Abstract

Photodynamic therapy (PDT), which uses a light-sensitive drug or photosensitizer to produce reactive oxygen that then kills nearby cells, has emerged as one of the important therapeutic options in management of cancer and other diseases. Nanomaterials such as semiconductor quantum dots and nanoparticles composed of metals, lipids or polymers offer great promise in cancer targeting applications. Furthermore, nanoparticle photosensitizer materials can alter the poor water solubility and inadequate selectivity of traditional organic photosensitizers. The side effects of this therapeutic method are reduced by novel luminescence effects of special kind of nanoparticles as a nano source of light. Although several challenges remain before they can be adopted for clinical use, these active PDT nanoparticles probably offer the best hope for extending the reach of PDT to regions deep in the body. In this paper the development of nanoparticle photosensitizers, the photodynamic therapy based on nanoparticles with luminescence effect and application of nano carriers for photodynamic therapy agents are reviewed.

Author did not supply full text of the paper/poster