



Evaluation of Sookshma Triphala by Using Namburi Phased Spot Test (NPST):

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Received: 19 December 2025

Revised: 29 December 2025

Accepted: 20 January 2026

ABSTRACT:

Sookshma triphala is an *Anubhuta yoga* (proprietary formulation) which contains Triphala and very little amount of kajjali. The best method to analyse medicine is to standardise it and then analyse it using standard and sophisticated instrumental techniques. The 'Namburi Phased Spot Test' is a new technique developed by Dr. Hanumantha Rao after a lot of trial and error. It is an identifying technique for various *bhasma* and *kajjali* preparation. This method is usually carried out in 3 phases at three different intervals of time. To check the standard of the *bhasma* or *sindura* preparation by observing the chemical reaction undergoing with the specific reagents as mentioned as CCRAS guidelines. **Aims:** To check the quality of *sookshma triphala* through Namburi Phased Spot Test (NPST) analysis. **Material and Method:** To assess the quality with the standard monograph of NPST of *Parada* group drugs. two Papers of Potassium Iodide, and *Haridra* were prepared and identify the changes on all two papers by the action of prepared solution of *sookshma triphala* in freshly prepared aqua regia. **Discussion:** *Sookshma triphala* showed distinct spots at three different intervals and it is compared with the specific monograph of *Parada* group compounds as *Parada* is one of the contents in it. **Conclusion:** Both the papers like Potassium Iodide and *Haridra* in three different phases showed a positive result.

Keywords: *Sookshma triphala*, *kajjali*, *triphal*, Namburi Phased Spot Test (NPST).

INTRODUCTION:

Sookshma triphala is a herbo-mineral *Anubhuta yoga* (proprietary formulation). It is an equal proportional mixture of fine powder of fruits of three medicinal herbs, *haritaki* (*Terminalia chebula*), *bibhitak* (*Terminalia bellerica*) and *amalaki* (*Emblica officinalis*)⁰¹ with very small quantity of *kajjali*.

Kajjali (black sulfide of mercury) is a preparation which is made either triturating *shodhita Parada* (mercury) with *shodhita Gandhaka* (sulfur) alone in different proportions⁰² or *Parada* (Mercury) with *Gandhaka* (Sulphur) along with other metals and minerals⁰³ without using any liquid and is converted into very subtle powder, just like collyrium. The preparation is simple with minimum and easily available ingredients.

Sookshma triphala is found to be effective mainly in various *urdhwajatrugata* (eye, nose and throat) infections like conjunctivitis, sty, dacryocystitis, acne vulgaris, follicular tonsillitis, septic tonsillitis, uvulitis, stomatitis, painful caries tooth, and pharyngitis.⁰⁴ While *kajjali* alone is claimed to improve the activity of *triphal*⁰⁵. *Triphala* is mainly indicated as *rakta shodhaka* and *rasayana*. It is one of the an *Anubhuta yoga* (proprietary formulation), prepared and marketed by many reputed Ayurvedic pharmacies.⁰⁶

To reanalyze the medicine the best way is to standardize it and after that analyses with standard and sophisticated instrumental techniques' is one of the analytical techniques with a standard monograph of metallic preparation that demonstrates the authenticity of a material and the quality of a certain chemical. CCRAS approved accepted the NPST standard monograph.

Some Special features of this technique:

- Study of the spot at three different time intervals.
- Pattern of colour display of the spot.



MATERIAL AND METHODS

- Distilled water
- Required Regents for NPST
- 5N HNO₃
- HCL
- Potassium iodide paper (Whatman Paper No.1 impregnated 10% Potassiumiodide) solution
- Test tubes
- Prepared *Sookshma triphala*
- Petri dishes

PAPER REQUIRED FOR NPST

- 1) Potassium Iodide Paper- Prepared by impregnation of Whatman paper (No. 1) in 10% Potassium Iodide solution for two min. and dried under shade.
- 2) Haridra Paper- 50 gm of crushed Haridra's mother tuber was allowed to infuse for 48 hrs in 50 ml of alcohol and decanted. The Whatman paper was impregnated with this extract and dried under shade.

PREPARATION OF SOOKSHMA TRIPHALA (ST):

Sookshma triphala is prepared by triturating one part of properly prepared Kajjali (black sulfide of mercury) and ten parts of fine powder of *triphala churna* with the help of mortar and pestle.

PROCEDURE (METHOD OF NPST)⁰⁷

Firstly, prepare Aqua regia with 5N HNO₃ and HCL in the ratio of 1:3. Put 1 gm *Sookshma triphala* (ST) in test tubes then add 2ml of freshly prepared aqua regia in a test tube and left the test tube undisturbed for 30 min. as proper reaction take place inside a test tube. After that gently heat the test tube for a minute and placed it undisturbed for 48 hrs. In between this period, test tube shakes for some time. After 48 hrs. clean the solution taken from the test tube and pour 1drop of solution on prepared paper of NPST. After that observe the colour changes on all 2 types of papers in 3 different stages.

OBSERVATION AND RESULTS:

Reading of the first phase was taken 0 to 5 minutes after spotting, the second phase taken 5 to 20 minutes and the third phase taken 20 minutes to 48 hrs.

Table 1: Showing the observation in NPST sampling of ST on 10% KI paper:

Sample	Solution	Prepared Paper	Observations	
<i>Sookshma triphala</i> (ST)	1 gm ST + 2ML Aqua regia	Potassium Iodide	Phase I	Brick red spot
			Phase II	The brick-red spot separates and spreading into a brick red concentric ring with a light brown colour periphery.
			Phase III	The light brown colour is extended to periphery fades away exposing a thin brick red margin.

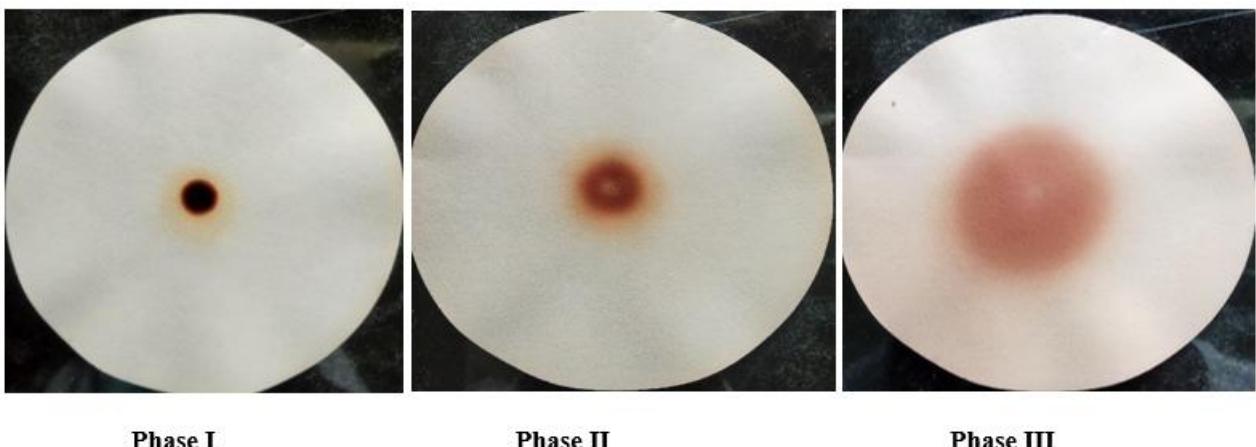


Fig. 1: NPST sampling of ST on 10% KI paper

Table 2: Showing the observation in NPST sampling of ST on Haridra paper:

Sample	Solution	Prepared Paper	Observations	
<i>Sookshma triphala</i> (ST)	1 gm ST + 2ML Aqua regia	Haridra paper	Phase I	Purple colour spot.
			Phase II	Purple fades with white colour center spot.
			Phase III	Purple colour reduces.



Fig.2 NPST sampling of ST on Haridra paper:

DISCUSSION:

The efficacy of any formulation depends upon its analytical value that shows the purity of the drug used in the formulation and its authenticity. NPST is one of the analytical tests which are used to identify the metal *Bhasmas*. It is a Specific analytical parameter in which the prepared drug is compared with the standard monograph of the drug to identify it.

This NPST is based on a chemical reaction that is in between chemical reacting paper and solution of drug prepared in the reagent. NPST analysis is based on colour which is observed on three different phases at three different time intervals. It is a simple test that can be carried out with minimum setup and requirements.

Sookhma triphala is an *anubhuta yoga* (preparatory formulation) prepared by adding of one part of *kajjali* and ten parts of fine powder of *triphala churna* and it is commonly used drugs in clinical practice.

Because of there is no availability of standard preparation and observation method of *kajjali* related formulations. so that attempt is made based on *parada* content formulation references by taking potassium Iodide and Haridra Paper and observation were tabulated as we got in I, II and III phases.



CONCLUSION:

According to the standard monograph of NPST accepted by CCRAS, the *sookshma triphala* produced positive results in the present analysis where we obtained the distinct colour on three separate reactive sheets at three different time intervals, which is identical with the formulations containing *parada*.

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How to cite this article:

Dr. Anil Kumar et al. Ijppr.Human, 2026; Vol. 32 (2):155-158.

Conflict of Interest Statement: All authors have nothing else to disclose.

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