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## Eco-friendly features in long-chain studies for pharmaceutical tetrapyrrolic formulation targeting efficient drug delivery

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**P**orphyrinic compounds represent the main class of tetrapyrrolic structures which play an important role in photodiagnosis and photodynamic therapy of malignant tumors. Therefore, the synthesis, investigation spectral properties and *in vitro* evaluation at the cellular level of such structures are of current interest in medicinal chemistry. Despite the complete absence of toxicity related to the porphyrinic compounds themselves, almost all stages involve classical synthesis and most of the analytical evaluation stages involve high toxicity. Unconventional microwave synthesis proved to be in this case the main factor in reducing the number of side products and toxic solvents usually used in the classical obtaining process for acetoxy and methoxy periphery A<sub>3</sub>B porphyrin type structures. Also, the evaluation by AFM microscopy for important features, such as aggregation capacity or interaction with other structures involved in pharmaceutical formulation (e.g. polyethylene glycol or several nanoparticles) prove to be an efficient eco-friendly tool for evaluation of such nano-systems.

## **Biography**

Radu Socoteanu has completed his PhD in Medicinal Chemistry and his thesis was on structure, properties and applications of some porphyrinic compounds. He is a Senior Researcher in the Molecular Structure Department of the Physical Chemistry Institute under the Romanian Academy, Bucharest. He is specialized in the field of tetrapyrrolic type compounds unconventional synthesis, related analytical and physical chemistry and various techniques from optical spectroscopy to NMR. He has over 35 ISI articles, eight patents and two book chapters. He is the Director, Partner, Co-director or Member in 22 national and international projects (NATO, MNT-Era-Net, MEC-MCT, CNCSIS etc.).

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