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Qualitative and quantitative analysis of phytochemicals in *ficus religiosa*

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Abstract
Abstract: Ficus commonly known as "Peepal tree" is a large tree found throughout India. It is a sacred tree which is having traditional uses as well as pharmacological activities.
Materials and Methods: *Ficus religiosa* Q, 6C, 12C, 30C, 200C, 1000C potencies are taken tested with different reagents to find out the presence of different phytochemicals in it.
Results: Potencies beyond avagadro limit also has shown presence of phytochemicals
Conclusion: Homoeopathic doses of medicines are too dilute i.e., beyond Avogadro limit medicines, therefore often receive criticism on their activity as having placebo effect. The present study lays emphasis on presence of phytochemicals even they are diluted beyond Avogadro number.

Keywords: *Ficus religiosa* mother tincture and high potencies potentization, phyto chemical analysis, amino acids, carbohydrates, proteins, flavonoids, glycosides

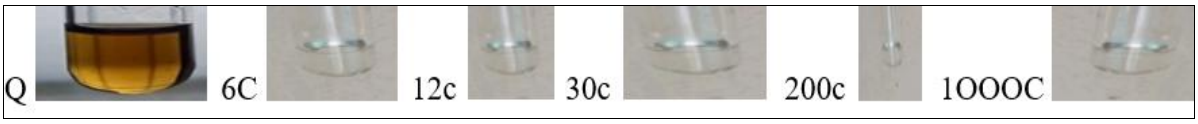
Introduction
India is rich in therapeutic plants. Plants play significant role in maintaining human health and importing quality of human life for thousands of years. Ficus commonly known as "Peepal tree" is a large tree found throughout India. One of the most controversial features in Homeopathy is principle of potentisation. During potentisation process due to absorption of electromagnetic waves, very slight isotopic molecules of medicinal material are created. These weightless isotopic molecules of medicinal materials will retain properties of original drug substances which increase pharmacological and therapeutic activity. Mass less particles will travel at the speed of light and possess momentum and energy but no rest mass. Hence in Homeopathy the medicinal particles are considered as mass less particles which have no mass but has only energy. Homeopathic potentised medicine has mass less particles having energy only; this energy is responsible for curing the natural disease. Homeopathic medicines are prepared from various biologically active substances that belong to different kingdoms. They are subjected to different procedures and diluted to reduce their toxicity and to ensure that they are biologically active and compatible with process of human physiology. As doses of medicines are too dilute i.e., beyond Avogadro limit medicines therefore receive criticism on their activity and termed as having placebo effect.
Hahnemann, in his preface to the 5th, volume of chronic disease says that Homoeopathic dynamisation is a process by which the medicinal properties, which are latent in their crude state will become aroused and then act in an almost spiritual manner i.e., in our sensible and irritable fibre. Dynamisation of crude natural dry substances will be done by means of trituration in a mortar, but in case of liquid substances by means of succusion.

Materials and methods: *Ficus religiosa* Q, 6C, 12C, 30C, 200C, 1000C of GMP certified company have been used for study. All reagents have been prepared following standard protocols.

Table 1: Qualitative & quantitative phytochemical analysis

Name of phytochemicals to test	Name of test	Observation for presence of phytochemicals
Proteins	Biuret Test	Purple or violet colour
Amino Acids	Ninhydrin test	violet colour
Carbohydrates:	Fehling test	A brick red ppt appeared at bottom of test tube
For Alkaloids	Dragendroff's reagents Mayer's reagents Hager's Test Wagner's test	Reddish brown precipitate Cream colour precipitate Yellow color precipitate Reddish brown precipitate
Tannins	Ferric chloride test	Blue and green color
Phenolic and tannins	Lead Acetate Test	white precipitate
Flavonoids	Alkaline reagent test	Colourless
Cardiac Glycoside	Keller-killiani test Shinoda test	Blue colour Crimson red colour
Anthraquinone Glycosides	Hy droxyanthraquinone test	red colour
saponin glycosides	Froth formation test	Formation of 1cm layer of foam

Discussion and results: Mother Tincture and Potencies



1. Biurette test

Reagents: 1% Copper sulphate, 10%NaoH

Procedure: To 2ml of sample solution, 5 drops of 1% Copper sulphate solution are added followed by 2ml of 10% NaoH. The contents are mixed thoroughly

Table 2: Biurette test

Mother tincture & Higher potencies	Observation	Inference
Mother tincture	Voilet colour	Presence of proteins
6C	Voilet colour is seen at the bottom of the test tube	Presence of proteins
12C, 30C, 200C,1000C	Slight decrease in the violet colour	Presence of proteins

2. Ninhydrin Test

Reagents: 0.2% sol of ninhydrin

Procedure: sample boiled with 2ml of 0.2% sol of ninhydrin

Table 3: Ninhydrin Test

Mother tincture & Higher potencies	Observation	Inference
Ficus religiosa Mother tincture 6C, 12C, 30C, 200C, 1000C	No change	Absence of amino acids and proteins

3. Fehling test

Reagents: Fehling A and Fehling B

Procedure: Equal volume of Fehling A and Fehling B reagents were mixed together and 2ml of it was added to sample and gently boiled

Table 4: Fehling test

Mother tincture & Higher potencies	Observation	Inference
Mother tincture, 6C, 12C, 30C	A Brick Red PPT appearance at the bottom of the test tube	Presence of reducing sugars
200C, 1000c	Light red colour at the bottom of the test tube	Presence of reducing sugars

4. Dragendroff's test: Dragendroff's reagent

Procedure: one ml Dragendroff's reagent added to the sample solution

Table 5: Dragendroff's test

Mother tincture & Higher potencies	Observation	Inference
Mother tincture	Reddish brown PPT	presence of alkaloids
6C	Reddish brown colour-thick in its consistency	presence of alkaloids
12C, 30C, 200C, 1000C	Reddish brown colour-slight decrease in the thickness of its consistency	presence of alkaloids

5. Mayer's test: Mayer's reagent

Procedure: 1ml of Mayer's reagent added to the sample solution

Table 6: Mayer's test

Mother tincture & Higher potencies	Observation	Inference
Mother tincture 6C, 12C, 30C, 200C, 1000C	Cream colour PPT	presence of alkaloids

6. Hager's test: Hager's reagent

Procedure: 1ml of hager's reagent added to the sample solution

Table 7: Hager's test

Mother tincture & Higher potencies	Observation	Inference
Mother tincture 6C, 12C, 30C, 200C, 1000C	yellow colour	Presence of alkaloid

7. Wagner's test: Wagner's reagent

Procedure: 1ml of Wagner's reagent is added to sample

Table 8: Wagner's test

Mother tincture & Higher potencies	Observation	Inference
mother tincture 6C, 12C, 30C, 200C, 1000C	Reddish brown	Presence of alkaloids

8. Ferric chloride test: Ferric chloride Solution

Procedure: Sample were treated with ferric chloride solution

Table 9: Ferric chloride test

Mother tincture & Higher potencies	Observation	Inference
Mother tincture	Slight green colour	Presence of hydrolysable and condensed tannins
6C,12C,30C,200C	Cream colour	Presence of hydrolysable and condensed tannins
1000C	Clear fluid is seen in the test tube	Presence of hydrolysable and condensed tannins

9. Lead acetate test: 10% lead acetate solution
Procedure: sample solution was dissolved in distilled water and 10% lead acetate solution

Table 10: Lead acetate test

Mother tincture & Higher potencies	Observation	Inference
mother tincture 6C, 12C, 30C, 200C, 1000C	White PPT	presence of phenolics and tannins

10. Alkaline reagent test
Reagents: Sodium hydroxide solution, dil hydrochloric acid
Procedure: To the sample solution, few drops of sodium hydroxide solution were added. Formation of intense yellow colour, which turned colourless after addition of few drops of dil hydrochloric acid

Table 11: Alkaline reagent test

Mother tincture & Higher potencies	Observation	Inference
mother tincture, 6C, 12C, 30C, 200, 1000C	colour less	Presence of flavonoids

11. Keller-killiani test: Glacial acetic acid, 5% ferric chloride solution, conc. sulphuric acid.
Procedure: Glacial acetic acid and few drops of 5% ferric chloride solution are added to the sample solutions con. Sulphuric acid is added along the side of the test tube carefully.

Table 12: Keller-killiani test

Mother tincture & Higher potencies	Observation	Inference
mother tincture	Blue colour in the acetic acid layer	Presence of Cardiac glycosides
6C, 12C, 30C, 200C, 1000C	Slight decrease of blue colour in the acetic acid layer	Presence of Cardiac glycosides

12. Hydroxyanthraquinone test: 10% Potassium Hydroxide

Procedure: To 1ml of sample solution, few drops of 10% Pottasium hydroxide solution were added

Table 13: Hydroxyanthraquinone test

Mother tincture & Higher potencies	Observation	Inference
Ficus religiosa mother tincture	Few drops of Red colour droplets are is seen in the test tube	Presence of Anthraquinone Glycosides
6C, 12C, 30C, 200C, 1000C	Few drops of Red colour droplets are is seen in the test tube	Presence of Anthraquinone Glycosides

13. Shinoda test: Magnesium turning s, concentrated hydrochloric acid.
Procedure: To the sample solutions, a few magnesium turnings are added followed by few drops of concentrated hydrochloric acid

Table 14: Shinoda test

Mother tincture and higher potencies	Observation	Inference
Ficus religiosa mother tincture	Orange colour	Absence of flavonoids
6C, 12C, 30C, 200C, 1000C	Colour less	Absence of flavonoids

14. Test for saponin glycosides: Froth formation test, 20 ml of distilled water

Procedure: A small quantity of the samples was diluted with 20 ml of distilled water and shaken vigorously.

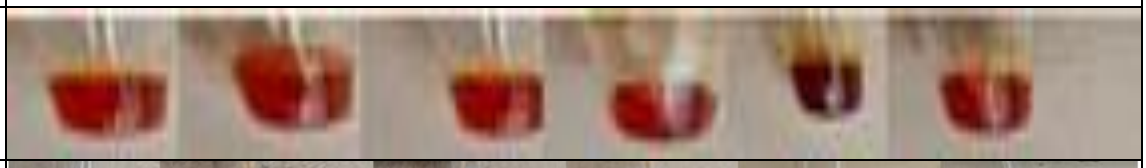
Table 15: Test for saponin glycosides

Mother tincture& higher potencies	Observation	Inference
mother tincture 6C, 12C, 30C, 200C, 1000C	formation of foam	Presence of saponin glycosides

Table 15: Test for saponin glycosides

Mother tincture& higher potencies	Observation	Inference
mother tincture 6C,12C, 30C, 200C, 1000C	formation of foam	Presence of saponin glycosides

Biurette test	
Ninhydrin Test	

Fehling test	
Dragendroff's test	
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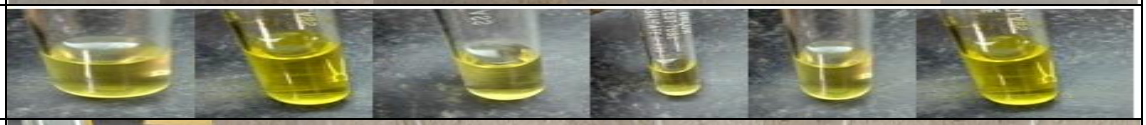
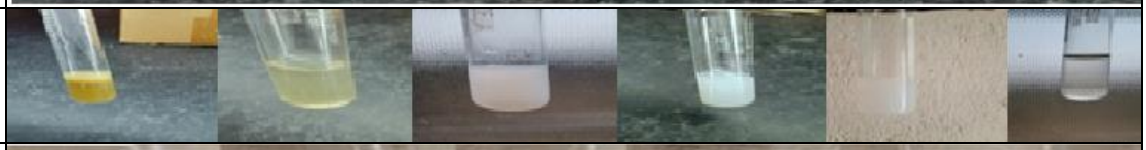
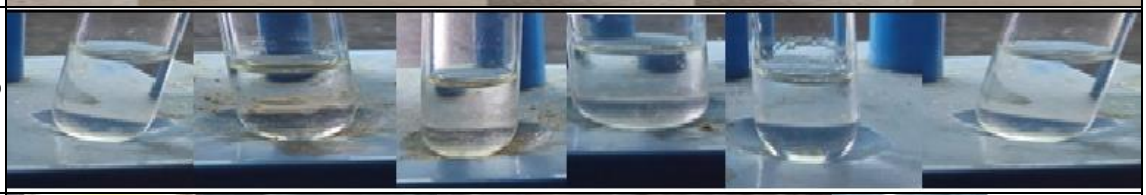
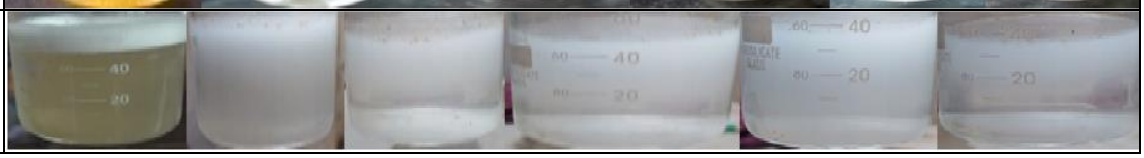
Hagers	
Wagners	
Lead acetate solution	
Ferric chloride	
Alkaline reagent test	
Keller-killiani test	
Hydroxyanthraquinone test	
Shinoda test	
saponin glycosides	

Conclusion

Present study throws light on presence of phytochemicals like Alkaloids, Tannins, Flavanoids, Cardiac glycosides in medicines. Potencies beyond Avogadro limit also has shown presence of phytochemicals. This study has given strong evidence for presence of phytochemicals in *Ficus religiosa* mother tincture and different potencies hence homoeopathic medicines are not placebo. Further studies on this topic will give a lot of evidential support to scientific world

Conflict of Interest

Not available

Financial Support

Not available

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