GLYCOCONJUGATED AB$_3$-SECO-PORPHYRAZINES AS POTENTIAL PHOTOSENSITIZERS IN PHOTODYNAMIC THERAPY

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Over the last two decades, photodynamic therapy (PDT) became an important alternative to standard of care methods in cancer treatment [1]. Though there are several photosensitizers (PS) already available, the research on new PS with improved photophysical and biological properties is mandatory.

Herein we present the synthesis of new seco-porphyrines (secoPz) A where the two amide moieties are trapped in a eleven membered ring. Our approach to new 3rd generation photosensitizers is to oxidize AB$_3$-type aminoporphyrines (Pz) in order to preempt autoxidation by singlet oxygen during quantum yield measurements and to improve the amine nitrogen’s fluorescence quenching characteristics of the latter [2]. To enhance cellular uptake and water solubility carbohydrate moieties are attached to the secoPz via 1,2,3-triazoles (B and C). This postmodification allows the use of carbohydrates with various protecting groups and the exchange of the central metal ion from Mg$^{2+}$ to more stable and suitable metals like Zn$^{2+}$.