SUPPLEMENTARY INFORMATION

F2	F2-1	F2-2	F2-2-B	F2-4-C
	ΔG = -10.09 kcal/mol	ΔG = -7.45 kcal/mol	ΔG = -2.50 kcal/mol	ΔG = -4.99 kcal/mol

F20	F20-1-A	F20-5	F20-4	F20-3-B
	ΔG = -5.24 kcal/mol	ΔG = -6.89 kcal/mol	ΔG = -2.51 kcal/mol	ΔG = -3.07 kcal/mol

F200	F200-3-B	F200-3	F200-1-A	F200-1
	ΔG = -3.90 kcal/mol	ΔG = -7.68 kcal/mol	ΔG = -3.55 kcal/mol	ΔG = -5.84 kcal/mol

F2K	F2K-3-C	F2K-4	F2K-1	F2K-1-A
	ΔG = -3.87 kcal/mol	ΔG = -4.55 cal/mol	ΔG = -4.06 kcal/mol	ΔG = -2.65 kcal/mol

F20K	F20K-1	F20K-2	F20K-1-A	F20K-3-B
	ΔG = -6.20 kcal/mol	ΔG = -3.00 kcal/mol	ΔG = -8.38 kcal/mol	ΔG = -5.65 kcal/mol

F27K	F27K-4	F27K-3-B	F27K-6	F27K-2-A
	ΔG = -3.36 kcal/mol	ΔG = -4.30 kcal/mol	ΔG = -3.93 kcal/mol	ΔG = -3.93 kcal/mol

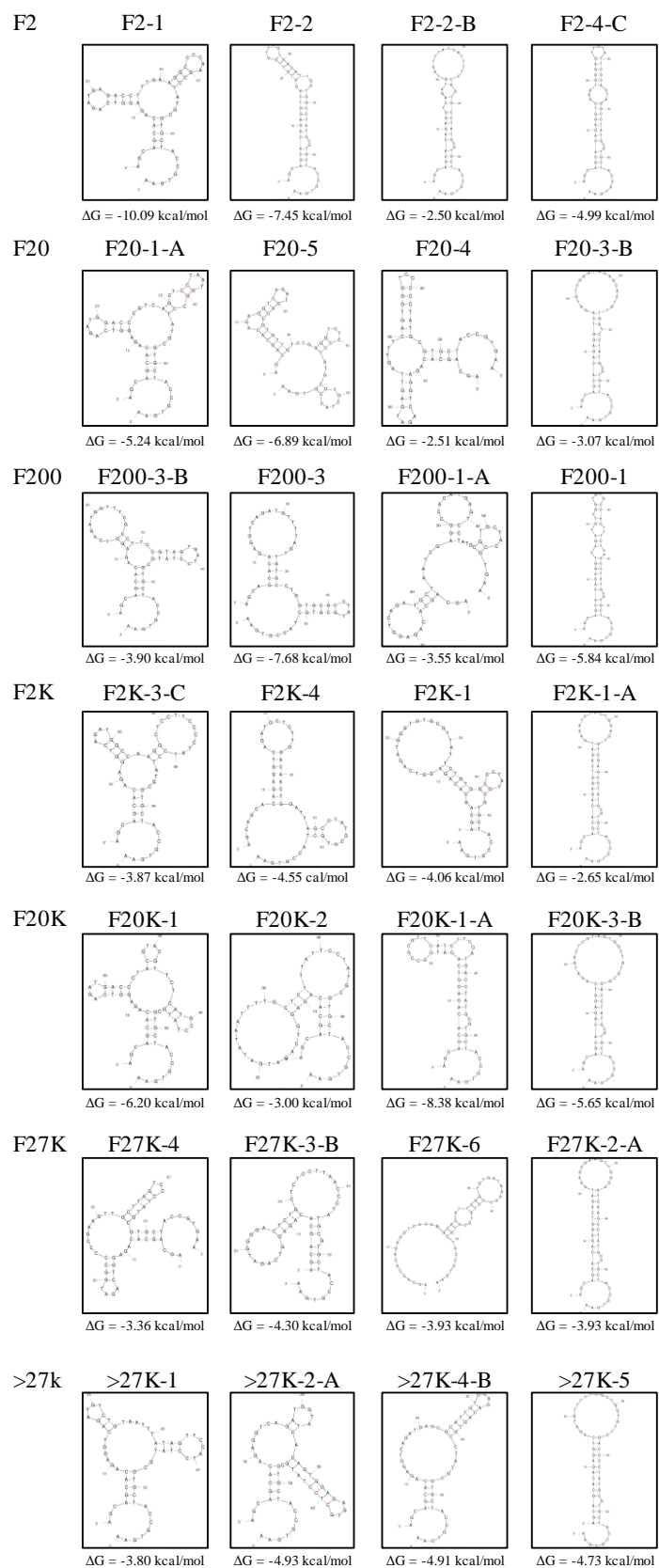| >27k	>27K-1	>27K-2-A	>27K-4-B	>27K-5
	ΔG = -3.80 kcal/mol	ΔG = -4.93 kcal/mol	ΔG = -4.91 kcal/mol	ΔG = -4.73 kcal/mol

Figure 1S. The representative predicted secondary structures of selected aptamer sequences from each step of MARAS using MFold analysis.
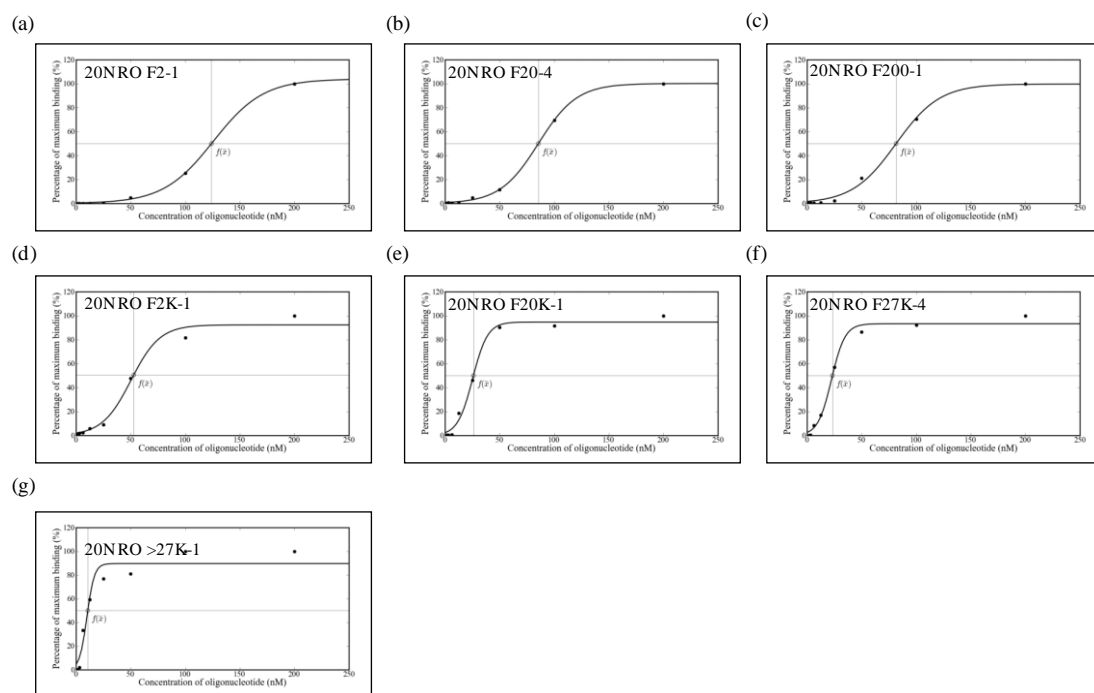
Figure 2S. Representative non-linear fitting curve results of aptamer from each step of MARAS. (a) F2-1, (b) F20-4, (c) F200-1, (d) F2K-1, (e) F20K-1, (f) F27K-4, (g) >27K-1.
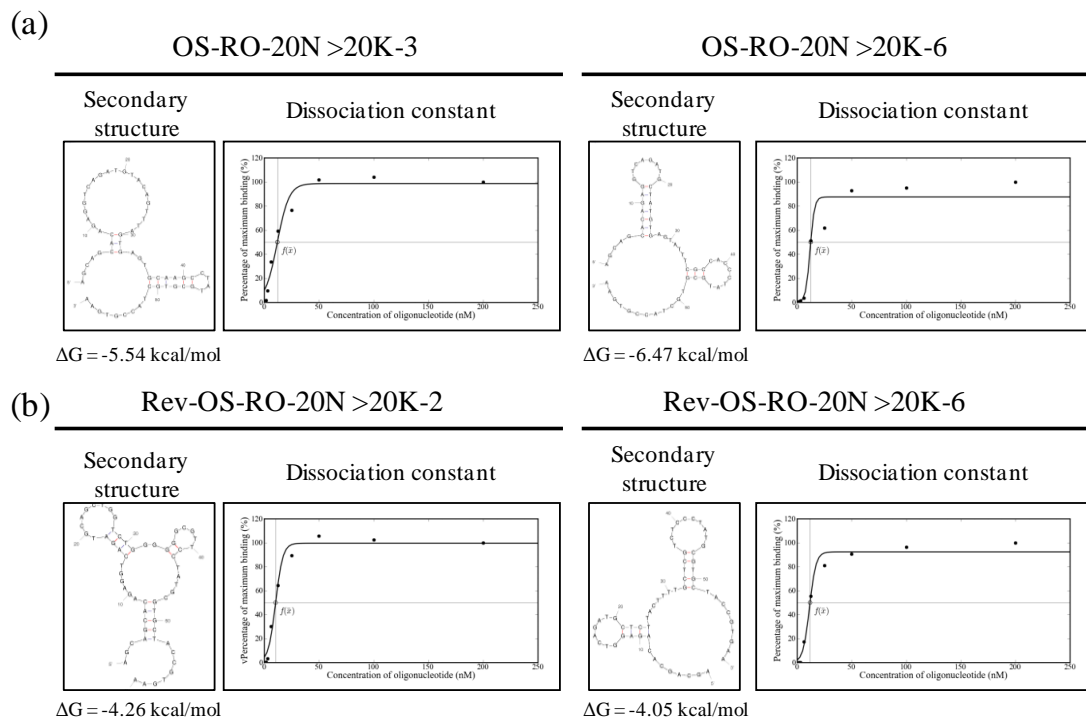
(a)

OS-RO-20N >20K-3	OS-RO-20N >20K-6

ΔG = -5.54 kcal/mol

ΔG = -6.47 kcal/mol

(b)

Rev-OS-RO-20N >20K-2	Rev-OS-RO-20N >20K-6

ΔG = -4.26 kcal/mol

ΔG = -4.05 kcal/mol

Figure 3S. Representative secondary structures and non-linear fitting curve results of the 20N region in the aptamers from a one-shot MARAS processes, with negative selection after or before ("Rev") the positive selection. (a) one-shot MARAS: OS-RO-20N >20K-3 and OS-RO-20N >20K-6. (b) Reversed MARAS: Rev-OS-RO-20N >20K-2 and Rev-OS-RO-20N >20K-6.
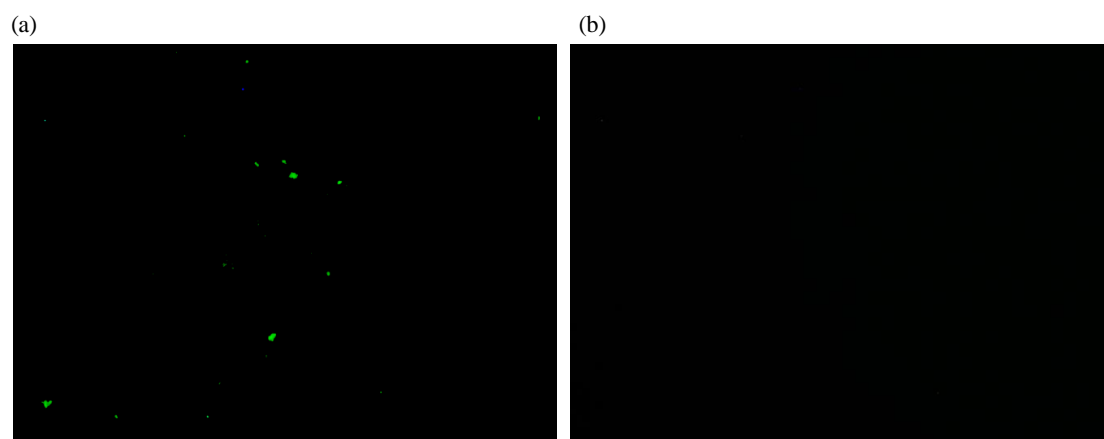
Figure 4S. Representative images of fluorescence of the aptamer binding specificity with CRP reagent. (a). FITC-20N RO F27K-4 aptamer incubated with CRP-MNPs. (b). FITC-20N RO F27K-4 aptamer incubated with SA-MNPs.