

28th International Conference on
Advanced Materials, Nanotechnology and Engineering

June 13, 2022 | Webinar

Sanyog Jain, J Material Sci Eng 2022, Volume 11

Combination drug therapy for synergistic anticancer efficacy using nano medicine approach

Sanyog Jain

NIPER, India

Cancer nanotechnology is often considered to be a vast field that comprises of multidisciplinary aspect of science, engineering and medicine. This arena of technology not only aids in detection and prevention of cancer but also helps in generating effective and personalized medicine. The primary focus shifted towards this field with the observation of anti-cancer drugs showing poor oral bioavailability and higher side effects accompanying extra therapeutic toxicity due to lack of targeting. Moreover, the damage that occurs to normal cells includes genetic material damage via elevated oxidative stress. Arena of cancer nanotechnology holds fascinating techniques to address these problems. Smart Nano carriers are able to specifically target tumor once they are into the systemic circulation. This leads to reduced side effects related to cancer chemotherapy, although the approach to co-deliver an antioxidant with the anticancer drug further improves the therapy in controlling chemotherapy related distress. This improves the overall effectiveness of therapy. The route of administration also remains an important aspect since parenteral, more preferably intravenous administration, gives absolute bioavailability and instant action, but remains to be poorly complying delivery for patients. Nanotechnology provides various techniques for improving oral bioavailability since this route of administration remains to be the most popular route for patients. Nano carriers holds answer to all these questions of targeted co-delivery of drugs through oral or other preferred routes. Thus this improvised technique provides the benefit of targeting with efficient multicomponent delivery which leads to effective cancer chemotherapy

Biography

Dr. Sanyog jain, is a professor at department of Pharmaceutics, National Institute of Pharmaceutical Education and Research, S.A.S Nagar (Mohali), India. He has been heading the Centre for Pharmaceutical Nanotechnology (CPN). He has been actively contributing in the field of Nano biotechnology and advanced drug delivery (Nano medicine). Also, he is deeply involved in developing tailor-made Nano formulations based on biodegradable polymers, lipids and carbon nanotubes for effective delivery of challenging drug and macromolecules like proteins (insulin), vaccines and DNA.

Received: May 31, 2022; **Accepted:** June 2, 2022; **Published:** June 13, 2022
