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Editor Note

Novel Nanotechnology based Approaches for Targeted Drug Delivery and Effective Therapy

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Journal of Nanomedicine and Nanotechnology publishes peer-reviewed articles in diverse fields of Nanoscience research having biological and clinical relevance. The Journal focuses on research pertaining to the synthesis and characterization of nanomaterials as well as evaluation of their potential pharmacological and therapeutic effects. In the current year, the Journal has published fourteen peer-reviewed articles elucidating the role of Nanoscience and Nanotechnology in developing biomedical and environmental applications, contributed by over 55 International authors from diverse regions of the world. This sixth issue of the current year focuses exclusively on design, development, characterization and performance optimization of nanomaterials for accurate drug delivery and enhanced therapeutic potential. Targeted drug deliver significantly enhances the drug efficiency and efficacy even with low dose and also facilitates the delivery of non-soluble drugs.

Lugasi et al. [1] have studied a novel drug delivery system for optimizing a targeted treatment method for colorectal and breast cancer. They have synthesized acidic proteinoids from amino acids that have high binding affinity to tumour cells. Since arginine, glycine aspartic acid receptors are overexpressed in tumor cells, the authors have encapsulated a therapeutic phytocannabinoid in poly RGD proteinoid nanoparticle thus overcoming poor solubility and drug bioavailability and further characterized the self assembly for their particle diameter, size distribution, drug loading, cytotoxicity, drug release, biodistribution as well as antitumor effect in a xenograft mouse model. The results have revealed that such approach is a relatively good strategy for treatment of colorectal and breast cancer.

Exon skipping by means of antisense oligomer is regarded a reliable strategy for treatment of Duchenne muscular dystrophy in the trial phase. Wang et al. [2] have recognized that enhanced and targeted delivery approach could substantially improve its therapeutic potential and thus investigated the feasibility of neutral surfactants as delivery carriers for an antisense oligomer both under in vitro condition as well as in dystrophic mdx mice. The study revealed that there was as high as seven fold enhancement in exon skipping performance over plain oligomers with no detectable toxicity under in vivo condition. The authors have emphasized on further molecular optimization for effective and safe treatment of muscular dystrophy and other similar diseases. The study is significant in developing delivery enhancers for oligonucleotides in treatment of muscular dystrophy and similar diseases. I take this opportunity to extend my sincere thanks to the editors, reviewers and advisory members for their valuable profession services in bringing out these quality publications within the stipulated time frame.

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