

Applications of Polymeric Nanomaterials

Amedeo Xu*

Department of Health Science and Technology, China

EDITORIAL

With important attention centered on nanoscience and engineering science in recent years, nanomaterials are utilized in a large kind of applications like automotive, environmental, energy, catalysis, biomedical, drug delivery, and chemical compound industries. Among those fields, the applying of nanomaterials with pharmaceutical science is associate degree rising and speedily growing field and has drawn increasing attention recently. Analysis and development during this field is especially centered on many aspects like the discoveries of novel useful nanomaterials, exploration on nanoparticles with controlled and targeted drug delivery characteristics, and investigation of bio functionalized and diagnostic nanomaterials. During this we've got invited a number of papers associated with recent advances in pharmaceutical application of chemical compound nanomaterials.

This editorial provides a comprehensive literature review on the applying of chemical compound nanoparticles in cytotoxic drug delivery particularly on temperature and pH-responsive drug delivery systems. The second paper examines properties of the PLGA-chitosan nanoparticle/plasmid deoxyribonucleic acid advanced once formation, determines the optimum quantitative relation of inclusion DNA: nanoparticles for macromolecule delivery functions, and elucidates the situation of the pDNA at

intervals the complexes. The third paper demonstrates an alternate thanks to monitor the viability of cells adhered on a nanoporous compound film ready by optical device interference patterning in real time. The fourth paper uses automatically raised polyester films to research the dynamics of cell alignment and cell-specific factors modulating the response of chinese gnawer ovary cells and of a rat myogenic cell line to the surface topography. The fifth article develops methotrexate-human albumen conjugates by a straightforward carbodiimide reaction and evaluates its toxicity. The sixth paper proposes to provide a self-microemulsifying docetaxel victimization PLGA, tetraglycol, labrasol, and cremophor ELP. The ready Dtx-loaded self-microemulsifying system shows associate degree repressing result for proliferation of B 16F 10 malignant melanoma cells. The seventh paper describes a simple production methodology of magnet microparticles with consistent associate degreed selectable sizes victimization flow focusing technology and reports the event of an initial formulation of a stable iron chemical compound suspension compatible with the flow focusing necessities. The eighth paper proposes the utilization of nanostructured materials (TiO₂ and Fe₂O₃) for at the same time coloring and/or rising the antimicrobial properties of PMMA resins. The last paper of this special issue describes a completely unique methodology comprised of microdialysis and optical imaging to assess the vesicle stability in-vivo.

*Correspondence to: Amedeo Xu, Department of Medicine, LV University, China, E-mail: amedeo.xu@gmail.com

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