

EFFECT OF THE METALS AND THE NUMBER AND POSITION OF THE SUBSTITUENTS ON THE PHOTO-PHYSICO-CHEMICAL AND PHOTODYNAMIC THERAPY ACTIVITIES OF PHTHALOCYANINES

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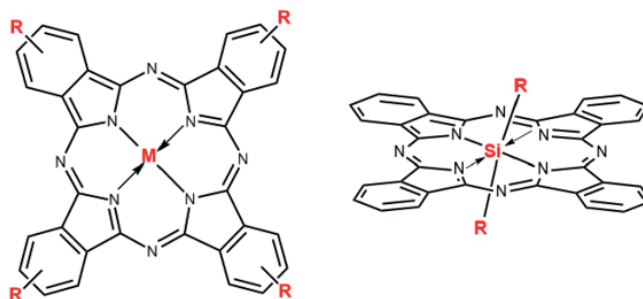
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Phthalocyanines (Pcs) as aromatic heterocycles have become commercially and technologically important materials. Their remarkable features such as optical, spectroscopic and electronic enable them to be used as important functional materials in many fields.¹

Phthalocyanine compounds are especially investigated as a photosensitizer (PS) in photodynamic therapy (PDT). PDT is a treatment method involving light, a chemical substance (a photosensitizer) and oxygen.² The process known as type II pathway is based on the generation of highly reactive singlet oxygen (¹O₂) which is generally considered to be the primary species responsible for PDT effects. Pcs, belonging to the second generation PSs, have many advantages in PDT applications as a result of their long absorption wavelength maxima and high extinction coefficients.³

The chemical properties of the Pcs could be readily modified through the introduction of metals and substituents and the position of substituents as axial, peripheral and non-peripheral on Pc ring.

Therefore, the PDT activity of a series of new synthesized Pcs carrying substituents at the peripheral position and axial position as well as the photo-physicochemical properties were investigated to determine the effect of the metals and substituent position.



References

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3. Bonnett R. Chemical aspects of photodynamic therapy. Gordon and Breach Science, 2000.