

P95- Photophysical Characterization of Phenalenone Derivatives

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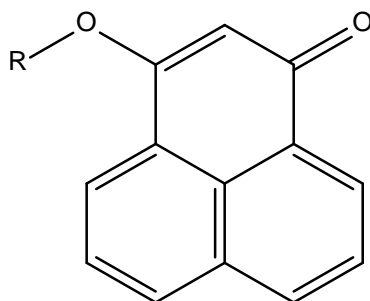
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Phenalenone has been studied extensively due to its behavior and because it can be used on interesting applications from the scientific and technological point of view. We are interested in obtaining and characterizing phenalenone derivatives able to interact with specific targets, like lectins, and generate singlet oxygen promoting damage at specific selected locations. The presence of substituents on the molecule rearranges the molecular electronic states changing its photophysical behavior. To rationalize the effect of the presence of substituents in position 3 of the phenalenone ring, we prepared and studied the derivatives shown.



R= H

Et

(CH₂)₆OH

(CH₂)₉OH

(CH₂)₆OMannoside

(CH₂)₉OMannoside

When compared with phenalenone, the capability of the different compounds to generate singlet oxygen is reduced, for example, in acetonitrile 3-hydroxy-phenalenone has Φ_{Δ} equal to 0.8, while for all other derivatives the quantum yield is lowered to 0.6. Additionally, singlet oxygen quenching is observed. All derivatives showed a low emission quantum yields, for 3-hydroxy-phenalenone a dual emission was observed, which can be related to the equilibria between diketo and enol tautomers, which is not observed for the other compounds.

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