

HERBAL DRUGS USED IN A HERBAL NANOPARTICLE

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Abstract:

Herbal medicines have been widely used all over the world since ancient times and have been recognized by physicians and patients for their better therapeutic value. They have fewer adverse effects as compared with modern medicines. Especially in India herbal medicines has increased because of their ability to treat various diseases with lesser side effects. This can be achieved by designing novel drug delivery systems. Nano-sized DDS (drug delivery systems) of herbal drugs have a potential application for improving the activity and countering the problems related

Introduction:

Herbal Medicine

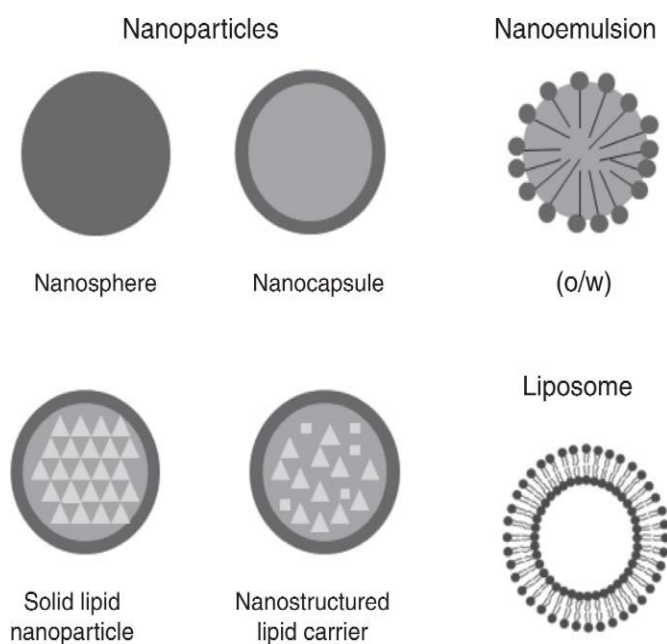
Botany and the use of medicinal plants are studied in herbal medicine. Plants have been used as the basis for medical procedures for much of human history, and conventional medicine is still used today. Since ancient time, herbal remedies and natural products are being to cure the diseases. Many plant-derived compounds are often used as basis for evidence-based prescription drugs in modern medicine. Herbal medicine is used by many people around the world to cure different illnesses.

Nanoparticles:

Nanotechnology combines physics, chemistry, biology, materials science, health sciences, and engineering expertise. A nanoparticle is particulate dispersions or hard particles with a size around 10 to 1000 millimeters. The drug is dissolved, entrapped, encapsulated, or bound to a nanoparticle matrix and in several forms. Nanoparticles, nanospheres, or nano capsules may be obtained based on the sample of preparing. Nano capsules are matrix systems where the drug is physically and uniformly dispersed inside a cavity surrounded by a different polymer membrane, while nanospheres are matrix systems where even the drug is physically and uniformly

dispersed within the matrix. Long-circulating biodegradable polymeric nanoparticles, especially those coated with hydrophilic polymers such as poly ethylene glycol (PEG), have been used as potential drug delivery devices in recent years due to their ability to circulate for a longer length of time, target a particular organ, serve as a carrier of DNA in gene therapy, and deliver proteins, peptides and genes.

Type of Nanoparticles



Need of the nanoparticles in herbal remedies

Nanoparticles can be utilized to focus on the home grown medication to singular organ which improves the selectivity, drug conveyance, viability and security.

- Nanoparticles can be used to build the home grown medication solvency and help to limit the medication in a particular site in this way bringing about better viability.
- Nanoparticles can convey high groupings of medications to illness locales in view of their extraordinary size and high stacking limits.
- Delivering the medication in little molecule size improves the whole surface zone of the medications hence designating snappier disintegration in the blood.
- Shows upgraded penetration and maintenance impact, i.e., improved saturation through the hindrances as a result of the little size and maintenance because of poor lymphatic seepage.

Herbal Drugs

1. Berberine: *barberry*

Botanical name—*Berberis vulgaris*

Family-*Berberidaceae*

Biological source- Berberine is also widely present in barks, leaves, twigs, rhizomes, roots, and stems of several medicinal plants species

Chemical constituents-*Berberis aristata*, *B. aquifolium*, *B. heterophylla*, *B. beaniana*, *Coscinium fenestratum*

Uses- The treatment of bacterial diarrhea.

➤ It is use in both Ayurvedic and Chinese medicine.

2. MURVA: *moorva*

Botanical name:- *Marsdeni tenacissima*

Family:-*Asclepiadaceae*

Biological source- Murva consists of dried root of *Marsdeni tenacissima* Wight. & Am medicinal plants

Chemical constituents- Resin, moorva, madhusrava, glycoside

Uses-treat diseases like anaemia, fever, diabetes, stomach disorders, typhoid, urinary infection and cough.

3. CURCUMIN: (TURMERIC)

Botanical Name:-*Curcuma longa*

Family:-*Zingiberaceae*

Biological source:-The part of used in roots of plant. Turmeric is an herbaceous evergreen plant in the Zingiberaceae (ginger).

Chemical constituents:-curcuminoids(5%), essential oil(6%), zingiberene, turmerone

Uses:-Antifungal Property

➤ Turmeric has lots of benefits for the skin including speeding up the process of healing wounds, calming pores on the face to reduce acne. Since it has antioxidant and-inflammatory properties, which is really use full for treating skin problems

4. DANSHEN: *red sage*

Botanical Name:-*Salvia miltiorrhiza*

Family:-*Lamiaceae*

Biological source:-It is obtained from dried roots and rhizome of *salvia miltiorrhiza*

Chemical constituents: Dihydrotanshinone, Danshensu, Tanshinone 1, Tanshinone 11A, salvianolic acid.

Use: Danshen is used for circulation problems, brain attack (stroke), chest pain (angina pectoris).

➤ It is also used for menstrual disorders, chronic liver disease, and trouble sleeping caused by complaints such as rapid heartbeat and tight chest.

5. DODDER: *cuscuta*

Botanical Name: *Cuscuta*

Family: *Convolvulaceae*

Biological source: The dodder has really no chlorophyll but only consumes food by haustoria, but is rootlike organs that enter a host plant's tissue and can kill it. The dodder's thin, stringlike stems come in various of paints, like yellow, orange, pink, and brown.

CHEMICAL CONSTITUENTS: Cuscutin, quercetin, amarbelin, aminoacids, cuscutaline.

Uses: Its pharmacological activities include anti-cancer, anti-aging, and immune-stimulatory effects.

6. QUERCETIN: *quercetina*

Botanical Name: *Spohora japonica*

Family: *Fabaceae*

Biological source: Quercetin is a plant pigment that is mostly found in onions, grapes, berries, cherries, broccoli, and citrus fruits. It is a powerful antioxidant flavonoid and more specifically a flavonol. It is a strong antioxidant that has been shown to protect against cell death impacted by a lot of drug toxicity.

Chemical constituents: 7-Pentahydroxyflavone, Bioflavonoid, Flavonoid, Meletin.

Uses:-1.Its use in pharmaceutical field is limited due to its low aqueous solubility and instability in physiological medium results in poor bioavailability.

2. Autism Heart disease Diabetes High blood pressure

7. CENTELLA ASIATICA: *Brahmi*

Botanical Name: *Centella asiatica*

Family: *Apiaceae*

Biological source: About 20 species related to CA(*centella asiatica*) grow in most parts of the tropic or wet pantropical areas such as rice paddies, and also in rocky, higher elevations. Part used whole plant but mainly leaves.

Chemical constituents: Mucilages, flavonoids (derivates of chercetin and kempferol) alkaloid (hydrochotine), resins.

Uses: Anti- anxiety,antioxidant,wounds, cancer, fever, allergy and syphilis.

Table 1: Marketed Products

SR.NO.	PRODUCT	MANUFACTURE
1	Swanson capsules	Swanson Premium
2	Sudarshan Ghanvati	Dhanvantari guj.herb
3	Nano Curcumin capsules	One Plant Nutrition
4	Hawaiian Herbal Kasly Dan Shen Capsule	Hawaiian Herbal
5	Dodder Seed Extract VegiCaps	Barlowe's Herbal Elixirs
6	Quercetin 500mg Supplement -Capsules	ASquared Nutrition
7	GotukolaPowder-Centella Asiatica	Herbal Hills

Conclusion:

Herbal medicines are increasing in popularity at the time due to their ability to handle almost all diseases. "Nanotechnology" has defined appealing therapies for pharmaceuticals that will tackle the problem with herbal medicines. Nanotechnology is a rapidly increasing and potentially beneficial field with massive consequences in industry, medicine, and

cosmetics.The combination of nanotechnology and contemporary herbal medicine may be a valuable tool for developing potential natural remedies with life cycle analysis and lower toxicity.

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