

DEAR READERS!

Biophotonics is a promising multidisciplinary approach in science that combines the studies of living systems with the use of light. This approach includes the bioimaging technologies and the modern therapeutic methods.

Innovative bioimaging techniques, such as fluorescence imaging at various levels of living system organization, from super-resolution microscopy to whole-body imaging, and optical methods based on light absorption and scattering in biological tissues, are actively used for biomedical research. On the one hand, they allow to discover new fundamental mechanisms of physiological and pathological processes, and, on the other hand, they displace the routine methods of preclinical research, in particular, in the case of developing novel antitumor drugs.

This special issue named “Biophotonics in the field of cancer research and regenerative medicine” collects the articles after the international symposium “Topical Problems of Biophotonics 2017”.

In this issue, two most promising areas of the application of biophotonics: cancer research and regenerative medicine, are presented.

The overcoming of cancer diseases is recognized as one of the main directions in modern medicine both in Russia and in the foreign countries. The main goal is to study the characteristics of tumor and to destroy cancer cells without damaging normal tissues. Biophotonics offers the completely new approaches to solve this problem, which are reflected in the 7 articles of the first section.

The creation of new cellular products and tissue engineering constructs opens a new era in the replacement of organs and tissues based on the artificial systems obtained from the patient’s cells. Technologies for the synthesis of matrices using lasers, as well as the innovative bioimaging methods, that are necessary for the development of cellular products, are shown in the 6 articles of the second section of the special issue.

We thank the authors for their advanced research and high-quality papers and sincerely hope that readers of the journal “Modern Technologies in Medicine” will be pleasantly surprised by the variety of prospects for using biophotonics. The wide geography of the authors of this special issue underlines the international scientific interest in this area.

Sincerely,

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