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Impact of Delivery Vehicles in tumor-specificity, imaging and therapy of multifunctional agents

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The poor water solubility of most of the porphyrin-based photosensitizers (PS) causes significant problems in clinical development, and the choice of a suitable formulation with limited toxicity is an important step in drug development. In recent years, a wide variety of formulating systems such as Tween 60, cremophor, liposomes, microcapsules, microspheres, nanoparticles, nanocrystals and polymers are being explored. However, reproducibility, biocompatibility, premature degradation

or inactivation within the systemic circulation and toxicity at higher doses are the problems associated with some of these formulations. Therefore, it becomes necessary to investigate the toxicity (including organ toxicity) of these formulating agent(s) before their use in drug formulation. We have shown that the nature of delivery vehicles makes a significant difference in tumor-uptake and biological efficacy. The limitations and advantages of certain vehicles in developing multifunctional agents will be presented.

Biography

Ravindra K Pandey is a Distinguished Member, Professor of Oncology and Director of Pharmaceutical Chemistry at Roswell Park Cancer Institute, Buffalo, NY, with extensive experience in drug design, drug delivery, molecular recognition, and tumor diagnostics. He has received several WNY inventor of the year awards, international award on heterocyclic chemistry, excellence in PDT award by ICPP, the American Chemical Society's Jacob Schoelkopf award and China 1000 Talent Scientists Award for his contribution in translational research. Dr. Pandey is the Founder and Chief Scientific Officer (CSO) of Photolitec, LLC, a spin-off company of Roswell Park Cancer Institute. He has published around 300 research papers, review articles, book chapters, a book on cancer-imaging/therapy and holds several patents.

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