Supplementary information

Fig. S1 IR spectrum of [H₂-(Sal-mtsc)]

Fig. S2 IR spectrum of [Ru(H-Sal-mtsc)(CO)Cl(PPh₃)₂](1)
Fig. S3 IR spectrum of [Ru(Sal-mtsc)(CO)(PPh₃)₂](2)

Fig. S4 ¹H-NMR spectrum of [H₂-(Sal-mtsc)]
Fig. S5 $^1$H-NMR spectrum of $[\text{Ru}(\text{H-Sal-} \text{mtsc})(\text{CO})\text{Cl}(\text{PPh}_3)_2](1)$

Fig. S6 $^1$H-NMR spectrum of $[\text{Ru}(\text{Sal-} \text{mtsc})(\text{CO})(\text{PPh}_3)_2](2)$
Fig. S7 The emission spectra of the DNA–EB system (\(\lambda_{\text{exc}} = 515\) nm, \(\lambda_{\text{em}} = 530–750\) nm), in the presence of complex 1 and 2. [DNA] = 10 \(\mu\)M, [Complex] = 0–50 \(\mu\)M, [EB] = 10 \(\mu\)M. The arrow shows the emission intensity changes upon increasing complex concentration.
**Fig. S8** The stern Volmer curves of fluorescence quenching of lysozyme by Complexes 1 (square) and 2 (circle)

**Fig. S9** Double-log plot of complex 1 and 2 quenching effect on lysozyme at 25°C.
Fig. S10 Synchronous spectra of lysozyme (1 x 10⁻⁶ M) in the absence and presence of 1 and 2 (0-5 x 10⁻⁵ M) in the wavelength difference of ∆λ = 15 nm

Fig. S11 Synchronous spectra of lysozyme (1 x 10⁻⁶ M) in the absence and presence of 2 (0-5 x 10⁻⁵ M) in the wavelength difference of ∆λ = 60 nm
**Fig. S12** The three-dimensional fluorescence contour map of free Lysozyme (a) and presence of Complexes 1(b) and 2(c)