

Supplementary Material - Impact of 2'-fluoro nucleobase modifications on CD detection, sensitivity and specificity of short oligonucleotides bound to alginate hydrogels

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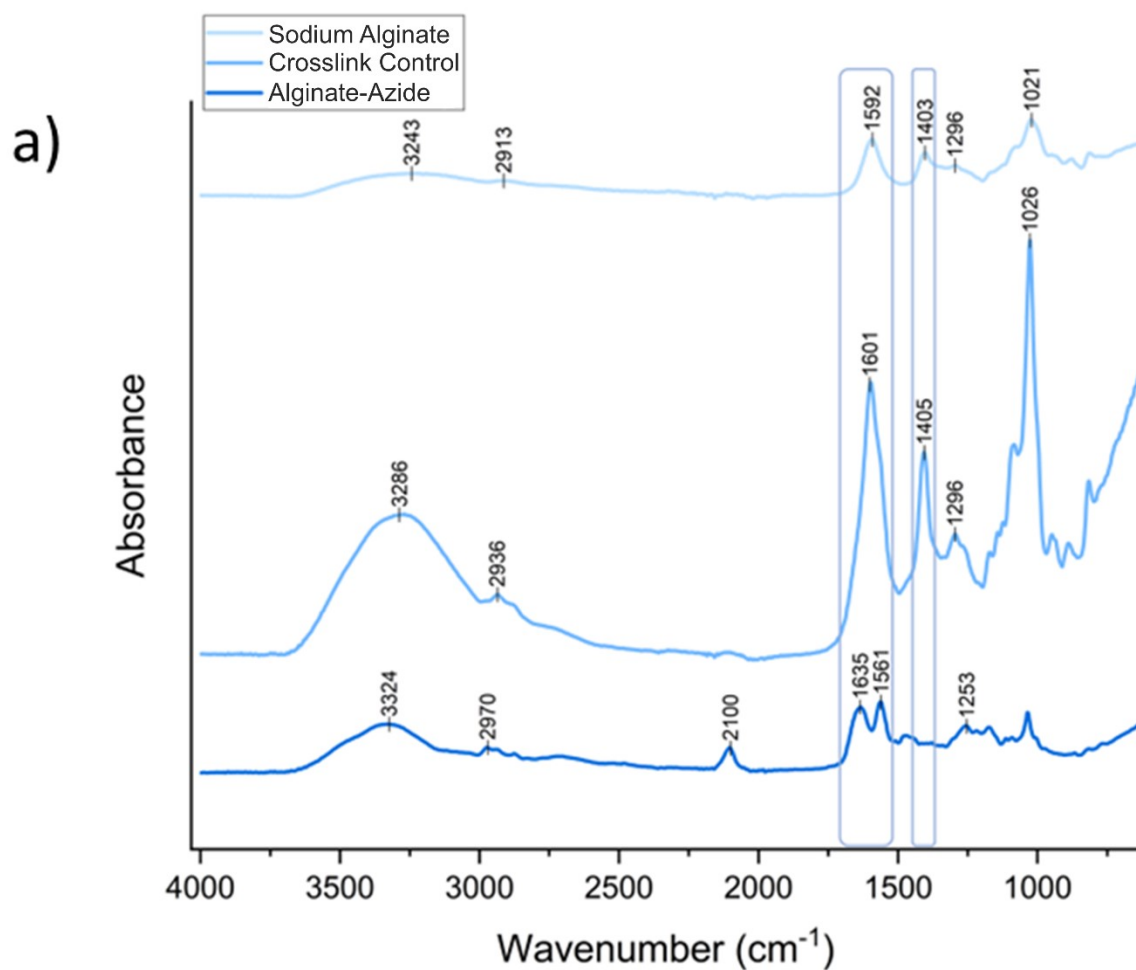


Figure S1. FTIR Spectra of sodium alginate, crosslink control and alginate-azide.

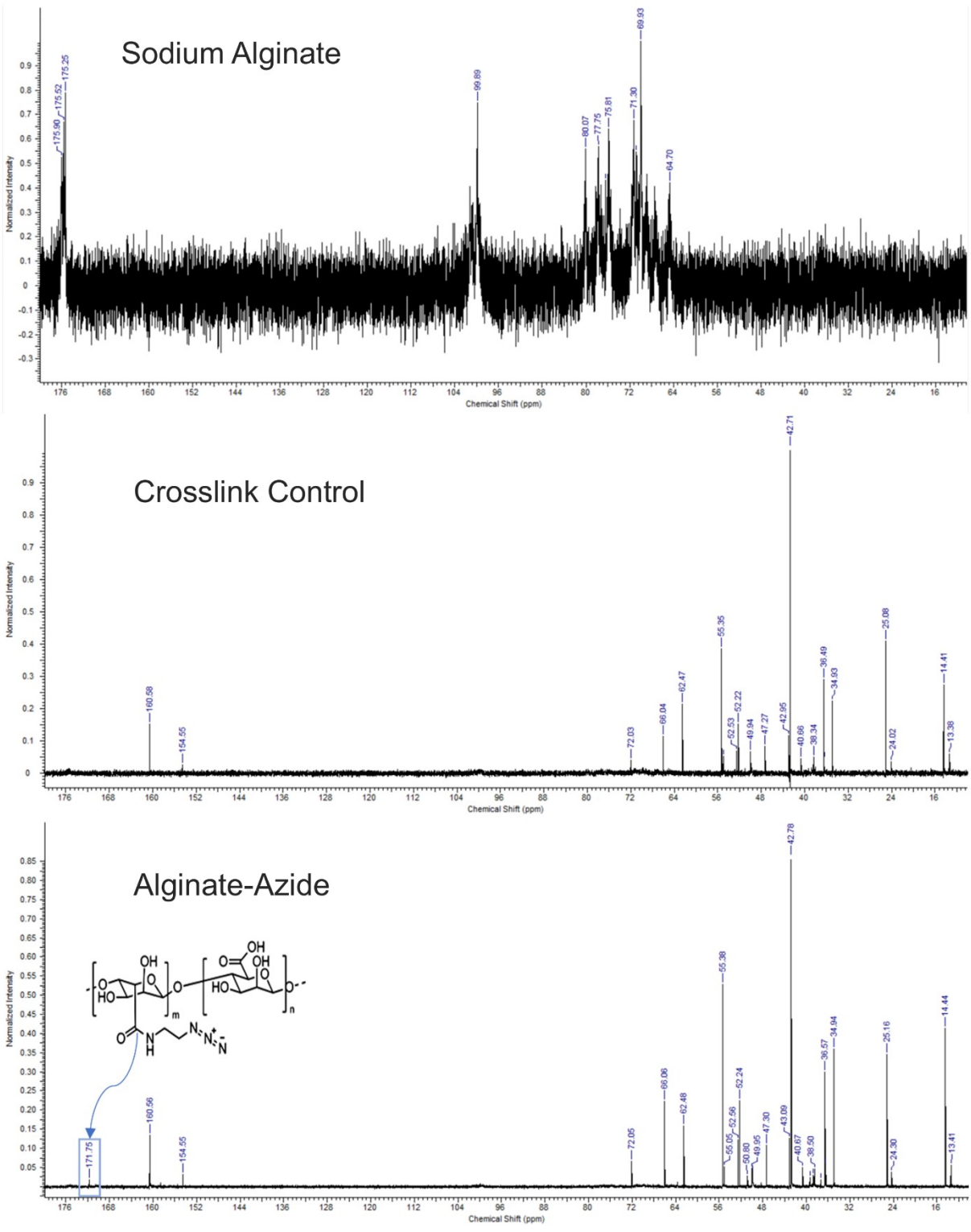


Figure S2. NMR Spectra of sodium alginate, crosslink control and alginate-azide.

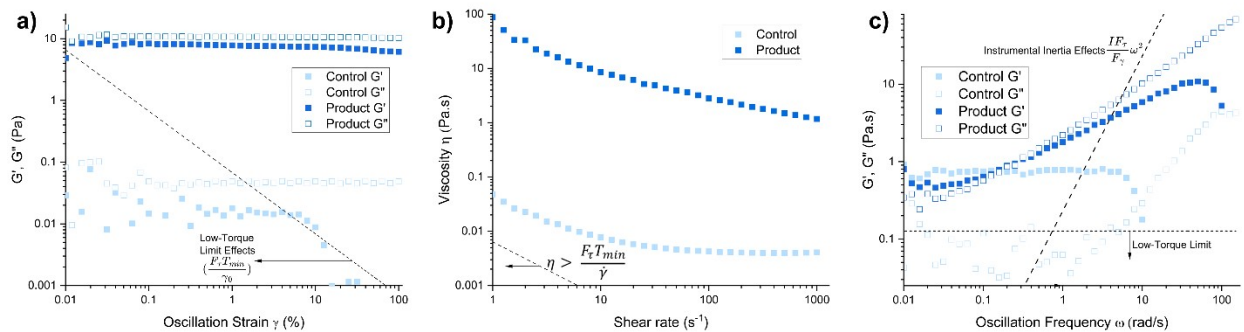


Figure S3. Amplitude, flow, and frequency sweeps of control and alginate-azide.

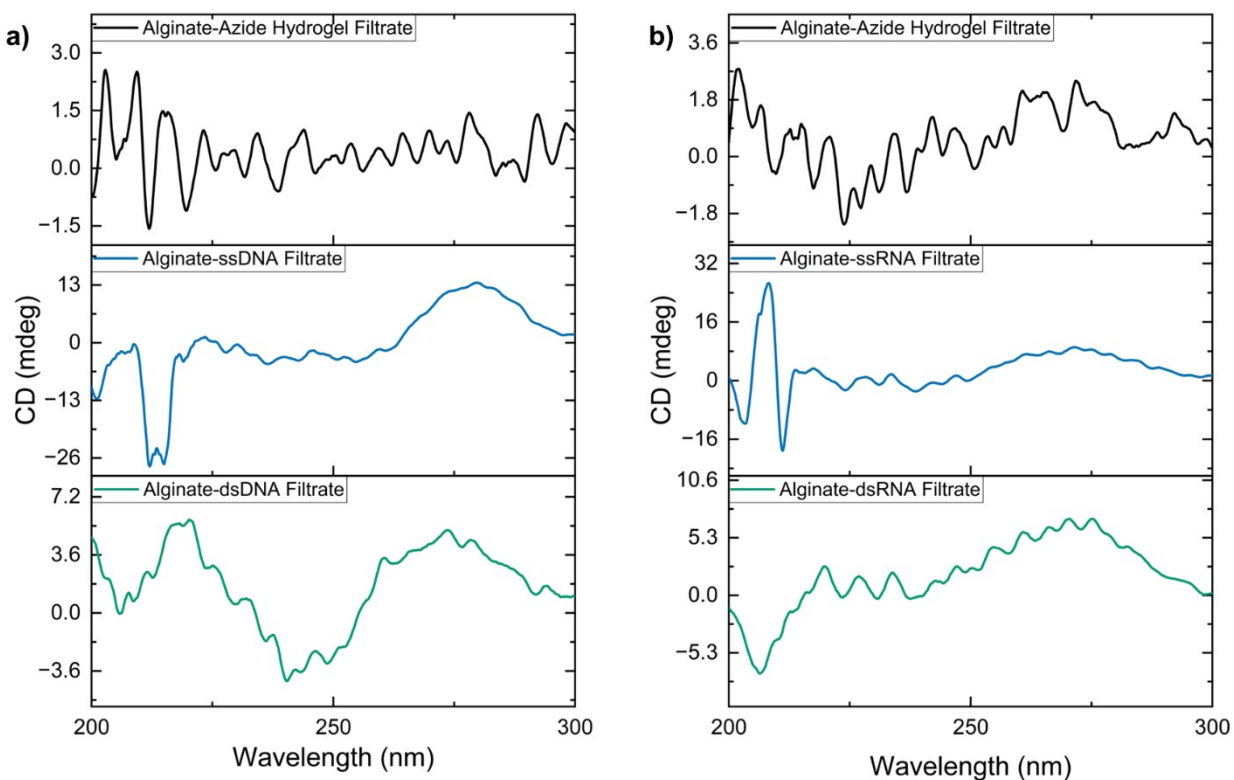


Figure S4. Example CD spectra from a) Alginate-azide, alginate-ssDNA, alginate-dsDNA, and b) Alginate-azide, alginate-ssRNA, alginate-dsRNA hydrogels collected from the filtrate post CuAAC reaction and post target sequence annealing.

Table S1. PCA Sample #s and their descriptions.

PCA #	Sample Description
4	Alginate-ssDNA: 20 nmol (Probe)
5	Alginate-ssDNA: 20 nmol (Probe)
6	Alginate-ssDNA: 20 nmol (Probe)
7	Alginate-ssDNA: 20 nmol (Probe)
8	Alginate-ssDNA: 20 nmol (Probe)
24	Alginate-dsDNA: 1.25 nmol each (Probe + Target)
25	Alginate-dsDNA: 1.25 nmol each (Probe + Target)
27	Alginate-dsDNA: 20 nmol each (Probe + Target)
28	Alginate-dsDNA: 20 nmol each (Probe + Target)
29	Alginate-dsDNA: 20 nmol each (Probe + Target)
30	Alginate-dsDNA: 20 nmol each (Probe + Target)
31	Alginate-dsDNA: 20 nmol each (Probe + Target)
113	Alginate-ssRNA: 20 nmol (Probe)
114	Alginate-ssRNA: 20 nmol (Probe)
115	Alginate-ssRNA: 20 nmol (Probe)
116	Alginate-ssRNA: 20 nmol (Probe)
146	Alginate-dsRNA: 20 nmol each (Probe + Target)
147	Alginate-dsRNA: 20 nmol each (Probe + Target)
148	Alginate-dsRNA: 20 nmol each (Probe + Target)
149	Alginate-dsRNA: 20 nmol each (Probe + Target)
150	Alginate-dsRNA: 20 nmol each (Probe + Target)
176	Alginate-ssDNA: 10 nmol (Probe)
177	Alginate-ssDNA: 10 nmol (Probe)
178	Alginate-ssDNA: 10 nmol (Probe)
179	Alginate-ssDNA: 10 nmol (Probe)
180	Alginate-ssDNA: 10 nmol (Probe)
223	Alginate-dsDNA: 10 nmol each (Probe + Target)
224	Alginate-dsDNA: 10 nmol each (Probe + Target)
225	Alginate-dsDNA: 10 nmol each (Probe + Target)
226	Alginate-dsDNA: 10 nmol each (Probe + Target)
227	Alginate-dsDNA: 10 nmol each (Probe + Target)
234	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Mismatch (3) + Scrambled A + Scrambled B + Scrambled C + Target)
235	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Mismatch (3) + Scrambled A + Scrambled B + Scrambled C + Target)
236	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Mismatch (3) + Scrambled A + Scrambled B + Scrambled C + Target)
237	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Mismatch (3) + Scrambled A + Scrambled B + Scrambled C)
238	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Mismatch (3) + Scrambled A + Scrambled B + Scrambled C)

239	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Mismatch (3) + Scrambled A + Scrambled B + Scrambled C)
240	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Mismatch (3) + Scrambled A)
241	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Mismatch (3) + Scrambled A)
242	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Mismatch (3) + Scrambled A)
243	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Mismatch (3) + Scrambled A + Target)
244	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Mismatch (3) + Scrambled A + Target)
245	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Mismatch (3) + Scrambled A + Target)
291	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled B + Target)
292	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled B + Target)
293	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled B + Target)
294	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled B)
295	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled B)
296	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled B)
297	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled C + Target)
298	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled C + Target)
299	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled C + Target)
300	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled C)
301	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled C)
302	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled C)
303	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Mismatch (3) + Target)
304	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Mismatch (3) + Target)
305	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Mismatch (3) + Target)
309	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled A + Target)
310	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled A + Target)
311	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled A + Target)
315	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled B + Scrambled C + Target)
316	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled B + Scrambled C + Target)
317	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled B + Scrambled C + Target)
318	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled A + Scrambled B + Scrambled C + Target)
319	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled A + Scrambled B + Scrambled C + Target)
320	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled A + Scrambled B + Scrambled C + Target)
322	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled A + Scrambled B + Scrambled C)
323	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled A + Scrambled

	B + Scrambled C)
324	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled B + Scrambled C)
325	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled B + Scrambled C)
326	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled B + Scrambled C)
327	Alginate-ssDNA: 20 nmol (Specificity Study: Probe)
328	Alginate-ssDNA: 20 nmol (Specificity Study: Probe)
329	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Mismatch (3))
330	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Mismatch (3))
331	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Mismatch (3))
332	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled A)
333	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled A)
334	Alginate-dsDNA: 20 nmol each (Specificity Study: Probe + Scrambled A)
622	Alginate-ds2'-F Oligo (F All DNA): 20 nmol each (Probe + Target)
623	Alginate-ss2'-F Oligo (F All RNA): 5 nmol (Probe)
624	Alginate-ss2'-F Oligo (F All RNA): 5 nmol (Probe)
625	Alginate-ss2'-F Oligo (F All RNA): 10 nmol (Probe)
626	Alginate-ss2'-F Oligo (F All RNA): 10 nmol (Probe)
627	Alginate-ss2'-F Oligo (F All RNA): 10 nmol (Probe)
628	Alginate-ss2'-F Oligo (F All RNA): 20 nmol (Probe)
629	Alginate-ss2'-F Oligo (F All RNA): 20 nmol (Probe)
630	Alginate-ss2'-F Oligo (F All RNA): 20 nmol (Probe)
640	Alginate-ds2'-F Oligo (F All RNA): 5 nmol each (Probe + Target)
641	Alginate-ds2'-F Oligo (F All RNA): 5 nmol each (Probe + Target)
642	Alginate-ds2'-F Oligo (F All RNA): 5 nmol each (Probe + Target)
643	Alginate-ds2'-F Oligo (F All RNA): 10 nmol each (Probe + Target)
644	Alginate-ds2'-F Oligo (F All RNA): 10 nmol each (Probe + Target)
645	Alginate-ds2'-F Oligo (F All RNA): 10 nmol each (Probe + Target)
646	Alginate-ds2'-F Oligo (F All RNA): 20 nmol each (Probe + Target)
647	Alginate-ds2'-F Oligo (F All RNA): 20 nmol each (Probe + Target)
648	Alginate-ds2'-F Oligo (F All RNA): 20 nmol each (Probe + Target)
694	Alginate-ss2'-F Oligo (F All DNA): 5 nmol (Probe)
695	Alginate-ss2'-F Oligo (F All DNA): 5 nmol (Probe)
696	Alginate-ss2'-F Oligo (F All DNA): 5 nmol (Probe)
697	Alginate-ss2'-F Oligo (F All DNA): 10 nmol (Probe)
698	Alginate-ss2'-F Oligo (F All DNA): 10 nmol (Probe)
699	Alginate-ss2'-F Oligo (F All DNA): 10 nmol (Probe)
700	Alginate-ss2'-F Oligo (F All DNA): 20 nmol (Probe)
701	Alginate-ss2'-F Oligo (F All DNA): 20 nmol (Probe)
702	Alginate-ss2'-F Oligo (F All DNA): 20 nmol (Probe)
712	Alginate-ds2'-F Oligo (F All DNA): 5 nmol each (Probe + Target)
713	Alginate-ds2'-F Oligo (F All DNA): 5 nmol each (Probe + Target)

714	Alginate-ds2'-F Oligo (F All DNA): 5 nmol each (Probe + Target)
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716	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Probe + Target)
717	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Probe + Target)
718	Alginate-ds2'-F Oligo (F All DNA): 20 nmol each (Probe + Target)
719	Alginate-ds2'-F Oligo (F All DNA): 20 nmol each (Probe + Target)
729	Alginate-ssRNA: 5 nmol (Probe)
730	Alginate-ssRNA: 5 nmol (Probe)
731	Alginate-ssRNA: 5 nmol (Probe)
732	Alginate-ssRNA: 10 nmol (Probe)
733	Alginate-ssRNA: 10 nmol (Probe)
734	Alginate-ssRNA: 10 nmol (Probe)
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736	Alginate-ssRNA: 20 nmol (Probe)
737	Alginate-ssRNA: 20 nmol (Probe)
747	Alginate-dsRNA: 5 nmol each (Probe + Target)
748	Alginate-dsRNA: 5 nmol each (Probe + Target)
749	Alginate-dsRNA: 5 nmol each (Probe + Target)
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754	Alginate-dsRNA: 20 nmol each (Probe + Target)
755	Alginate-dsRNA: 20 nmol each (Probe + Target)
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757	Alginate-ssDNA: 10 nmol (Probe)
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759	Alginate-ssDNA: 10 nmol (Probe)
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761	Alginate-ssDNA: 10 nmol (Probe)
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768	Alginate-ssDNA: 10 nmol (Probe)
769	Alginate-ssDNA: 10 nmol (Probe)
770	Alginate-ssDNA: 10 nmol (Probe)
771	Alginate-ssDNA: 10 nmol (Probe)
772	Alginate-ssDNA: 10 nmol (Probe)
773	Alginate-ssDNA: 10 nmol (Probe)
777	Alginate-dsDNA: 10 nmol Probe + 1.25 nmol Target

778	Alginate-dsDNA: 10 nmol Probe + 1.25 nmol Target
779	Alginate-dsDNA: 10 nmol Probe + 1.25 nmol Target
780	Alginate-dsDNA: 10 nmol Probe + 2.5 nmol Target
781	Alginate-dsDNA: 10 nmol Probe + 2.5 nmol Target
782	Alginate-dsDNA: 10 nmol Probe + 2.5 nmol Target
783	Alginate-dsDNA: 10 nmol Probe + 5 nmol Target
784	Alginate-dsDNA: 10 nmol Probe + 5 nmol Target
785	Alginate-dsDNA: 10 nmol Probe + 5 nmol Target
786	Alginate-dsDNA: 10 nmol Probe + 10 nmol Target
787	Alginate-dsDNA: 10 nmol Probe + 10 nmol Target
788	Alginate-dsDNA: 10 nmol Probe + 10 nmol Target
789	Alginate-dsDNA: 10 nmol Probe + 20 nmol Target
790	Alginate-dsDNA: 10 nmol Probe + 20 nmol Target
791	Alginate-dsDNA: 10 nmol Probe + 20 nmol Target
792	Alginate-ss2'-F Oligo (F All DNA): 10 nmol (Probe)
793	Alginate-ss2'-F Oligo (F All DNA): 10 nmol (Probe)
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813	Alginate-ds2'-F Oligo (F All DNA): 10 nmol Probe + 1.25 nmol Target
814	Alginate-ds2'-F Oligo (F All DNA): 10 nmol Probe + 1.25 nmol Target
815	Alginate-ds2'-F Oligo (F All DNA): 10 nmol Probe + 1.25 nmol Target
816	Alginate-ds2'-F Oligo (F All DNA): 10 nmol Probe + 2.5 nmol Target
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822	Alginate-ds2'-F Oligo (F All DNA): 10 nmol Probe + 10 nmol Target
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826	Alginate-ds2'-F Oligo (F All DNA): 10 nmol Probe + 20 nmol Target
827	Alginate-ds2'-F Oligo (F All DNA): 10 nmol Probe + 20 nmol Target
828	Alginate-ssRNA: 10 nmol (Probe)
829	Alginate-ssRNA: 10 nmol (Probe)
830	Alginate-ssRNA: 10 nmol (Probe)
831	Alginate-ssRNA: 10 nmol (Probe)
832	Alginate-ssRNA: 10 nmol (Probe)
833	Alginate-ssRNA: 10 nmol (Probe)
834	Alginate-ssRNA: 10 nmol (Probe)
835	Alginate-ssRNA: 10 nmol (Probe)
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839	Alginate-ssRNA: 10 nmol (Probe)
840	Alginate-ssRNA: 10 nmol (Probe)
841	Alginate-ssRNA: 10 nmol (Probe)
842	Alginate-ssRNA: 10 nmol (Probe)
843	Alginate-ssRNA: 10 nmol (Probe)
844	Alginate-ssRNA: 10 nmol (Probe)
845	Alginate-ssRNA: 10 nmol (Probe)
849	Alginate-dsRNA: 10 nmol Probe + 1.25 nmol Target
850	Alginate-dsRNA: 10 nmol Probe + 1.25 nmol Target
851	Alginate-dsRNA: 10 nmol Probe + 1.25 nmol Target
852	Alginate-dsRNA: 10 nmol Probe + 2.5 nmol Target
853	Alginate-dsRNA: 10 nmol Probe + 2.5 nmol Target
854	Alginate-dsRNA: 10 nmol Probe + 2.5 nmol Target
855	Alginate-dsRNA: 10 nmol Probe + 5 nmol Target
856	Alginate-dsRNA: 10 nmol Probe + 5 nmol Target
857	Alginate-dsRNA: 10 nmol Probe + 5 nmol Target
858	Alginate-dsRNA: 10 nmol Probe + 10 nmol Target
859	Alginate-dsRNA: 10 nmol Probe + 10 nmol Target
860	Alginate-dsRNA: 10 nmol Probe + 10 nmol Target
861	Alginate-dsRNA: 10 nmol Probe + 20 nmol Target
862	Alginate-dsRNA: 10 nmol Probe + 20 nmol Target
863	Alginate-dsRNA: 10 nmol Probe + 20 nmol Target
864	Alginate-ss2'-F Oligo (F All RNA): 10 nmol (Probe)
865	Alginate-ss2'-F Oligo (F All RNA): 10 nmol (Probe)
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880	Alginate-ss2'-F Oligo (F All RNA): 10 nmol (Probe)
881	Alginate-ss2'-F Oligo (F All RNA): 10 nmol (Probe)
885	Alginate-ds2'-F Oligo (F All RNA): 10 nmol Probe + 1.25 nmol Target
886	Alginate-ds2'-F Oligo (F All RNA): 10 nmol Probe + 1.25 nmol Target
887	Alginate-ds2'-F Oligo (F All RNA): 10 nmol Probe + 1.25 nmol Target
888	Alginate-ds2'-F Oligo (F All RNA): 10 nmol Probe + 2.5 nmol Target
889	Alginate-ds2'-F Oligo (F All RNA): 10 nmol Probe + 2.5 nmol Target
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891	Alginate-ds2'-F Oligo (F All RNA): 10 nmol Probe + 5 nmol Target
892	Alginate-ds2'-F Oligo (F All RNA): 10 nmol Probe + 5 nmol Target
893	Alginate-ds2'-F Oligo (F All RNA): 10 nmol Probe + 5 nmol Target
894	Alginate-ds2'-F Oligo (F All RNA): 10 nmol Probe + 10 nmol Target
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896	Alginate-ds2'-F Oligo (F All RNA): 10 nmol Probe + 10 nmol Target
897	Alginate-ds2'-F Oligo (F All RNA): 10 nmol Probe + 20 nmol Target
898	Alginate-ds2'-F Oligo (F All RNA): 10 nmol Probe + 20 nmol Target
899	Alginate-ds2'-F Oligo (F All RNA): 10 nmol Probe + 20 nmol Target
951	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Target)
952	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Target)
953	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Target)
954	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Mismatch (3))
955	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Mismatch (3))
956	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Mismatch (3))
957	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Mismatch (3) + Target)
958	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Mismatch (3) + Target)
959	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Mismatch (3) + Target)
960	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled A)
961	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe +

	Scrambled A)
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963	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled A + Target)
964	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled A + Target)
965	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled A + Target)
966	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled B)
967	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled B)
968	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled B)
969	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled B + Target)
970	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled B + Target)
971	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled B + Target)
972	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled C)
973	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled C)
974	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled C)
975	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled C + Target)
976	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled C + Target)
977	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled C + Target)
978	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled B + Scrambled C)
979	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled B + Scrambled C)
980	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled B + Scrambled C)
981	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled B + Scrambled C + Target)
982	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled B + Scrambled C + Target)
983	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled B + Scrambled C + Target)
984	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled A + Scrambled B + Scrambled C)
985	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled A + Scrambled B + Scrambled C)

986	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled A + Scrambled B + Scrambled C)
987	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled A + Scrambled B + Scrambled C + Target)
988	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled A + Scrambled B + Scrambled C + Target)
989	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Scrambled A + Scrambled B + Scrambled C + Target)
990	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Mismatch (3) + Scrambled A)
991	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Mismatch (3) + Scrambled A)
992	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Mismatch (3) + Scrambled A)
993	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Mismatch (3) + Scrambled A + Target)
994	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Mismatch (3) + Scrambled A + Target)
995	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Mismatch (3) + Scrambled A + Target)
996	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Mismatch (3) + Scrambled A + Scrambled B + Scrambled C)
997	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Mismatch (3) + Scrambled A + Scrambled B + Scrambled C)
998	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Mismatch (3) + Scrambled A + Scrambled B + Scrambled C)
999	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Mismatch (3) + Scrambled A + Scrambled B + Scrambled C + Target)
1000	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Mismatch (3) + Scrambled A + Scrambled B + Scrambled C + Target)
1001	Alginate-ds2'-F Oligo (F All DNA): 10 nmol each (Specificity Study: Probe + Mismatch (3) + Scrambled A + Scrambled B + Scrambled C + Target)
1029	Alginate-dsDNA: 10 nmol each (Mismatch Determination Threshold: DNA Probe + DNA Target)
1030	Alginate-dsDNA: 10 nmol each (Mismatch Determination Threshold: DNA Probe + DNA Target)
1031	Alginate-dsDNA: 10 nmol each (Mismatch Determination Threshold: DNA Probe + DNA Target)
1032	Alginate-dsDNA: 10 nmol each (Mismatch Determination Threshold: DNA Probe + Mismatch (3))
1033	Alginate-dsDNA: 10 nmol each (Mismatch Determination Threshold: DNA Probe + Mismatch (3))
1034	Alginate-dsDNA: 10 nmol each (Mismatch Determination Threshold: DNA Probe + Mismatch (3))
1035	Alginate-dsDNA: 10 nmol each (Mismatch Determination Threshold: DNA Probe + Mismatch (3) + DNA Target)
1036	Alginate-dsDNA: 10 nmol each (Mismatch Determination Threshold: DNA Probe + Mismatch (3) + DNA Target)
1037	Alginate-dsDNA: 10 nmol each (Mismatch Determination Threshold: DNA Probe + Mismatch (3) + DNA Target)

1038	Alginate-dsDNA: 10 nmol each (Mismatch Determination Threshold: DNA Probe + Mismatch (5))
1039	Alginate-dsDNA: 10 nmol each (Mismatch Determination Threshold: DNA Probe + Mismatch (5))
1040	Alginate-dsDNA: 10 nmol each (Mismatch Determination Threshold: DNA Probe + Mismatch (5))
1041	Alginate-dsDNA: 10 nmol each (Mismatch Determination Threshold: DNA Probe + Mismatch (5) + DNA Target)
1042	Alginate-dsDNA: 10 nmol each (Mismatch Determination Threshold: DNA Probe + Mismatch (5) + DNA Target)
1043	Alginate-dsDNA: 10 nmol each (Mismatch Determination Threshold: DNA Probe + Mismatch (5) + DNA Target)
1044	Alginate-dsDNA: 10 nmol each (Mismatch Determination Threshold: DNA Probe + Mismatch (7))
1045	Alginate-dsDNA: 10 nmol each (Mismatch Determination Threshold: DNA Probe + Mismatch (7))
1046	Alginate-dsDNA: 10 nmol each (Mismatch Determination Threshold: DNA Probe + Mismatch (7))
1047	Alginate-dsDNA: 10 nmol each (Mismatch Determination Threshold: DNA Probe + Mismatch (7) + DNA Target)
1048	Alginate-dsDNA: 10 nmol each (Mismatch Determination Threshold: DNA Probe + Mismatch (7) + DNA Target)
1049	Alginate-dsDNA: 10 nmol each (Mismatch Determination Threshold: DNA Probe + Mismatch (7) + DNA Target)
1050	Alginate-dsDNA: 10 nmol each (Mismatch Determination Threshold: DNA Probe + Mismatch (9))
1051	Alginate-dsDNA: 10 nmol each (Mismatch Determination Threshold: DNA Probe + Mismatch (9))
1052	Alginate-dsDNA: 10 nmol each (Mismatch Determination Threshold: DNA Probe + Mismatch (9) + DNA Target)
1053	Alginate-dsDNA: 10 nmol each (Mismatch Determination Threshold: DNA Probe + Mismatch (9) + DNA Target)
1054	Alginate-dsDNA: 10 nmol each (Mismatch Determination Threshold: DNA Probe + Mismatch (9) + DNA Target)

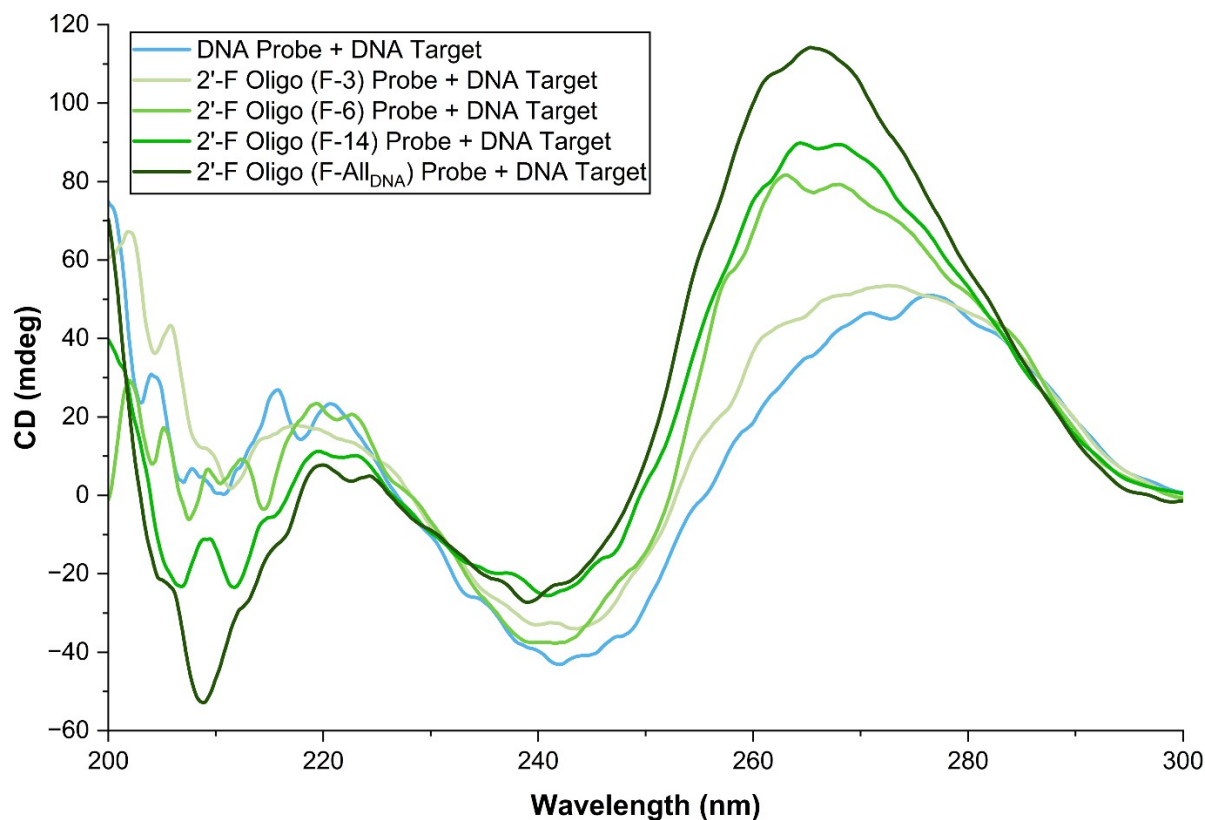


Figure S5. CD Spectra for duplexes of Unmodified DNA and 2'-F Oligo Probes bound to the DNA Target (not bound to alginate-azide).

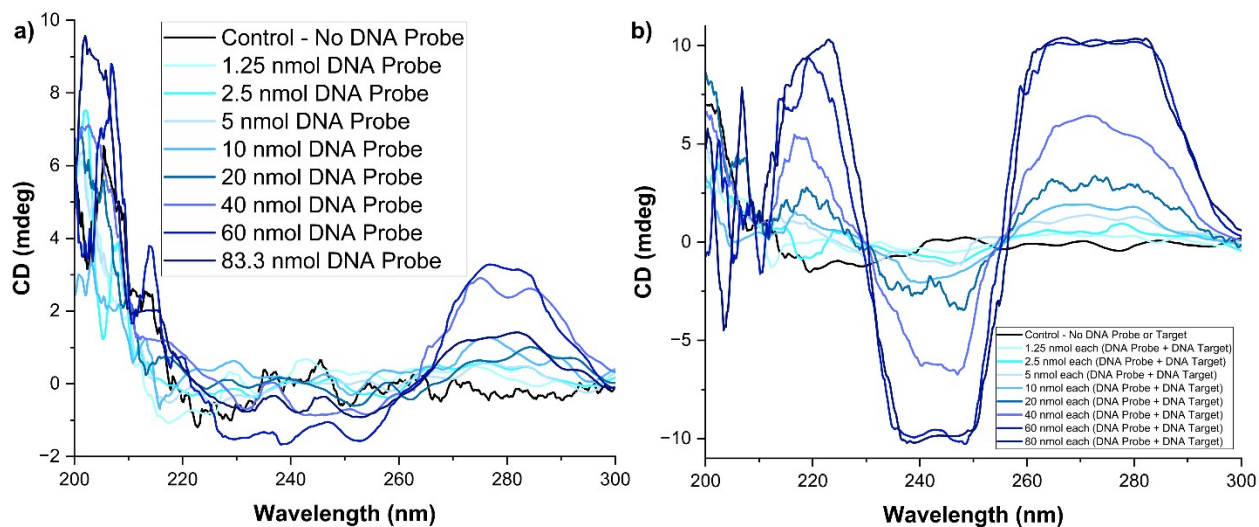


Figure S6. CD spectra for samples from Sensitivity Study I – Equal Molar Amounts of Probe and Target showing full range of concentrations tested (0-83.3 nmol) for a) ssDNA and b) dsDNA

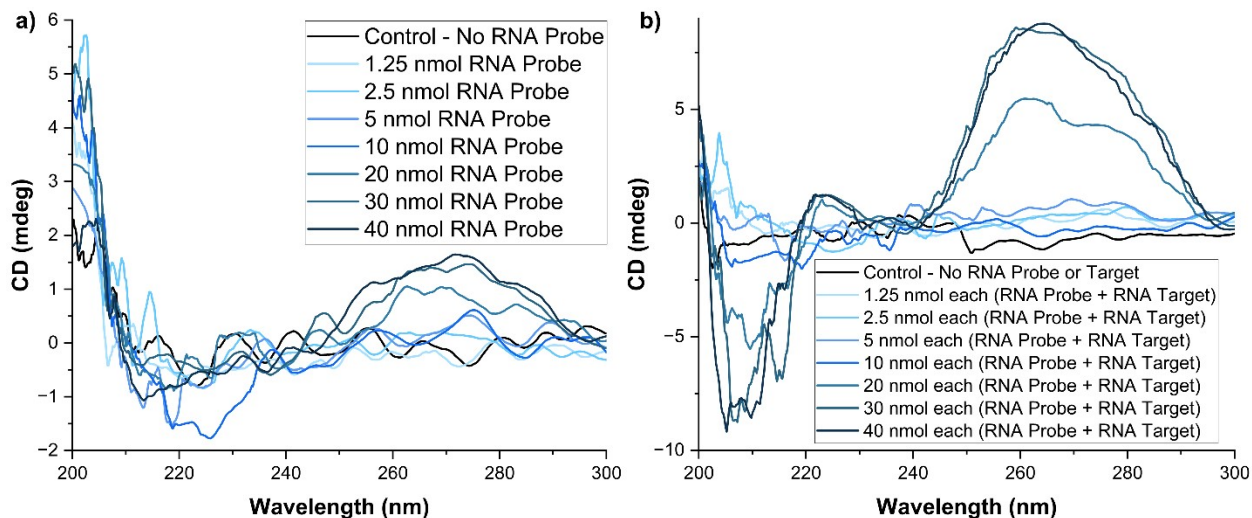


Figure S7. CD spectra for samples from Sensitivity Study I – Equal Molar Amounts of Probe and Target showing full range of concentrations tested (0-40 nmol) for a) ssRNA and b) dsRNA

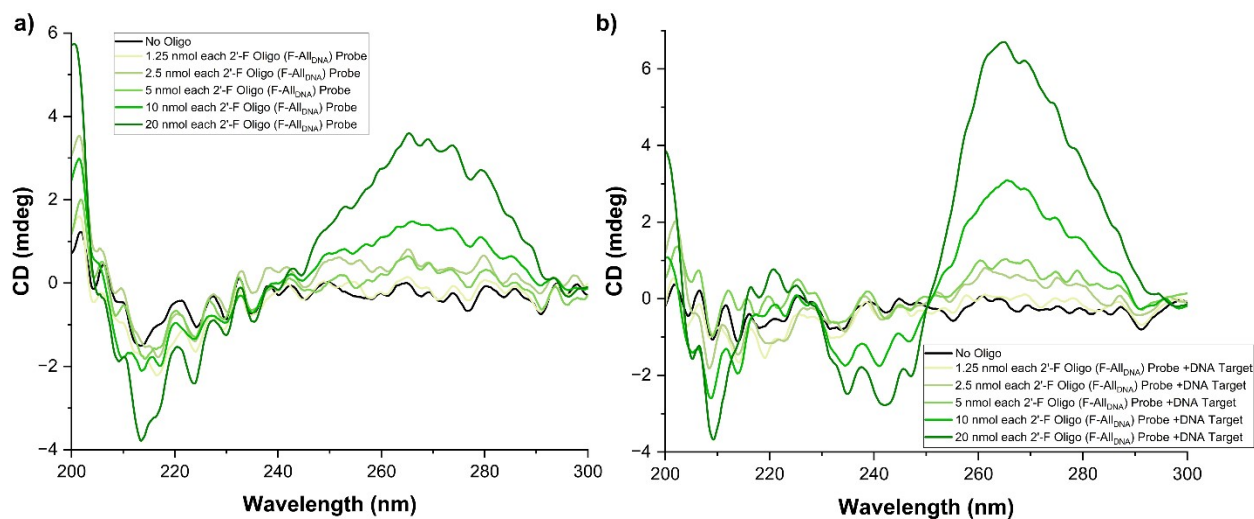


Figure S8. CD spectra for samples from Sensitivity Study I – Equal Molar Amounts of Probe and Target showing full range of concentrations tested (0-20 nmol) for a) ss2'-F Oligo (F-All_{DNA}) and b) ds2'-F Oligo (F-All_{DNA})

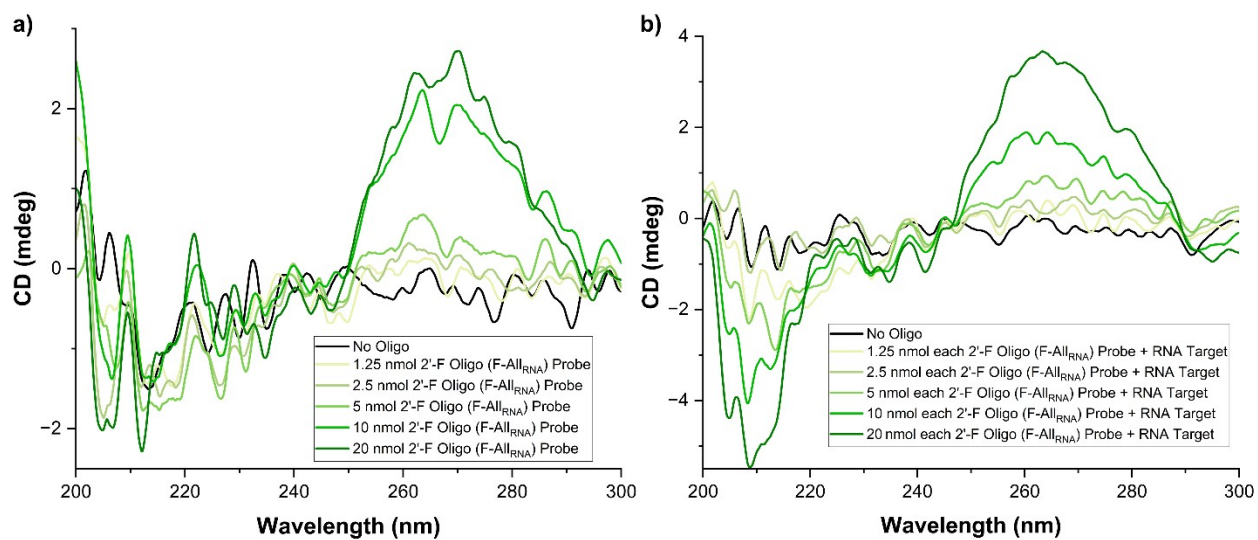


Figure S9. CD spectra for samples from Sensitivity Study I – Equal Molar Amounts of Probe and Target showing full range of concentrations tested (0-20 nmol) for a) ss2'-F Oligo (F-All_{RNA}) and b) ds2'-F Oligo (F-All_{RNA})

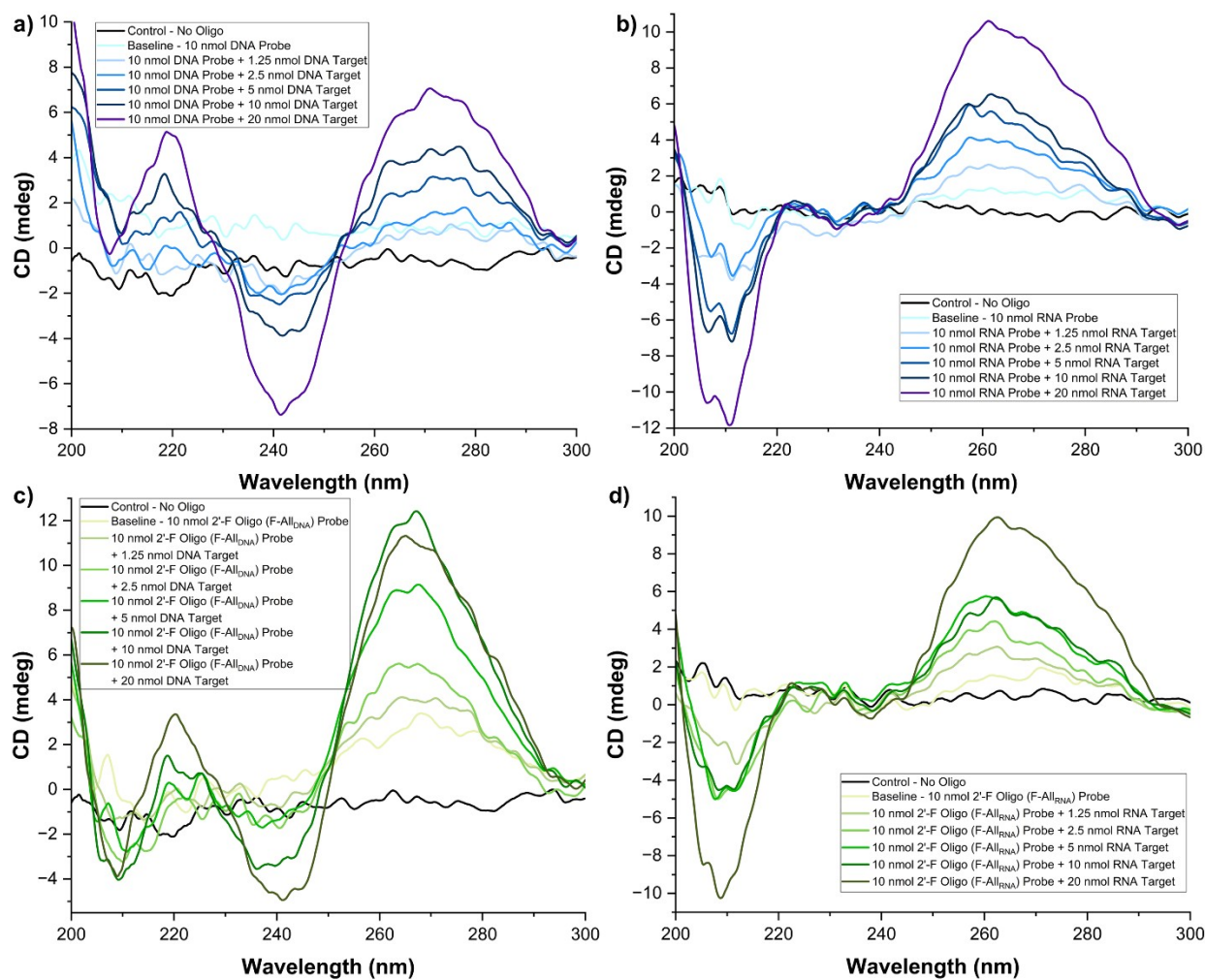


Figure S10. CD Spectra of a) DNA Sensitivity Study, b) RNA Sensitivity Study, c) 2'-F Oligo (F-All_{DNA})/DNA Target, and d) 2'-F Oligo (F-All_{RNA})/RNA Target Sensitivity Study with constant Probe and changing Target Sequence amounts.

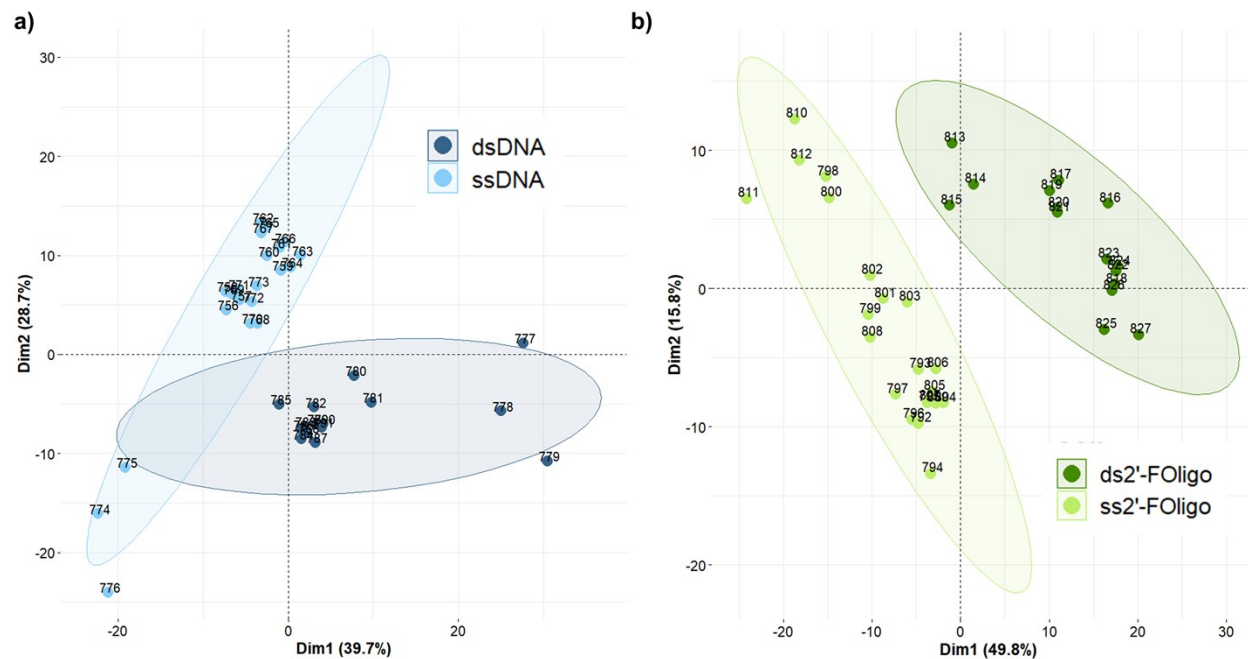


Figure S11. PCA of ss and ds a) DNA and b) 2'-F Oligo (F-All_{DNA}) for Sensitivity Studies with Constant Probe and Varying Target Sequence Concentrations. PCAs include all samples containing 1.25-20 nmol of target sequence; CD response from 230-290 nm was used for PCA.

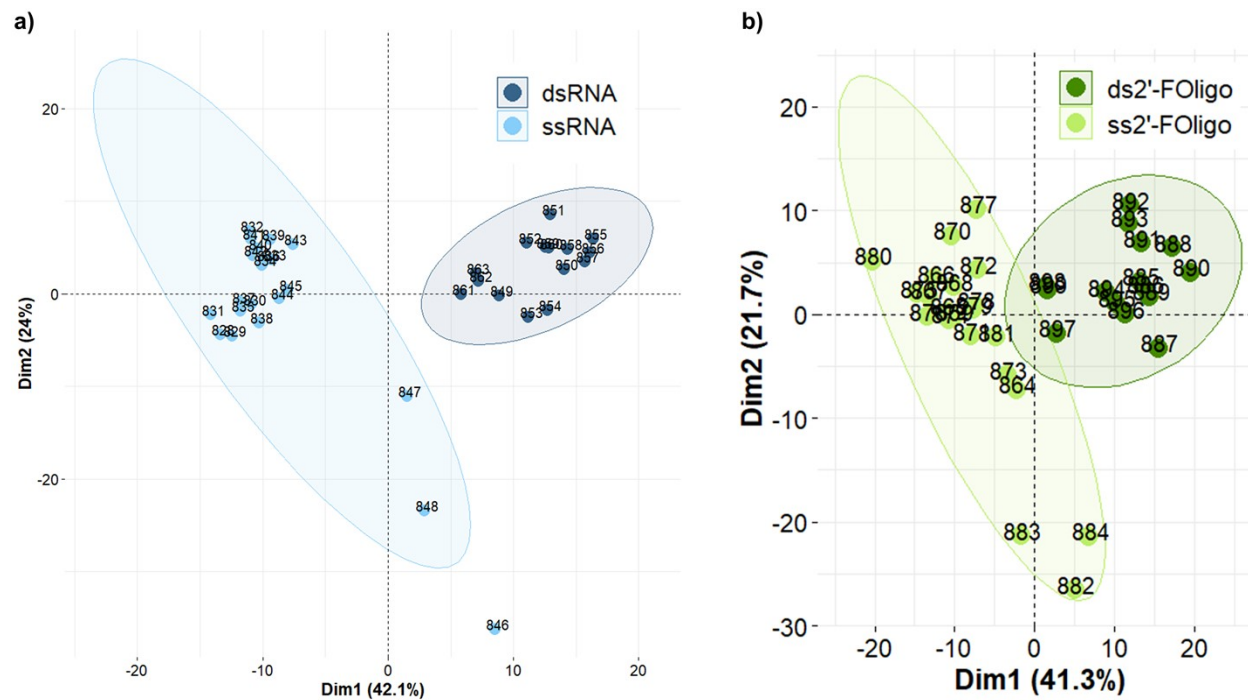


Figure S12. PCA of ss and ds a) RNA and b) 2'-F Oligo (F-All_{RNA}) for Sensitivity Studies with Constant Probe and Varying Target Sequence Concentrations. PCAs include all samples containing 1.25-20 nmol of target sequence; CD response from 230-290 nm was used for PCA.

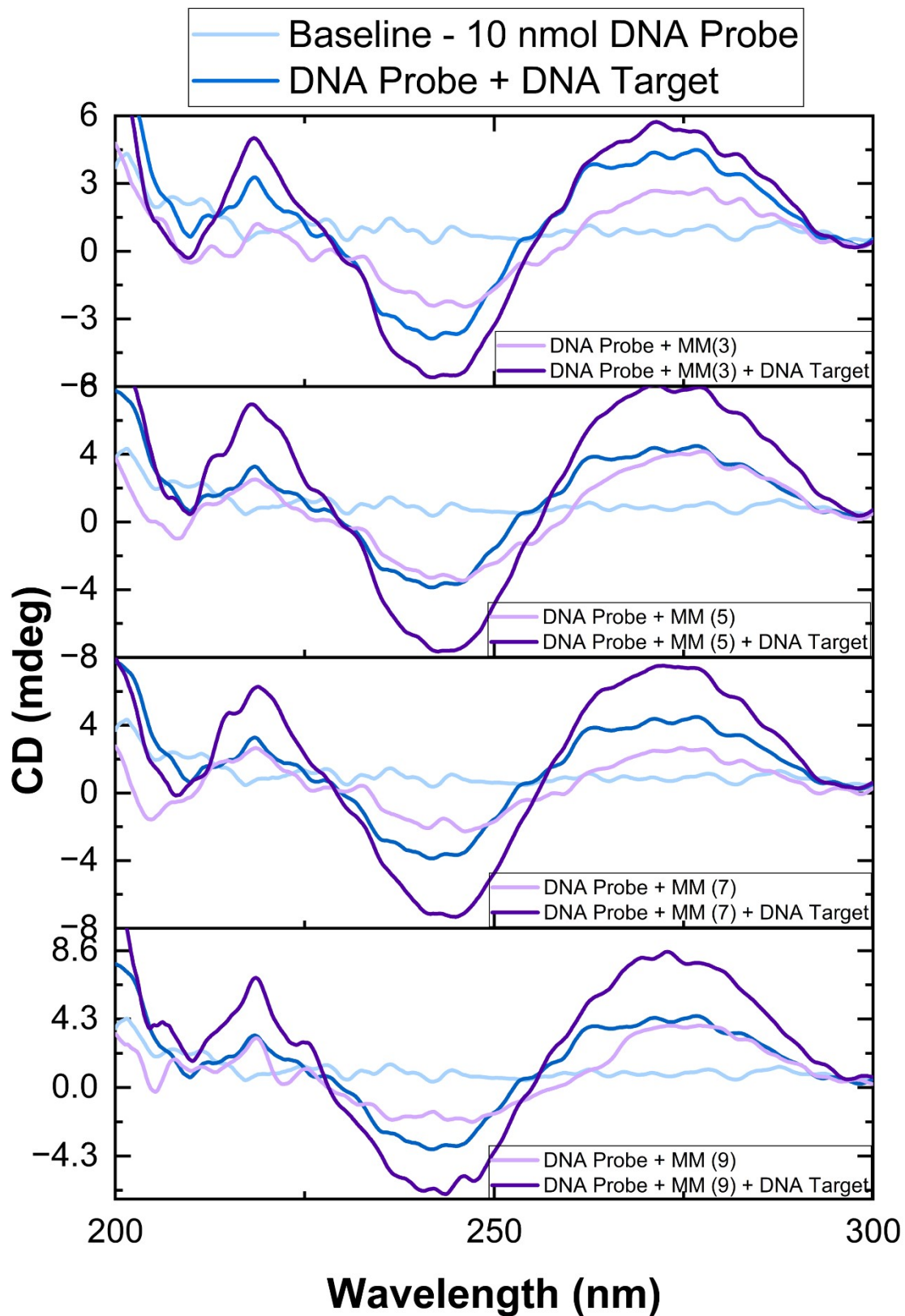


Figure S13. CD spectra for Mismatch Discrimination Threshold Study involving mixtures containing targets with 3, 5, 7 and 9 mismatches (MM3-9).

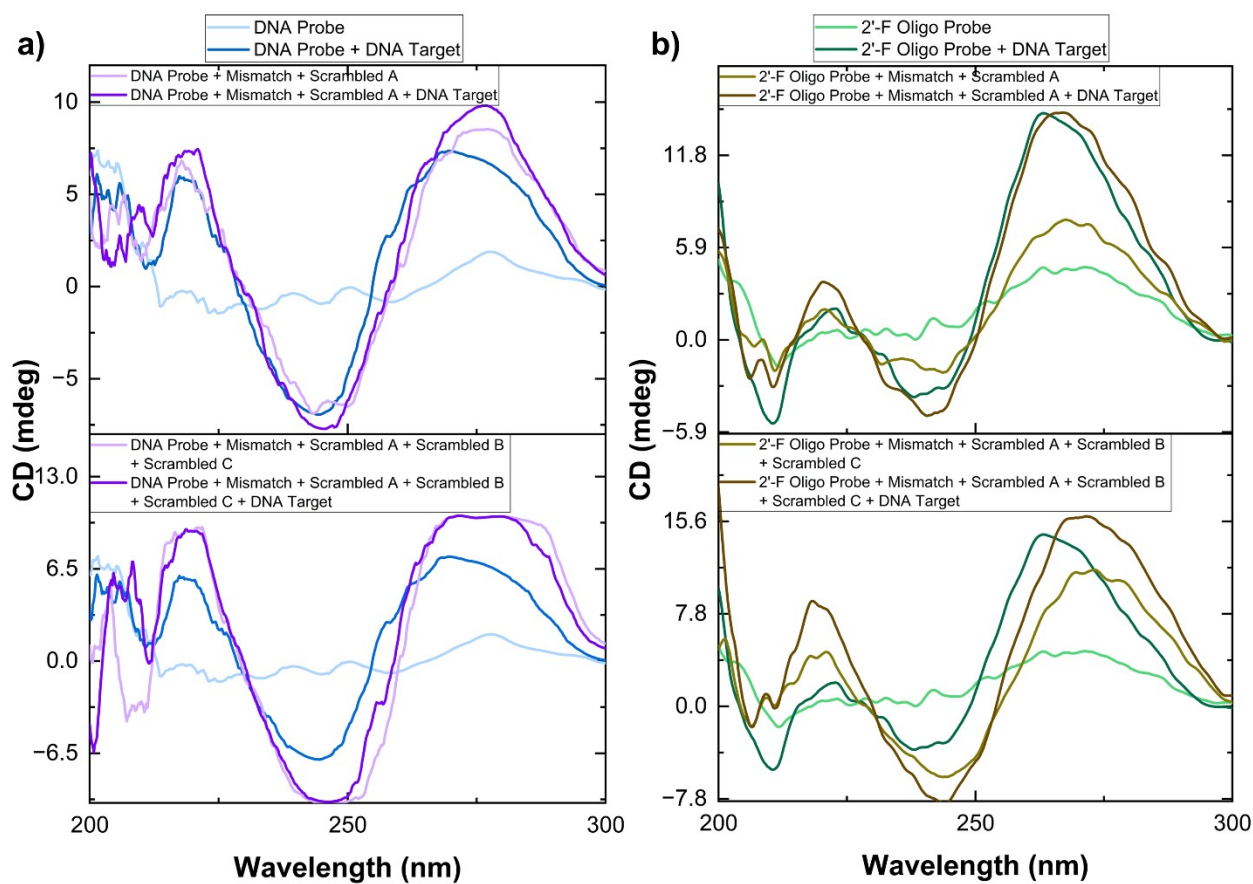


Figure S14. CD spectra of the DNA hydrogels and 2'-F Oligo hydrogels tested during the specificity study. 2'-F Oligo corresponds to the 2'-F Oligo (F-ALL_{DNA}) sequence. Spectra are compared to Probe strands and a Probe/Target duplex, represented in light blue and dark blue for DNA and light green and dark green for 2'-F Oligo, respectively. CD Spectra in a) and b) represent samples with multiple non-complementary sequences.