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Saponines Secondary metabolites and their physical uses as pharmaceutical Excipients .

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ABSTRACT: plant are always concidered the part of interest as source of research and innovations in the pharmaceutical science. They are considered as natural laboratory because of number of metabolic reactions are occurredsimultaneously. Many of the secondary metabolites not only studiedunderconsideration of their pharmacological action but also many of these having properties as pharmaceutical excipients eg. Biosurfactant, emulsifying agent etc…
This research paper gives detailed about study of Sapindus mukorossi in perspective
Of biosurfactant and emulsifying agent by the forming micelle and stabilize the unstable system by acting as emulsifying agent between oil and water
Keywords : biosurfactant , emulsifying agent ,S.mukorossi , excipients

I. INTRODUCTION

sapindus mukorossi (ritha) is well known species of plant from family sapindaceae it also introduced itself for their natural soap in nature after come interactive contact with the water. It is also having wide chemical uses as respect to the uses un cosmetics and traditional uses like In migraine , laxatives , antacids etc….but it also having some physicochemical properties like emulsifying / micro emulsifying property it is act as potentially biosurfactant activity by decreasing the interfacial tension between two immiscible surface of liquids .the main constituents which is present in the S.mukorossiplant which is actively essential to shows property of biosurfactant factor and emulsifying agent saponines are naturally occurring compounds that are widely distributed in all cells of legumes plant. Saponines which derived their name from their ability to form stable soap like form in aqueous solution, constitute a complex and chemically diverse group of compounds these are thermal sensitive, the major compounds isolated from Sapindus mukorossi are triterpenoids saponines of mainly three oleanane, dammaraneand tirucullane types, it can showing emulsifying activity for kerosene and various plants oils was found to be excellent in comparison with synthetic surfactant like SDS sodium dodecyl sulfate.
These functional property are comparable to the saponines composites which is chemically extracted from ritha hence crude part of the plant Is legumes ritha used as an economical biosurfactant there is the growing interest in the natural and green surfactant due to excellent functions properties and being biologically and environmentally safe as well as ecological adaptable the particular plant which having that's property and are under the researchwork is sapindus mukorossi plant
Plant:- kingdom– plantae
Clade :- trichophytes
Order :- sapindus
Family :- sapindaceae
Genus :- sapindus
Species :- mukorossi
S.mukorossi fruits in the form of nut it is used to extract the extraction of the liquid by maceration after the process usually totally ripened fruits is selected to Got more and much efficacy of result

II. METHODOLOGY

to got the scientifically desiredresult after the accurate procedure followed for the experiment that's depends resulted the emulsifying index of the prepared solutions

III. PROCEDURE

For preparation of extract of S.mukorossi nutes

1. collect dried nut fruits of the S.mukorossi
2. Wash is properly
3. Separate pericarp of the fruit and seeds
4. Desired part is pericarp which is highly concentrated by saponines
5. Take 20 gm of separated pericarp and introduced with 200 ml of double distilled water in the beaker
6. And soaked it over night
7. After 12-14 hr it vortexed by magnetic stirrer at the medium speed for 2 hrs.

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8. During whole procedure temperature must be room Temperature
9. After the stirring , filter this solution by the sieve (58 um)
10. The entire concentration of solution is till 0.1gm /cc, (10wt%)
11. Centrifuge this solution by centrifugation machine by speed 4000rpm for 20 minute at the room temperature
12. After the centrifugation we will get suspended free solution
13. PH between (4.6-5.4)

Test :- 1. Foam test :- 1 ml solution of extracted was diluted with distilled water to 20 ml and shaken in graduated cylinder for 15 minute

Result :- development of stable soap suggest the presence of saponines

2. Ritha-A, ritha-B, and ritha C solutions at CMC were tested separately for the emulsifications activity

Procedure :- 2 ml of ritha + 5 ml of water + 7 ml of paraffin oil

1. Vortexed vigorously for 2 minute to obtained maximum emulsion
2. Quantity of ritha solutions we can exchange to get repost
3. Same procedure repeats for solutions ritha B and ritha C

IV. EVALUATION

keep preparedemulsion for 48 hr s to got emulsifyingproperty of S.mukorossi and resultant it got passed by oil paraffin + water + ritha solution

Assay :- 3ml of ritha solution + 0.5 ml o coconut oil+ vortexed about 2 minute = emulsion

Incubated at room temperature for 1 hr withoutdisturbing.

Emulsification acting using liquid paraffin and various plants oil was found to be excellentin comparison with commercially available SDS surfactant(sodium dodecyl sulphate)

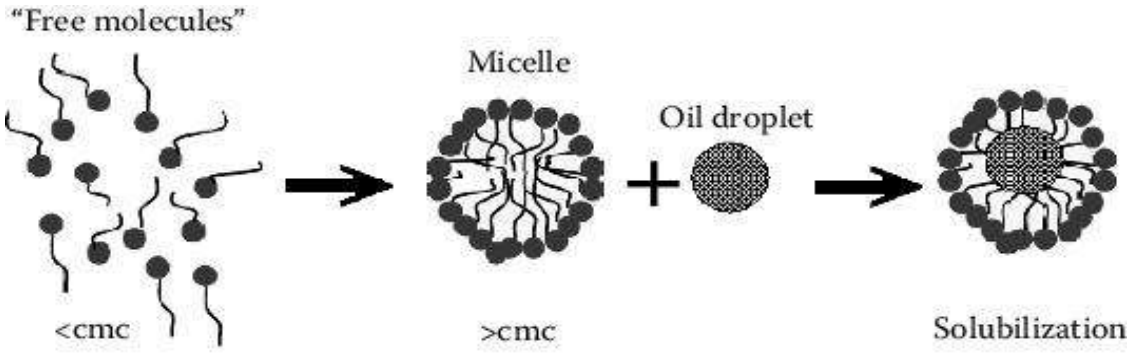
As the excellence surfactant and its also having properties of antimicrobial and insecticidal it is also used as the toilet preparation

Principle :- during performing test to check the quality of th emulsifying agent we have to must considerwhat's index by which our agent should minimize the interfacial tension between two molecules phases ,which is basically immiscible in nature

By micelles forming it is able to mixed two immiscible phases into one phase l.e

Water + oil = emulsion

Head is hydrophilic in nature
Tail is hydrophobic in nature



If we consider about O/W emulsion then continuous phase is water and dispersed phase is oil

Then head Is able to make consistency of the continuous phase and oil molecules goes inside the globules

Critical micelles concentration (CMC) :- critical micelle concentration on the this term is very important regarding to the estimate surface active property of the particularsurfactant, here surfactant activity carrying substance / solution is sapindus mukorossi solution which is shows essential property to minimize the interfacial tension between two immiscible liquids phases

In colloidal and surface chemistry the critical micelle concentration CMC is defined as the concentration of surfactant above which micelles form and all additional surfactant added to the system will form Micelles the critical micelle concentration is an important characteristics of surfactant

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Surfactant :- biosurfactant are active compoundsthat's are produced at the microbial cell surface or excreted and reduces surface and interfacial tension

As ritha solution I have prepared after the followed standard procedure so that is able to shows biosurfactantactivity

Bio- concerts as it is collected from the natural origin eg plant sapindus mukorossi, surfactantusually considered as agents which are able to reduce the interfacial tension between two immiscibleliquids called as surfactants

And as per the case study our prepared solutions is able to make solutionsfrom Immiscible to miscible formso that's why I can say that it is shows surfactant activity hence we have consider as it is surfactant in nature

Emulsifier :- emulsifier agent which is considered as the agent which are used to maintain stability of the emulsion (to resist reparation of two phases)

By concept of the micelles forming our liquids molecules are able to emulsifying that's two immiscible molecules and maintain stability of their mixing it avoid to Separate two mixing it avoid to separate two phase and maintain stability of the prepared preparation l.e O/W & W/O

Analytical result :- prepared solutions is able to shows emulsifying index well in both types of the emulsions but in thecompared with each other O/W shows better emulsifying index than the W/O

The required completed by the as per my recorded unit is

I prepared emulsion and put is for 48 hrs at room temperaturewithout any physical distribute

Then there is no separation of two layers of oil and water

Temperature :-When we increasedtemperature of the surrounding than the normal room temperaturel.e above 40.c then chances of cracking of emulsion

Because when temperature is increased then hydrophilic molecule are ionic in nature so may be changes of formations of two equalcaring chargesbetween two phases and may repulsion will be happen so avoid temperaturemore than Room temperature

If the particle are pre adsorbed to water drop interfaces by emulsification at room temperaturesubsequentlyincrease of the temperature leads to a progressive increase in cracking and coalesces as particle melt disturbed from interface ..

V. CONCLUSION

by reducing the surface tension between oil and water in the both the cases in O/W and O/W formation of micelles and provide stable nature to the emulsion that's all due to a surfactant and maintain stability of micelles concentration means equal concentration of free molecules with respectto theoil and Form micelles globules and maintain stabilizesystem done by the emulsifyingagent's

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