SYNTHESIS AND CHARACTERIZATION BY MASS SPECTROMETRY OF PORPHYRIN AMINO ACID DERIVATIVES


Department of Chemistry, University of Aveiro, 3810-193 Aveiro, Portugal

Porphyrin derivatives are well known compounds with potentialities to be used as catalysts, new electronic material, sensors and drugs [1]. In the medicinal field, formulations based on this type of compounds are already being applied in the photodiagnosis (PD) and in the photodynamic therapy (PDT) of cancer and other diseases [2,3]. These applications require porphyrins adequately substituted. In particular, porphyrins coupled to amino acids have been reported to have promising features for the medicinal area. These porphyrins are able to intercalate DNA sequences with higher specificity and to enhance the cellular uptake in tumors; recent studies involving meso-substituted porphyrin-poly-S-lysine conjugates have revealed that they are efficient in the photoinactivation of antibiotic resistant Gram-positive and Gram-negative bacteria [4].

It is known that mass spectrometry can give significant structural information about porphyrinic derivatives and the fragmentation patterns observed in MS/MS spectra allow to identify the structural features of the peripheral substituents.

In this communication we will describe the synthesis and the structural characterization, by Electrospray Tandem Mass Spectrometry, of new porphyrin-amino acid derivatives.

\[ \text{Acknowledgements:} \]

Thanks are due to “Fundação para a Ciência e a Tecnologia, FCT/FEDER” and to the University of Aveiro for funding this work. J. P. C. Tomé also thanks FCT for a postdoctoral grant.