Electronic Supplementary Material (ESI) for RSC Advances.

Synthesis and photophysical properties of 2´-deoxyguanosine derivatives labeled with fluorene and fluorenone units: Toward excimer probes

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Supplementary Information

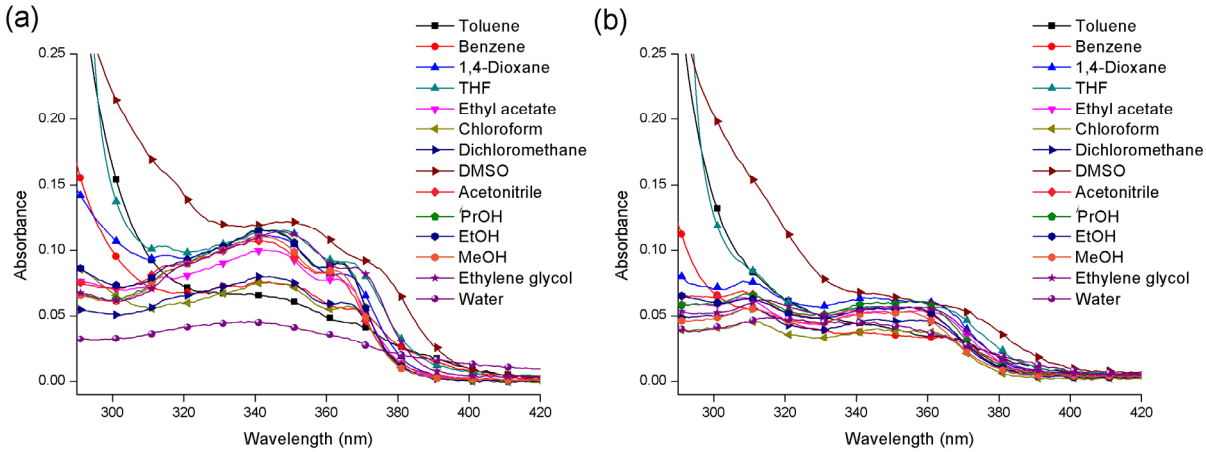

Fig. S1 Absorption spectra of (a) $\mathbf{G}^{\mathbf{FL}}$ and (b) $\mathbf{G}^{\mathbf{FO}}$ in various solvents at 25 °C (all at 3 μM concentration). All samples contained 0.5% DMSO to ensure solubility.

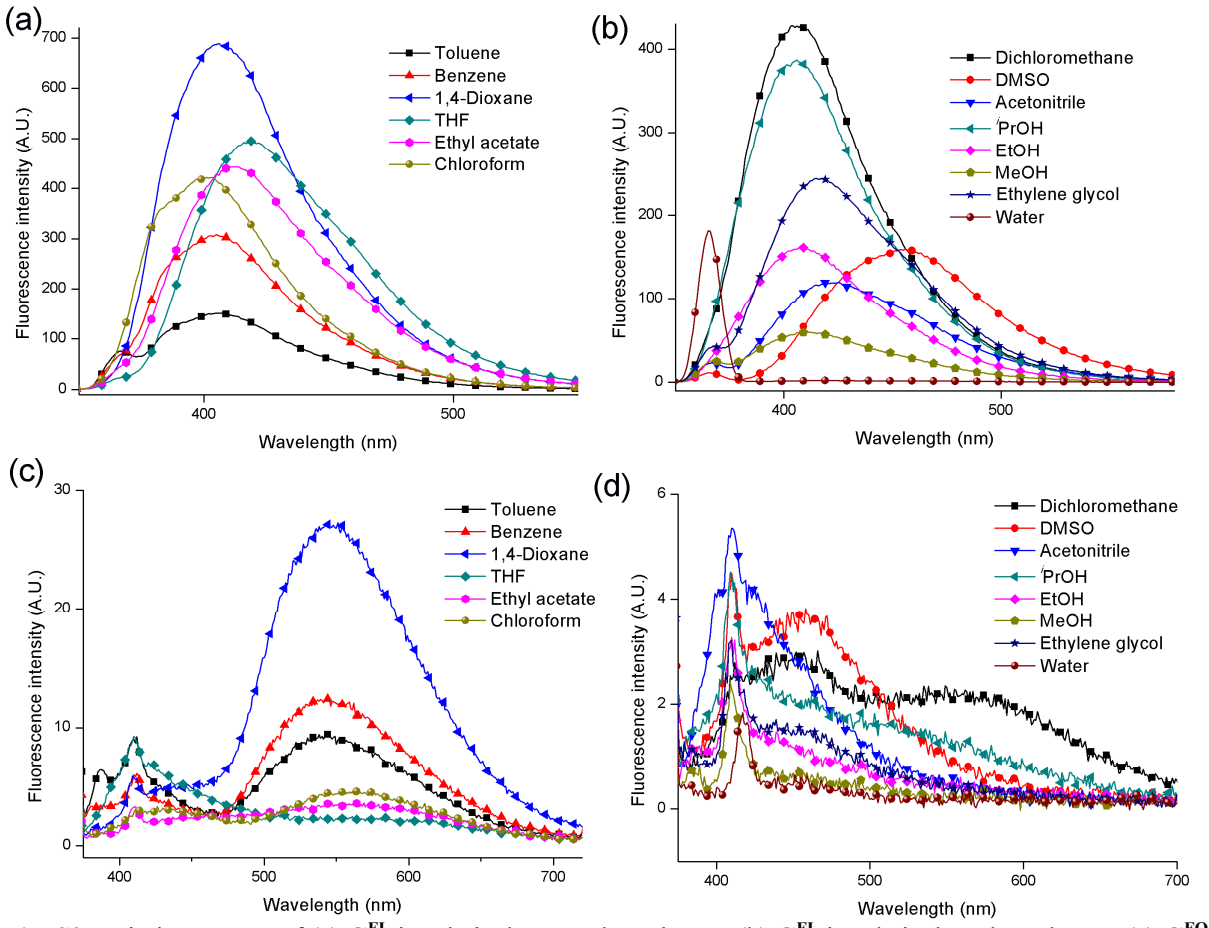

Fig. S2 Emission spectra of (a) $\mathbf{G}^{\mathbf{FL}}$ in relatively nonpolar solvents, (b) $\mathbf{G}^{\mathbf{FL}}$ in relatively polar solvents, (c) $\mathbf{G}^{\mathbf{FO}}$ in relatively nonpolar solvents, and (d) $\mathbf{G}^{\mathbf{FO}}$ in relatively polar solvents at 25 °C (all at 3 μM concentration). Excitation wavelength: 366 nm. All samples contained 0.5% DMSO to ensure solubility.

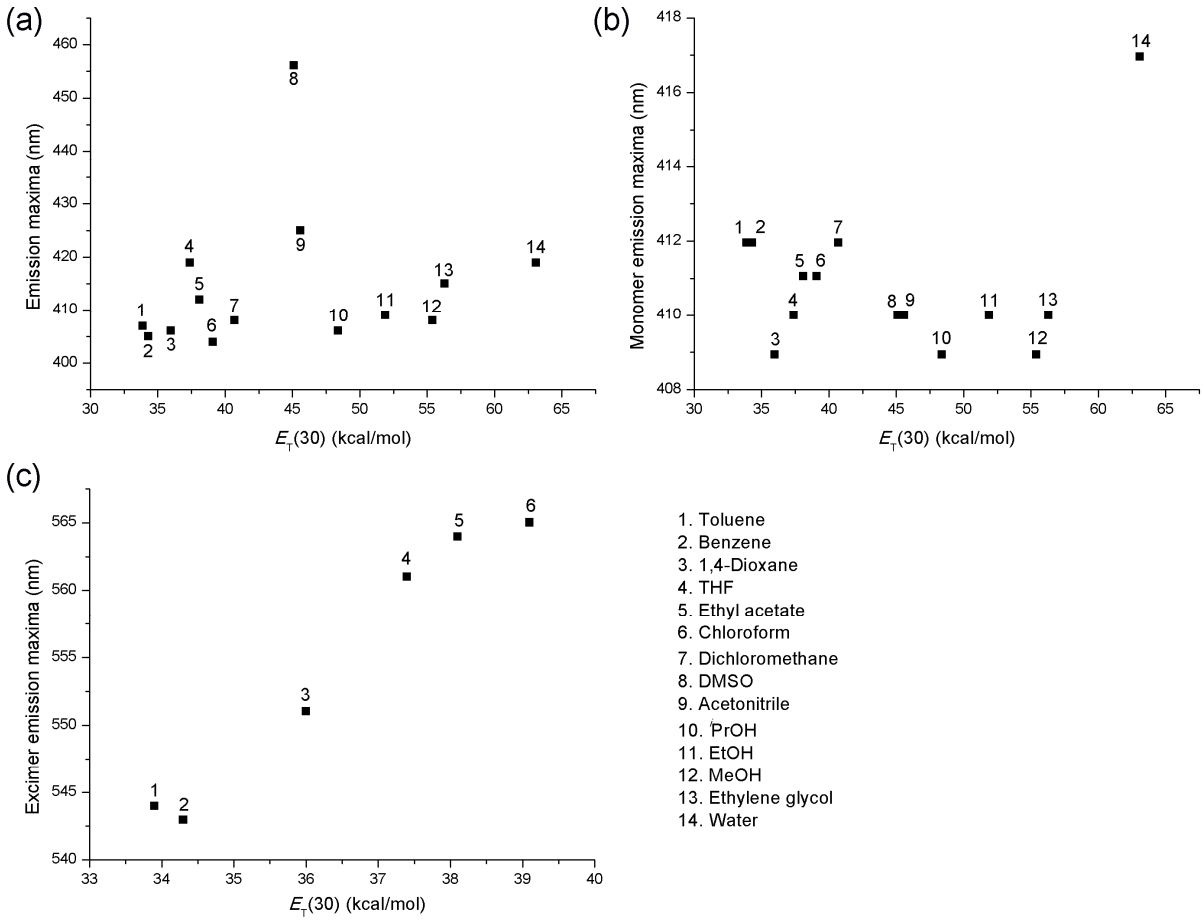

Fig. S3 (a) Emission maxima of $\mathbf{G}^{\mathbf{FL}}$, (b) monomer emission maxima of $\mathbf{G}^{\mathbf{FO}}$, and (c) excimer emission maxima of $\mathbf{G}^{\mathbf{FO}}$, plotted with respect to values of $E_T(30)$ of various solvents.

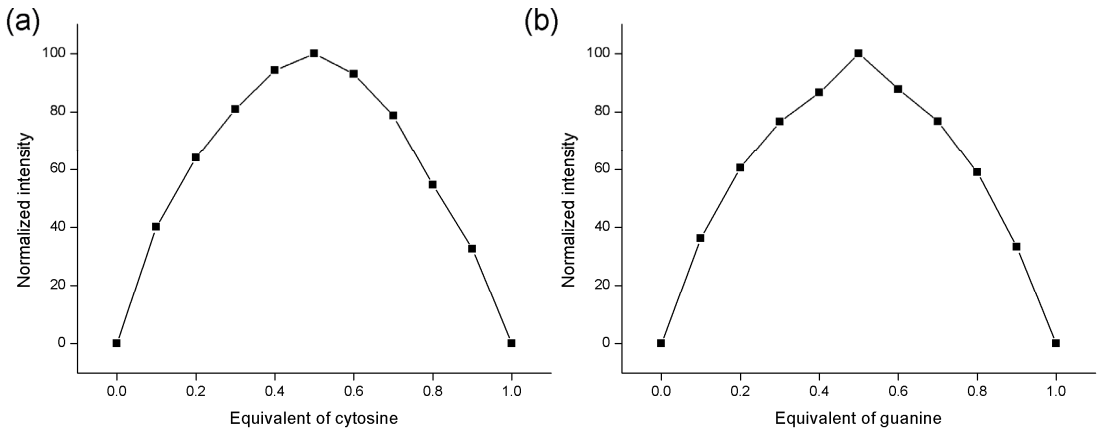

Fig. S4 Fluorescence Job's plots for the interactions of $\mathbf{G^{FO}}$ with (a) cytosine (measured at 537 nm) and (b) guanine (measured at 540 nm) in 1,4-dioxane.

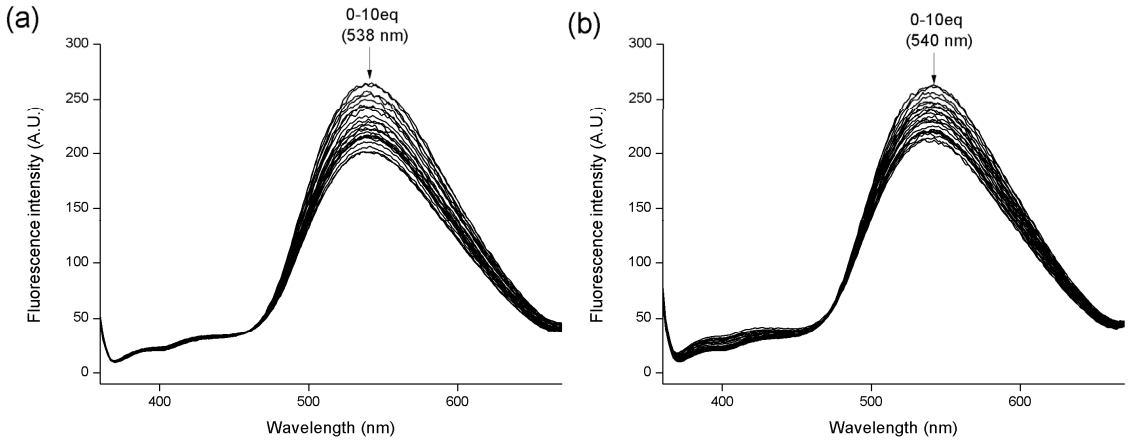

Fig. S5 Fluorescence spectra of $\mathbf{G^{FO}}$ (3 μM) in 1,4-dioxane containing various concentrations (0–30 μM) of (a) thymine and (b) adenine (λ_{ex} = 345 nm).

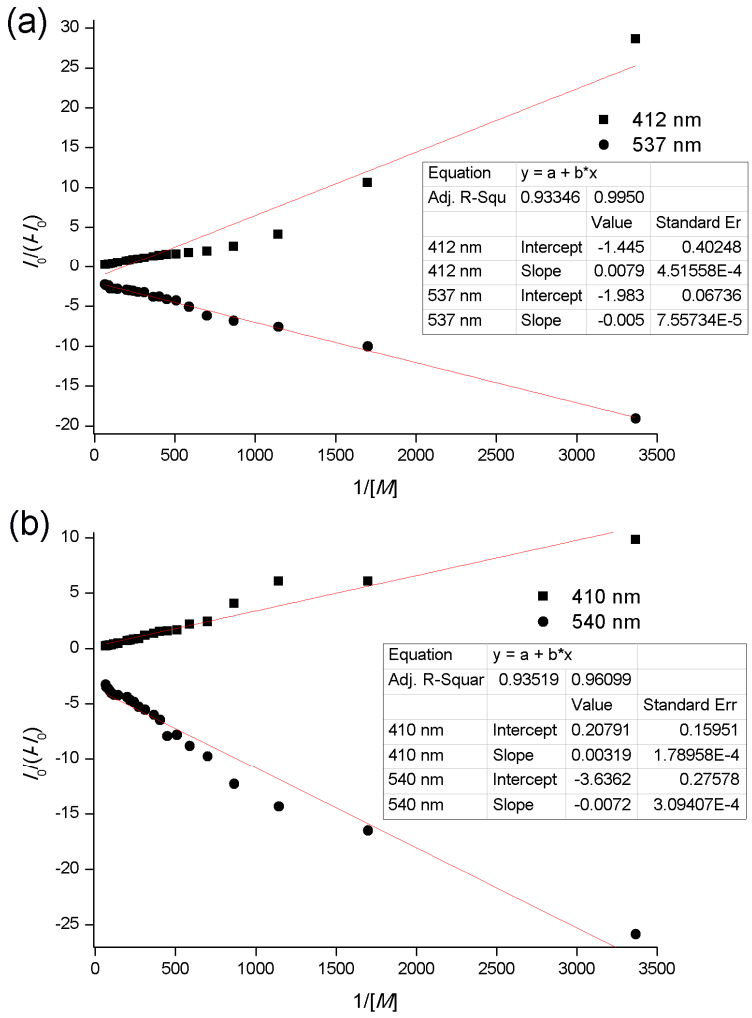

Fig. S6 Linear regression curves of $\mathbf{G}^{\mathbf{FO}}$ obtained using the (a) monomer emission band and (b) excimer emission band, obtained by plotting $I_0/(I - I_0)$ with respect to the reciprocal of the nucleobase concentration (1/[*M*]) in 1,4-dioxane (λ_{ex} = 345 nm). Nucleobase: (a) cytosine; (b) guanine.

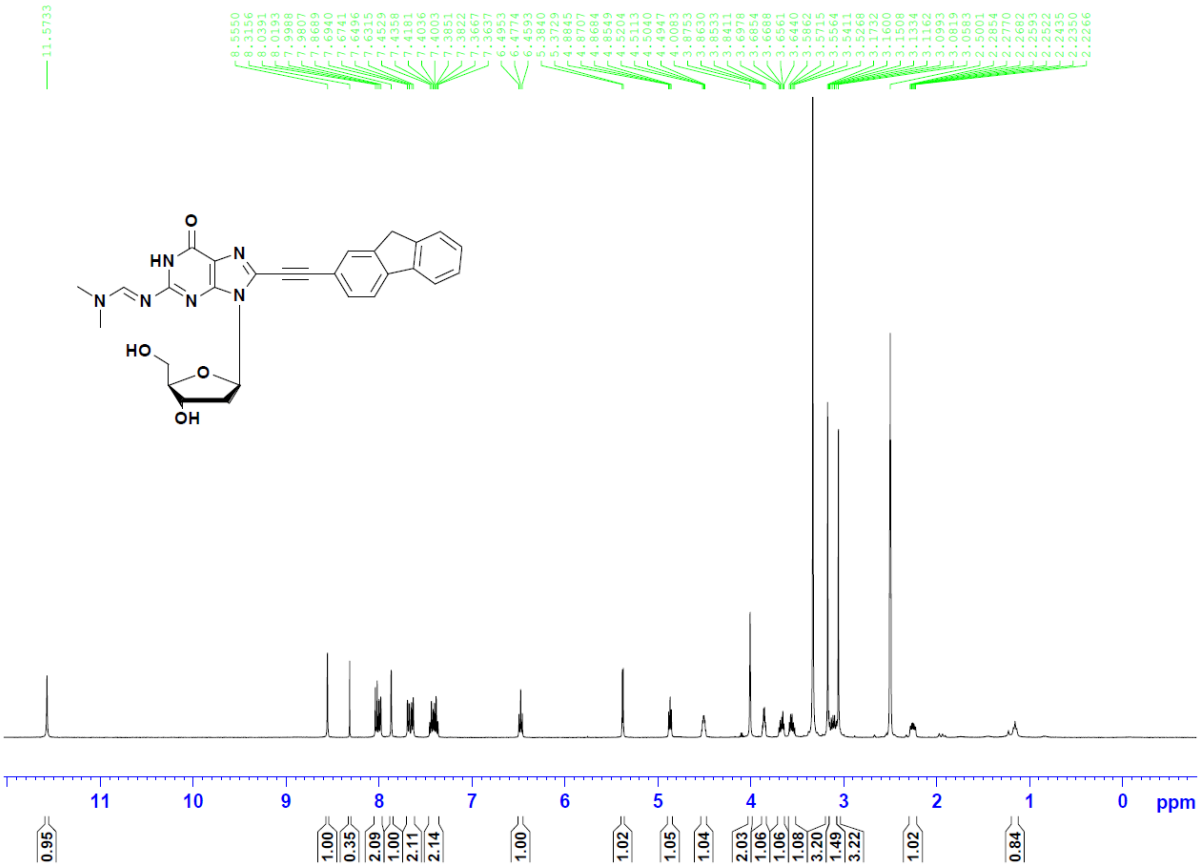

Fig. S7 [1]H NMR spectra of **2a**.

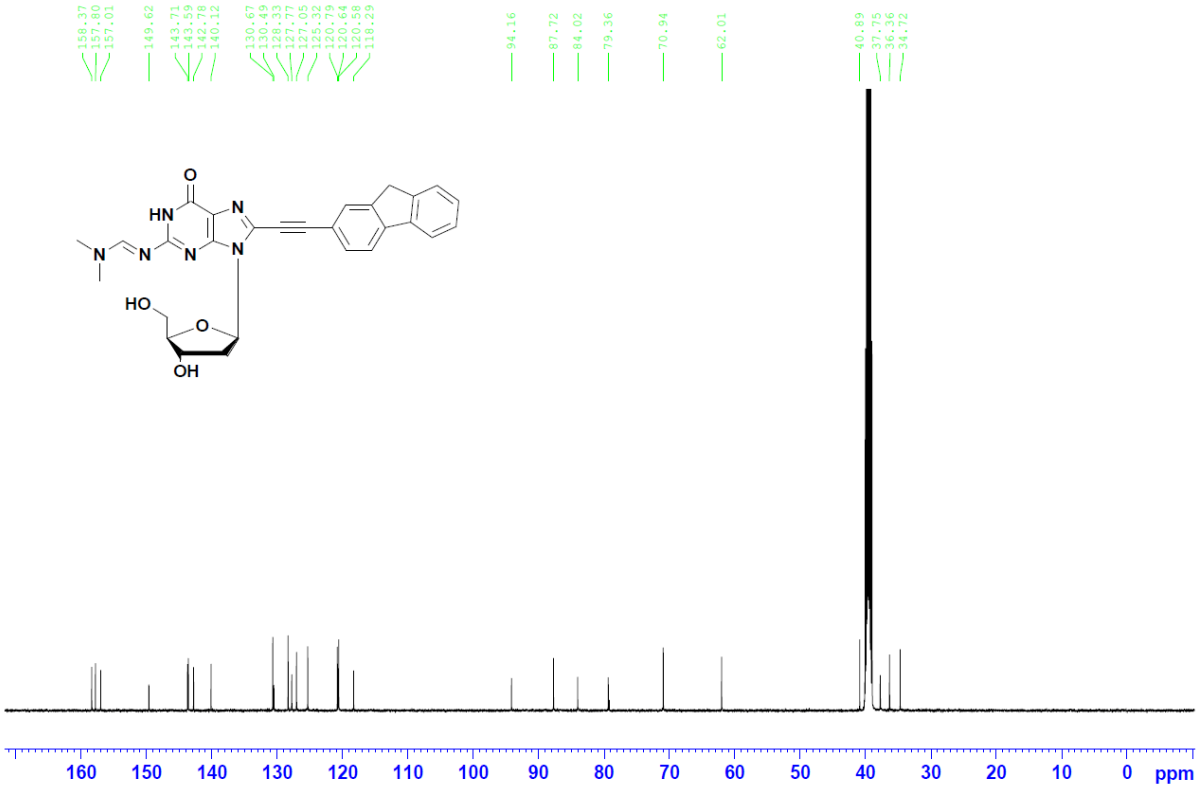

Fig. S8 [13]C NMR spectra of **2a**.

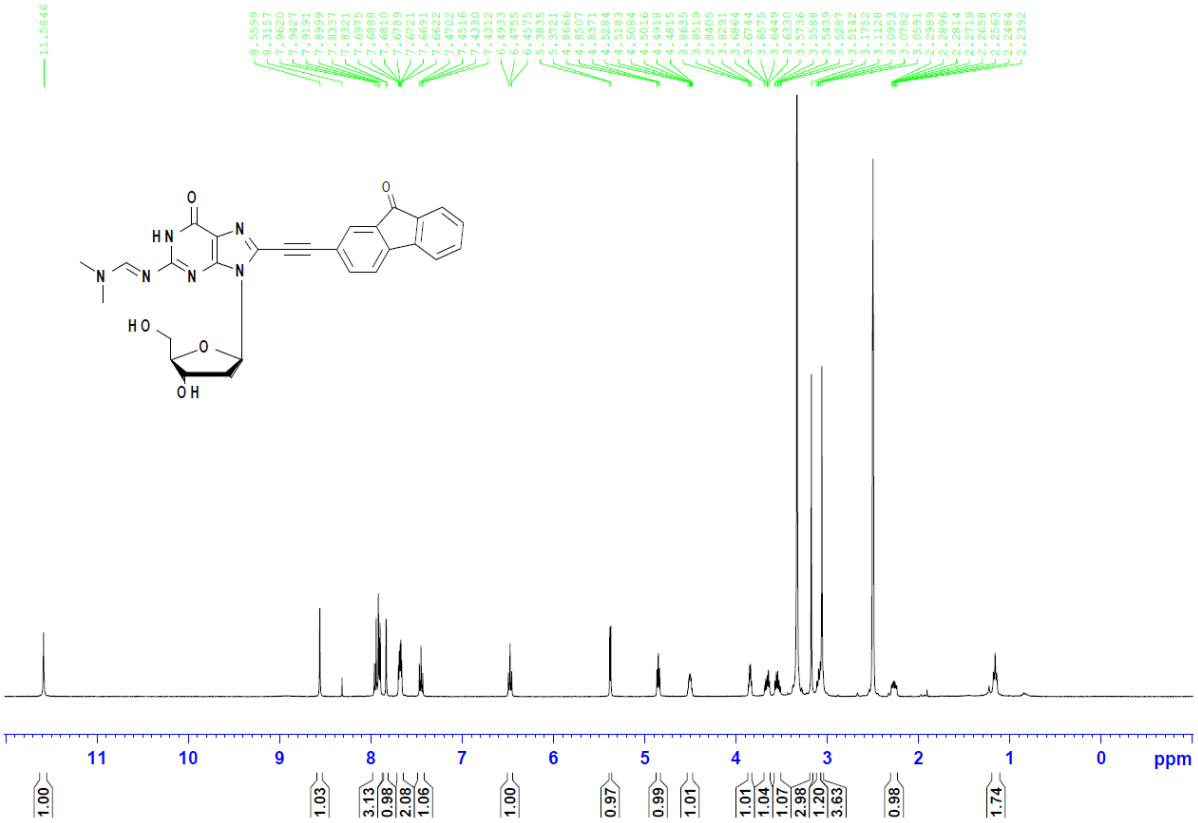

Fig. S9 ^{1}H NMR spectra of **2b**.

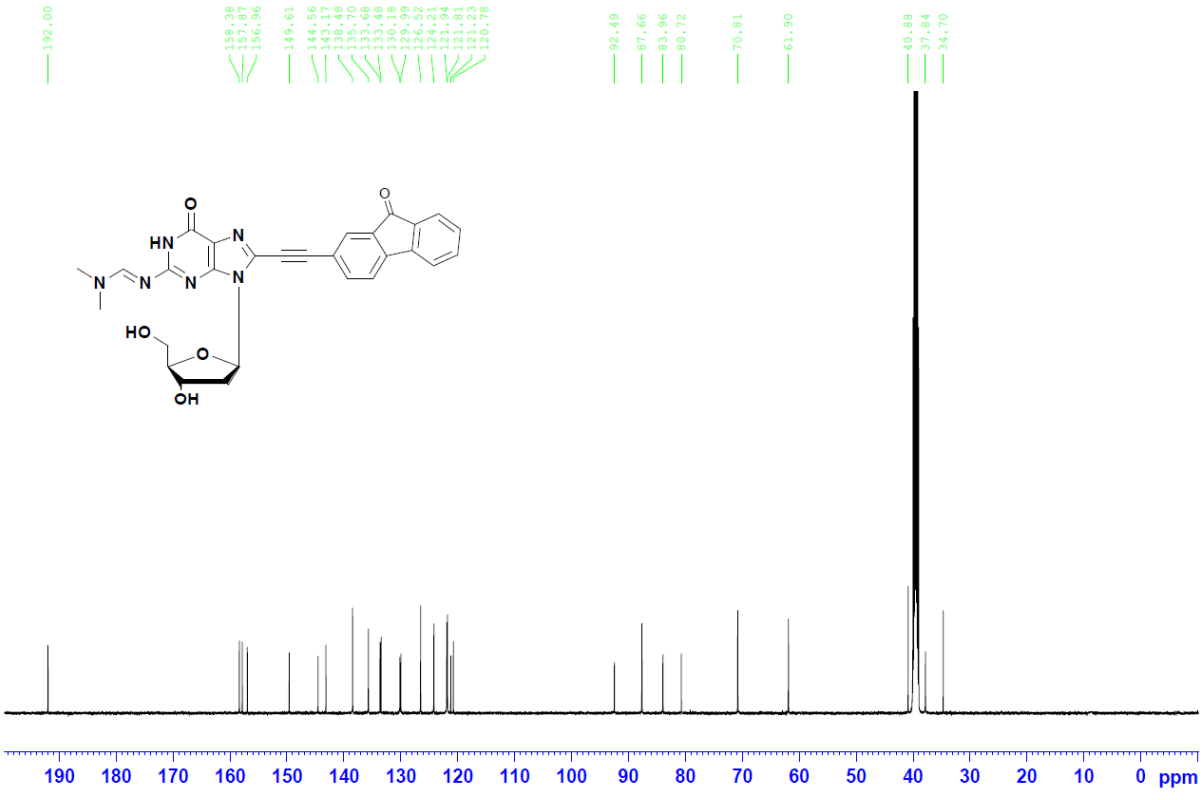

Fig. S10 ^{13}C NMR spectra of **2b**.

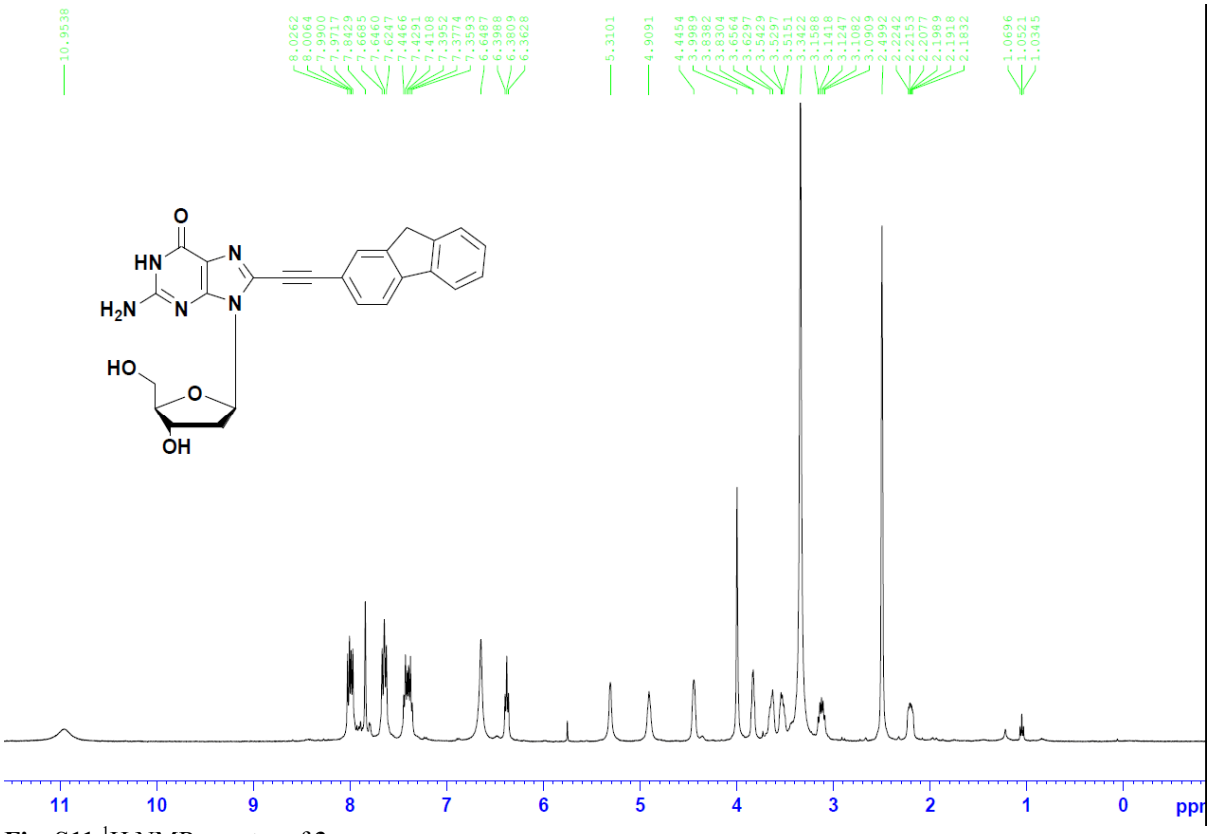

Fig. S11 ^{1}H NMR spectra of **3a**.

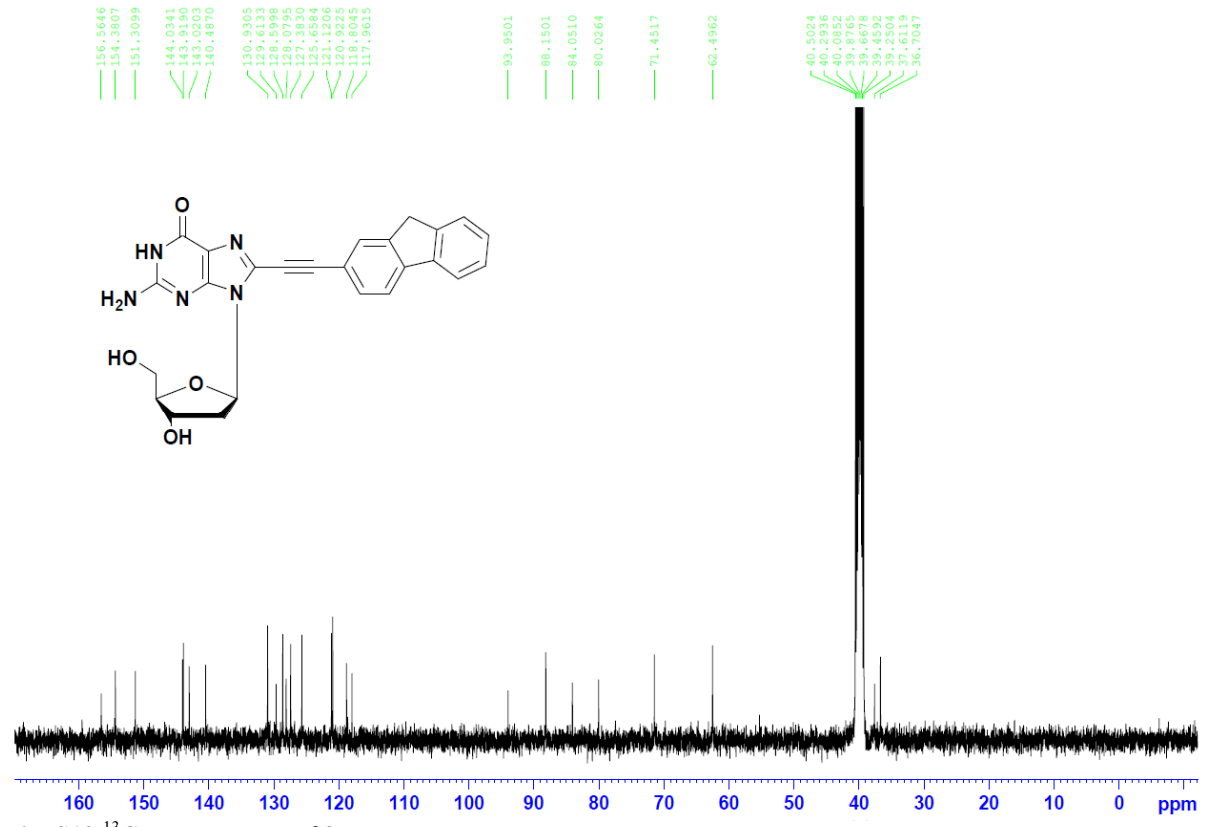

Fig. S12 ^{13}C NMR spectra of **3a**.

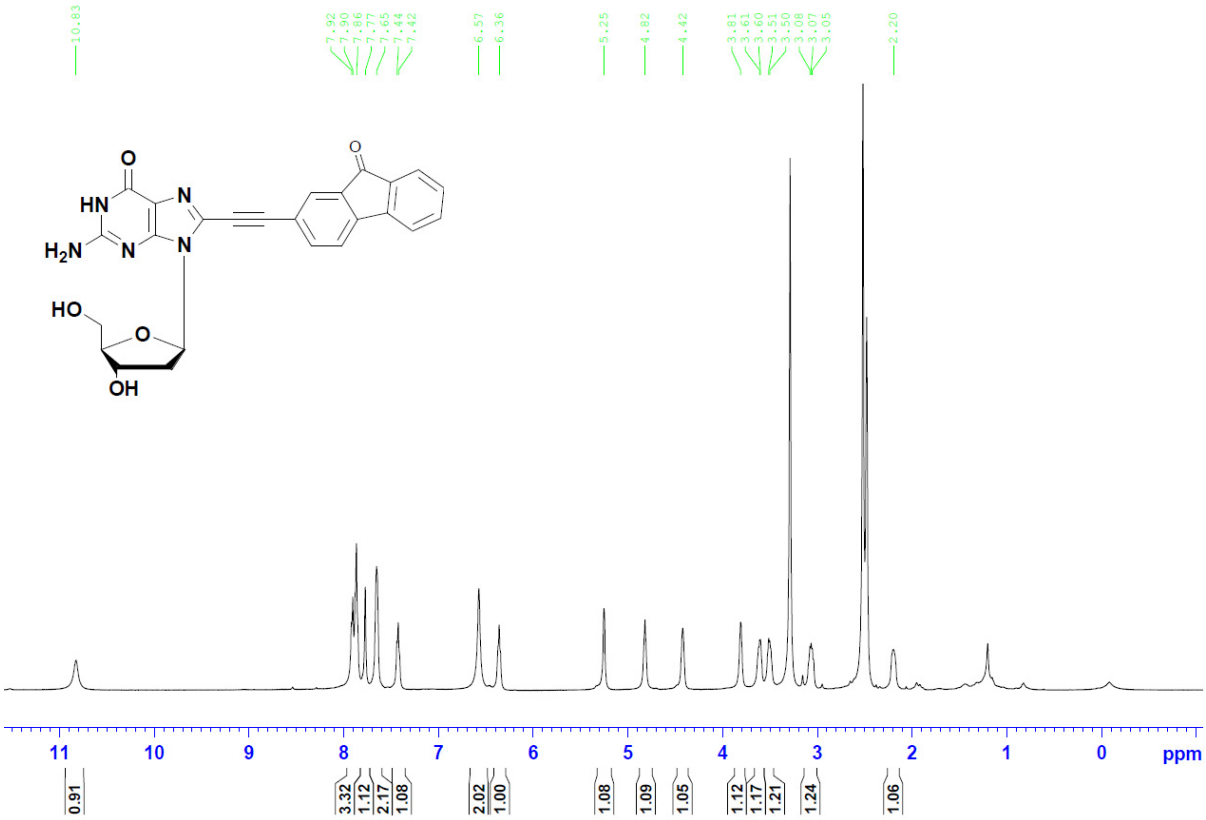

Fig. S13 ^{1}H NMR spectra of **3b**.

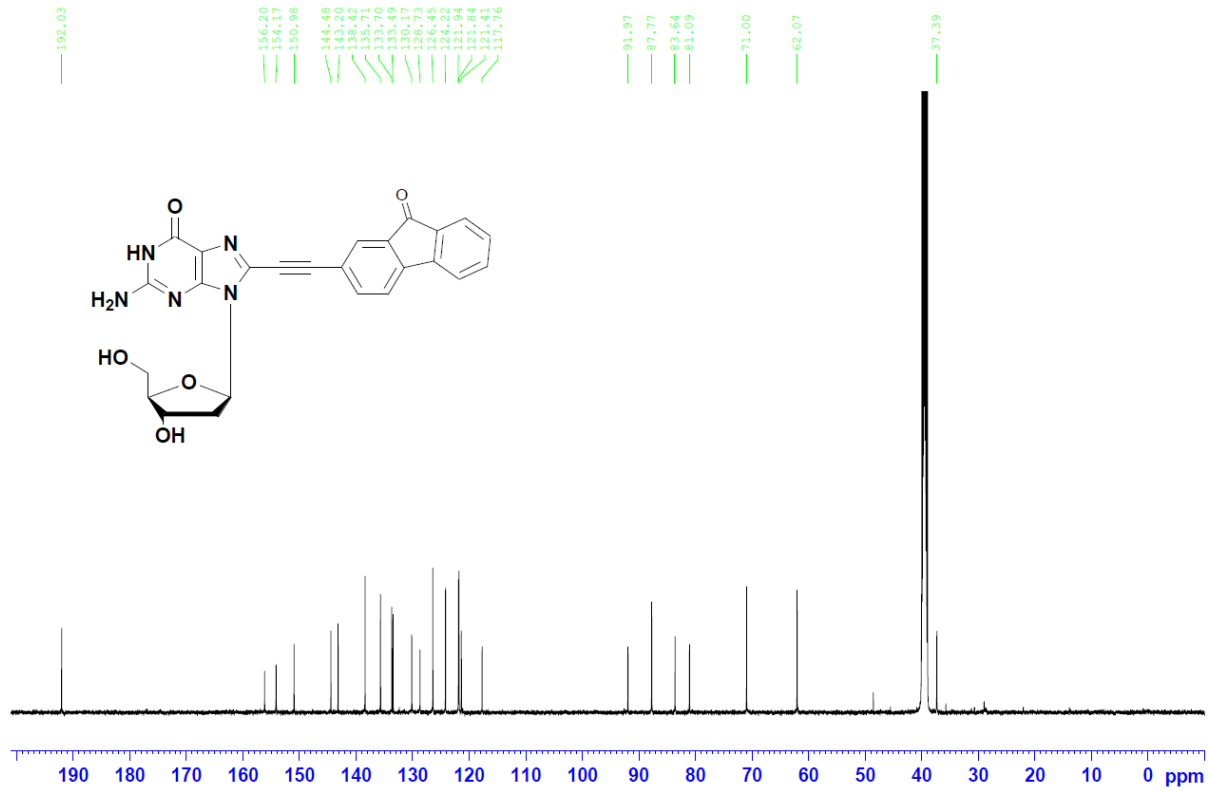

Fig. S14 ^{13}C NMR spectra of **3b**.