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Photothermal Agents in Therapy

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Message from the Guest Editors

Dear Colleagues,

Thermal treatments are based on driving the normal temperature of the body (or part of it) at higher values in a controlled manner. Controlled temperature increments have a positive effect on patients with an ongoing disease, such as cancer. Thermal treatments include two techniques, namely hyperthermia and thermal ablation. The difference between these is the threshold of temperature: in hyperthermia, the temperature rises to 42 °C, while in thermal ablation, the temperature exceeds 42 °C. Thermal ablation is the basis of photothermal therapy (PTT). For this therapy, it is necessary to induce a temperature increase in the tumor, while keeping the temperature of the surrounding tissue at a normal level. To increase the efficacy and selectivity of photothermal ablation, it is necessary to introduce substances into the tumor to convert the absorbed light into heat. Such substances are called photothermal agents (PA). To date, a vast array of nanoparticles capable of efficient heat generation under illumination with laser radiation have been developed.

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Guest Editors



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Message from the Editor-in-Chief

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