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Evaluation of the photophysicochemical properties and photodynamic therapy activity of nanoconjugates of zinc phthalocyanine linked to glutathione capped Au and Au3Ag1 nanoparticles

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ABSTRACT:

We report on the synthesis of glutathione capped gold (AuNPs–GSH) and gold–silver (Au3Ag1NPs–GSH) nanoparticles and their covalent attachment to Zn monocarboxyphenoxy phthalocyanine (1) via amide bond formation. The photophysicochemical properties and photodynamic therapy (PDT) activity of the complex and its nanoconjugates were assessed. The conjugates afforded improved triplet and singlet oxygen quantum yield as well as PDT activity (except for 1-Au3Ag1NPs which afforded decreased activity) in comparison to complex 1.