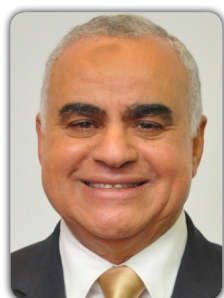


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Oncological applications of photodynamic diagnosis and therapy

Although photodynamic diagnosis (PDD) and therapy (PDT) are now more than hundreds of years old and nowadays there exists well defined diagnostic and treatment protocols approved by FDA for clinical use, PDT still deserves to receive more attention from physicians to expand its application. PDD and PDT depend on the interaction of three harmless components; namely a light source, a photosensitizer (PS) and molecular oxygen. When light of a specific wavelength is absorbed by the PS, fluorescence emission is induced which is the basis for PDD. When the energy is transferred to tissues oxygen, toxic reactive oxygen species (ROS) are generated which lead to irreversible cellular damage causing cell death and tumor destruction. This technique possesses numerous advantages such as targeting as PS is selectively taken up and retained by tumor cells, lack of resistance upon repetitive applications and importantly the ability to use them in combination with standard cancer treatment approaches. In this presentation, an overview of PDT fundamentals along with its clinical implications for different types of cancer will be illustrated. In addition, the successful field applications of PDT in control of malaria vector and other parasites will be briefly discussed.

Biography

Mahmoud H Abdel Kader is a Professor of Photochemistry at Cairo University and currently the President of German University in Cairo. He has received his PhD at Stuttgart University, 1979. He has published over 100 publications in peer reviewed journals and in conference proceedings. He is an Inventor of 9 patents. He was awarded the distinguished State Prize in Chemistry, 1996 as well as the State Medal in Chemistry, 1998. He was awarded the 2012 Excellence Award of Science from Cairo University. He was awarded the State Award Discretion in Advanced Technological Sciences, 2014.

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