Theranostics as an emerging field of nanomedicine

Nanasaheb Throat
Medical Science Division, John Radcliffe Hospital
University of Oxford
Oxford, United Kingdom

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Abstract

Over the past three decades, functional nanoparticles have emerged that are capable of performing additional therapeutic modality in cancer disease management. The nanomedicine, a therapeutic branch of nanotechnology, has reached advanced clinical landscape and many nanomedicine products have been approved for cancer therapies. I will present progress update on the current clinical landscape of nanomedicine, which relies on hybrid nanostructures and nanotheranostics, and highlight advanced clinical stage development. I will (i) focus on how new generation hybrid nanostructures are designed for nanomedicine; (ii) highlight development of the next-generation of cancer nanotheranostics; (iii) present the advances in clinical progress of emerging cancer nanotheranostics.

About the presenter

Dr Nanasaheb Thorat is currently Marie Curie Fellow Researcher at the Medical Science Division, John Radcliffe Hospital, University of Oxford, United Kingdom. Previously, from 2018 to 2020, he worked as a MSCA Fellow at the Department of Biomedical Engineering, Wrocław University of Science and Technology, Poland; 2016–2018 as a Researcher at the University of Limerick, Ireland; and 2014–2015 as Senior Research Fellow at Samsung Biomedical Research Institute, South Korea. Dr Thorat received many international acclaims and awards for his research contribution, generated so far research fund in excess of more than € 750,000, supervised students/junior researchers, and actively participated in outreach and scientific dissemination for the service of the wider community. He is an author and co-author of 55 peer-reviewed journal research papers, 1 European patent application, 2 European innovations, 3 Books, 15 book chapters. He also presented 5 keynote speeches, 30 invited lectures, and 5 oral presentations at prestigious scientific peer-conferences in Singapore, France, Germany, USA, Ireland, Poland, South Korea, and India. In 2020, Dr Thorat was co-awarded the prestigious European Commission's Grand Prix of the Innovation Radar Prize. He is also the winner of prestigious fellowships including the Japanese Society for the Promotion of Science (JSPS) Fellowship in Japan (2017) and PBC-Outstanding Fellowship, Israel (2016). At the University of Oxford, he is working in the Medical Science Division jointly with the Engineering Science Division. His current research work involves designing new light-activated nanomedicine therapies and Raman imaging techniques of brain cancer in paediatric patients.