Special Issue

Cancer Photodiagnosis and Photodynamic Therapy

Message from the Guest Editor

A successful cancer treatment hinges on accurate diagnosis, precise tumor resection and targeted therapy with minimum normal tissue toxicity. Used in combination with non-ionizing radiation, photodiagnostic probes and photosensitizers with little dark toxicity are being developed to improve cancer treatment outcomes. Three fluorescent probes including methylene blue, fluorescein and indocyanine green have been used in the clinic for over half a century. Two most recent FDA-approved intraoperative probes are 5-aminolevulinic acid and pafolacianine. They make tumors visible to surgeons, thereby enabling fluorescence image-guided tumor resection, by revealing tumor-associated metabolic alterations. It is the combination of photoactive drug development and the engineering of companion optical devices that makes cancer photodiagnosis and photodynamic therapy a clinical success. This Special Issue of Bioengineering is to celebrate the success of this multidisciplinary research and development, tackle current issues in the field, and foresee future developments to expand its application in oncology.

Guest Editor

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Editor-in-Chief

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