Electronic Supplementary Material (ESI) for Analyst.

Supporting Information

Naphthalene amine support for G-quadruplex isolation

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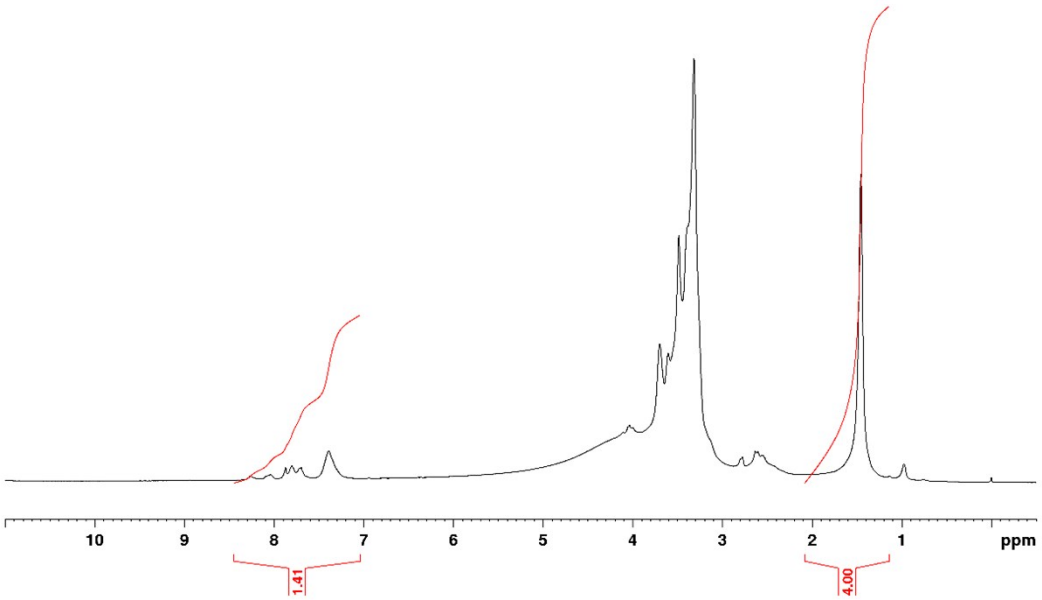


Figure S1- ^{1}H HR-MAS spectrum of agarose with activated linker bound to L_1 in DMF-d_7 with integrations.

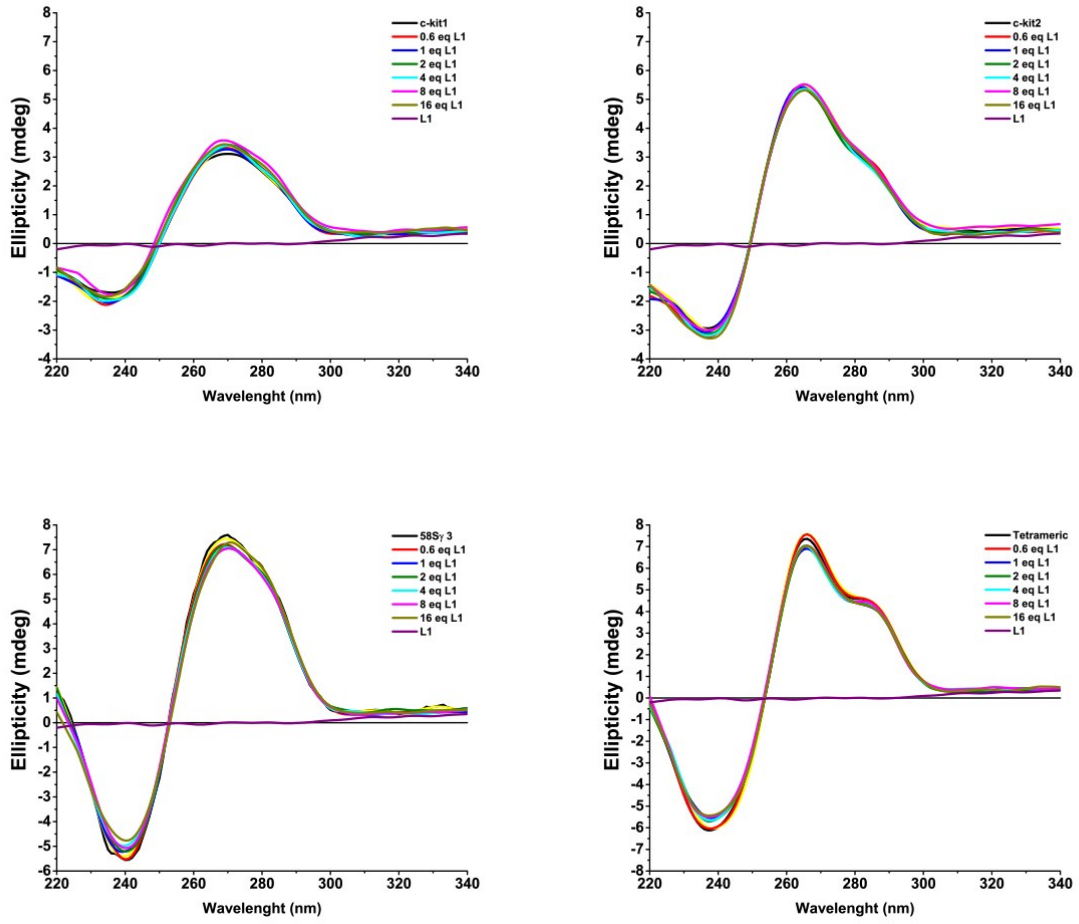


Figure S2- CD titration spectra of L_1 (0−16 molar eq.) to quadruplex a) c-kit1 duplex, b) c-kit2, c) 58Sγ3, d) tetrameric in 10 mM K-phosphate buffer.

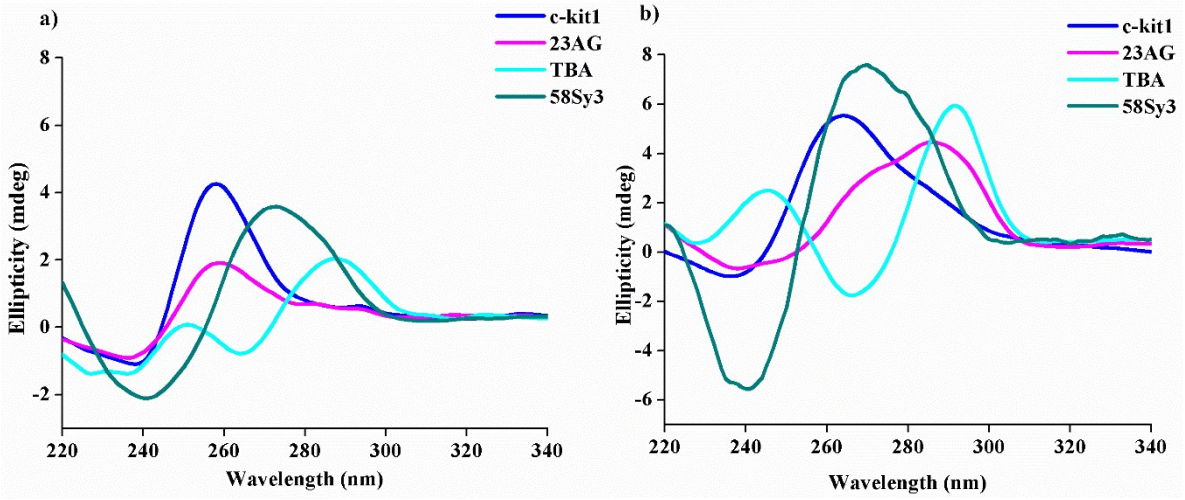


Figure S3- a) CD spectra of single strands c-kit-1, 23AG, 58Sγ3 and TBA before annealing. b) CD spectra of single strands c-kit-1, 23AG, 58Sγ3 and TBA after annealing.

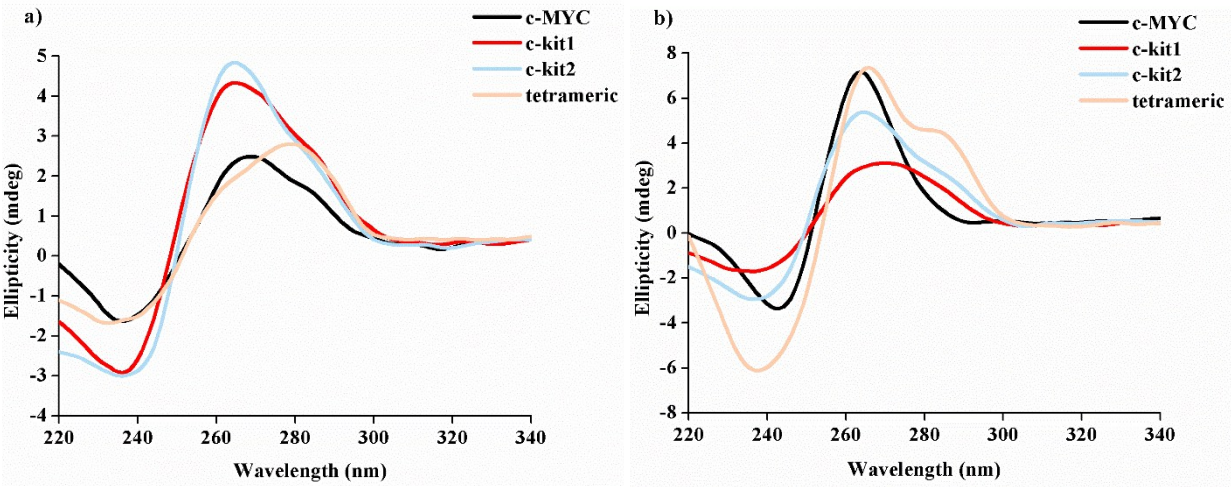
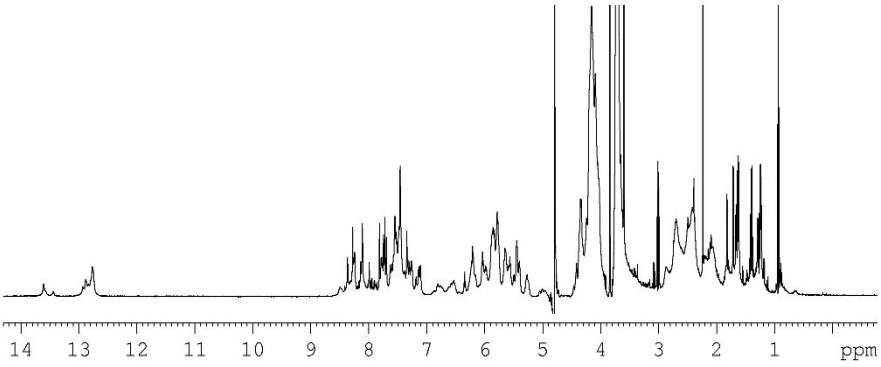
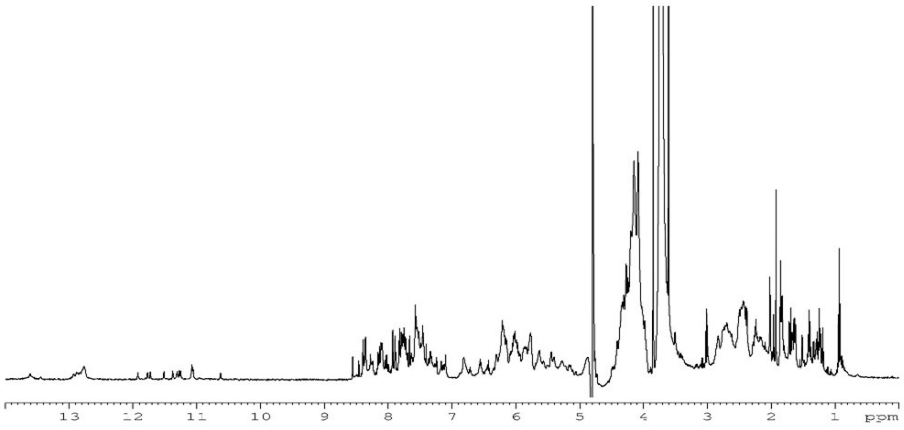


Figure S4- a) CD spectra of duplex c-MYC, c-kit-1, c-kit2 and tetrameric before annealing. b) CD spectra of DNA c-MYC, c-kit-1, c-kit2 and tetrameric after annealing.

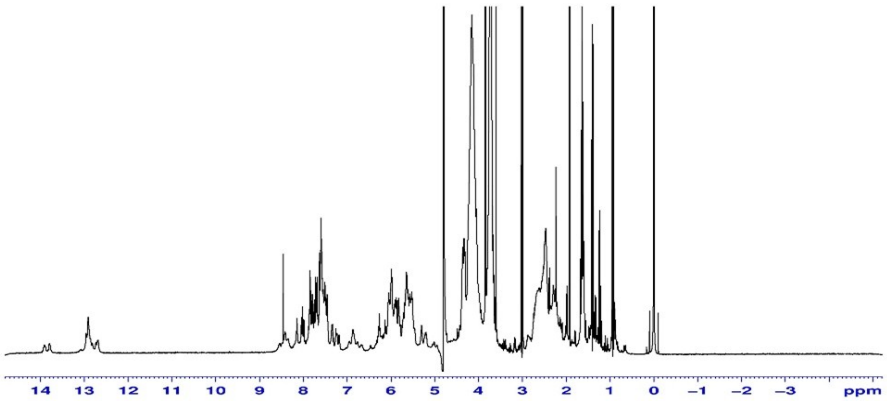
a)


14 13 12 11 10 9 8 7 6 5 4 3 2 1 ppm

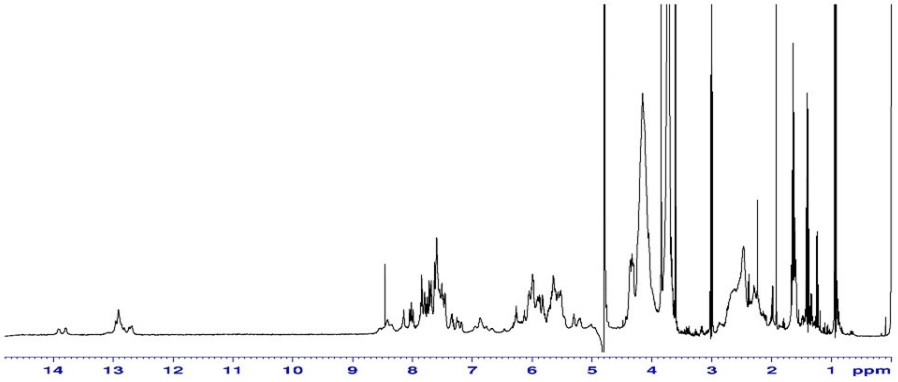
b)


13 12 11 10 9 8 7 6 5 4 3 2 1 ppm

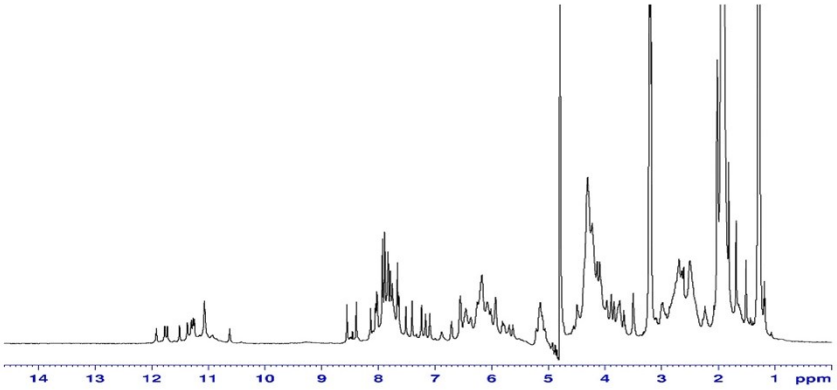
c)


14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 −1 −2 −3 ppm

d)


14 13 12 11 10 9 8 7 6 5 4 3 2 1 ppm

e)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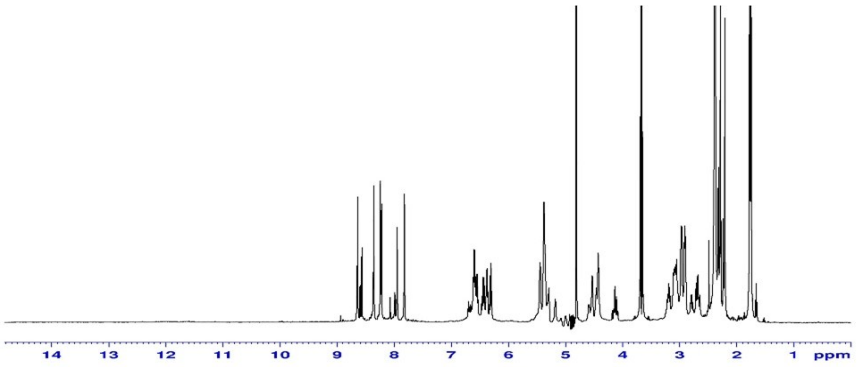
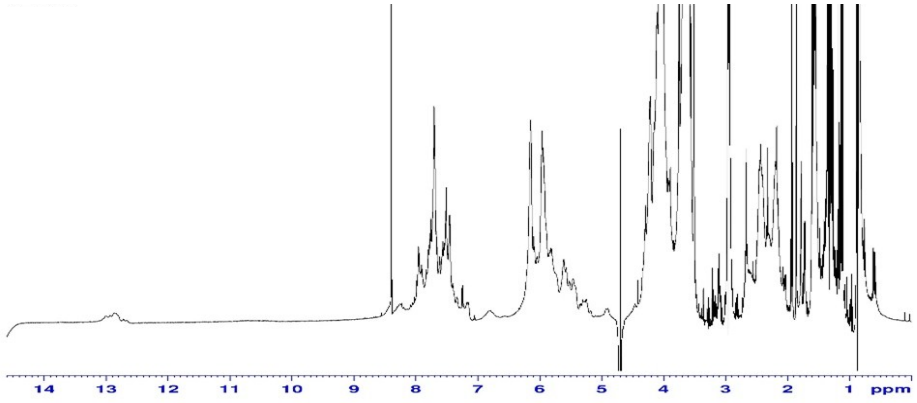
f)


14 13 12 11 10 9 8 7 6 5 4 3 2 1 ppm

g)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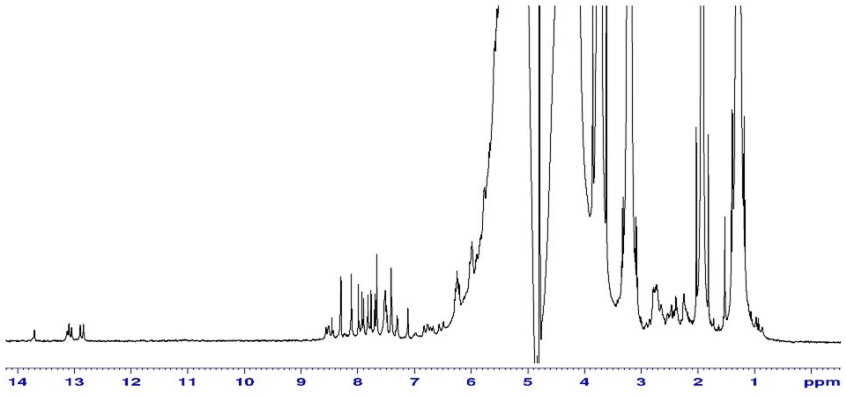
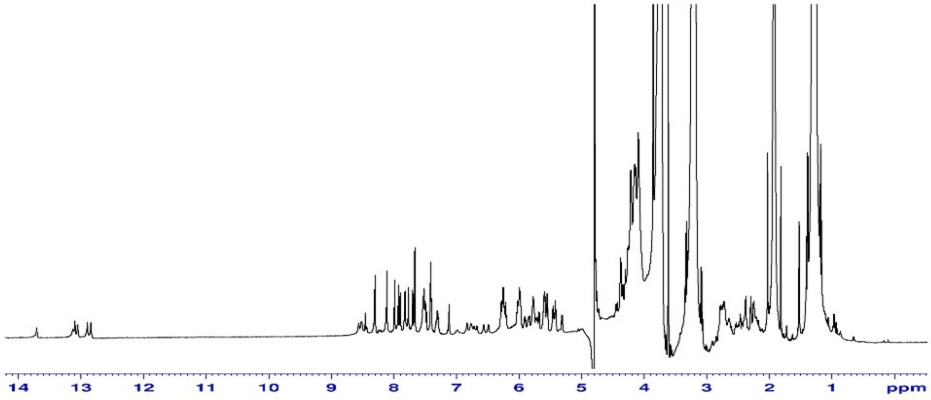
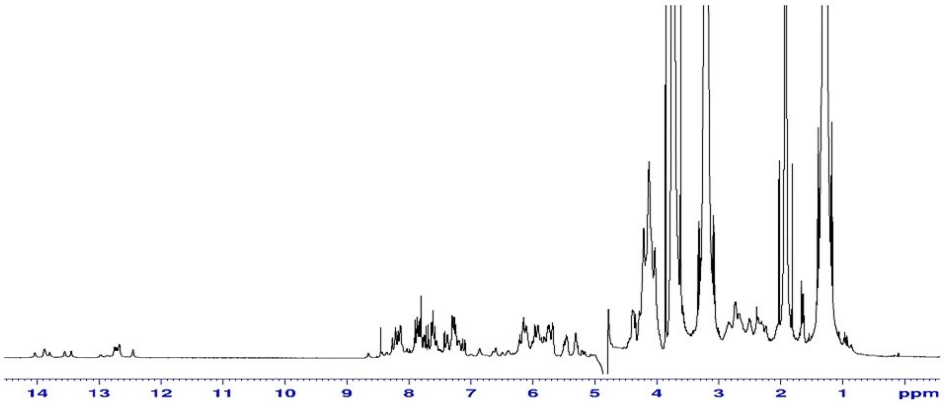
h)


14 13 12 11 10 9 8 7 6 5 4 3 2 1 ppm

i)


14 13 12 11 10 9 8 7 6 5 4 3 2 1 ppm

j)



k)

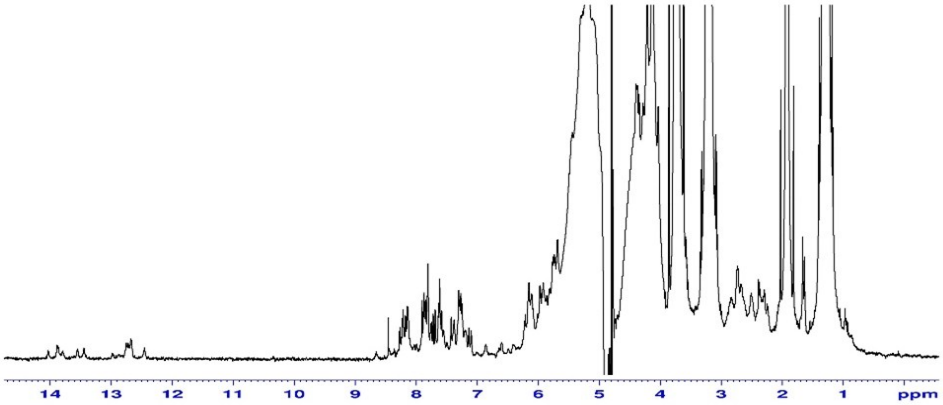


Figure S4- ^{1}H NMR spectra of DNA/single strand sequences before annealing: a) c-MYC, c) c-kit1, h) tetrameric, j) TBA; and after annealing: b) c-MYC, d) c-kit1 duplex, e) c-kit1 single strand, f) 23AG, g) c-kit2, i) tetrameric, k) TBA.

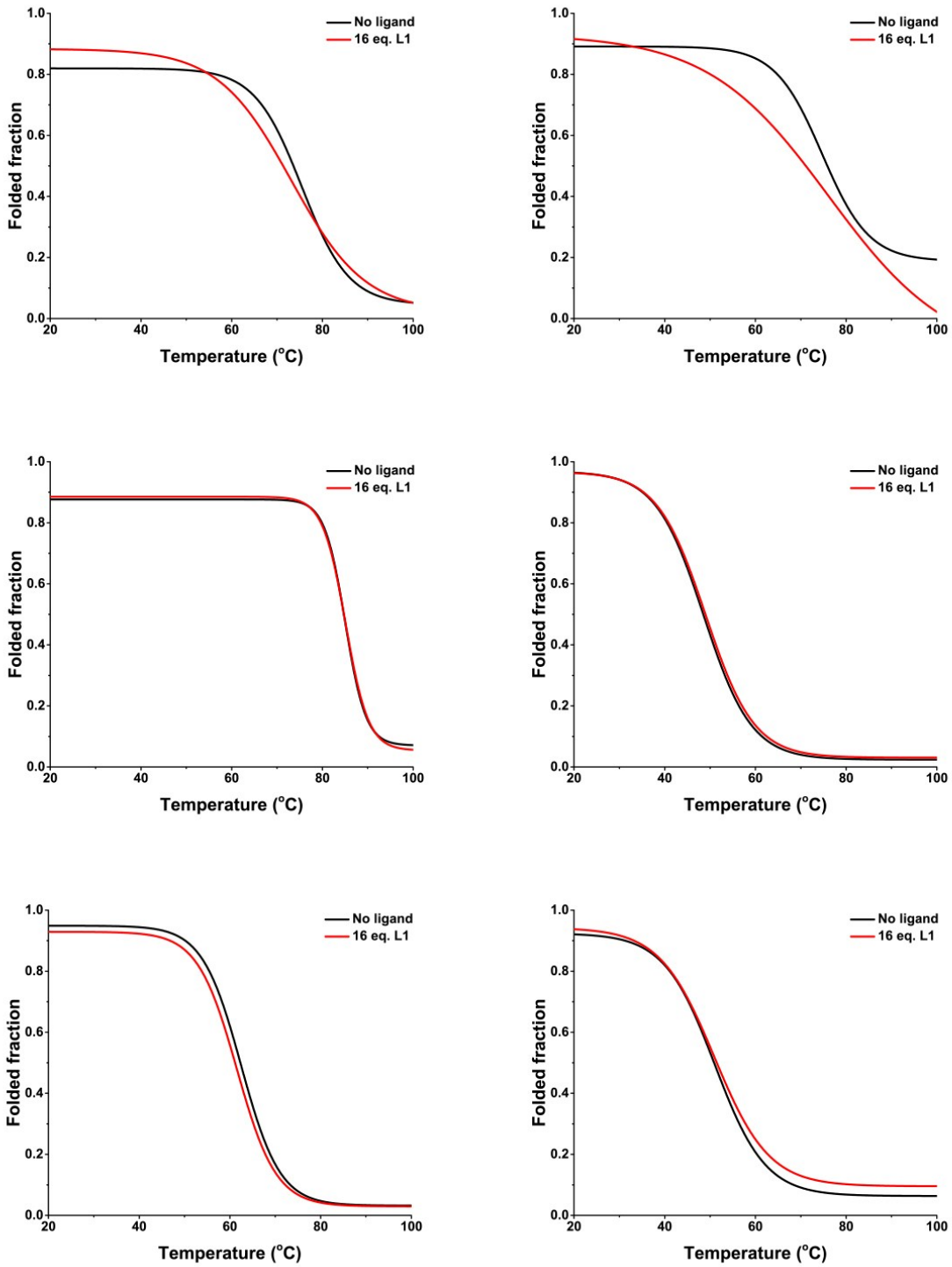


Figure S5- CD melting curves of a) c-kit2, b) 58Sγ3, c) TBA, d) 23AG, e) tetrameric in the absence and presence of L_1.

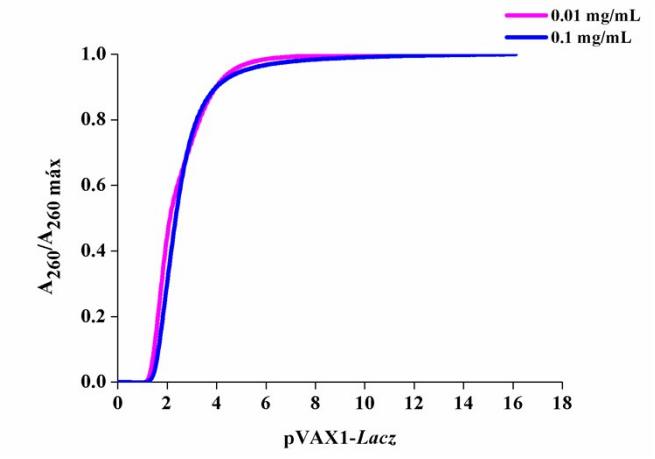


Figure S6 - Breakthrough curves resulting from different pDNA concentrations experiments (0.1 and 0.01 mg/mL). The assays were performed at a temperature of 4 ºC using a flow rate of 1 mL/min.

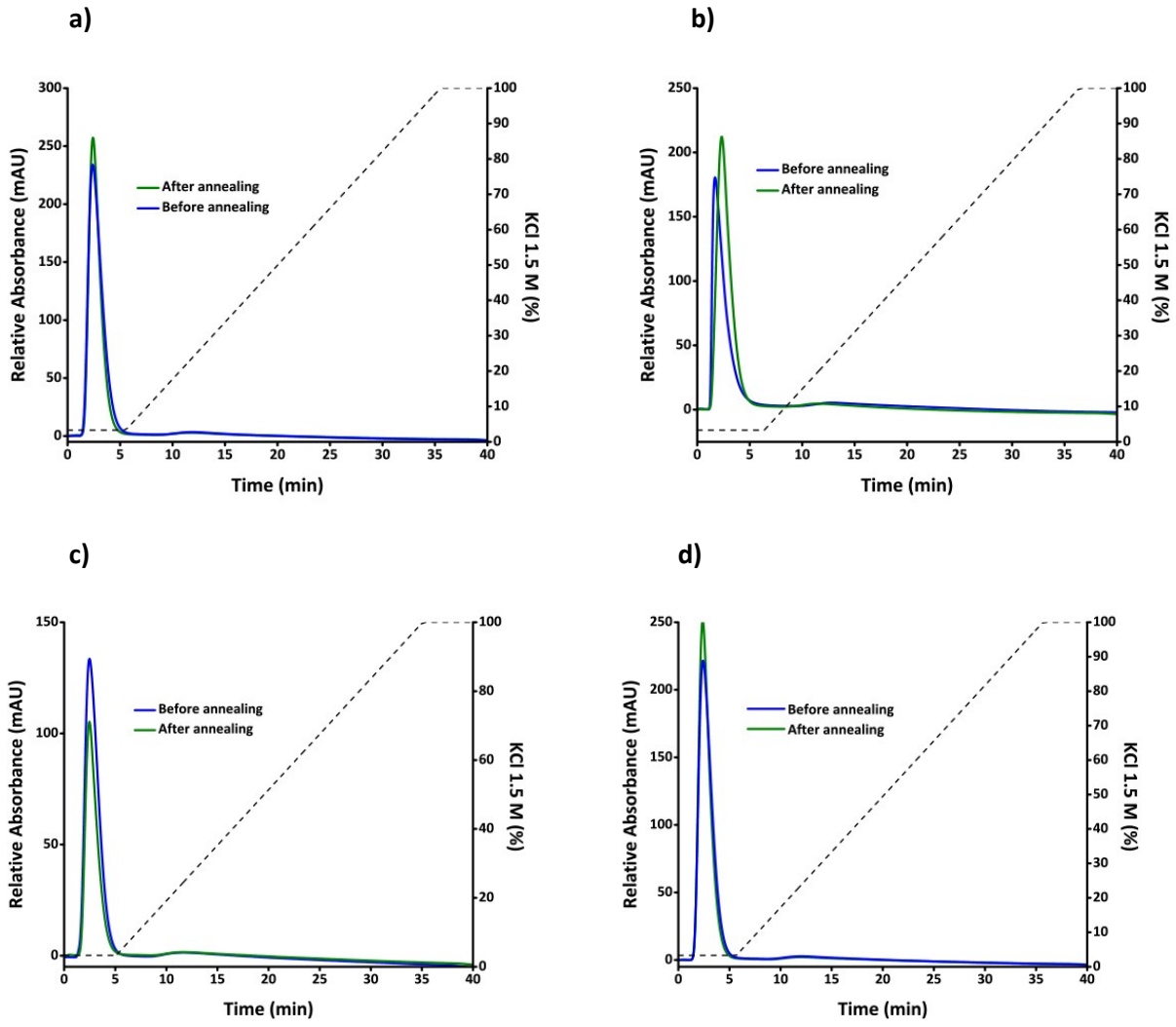


Figure S7- Chromatographic profiles of G4 forming sequences before and after annealing with K^+ at 95 ºC and cooling until room temperature on epoxy-activated Sepharose CL-6B matrix using KCl as elution buffer: a) c-MYC (ds); b) c-kit1 (ss); c) TBA (ss); d) 23AG (ss).

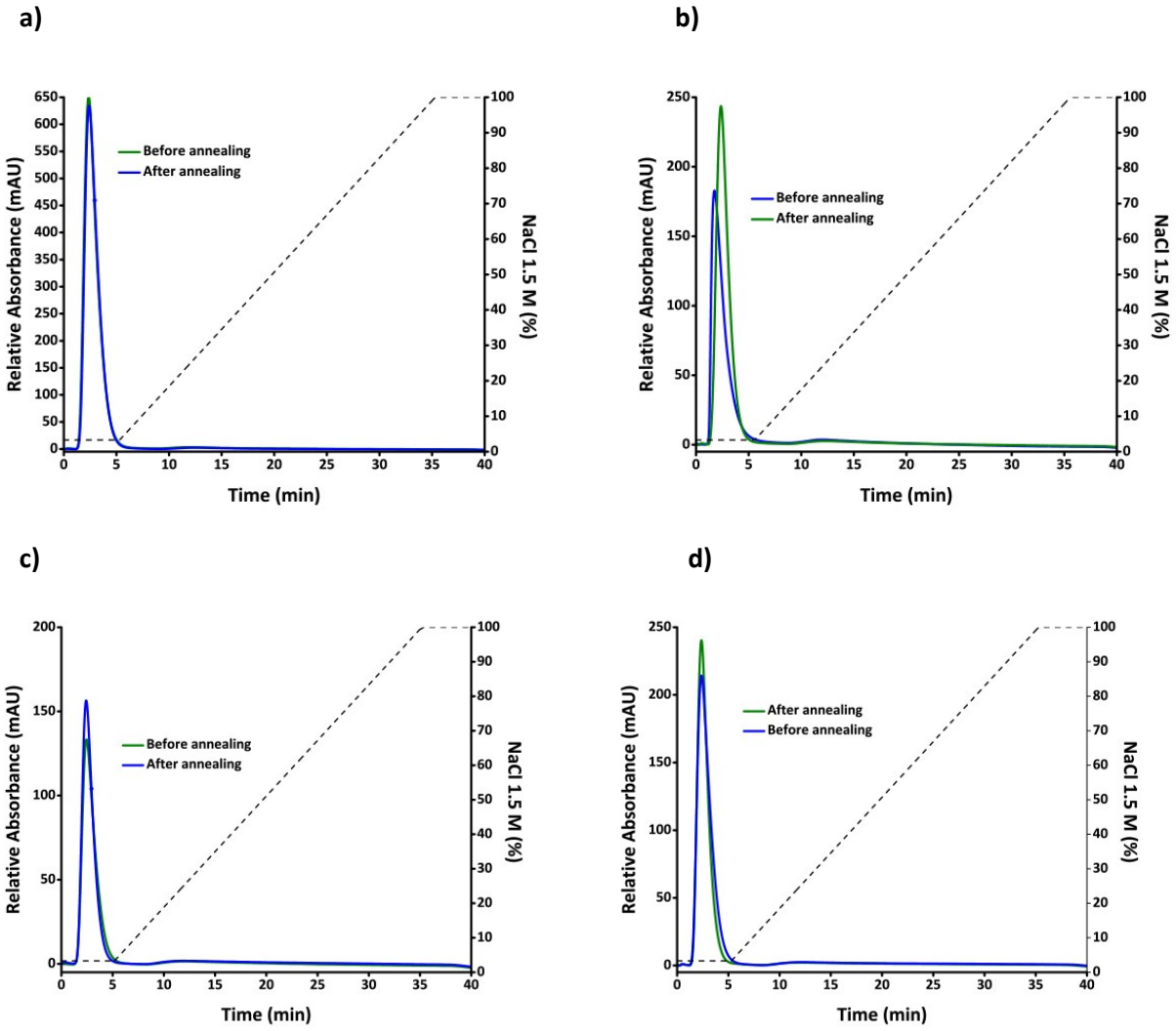
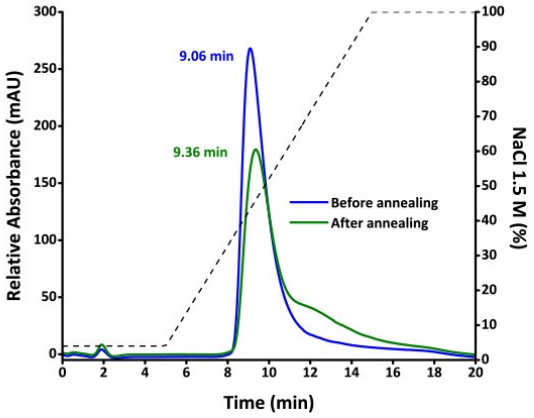
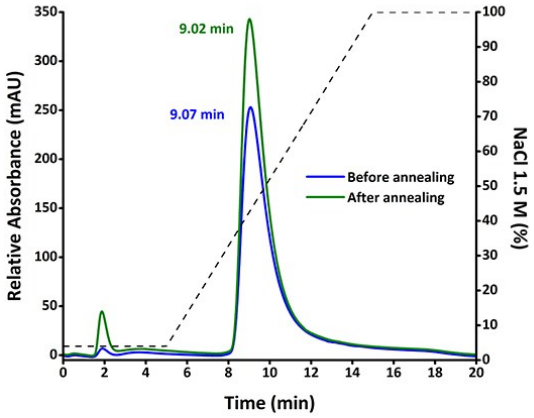


Figure S8- Chromatographic profiles of G4 forming sequences before and after annealing with Na^+ at 95 ºC and cooling until room temperature on epoxy-activated Sepharose CL-6B matrix using NaCl as elution buffer: a) c-MYC (ds); b) c-kit1 (ss); c) TBA (ss); d) 23AG (ss).

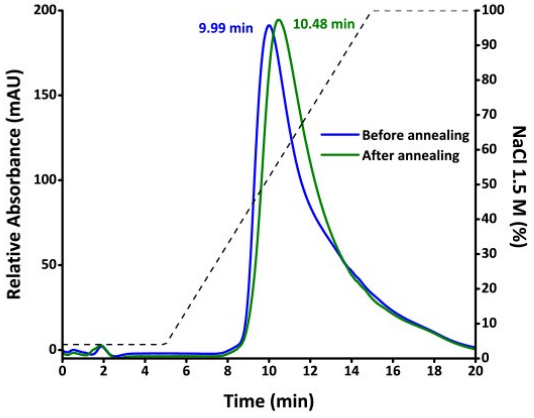
a)


9.06 min
9.36 min
Before annealing
After annealing
Relative Absorbance (mAU)
NaCl 1.5 M (%)
Time (min)

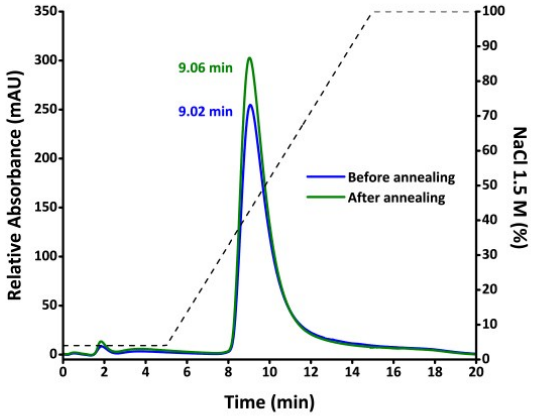
b)


9.02 min
9.07 min
Before annealing
After annealing
Relative Absorbance (mAU)
NaCl 1.5 M (%)
Time (min)

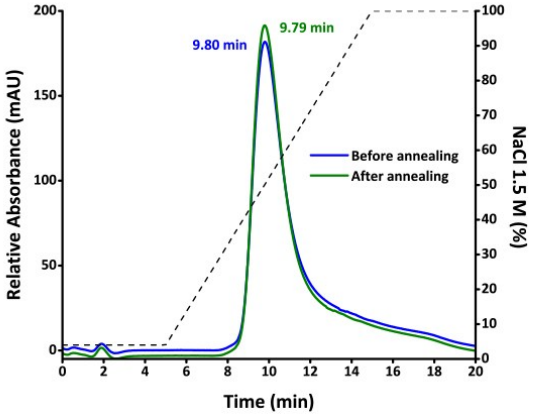
c)


9.99 min
10.48 min
Before annealing
After annealing
Relative Absorbance (mAU)
NaCl 1.5 M (%)
Time (min)

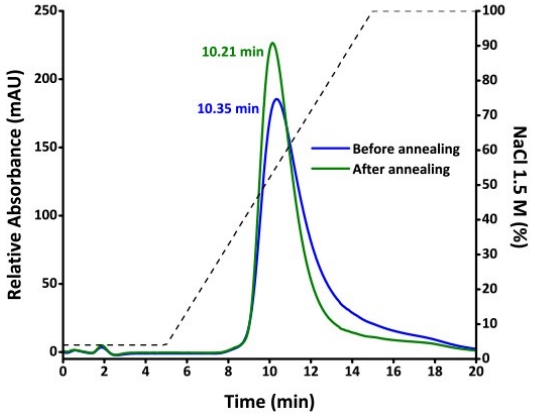
d)


9.06 min
9.02 min
Before annealing
After annealing
Relative Absorbance (mAU)
NaCl 1.5 M (%)
Time (min)

e)


9.80 min
9.79 min
Before annealing
After annealing
Relative Absorbance (mAU)
NaCl 1.5 M (%)
Time (min)

f)


10.21 min
10.35 min
Before annealing
After annealing
Relative Absorbance (mAU)
NaCl 1.5 M (%)
Time (min)

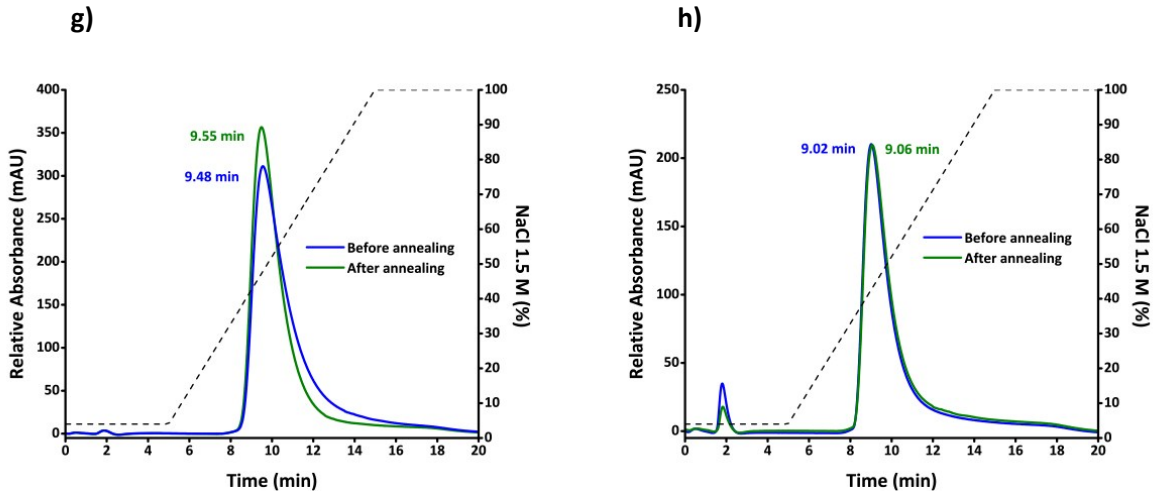


Figure S9- Chromatographic profiles of G4 forming sequences before and after annealing with Na^+ at 95 ºC and cooling until room temperature and using NaCl in the elution buffer: a) c-MYC (ds); b) c-kit1 (ds); c) c-kit1 (ss); d) c-kit2 (ds); e) tetrameric (ds); f) TBA (ss); g) 23AG (ss); h) 58Sγ3 (ss).

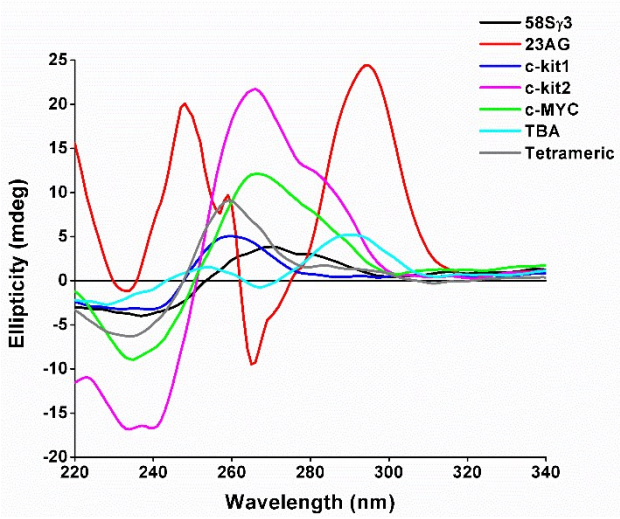


Figure S10- CD spectra of c-MYC (ds), c-kit1 (ss), ckit2 (ds), TBA (ss), 23AG (ss), 58Sγ3 (ss) and tetrameric (ds) after performing the chromatographic experiments using NaCl in the elution buffer.