SUPPORTING INFORMATION The supplemental figures are

Figure S1: Circular dichroism spectra of 1 μM (5'-CGCGCAATTGCGCG-3')$_2$ without (solid) and with (dotted) 3 *m* triethylene glycol.

Figure S2. Comparison of the absorbance of 5'-CGCGCAATTGCGCG-3')$_2$ vs. temperature without (open squares, right axis) and with 3 *m* triethylene glycol (open circles, left axis). The melting temperatures are 55^{o}C and 46 ^{o}C, respectively.

Figure S3. Continuous variation analysis at a total concentration of 100 nM oligonucleotide and Hoechst using 3 *m* triethylene glycol. The emission intensities are plotted relative to the mole fraction with respect to Hoechst. The fluorescence emission was measured using an emission wavelength of 446 nm and excitation wavelength of 358 nm. The inflection at $X_{Hoechst} = 0.5$ corresponds to 1 Hoechst:oligonucleotide.

Figure S4: Plot of the natural logarithm of the observed equilibrium constant for the association of Hoechst with DNA as a function of the concentration of acetamide (top), betaine (middle), and tetraethylene glycol (bottom). Linear least-squares fit using Eq. 8 ($K_p = 0$) gives 51 ± 6 for acetamide, 51 ± 3 for betaine, and 67 ± 8 for tetraethylene glycol. The extrapolation to a 0.12 *m* for the buffer gives K = 2.8 (± 0.8) x 10^8 M^{-1} for acetamide, 3.5 (± 0.4) x 10^8 M^{-1} for betaine, and 0.8 (± 0.3) x 10^8 M^{-1} for tetraethylene glycol. These values are similar to the K = 2.5 (± 0.4) x 10^8 M^{-1} measured in the buffer alone at 25 ^{o}C.

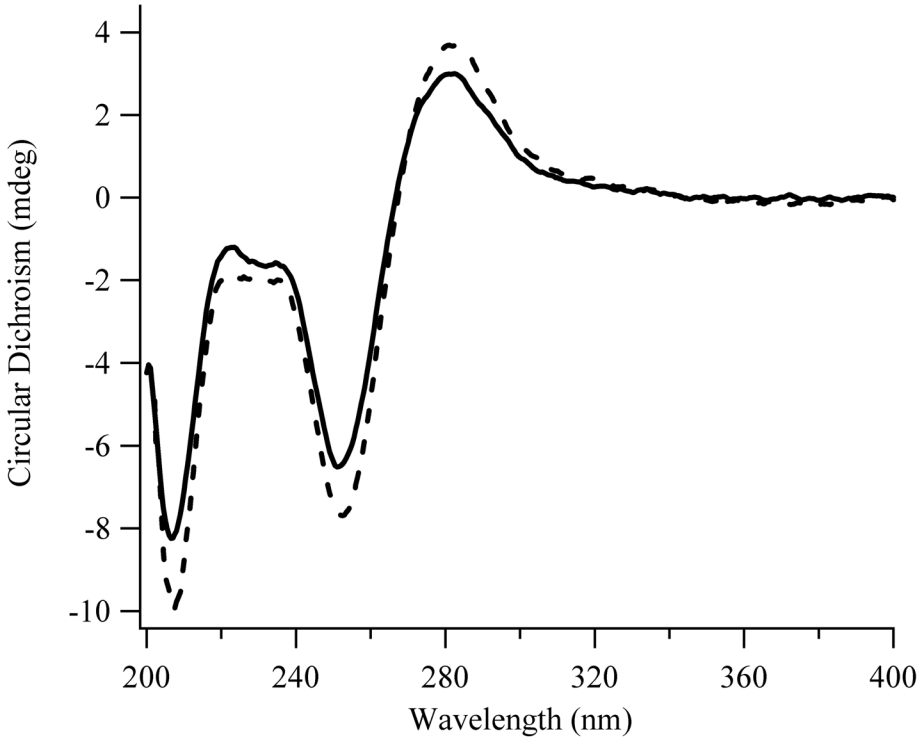

Circular Dichroism (mdeg)
4
2
0
-2
-4
-6
-8
-10
200
240
280
320
360
400
Wavelength (nm)

Figure S1

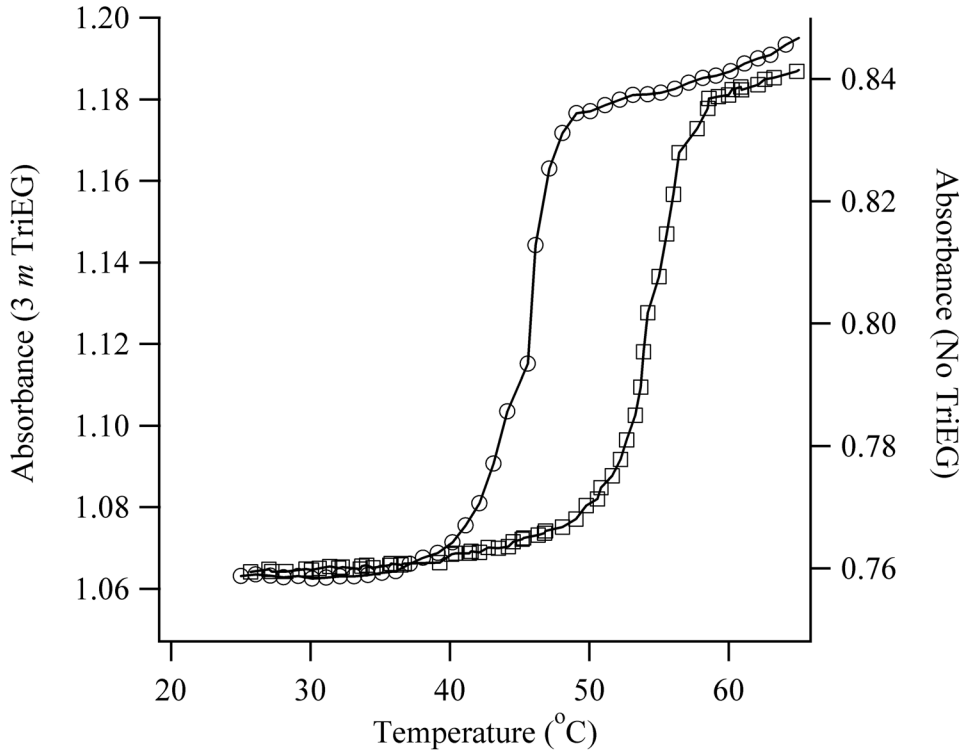

1.20
1.18
1.16
1.14
1.12
1.10
1.08
1.06
Absorbance (3 m TriEG)
0.84
0.82
0.80
0.78
0.76
Absorbance (No TriEG)
20
30
40
50
60
Temperature (°C)

Figure S2

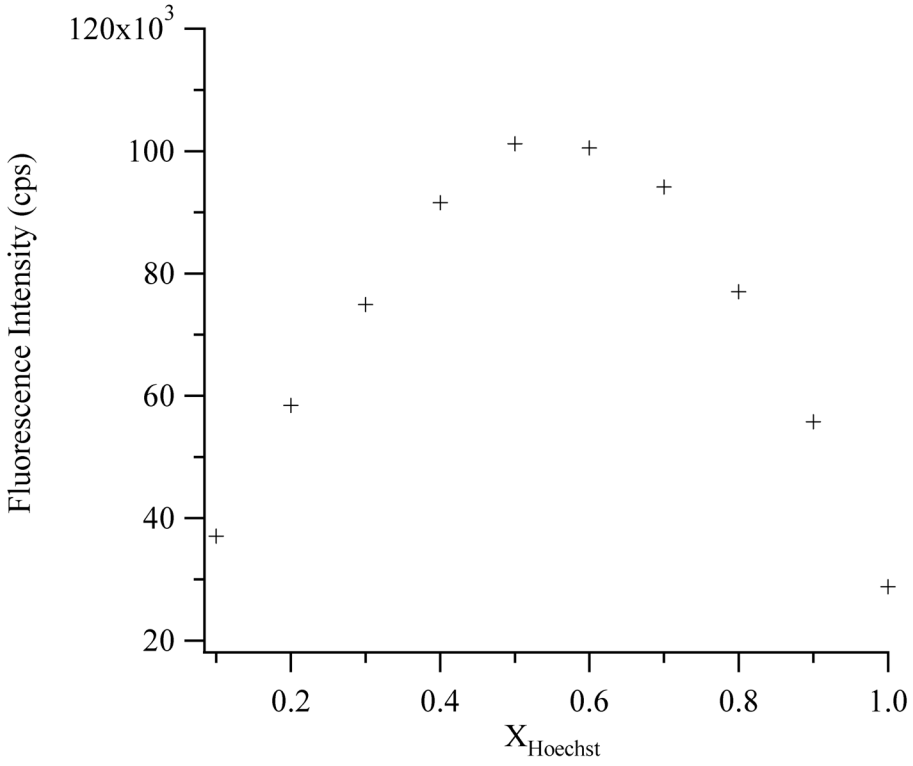
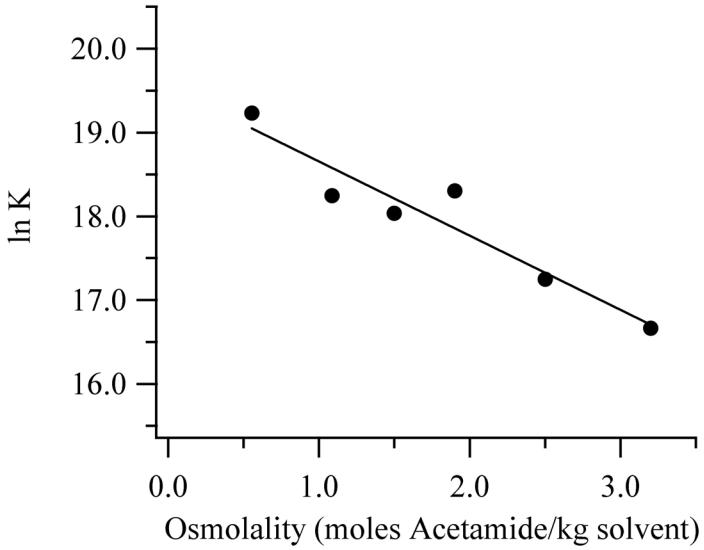
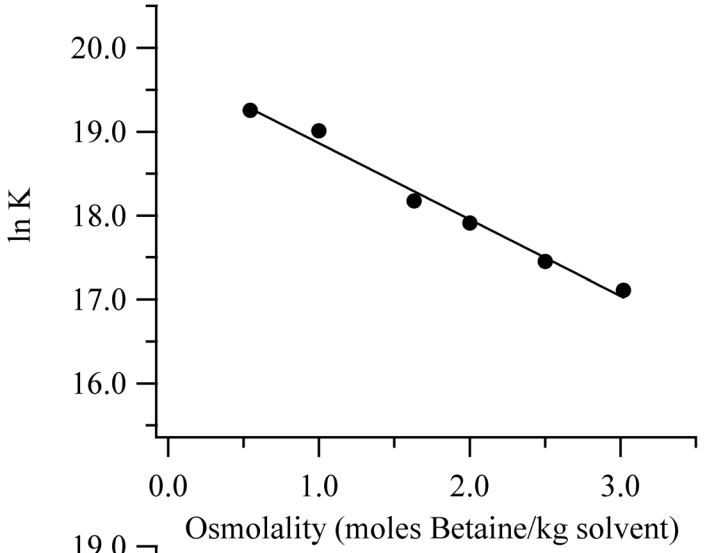

120x10^3
100
80
60
40
20
Fluorescence Intensity (cps)
0.2
0.4
0.6
0.8
1.0
X_Hoechst

Figure S3


20.0
19.0
18.0
17.0
16.0
ln K
0.0
1.0
2.0
3.0
Osmolality (moles Acetamide/kg solvent)


20.0
19.0
18.0
17.0
16.0
ln K
0.0
1.0
2.0
3.0
Osmolality (moles Betaine/kg solvent)

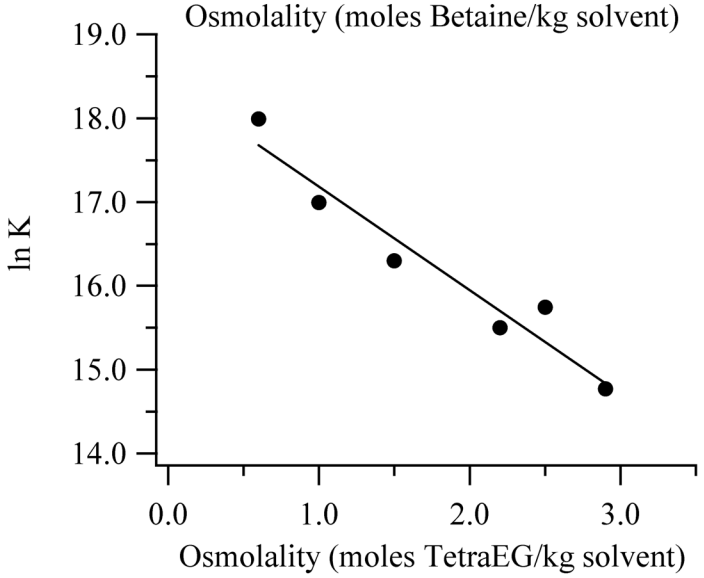

19.0
18.0
17.0
16.0
15.0
14.0
ln K
0.0
1.0
2.0
3.0
Osmolality (moles TetraEG/kg solvent)

Figure S4