

Electronic Supplementary Information

Photochemical Behavior of Biosupramolecular Assemblies of Photosensitizers, Cucurbit[*n*]uril and Albumin

Javiera Cáceres^a, José Robinson-Duggon^a, Anita Tapia^a, Constanza Paiva^a, Matías Gómez^a, Cornelia Bohne^b and Denis Fuentealba^{a*}

^a Laboratorio de Estructuras Biosupramoleculares, Departamento de Química Física, Facultad de Química, Pontificia Universidad Católica de Chile, Santiago, Chile. *Corresponding author: dlfuente@uc.cl

^b Department of Chemistry, University of Victoria, P.O. Box 1700 STB CSC, Victoria, BC, Canada V8W 2Y2.

1. Absorption spectra for AO⁺ irradiated in the presence of HSA and in the absence of CB[*n*]

The results obtained for the absorption spectra of AO⁺ in the presence of HSA and in the absence of CB[*n*] irradiated for 30 min (492 nm) are shown in figure S1.

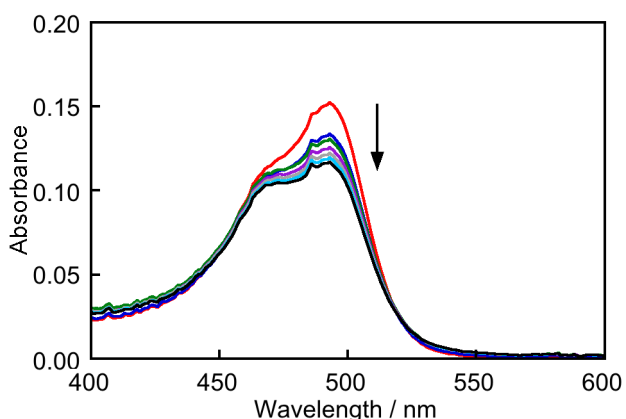


Figure S1. AO⁺ in the presence of HSA and in the absence of CB[*n*] were irradiated at 492 nm. The arrow indicates the decrease in the absorbance that were observed for the samples over the time period of the experiment. Experimental conditions: [AO⁺] = 5 μM, [HSA] = 25 μM, pH = 7.0. The sample was irradiated at 25 °C and was kept under constant stirring. The absorbance spectrum was recorded every 5 min.

2. Absorption spectra for the AO⁺@CB[7] complex irradiated in the presence of HSA

The absorption spectra for the AO⁺@CB[7] complex in the presence of HSA irradiated for 30 min (485 nm) are shown in figure S2.

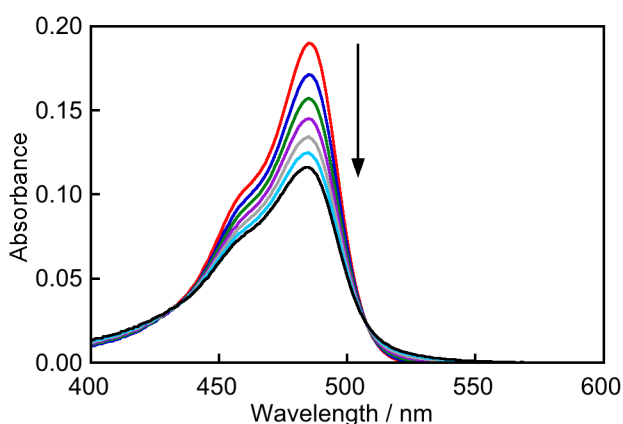


Figure S2. AO⁺@CB[7] complex in the presence of HSA was irradiated at 485 nm. The arrow indicates the decrease in the absorbance that was observed for the sample over the time period of the experiment. Experimental conditions: [AO⁺] = 5 μM, [HSA] = 25 μM, CB[7] = 50 μM, pH = 7.0. The sample was irradiated at 25 °C and was kept under constant stirring. The absorbance spectrum was recorded every 5 min.

3. Absorption spectra for the AO₂⁺@CB[8] complex irradiated in the presence of HSA

The absorption spectra for the AO₂⁺@CB[8] complex in the presence of HSA irradiated for 30 min (465 nm) are shown in figure S3.

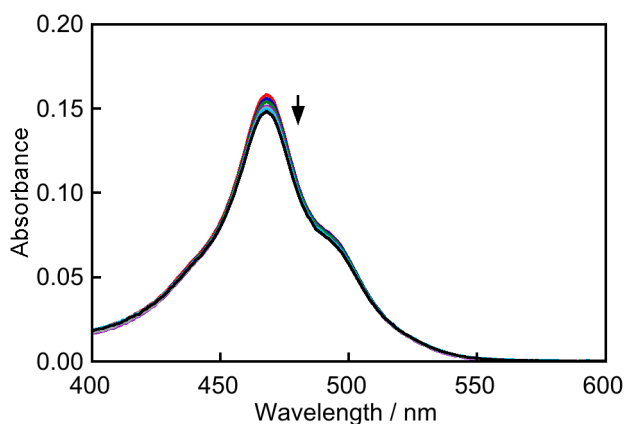


Figure S3. $\text{AO}^+_{2@CB[8]}$ complex in the presence of HSA was irradiated at 465 nm. The arrow indicates the decrease in the absorbance that was observed for the sample over the time period of the experiment. Experimental conditions: $[\text{AO}^+] = 5 \mu\text{M}$, $[\text{HSA}] = 25 \mu\text{M}$, $[\text{CB}[8]] = 35 \mu\text{M}$, $\text{pH} = 7.0$. The sample was irradiated at 25°C and was kept under constant stirring. The absorbance spectrum was recorded every 5 min.

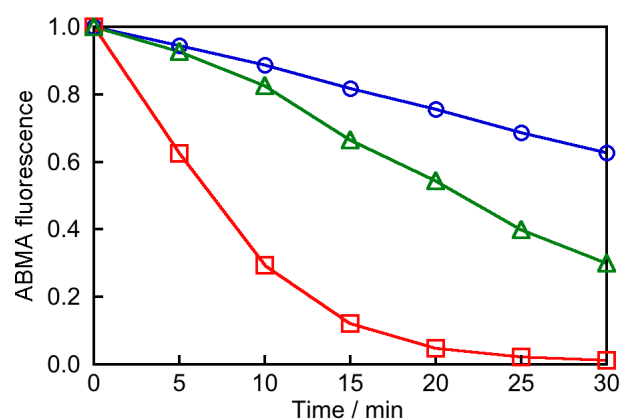


Figure S5. Normalized fluorescence intensity of ABMA ($1.6 \mu\text{M}$) at 407 nm for AO^+ irradiated in the absence of $\text{CB}[n]$ (blue circles), in the presence of $\text{CB}[7]$ (red squares) and in the presence of $\text{CB}[8]$ (green triangles). Experimental conditions: $[\text{AO}^+] = 5 \mu\text{M}$, $[\text{CB}[7]] = 50 \mu\text{M}$, $[\text{CB}[8]] = 35 \mu\text{M}$, $\text{pH} = 7.0$. The samples were irradiated at 25°C and were kept under constant stirring. The emission spectra were recorded every 5 min.

4. HSA photo-oxidation mediated by MB^+ in D_2O

Photo-oxidation of HSA mediated by MB^+ in the presence and in the absence of $\text{CB}[7]$ in D_2O are shown in figure S4.

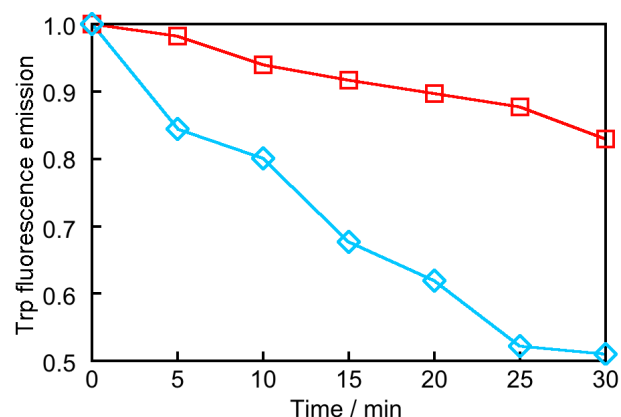


Figure S4. Normalized fluorescence intensity for the photo-oxidation of HSA mediated by MB^+ (red squares) in the presence of $\text{CB}[7]$ (cyan squares) in D_2O irradiated at 659 nm. Experimental conditions: $[\text{MB}^+] = 10 \mu\text{M}$, $[\text{CB}[7]] = 50 \mu\text{M}$, $[\text{HSA}] = 25 \mu\text{M}$, $\text{pH} = 7.0$. The samples were irradiated at 25°C and were kept under constant stirring. The emission spectra were recorded every 5 min.

5. Effect of $\text{CB}[n]$ in the generation of singlet oxygen mediated by AO^+

The results obtained for the effect of $\text{CB}[n]$ encapsulation in the generation of singlet oxygen mediated by AO^+ using the decrease in the fluorescence of ABMA are shown in figure S5.