

A study of nanotechnology in pharmacology

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We study important physiological characteristics, pharmacological mechanisms, and pathological features that have been combined into the design of nanotechnology-assisted drug delivery methods and therapies.

INTRODUCTION

Nanotechnology is an arena of research and revolution worried with building things usually, materials and devices on the scale of atoms and molecules. A nanometer is one particle of a meter ten times the diameter of a hydrogen molecule. Nanotechnology is assisting to considerably advance, even transform, many technologies and industry divisions: homeland security, information technology, medicine, energy, transportation, food safety, and environmental science, among many others [1]. Nanotechnology is the acceptance and control of substances at the nanometer scale, where inimitable phenomena enable novel uses. Covering engineering, Nano scale science, and technology, nanotechnology includes modeling, imaging, measuring, and manipulating matter at this measurement scale [2].

Nanotechnology has been functional widely in drug transfer to improve the beneficial outcomes of numerous diseases. Incredible efforts have been intensive on the development of novel nanoparticles and the description of the physicochemical belongings of nanoparticles relative to their natural fate and functions [3].

Pharmacology is a division of science that contracts with the study of drugs and their actions on existing systems that is, the study of how drugs work in the body [4]. There are two branches of pharmacology are Pharmacokinetics which mentions the absorption, metabolism, distribution, and excretion of drugs, and Pharmacodynamics, which refers to the biochemical, molecular, and drug mechanism, including physiological effects of drugs of action [5]. The application of nanotechnology for drug delivery delivers the potential for improved treatments with directed delivery and fewer side effects. Nanotechnology drug delivery uses occur through the use of planned nanomaterial as well as forming delivery structures from Nano scale molecules such as liposomes.

Nano biotechnology, which is greatly apprehensive with the construction and application of various nanomaterial' particular to pharmacy and

medicine has vast possibility to solve serious issues of important human illnesses [6].

CONCLUSION

Pharmacology is a study of drugs and their reactions to the body. In that felid nanotechnology is used in the manufacturing of the drugs, examining the reaction of the drug the body, etc. and it modifies the old techniques into modern techniques by adding the nanotechnology in the process of drug-related work where a man cannot handle without nanotechnology.

REFERENCES

1. Pelaz B, Alexiou C, Alvarez-Puebla RA, et al. Diverse applications of nanomedicine. ACS Nano. 2017;11(3):2313-2381.
2. Min Y, Caster JM, Eblan MJ, et al. Clinical translation of nanomedicine. Chem Rev. 2015;115(19):11147-11190.
3. Wishart DS, Knox C, Guo AC, et al. A knowledgebase for drugs, drug actions and drug targets. Nucleic Acids Res. 2008;36(1):901-906.
4. Pirmohamed M, James S, Meakin S, et al. Adverse drug reactions as cause of admission to hospital: prospective analysis of 18 820 patients. BMJ. 2004;329(7456):15-24.
5. Haranath PS, Kulkarni SK, George B, et al. Reflections on the evolution of pharmacology in India during twentieth century. Indian J Pharmacol. 1999;31:1-3.
6. Cheng M, Gao X, Wang Y, et al. Synthesis of glycyrrhetic acid-modified chitosan 5-fluorouracil nanoparticles and its inhibition of liver cancer characteristics *in vitro* and *in vivo*. Marine Drugs. 2013;11(9):3517-3536.

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