Supporting Information:

Recognition Study of Substituted Benzoic Acids by 7-Substituted Pterin Receptors in Solution and Solid Phases

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1. UV-vis titration spectra and Association constant determination curve:

![UV-vis titration spectra](image)

**Figure 1:** UV-vis titration spectra of receptor 1 ($1.69 \times 10^{-4}$ mL$^{-1}$) with substituted benzoic acids: (i) benzoic acid; (ii) 2-hydroxybenzoic acid; (iii) 3-hydroxybenzoic acid; (iv) 4-hydroxybenzoic acid; (v) 3-nitrobenzoic acid and (vi) 4-nitrobenzoic acid.
Figure 2: UV-vis titration spectra of receptor 2 (1.12 x 10^{-4} mL^{-1}) with substituted benzoic acids: (i) benzoic acid; (ii) 2-hydroxybenzoic acid; (iii) 3-hydroxybenzoic acid; (iv) 4-hydroxybenzoic acid; (v) 3-nitrobenzoic acid and (vi) 4-nitrobenzoic acid.
Figure 3: Binding constant calculation curve of (i) receptor 1; (ii) receptor 2 with different aromatic acids by UV-vis titration method in acetonitrile.
2. Fluorescence titration spectra and association constants determination curves:

![Fluorescence spectra](image)

**Figure 4:** Fluorescence titration spectra of receptor 1 \((1.53 \times 10^{-4} \text{ mL}^{-1})\) with aromatic acids: (i) 2-hydroxybenzoic acid and (ii) 4-nitrobenzoic acid in acetonitrile solution.

![Fluorescence spectra](image)

**Figure 5:** Fluorescence titration spectra of receptor 2 \((1.12 \times 10^{-4} \text{ mL}^{-1})\) with aromatic acids: (i) 2-hydroxybenzoic acid; (ii) 4-nitrobenzoic acid in acetonitrile solvent.
3. $^1$H NMR (500 MHz) of receptor 1:
4. $^{13}$C NMR (125 MHz) of receptor 1:

![NMR Spectrogram](image)

5. Mass spectra of receptor 1:

![Mass Spectrum](image)
6. \(^1\)H NMR (500 MHz) of receptor 2:

![NMR Spectrogram](image)

7. \(^{13}\)C NMR (75 MHz) of receptor 2:

![NMR Spectrogram](image)
8. Mass spectra of receptor 2: 322.0 (M+H)^+
9. $^1$H NMR (500 MHz) of receptor 1 with 3-hydroxybenzoic acid: