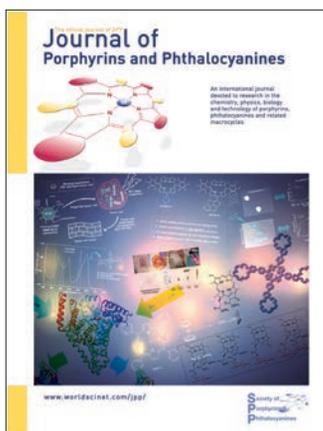


About the Cover



The cover shows a montage of the science presented in the current issue.

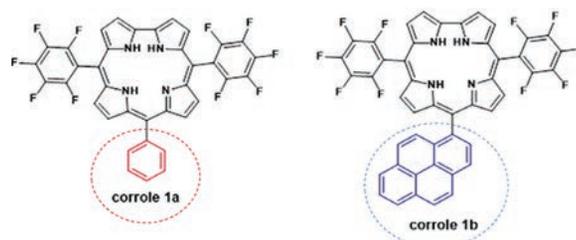
Articles

pp. 75–94

Fluorescent pyrene moiety in fluorinated C₆F₅-corroles increases the interaction with HSA and CT-DNA

Thiago V. Acunha, Otávio A. Chaves* and Bernardo A. Iglesias*

Fluorinated corroles were biologically evaluated regarding their binding affinity to human serum albumin (HSA) and calf-thymus DNA (CT-DNA) *via* multiple spectroscopic techniques combined with molecular docking calculations. Corroles 1a and 1b interacted spontaneously and moderately *via* the static process with HSA, however, corrole 1b could easily be released in the human bloodstream ($K_a \sim 103 \text{ M}^{-1}$ at 310 K). For CT-DNA analysis, the corroles interacted spontaneously by non-classical modes in the minor groove, corroborating molecular docking results. Overall, the pyrene moiety increased interactions with both HSA and CT-DNA, likely due to pyrene planarity.



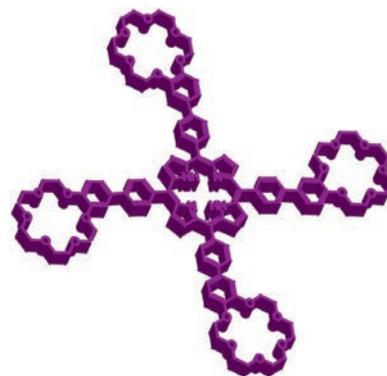
- Static binding HSA and corrole interactions;
- Higher perturbation in the albumin structure;
- CT-DNA binding assays by non-classical modes;
- Minor groove as the main binding site in DNA;

pp. 95–101

Synthesis and characterization of a porphyrin-crown ether conjugate as a potential intermediate for drug delivery application

Maher Fathalla*

A new porphyrin appended with four 18-crown-6 (18C6) ether moieties was constructed *via* the Suzuki-Miyaura coupling reaction and applied as a snap-top nanocarrier through harnessing the non-covalent interactions between the four 18C6 ring and ammonium cations immobilized mesoporous silica nanoparticles. The release of the cargo molecules was achieved by using both KPF6 and triethylamine stimuli.

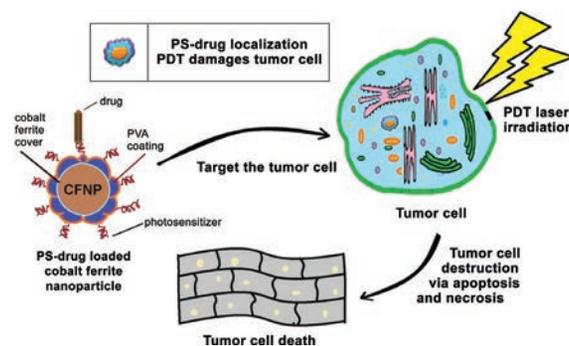


pp. 102–119

The application of aluminium phthalocyanine AIPs-4-mediated photodynamic therapy against human soft tissue sarcoma (RMS) cell line

Muhammad Zakir, Ahmat Khurshid, Muhammad Iqbal Khan, Asma Khattak and Murad Ali Khan*

The iron oxide nanoparticles (IONPs) and cobalt ferrite (CF) NPs were synthesized and coated with polyvinyl alcohol (PVA). The photodynamic effect of the photosensitizer, doxorubicin and dacarbazine loaded nanomaterials were screened against human rhabdomyosarcoma (RMS). The combination of photodynamic therapy (PDT) with chemo drugs is studied over different doses. When RMS cells were exposed to nanomaterials loaded with chemo drugs and PDT alone, it resulted in less cell destruction as compared to chemo drugs followed by PDT.

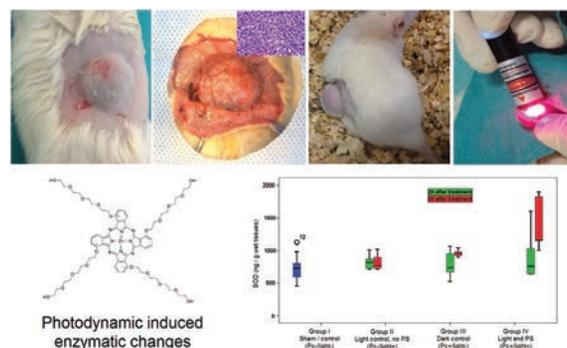


pp. 120–127

In vivo phototoxic effects of a tetraethyleneglycol-substituted Zn phthalocyanine in tumor bearing rats at an enzymatic level

Muhammed Raşid Aykota, Sevda Yılmaz, Halil Erbiş, Nilgün Kabay, Sinem Tuncel Kostakoğlu, Vefa Ahsen, Fabienne Dumoulin*, Çiğdem Yenisey and Burhan Kabay*

A study of the enzymatic changes following the photodynamic treatment on CCL-18-tumor implanted Wistar albino rats.

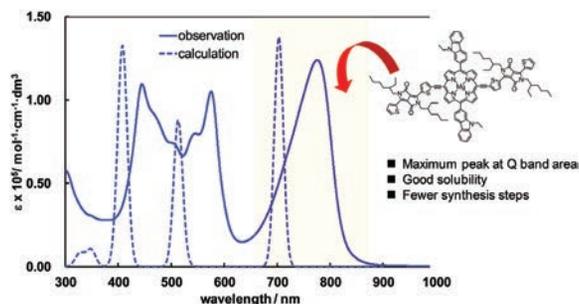


pp. 128–134

Magnesium diethynylporphyrin derivatives with strong near-infrared absorption for solution-process bulk heterojunction organic solar cells

Keisuke Ogumi, Takafumi Nakagawa, Masahiro Nakano and Yutaka Matsuo*

Novel magnesium diethynylporphyrin derivatives synthesized with electron rich units. These units influenced photophysical properties creating strong near-infrared absorption due to the intramolecular charge transfer. Diethynylporphyrin structure improved the solubility due to the inhibition of intermolecular interaction. The optimized device using magnesium diethynyl porphyrin derivative gave a PCE of 2.91%.

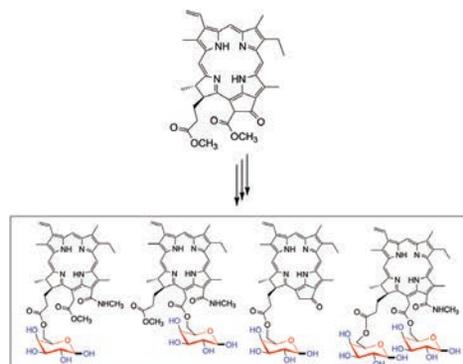


pp. 135–144

Novel chlorophyll a derivatives with ester-linked galactose fragments for photodynamic therapy and fluorescence diagnostics of cancer

Marina V. Mal'shakova*, Ilya O. Velegzhaninov, Elena E. Rasova and Dmitry V. Belykh

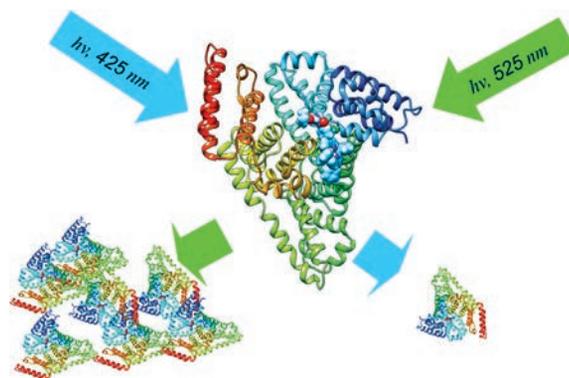
A number of chlorophyll a derivatives with galactose fragments with an ester bond between macrocycle and carbohydrate fragments were synthesized. All conjugates had comparable photoinduced toxicities and the conjugate with phorbino macrocycle fragment had a much lower dark toxicity.



pp. 145–152**Aggregation of protein complexes with porphyrins under light irradiation**

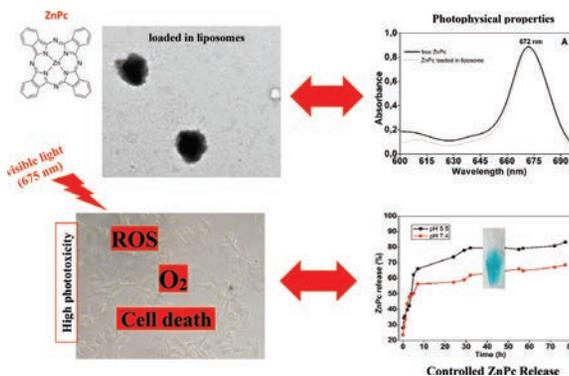
Natalia Sh. Lebedeva, Elena S. Yurina, Yury A. Gubarev*, Sergey A. Syrbu and Oskar I. Koifman

The interaction of *meso*-tetra-(*N*-methyl-3-pyridyl)bacteriochlorin tetra 4-methylbenzenesulfonate, *meso*-tetra-(*N*-methyl-4-pyridyl)porphine tetraiodide and *meso*-tetra-(*N*-methyl-3-pyridyl)porphine tetraiodide with protein was studied. Irradiation of complexes of bacteriochlorin and porphyrins with a protein with blue and green light can affect the shift in the aggregation equilibrium, obtaining predominantly monomeric or aggregated protein structures.

**pp. 153–161*****In vitro* phototoxicity of zinc phthalocyanine (ZnPc) loaded in liposomes against human breast cancer cells**

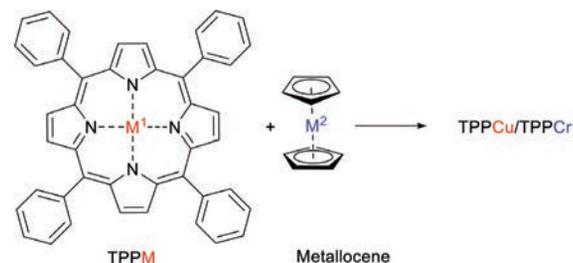
Paulo Emilio Feuser*, Jonathann Corrêa Possato, Rahisa Scussel, Rodrigo Cercena, Pedro Henrique Hermes de Araújo, Ricardo Andrez Machado-de-Ávila and Alexandre Gonçalves Dal Bó

Liposomes are efficient carriers for delivering photosensitizer agents, such as zinc phthalocyanine to a drug target cell with controlled release, providing a significant tumor regression when exposed to low light dose.

**pp. 162–167****Towards self-doping multimetal porphyrin systems**

Udo Lehmann, Richard Goddard, Ralf Tonner and Manfred T. Reetz*

First experiments and exploratory DFT calculations on hypothetical cationic TPPCu/TPPRu indicate the feasibility of self-doping in multimetal porphyrin systems.

**pp. 168–172****Sodium 3-mercaptopropanesulphonate substituted phthalocyanine: Synthesis, photophysical properties, *in vitro* and *in vivo* PDT efficacy**

Mack Biyiklioglu

This article has been retracted

pp. 173–177**Pi-stacking interaction perphenazine modified zinc(II) phthalocyanine nanoparticles for photothermal and photodynamic therapy**

Mack Biyiklioglu

This article has been retracted

Retraction Notices

p. 178

Retraction of “Sodium 3-mercaptopropanesulphonate substituted phthalocyanine: Synthesis, photo-physical properties, *in vitro* and *in vivo* PDT efficacy” by Mack Biyiklioglu, *Journal of Porphyrins and Phthalocyanines*, doi: 10.1142/S108842462050042X

Karl M. Kadish

p. 179

Retraction of “Pi-stacking interaction perphenazine modified zinc(II) phthalocyanine nanoparticles for photothermal and photodynamic therapy” by Mack Biyiklioglu, *Journal of Porphyrins and Phthalocyanines*, doi: 10.1142/S1088424620500480

Karl M. Kadish
