Phytosome is a complex of a natural active ingredient and a phospholipid. Phytosome technology enhances the bioavailability of herbal extracts. In phytosomes technology the individual components of an herbal extract are bound to phosphatidylcholine. The emerging technology of drug delivery is being applied to phyto-pharmaceuticals for the improvement of bioavailability of herbal extracts for medicinal applications. The bioavailability of the active constituents were enhanced greatly due to the improved capacity of phytosome system to cross the biomembrane and reaches the systemic circulation. The term “phyto” means plant while “some” means cell-like. Phytosomes are little cell like structure. It may be either in the ratio of 1:1 and 1:2. This is advanced forms of herbal formulations which contain the bioactive phytoconsituents of herbal extract surrounded and bounded by a lipid membrane. There are a number of products available in the market that contains phytosomal drug delivery system such as Ginkgo biloba, Curcuma longa and Silybum marianum. Phospholipid based drug delivery systems have been found promising for the effective and efficacious herbal drug delivery. The phytosomes are developed in order to carry the drug to boost up metabolism and for specific site targeting of the drug. Based on the published reports, the recent progress in the research of phytosomes including preparation, characterization, advantage, application, limitation and its commercial availability is reviewed under this article.
INTRODUCTION:
Phytosomes are enhanced microsphere or cell forms of herbal products that are more readily absorbed and generate a superior pharmacokinetic and pharmacodynamics profile than ordinary herbal extracts [1]. Herbosomes are another name for these. "Phyto" refers to a plant, while "some" refers to a cell [2]. The active components of the phytosomes, plant extract and their constituents are attached to phospholipids, primarily phosphatidylcholine, to form a lipid compatible molecular complex. Phospholipids are complex chemicals that are used to create cell membranes in all known life forms. They are the building blocks of cell membranes, forming the matrix into which a wide range of proteins such as enzymes, transport proteins, receptors, and other biological energy converters can fit. In humans and other higher animals the phospholipids are also employed as natural digestive aids and as carriers for both fat-miscible and water miscible nutrients [3].

Phosphatidylcholine is not only a passive "carrier" for the bioactive flavonoids of the phytosomes, but is itself a bioactive nutrient for liver disease. Flavonoids (e.g., anthocyanidins from bilberry, catechins from green tea, silymarin from milk thistle) are the most bioactive constituents of phytomedicines. Poor absorption of many flavonoids is due to two factors. First, they are having multiple-ring molecules that are too large to be absorbed by simple diffusion. Secondly, flavonoid molecules typically have poor miscibility with oils and other lipids, which limited their ability to pass across the lipid-rich outer membranes of the enterocytes of the small intestine. Water-soluble flavonoid molecules can be converted into lipid-compatible molecular complexes; aptly called phytosomes.

The phospholipid molecular structure includes a water-soluble head and two fat-soluble tails. Because of this dual solubility, the phospholipid acts as an effective emulsifier. By combining the emulsifying action of the phospholipids with the standardized botanical extracts, the phytosome form provides dramatically enhanced bioavailability for lipid soluble drugs explained by faster and improved absorption in the intestinal tract [4]. Phytosome protect the valuable components of the herbal extract from destruction by digestive secretions and gut bacteria. Phytosomes are use in the treatment of the acute and chronic liver disease of toxic metabolic or infective origin or of degenerative nature. It can also be used in anti-inflammatory activity as well as in pharmaceutical and cosmetic compositions [5]. The intakes of phytosome preparations sufficient to provide reliable clinical benefit often also provide substantial phosphatidylcholine intakes. The phytosome process has been applied to many popular herbal extracts including Ginkgo biloba, grape seed, hawthorn, milk thistle, green tea, and ginseng [6].

The phytosomal formulations have gained importance in various fields like pharmaceuticals, cosmeceuticals and nutraceuticals in preparing different formulations such as solutions, emulsion, creams, lotions, gels, etc. This article reviews the progress in phytosome research and highlights the recent advances in their therapeutic applications [7].

The phytosome technology is a breakthrough model for [8, 9]:
- Significantly greater clinical benefit.
- Assured delivery to the tissues.
- No compromise of nutrient safety.
- Marked enhancement of bioavailability.

Phytosomes means herbal drug loaded in vesicles, which is available in the nano form. The phytosome provide an envelope, like coating around the active constituent of drug and due to this the chief constituent of herbal extract remains safe from degradation by digestive secretion and bacteria. Phytosome is
effectively able to absorb from a water loving environment into lipid loving environment of the cell membrane and finally reaching to bloodstream \cite{10,11}.

**Advantage of Phytosomes** \cite{12-18}

Phytosomes have the following advantages:

1. It enhances the absorption of lipid insoluble polar phytoconstituents through oral as well as topical route showing better bioavailability, hence significantly greater therapeutic benefit.
2. Appreciable drug entrapment.
3. As the absorption of active constituent(s) is improved, its dose requirement is also reduced.
4. Phosphatidylcholine used in preparation of phytosomes, besides acting as a carrier also acts as a hepatoprotective, hence giving the synergistic effect when hepatoprotective substances are employed.
5. Chemical bonds are formed between phosphatidylcholine molecule and phytoconstituent, so the phytosomes show better stability profile.
6. Application of phytoconstituents in form of phytosome improves their percutaneous absorption and act as functional cosmetics.

**LIMITATIONS OF PHYTOSOMES**

Phytosomes, despite of having numerous advantages as drug delivery system, are not prevalent in the market. Yamila B. Gándola et al. 2014 mentioned that phospholipids (lecithin) can induce proliferation on MCF-7 breast cancer cell line \cite{19}. A major drawback of phytosome could be leaching of the phytoconstituents off the ‘some’ which reduces the desired drug concentration indicating their unstable nature \cite{20}.

**PROPERTIES OF PHYTOSOMES**

**Chemical properties**
Phytosomes is a complex between a natural product and natural phospholipids, like soy phospholipids. Such a complex is obtained by reaction of stoichiometric amounts of phospholipid and the substrate in an appropriate solvent. On the basis of spectroscopic data it has been shown that the main phospholipid-substrate interaction is due to the formation of hydrogen bonds between the polar head of phospholipids (i.e. phosphate and ammonium groups) and the polar functionalities of the substrate. When treated with water, phytosomes assumes a micellar shape forming liposomal-like structures, In liposomes the active principle is dissolved in the internal pocket or it is floating in the layer membrane, while in phytosomes the active principle is anchored to the polar head of phospholipids, becoming an integral part of the membrane for example in the case of the catechins-distearoyl phosphatidylcholine complex, in this there is the formation of H-bonds between the phenolic hydroxyls of the flavone moiety and the phosphate ion on the phosphatidylcholine side \cite{21}.

**Phosphatidylcholine**
This can be deduced from the comparison of the NMR of the complex with those of the pure precursors. The signals of the fatty chain are almost unchanged. Such evidences inferred that the two long aliphatic chains are wrapped around the active principle, producing a lipophilic envelope, which shields the polar head of the phospholipid and the catechins \cite{22}.

**Biological properties**
Phytosome are advanced forms of herbal products that are better absorbed, utilized and as a result produce better results than conventional herbal extracts the increased bioavailability of the phytosome over the non-complexed botanical derivatives has been demonstrated by pharmacokinetics studies or by pharmacodynamic tests in experimental animals and in human subjects \cite{23}. 


DIFFERENCE BETWEEN PHYTOSOMES AND LIPOSOMES:
Phytosome products, after numerous studies prove that they are markedly better absorbed and have substantially greater clinical efficacy over niosomes and now a day’s companies have successfully applied this technology to a number of standardized flavonoid preparations. The following table-1 shows the major differences between phytosome and liposome [19].

\[ \begin{array}{|c|c|c|}
<table>
<thead>
<tr>
<th>Property</th>
<th>Phytosome</th>
<th>Liposome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonding</td>
<td>It is a unit of few molecules bonded together</td>
<td>It is an aggregate of many phospholipid molecules that encloses other phytoactive molecules without specifically bonding to them.</td>
</tr>
<tr>
<td>Bioavailability and Absorption</td>
<td>It has much better bioavailability and absorption</td>
<td>Its bioavailability and absorption is lesser than phytosome.</td>
</tr>
<tr>
<td>Arrangement of molecules</td>
<td>(phosphatidylcholine) and an individual phytoconstituent are present in 1:1 or 2:1 ratio depending on the substance.</td>
<td>In liposomes, hundreds and thousands of phosphatidylcholine molecules surround the water soluble molecule.</td>
</tr>
</tbody>
</table>
\]

MECHANISM OF PHYTOSOME TECHNOLOGY
The lower values of absorption and bioavailability of polyphenolic constituents are mainly due to the two factors. These chief constituents are number of ringed molecule and are not too much small that it will absorbed by diffusion process. Second factor is that flavonoid molecule or chief constituents of polyphenols have poor solubility with lipids. These are the limitations that inhibit their absorption through biological membrane. Phytosome technology is mainly result with complexation of polyphenols with phospholipid in 1:1 ratio or 1:2 results in the formation of phytosomal complex with lipid covering around the constituents [27].

PREPARATION TECHNIQUES FOR PHYTOSOMES
The four main processes are described as: 

**Solvent evaporation method**

The solvent evaporation methods involve integration of the phytoconstituents and PC during flask containing organic solvent [28]. This reaction mixture is kept at an optimum temperature usually 40°C for specific interval of 1 hr to achieve maximum drug entrapment within the phytosomes formed. Thin film phytosomes are separated by 100 mesh sieves and stored in desiccators for overnight [29, 4].

**Mechanical Dispersion method**

In the experiments, the lipids dissolved in organic solvent are brought be in contact with aqueous phase containing the drug (Sikarwar MS et al., 2008). The next removal of the organic solvent under reduced pressure results in the formation of phyto-phospholipid complex. Recently methods for the phospholipid involute preparation includes super critical fluids (SCF), which include gas anti-solvent technique (GAS) compressed anti solvent process (PCA), supercritical anti solvent method (SAS) (Li Y et al.) [30].
**Salting out technique**

An important method of phytosome preparation that done by dissolving both PC and therefore the plant extract during a suitable organic solvent then n-hexane was added until the extract-PC complex precipitation occurs [31].

**Lyophilization method**

The lyophilization technique DSN was plenary dissolved in DMSO. The resulting DSN solution (2.5% weight/volume) was added to the answer of SPC dissolved in t-butylalcohol (1.5% weight/volume) followed by stirring for 3 hours on a magnetic stirrer until complex formation. The complex was then isolated by lyophilization. After abstracting the samples from the freeze drier, the resultant DSN: SPC involute (yield 90.4%, weight/weight) was placed in a desiccator over P2O5 at 4°C until testing is done. For the culled developing technique the influence of variable formulation factors was assessed including SPC type (Lipoid® S100, Lipoid® S75 and Lipoid® S PC-3), drug phospholipid ratio (1:1, 1:2, and 1:4) and co-solvent type of chemical (methanol, ethanol, chloroform, acetone, and TBA). Non-conventional methods are customarily employed in construction of phytosome complexes. Modernistic herbal complexes are composed by reaction between equilar amalgamation of natural or synthetic phospholipid and active constituents or herbal extract in acrostic organic solvents [18, 32].

**Anti-solvent precipitation process:** Certain amount of herbal extract and phospholipids is refluxed with 20 ml of organic solvents like acetone at specific experimental conditions below 50°C for 2-3 hr. The reaction mixture is concentrated to minimum volume up to 10 ml then addition of solvent having low polarity like n-hexane with constant stirring gives precipitates. Filtered precipitates are stored in desiccators. The dried precipitates are pulverized and powdered involute are stored in dark amber colored glass bottle at temperature [33].

**Rotary evaporation process:** Specific weight of herbal extract and phospholipids were mixed in 30 ml water miscible organic solvent like acetone in round bottom glass container followed by stirring for two hours at a temperature but 50°C in Rota evaporator. Anti-solvent like n-hexane is often added to thin film which is obtained after uninterrupted stirring employing a stirrer [34]. Precipitate of phytosomes obtained is often stored in amber colored glass container at controlled temperature under specified humidity. Phospholipids solubilized in ether are slowly injected drop wise in a solution of the phytoconstituents which is to be encapsulated. It leads to the formation of cellular vesicles on subsequent solvent abstraction, resulting in involute formation [35]. Structure of phytosomes depends upon concentration amphiphiles in mono state are produced when the concentration is a smaller amount, but sort of structures with different shapes viz. round, cylindrical, disc and cubic or hexagonal vesicles could also be formed on increasing the concentration [36]. Fig. 1 represented the general method for preparation of phytosomes.
Table 2: Formulated complexes and innovations in Phytosomes\textsuperscript{[10, 60-68]}

<table>
<thead>
<tr>
<th>Sr.no</th>
<th>Complexes</th>
<th>Description of innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Phospholipid complexes of olive fruits or leaves extracts</td>
<td>Having improved bioavailability</td>
</tr>
<tr>
<td>2</td>
<td>Compositions comprising Gingko biloba derivatives</td>
<td>Useful for asthma and allergic condition</td>
</tr>
<tr>
<td>3</td>
<td>with thymosin beta-4</td>
<td>Composition of thymosin for treatment of skin</td>
</tr>
</tbody>
</table>
Soluble isoflavone compositions Exhibit improved solubility

Phospholipid curcumin complex and piperine as chemosensitizing agent Treatment of drug resistant

Fatty acid monoesters of sorbityl furfural and composition for cosmetic and dermatological use Fatty acid monosester of sorbityl furfural selected from two different series of compounds in which side chain is linear alkyl radical optionally containing at least one ethylenic unsaturation

Cosmetic and dermatological compositions for the treatment of aging and photo-damaged skin Cosmetic or dermatological composition for topical treatment

Complex of saponin with phospholipid High lipophilic and improved bioavailability and suitable for use in pharmaceutical cosmetic compositions

An antioxidant preparation based on plant extract Used in circulation problems, arteriosclerosis and high blood pressure

CHARACTERIZATION OF PHYTOSOMES

Differential scanning calorimetry
Differential scanning calorimetry (DSC) is a thermo-analytical technique used to measure a number of properties of a sample [7]. It is possible to observe the transition temperature, the elimination of endothermic peaks, appearance of new peaks, changes of relative peaks area and so on [37-42].

Dynamic light scattering and photon correlation Spectroscopy
The particle size and zeta potential can be determined by dynamic light scattering (DLS), using a computerized inspection system. Photon correlation spectroscopy (PCS) can also be used to determine the particle size of phytosomes [42].

Scanning electron microscopy and transmission electron microscopy
The surface morphology of the complex can be observed by scanning electron microscopy (SEM) and transmission electron microscopy (TEM). In the complex, active constituents are combined with the polar part of phospholipids. When stirred in distilled water, lots of complexes form a structure of vesicles by themselves. Therefore, there are many particles suspended in water, like liposomes but not liposomes essentially [43, 44].

X-ray diffractometry
X-ray diffractometry (XRD) is used to identify specific crystalline compounds based on their crystal structure. The results of related researches showed that the powder X-ray diffraction pattern of active constituents usually consists of partial sharp crystalline peaks, which is the characteristic of an organic molecule with some crystallinity. In contrast, phospholipids generally show an amorphous structure lacking crystalline peaks. The crystalline peaks usually disappear in the phytosomes compared with that of the physical mixture [45--48].

UVspectra
Appropriate amounts of the test samples (active constituents, phospholipids, their physical mixture and the complex) are used to obtain the UV-spectra. Some results show that the UV
absorption characteristics of active constituents before and after complexation usually have no difference, which is a strong indication that the bonding of the drug with phospholipids does not affect the conjugation system of drug and the chromophores are not altered[49,50].

**Solubility studies**
The determination of solubility of active constituent, active constituent phytosomes and physical mixture of active constituent and phospholipids in noctanol/water, or known as n-octanol/water partition coefficient (P), are necessary for solubility studies. Due to the strong dispersibility or/and amorphous form of active constituent phytosomes, which can significantly increase the lipophilicity and hydrophilicity of active constituents. The solubility of phytosomes could be much higher than that of active constituents [41, 48].

**Structure verification of phytosomes:**
In order to confirm the formation of phytosomes as well as to study the corresponding interaction between active constituent and phospholipids, the following methods usually employed.

**Nuclear magnetic resonance**
The nuclear magnetic resonance (NMR) spectrum of the silybinphospholipid complex has been studied. The 1 H NMR spectrum showed that the signals of the protons in silybin and phospholipids had remarkable distinction some of the phospholipids protons have weakened so remarkably that they cannot be observed, indicating that these protons were involved in the formation of the complex, whereas the proton signals of the fatty acid chains in phospholipids were still clear with no change, indicating that they were not involved in complexation. In the study of the silybinphospholipid complex by 13 C NMR, the results showed that the relaxation time of the drug’s carbon cores has decreased significantly, making the corresponding signals of the carbon spectrum decreased or disappeared. Meanwhile, the signals of –N(CH3)3 +in phospholipids have broadened; whereas conjugant signals of fatty acid chains retain their original sharp peaks. These NMR studies demonstrate that information obtained from 13 C NMR and 1 H NMR spectrum can help up to confirm the formation of active constituent phytosomes or to study reciprocal interaction between the active constituents and the phospholipids [7, 51].

**FTIR spectroscopy**
The structure of the complex also can be confirmed by IR spectroscopy by comparing the spectrum of the complex with the spectrum of the individual components and their physical mixtures. It has been reported that [52] the physical mixture of matrine and phospholipids and the matrinephospholipid complex showed distinct IR spectra. Compared with the complex, the peaks at 1737 cm −1 and 1630 cm −1 were clearly found in the spectrum of physical mixture. However, in the spectrum of their complex, the characteristic absorption peak of matrine was almost completely masked by that of phospholipid at 1644 cm −1. The FTIR method can also be considered as a valuable tool in confirming the stability of active constituent phytosomes by comparing its spectrum in solid form with that of the spectrum of micro-dispersion in water after lyophilization at different times [51].

**APPLICATIONS OF PHYTOSOMES**
For enhancing bioavailability: Phytosomes of Evodiamine proved to have higher in vitro dissolution rate, better absorption, longer action time and higher bioavailability. A prolonged action time and higher bioavailability was observed due to extended release of the drug from the phytosome [28]. The Oleaselect phytosomes showed a higher percentage of HT (hydroxytyrosol) and HVAlc (homovanillyl alcohol) indicating increase in oral bioavailability as compared to the group treated with uncomplexed extract. A dose-related reduction of iso-prostanes excretion was also observed [53].
Antioxidant properties: S. Moscarella et al 1993; studied the antioxidant and free radical scavenging activity of Silipide which is phytosome of Silybum marianum plant against liver oxidative damage induced by CC14 and Paracetamol (high dosages) in rats. The mechanism by which Silipide protects hepatocytes against oxidative damage may be through inhibition of lipid peroxidation by scavenging reactive oxygen species [4].

A physically stable phytosomal formulation of Quercetin was prepared with higher encapsulation efficiency and physical stability to improve its efficacy in intestinal absorption and its preservation from oxidation in foodstuffs [54].

Hepato-Protective: The traditional uses of Andrographolide (AN) obtained from Andrographis paniculata Linn include treatment of fever, inflammation, common cold, tonsilitis, pharyngitis, laryngitis, pneumonia, tuberculosis, pyelonephritis and hepatic impairment etc. The equimolar dose of drug shows lesser absorption and elevated levels of SGOT and SGPT in serum as compared to its phytosome dose indicating its hepatoprotective nature [55].

Cancer treatment:
S. Shalini et al. 2015 researched on methanolic extract of Terminalia Arjuna bark and its phytosome to investigate its antiproliferative activity on human breast cancer cell line MCF-7 by MTT assay by comparing its activities with Quercetin and its phytosomes. The IC50 values of the extract and its phytosome were 25μg/ml and 15μg/ml respectively which suggests that they exert more anti-proliferative effect as compared to free drug [56].

Transdermal application
Malay K Das et al. 2104, investigated about Rutin, one of the most common flavonoid (Ruta graveolens) used to treat capillary fragility, hypertension, ultraviolet radiation induced cutaneous oxidative stress, hepatic and blood cholesterol, cataract, cardiovascular disease and possesses antioxidant, anti-inflammatory, antithrombotic, antineoplastic, and antiplatelet activity. It was observed that the Rutin phytosomes were better able to penetrate the impermeable stratum corneum than its free form. Skin uptake of Rutin phytosomes was 33 ± 1.33 % whereas that of Rutin was 13 ± 0.87 % [57]

Approved for cosmetic and pharmaceutical applications:
• Low-risk profile
• Toxicological properties have been well documented
• Delivery of large and diverse drugs e.g. peptides and proteins
• Safe composition
• High market attraction [58, 59].
Table 3: Commercially available Phytosomal products[^69-71]

<table>
<thead>
<tr>
<th>SNo.</th>
<th>Product name</th>
<th>Active ingredient</th>
<th>Biological source</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Centella phytosomes</td>
<td>Triterpine</td>
<td>Centella asiatica</td>
<td>Cicatrizng, trophodermic</td>
</tr>
<tr>
<td>2</td>
<td>Ginselect phytosomes</td>
<td>Ginsenosides</td>
<td>Gingko biloba</td>
<td>Adaptogenic</td>
</tr>
<tr>
<td>3</td>
<td>Greenselect phytosomes</td>
<td>Polyphenols</td>
<td>Camellia sinensis</td>
<td>Free radical scavenging activity</td>
</tr>
<tr>
<td>4</td>
<td>Silymarin</td>
<td>Silymarin</td>
<td>Silybum marianum</td>
<td>Antihepatotoxic</td>
</tr>
<tr>
<td>5</td>
<td>Oleoselect tm phytosome</td>
<td>Polyphenols of olive oil</td>
<td>Olea europaea</td>
<td>Anti-inflammatory, antioxidant</td>
</tr>
<tr>
<td>6</td>
<td>Crataegus phytosomes</td>
<td>Vitexin-2’-orhamonoside</td>
<td>Crataegus mexicana</td>
<td>Antioxidant</td>
</tr>
<tr>
<td>7</td>
<td>Visnadine</td>
<td>Visnadine</td>
<td>Ammi visnaga</td>
<td>Circulation improver</td>
</tr>
<tr>
<td>8</td>
<td>Bilberry</td>
<td>Triterpine</td>
<td>Vaccinium myritillus</td>
<td>Potent antioxidant</td>
</tr>
<tr>
<td>9</td>
<td>Ruscogenin phytosomes</td>
<td>Steroid saponin</td>
<td>Ruscus aculeatus</td>
<td>Anti-inflammatory</td>
</tr>
<tr>
<td>10</td>
<td>Pa2 phytosomes</td>
<td>Proanthocynidin</td>
<td>Horse chestnut bark</td>
<td>Antiwrinkles, ultraviolet protectant</td>
</tr>
<tr>
<td>11</td>
<td>Zanthalene phytosomes</td>
<td>Zanthalene</td>
<td>Zanthoxyllum bungeanum</td>
<td>Soothing, anti-itching</td>
</tr>
<tr>
<td>12</td>
<td>Lymphaselect phytosomes</td>
<td>Triterpines</td>
<td>Melilotus officinalis</td>
<td>Indicated in insomnna</td>
</tr>
<tr>
<td>13</td>
<td>Rexatrol</td>
<td>Resveratrol</td>
<td>Polygonum cuspidatum</td>
<td>Antioxidant, antiaging</td>
</tr>
<tr>
<td>14</td>
<td>Sericoside phytosome</td>
<td>Sericosides</td>
<td>Terminalia asericea</td>
<td>Skin improver</td>
</tr>
<tr>
<td>15</td>
<td>Echinacea phytosome</td>
<td>Echinacosides</td>
<td>Echinacea angustifolia</td>
<td>Immunomodulators, nutraceuticals</td>
</tr>
<tr>
<td>16</td>
<td>Sabalselect phytosome</td>
<td>Fatty acid, sterols</td>
<td>Serenoa repens</td>
<td>Beningn prostate hyperplasia</td>
</tr>
</tbody>
</table>

REFERENCES
5. www.doctormurray.com/articles/silybin.html
6. Chauhan N.S et al. Phytosomes: A potential
30. Jose MM, Bombardelli E. Pharmaceutical Composition Containing Flavanolignans and


50. Song YM; Zhuang J; Guo J; Xiao Y; Ping Q. Pharmazie, 2008; 63: 35–42.

51. Chen ZP; Sun J; Chen HX; Xiao YY; Liu D; Chen J; Cai H; Cai BC. Fitoterapia, 2010; 81: 1045–1052.


58. Das MK, Kalita B. Design and Evaluation of PhytoPhospholipid Complexes (Phytosomes) of


65. Bertelli V. Fatty Acid Monoesters of Sorbityl Furfural and Composition for Cosmetic and Dermatological use EP1690862.2006


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