

Synthesis, Characterization, Antioxidant and Anti-inflammatory Studies of Modern Synthetic Tetra Phenyl Porphyrin Derivatives

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Abstract : Embarking on the frontier of molecular advancement, this study focuses on the synthesis and characterization of a distinct class of porphyrin derivatives—specifically, the 5, 10, 15, 20-tetrakis (3-bromopropoxyphenyl) porphyrins. Through meticulous synthetic methodologies, these derivatives are crafted, strategically incorporating bromopropoxyphenyl moieties at distinct positions within the porphyrin framework. This research aims to unravel the structural intricacies and explore the potential applications of these compounds through a detailed characterization utilizing advanced analytical techniques. 5, 10, 15, 20, tetrakis (4-hydroxyphenyl) porphyrin was synthesized by treating pyrrole and p- hydroxylbenzaldehyde. 5, 10, 15, 20, tetrakis-(4-hydroxyphenyl) was converted into 5, 10, 15, 20, tetrakis (4-bromoalkoxyphenyl) porphyrin. 5,10,15, 20-Tetrakis -(4-bromoalkoxyphenyl) porphyrin was treated with Isopropyl phenol, para-Aminophenol, hydroquinone, 2-Naphthol, 1-Naphthol and Hydroquinone and different derivatives of ether-linked were obtained. The synthesized compounds were analyzed using contemporary spectroscopic techniques like UV-Vis, NMR and Mass spectrometry. The synthesized compounds were also tested for their biological activities like antioxidants and anti-inflammatory.

Keywords : tetraphenyl porphyrin, NMR, antioxidant, anti-inflammatory

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