

Porphycene-mediated photooxidation of benzylamines by visible light.

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Streszczenie

A variety of primary and secondary benzylic amines were oxidized efficiently to *N*-benzylidenebenzylamines and imines, respectively, using 2,7,12,17-tetrapropylporphycene (H₂TPrPc) photocatalyst and blue light emitting diodes (LEDs). The photooxidation of 4-methoxybenzylamine in the presence of H₂TPrPc and its tin(IV) complex Sn(TPrPc)Cl₂ was studied in detail in order to show that operating mechanisms can be different depending on the photosensitizer type. Two experiments involving solvent deuterium isotope effect and competitive quenching with DABCO provide evidence for the singlet oxygen mechanism as the major pathway in the H₂TPrPc-catalyzed reaction and the predominance of the direct electron transfer from the photoexcited dye to the amine when the Sn(TPrPc)Cl₂ complex was used as a photocatalyst.

Adres publiczny

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