


Supplementary Information

Design, Synthesis, Trypanocidal Activity, and Studies on Human Albumin Interaction of Novel S-Alkyl-1,2,4-triazoles

Tatiany N. Franklin,^{a,b} Leonardo Freire-de-Lima,^b Otávio A. Chaves,^a
 Isabel F. LaRocque-de-Freitas,^b Joana D. da Silva-Trindade,^a José C. Netto-Ferreira,^{a,c}
 Célio G. Freire-de-Lima,^b Debora Decoté-Ricardo,^d José O. Previato,^b
 Lucia Mendonça-Previato^b and Marco E. F. de Lima *,^a

^aInstituto de Química, Departamento de Química Orgânica,
 Universidade Federal Rural do Rio de Janeiro, BR 465, km 07,
 23890-000 Seropédica-RJ, Brazil

^bInstituto de Biofísica Carlos Chagas Filho, Universidade Federal do Rio de Janeiro,
 Cidade Universitária, Ilha do Fundão, 21941-902 Rio de Janeiro-RJ, Brazil

^cDivisão de Metrologia Química, Instituto Nacional de Metrologia, Qualidade e Tecnologia (INMETRO),
 25250-020 Duque de Caxias-RJ, Brazil

^dDepartamento de Microbiologia e Imunologia Veterinária, Instituto de Veterinária,
 Universidade Federal Rural do Rio de Janeiro, BR 465, km 07,
 23890-000 Seropédica-RJ, Brazil

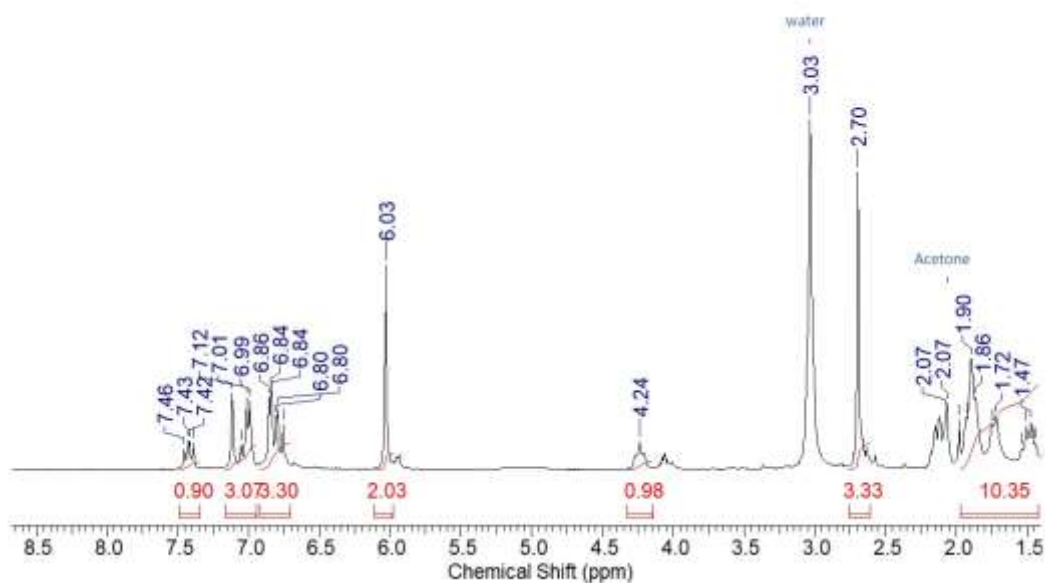


Figure S1. ¹H NMR spectrum (500 MHz, acetone-*d*₆) of 4a.

*e-mail: marco@ufrj.br

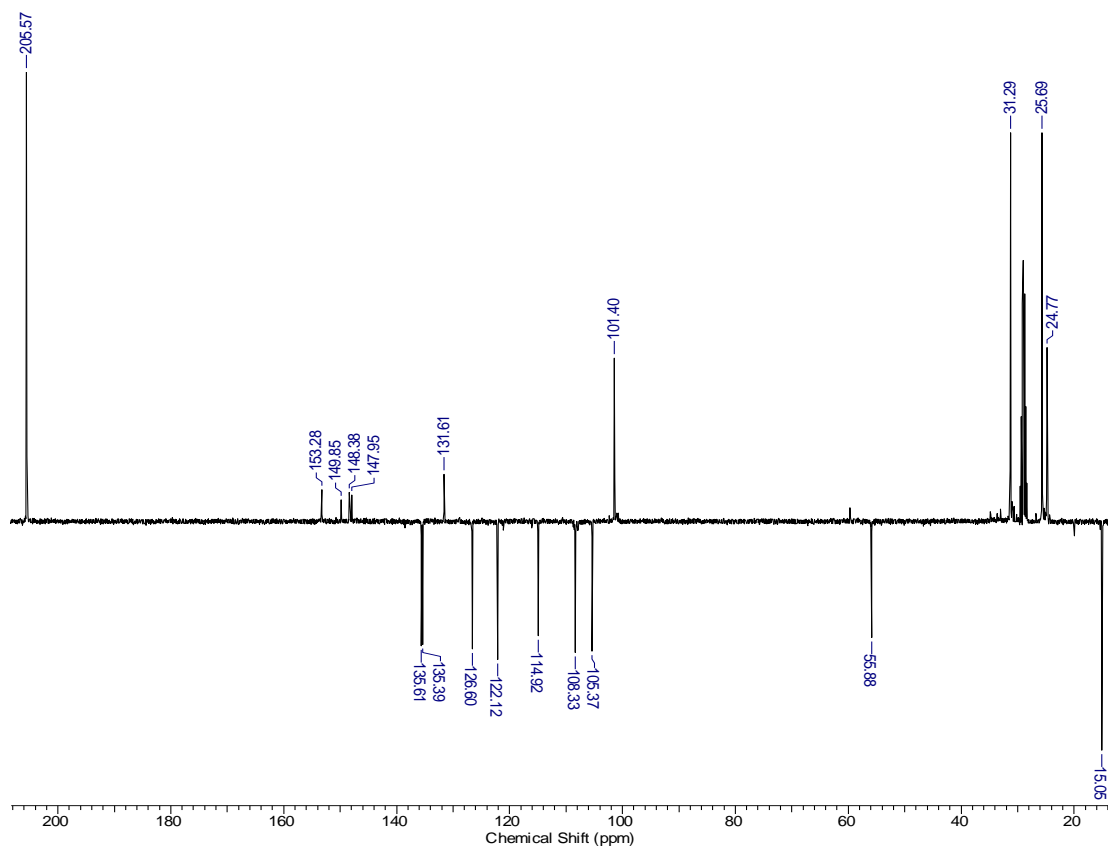


Figure S2. ^{13}C NMR spectrum (125 MHz, acetone- d_6) of **4a**.

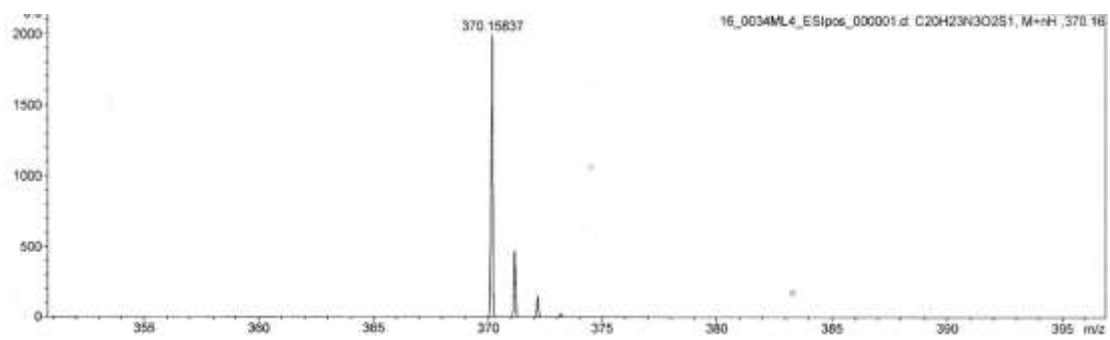


Figure S3. HRMS $[\text{M} + \text{H}]^+$ of **4a**.

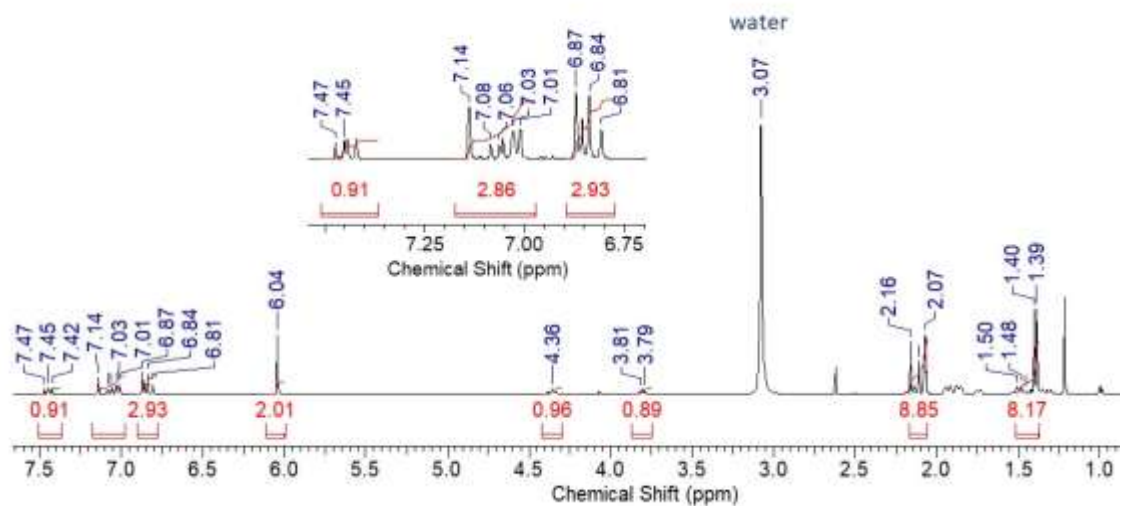


Figure S4. ^1H NMR spectrum (500 MHz, acetone- d_6) of **4b**.

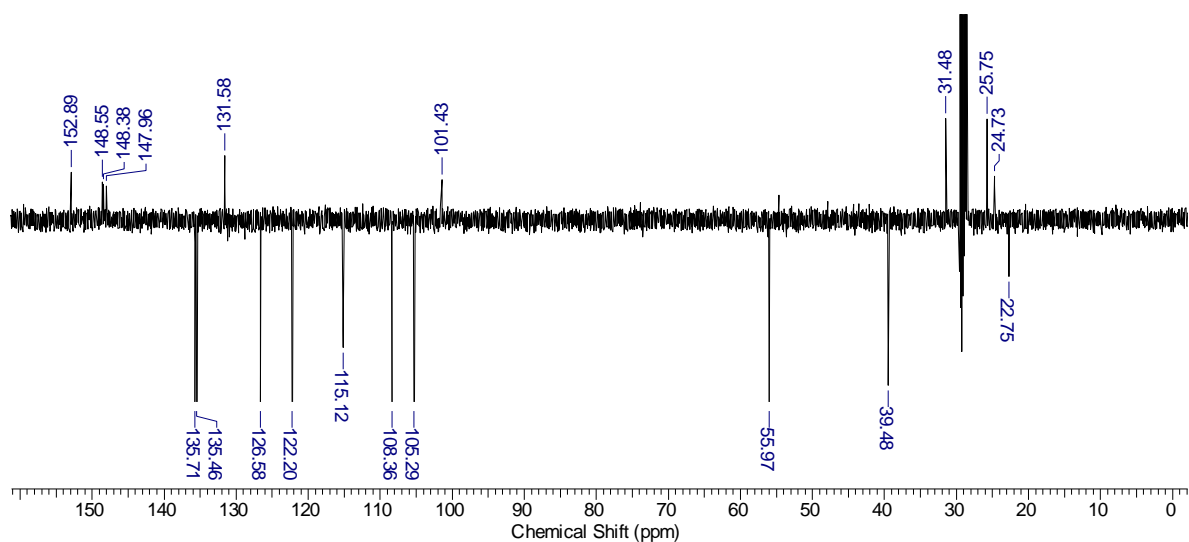


Figure S5. ^{13}C NMR spectrum (125 MHz, acetone- d_6) of **4b**.

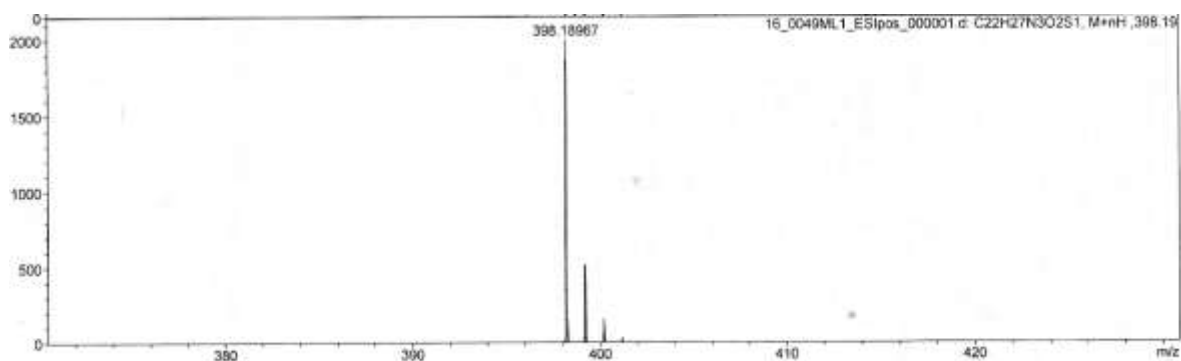


Figure S6. HRMS $[\text{M} + \text{H}]^+$ of **4b**.

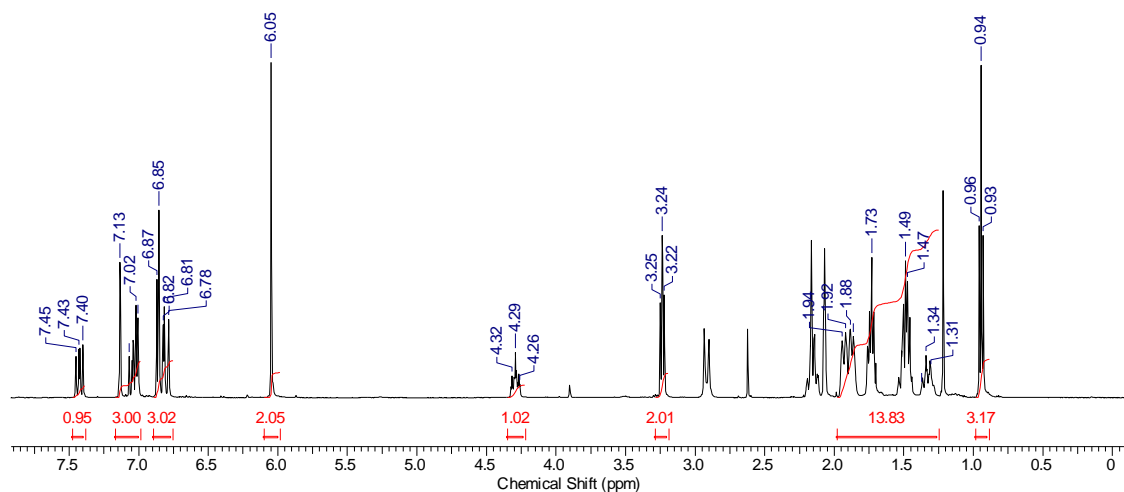


Figure S7. ^1H NMR spectrum (500 MHz, acetone- d_6) of **4c**.

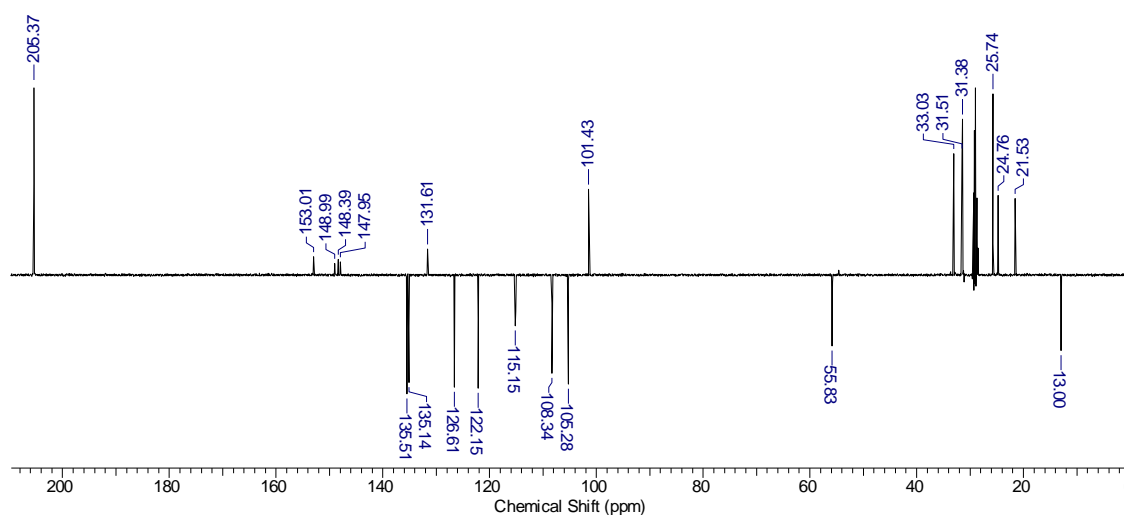


Figure S8. ^{13}C NMR spectrum (125 MHz, acetone- d_6) of **4c**.

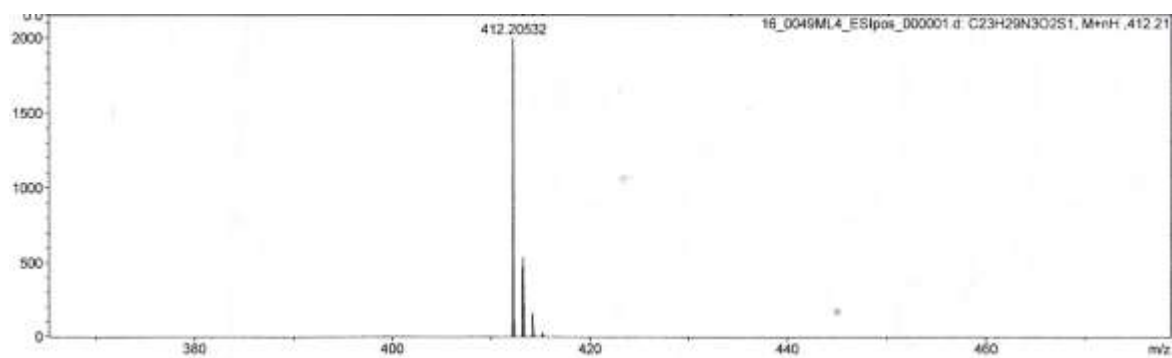


Figure S9. HRMS $[\text{M} + \text{H}]^+$ of **4c**.

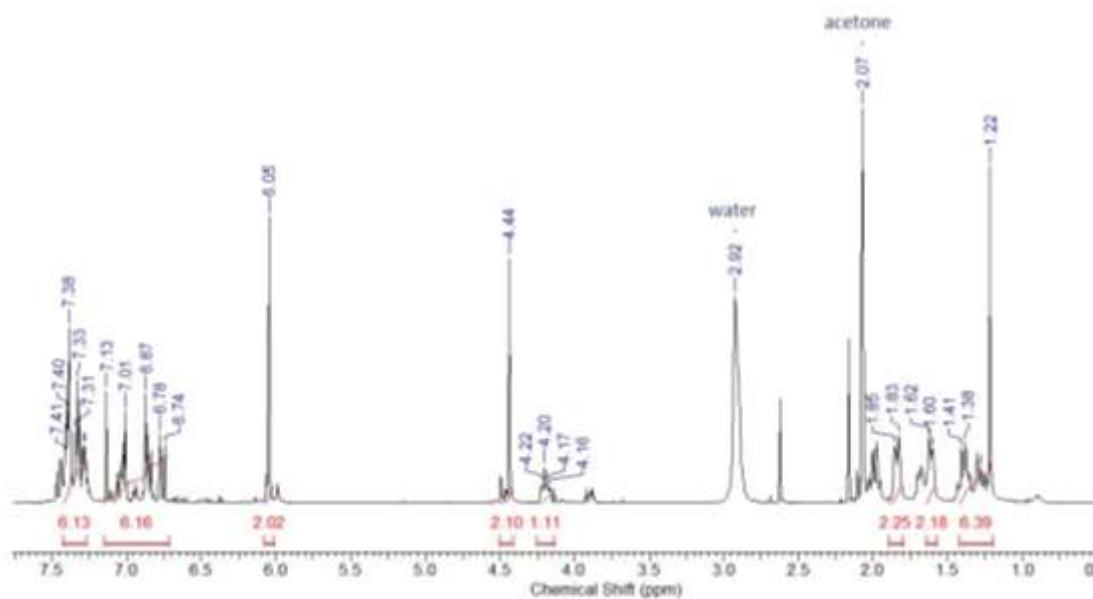


Figure S10. ^1H NMR spectrum (500 MHz, acetone- d_6) of **4d**.

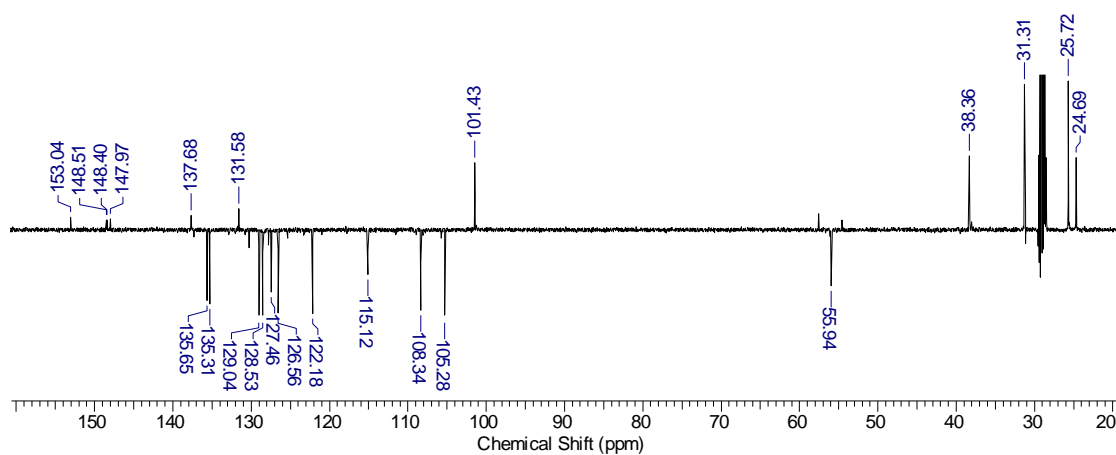


Figure S11. ^{13}C NMR spectrum (125 MHz, acetone- d_6) of **4d**.

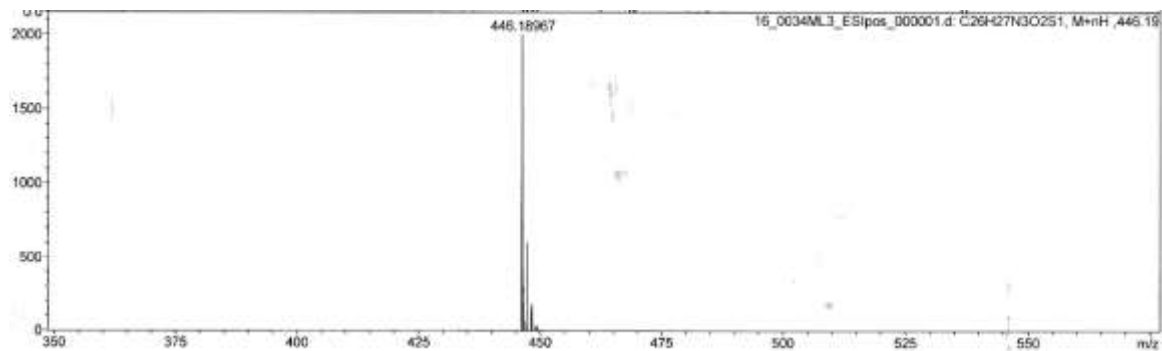


Figure S12. HRMS $[\text{M} + \text{H}]^+$ of **4d**.

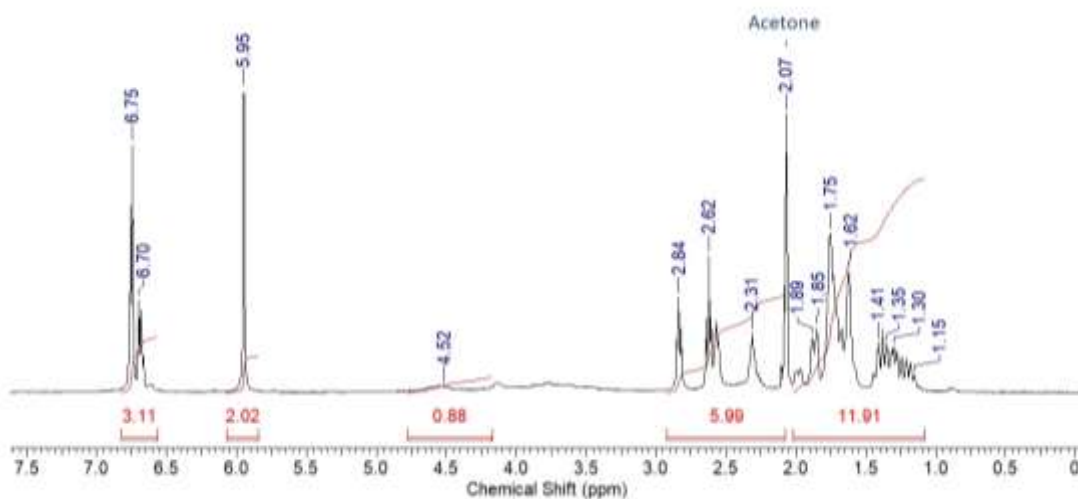


Figure S13. ^1H NMR spectrum (500 MHz, acetone- d_6) of **5**.

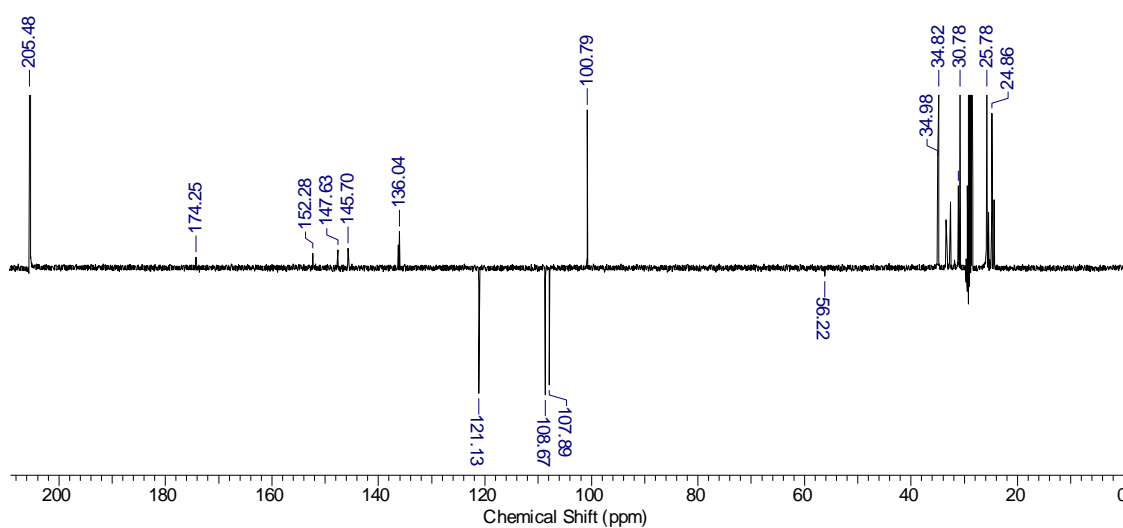


Figure S14. ^{13}C NMR spectrum (125 MHz, acetone- d_6) of **5**.

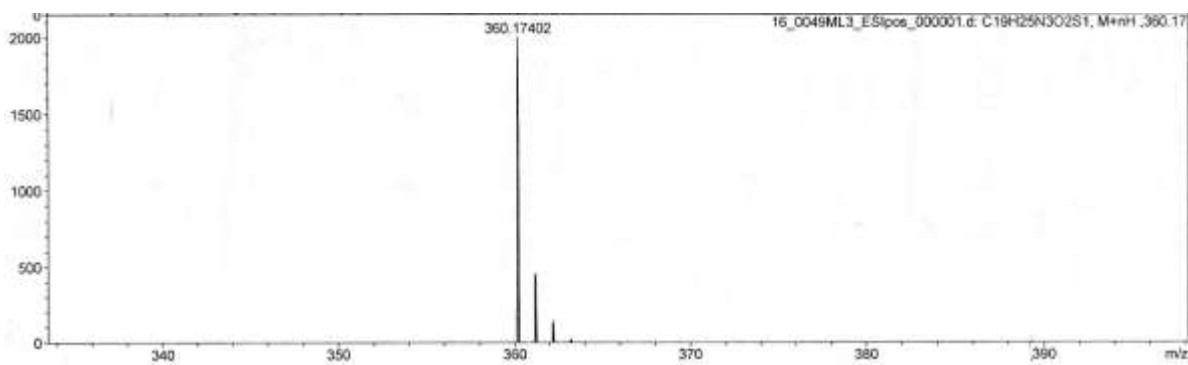


Figure S15. HRMS $[\text{M} + \text{H}]^+$ of **5**.

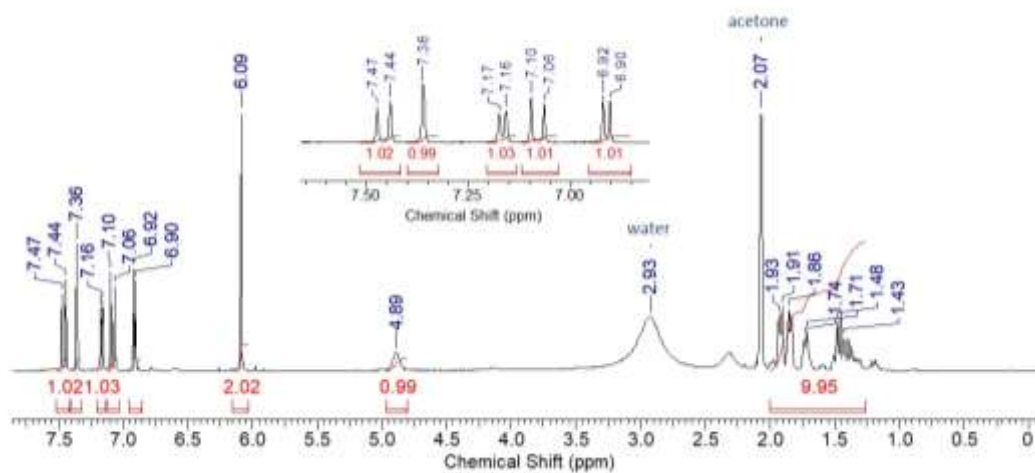


Figure S16. ^1H NMR spectrum (500 MHz, acetone- d_6) of **6**.

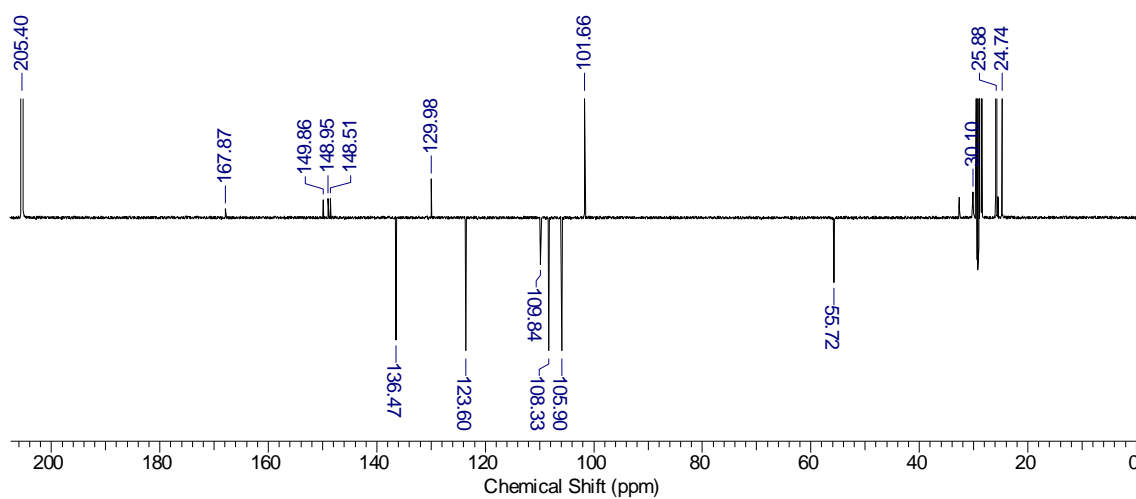


Figure S17. ^{13}C NMR spectrum (125 MHz, acetone- d_6) of **6**.

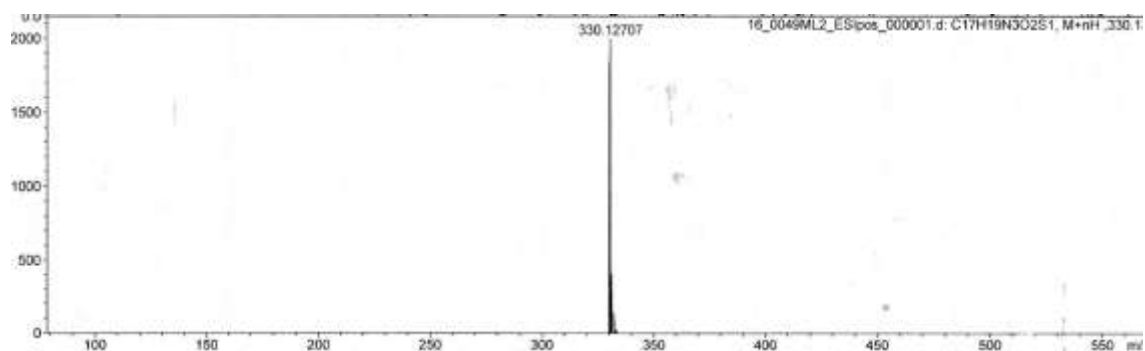


Figure S18. HRMS $[\text{M} + \text{H}]^+$ of **6**.

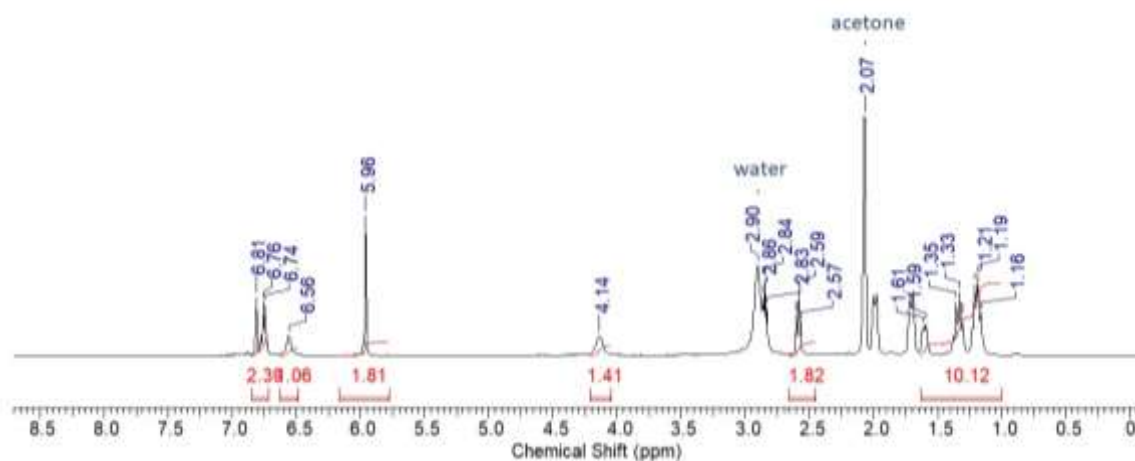


Figure S19. ^1H NMR spectrum (500 MHz, acetone- d_6) of 7.

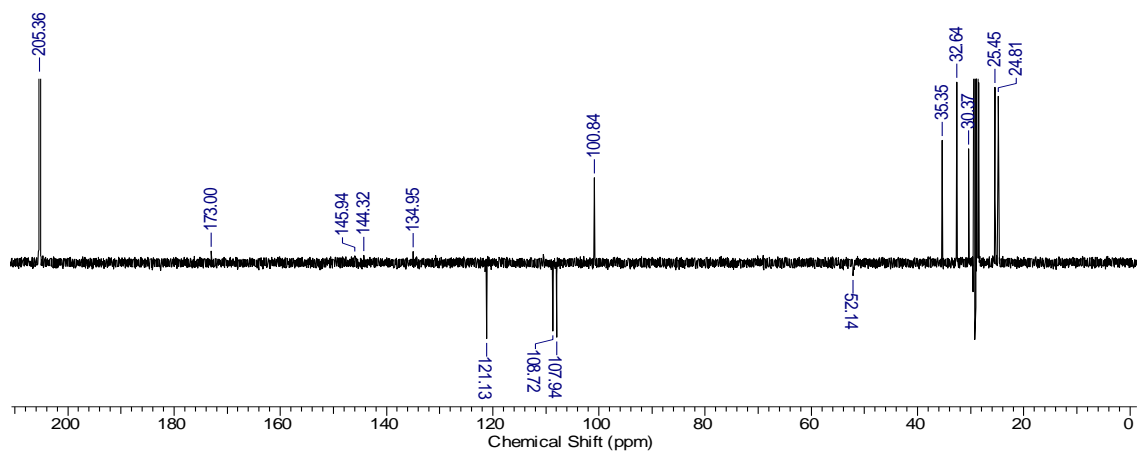


Figure S20. ^{13}C NMR spectrum (125 MHz, acetone- d_6) of 7.

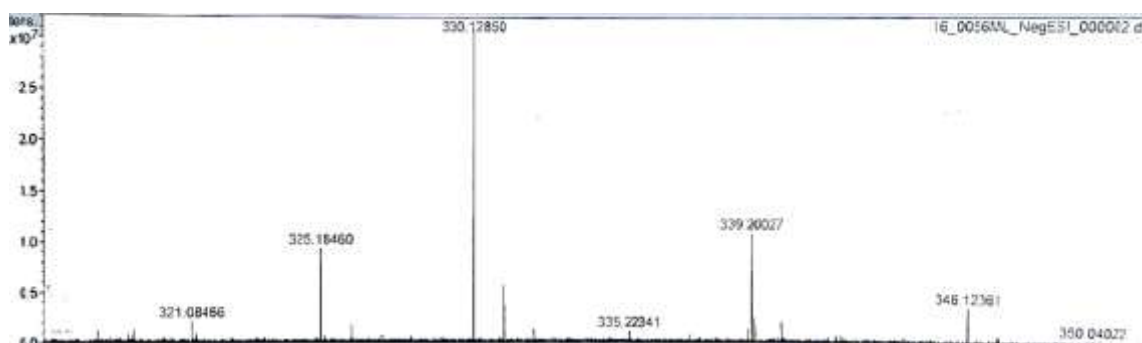


Figure S21. HRMS $[M - H]^-$ of 7. ESI-negative mode ($\text{CH}_3\text{OH} + \text{AcCN} + \text{NH}_4\text{OH}$).

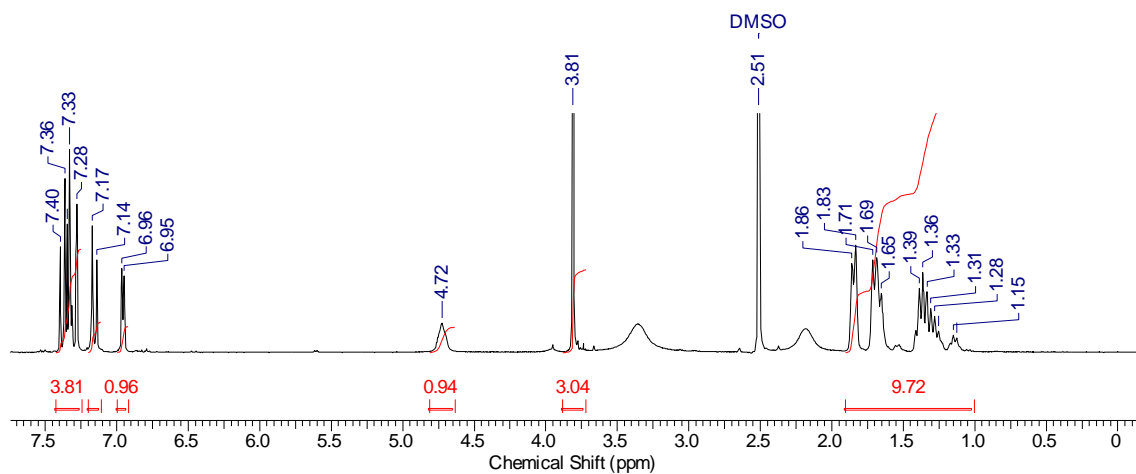


Figure S22. ^1H NMR spectrum (500 MHz, $\text{DMSO-}d_6$) of **8**.

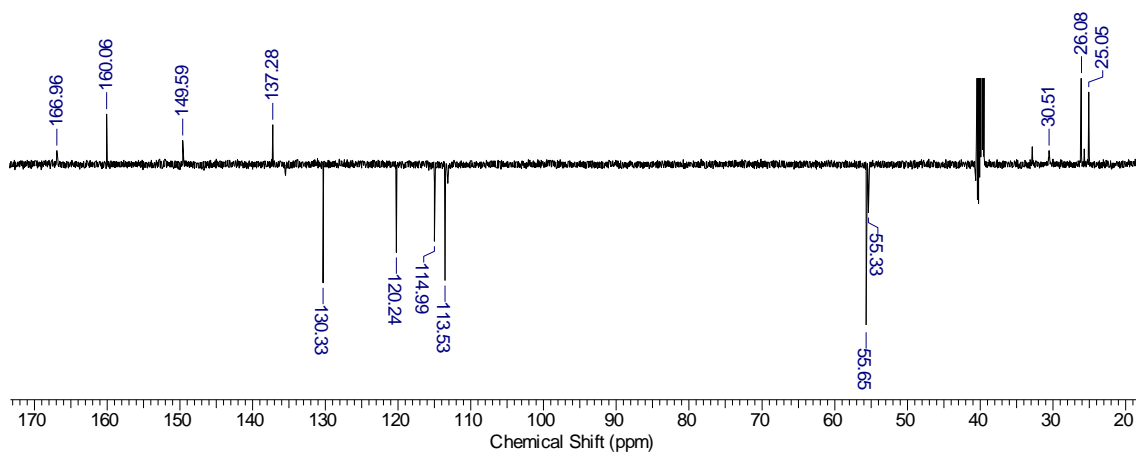


Figure S23. ^{13}C NMR spectrum (125 MHz, $\text{DMSO-}d_6$) of **8**.

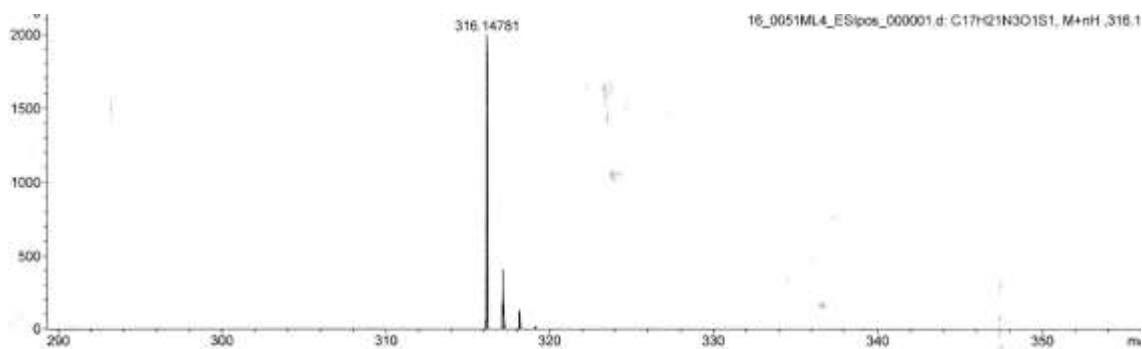


Figure S24. HRMS $[\text{M} + \text{H}]^+$ of **8**.

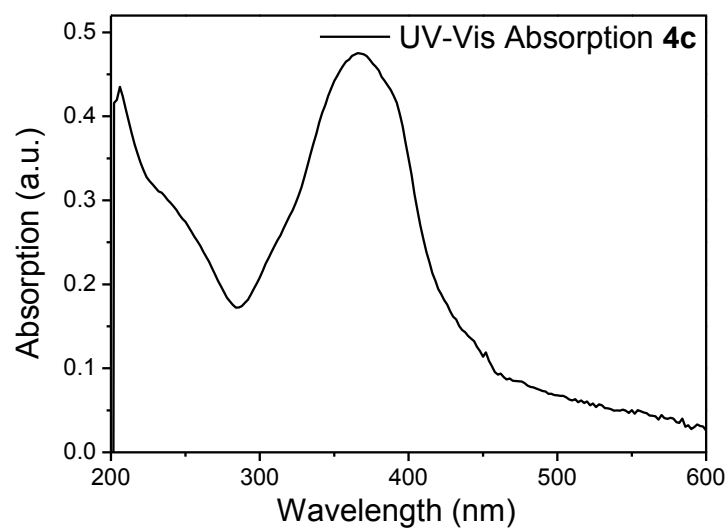


Figure S25. UV-Vis spectrum of **4c**, in PBS (pH = 7.4) at room temperature. $[4c] = 1.32 \times 10^{-5}$ M.

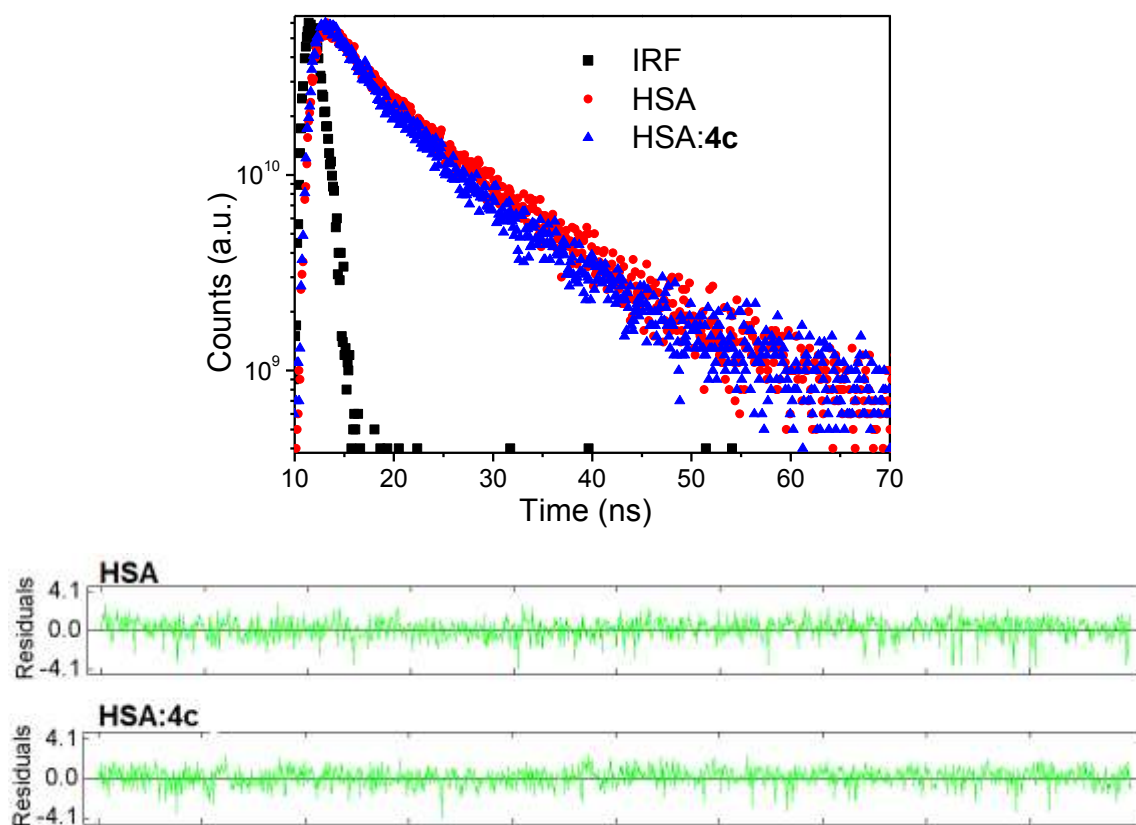


Figure S26. Time-resolved fluorescence decays and its residuals for HSA without and in the presence of **4c** at pH = 7.4 and room temperature. $[HSA] = 1.00 \times 10^{-5}$ M and $[4c] = 1.32 \times 10^{-5}$ M.

Table S1. Time-resolved fluorescence parameters for HSA and HSA:**4c** at pH = 7.4 and room temperature

Code	τ_1 / ns	Relative / %	τ_2 / ns	Relative / %	χ^2
HSA	1.56 ± 0.09	22.3	5.46 ± 0.08	77.7	1.174
HSA: 4c	1.52 ± 0.07	32.8	5.39 ± 0.10	67.2	1.177

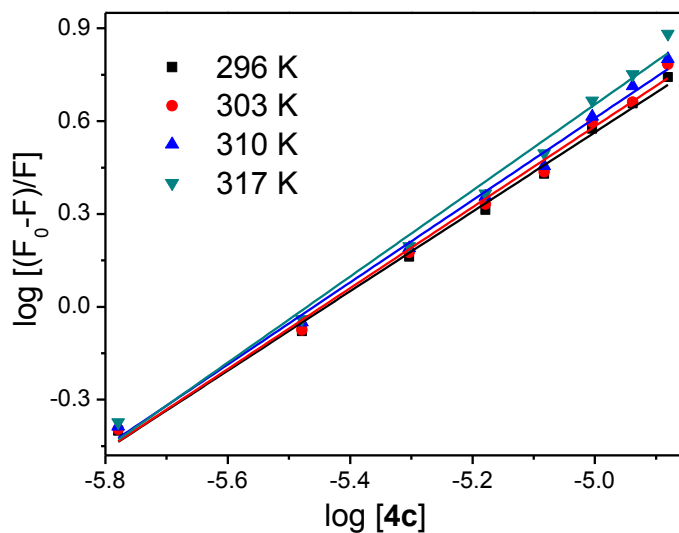


Figure S27. Double logarithmic plot for the interaction HSA:**4c** at pH = 7.4, at 296, 303, 310 and 317 K. [HSA] = 1.00×10^{-5} M and [4c] = 0.17; 0.33; 0.50; 0.66; 0.83; 0.99; 1.15 and 1.32×10^{-5} M.

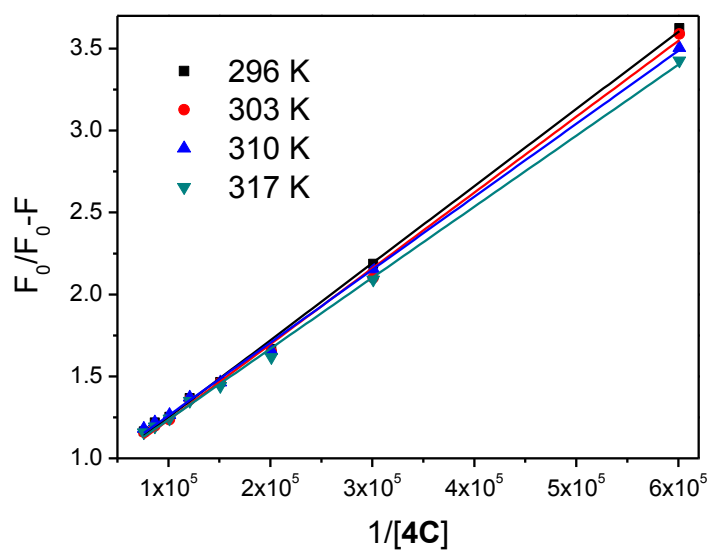


Figure S28. Modified Stern-Volmer plot for the interaction HSA:**4c**, at pH = 7.4, at 296, 303, 310 and 317 K. [HSA] = 1.00×10^{-5} M and [4c] = 0.17; 0.33; 0.50; 0.66; 0.83; 0.99; 1.15 and 1.32×10^{-5} M.

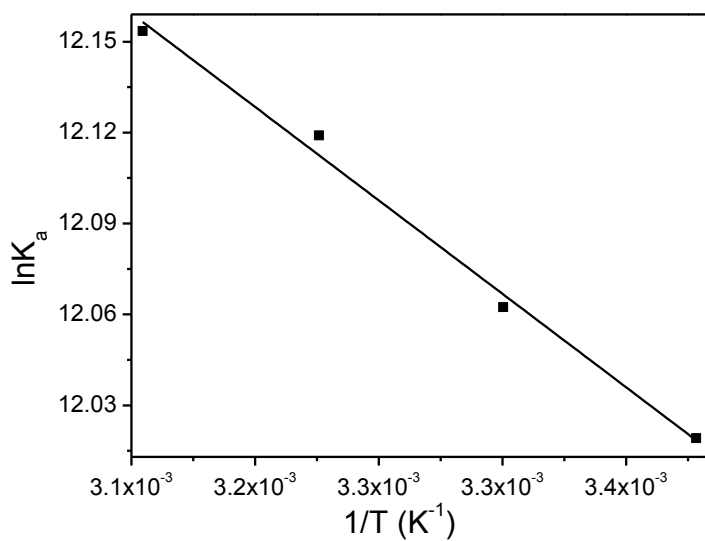


Figure S29. Van't Hoff plot for the interaction HSA:**4c** at pH = 7.4 and four different temperatures.

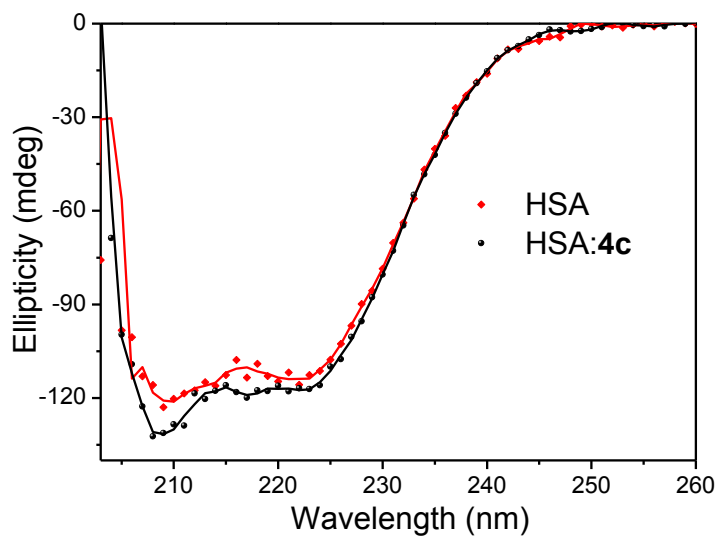


Figure S30. CD spectrum of HSA without and in the presence of **4c**, at pH = 7.4 and 310 K. [HSA] = 1.00×10^{-6} M and [**4c**] = 1.32×10^{-5} M.

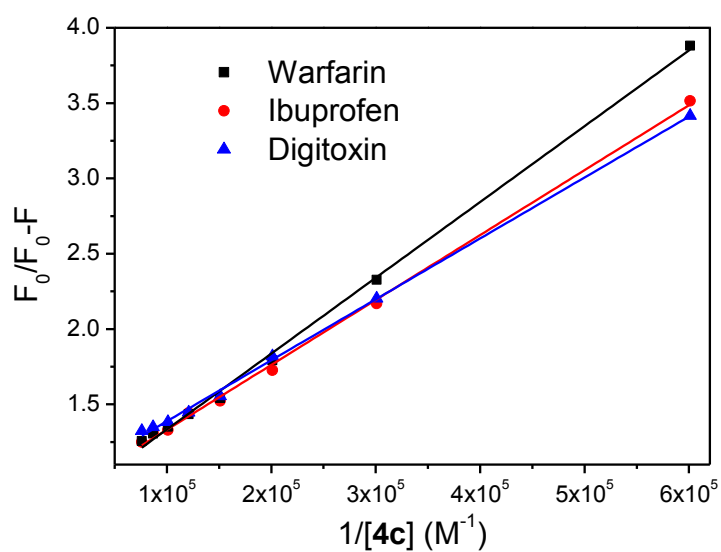


Figure S31. Modified Stern-Volmer plot for the interaction HSA:**4c**, in the presence of site markers warfarin, ibuprofen and digitoxin, at pH = 7.4 and 310 K. [HSA] = [warfarin] = [ibuprofen] = [digitoxin] = 1.00×10^{-5} M and **4c** = 0.17; 0.33; 0.50; 0.66; 0.83; 0.99; 1.15 and 1.32×10^{-5} M.