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) $G^{FL}$ and (b) $G^{FO}$ 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) $G^{FL}$ in relatively nonpolar solvents, (b) $G^{FL}$ in relatively polar solvents, (c) $G^{FO}$ in relatively nonpolar solvents, and (d) $G^{FO}$ 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 G^PL, (b) monomer emission maxima of G^PO, and (c) excimer emission maxima of G^PO, plotted with respect to values of $E_t(30)$ of various solvents.
**Fig. S4** Fluorescence Job’s plots for the interactions of $G^{\text{FO}}$ with (a) cytosine (measured at 537 nm) and (b) guanine (measured at 540 nm) in 1,4-dioxane.

**Fig. S5** Fluorescence spectra of $G^{\text{FO}}$ (3 μM) in 1,4-dioxane containing various concentrations (0–30 μM) of (a) thymine and (b) adenine ($\lambda_{ex} = 345$ nm).
Fig. S6 Linear regression curves of GFOI 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 ($\lambda_{ex} = 345$ 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.