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A Note on Novel Drug Delivery Carriers

Dietmar Todt*

Department of Biology, Chemistry & Pharmacy, Institute of Biology Free University of Berlin, Germany

Novel drug delivery system is a new approach to drug delivery that addresses the limitations of the traditional medicine delivery systems. Our country has a vast knowledge base of Ayurveda whose eventuality is only being realized in the recent times. Still, the drug delivery system used for administering the herbal drug to the case is traditional and out-of- date, performing in reduced efficacy of the drug. However, it may help in adding the efficacy and reducing the side goods of various herbal composites and sauces, If the new medicine delivery technology is applied in herbal drug. This is the introductory idea behind incorporating new system of medicine delivery in herbal drugs. Therefore it's important to integrate novel drug delivery system and Indian Ayurveda drugs to combat more serious conditions. For a long time herbal drugs weren't considered for development as new formulations owing to lack of scientific defense and processing difficulties, similar as standardization, extraction and identification of individual drug components in complex polyhedral systems. Still, ultramodern phyto pharmaceutical research can break the scientific requirements (similar as determination of pharmacokinetics, mechanism of action, point of action, accurate cure needed etc.) of herbal drugs to be incorporated in new drug delivery system, similar as nanoparticles, micro emulsions, matrix systems, solid dispersions, liposomes, solid lipid nanoparticles and so on. This composition summarizes various drug delivery technologies, which can be used for herbal actives together with some examples.

Various medicine delivery systems have been developed and some of them under development with an end to minimize drug degradation or loss [1], to help harmful side effects and to Improve drug bioavailability and also to favour and grease the accumulation of the medicine in the required bio- zone (point). There are no. Of novel carries which have been established and proved to be useful for controlled and targeted drug delivery. It's important to critically estimate different terms used under the different broad categories of novel drug delivery system.

• Sustained-or controlled- drug delivery systems provide drug action at a pre-determined rate by furnishing a prolonged or constant (Zero- order) release independently [2], at the therapeutically effective situations in the rotation.

• Localized drug delivery bias provide drug action through spatial or temporal control of medicine release (generally rate- limiting) in the vicinity of the target.

• Rate-pre-programmed drug delivery systems give medicine action by manipulating the release of drug molecules by system design which controls the molecular prolixity of drug molecules.

• Targeted drug delivery provides drug action by using carries either for unresisting or active targeting or one base or tone programmed approach [3], generally anchored with suitable sensitive bias, which recognize their receptor at the target.

Drug delivery carriers

Colloidal drug carrier systems similar as micelles results, vesicle and liquid crystal dissipations, as well as nanoparticle dissipations conforming of small patches of 10 – 400 nm periphery show great promise as drug delivery systems [4]. When developing these formulations, the thing is to gain systems with optimized medicine lading and release properties, long shelf- life and low toxin. The incorporated drug participates in the microstructure of the system, and may even impact it due to molecular relations, especially if the drug possesses amphiphilic and/ or monogenic parcels.

Micelles

Micelles formed by self- assembly of amphiphilic block copolymers (5-50 nm) in aqueous solutions are of great interest for medicine delivery operations [5]. The drugs can be physically entangled in the core of block copolymer micelles and transported at attention that can exceed their natural water-solubility. Also, the hydrophilic blocks can form hydrogen bonds with the aqueous surroundings and form a tight shell around the micelles core. As a result, the contents of the hydrophobic core are effectively protected against hydrolysis and enzymatic declination. In addition, the corona may help recognition by the reticula endothelial system and thus primary elimination of the micelles from the bloodstream.

Liposomes

Liposomes are a form of vesicles that correspond either of numerous, few or just one phospholipid bilayers. The polar character of the liposomal core enables polar drug molecules to be encapsulated [6]. Amphiphilic and lipophilic molecules are solubilized within the phospholipid bilayer according to their affinity towards the phospholipids.

Dendrimers

Dendrites are nanometre-sized, largely branched and mono disperses macromolecules with symmetrical architecture. They correspond of a central core, raying units and terminal functional groups.

Liquid Crystals

Liquid Crystals combine the properties of both liquid and solid states. They can be made to form different geometries, with indispensable polar and non-polar layers (i.e., a lamellar phase) where aqueous drug results can be included.

Nanoparticles

Nanoparticles (including Nano spheres and Nano capsules of size 10-200 nm) are in the solid state and are either unformed or crystalline.

***Corresponding author:** Dietmar Todt, Department of Biology, Chemistry & Pharmacy,Institute of Biology Free University of Berlin, Germany, E-mail: todtdietmar@gmail.com

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They're suitable to adsorb and/ or synopsize a drug, therefore protecting it against chemical and enzymatic declination. Nano capsules are vesicular systems in which the drug is confined to a cavity surrounded by a unique polymer membrane, while Nano spheres are matrix systems in which the drug is physically and uniformly dispersed.

Hydrogels

Hydrogels are three-dimensional, hydrophilic, polymeric networks capable of imbibing large quantities of water or biological fluids. The networks are composed of homo polymers or copolymers, and are insoluble due to the presence of chemical crosslinks (tie- points, junctions), or physical crosslinks, such as entanglements or crystallites. Hydrogels parade a thermodynamic compatibility with water, which allows them to swell in aqueous media.

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Conflict of Interest

The authors declare that they are no conflict of interest.

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