

Supplementary Materials

Effect of Palmitic Acid on Tertiary Structure of Glycated Human Serum Albumin

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Table S1. Absorbance of non-glycated (HSA); glycated and deffated (gHSA), and glycated in the presence of palmitic acid (PA) albumin at molar ratios of PA:gHSA 1.5:1 and PA:gHSA 3:1; protein concentration, 5×10^{-6} mol·L⁻¹; $\lambda_{\text{max}} = 279$ nm, $\lambda = 330$ nm, $\lambda = 360$ nm, and $\lambda = 400$ nm.

5×10^{-6} (mol·L ⁻¹)	Absorbance (a.u.)			
	$\lambda_{\text{max}} = 279$ (nm)	$\lambda = 330$ (nm)	$\lambda = 360$ (nm)	$\lambda = 400$ (nm)
HSA	0.097	0.019	0.016	0.013
gHSA	0.161	0.081	0.065	0.047
PA:gHSA 1.5:1	0.090	0.021	0.013	0.007
PA:gHSA 3:1	0.150	0.059	0.047	0.037

Table S2. Absorbance of non-glycated (HSA); glycated and deffated (gHSA), and glycated in the presence of palmitic acid (PA) human serum albumin in molar ratio PA:gHSA 1.5:1 and PA:gHSA 3:1 for a wavelength of 412 nm and the percentage of free sulfhydryl groups [SH] %.

	Abs_{412p} (a.u.)	Abs_{412t} (a.u.)	Abs_{412k} (a.u.)	[SH] (mol·L⁻¹)	[SH]%
HSA	0.022139	0.019295	0.009356	2.27×10^{-6}	45.34
gHSA	0.006691	0.007764	0.007917	0.46×10^{-6}	9.20
PA:gHSA 1.5:1	0.008253	0.009331	0.031669	0.99×10^{-6}	19.91
PA:gHSA 3:1	0.033796	0.034222	0.018337	1.12×10^{-6}	22.46

Table S3. The position (λ_{max}) of the maximum fluorescence (F_{max}) and the shift of the maximum fluorescence emission ($\Delta\lambda$) determined for non-glycated (HSA), glycated and deffated (gHSA), and glycated in the presence of palmitic acid (PA) human serum albumin in molar ratio PA:gHSA 1.5:1 and PA:gHSA 3:1; $\lambda_{\text{ex}} = 290$ nm, $\lambda_{\text{ex}} = 295$ nm and $\lambda_{\text{ex}} = 300$ nm.

	$\lambda_{\text{ex}} = 290$ nm		$\lambda_{\text{ex}} = 295$ nm		$\lambda_{\text{ex}} = 300$ nm		$\Delta\lambda$ (nm)
	λ_{max} (nm)	F_{max}	λ_{max} (nm)	F_{max}	λ_{max} (nm)	F_{max}	
HSA	330	50.27	333	22.24	335	17.28	5
gHSA	326	5.20	332	4.66	346	3.70	20
PA:gHSA 1.5:1	326	4.72	332	4.72	346	3.79	20
PA:gHSA 3:1	327	23.09	336	10.81	360	5.63	33

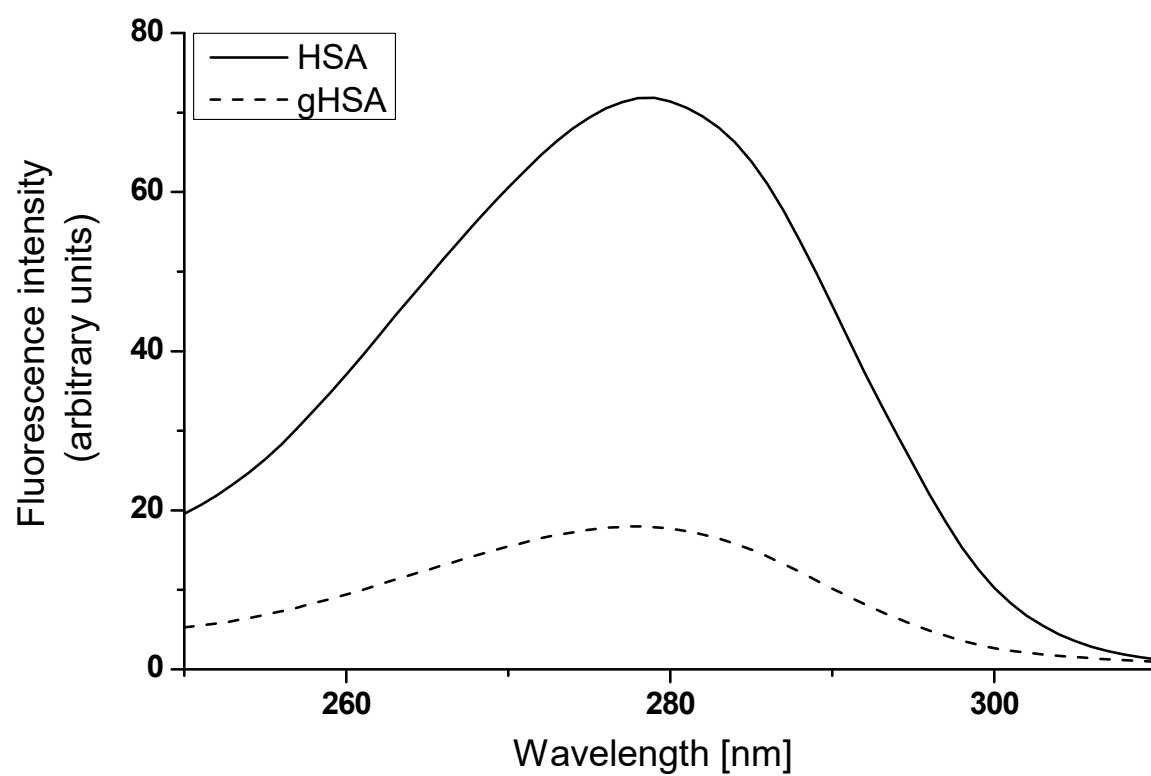


Figure S1. Excitation spectra of HSA and gHSA at $5 \times 10^{-6} \text{ mol}\cdot\text{L}^{-1}$ concentration; $t = 37^\circ\text{C}$.

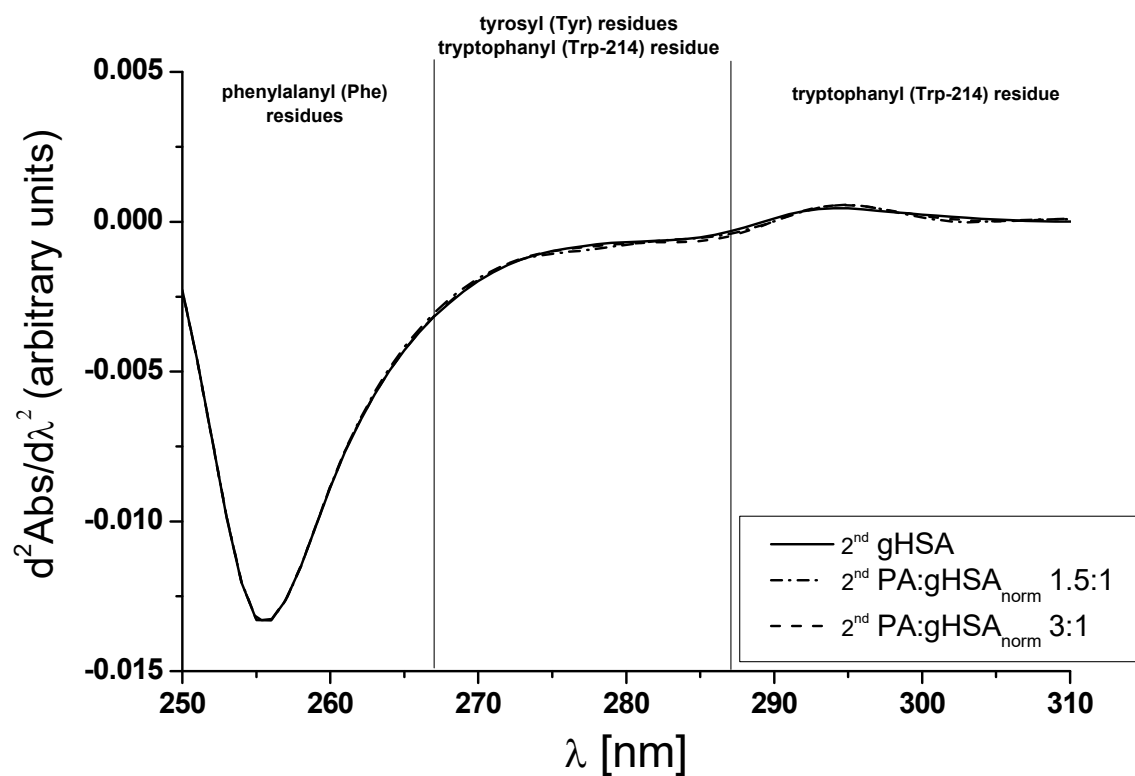


Figure S2. Second derivative of glycated, deffated (2nd gHSA) and glycated in the presence of palmitic acid (PA) serum albumin in molar ratio PA:gHSA 1.5:1 and PA:gHSA 3:1 (2nd PA:gHSA_{norm} 1.5:1, 2nd PA:gHSA_{norm} 3:1) absorption spectrum. Protein concentration, $5 \times 10^{-6} \text{ mol}\cdot\text{L}^{-1}$; $t = 37^\circ\text{C}$.

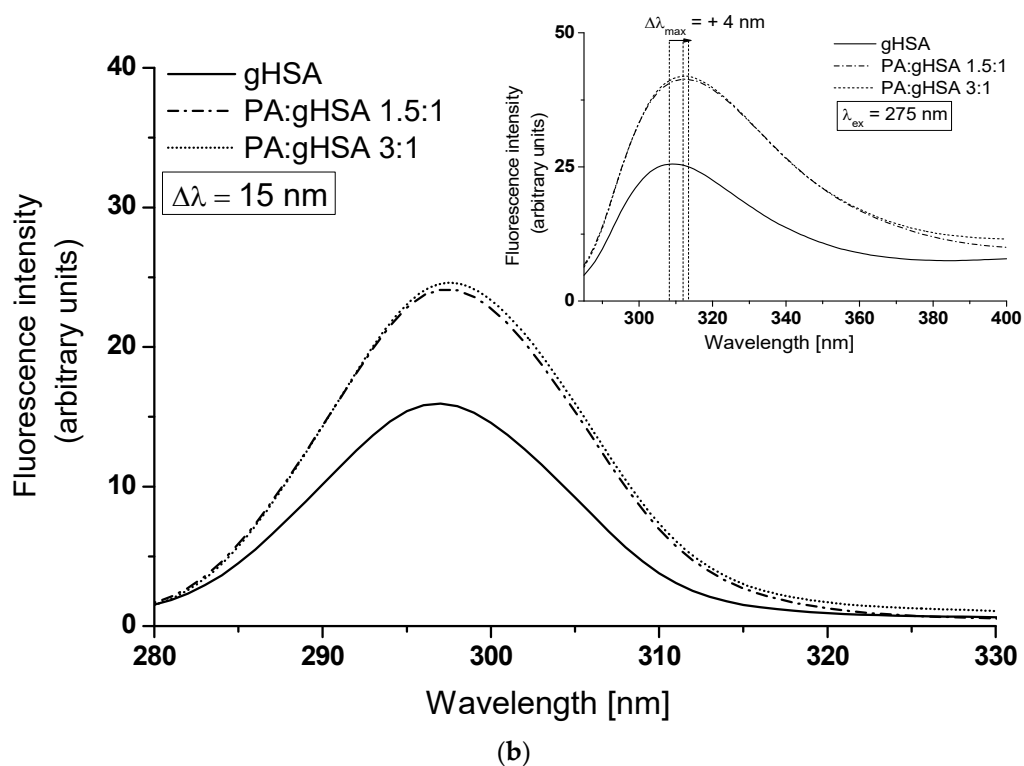
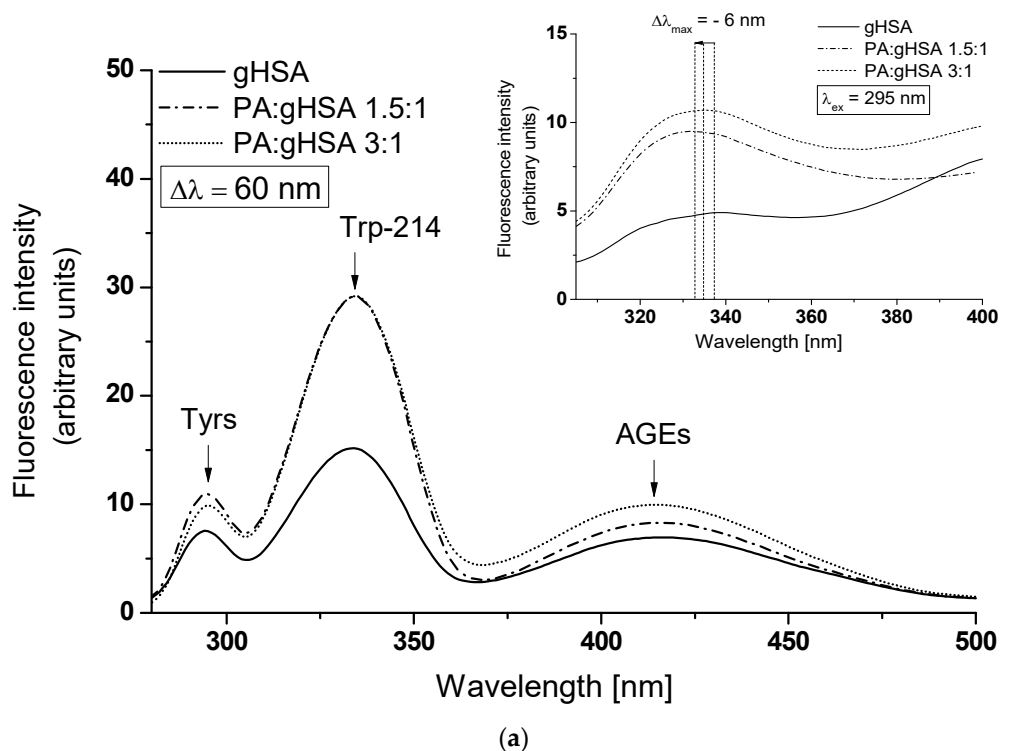


Figure S3. Main view: synchronous fluorescence spectra of glycated, deffated (gHSA) and glycated in the presence of palmitic acid (PA) human serum albumin in molar ratio PA:gHSA 1.5:1 and PA:gHSA 3:1 at $5 \times 10^{-6} \text{ mol}\cdot\text{L}^{-1}$ concentration (a) $\Delta\lambda = 60 \text{ nm}$ ($\lambda_{\text{ex}} = 220\text{--}440 \text{ nm}$), (b) $\Delta\lambda = 15 \text{ nm}$ ($\lambda_{\text{ex}} = 265\text{--}305 \text{ nm}$). Insert: comparison of gHSA, PA:gHSA 1.5:1 and PA:gHSA 3:1 emission spectrum excited at (a) $\lambda_{\text{ex}} = 295 \text{ nm}$ and (b) $\lambda_{\text{ex}} = 275 \text{ nm}$; $t = 37^\circ\text{C}$.