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## Supplementary Information New Journal of Chemistry Stereospecific ligands and their complexes. XXIV. Synthesis and characterization of platinum(II) complexes with some alkyl esters of (*S*,*S*)-ethylenediamine-*N*,*N'*-di-(2,2'-di(4--hydroxy)-benzyl-acetic acid. Binding interactions with DNA and HSA and some biological properties of these ligands and their palladium(II) and platinum(II) complexes

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**Figure S1.** Electronic spectra of complexes **C1** in Tris-HCl buffer upon addition of CT-DNA. [Complex] =  $4.1 \times 10^{-5}$  mol/dm<sup>3</sup>, [DNA] =  $0-1.7 \times 10^{-4}$  mol/dm<sup>3</sup>. Arrow shows the absorption intensities increase upon increasing DNA concentration. Insets: plots of [DNA]/( $\varepsilon_a$ - $\varepsilon_f$ ) versus [DNA].



**Figure S2.** Electronic spectra of complexes **C2** in Tris-HCl buffer upon addition of CT-DNA. [Complex] =  $4.1 \times 10^{-5}$  mol/dm<sup>3</sup>, [DNA] =  $0-1.7 \times 10^{-4}$  mol/dm<sup>3</sup>. Arrow shows the absorption intensities increase upon increasing DNA concentration. Insets: plots of [DNA]/( $\varepsilon_a$ - $\varepsilon_f$ ) versus [DNA].



**Figure S3.** Electronic spectra of complexes **C3** in Tris-HCl buffer upon addition of CT-DNA. [Complex] =  $4.1 \times 10^{-5}$  mol/dm<sup>3</sup>, [DNA] =  $0 \cdot 1.7 \times 10^{-4}$  mol/dm<sup>3</sup>. Arrow shows the absorption intensities increase upon increasing DNA concentration. Insets: plots of [DNA]/( $\varepsilon_a$ - $\varepsilon_f$ ) versus [DNA].



**Figure S4.** Electronic spectra of complexes **C5** in Tris-HCl buffer upon addition of CT-DNA. [Complex] =  $6.0 \times 10^{-5}$  mol/dm<sup>3</sup>, [DNA] =  $0-1.7 \times 10^{-4}$  mol/dm<sup>3</sup>. Arrow shows the absorption intensities increase upon increasing DNA concentration. Insets: plots of [DNA]/( $\varepsilon_a$ - $\varepsilon_f$ ) versus [DNA].



**Figure S5.** Electronic spectra of complexes C6 in Tris-HCl buffer upon addition of CT-DNA. [Complex] =  $6.0 \times 10^{-5}$  mol/dm<sup>3</sup>, [DNA] =  $0-1.7 \times 10^{-4}$  mol/dm<sup>3</sup>. Arrow shows the absorption intensities increase upon increasing DNA concentration. Insets: plots of [DNA]/( $\varepsilon_a$ - $\varepsilon_f$ ) versus [DNA].



**Figure S6.** Electronic spectra of complexes **C7** in Tris-HCl buffer upon addition of CT-DNA. [Complex] =  $6.0 \times 10^{-5}$  mol/dm<sup>3</sup>, [DNA] =  $0-1.7 \times 10^{-4}$  mol/dm<sup>3</sup>. Arrow shows the absorption intensities increase upon increasing DNA concentration. Insets: plots of [DNA]/( $\varepsilon_a$ - $\varepsilon_f$ ) versus [DNA].



**Figure S7**. Emission spectra of the CT-DNA-EB system in Tris–HCl buffer upon the titration of the **C1** complex. [EB] =  $1.2 \times 10^{-5}$  mol dm<sup>-3</sup>, [DNA] =  $1.8 \times 10^{-5}$  mol dm<sup>-3</sup>, [Complex] =  $0 - 1.4 \times 10^{-4}$  mol/dm<sup>3</sup>. Arrow shows the intensity change upon the increase of the complex concentration.



**Figure S8**. Emission spectra of the CT-DNA-EB system in Tris–HCl buffer upon the titration of the **C2** complex. [EB] =  $1.2 \times 10^{-5}$  mol/dm<sup>3</sup>, [DNA] =  $1.8 \times 10^{-5}$  mol/dm<sup>3</sup>, [Complex] =  $0 - 1.4 \times 10^{-4}$  mol/dm<sup>3</sup>. Arrow shows the intensity change upon the increase of the complex concentration.



**Figure S9**. Emission spectra of the CT-DNA-EB system in Tris–HCl buffer upon the titration of the **C3** complex. [EB] =  $1.2 \times 10^{-5}$  mol/dm<sup>3</sup>, [DNA] =  $1.8 \times 10^{-5}$  mol/dm<sup>3</sup>, [Complex] =  $0 - 1.4 \times 10^{-4}$  mol/dm<sup>3</sup>. Arrow shows the intensity change upon the increase of the complex concentration.



**Figure S10**. Emission spectra of the CT-DNA-EB system in Tris–HCl buffer upon the titration of the **C5** complex. [EB] =  $1.2 \times 10^{-5}$  mol/dm<sup>3</sup>, [DNA] =  $1.8 \times 10^{-5}$  mol/dm<sup>3</sup>, [Complex] =  $0-1.4 \times 10^{-4}$  mol/dm<sup>3</sup>. Arrow shows the intensity change upon the increase of the complex concentration.



**Figure S11**. Emission spectra of the CT-DNA-EB system in Tris–HCl buffer upon the titration of the C6 complex. [EB] =  $1.2 \times 10^{-5}$  mol/dm<sup>3</sup>, [DNA] =  $1.8 \times 10^{-5}$  mol/dm<sup>3</sup>, [Complex] =  $0-1.4 \times 10^{-4}$  mol/dm<sup>3</sup>. Arrow shows the intensity change upon the increase of the complex concentration.



**Figure S12.** Emission spectra of the CT-DNA-EB system in Tris–HCl buffer upon the titration of the **C7** complex. [EB] =  $1.2 \times 10^{-5}$  mol/dm<sup>3</sup>, [DNA] =  $1.8 \times 10^{-5}$  mol/dm<sup>3</sup>, [Complex] =  $0-1.4 \times 10^{-4}$  mol/dm<sup>3</sup>. Arrow shows the intensity change upon the increase of the complex concentration.



**Figure S13**. Absorption spectra of HSA ( $2 \times 10^{-6} \text{ mol/dm}^3$ ), with various amounts of the **C1** complex ( $0-15 \times 10^{-6} \text{ mol/dm}^3$ ) at room temperature.



**Figure S14**. Absorption spectra of HSA ( $2 \times 10^{-6} \text{ mol/dm}^3$ ), with various amounts of the **C2** complex ( $0-15 \times 10^{-6} \text{ mol/dm}^3$ ) at room temperature.



**Figure S15**. Absorption spectra of HSA ( $2 \times 10^{-6} \text{ mol/dm}^3$ ), with various amounts of the C3 complex ( $0-15 \times 10^{-6} \text{ mol/dm}^3$ ) at room temperature.



**Figure S16**. Absorption spectra of HSA  $(2 \times 10^{-6} \text{ mol/dm}^3)$ , with various amounts of the **C5** complex  $(0-15 \times 10^{-6} \text{ mol/dm}^3)$  at room temperature.



**Figure S17**. Absorption spectra of HSA (2 x  $10^{-6}$  mol/dm<sup>3</sup>), with various amounts of the C6 complex (0-15×10<sup>-6</sup> mol/dm<sup>3</sup>) at room temperature.



**Figure S18**. Absorption spectra of HSA ( $2 \times 10^{-6} \text{ mol/dm}^3$ ), with various amounts of the **C7** complex ( $0-15 \times 10^{-6} \text{ mol/dm}^3$ ) at room temperature.



Figure S19. Effect of C1 (A), C2 (B) or C3 (C) complex on the fluorescence spectrum of HSA at room temperature,  $[HSA] = 2 \times 10^{-6} \text{ mol/dm}^3$ ,  $[Complex] = 0.15 \times 10^{-6} \text{ mol/dm}^3$ .



**Figure S20**. Effect of **C5** (A), **C6** (B) or **C7** (C) complex on the fluorescence spectrum of HSA at room temperature,  $[HSA] = 2 \times 10^{-6} \text{ mol/dm}^3$ ,  $[Complex] = 0.15 \times 10^{-6} \text{ mol/dm}^3$ .



**Figure S21**. Plot of  $\log(F_0 - F)/F$  versus  $\log[\text{Complex}]$  for HSA in the presence of complexes C1 and C5.



**Figure S22.** Plot of log  $(F_0 - F)/F$  versus log[Complex] for HSA in the presence of complexes C2 and C6.



**Figure S23.** Plot of log  $(F_0 - F)/F$  versus log[Complex] for HSA in the presence of complexes C3 and C7.



**Figure S24.** <sup>1</sup>H NMR spectra of dichlorido-(*O*,*O*'-dibutyl-(*S*,*S*)-ethylenediamine-N,N'-di--(2,2'-di(4-hydroxy)-benzyl-acetate-platinum(II), [PtCl<sub>2</sub>(dbu-*S*,*S*-eddtyr)] **C3** 



**Figure S25.** <sup>13</sup>C NMR spectra of dichlorido-(O, O'-dibutyl-(S, S)-ethylenediamine-N, N'-di--(2,2'-di(4-hydroxy)-benzyl-acetate-platinum(II), [PtCl<sub>2</sub>(dbu-S, S-eddtyr)] **C3**