

Supplementary Materials

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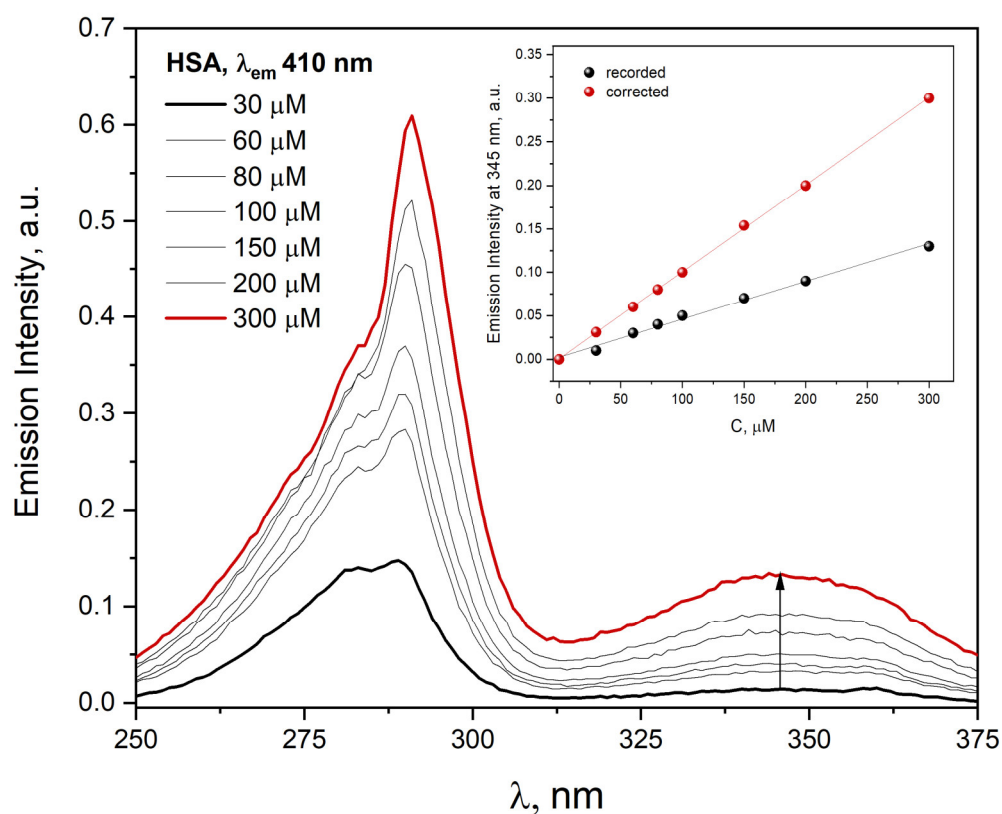


Figure S1. Emission excitation spectra of the neat HSA solution (30-300 μ M). The emission wavelengths were 410. **Insert:** Dependence of I_{max} as a function of human serum albumin concentration (30–300 μ M). I_{max} —intensity of HSA emission in buffer solution at maximum of excitation emission band, λ_{em} =410 nm. The red dots represent the I_{max} after correction for inner filter effect.

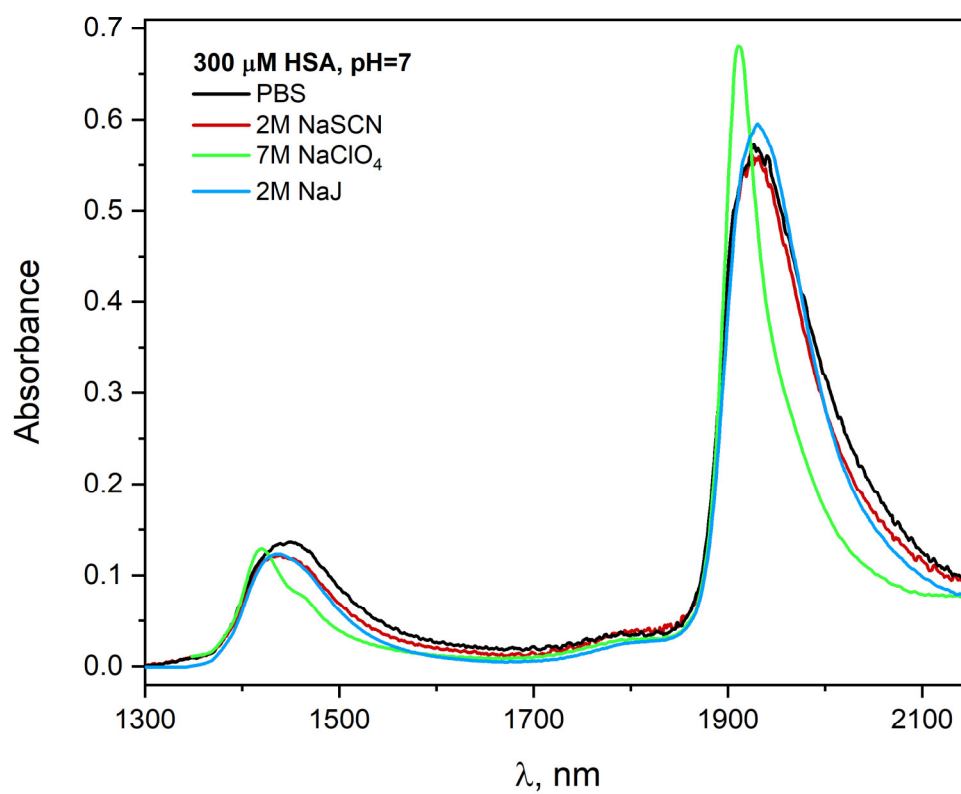


Figure S2. Absorption spectra of buffer solution of HSA (300 μM) containing NaSCN (2M), NaClO₄ (7M), NaJ (2M). Measurements were made using a 0.1 mm quartz cuvette. The PBS plot represents the spectra of HSA (300 μM).

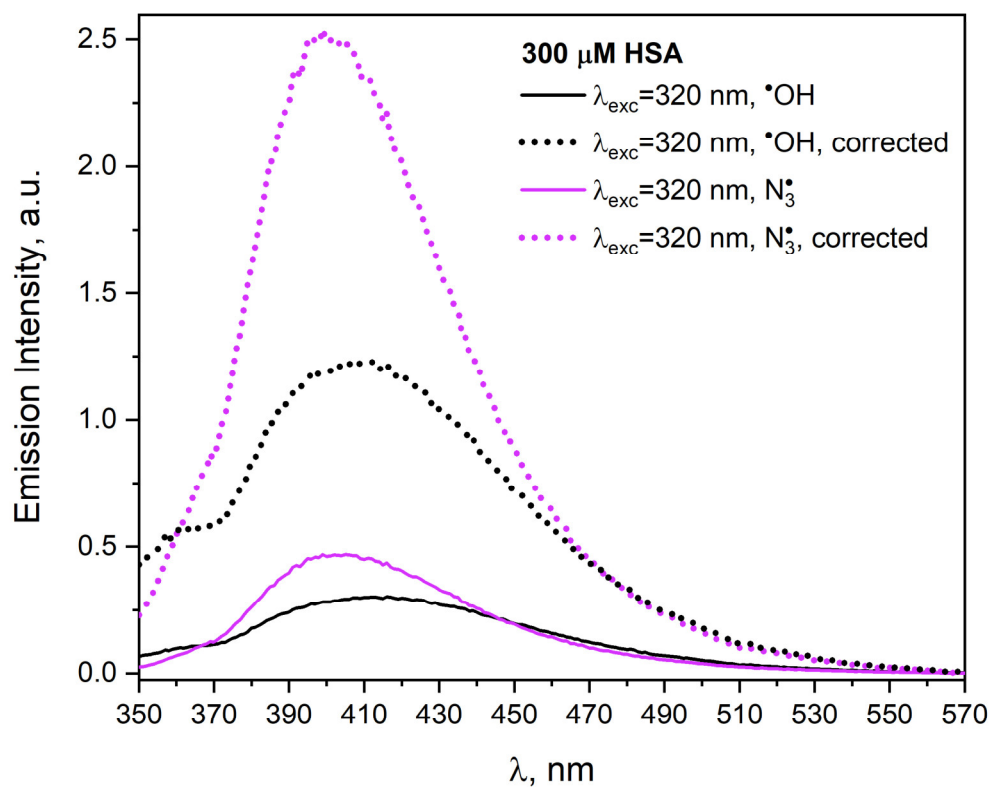


Figure S3. Emission spectrum of N_2O -saturated buffer HSA solution ($300 \mu\text{M}$) containing NaN_3 (0.1M), obtained for irradiation dose 27.8 kGy (violet curve). Emission spectrum of N_2O -saturated buffer solution of HSA ($30 \mu\text{M}$), obtained for irradiation dose 27.8 kGy (black curve). The excitation wavelength was 320 nm . The dotted curves represent the HSA emission spectra after correction for inner filter effect.

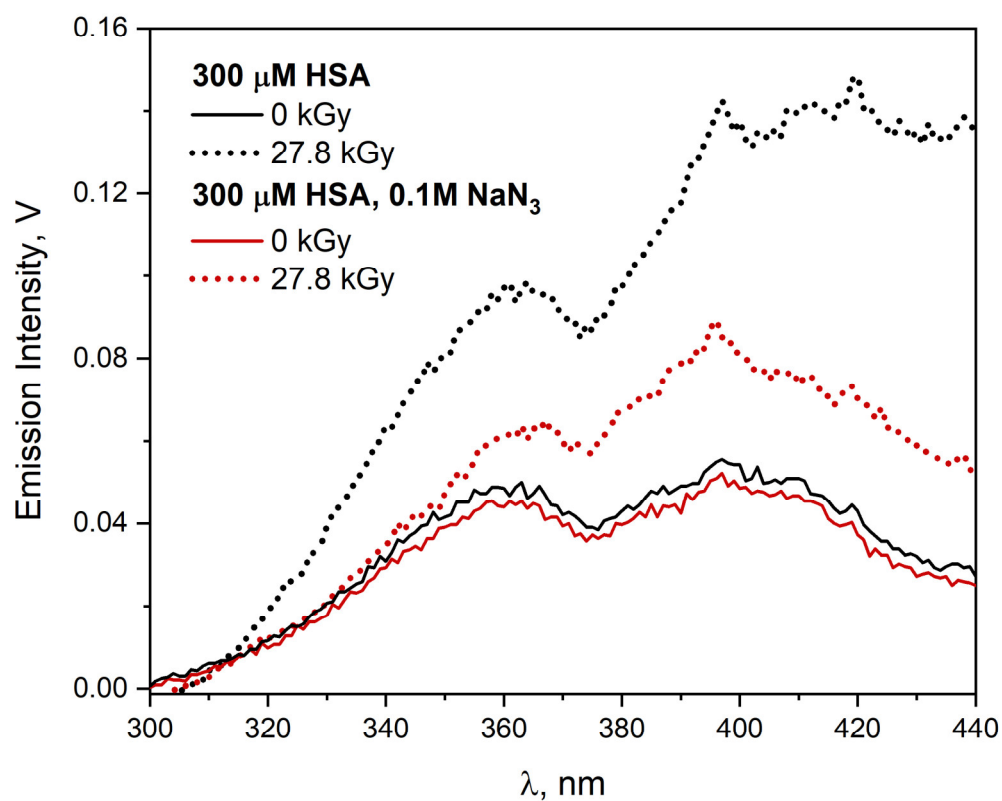


Figure S4. Emission excitation spectra of the N₂O-saturated HSA solutions (300 μM): neat or containing 0.1M NaN₃, obtained for irradiation dose 27.8 kGy. The emission wavelength was 525 nm.

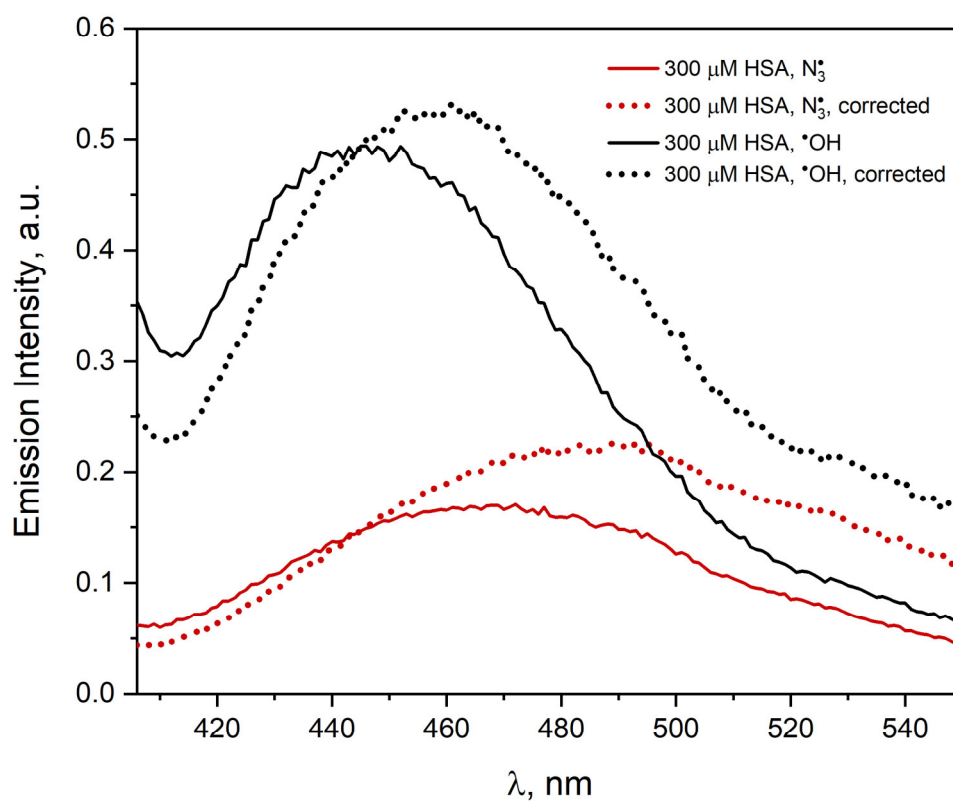


Figure S5. Emission spectrum of N_2O -saturated buffer HSA solution ($300\ \mu\text{M}$) containing NaN_3 (0.1M), obtained for irradiation dose $27.8\ \text{kGy}$ (red curve). Emission spectrum of N_2O -saturated buffer solution of HSA ($30\ \mu\text{M}$), obtained for irradiation dose $27.8\ \text{kGy}$ (black curve). The excitation wavelength was $390\ \text{nm}$. The dotted curves represent the HSA emission spectra after correction for instrument response (mainly photomultiplier spectral response).

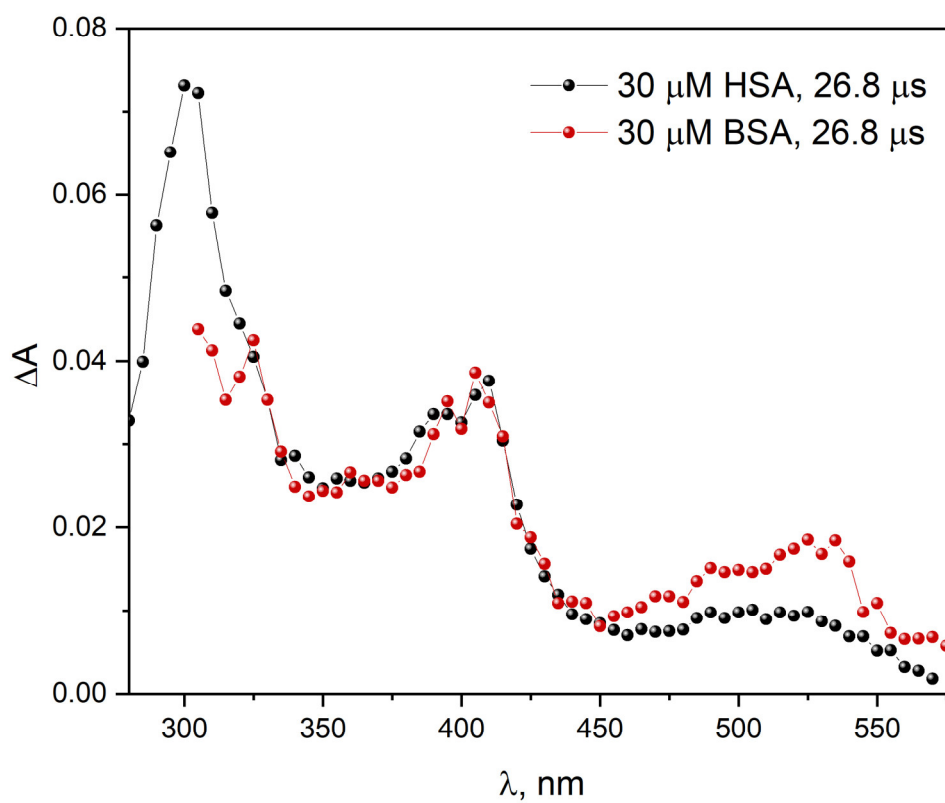


Figure S6. Transient absorption spectra recorded at 26.8 μs time after 4 μs pulse irradiation with dose of 800 Gy of N_2O -saturated buffer solutions containing: 30 μM HSA or 30 μM BSA and 0.1M NaN_3 . Spectra were normalized.

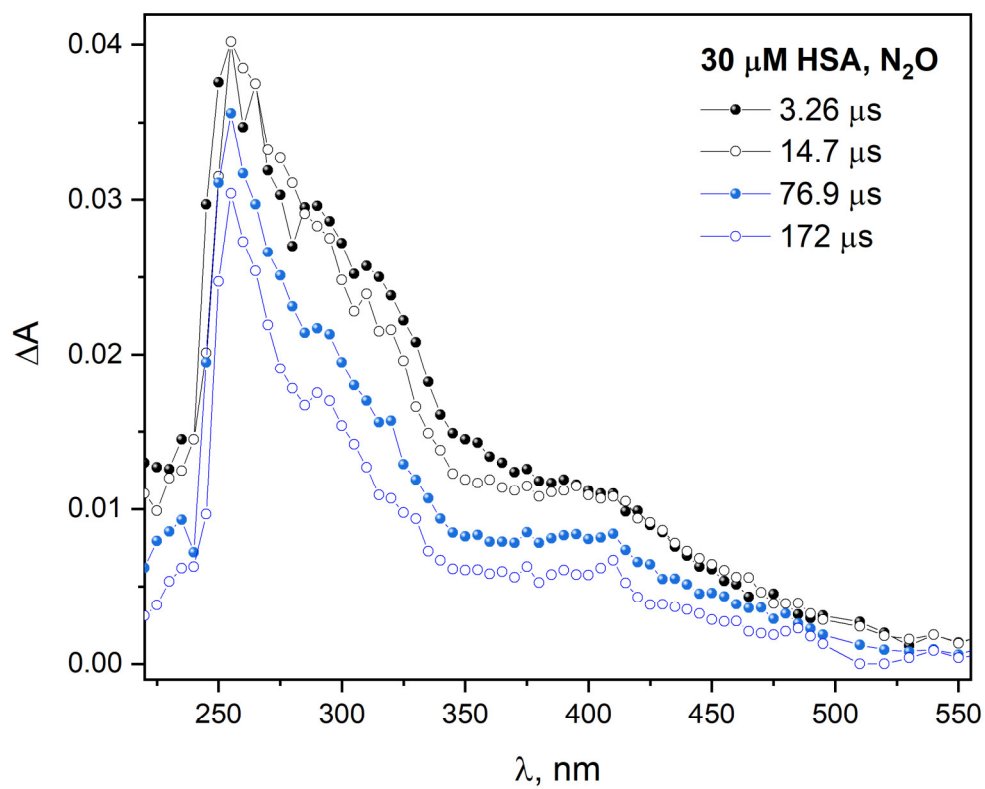


Figure S7. Transient absorption spectra recorded at various time after 17 ns pulse irradiation with dose of 55 Gy of N_2O -saturated buffer solutions containing 30 μM HSA.

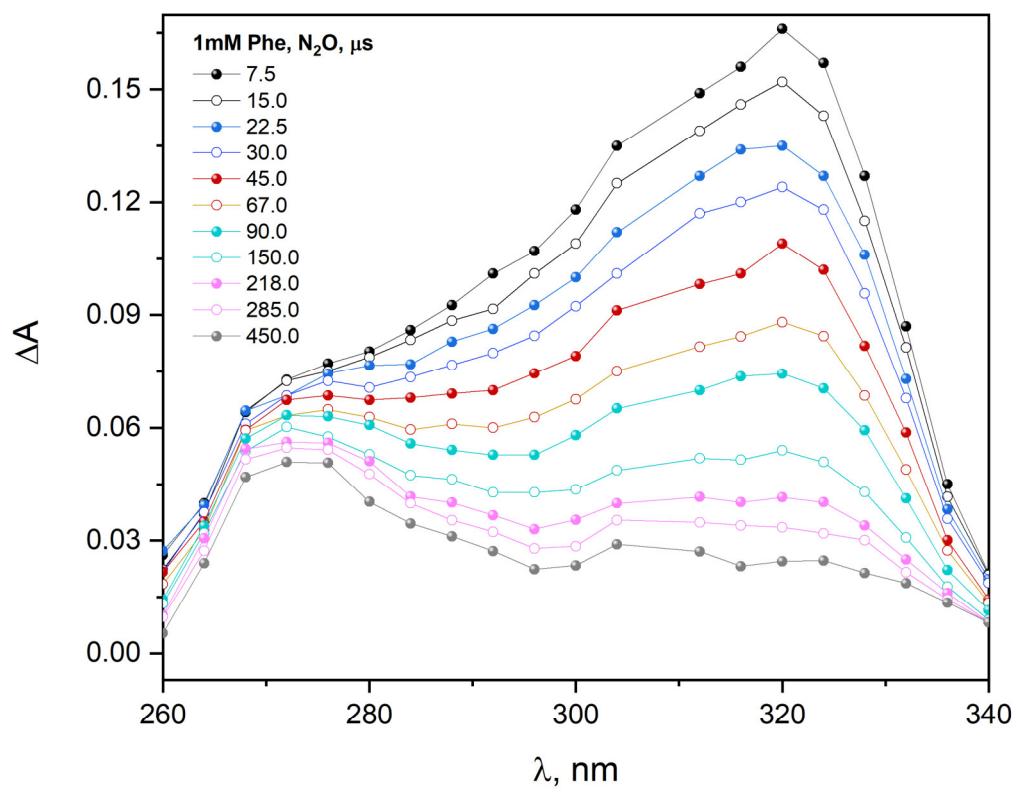


Figure S8. Transient absorption spectra recorded at various time after 17 ns pulse irradiation with dose of 55 Gy of N_2O -saturated buffer solutions containing 1 mM Phe.

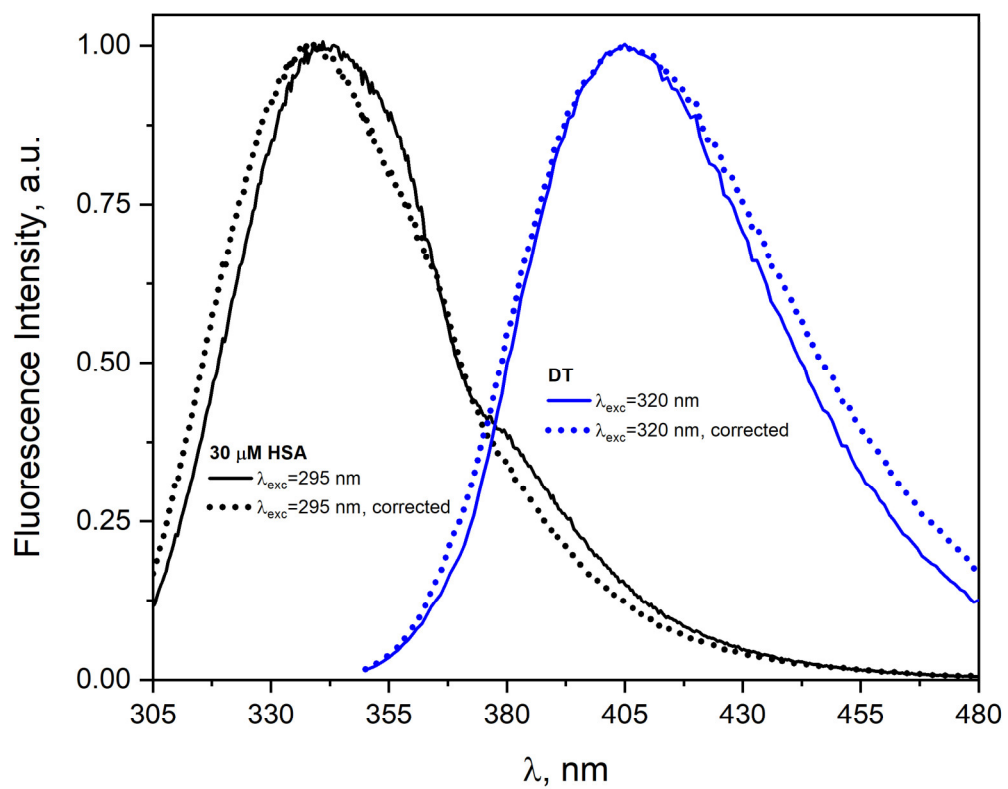


Figure S9. Fluorescence spectra of aqueous solutions of HSA (30 μM), $\lambda_{\text{exc}} = 295$ nm and DT, $\lambda_{\text{exc}} = 320$ nm (generated by irradiation, see caption for Figure 12).