

*Supporting Information for:*

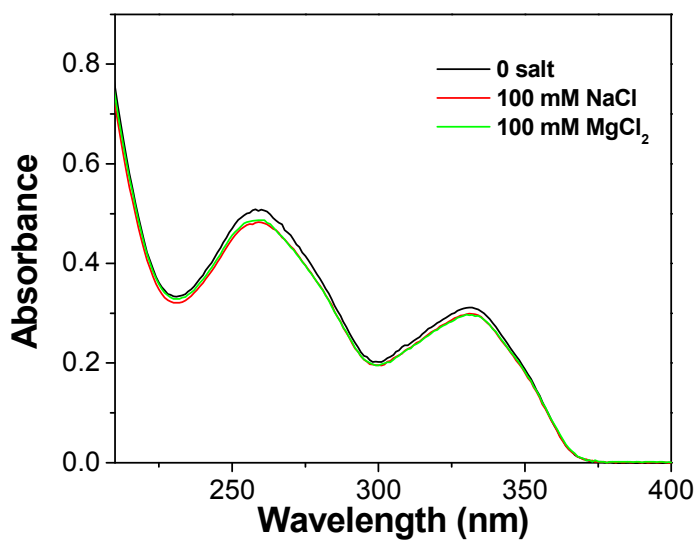
**The Effect of  $\text{Mg}^{2+}$  Cations on the Dynamics and Efficiency of Hole Transport in DNA**

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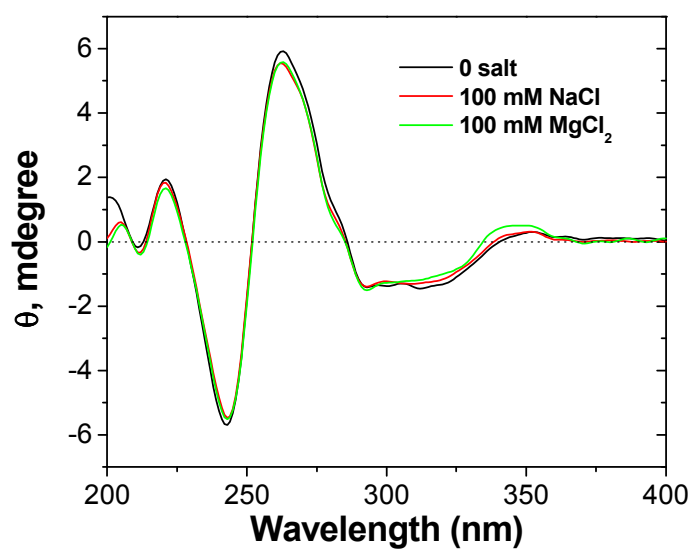
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**Figure 1S.** Absorption spectra of hairpin A<sub>3</sub>G<sub>3</sub> in 10 mM sodium phosphate buffer (pH 7.2) with no added salt and with 100 mM NaCl and 100 mM MgCl<sub>2</sub>.



**Figure 2S.** Circular dichroism spectra of hairpin A<sub>3</sub>G<sub>3</sub> in 10 mM sodium phosphate buffer (pH 7.2) with no added salt and with 100 mM NaCl and 100 mM MgCl<sub>2</sub>.