

**Supporting Information for:**

**One-Flask Synthesis of Dinucleoside Tetra- and Pentaphosphates**

**Qianwei Han, Barbara L. Gaffney, and Roger A. Jones\***

*Department of Chemistry and Chemical Biology, 610 Taylor Rd,  
Rutgers, The State University of New Jersey, Piscataway NJ 08854*

S1. Table of Contents

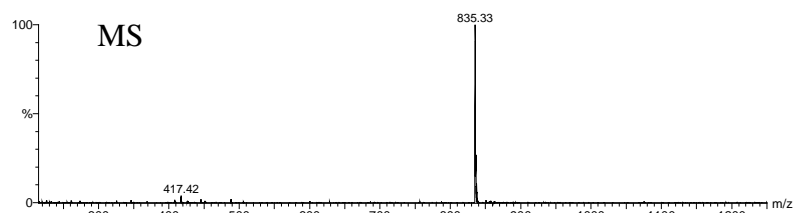
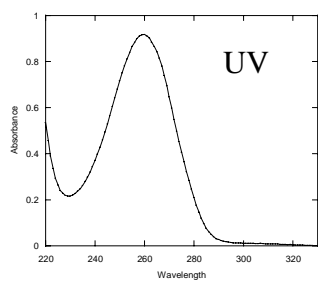
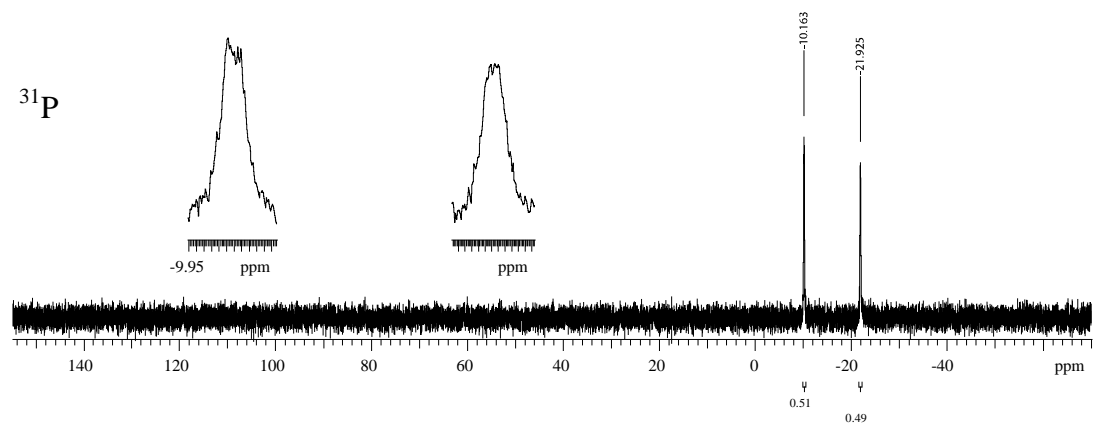
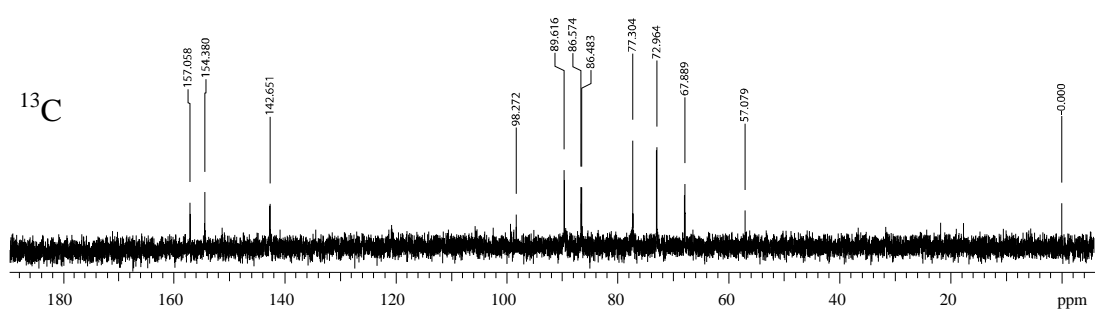
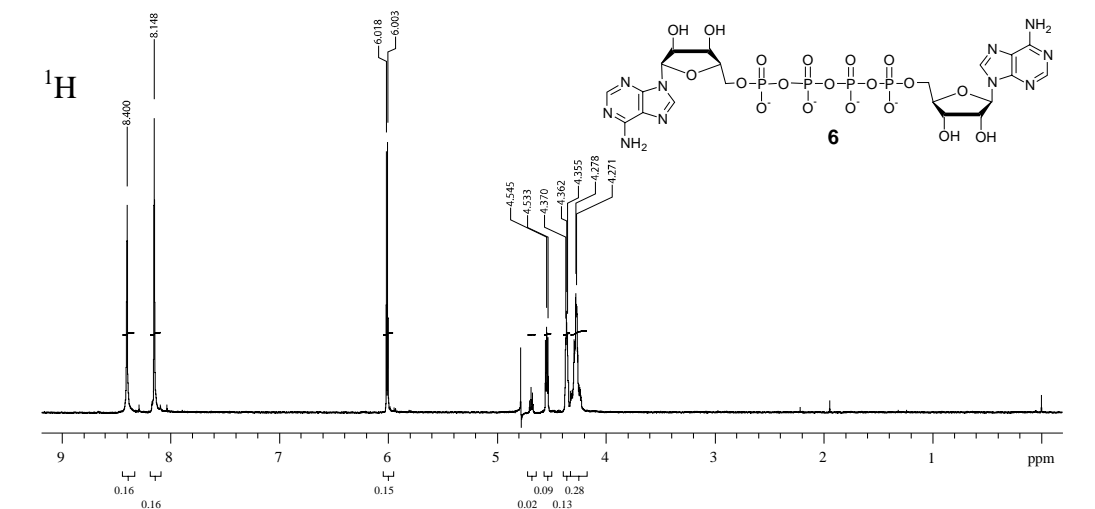
S2. Spectra (UV, MS,  $^1\text{H}$  NMR,  $^{13}\text{C}$  NMR and  $^{31}\text{P}$  NMR) for Ap<sub>4</sub>A, **6**

S3. Spectra (UV, MS,  $^1\text{H}$  NMR,  $^{13}\text{C}$  NMR and  $^{31}\text{P}$  NMR) for Ap<sub>4</sub>G, **7**

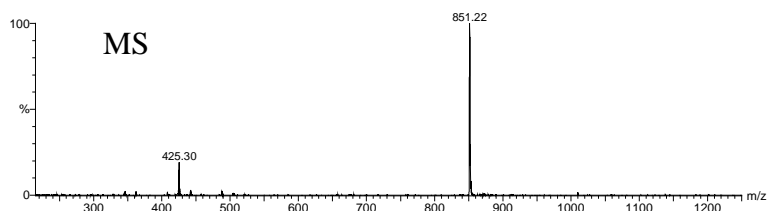
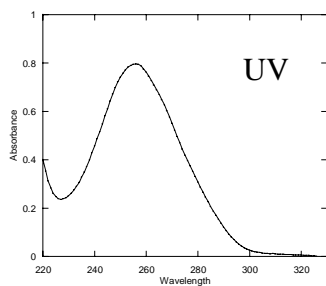
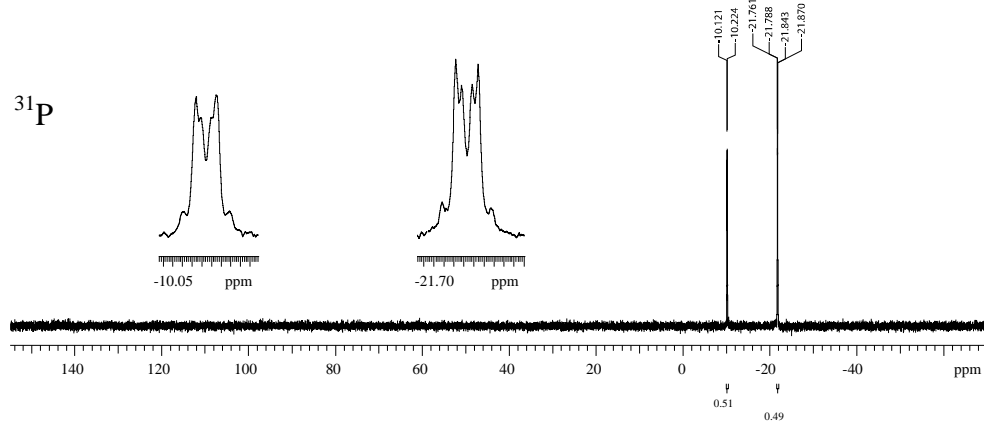
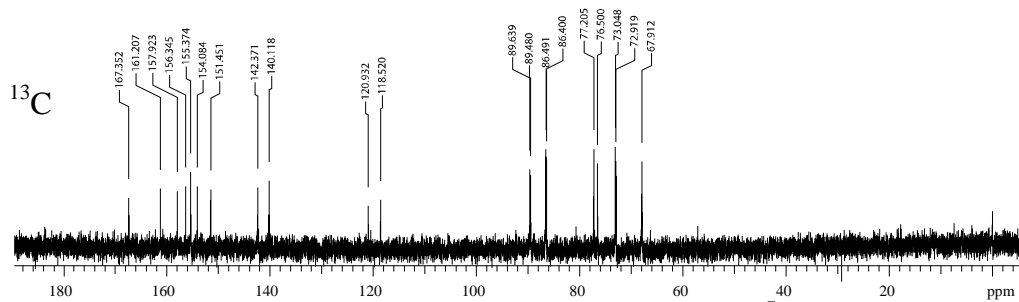
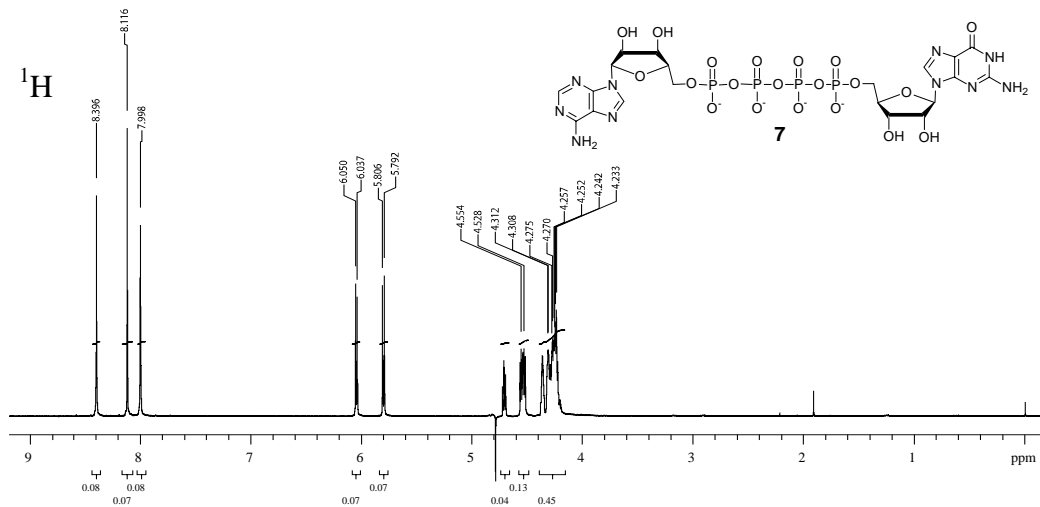
S4. Spectra (UV, MS,  $^1\text{H}$  NMR,  $^{13}\text{C}$  NMR and  $^{31}\text{P}$  NMR) for Gp<sub>4</sub>G, **8**

S5. Spectra (UV, MS,  $^1\text{H}$  NMR,  $^{13}\text{C}$  NMR and  $^{31}\text{P}$  NMR) for Ap<sub>5</sub>A, **9**

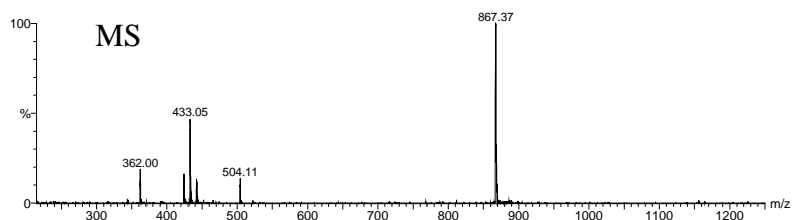
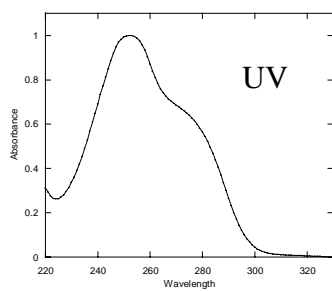
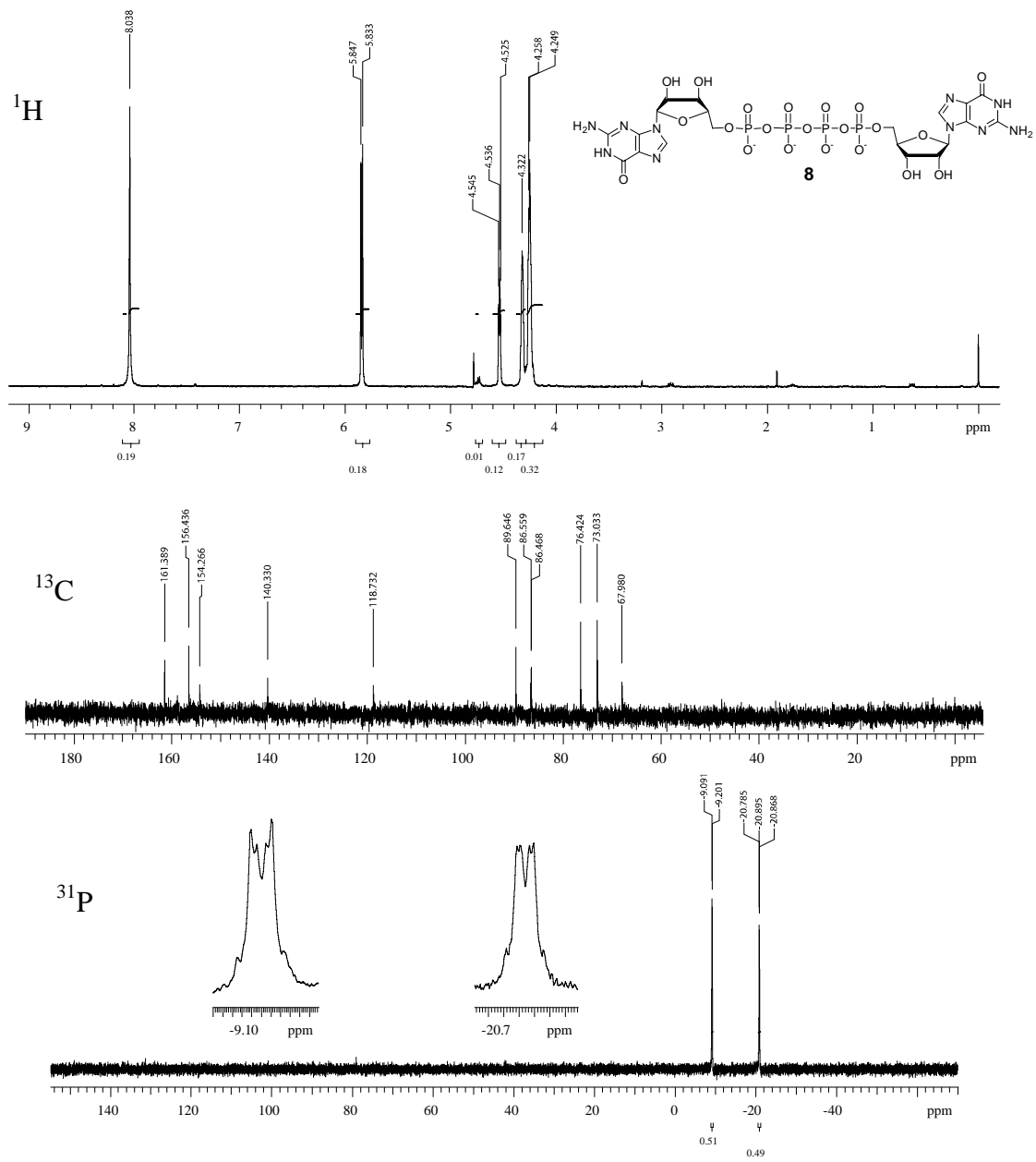
Note: All NMR spectra were acquired on a Varian Unity 400 MHz spectrometer. The samples were all in D<sub>2</sub>O. The  $^1\text{H}$  and  $^{13}\text{C}$  spectra were referenced to 3-(trimethylsilyl)-1-propane-sulfonic acid, sodium salt, and the  $^{31}\text{P}$  were referenced to neat phosphoric acid. In the  $^1\text{H}$  NMR spectra, water suppression diminishes the adjacent resonances.



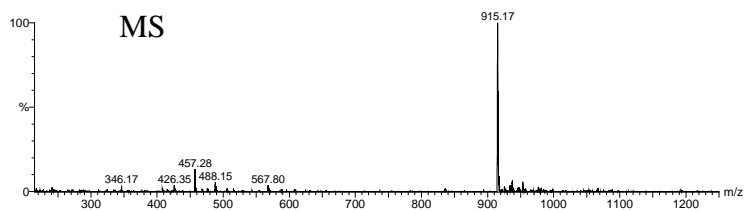
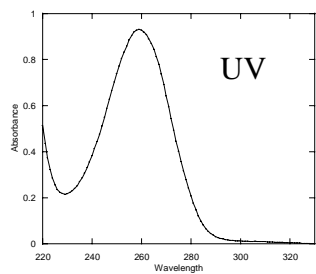
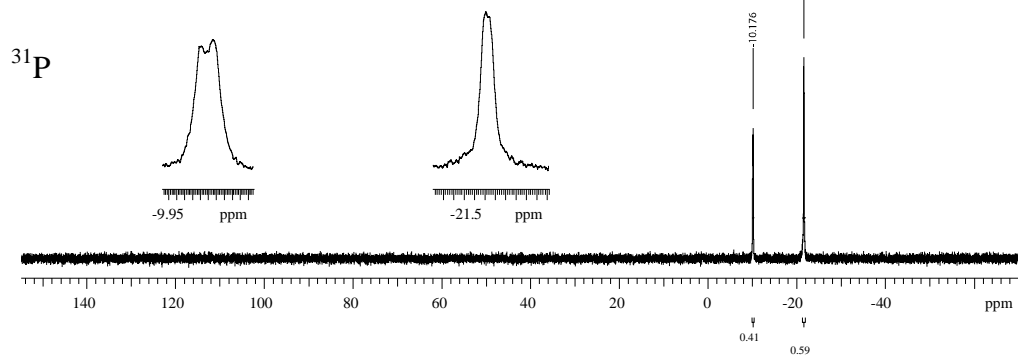
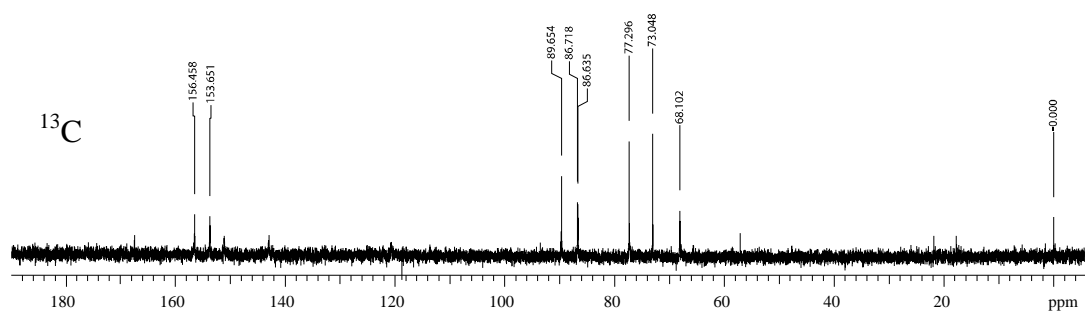
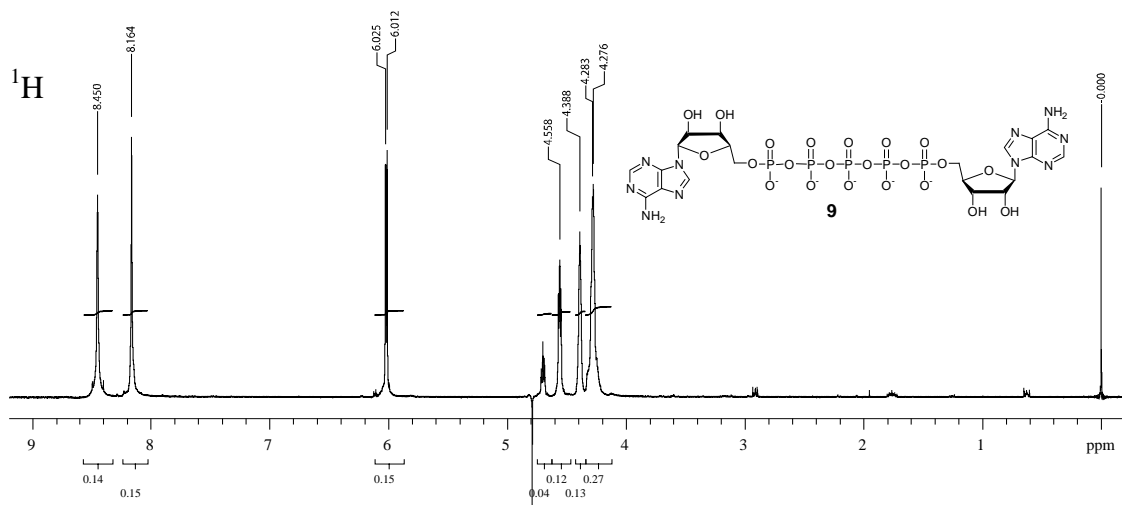
**<sup>1</sup>H NMR, <sup>13</sup>C NMR, <sup>31</sup>P NMR, UV and Mass Spectra for 6**



**<sup>1</sup>H NMR, <sup>13</sup>C NMR, <sup>31</sup>P NMR, UV and Mass Spectra for 7**



**<sup>1</sup>H NMR, <sup>13</sup>C NMR, <sup>31</sup>P NMR, UV and Mass Spectra for 8**



**<sup>1</sup>H NMR, <sup>13</sup>C NMR, <sup>31</sup>P NMR, UV and Mass Spectra for **9****