Drug Designing: Open Access

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Editorial

Nano Particles as Accurate Drug Delivery

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INTRODUCTION

With exceptional and unconditional progress in the field of nanotechnology in past years, a novel drug delivery approaches which were based under arts of nanotechnology has been getting an outstanding recognition and concentration. Nanoparticles in the area of nanotechnology progressively identified as capable carriers for therapeutic agents into targeted receptors and tissues or organs or cells.

Nanoparticles by definition are the ultrafine and small particles normally called as particles of size ranging from 1-100 nanometres in diameter. These are the colloidal materials and therefore these have the ability to enter and penetrate into the cells and cell organelles. The new technologies in the development of nanoparticles might help in meeting the regular and present challenges in drug delivery.

Combination of small molecular parts of drugs with nanoparticles has been emerged now and these Nano drug carriers are expected to carry the small packed dug to release at selectively targeted tissue or cells precisely and accurately at balanced amounts. These multiple drug delivery with nanoparticle aids are designed and developed to reach and achieve therapeutic synergy that help reducing the toxicity and increasing the efficacy and potential of the drugs with less side effects and adverse effects.

CHARACTERISTICS OF NANOPARTICLES

Size of the particles that refer to many advantages like distribution, toxicity, targeting ability, and mostly importantly it can cross the Blood Brain Barriers (BBB). Surface properties of nanoparticles help in showing prominent effect on the performance of the particles in drug formulations. We can also manipulate the surface properties of nanoparticles thereby developing the new level of drugs. Drug loading and release of nanoparticles helps in optimizing the bioavailability of the drugs there by reducing the clearance rate and increasing the stability of the drugs in the patient.

APPLICATIONS OF NANOTECHNOLOGY

Nanoparticles advancements help in cancer therapy, to treat cancer patients. The main and crucial problem in cancer therapy is rise of side effects that could be vastly and remarkably reduced in the Nano drug delivery. Use of nanotechnology in the areas of diagnostic purposes has been emerging these days which help in reducing the cost for sophisticated technologies. Nanoparticles also help in the treatment of HIV and AIDS that help in reaching only to the targeted areas of tumour and increasing the therapeutic activity of the drugs [1-5].

CONCLUSION

The special issue mainly aims in publishing the novel concepts of nanoparticles that aid in drug delivery. The Journal of Drug Design: Open Access focused on releasing articles that could show the advancements in nanoparticle technology. There are numerous reasons for utilizing nanoparticles for therapeutic and diagnostic agents, as well as advancement of drug delivery, is crucial and much important. It is to be noticed that the efficacy of the drug in reaching the targeted tissue is directly linked to particle size (excluding intravenous and solution).

REFERENCES

1. Sivasankar M, Kumar BP. Role of nanoparticles in drug delivery system. Int J Res Pharm Bio Sci. 2010;1(2):41-66.
2. Doane TL, Burda C. The unique role of nanoparticles in nanomedicine: imaging, drug delivery and therapy. Chem Socie Revi. 2012;41(7):2885-911.
3. Kong FY, Zhang JW, Li RF. Unique roles of gold nanoparticles in drug delivery, targeting and imaging applications. Molecules. 2017;22(9):1445.
4. Patra HK, Dasgupta AK, Sarkar S, Biswas I, Chattopadhyay A. Dual role of nanoparticles as drug carrier and drug. Can nanotechn. 2011;2(1-6):37-47.
5. AlMatar M, Makky EA, Var I, Koksal F. The role of nanoparticles in the inhibition of multidrug-resistant bacteria and biofilms. Cur drug delivery. 2018;15(4):470-84.

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