



1 Suppressing Effect of 2-Nitrobenzaldehyde on 2 Singlet Oxygen Generation, Fatty Acid 3 Photooxidation, and Dye-Sensitizer Degradation

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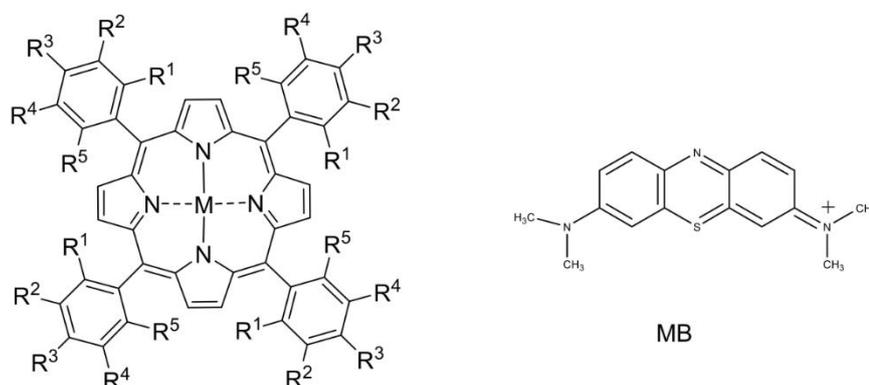
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H₂TTP: R¹=R²=R⁴=R⁵=H, R³=Me, "M=H, H"

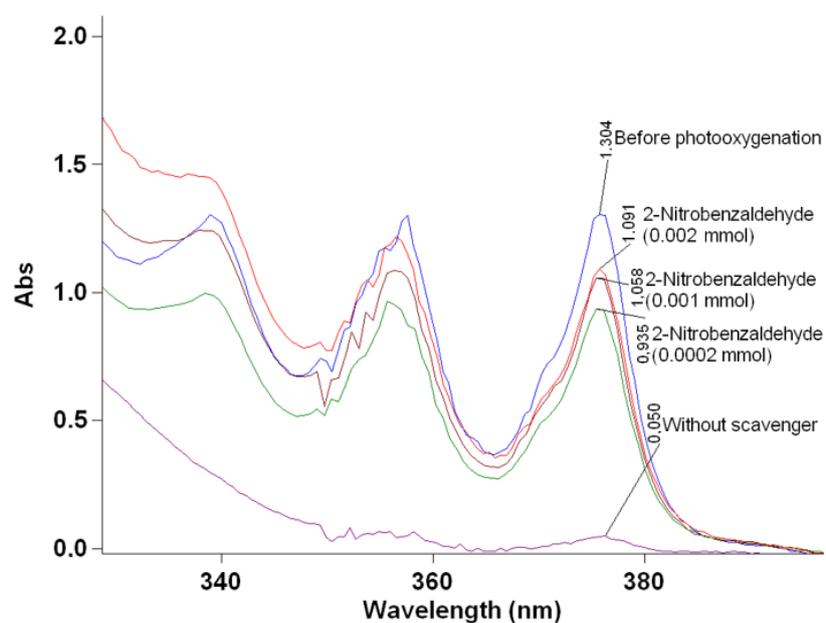
ClFeTTP: R¹=R²=R⁴=R⁵=H, R³=Me, "M=FeCl"

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Figure S1. Structures of the phenothiazine dye methylene blue (MB), as well as the *meso*-tetrakis(tolyl)porphyrin derivatives H₂(TTP) and (TTP)FeCl applied as photosensitizers.



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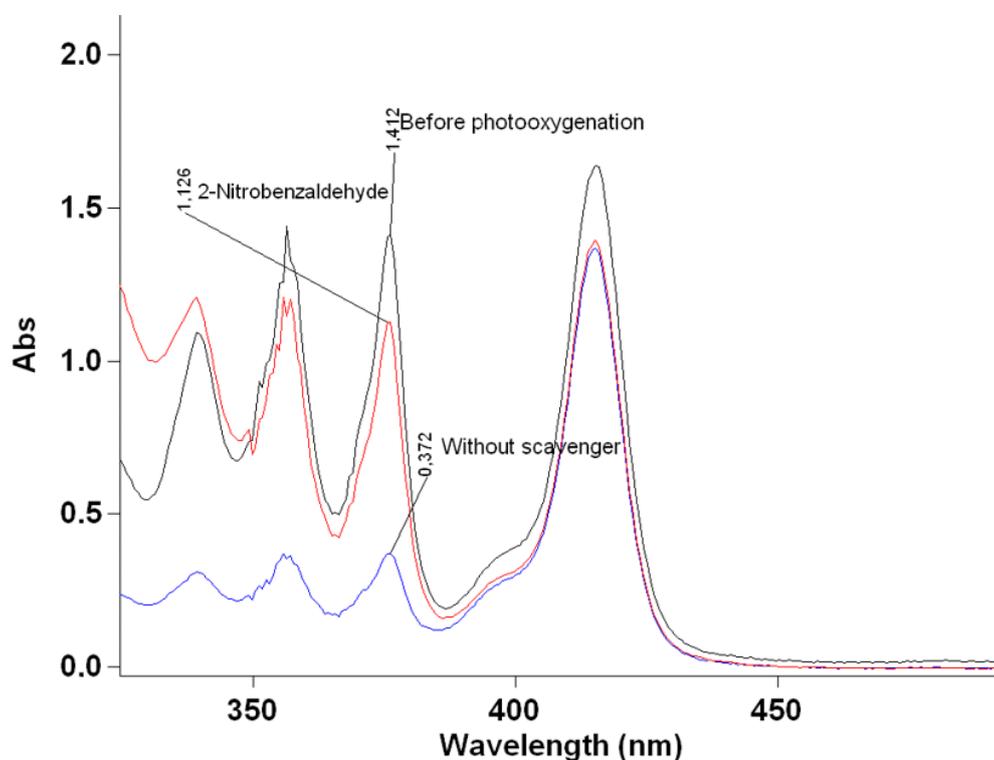
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Figure S2. UV-vis spectra revealing the degree of anthracene photooxygenation by singlet oxygen (analyzed at $\lambda_{\max} = 375$ nm) in the presence of different concentrations of 2-nitrobenzaldehyde and MB as a photosensitizer after 45 min of visible-light irradiation using a combination of fluorescent lamps (maximum output at 419 nm and 575 nm).



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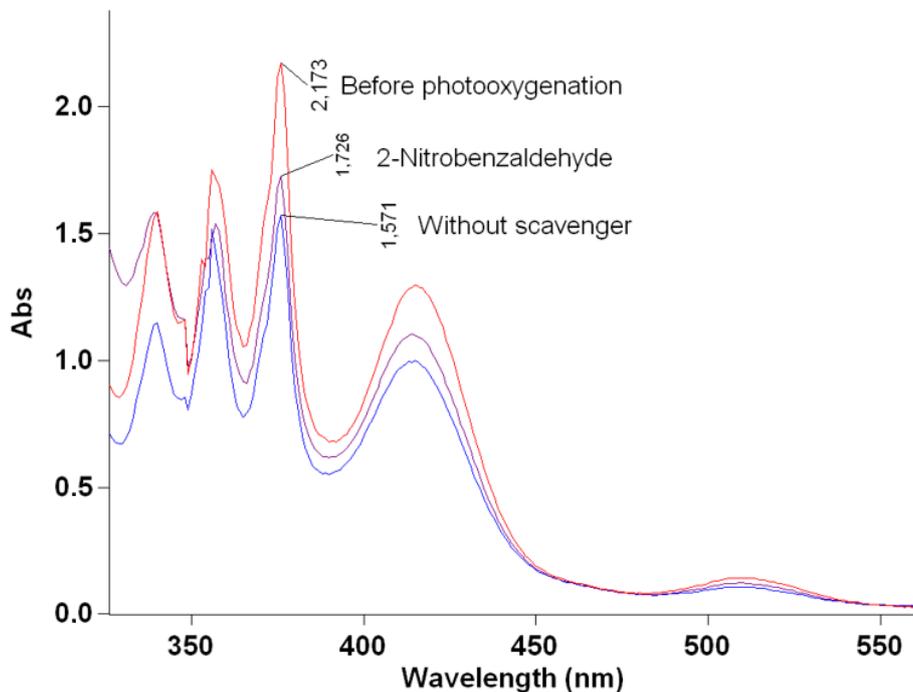
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Figure S3. UV-vis spectra comparing the degree of anthracene photooxygenation by singlet oxygen (analyzed at $\lambda_{\max} = 375$ nm) with $H_2(TTP)$ acting as a photosensitizer in the absence and presence of 2-nitrobenzaldehyde. Conditions: 45 min of visible-light irradiation using a combination of fluorescent lamps (maximum output at 419 nm and 575 nm).



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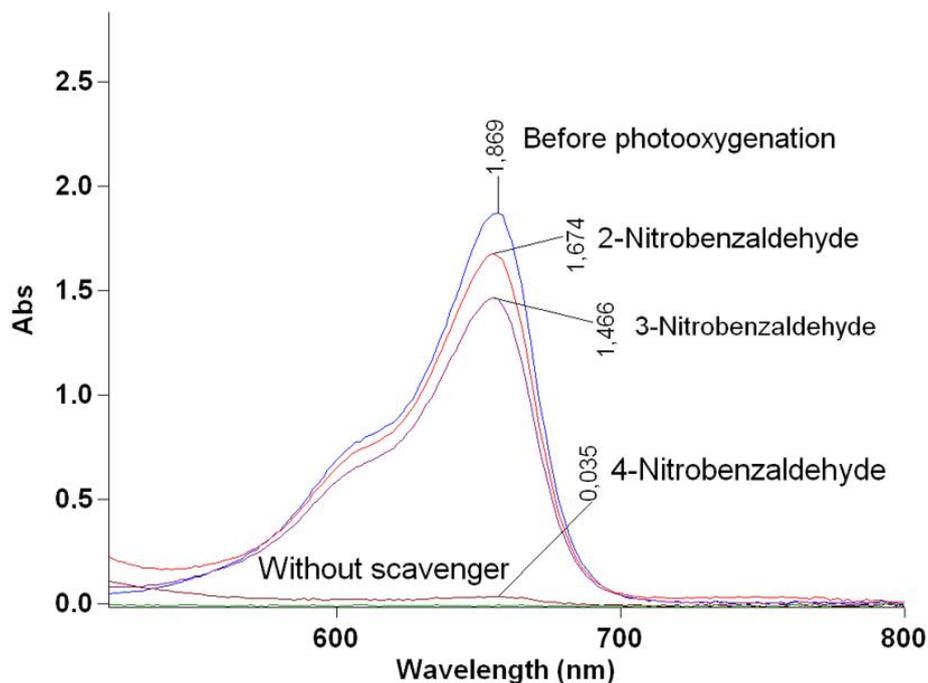
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Figure S4. UV-Vis spectra comparing the degree of anthracene photooxygenation by singlet oxygen (analyzed at $\lambda_{\text{max}} = 375 \text{ nm}$) with (TTP)FeCl as a photosensitizer in the absence and presence of 2-nitrobenzaldehyde. Conditions: 45 min of visible-light irradiation using a combination of fluorescent lamps (maximum output at 419 nm and 575 nm).



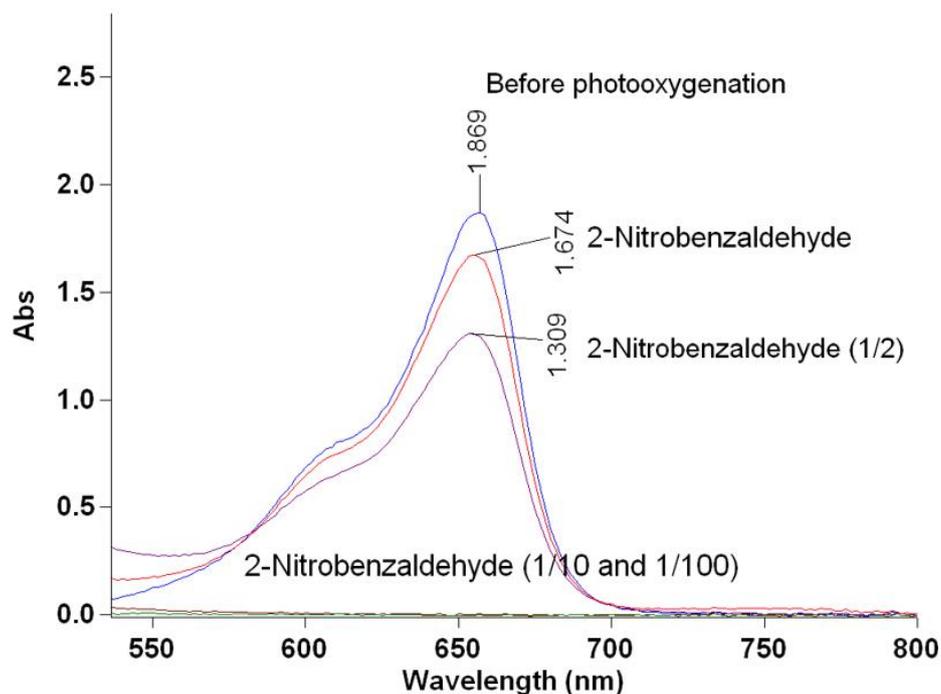
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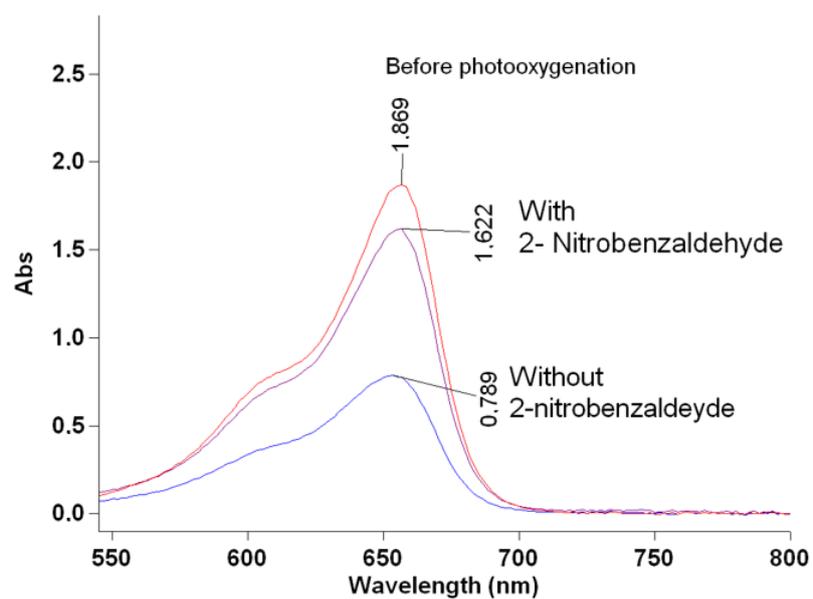
Figure S5. UV-Vis spectra showing the photodegradation of MB ($\lambda_{\text{max}} = 655 \text{ nm}$) in the presence of different nitrobenzaldehyde derivatives (1 mmol) after 24 h of UV-light irradiation with 300 nm fluorescent lamps.



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39 **Figure S6.** UV-Vis spectra showing the photodegradation of MB ($\lambda_{\max} = 655 \text{ nm}$) in the presence of
 40 different concentrations of 2-nitrobenzaldehyde (1.0 mmol, 0.5 mmol) after 24 h of UV-light
 irradiation with 300 nm fluorescent lamps.



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Figure S7. UV-Vis spectra showing the photodegradation of MB ($\lambda_{\max} = 655 \text{ nm}$) in the presence and
 in the absence of 2-nitrobenzaldehyde after 24 h of irradiation with 419 nm fluorescent lamps.

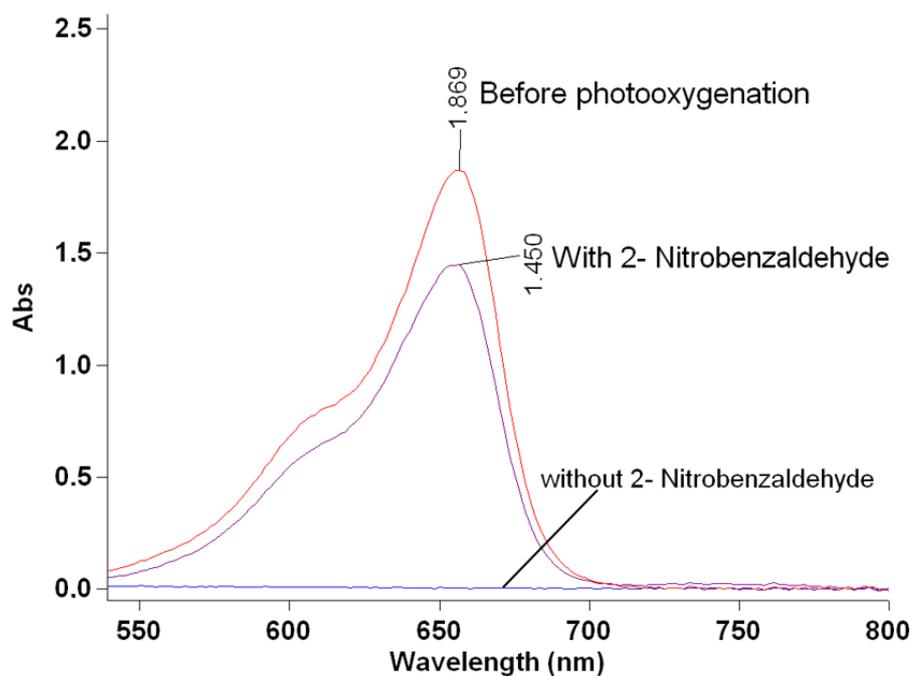


Figure S8. UV-Vis spectra showing the photodegradation of MB ($\lambda_{max} = 655 \text{ nm}$) in the presence and in the absence of 2-nitrobenzaldehyde after 24 h of irradiation with 575 nm fluorescent lamps.



Figure S9. Photochemical reactor applied for the present study (<https://rayonet.org/reactors.php?part=RPR-100>).