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A REVIEW ON NEW DRUG DELIVERY SYSTEM USING HERBAL EXCIPIENTS

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ABSTRACT:
New drug delivery systems and physics-based biochemistry possessed been developed to raiseThat clinical medication effectiveness and reduce drug toxicity. Osmosis, diffusion, erosion, dissolution and electrical transport are some of the methods that can be used to control these systems. The problem of drug release at specific locations and costs can be solved by design. Thanks to technological advances, these systems have expanded to create New methods of drug delivery.
New methods of drug delivery.can improve patient compliance, safety and effectiveness by converting existing drug molecules into new delivery systems. By taking advantage of the delivery quality and low side effects of these systems, companies solve problems related to the placement of drugs in specific locations and costs.
Key words: *NDDS, Conventional drug delivery system, New approach,phytosome, liposome, nanoparticles, niosome*

INTRODUCTION:

NDDS is a drug delivery approach that uses innovative dose forms and cutting-edge methods, combining traditional methods with innovative methods. It focuses on finding herbal remedies in labs, conducting pre-clinical and clinical trials, and improving distribution of herbal medications. There are challenges in the design, extraction and analysis of new treatments related to drug delivery technologies. Technological advancements provide access to modern methods for distributing natural drugs, enhancing patient compliance and reducing toxicity. Changes in herbal medicine supply can impact the efficacy of medicines. New approaches manage pharmacokinetic, pharmacodynamics, toxicity, immune response, biorecognition, and efficacy of drugs. NDDS focuses on specific areas and directs the development of designs, technologies and systems that ensure the safety of chemical compounds in the body.

Definition ● Novel drug delivery systems (NDDS) are innovative strategies that combine design, technology, and delivery mechanisms to safely deliver drugs throughout the body

NDDS is an advanced drug delivery technique that maintains drug concentration within the therapeutic window, minimizing undesired effects and maximizing therapeutic benefits. It addresses shortcomings in conventional routes like enzymatic degradation and poor bioavailability of certain medicines like antibodies and vaccines.

Research needs: Currently, 95% of clinical trials have poor pharmacokinetic and biopharmaceutical results. Therefore, appropriate drug delivery systems should be created for novice therapists that deliver therapeutically active drug molecules, reduce the effective dose, increase the therapeutic index, and ensure safety in the area without harming the healthy body and tissues. Some of the reasons for this are: 1) Wrong drug solubility 2. Biotechnology leaks into leachate. Imbalance of septate high-limit organisms Third, pharmacodynamics Short life span Large volume Slow rate of distribution Clinical unfavorable therapeutic index [1,2]

PHYSICOCHEMICAL AND BIOLOGICAL PROPERTIES

Physico chemical properties[3]

1. It is soluble in water.
2. Distribution coefficient.
3. Chemical stability.
4. Interactions between proteins.
5. Distribution and size of molecules. (Google Scholar)

1. Water Solubility

This is the most important factor when it comes to the biological activity of SDRF. Drug solubility affects absorption in two ways:A method for determining the concentration and tissue penetration of drugs. The rate at which compounds in a solution dissolve is affected. Meanwhile, it also affects the penetrating ability of the drug depending on its solubility in tissue. The relationship between dissociation and water solubility can be found using the Noyce-Whitney equation. The relationship between dissociation and water solubility can be found using the Noyce-Whitney equation.

You can use the Noyce-Whitney equation to find the relationship between dissociation and water solubility.

$Dt/dc=KDA.Cs$

Dc/dt is the breakdown speed.

KD is the dissolution rate constant.

A= is the total area solution in question.

Cs: Soluble state of the drug in water saturated state.

2. Coefficient Assignment

The Time for drugs to be cleared and eliminated from the body.

Properties of chemicals

$Co/Cw = K$

Where the concentrations of all chemicals are equal.

Equilibrium concentrations of each shrimp species in the aqueous phase. (twenty four)

3. Drug Stability

Loss of oral dosage due to acid hydrolysis or gastrointestinal metabolism.

- Solid drugs decompose more slowly than drugs in suspension or solution.
- Drugs that are poorly soluble in water generally dissolve slowly and have problems with oral bioavailability.
- The value and pH of the Pka environment controls the solubility of weak acids and weak bases in water.

3. Binding Proteins

Sequestration of drugs by proteins controls the distribution of drugs in extra space.In protein-bound drugs, the Drug and protein complexes acts in the role of fluid Within the bloodstream to distribute the drug to extravascular tissues.

For example, diazepam is more than 95% protein bound. Other drugs bind to more proteins.

4. Diffusion and Molecular Size

Diffusion is a function of molecular size and is the ability of a substance to spread cross a membrane. For most polymers we can convert logD to a function of molecular mass: -

LogD = -Sm log M + Km = - Sv log V + Ky (

V – Molecular volume refers to the size and shape of the substance in relation to the constant value of the substance. M, Sv, Sm and Kv represent molecular weight. and Km. D.

Characteristics a Biology

1. Company establishment
2. Allocation
3. Catabolism
4. Biochemical Half-Life and Elimination
5. Adverse events and safety assessment[3]

F . FRAGRANCES & FLAVORING AGENTS FROM NATURE

1. Completion

An important consideration for regular discharge is the amount, length and consistency of absorption.

• Rapid release is important for the success of the system, Because the release of mor form and the e medicine coming release shape and the lack of intake is that step that limits the distribution of the vaccine. .

2. Action

The overall elimination kinetics of the drug are greatly influenced by the way the drug is distributed throughout the vascular system and extravascular space of the body.

This affects drug production by limiting drug release and dosage.

V = dose/ Co >

Co-Concentration of Drugs in Plasma Simply put,

The apparent volume of this distribution is the proportionality consistent with relates all drugs Within the body to the blood or the drug blood concentration

In that caseof the two sections model, (1+k12/k21)Vss= V1

K–12is the continuous value a the given solution divided by the position. To the ground. Room. >

3 .Metabolism

Sustained drug release systems are designed taking into account metabolism (the process of transition of drugs from one drug form to another).

• **Cyclical factors**

1. Drugs can promote or stop enzyme synthesis
2. Changes in drug concentration in blood and their primary metabolism

Side implications and safety aspects

Reducing the amount of a given drug used overall during treatment and managing its plasma concentration to minimize side effects.

• The therapeutic index is taken into account when calculating a drug's margin of safety. TI

= TD50 / ED50[4, 5]

Advantages

1. leading to a decrease in its effectiveness. Physical degradation, such as color changes or chemical degradation, can be prevented by using nanosystems for drug delivery.
2. Sustained drug delivery, achieved through nanotechnology, promotes long-term benefits by retaining drugs in the body, particularly for fast metabolism or quickly removed drugs.
3. The nano drug delivery system enhances tissue macrophage distribution, allowing them to fight pathogens, maintain homeostasis, repair tissues, and improve immunity, aiding in the treatment of respiratory tract inflammatory diseases.
4. The stability of drugs is crucial for their ability to treat specific diseases. A nano drug application system effectively achieves this stability, ensuring drugs remain in their best form from production to future use.
5. New drug delivery systems like nanoparticles and microsomes enhance pharmacological activity by increasing drug absorption surface area and enhancing drug absorption, leading to more efficient drug delivery at the action site.
6. Controlled drug delivery by maintaining required drug concentration and controlled rate.
7. Accurate dose of drug.
8. Improved efficacy and safety
9. Delivery of optimum dose at specific target/site low toxicity

and less side effects. 10.Improved patient compliance.

Demerits:

- The daily dose cannot be more than 10 mg.
- Local irritation is a serious problem.
- Drugs that require high blood pressure are not suitable.
- Drugs with long half-lives cannot be produced with TDDS.
- Not comfortable to wear.
- May not be commercial

Current challenge in upgrading modernization herbal formation[6, 7]

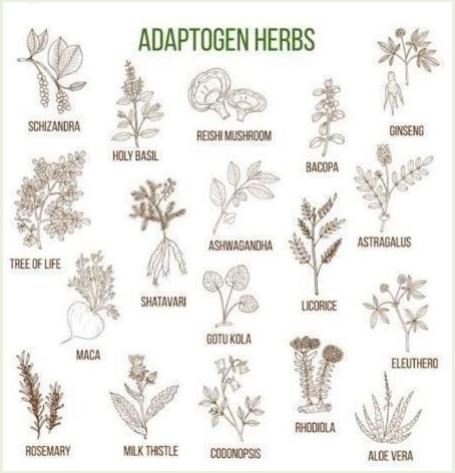
India is having just 2% global herbal market share

1. India's current share in the Ayurveda market is only 5%. Judging by the current level of the rupee, there is still huge room in the world to expand its business. 40 billion rupees. But unfortunately, despite the knowledge, skills and resources, India has neglected the opportunity in the global economy. (25)
2. In order to increase production and product quality, research and information should be conducted in accordance with international legislation. This requirement can be fulfilled by referring to international standards and international pharmaceutical sources such as Herbal B.P., Chinese Herbal Medicine, Japanese Herbal Medicine, Indian Ayurvedic Formulas, World Health Organization Herbal Medicine Guide.
3. If the Ayurvedic industry is to survive in the local and international markets, steps should be taken to establish good governance and for this purpose the government should consider assisting the business in establishing a good house which should be allocated. The effectiveness of Pharmaceutical Standardization will meet international standards in the coming years.

The evaluation of the costs of purification and preparation of raw materials. In addition, for the better development of herbal medicine, it is necessary to create a joint effort that includes the cooperation of many people, workplaces and enterprises in the sector.

There is also a need to combine modern knowledge with traditional knowledge. Medicines and products produced by this industry must be researched and elucidated using modern biological and chemical concepts and tools, as this alone can provide the herbal medicine green for global healthcare.

It may be noted that the Kerala Medicinal Plants Board has 500 hectares of land for cultivation of medicinal plants with the aim of promoting the cultivation of special medicinal plants and medicinal plants which will be obtained as expected in the future.[26]



HERBAL DRUG FORMULATIONS

An herbal preparation refers to the the way one or more medicinal herbs are administered, or drugs. Compiled to provide specific nutritional and cosmetic benefits for diagnosing, treating, reducing diseases in humans or animals, and modifying human structures or organs.

Br>

Herbal preparations can be made by extracting, distilling, pressing, fractionating, purifying, concentrating or fermenting herbal medicines.

Herbal preparations include tinctures, extracts, essential oils, juices, and finished infusions.

Medicinal herbs and plants have been used for medicinal or healing purposes long before recorded history. They have formed the basis of almost every medical culture in the world for thousands of years and continue to offer people new treatments in the form of herbal preparations and preparations.

In the past, medicinal plants were distributed as an example of simple preparations for example teas, tinctures, and pastes, Flour and other herbs preparations, and all kinds of drugs that make up these medicinal products are used for a long time. It has traditionally been used in local or regional medicine to treat disease. However, practitioners of allopathic medicine have always viewed plants as traditional medicine to be used first, and during the colonial period this practice was often legalized by national authorities.[8, 9,10]

Even today, herbs are an important part of Unani, Ayurveda, Homeopathic and Ayurvedic medicine. Plant-derived compounds also feature prominently in modern allopathic medicine.
Approximately 25% of all allopathic medicines contain at least one active ingredient derived from plants.
Nowadays, medicinal plants are gradually gaining attention in the international health forum, and almost all medical machines use medicinal plants as tools. Medical significance. Many of them are now ready to use modern medical equipment and make modern medicines. Likewise, medicinal plants are experiencing a beautiful renaissance.

Rising Awareness Towards Herbal Drugs

Traditional medicine produced locally or abroad is expensive and/or inaccessible to Western medical facilities. On the contrary.
Cultural factor also plays an important role in this motivation. It has been observed that despite the existence of Western medical facilities, traditional medicine is seen as culturally valid and effective.
Recent advances in environmental science, immunology, botany and pharmacognosy have allowed scientists to explore the benefits of various drugs in a new way. In addition, it has now been determined that herbal medicines do not have much different effects than traditional

medicines. This fact makes herbal medicine similar in principle to traditional medicine.

UPGRADING AND MODERNISATION OF HERBAL DRUGS: CHALLENGES

Despite a long history of international development and traditional use, the promotion of herbal medicines worldwide (especially in developing countries) faces many challenges. In order for herbal knowledge to be promoted worldwide, the following challenges must be overcome:

Quality issues:

Contamination, improper cultivation, collection and preparation errors, and improper preparation procedures are the main problems that reduce the yield in the preparation of traditional Chinese medicine and can be considered important factors affecting quality and purity. Traditional medicine. Chinese medicine.

Processing and harvesting problems:

Poor harvesting, poor cultivation and expansion, poor pre-harvest and post-harvest handling, and lack of technology reduce the quality of pharmaceutical products in China.

GOOD QUALITY MANAGEMENT REGARDING:

Design, Inadequate control proceduress and Misuse of GMP (GMP) are major issues in the management of these products. Lack of knowledge regarding growers' and producers' instructions, lack of use and care of Process Technology.Over the last two years, the integration of online chromatographic separation systems with spectroscopic detectors to obtain analytical information in samples has become the most important method for identifying and/or asserting the identity of purpose and/or purpose. Unknown compound. For most analytical problems in herbal research, column liquid chromatography coupled.

• **Examples**

Analysis of garlic essential oil by GC-MS. IC-MS Quantification of Rosmarinic and Ursolic Acid in Basil Leaf Extract

Regulatory issues:

The herbal industry lacks regulatory and regulatory authority and lacks proper supervision and control. Pharmacovigilance:

In the herbal industry, it takes time to find appropriate pharmacovigilance, toxicological information and adverse reactions to plants. Adverse reactions, contraindications, interactions with other medicinal products and existing traditional medicine should be taken into account.

Clinical Research

Since safety is still an important issue in herbal medicines, clinical research is required to understand the safety, design and performance of these drugs before they are introduced to the world market.

Intellectual property and biopiracy:

Biopiracy is a major challenge in the promotion of herbal medicines. Therefore, recording public information is very important for our future.

Misuse

It is generally believed that herbal products have no side effects or side effects, but unfortunately this is not the case. Therefore, misuse of these drugs can cause many problems and hinder the promotion of these drugs.

Research and development:

Research and development is an important requirement for every medicine, but there is very little research and development experience in the field of herbal medicine, although the pattern has changed in recent years. Research is needed to understand the mechanism of action and pharmacokinetic phenomena, develop/create monographs, and standards for identifying signals.

Other problems:

Abuse of herbal medicines, lack of qualified doctors, dissemination of unreliable and unreliable information, lack of sufficient funds, lack of marketing targets and product development, lack of shared knowledge still hinder the development of herbal medicine. . International promotion of herbal medicines. Conservation of biodiversity is not enough and conservation of medicinal plants is also a challenge.

Research in Medicine: Challenges

Herbal products have become an important and essential part of healthcare worldwide.

Many studies of traditional medicine and other medicines show their widespread use. However, clinical trials on these medicinal plants need to be encouraged to further expand the scope. It is recommended to use a combination of constructs to prove efficacy in clinical studies.

Herbal Excipient

Introduction: escription of excipient**:** inactive substances Ve the in motion ingredient drug The excipients are substances used as tools in drug administration.These help ensure, prevent,

promote or improve the stability, bioavailability or patient acceptance of the drug delivered during the manufacturing process.[10, 11]

Merits of Herbal Excipients

1. Eco-friendly
2. Biocompatible
3. Cost effective
4. Preventive without side effects
5. Easily available [11]

Demerits of Herbal Excipient[12]

1. Microbiological contamination
2. variation
3. heavy metal pollution
4. Variable rate of hydration
5. Slow process(11)

The purpose of excipients is to:

A. Give the **formulation more volume.**

B. **Handling active pharmaceutical ingredients during manufacture is made easier.**
C. **Help with medication administration.**
D. **Boost the adherence of patients.**
E. **Improve the active pharmaceutical ingredients' solubility and bioavailability.**
F. **Steer clear of medication** deterioration.Provide a reliable and consistent formulation outcome.
G. Adjust the liquid dose forms' pH and osmolarity.
H. Aids in the dispersion of drug particles and prevents drug agglomeration.
I. Aids in disguising offensive color, smell, and taste.~
J. Supports preserving stability(12)

The ideal properties of excipients are as follows:

1. They are realistically useful.
2. They ought to be naturally non-toxic and non-irritating.
3. Their characteristics ought to remain stable.
4. Temperature, light, and hydrolysis shouldn't have an impact on them.
5. They should be affordable and readily available.
6. They ought not to possess a particular color, smell, or flavor.
7. They should have high solubility in lipids and water.
8. They ought to work well with the preparation's active ingredient and not interfere with it.
9. Pharmacological inertness is expected of them (13)

Colorants and dyes[13,]

Invertebrates, plants, animals, and minerals can all be used as natural dye sources to create colorants.

1) Different colors are provided by plants such as roots, bark, leaves, wood and other biological resources such as mushrooms.
2) Synthetic pigments were created in experiments and cannot be found. Case
3) 4) Colors obtained from natural sources have been proven to be safe as they are non-carcinogenic, non-toxic and biodegradable.
4) Plants contain many components that can be used to create different colors, such as anthocyanins, carotenoids, betalains, crocin and anthraquinones.

- **Colourant are classified into**

1. Based on source
2. Based on methods of application

Mordant dye

digoids

Plant origin

Pyridine

Animal origin

Acid dyes

Carotono ids

Mineral origin Basic dyes

The best qualities for natural coloring agents

- not physiologically active
- Does not contain harmful impurities
- High coloring power, only a small amount
- Not affected by hydrolysis from light or heat.

1. Sweeteners

Foods can have their flavor and shelf life extended by using sweeteners.
Add sugar to the recipe.
They do not cause weight gain, tooth decay or diabetes.
Sugar can reduce or mask bitterness, sourness and saltiness.[13]

Useful Characteristics of natural sweeteners

Efficient under light pressure
Recovery at various temperatures
Long-term use of these substances does not cause carcinogenic effects

They have low or no caloric value
May exceed other components
in milk Examples of natural
sweeteners

Binders

Binders are excipients, dry powders or liquids that serve to bind or store all the ingredients used in a certain amount. Binders are mixed into the formula to provide plasticity or improve the relationship between ingredients in the formula.

Types of adhesives

1. Depending on location

a. Natural Polymers such as tragacanth, acacia, gelatin, starch and gum
b. Synthetic polymers: PVC, HPMC, MC, EC, PEG

- Sweeteners: Glucose and Sorbitol
- According to application

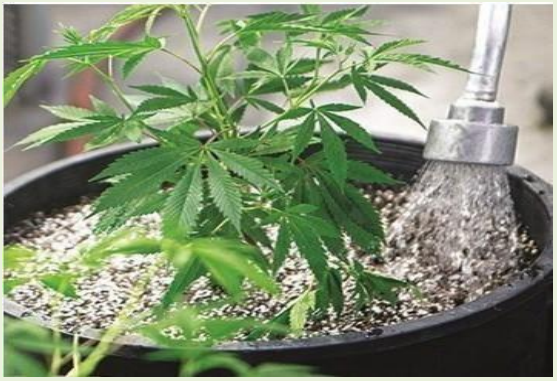
A Chemical Binders: PEG, starch, cellulose thiab gelatinb. desiccated ingredients : Methylcellulose

Advantages of Adhesive

Less toxic
Biodegradable
Easy to
obtain Low
cost
. Improved security
How much paper is broken [13]

Diluents

Diluents are excipients used to increase the dosage of a product or dilute a liquid form.
The main function of diluents/fillers is to give the dosage form its structure, fill its length and increase its volume, making it suitable for use in medicine. >
It is used to increase cohesion. It improves the flow and the die cavity adjusts the weight of the tablet. [13]



Viscosity Increaser

A thickener is a substance that increases the viscosity of a liquid without changing its properties.. It modifiers reduce the consistency of liquids to improve flow, ultimately making it palatable. Some thickeners can also act as stabilizers when used to control emulsion stability.

Viscosity Increaser Types

Natural Thickeners

Cellulose-HEC for shampoo or shower gel, e.g. xanthan gum

Mineral Thickeners

Bentonite Clay. Magnesium. Silica and aluminum silicate.

Advantages

1) It stops the formation of crystals.
2) It makes the body more stable.

Demerits

1)It stops the residue from being able to spread.

2) It stops medications from being absorbed.

3)It creates problems in the transportation of products during production.

Disintegrants

Disintegrants cause the tablet to swell or break apart when it becomes liquid.
Disintegrants are added to formulations because upon contact with liquid it breaks the form into small particles, Smaller particles have a larger surface area, causing the chemical to break down.

For example. - Starch, cellulose.

Degradative properties

Poor solubility
Poor gel formation
Good hydration capacity
Good compressibility and fluidity
Not affected by drug complexes

Fragrances

Fragrances can be used to mask the odor of active ingredients and increase patient acceptance.
The FDA defines sweeteners as "essential oils, oleoresins," flavors or extracts, protein hydrolysates, distillates, or any roasted, heated, or enzymatic product mixed with spices, fruit or fruit juice. [13]

Perfume

The word perfume is of Latin origin and means sweet liquid containing flower essences and other substances.
It is a mixture of blood sugar, essential oils and spices.
It is used in external uses such as perfumes, perfumes, body care products, hand sanitizers, cosmetics, soaps and hand sanitizers.

Natural sources

1) Essential oils – citronella oil, lemongrass oil, sandalwood oil, orange oil
2) Animals – Musk, (Moschus moschiferus, Moschidae))
   Civettictis civetta, Viverridae[14]

Colorants

HENNA

Synonyms: Egyptian Special, Mignonette, Mahendi.

C/C: Lawsone (2,5-dihydroxy-1,4- Naphthoquinone),

coumarins, xanthenes, e.g. Flavonoids, oils, resins, tannins.

Drug test: Add the acid to the henna decoction and the orange-red color disappears. Its color darkens when alkali is added.

Use Area: It is used as a chemical in hair dye and other cosmetics. [15,16]

Turmeric

Synonyms: Haldi, Indian

Saffron. B/S: Plant Curcuma

Longa

Longa is the dry and fresh rhizome of the Zingiberaceae plant.Chemical constituents: 5% essential oil, resin and diarylheptane. The yellow substance is called curcumin. Other plant ingredients include Atlantone, demethoxycurcumin, curcumin, sugar, minerals, etc. is available.

Chemical test: Curcumin turns dark red when exposed to sulfuric acid.

Application: As a make-up artist for various pharmaceutical, cosmetic and food products

ANNATO

Synonyms: lipstick tree

G/S: Central and Southern United States, India.

- Description: Bixin is an orange-yellow crystal or pink to purple powder
- Application: Colorant and coating agent for product and liquid dosage information. It is used in the production of wood stains and varnishes and in silk dyeing.

2. Indigo

Synonyms: Neel, indigo

B/S: Indigo, I. suffruticosa, leaves of legume plant

Description:

The color is blue crystalline powder. This dye is insoluble in water, ethanol, or ether but is soluble in DMSO, chloroform, and nitrobenzene.

C/C: Glycoside Indican, deglelin, dried deguelin, rotenol, rotenone, tephrosin and sumatrol.

NATURAL SWEETENERS

These are added to the formula to mask the bitter taste and can be used by people with diabetes.

• Natural sweeteners are available in both sweet and unsweetened forms. There are many non-sugar compounds such as terpenes, dihydrochalcones, dihydrocoumarins, glycoproteins and steroidal saponins.

Merits:

1. These are essentially zero calories.
2. Less results.
3. Blood sugar does not increase
4. Don't brush your teeth.

Stevia

Alias: sweet leaves

B/S: Obtained from the Asteraceae plant Stevia.

Geographical source: southern Brazil, Japan,

America, etc.

C/C: glycosides, Stevia.

Use: Non-caloric sweeteners found in liquids or foods and beverages. An alternative to traditional sugar. The sweetener preferred by diabetics.

Liquorice

Synonyms: Yashtimadha, mulethi, licorice.

B/S: Dry peeled, unpeeled roots and excrements of licorice and legume plant

Chemical test: Contains 80% sulfuric acid, dark yellow in colour.

Glycyrrhizic acid

Uses: sweetener, flavoring agent, foam stabilizer. [17,]

THAUMATIN

Synonyms: Tallinn.

B/S: Fruit of the tropical plant Deinococcus dansoni, , Fam- Marantaceae.

• G/S: West Africa

Descriptions: It is between 2000 and 10,000 times sweeter than sucrose. .Soluble in water and dilute alcohol.

Usage: Less-calorie sweeteners and flavors. (thirty three)

Natural Binders

Binders are auxiliary substances that enable all ingredients used in a formulation to form in appropriate amounts.

Adhesives

Solutions for adhesives, e.g. Gelatin, cellulose

Dry binders

E.g. MC, PEG.

• Natural binders are non-toxic, naturally degradable, economical, simple and abundant, and can improve the stability and texture of paper.

1. ACACIA

Nickname: Gum India, Babur.

B/S: It is the dried gum-like exudate of Acacia arabica, Acacia Senegal and legume plants. Test: After treating acacia powder with lead subacetate, aqueous gels are formed.

Uses: Used as natural binders, suspending agents, emulsifiers and thickeners for tablets. As a base for lozenges and lozenges. [16,17]

Tragacanth

Synonyms:: Persian triracantha.

Biological Sources: Dried gum is obtained from gum tragacanth, a legume plant.

Its color var ies from white to light yellow, it is translucent, odorless and mucous.

Chemical Constituents :Polysaccharides that are both water-soluble and insoluble . Binder, cellulose, starch, protein, ash.[16, 17]

Clinical trial: Scutellaria baicalensis changes greenolive color after adding iodine concentrate.

Organic Diluting Agents

Natural filler are products that increase the volume of information or dilute the amount of liquid information.

They are biodegradable, non-toxic, economical and environmentally friendly.

It provides easy control of the weight by providing the correct structure.

Cellulose

Alias: Arbocel.

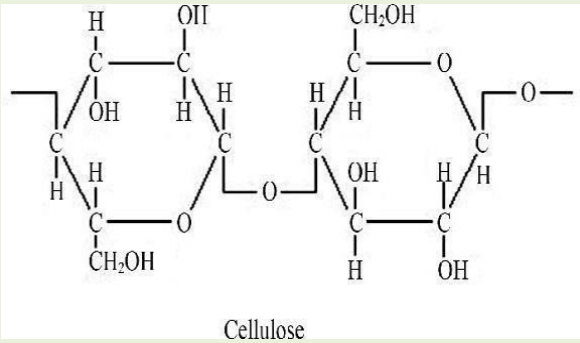
Biological sources: It is a polysaccharide whose structure is found in plants, algae and a few bacterial cells.

Discrimination : The powder known as natural diluents has various properties and is tasteless, odorless, and white in color. It dissolves somewhat in most organic solvents and water.

Test: Replacement of cellulose with blood using Schulz reagent.

• Usage: tablet diluent, hard gelatin capsule filler, granule, direct compression of granules in food and cosmetics, as suspension agent

Structure



LACTOSE

Alias: lactose, Lactin, lactose.

Biological sources : disaccharide consisting of galactose and glucose, obtained from the milk of ous anim**a**ls

Chemical Test: Mix lactose with water and heat in a 10M ammonia bath until red.

- Usage: As diluent tablets, capsules, dry powder inhalers. It is combined with sucrose as a coating agent. For the preparation of freeze-dried products.

Structure

Viscosity Additives

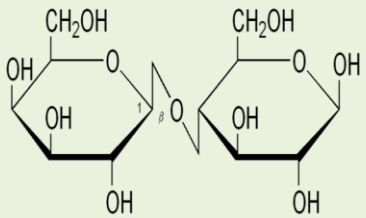
• They are aqueous solutions that keep the viscosity unchanged.

Inhibits crystal growth, stabilizes the body and prevents metastable crystals from forming stable crystals.

• Type:

1. Acacia, tragacanth, xanthan gum, etc. Some gums such as.
2. Cellulose derivatives methylcellulose, ethylcellulose, CMC
3. Magnesium aluminum silicate, bentonite etc. hair. [18,19]

Lactose



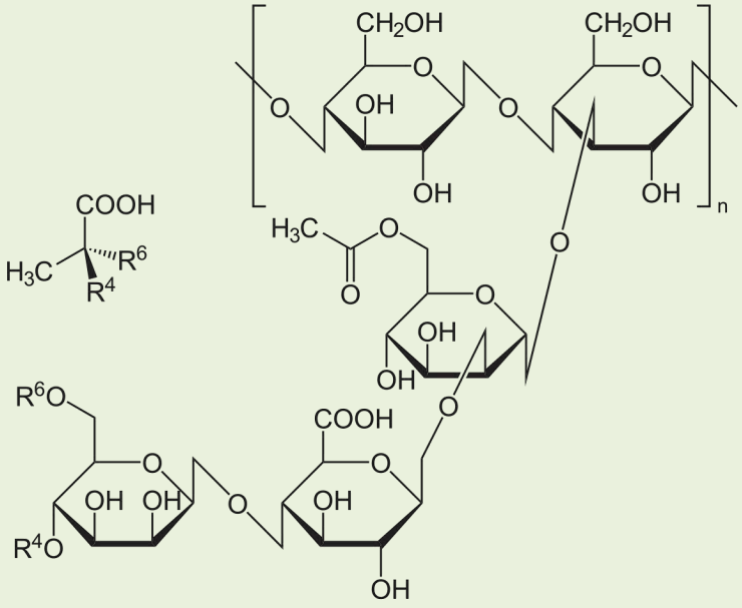
1. XANTHAN GUM

Alias: corn gum

B/S: It is a polysaccharide produced by the fermentation of bacteria such as Xanthomonas compestris.

Material: thick or white, no smell, no water flow. Almost insoluble in ethanol and ether, soluble in cold or warm water. Potassium and sodium salts are sold.

Usage: As a good emulsifier, stabilizer and thickener, as a viscosity enhancer in oral and external preparations of medicines, cosmetics and foods. Extended-release matrix and ophthalmic liquid can be added to dosing information.



2. CARRAGEENAN

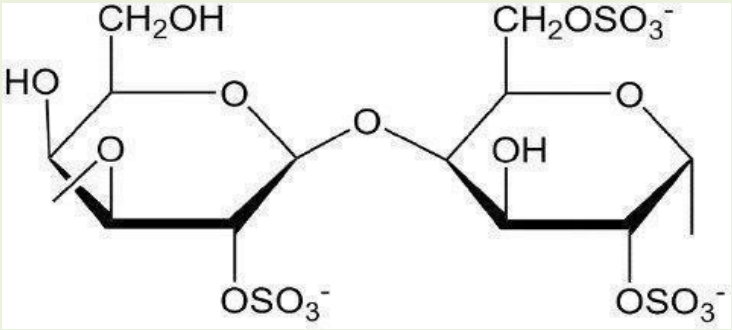
Alias: Carrageenan extract, carrageenan extract.

G/S: It is produced in Europe, North America, France, Spain, Denmark and the North Atlantic coast of the United States.

C/C: Its main components are potassium, sodium, calcium, magnesium, ammonium sulfate galactose ester and 3,6anhydrogalactose copolymer.

Chemical test: It turns into a gel after being immersed in cold water.

• Usage: . lozenges, powders and other preparations. is also used for microencapsulation of proteins and probiotics. [20]

Structure 

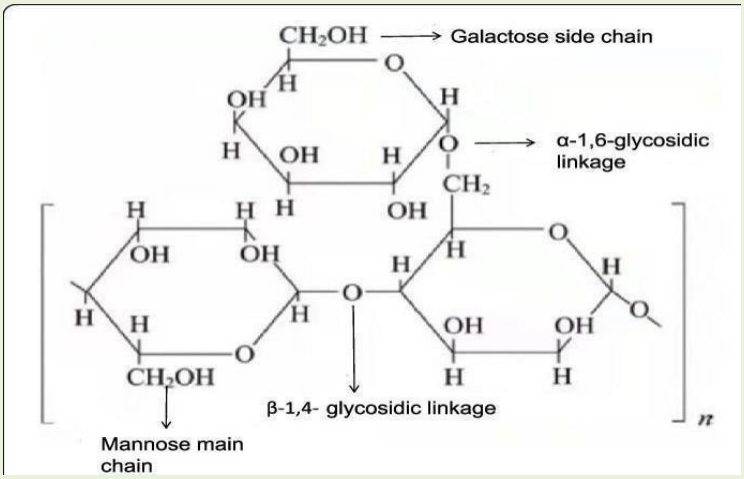
3. GUAR GUM

Alias: guar gum, guar powder, jaguar gum

B/S: galactomannan obtained from the endosperm of the legume plant guar seeds. G/S: India, Pakistan, America, Australia, Africa.

Chemical test: 2% lead reacts with acetate to form a precipitate.

Uses: To regulate the release of additional information, use a thickener, stabilizer, disintegrant, suspending agent, and binder. Widely used in the food and cosmetic industry [21]



Structure

DISINTEGRATING AGENTS

They help disperse or break up the tablet and help break the contents of the capsule into small pieces.

They work with various mechanisms such as swelling, osmosis, deformation and repulsion.

< br> They have the advantage of low pressure, do not affect compressibility and work better in the intra-particle space.

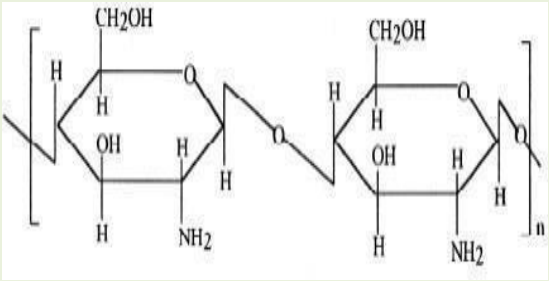
However, its price is high, it causes side effects and poor patient compliance.

.1**. CHITOSAN**

Name: Deacetylchitin.

Biological source: Polysaccharide derived naturally from the shells of crabs and shrimp.

• Properties: Odorless, white or milky powder or flakes, slightly soluble in water, concentrated <Usage: For drug delivery, rapid release of mucoadhesive drugs, improving the delivery of drug peptides, colonic drug delivery [22]



Gelatinized Starch:

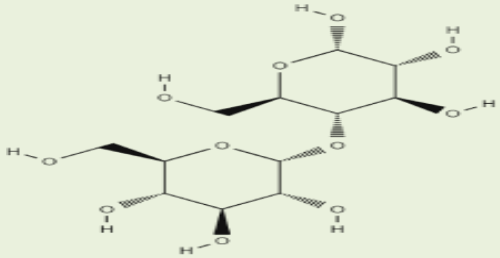
• Alias: Pharma-Gel, Prejel

Biological source: replaced by potato starch.

Description: Odorless, tasteless, medium to fine white to white powder. Little soluble in cold water, almost soluble in organic solvents.

Test:The substance turns from red to blue when exposed to iodine solution.

• Usage: used as disintegrant, binder and diluent in tablets and powders Structural formula[23, 24,25]



FRAGRANCES & FLAVORING AGENTS FROM NATURE

Natural fragrances are made from a blend of chemicals, solvents, and essential oils that are used for food, medicine, living spaces, and animals.

• Aromas are scents odor of unpleasant taste notes and to improve the palatability of the drug and patient compliance.

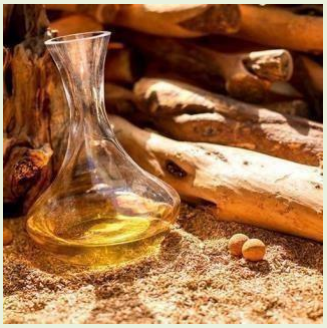
1. Sandalwood oil

Synonym: Chandan

Biological source: Essential oil obtained by steam distillation of sandalwood and sandalwood core.

Description: Pale to pale yellow, with a mildly aromatic wood taste. It dissolves in five volumes of 70% alcohol and is an oily, viscous liquid.

Areas: fragrance, treatment of colds, bronchitis, urinary tract infections and inflammation. (twenty four) [26,]



2. ROSE OIL

Synonyms: rose otto, rose essential oil.

. Biological sources: It is an essential oil obtained from the flowers of the Damascus Rose plant, belonging to the Rosaceae family. Description: Colorless or yellow liquid with rose oil scent, miscible with 1 ml of chloroform.

Usage Areas: Sweetener, Perfume, Moisturizing dry skin, acne treatment, reducing signs of aging, scar and eczema treatment.[27]

3. **LEMON OIL**

Name: Limb

Biological source: It is extracted from the fresh fruit of citrus lemons belonging to the Rutaceae family.. Product: Light yellow-green, pungent, bittersweet, juicy and sticky.

. Uses: Spices, perfumes, treats fever, sore throat, lung, asthma, constipation, indigestion and cold. [24]

Preservative:

Chemicals called preservatives are used in food, medicine and cosmetics.

They added it to the formula to prevent bacteria from damaging the ingredients. They also eliminate unnecessary medication changes. There are generally two types of preservatives: The first is antibiotics.

Antioxidants act as antioxidants. [27,28]

India's Prospects and Future Opportunities One of the key areas for the pharmaceutical industry is India.

This is the reason that a lot of big businesses are keen to grow and make investments in this industry worldwide.

The use of new methods and new methods in the operation of NDDS will create many needs in terms of implementation and development. India is known for its ability to quickly adapt to new products and related technologies. Therefore, excipients in the Indian market [29]

CONCLUSION:

Nanoparticles impact management, drug delivery options, marketing, and business continuity by reducing drug toxicity, reducing medical costs, and improving bioavailability. They also aid in the synthesis of molecular contrast agents and the conversion of poorly soluble, absorbent and unstable bioactive substances. Nanoparticle systems for drug delivery. Nanoparticles generally have greater intracellular uptake than microparticles Due to their small size and relative mobility,

they can achieve many biological targets When new drugs are introduced into the body, these are now a field of science. It is known for its clear benefits, its ability to provide unparalleled physical stability, its first delivery and its special medicine, and it can open new horizons in health, safety and quality of treatment. In this review, the following information is given about new herbal medicines and their types, drug types, herbal uses and the current market of new herbal medicines. Research continues in the field of new drug delivery, focusing on active herbs and extracts. We also need to pay attention to transporter research, develop suitable transporters, reduce toxicity, improve performance and improve overall efficiency. However, phototherapy needs a scientific approach to deliver ingredients in new ways to increase patient compliance and prevent drug mixing. This can be done by developing new herbal medicines. New Drug Delivery Systems (NDDS) NDDS may be a combination of new drugs that are not numbered but have better sites than expected. Advantages of new drug delivery systems; Using the right medicine at the right time and in the right place, Making expensive medicines cheaper, Use of additional materials and reducing costs, Patient use, Better health services and global lifestyle. [30]

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