Highlights in applications of nanotechnology in radiation research

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Translational Cancer Research (Transl Cancer Res; TCR; Print ISSN: 2218-676X; Online ISSN 2219-6803; www.thetcr.org) launched in August 2013 a special issue on Applications of Nanotechnology in Radiation Research inviting Prof. Rao V.L. Papineni from University of Kansas Medical Center, Pataje G.S. Prasanna from National Cancer Institute and Mansoor M. Ahmed, National Cancer Institute to serve as the Guest Editors.

This special issue is a compendium of critical reviews and commentaries in this multi-disciplinary field and provides a forum to learn several features of the integration of two fields between nanotechnology and radiation therapy. Leading experts from both the nanoscience and radiation oncology fields have made precise and timely effort to allow this issue to serve as a valuable reference to researchers, technologists, and clinicians with interest in nanotechnology and its application in radiation therapy.

TCR publishes novel research investigations which bridge the laboratory and clinical settings including risk assessment, cellular and molecular characterization, prevention, detection, diagnosis and treatment of human cancers with the overall goal of improving the clinical care of oncology patients. We hope the launch of this special issue on nanotechnology in radiation research will provide a valuable focused edition for targeted readers.

- Third generation gold nanoplatform optimized for radiation therapy
  Rajiv Kumar, Houari Korideck, Wilfred Ngwa, Ross I. Berbeco, G. Mike Makrigiorgos, Srinivas Sridhar; Northeastern University, Boston MA 02115, USA
- Nanoformulation enhances anti-angiogenic efficacy of tunicamycin
  Aditi Banerjee, Karen T. Johnson, Ipsita A. Banerjee, Dipak K. Banerjee; University of Puerto Rico, Medical Sciences Campus, San Juan, USA
- Convergence of nanotechnology with radiation therapy—insights and implications for clinical translation
  Dev Kumar Chatterjee, Tatiana Wolfe, Jibyoun Lee, Aaron P Brown, Pankaj Kumar Singh, Shanta Raj Bhattacharai, Parmeswaran Diagaradjane, Sunil Krishnau; The University of Texas M. D. Anderson Cancer Center, Houston, Texas 77030, USA
- Radiosensitization by gold nanoparticles: effective at megavoltage energies and potential role of oxidative stress
  Karl T. Butterworth, Stephen J. McMahon, Laura E. Taggart, Kevin M. Prise; Centre for Cancer Research & Cell Biology, Belfast, BT9 7BL, Northern Ireland, UK
- Gold nanoparticles in radiation research: potential applications for imaging and radiosensitization
  Jay F. Dorsey, Lova Sun, Daniel Y. Job, Alon Witztum, Aylan Al Zaki, Gary D. Kao, Michelle Alonso-Basanta, Stephen Avery, Andrew Tsiourkas, Stephen M. Hahn; University of Pennsylvania, Philadelphia, PA 19104, USA
- Externally modulated theranostic nanoparticles
  Cordula Urban, Alexander S. Urban, Heather Charron, Amit Joshi; Baylor College of Medicine, Houston, TX, USA
- Tumor microenvironment and nanotherapeutics
  Meenakshi Upreti, Amar Jyoti, Pallavi Sethi; University of Kentucky, Lexington, KY, 40536, USA
- Improving chemoradiotherapy with nanoparticle therapeutics
  Michael Joseph Eblan, Andrew Zhuang Wang; Lineberger...
Nanoparticles in radiation therapy: a summary of various approaches to enhance radiosensitization in cancer

Deep Kwatra, Anand Venugopal, Shrikant Anant; University of Kansas Cancer Center, University of Kansas Medical Center, Kansas City, KS 66160, USA

Harnessing cerium oxide nanoparticles to protect normal tissue from radiation damage
Cheryl H. Baker; BioCurity

Spot light on intestinal microbiota
Rao V. L. Papineni, Shabid Umar; University of Kansas Medical Center, USA

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