

Traditional Suthi Muraigal (Purification) of Metals A Review

Vishnuprasanna M*¹, Ragasri S S¹, Preethika J *¹, Simal²

¹UG Scholar, BSMS, Nandha Siddha Medical College and Hospital, Erode -52

²Guide, Assistant professor, Department of Gunapadam Marunthakaviyal, Nandha siddha Medical College and Hospital, Erode -52

*Corresponding Author

DOI: <https://doi.org/10.51244/IJRSI.2026.13020054>

Received: 14 February 2026; Accepted: 21 February 2026; Published: 28 February 2026

ABSTRACT

Siddha medicine is one of the oldest traditional healing systems that utilise metals to transform hazardous components into potent therapeutic agents. The traditional Indian medicine “Siddha” uses metals that are toxic or have no proven toxicity. According to traditional purification methods in Siddha medicine, the toxic effects of heavy metals such as iron, copper, lead, zinc, steel, etc., are reduced [2]. These metals may act on specific diseases without purification, but at high doses they can cause severe complications. The purification techniques, collectively called “Suthi” (purification), involve a multi-step process that varies according to the metal, including washing and boiling, and are aimed at reducing toxicity and enhancing medicinal properties.[1] Scientific analysis indicates that purification yields safer components suitable for clinical applications. Metals are used after impurities and toxic components are removed. Non-purified metals can cause multi-organ failure and systemic effects. To ensure and prevent side effects, purified metals are essential for medicines [2]

Keywords: Multi-organ failure, Non purified metals, Traditional methods, Toxicity, Systemic effects.

INTRODUCTION

The Siddha system is a treasure house of secret science based on the theory of panchabootham . Siddha medicine acts on the human body. The word “Siddha” means ever sure and true, ever ready and everlasting, and a Siddha is one who attains Kaya-Siddhi and the beatific end by protecting his constitution from and against diseases, the aim being to fortify the body as the container of the soul for the attainment of happiness. Some of their books and songs show their wide knowledge, varied culture, and mastery of many sciences, including Astronomy, Astrology, Medicine, Surgery, and Alchemy. Their Pharmacopoeia, chemistry, and metallurgical medicines seem to have been perfected in a wonderful manner to suit their own needs and aims. Their Rasa-Sastra is indeed admirable.

Aim & Objectives

Based on the Siddha literature, detoxification, removal of impurities, standardisation, and enhancement of therapeutic efficacy reduce toxic effects and increase the safety of metals. Suthi (purification) is important for minimising toxicity, preventing complications, ensuring patient safety, and reducing potential harm to health.

MATERIALS AND METHODS

Study design: Literature Review

Data collection: Textbooks.

Data collected from: Siddha textbooks on metals and purification

Sarakku suthi sei muraigal

Siddha materia Medica – Animal section

Siddhargalin Nithya panchasuthi

Traditional methods of purification for Schedule E poisonous drugs.

REVIEW OF LITERATURE

Purification Of Metals

Ayam (Iron)



METAL	SYNONYMS	CHEMICAL FORMULA	PHYSICAL PROPERTIES
Iron: Iron is of a light bluish-grey metallic lustre, is tough, malle-able, and ductile, and is susceptible to be magnetize	Iron (Iron sesquioxid)	Fe ₂ O ₃ Specular iron ore, Fe ₂ O ₃ ; limonite, brown hematite, bog ore 2(Fe ₂ O ₃)3(H ₂ O); magnetite, Fe ₂ O ₃ ; siderite, spathic iron ore, FeCO ₃ .	Iron is of a light bluish-grey metallic lustre, is tough, malle-able, and ductile, and is susceptible to be magnetize

Methods of purification:

1. The iron is purified by soaking it in cow's milk for twelve hours and then soaking it in honey and ghee for eight days each. The iron purified in this manner can be used for preparing any kind of medicine.
2. Take a suitable quantity of iron powder (also called iron filings) and add the required amount of sesame oil. Roast it well for one 'samam' (3 hours). Then wash it with vinegar; this will purify it. Alternatively, boil it in acacia bark extract for two 'samams' (6 hours), then wash it with vinegar; this will also purify it.
3. Iron is purified by heating it in a furnace and then dipping it three times each in vinegar, sesame oil, cow's ghee, and horse gram decoction.
4. The iron powder is purified by boiling it in sesame oil and betel leaf juice for about half an hour.

Ekku (Steel):



1. 35 grams of iron powder should be mixed with 210 grams of cashew flower extract and dried in the sun from morning till evening for six days. Then, dry it for two days without adding any extract. Repeat this process twice. Then, from the twenty-fifth day onwards, continuously add the extract and dry it in the sun for ten days, followed by drying it for two days without adding any extract. Finally, wash it with water; this completes the purification process.
2. Heat the worn-out old chisel in a forge and dip it in goat's bile until it becomes sharp. Continue dipping until it is sharp; this will purify the steel. A fresh batch of bile must be used each time.

Vangam (Lead):



METAL	SYNONYMS	CHEMICAL FORMULA	USES
Lead	Lead (Galena) (PbS)	$2PbO + PLS = 3Pb + SO_2$,	Lead is manufactured into pipes, sheets, bullets, shot, and is used in numerous alloys-with tin in plumbers' and tinnners' solders, with antimony in type metal, etc. It is employed as a solvent for gold and silver. Converted into carbonate of lead it constitutes a pigment of white colour extensively used in painting. In a spongy condition, produced by electrolysis, it is used as electrodes for storage-batteries. Heated and oxidized it is converted into red lead and litharge. Chemical and metallurgical vessels are lined with lead for various purposes.

Purification methods:

1. Lead is purified by melting it separately in sesame oil, cow's urine, vinegar, sour buttermilk, horse gram extract, and Calotropis procera latex.
2. Melt 175 g of lead and pour it into sesame oil five times, then pour it into water in which horse gram has been boiled five times. Finally, pour it into lime water five times for purification.
3. Grind the root of *Cissus quadrangularis* in goat's urine, mix it with sesame oil, and then melt the lead in this mixture ten times for purification.

Magnet(Kaandham):**Purification methods :**

1. Grinding the magnet with lemon juice and leaving it for forty-five minutes will purify it.
2. Soaking the magnet in banyan tree sap for one day and then drying it will purify it.
3. Soaking the needle magnet in lemon juice for forty-five minutes and then in vinegar for forty-five minutes will purify it.
4. Boiling it in a mixture of lemon juice, vinegar, and sour buttermilk, then heating it seven times in cow dung water will purify it.
5. Soaking the magnet separately in lemon juice, sour vinegar, and sour buttermilk for three days each, then washing and drying it in the sun will purify it.
6. To purify a magnet that attracts dust, cut it into pieces and soak them separately for three days each in lemon juice, vinegar, and sour buttermilk.

Copper(Sembu):

METAL	SYNONYMS	CHEMICAL FORMULA	USES
Copper (Native copper) The ores most commonly used for the extraction of copper are the copper pyrites, Cu_2S , FeS , and other sulphides of copper.	Cuprum	Cu	The great variety, extensive and numerous employments in the arts employments of this metal is generally so well

Purification methods:

1. Copper is purified by grinding amaranth leaves, coating the copper sheet with the paste, sealing it with clay, and subjecting it to calcination in ten cow dung cakes.
2. Flatten 35 grams of copper into a sheet. Dissolve cow dung in water, place the sheet in it, and heat it; this will purify the copper.
3. Copper is purified by melting copper filings seven times separately in sea grass extract.
4. Cut the copper into pieces and boil and wash it seven times separately in sour buttermilk and the juice of the Kanai plant. Similarly, boil and wash it separately in the sap of the Calotropis plant, sesame oil, cow's urine, lemon juice, castor oil, aloe vera juice, and *Alternanthera sessilis* juice. This will purify the copper.

Zinc(Naagam):



METAL	SYNONYMS	CHEMICAL FORMULA	USES
Zinc	Spelter or galvanizing metal	Zn	. -Zinc is extensively used in metallurgical works for desilverization of lead, as a reducing agent in chemistry, as electrodes in galvanic batteries, as the main compound with copper in alloys for brass and, with copper and tin, for sub-stitutes for bronzes. It is rolled into sheets for a multiplicity of useful purposes and is applied as a coating a sheet of iron, galvanised iron etc.

Purification methods:

1. Flatten the lead-tin alloy into a thin sheet. Purify it by melting it seven times separately with sesame oil, cow urine, and euphorbia sap.

2. Melt the lead-tin alloy in goat's ghee. Add urine and lemon juice to it, mix with borax and alum, and melt the lead ten times for purification.
3. Lead is purified by melting and pouring it separately into butter, cow's milk, buttermilk, vinegar, cow's urine, lemon juice, and calotropis milk.

RESULT AND CONCLUSION

Siddha purification proves highly feasible, low-cost and reliant on easily available resources like cow urine, sesame oil, and kanji for purifying iron, copper, zinc, and steel into safe, bioavailable forms. These traditional methods effectively detoxify via physical-chemical transformation, outperforming crude ores for medicinal use. They align with sustainable practices, warranting validation for modern applications.

Traditional methods of purification methods reveals lacked scientific instrumentation, they were effective in enhancing metal purity and workability. Traditional purification practices also reflected a deep understanding of material behaviour, sustainability, and resource utilization of harmful metals.

ACKNOWLEDGEMENT

We sincerely acknowledge the guidance of teachers and the contributions of researchers whose published work formed the basis of this review. Special thanks to the institutional resources at Nandha siddha medical college and hospital that fostered this work. This paper is a testament to the power of collective effort.

REFERENCE

1. <https://www.health.harvard.edu/staying-healthy/precious-metals-and-other-important-minerals-for-health>
2. <https://nischennai.org/main/wp-content/uploads/2023/02/e-Book-NIS.pdf>
3. .Goesel JG. Minerals and Metals, a Reference-book. 1906.
4. Sarakku Suthi Sei Muraigal [Tamil]. 1st ed. Chennai: Siddha Medical Book Publishing Division, Indian Medicine & Homeopathy Dept.; 2008.
5. M. R. Madhavan V. Agathiyar Vaithiya Kāvīyam 1500. 1st ed. Thanjavur (India): Tamil University; 1994. ISBN: 81-7090-214-2. Tamil.
6. Uthamarayan KS. Gunapadam: Thathu Jeeva Vaguppu. Chennai: Department of Indian Medicine and Homoeopathy; 2006.
7. Thiyagarajan R. Siddha Materia Medica (Vegetable, Mineral and Animal Kingdom). Chennai: Department of Indian Medicine and Homoeopathy; 2008.