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FLUORESCENCE ANALYSIS OF SIDDHA POLYHERBAL DRUG PARANGIPATTAI CHOORANAM

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ABSTRACT

The Siddha system of medicine is based on the combination of ancient medical practices and spiritual discipline to pressure and prolong life. Chooranam is one among the 32 types of internal medicines in Siddha system. In the present study Parangipattai chooranam is used in which crude drug evaluation is done by one of the pharmacognostical evaluations namely fluorescence analysis. The investigation on the fluorescent character of the chooranam showed varied colours like yellow, crimson brown, pale pink, pale yellow, florescent green, orange, turbid white, creamy white, lime yellow under ordinary visible light and in short UV – light (254 nm) and long UV – light (365 nm). The result of this study reveals the quality of the drug.

KEYWORDS: Fluorescent analysis, Parangipattai chooranam, Standardisation, Siddha medicine.

INTRODUCTION

Evaluation of drug means confirmation of its identity and determination of its quality and purity and detection of nature of adulteration. The evaluation of a crude drug is essential because of these main reasons i) biochemical variation in the drugs ii) detoriation due to treatment and storage and iii) substitution and adulteration, a result of carelessness, ignorance

or fraud.[1] So standardisation method is significant for each and every AYUSH medications to catch on whether any of the exceeding reasons are there or not.

Fluorescence analysis is one of the pharmacognostical evaluations which is helpful in assessing the quality of the preparation.

The selected drug Parangipattai chooranam is a standard siddha formulation, simple and cost effective, has diverse medicinal properties and used in the treatment of various diseases like Venkuttam, Karunkuttam, Megam and diseases of Vatham and Pitham.[2]

MATERIALS AND METHOD

In the present study, the fine powder of Parangipattai chooranam[2] was used.

Collection of the raw drugs

The raw drugs were collected in the botanical garden, National Institute of Siddha, Chennai and also in nearby raw drug shop in Chennai. The collected raw drugs were identified and authenticated by Department of Botany, National Institute of Siddha, Chennai.

Preparation of the drug

Parangipattai (*SMILAX CHINA* Linn.,) was soaked in equal amount of Karunthulasi juice (*OCIMUM TENUIFLORUM* Linn.,) and kept in sunlight until it was dried. Then it was grinded and filtered by Vasthirakaayam (filtration method with the help of cloth) to get the texture of fine powder.[2]

Fluorescence analysis

Sample PPC was subjected to fluorescence analysis under visible light and UV – Light at 365 nm under closed circuit cabinet. Each fluorescence characteristic of the treated sample was observed under ordinary light and then under UV light of wave length 365 nm. The drug was treated with acids viz., Conc. HCl, Conc. H_2SO4, Conc. HNO_3 and glacial acetic acid. The drug was treated with alkaline solutions viz., aqueous NaOH and ferric chloride. They were subjected to fluorescence analysis in visible light and in short UV- light (254 nm) and long UV- light (365 nm).[4]

RESULTS

The analysis done in Parangipattai chooranam shows the following results.

Fluorescence analysis

The fine powder of Parangipattai chooranam was extracted in Conc. HCl, Conc. H_2SO_4, Conc. HNO_3, glacial acetic acid, aqueous NaOH, ferric chloride and H_2O. The fluorescence analysis of the chooranam powder extract was observed under ordinary visible light and in short UV – light (254 nm) and long UV – light (365 nm) and recorded in Table 1. In fluorescence analysis when treated with Conc. Hcl it showed pinkish red under visible light, mild yellow florescent under short UV – light (254 nm) and yellowish orange under long UV – light (365 nm). When treated with Conc. Sulphuric acid it showed greenish brown under visible light and short UV – light (254 nm), crimson red under long UV – light (365 nm). Various colour like yellow, crimson brown, pale pink, pale yellow, florescent green, orange, turbid white, creamy white, lime yellow, greenish brown and florescent yellow were also observed under different reagents and different light conditions **(Table 1).**

Table 1: Fluorescence analysis of Parangipattai chooranam.

S.No	Experiment	Observation		
		Visible light	Short UV – Light (254 nm)	Long UV – Light (365 nm)
1.	Sample + Conc. Hcl	Pinkish red	Mild yellow Florescent	Yellowish orange
2.	Sample + Conc. Sulphuric Acid	Greenish brown	Greenish brown	Crimson red
3.	Sample + Conc. Nitric acid	Yellow	Florescent yellow	Crimson brown
4.	Sample + Sodium hydroxide in water	Pale pink	Pale yellow	Crimson red
5.	Sample + Ferric chloride	Greenish brown	Florescent green	Orange
6.	Sample + glacial acetic acid	Turbid white	Lime Yellow	Pale Yellow
7.	Sample + Water	Creamy white	Lime Yellow	Pale Yellow

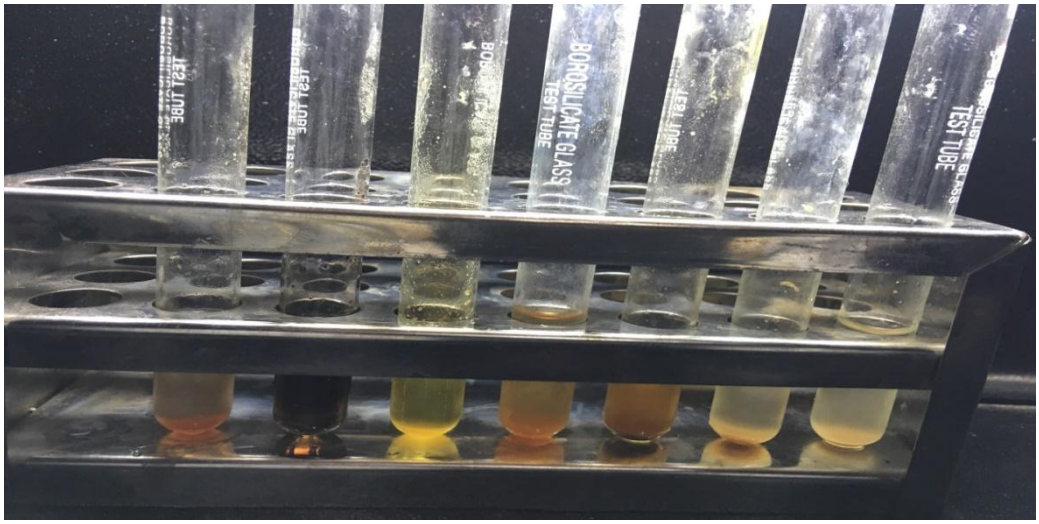

Figure 1: Visible light.

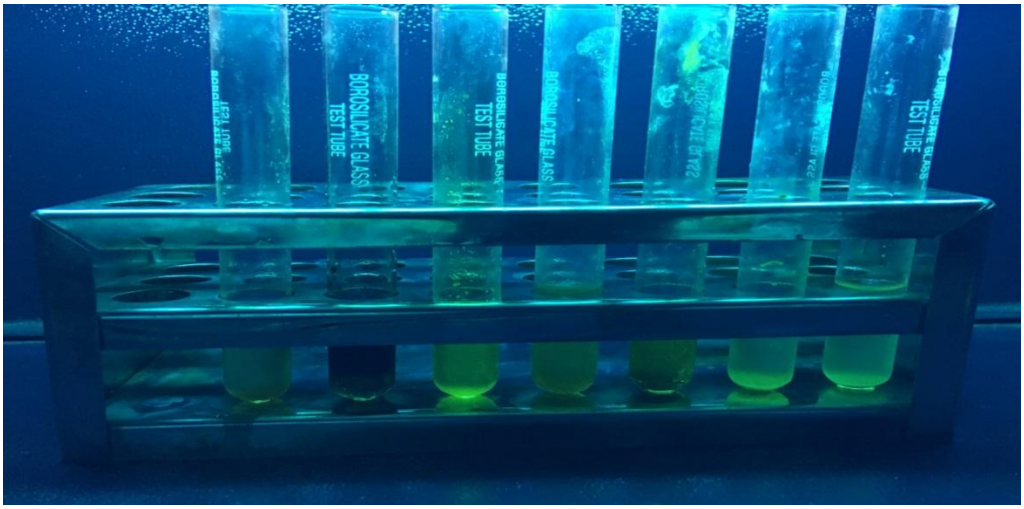

Figure 2: Short UV- light (254 nm).

Figure 3: Long UV- light (365 nm)

DISCUSSION

Fluorescence is the phenomenon exhibited by various chemical constituents present in the plant material. Some constituents show fluorescence in the visible range of daylight. The ultra violet light produces fluorescence in many natural products (e.g. alkaloids like berberine), which do not visibly fluoresce in daylight. If the substances themselves are not fluorescent, they may often be converted into fluorescent derivatives or decomposition products by applying different reagents. Hence, some crude drugs are often assessed qualitatively in this way and it is an important parameter of pharmacognostical evaluation.[5][6]

CONCLUSION

The present fluorescence analysis shows that the Parangipattai chooranam shows different colours in different reagents and different light condition which reveal the quality of the Parangipattai chooranam.

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