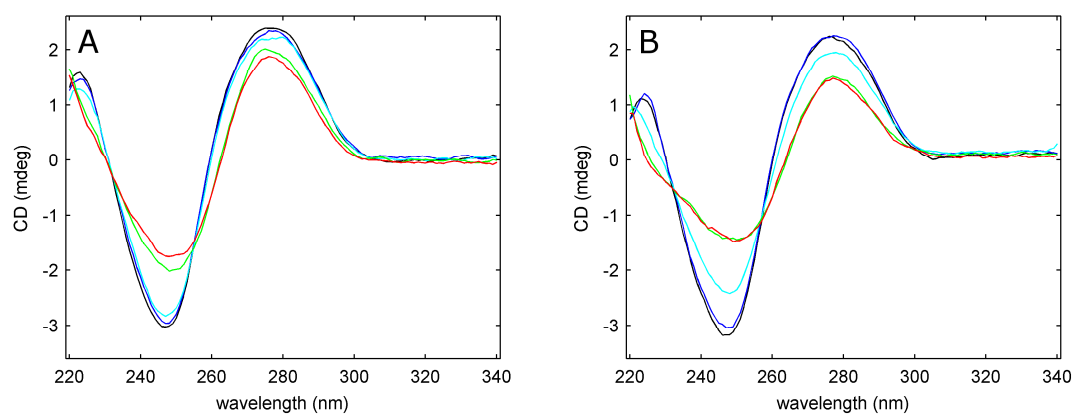


## Supplementary Information

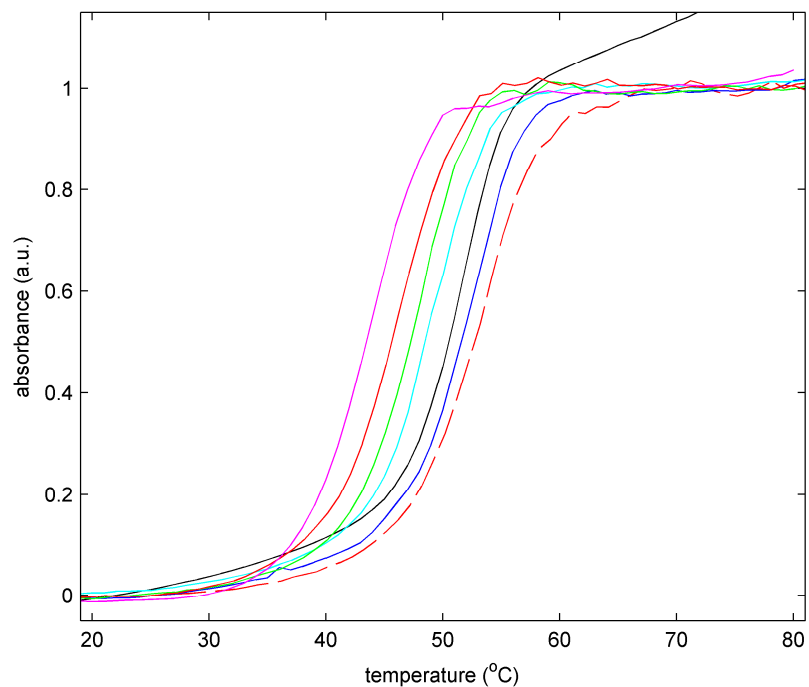
### DNA Strand Exchange Catalyzed by Molecular Crowding in PEG Solutions

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**Figure S1.** CD spectra of unlabeled  $D^F/D^T$  in (A) phosphate buffer (50 mM  $Na^+$ ) and (B) 50% PEG-6000 and 50% phosphate buffer at 20°C (black), 37°C (blue), 45°C (cyan), 55°C (green), and 65°C (red).

Figure S1 compares the CD spectra of unlabeled  $D^F/D^T$  (20 bp oligonucleotide duplex) in the absence and presence of PEG at different temperatures. It shows that the B-DNA conformation is not distorted by PEG at the experimental temperature of 37°C.



**Figure S2.** Melting curves of unlabeled  $D^F/D^T$  obtained in 52% (violet), 50% (red), 47% (green), 45% (cyan), 0% (black), 40% (blue) PEG-6000 (w/w) in phosphate buffer with 50 mM  $Na^+$ , and 50% PEG in phosphate buffer with 200 mM  $Na^+$  (red dashed).

Figure S2 (corresponding to the  $T_m$  values in Table 1) shows that  $T_m$  decreases with increasing PEG concentration. However, the dashed line shows that the decrease in DNA duplex stability can be compensated by the addition of NaCl.