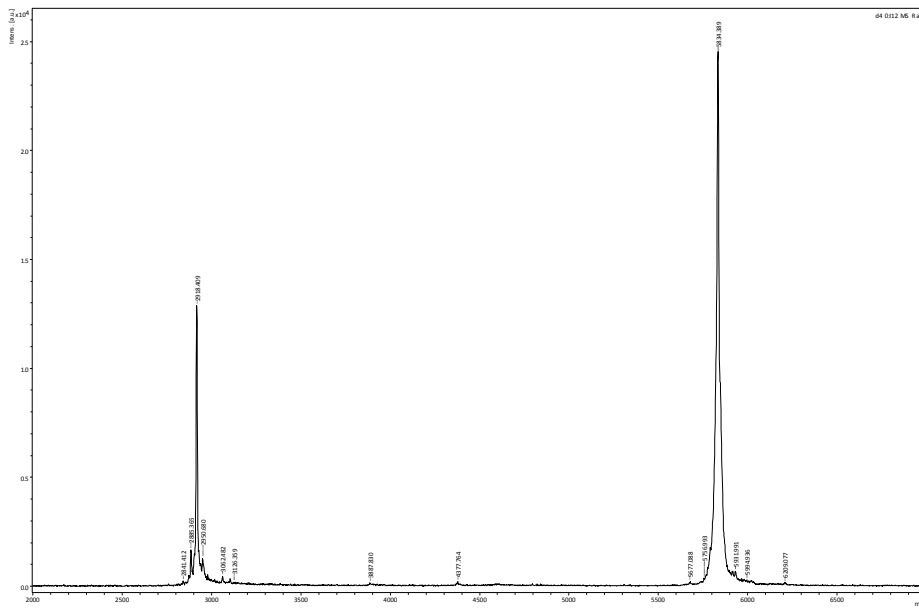
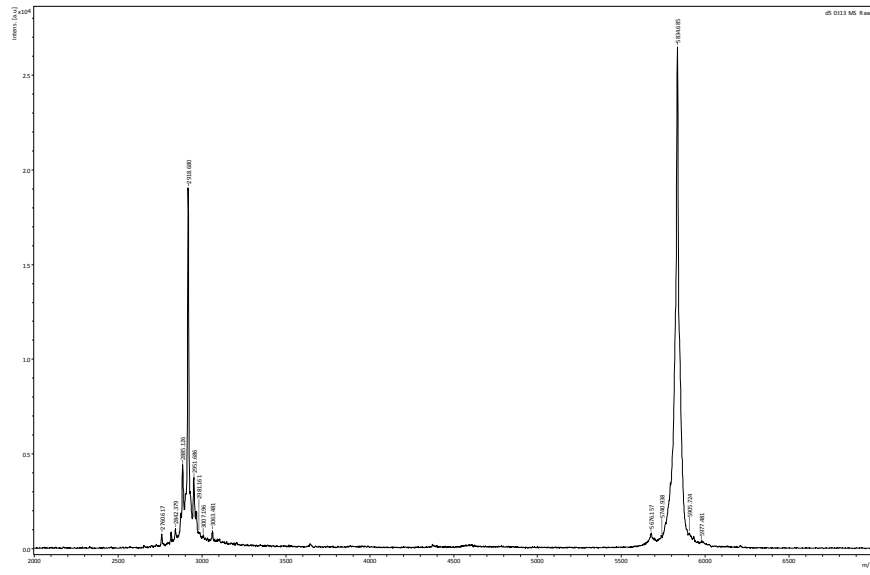
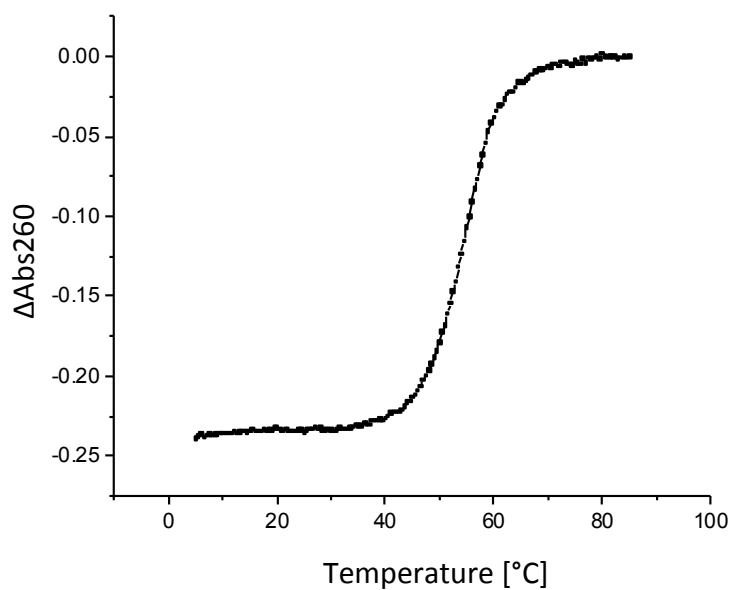


Figure S21. MALDI-TOF-MS analysis of peptide 3 dimer

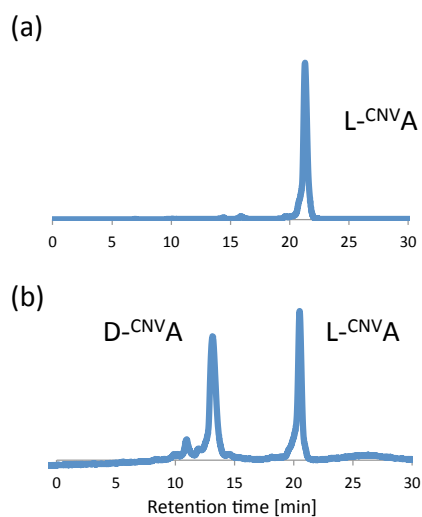


### Melting curve of CRE14 DNA



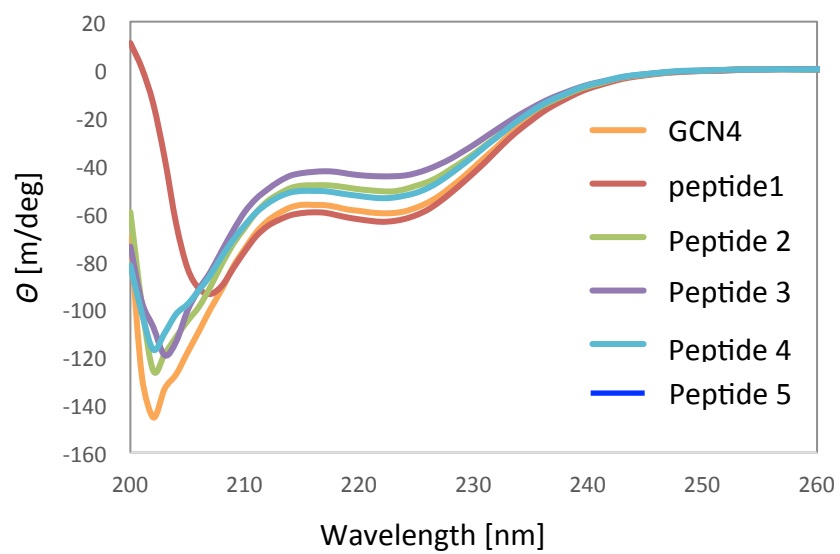
**Figure S24.** Melting curve of CRE14 DNA containing buffer

### Enantiomeric excess



**Figure S25.** HPLC spectra of <sup>CNV</sup>A (a) Deacetylation of compound 6 by acylate (b) Deacetylation of compound 6 by Ammonium solution

## CD spectra



**Figure S26.** CD spectra of GCN4 peptide containing L-<sup>CNV</sup>A and CRE14 DNA.