



Exploratory review on Siddha herbo mineral drug Neeradimuthu Vallathy Mezhugu

**Keerthiga T^{1*}, Vimala Jasmine A², Sathya Rathish M²,
Arihari krishnan K², Thiruvengadam P³**

¹PG scholar, Department of Nanju Maruthuvam, National Institute of Siddha,
Tambaram sanatorium, Chennai 47, Tamil Nadu, India.

²PG scholars, Department of Nanju Maruthuvam, National Institute of Siddha,
Tambaram sanatorium, Chennai 47, Tamil Nadu, India.

³MD (S), Department of Noi Naadal, Govt Siddha Medical college, Chennai, Tamil Nadu, India.

*Corresponding author: Keerthiga T,

PG Scholar, Department of Nanju Maruthuvam, National Institute of Siddha, Chennai - 47

E-mail: keerthivendhan96@gmail.com

Abstract

Siddha medicine, an ancient Indian healing system rooted in holistic practices and natural remedies, including herbal medicines, is discussed. The paper focuses on "Neeradimuthu vallathy mezhugu" (NMVM), a Siddha herbal-mineral elixir with potential anti-cancer properties, including cytotoxicity, apoptosis induction, anti-inflammatory effects, antioxidant properties, and immune system modulation. It also underscores the need for further clinical trials to determine safety and efficacy. It concludes by emphasizing the importance of scientific research to validate the effectiveness and safety of Siddha herbal medicine in modern healthcare.

Keywords: Siddha medicine, herbomineral formulation, holistic practices, NMVM, anti-cancer properties.

Introduction

Siddha medicine, one of the traditional Indian medicinal systems, is rooted in ancient practices and knowledge that date back thousands of years. Siddha medicine, which originated in the southern part of India, primarily Tamil Nadu, is known for its holistic approach to healing and its emphasis on using natural remedies, including herbal medicines, to promote health and well-being.

Among the many herbs and formulations used in Siddha medicine, "Neeradimuthu vallathy mezhugu" is one that has gained attention for its potential therapeutic properties. This paper gives about the review of Neeradimuthu vallathy mezhugu (NMVM), a Siddha herbo mineral drug which is elixir of anti cancer in Siddha. It is a potent medicine used to manipulate multiple disease conditions like neuralgia, skin diseases, various bites and malignancies⁽¹⁾. NMVM was

tested in vitro for its anti proliferative and cytotoxic ability against the HeLa cervical cancer cell line, the results were reported in the Journal of Survey in Fisheries Sciences (Srinivasan M R et al., 2023). The lowest viability was noted, according to the MTT assay study results. The test medication NMVM, has an IC₅₀ of 151.34µg/ml⁽²⁾. Acute and Subacute toxicity study was performed and published by Dept. of Biochemistry, University of Madras, Simna SP et al. 2012. The study results reveal no observed adverse effect⁽³⁾.

Incidence of cervical cancer:

Cervical cancer is a significant global health issue, and its incidence varies by region and population. The incidence rates of cervical cancer can be influenced by factors such as access to healthcare, vaccination rates against human papillomavirus (HPV), and the availability of cervical cancer screening programs.

Global Incidence: Cervical cancer is one of the most common cancers in women worldwide. According to the World Cancer Research Fund, there were an estimated 604,000 new cases of cervical cancer and 342,000 deaths from the disease in 2020.

Regional Variations: The incidence of cervical cancer varies significantly by region. High-income countries with well-established screening and vaccination programs tend to have lower incidence rates, while low- and middle-income countries may have higher rates due to limited access to healthcare and preventive measures.

HPV Vaccination: The human papillomavirus (HPV) is a major risk factor for cervical cancer. Vaccination against high-risk HPV types has been introduced in many countries and has the potential to reduce the incidence of cervical cancer in the long term.

Cervical Cancer Screening: Regular cervical cancer screening programs, such as Pap smears (Pap tests) and HPV testing, are crucial for early detection and prevention. In countries with robust screening programs, the incidence of cervical cancer is often lower.

Age at Diagnosis: Cervical cancer is most commonly diagnosed in women between the ages of 35 and 44, although it can affect women of any age.

Preventability: Cervical cancer is highly preventable through HPV vaccination and regular screening. Detecting pre-cancerous changes in the cervix early allows for effective treatment and prevents the development of invasive cancer.

Public Health Efforts: Various international organizations and governments have implemented public health initiatives to reduce the burden of cervical cancer. These efforts include increasing HPV vaccination coverage, improving access to screening and treatment, and raising awareness about the disease.

The drug profile:

The drug “NEERADIMUTHU VALLATHY MEZHUGU” has been selected from the Siddha literature, “ANUBOGA VAITHIYA NAVANEETHAM”- PART 8⁽¹⁾.

Ingredients of Neeradimuthu Vallathy Mezhugu (NMVM)⁽¹⁾

- | | |
|---|-----------------|
|) Purified Serankottai (<i>Semicarpus anacardium</i>) | |
| - 3500 grams | |
|) Purified Neeradimuthu paruppu (<i>Hydnocarpus kurzii</i>) | |
| - 350 grams | |
|) Parangipattai (<i>Smilax China</i>) | - 350 grams |
|) Pirappan kizhangu (<i>Calamus rotang</i>) | } Each 70 grams |
|) Karunseeragam (<i>Nigella sativa</i>) | |
|) Kumilam vaerpattai (<i>Gmelina arborea</i>) | |
|) Seeragam (<i>Cuminum cuminum</i>) | |
|) Vasambu sutta Kari | |
|) (<i>Acorus calamus</i>) | |
|) Sivanarvembu (<i>Indigofera aspalathoides</i>) | |
|) Sanganner (<i>Azima tetracantha</i>) | |
|) Karudan kizhangu (<i>Carollacarpus epigaeus</i>) | |
|) Senthottivaer (<i>Pavnoia odorata</i>) | |
|) Amukkara kizhangu (<i>Withania somnifera</i>) | } Each 70 grams |
|) Vellarugu (<i>Encostema littoral</i>) | |
|) Erukkanver (<i>Calotropis gigantea</i>) | |
|) Athipattai (<i>Ficus racemosa</i>) | |
|) Saranaiver (<i>Trianthema decandra</i>) | |

) Milagaranaielai (<i>Toddalia asiatica</i>)	}	Each 70 grams
) Veppamparuppu (<i>Azadirachta indica</i>)		
) Vetpalaarisi (<i>Wrightia tinctoria</i>)		
) Senkathaari pattai (<i>Capparis sepiaria</i>)		
) Vatha karappan pattai (<i>Sterculia foetida</i>)	}	Each 17.5 grams
) Purified Rasam (Hydrargyrum)		
) Purified Gandhagam (Sulphur)		
) Purified Thurusu (Copper sulphate)		
) Purified Palthutham (Zinc sulphate)		
) Ellu (Sesamum indicum) - 280 grams		
) Panai vellam (<i>Borassus flabellifer</i>) -1400 grams		

NMVM consists of 28 ingredients, among that major ingredients were reviewed.

Indications:

Soolai 18 (types of neuralgia), Kiranthi 18 (types of syphilis), Alkulputtru (cancer of genital tract), Alkuloosolai (neuralgia of genital tract), Kapala soolai (neuralgia of cranium), Araiappu (bubo), Madhumegam (diabetes mellitus), Megam (types of gonorrhoeal disorder), Mudakkuvatham (paralysis), Kaikalpidippuvatham (paralytic of both limbs), Mugavatham, vaikonuvatham, naakkupurattal (symptoms of facial paralysis), Thanurvaatham (tetanus), Elampillaivatham (polio), Senkuttam karunkuttam venkuttam (types of patches of skin), Vedisoolai (types of neuralgia), Kandamalai (lymphatic swelling around the neck), Kalveddipu (fissure foot), Thimir (pain and numbness), Padarthamarai (ringworm), Linga puttru (cancer of the penis), Kurainoi (leprosy), Tholluri (scaling of the skin), Sori (types of patches with severe itching), Puzhuvettu (alopecia), Sevattai kadi (leech bite), Nandu kadi (crab bite), Eli kadi (rat bite) & Seyyan kadi.

Materials and Methods:

This review is written by using various data bases like Pubmed, Google Scholar, Web Of Science, Scopus and Classical Siddha Literature.

Semecarpus anacardium ⁽⁴⁾

Semecarpus anacardium, known as "Bhilawa" or "Marking Nut," is a plant native to India and

Southeast Asia, with various parts used in traditional medicine. Some research suggests potential anti-cancer effects, including cytotoxicity against cancer cells, induction of apoptosis (programmed cell death), anti-inflammatory properties, antioxidant effects, and immune system modulation. However, most studies are preliminary and conducted in vitro or in animal models. Clinical trials are needed to determine its safety and efficacy. It's important to note that *Semecarpus anacardium* contains toxic compounds (anacardic acids) and should only be used under medical supervision.

Hydnocarpus laurifolia ⁽⁵⁾

Hydnocarpus laurifolia, also known as "Chaulmoogra" or "Marotti," is a tree native to parts of Southeast Asia and India. It has a long history of traditional use in indigenous medicine, particularly for the treatment of skin diseases, leprosy, and some types of cancer. Here are some studies and potential anti-cancer activities associated with *Hydnocarpus laurifolia*:

Chaulmoogra Oil: The most well-known traditional use of *Hydnocarpus laurifolia* is the extraction of chaulmoogra oil from its seeds. Chaulmoogra oil has been used historically in the treatment of various skin conditions, including certain types of skin cancer. It contains fatty acids, such as hydnocarpic acid and chaulmoogric acid, which were believed to have therapeutic properties.

Anticancer Properties: Some studies have explored the potential anticancer effects of chaulmoogra oil and its constituents. These studies have indicated that the oil may have cytotoxic effects on cancer cells and may inhibit their growth. However, the exact mechanisms of its anticancer activity are not fully understood.

Immunomodulatory Effects: *Hydnocarpus laurifolia* extracts have been investigated for their potential immunomodulatory properties. A properly functioning immune system is essential in recognizing and combating cancer cells. Modulating immune responses can be an indirect way to control cancer growth.

Smilax chinensis ⁽⁶⁾

Smilax chinensis, commonly known as Chinese Smilax or China root, is a plant that has been used in traditional medicine systems, particularly in Siddha medicine. Here are some reported potential anti-cancer activities associated with *Smilax chinensis*:

Antioxidant Properties: *Smilax chinensis* contains antioxidants that can help neutralize harmful free radicals in the body. Excess free radicals can damage DNA and contribute to cancer development. Antioxidants can potentially protect against such damage.

Anti-Inflammatory Effects: Chronic inflammation is often associated with cancer development and progression. Some components of *Smilax chinensis* are believed to possess anti-inflammatory properties, which may indirectly contribute to its potential anti-cancer effects by reducing inflammation-related pathways.

Anti-Proliferative Activity: Some studies have suggested that extracts or compounds derived from *Smilax chinensis* may have anti-proliferative effects on cancer cells. This means that they may inhibit the growth and division of cancer cells, which is a key feature in controlling cancer progression.

Immunomodulation: Some research has indicated that *Smilax chinensis* extracts may modulate the immune system, potentially enhancing the body's ability to recognize and target cancer cells. An active immune system can play a role in the surveillance and elimination of cancerous cells.

Nigella sativa ⁽⁷⁾

Nigella sativa, commonly known as black cumin or black seed, has been used for centuries in traditional medicine for various purposes, including its potential anti-cancer effects. Here are some of the reported potential anti-cancer effects associated with *Nigella sativa*:

Antioxidant Properties: *Nigella sativa* contains bioactive compounds like thymoquinone, which have antioxidant properties. Antioxidants can help protect cells from oxidative stress and damage, which is one of the factors associated with cancer development.

Anti-Inflammatory Effects: Chronic inflammation is linked to the development and progression of many cancers. Some components of *Nigella sativa* are believed to possess anti-inflammatory properties, which may indirectly contribute to its potential anti-cancer effects by reducing inflammation-related pathways.

Apoptosis Induction: Apoptosis, or programmed cell death, is a mechanism that plays a crucial role in controlling the growth of cancer cells. Some studies suggest that *Nigella sativa* extracts may induce apoptosis in cancer cells, inhibiting their uncontrolled growth.

Immune Modulation: There is some evidence to suggest that *Nigella sativa* extracts may modulate the immune system, potentially enhancing the body's ability to recognize and target cancer cells. A properly functioning immune system is essential in controlling cancer growth.

Anti-proliferative Effects: *Nigella sativa* extracts have been reported to have anti-proliferative effects on cancer cells, meaning they can slow down or inhibit the division and growth of cancer cells.

Acorus calamus ⁽⁸⁾

Acorus calamus, commonly known as sweet flag or calamus, is a perennial herbaceous plant found in various parts of the world. It has a long history of use in traditional medicine systems, particularly in Siddha medicine.

Antioxidant Properties: *Acorus calamus* contains compounds with antioxidant properties that can help neutralize harmful free radicals in the body. Antioxidants play a role in reducing oxidative stress, which is associated with cancer development.

Anti-inflammatory Effects: Chronic inflammation is linked to the development and progression of cancer. Some components of *Acorus calamus* are believed to possess anti-inflammatory properties, which may indirectly contribute to its potential anti-cancer effects by reducing inflammation-related pathways.

Cytotoxic Activity: Some studies have suggested that extracts or compounds derived from *Acorus calamus* may exhibit cytotoxic (cell-killing) activity against cancer cells. This cytotoxicity could potentially inhibit the growth of cancer cells.

Immune Modulation: A properly functioning immune system is essential in recognizing and targeting cancer cells. Some research has indicated that *Acorus calamus* extracts may modulate the immune system, potentially enhancing the body's ability to combat cancer.

Indigofera aspalathoides ⁽⁹⁾

Indigofera aspalathoides, commonly known as "Indian Sarsaparilla," is a medicinal plant native to India. It has been used in traditional medicine systems, for its various potential health benefits.

Anti-Inflammatory Activity: It has been traditionally used for its anti-inflammatory properties. It may help reduce inflammation, which is associated with various health conditions.

Antioxidant Properties: Some studies suggest that *Indigofera aspalathoides* contains compounds with antioxidant properties. Antioxidants can help protect cells from oxidative stress and damage caused by free radicals.

Anti-Diabetic Potential: It has been investigated for its potential in managing diabetes. It may help regulate blood sugar levels, although more research is needed in this area.

Anti-Microbial Activity: Some studies have reported that extracts from *Indigofera aspalathoides* have antimicrobial properties, which means they may help inhibit the growth of certain bacteria and fungi.

Liver Protective Effects: It plays a role in supporting liver health. It may have hepatoprotective properties, which could be beneficial for liver function.

Detoxification: In traditional medicine, is used as a detoxifying agent to help remove toxins from the body.

Skin Health: It is used topically for skin conditions due to its potential anti-inflammatory and antimicrobial properties.

Enicostemma axillare ⁽¹⁰⁾

Enicostemma axillare, commonly known as "Indian Euphorbia" is believed to have several potential activities and uses, including:

Anti-Diabetic Activity: *Enicostemma axillare* has been traditionally used to manage diabetes. Some studies have suggested that it may have hypoglycemic (blood sugar-lowering) effects, making it potentially useful for people with diabetes.

Anti-Inflammatory Properties: It is believed to possess anti-inflammatory properties, which can be useful for managing various inflammatory conditions.

Antioxidant Activity: *Enicostemma axillare* contains compounds with antioxidant properties that can help neutralize harmful free radicals in the body, potentially reducing oxidative stress.

Antimicrobial Activity: *Enicostemma axillare* extracts have shown antimicrobial properties against various microorganisms, suggesting potential use as an antimicrobial agent.

Gastrointestinal Health: In traditional medicine, *Enicostemma axillare* has been used for its potential gastrointestinal benefits, including alleviating digestive issues and promoting overall gut health.

Anti-Inflammatory Skin Care: It is used topically for skin conditions due to its potential anti-inflammatory and antimicrobial properties.

Calotropis gigantea ⁽¹¹⁾

Calotropis gigantea, commonly known as the "Giant Milkweed" is a plant that belongs to the Asclepiadaceae family. It is native to regions in Asia and Africa and has been used in traditional medicine for various purposes.

Anti-Inflammatory Activity: *Calotropis gigantea* is believed to have anti-inflammatory properties, and extracts from the plant have been used traditionally to alleviate inflammation-related conditions.

Antioxidant Effects: Some studies suggest that *Calotropis gigantea* may possess antioxidant properties due to the presence of bioactive compounds. Antioxidants help neutralize harmful free radicals in the body.

Analgesic Properties: Traditional medicine has used *Calotropis gigantea* for its potential analgesic (pain-relieving) effects, particularly in treating various types of pain.

Wound Healing: The latex of *Calotropis gigantea* has been applied topically to wounds and skin ulcers in traditional medicine. It is believed to have wound-healing properties.

Antibacterial and Antifungal Activity: Some studies have explored the antibacterial and antifungal potential of *Calotropis gigantea* extracts, suggesting that it may help combat certain bacterial and fungal infections.

Gastrointestinal Effects: In traditional medicine, *Calotropis gigantea* has been used to address gastrointestinal issues, such as indigestion and stomach discomfort.

Cardiovascular Effects: Some research has investigated the plant's effects on the cardiovascular system, including potential hypotensive (blood pressure-lowering) effects.

Insecticidal Properties: Certain compounds found in *Calotropis gigantea* have been evaluated for their insecticidal properties and potential use in pest control.

Mercury ⁽¹²⁾

Mercury (commonly referred to as "Rasam") has been used in various therapeutic purposes. However, it's crucial to note that the use of mercury in Siddha is highly specialized and requires strict purification and processing methods to make it safe for medicinal use. When prepared correctly, mercury in Siddha is believed to have several therapeutic actions, which include:

Detoxification: Mercury, when properly processed, is considered to have detoxifying properties. It is believed to help remove toxins and impurities from the body, promoting overall health.

Bioavailability: Enhance the bioavailability and potency of other herbs and minerals when used in specific formulations. It is often used as a catalyst to enhance the therapeutic effects of other ingredients.

Immune System Modulation: Mercurial formulations can be used to strengthen the immune system, making the body more resilient to diseases.

Rejuvenation: It is used to promote longevity, vitality, and overall well-being. It is believed to rejuvenate the body and mind when used appropriately.

Sulphur ⁽¹³⁾

In Siddha medicine, sulphur (known as "Gandhagam" or "Gandhakam") is considered to have therapeutic properties and is used in various formulations for its potential health benefits.

Antimicrobial Properties: Sulphur based medicines to possess antimicrobial properties, which means it may help inhibit the growth or kill microorganisms like bacteria, fungi, and certain parasites.

Anti-inflammatory Activity: It is thought to have anti-inflammatory effects, which may be beneficial in conditions characterized by inflammation.

Skin Disorders: Sulphur is commonly used in Siddha medicine for the treatment of various skin disorders, including acne, eczema, and fungal infections.

Respiratory Conditions: It is believed to have benefits for respiratory health and is used in formulations targeting conditions like asthma and bronchitis.

Digestive Disorders: Sulphur may be used in Siddha preparations for digestive issues, although the specifics would depend on the specific formulation and accompanying ingredients.

Rheumatic Conditions: It is sometimes included in formulations for joint and musculoskeletal conditions due to its potential anti-inflammatory properties.

Wound Healing: It aids in wound healing and is included in certain formulations for this purpose.

Purification and Detoxification: In Siddha philosophy, sulphur is associated with cleansing and purifying properties, and it may be used as part of detoxification therapies.

Conclusion

Siddha medicine is a traditional Indian medicinal system with a rich history dating back thousands of years. It is known for its holistic approach to healing and its reliance on natural remedies, including herbal medicines. One of the herbo mineral formulations used in Siddha medicine is "Neeradimuthu vallathy mezhugu", which is believed to have various therapeutic properties. Traditional practices and knowledge form the basis of Siddha medicine, but more rigorous scientific studies are needed to validate its effectiveness and safety in contemporary healthcare contexts. Cervical cancer varies in incidence based on geographical regions, access to healthcare, vaccination rates, and screening programs. Preventive measures such as HPV vaccination and regular cervical cancer screening are critical in reducing the burden of cervical cancer. To explore the safety and efficacy of this medicine and to identify the research gaps, a thorough literature review of NMVM is essential.

References

- 1) Hakkim Abdulla Sahib PM, Anuboga Vaidya Navaneetham, 2nd Ed, Part-8, Siddha Medical Publications, India, 1975, P.no. 97.
- 2) Srinivasan M R et al. Invitro Antiproliferative and Cytotoxic potential of the Siddha formulation- NeeradiMuthu Vallathi Mezhugu- Against HeLa Cervical cancer cell line, Journal of Survey in Fisheries Sciences. Vol.10. Issue 4S (2023). DOI: <https://doi.org/10.17762/sfs.v10ri4S.850>
- 3) Simna SP et al. / Toxicological assessment of herbo-mineral Siddha formulation: NeraadimuthuvallathyMezhugu in swiss albino mice, Journal of Pharmacy Research 2012,5(3),1684-1689.
- 4) Mona Semalty et al. Semecarpus anacardium Linn.: A review, PharmacognosyReviews, July 2010. 4(7):88-94. DOI:10.4103/0973-7847.65328
- 5) Rajput, M., Bithel, N. Phytochemical characterization and evaluation of antioxidant, antimicrobial, antibiofilm and anticancer activities of ethyl acetate seed extract of *Hydnocarpus laurifolia* (Dennst) Sleummer. 3 *Biotech* 12, 215 (2022). <https://doi.org/10.1007/s13205-022-03267-3>
- 6) Alam T et al., Literature Review of Chobchini (*Smilax china* Linn.). American Journal of PharmTech Research 2020.
- 7) Aftab Ahmad et al., A review on therapeutic potential of *Nigella sativa*: A miracle herb, Asian Pac J Trop Biomed. 2013 May; 3(5): 337–352. doi: 10.1016/S2221-1691(13)60075-1
- 8) Durgavati Yadav et al., Acorus Calamus: A Review, International Journal of Scientific Research in Biological Sciences, Vol.6, Issue.4, pp.62-67, August (2019) doi: <https://doi.org/10.26438/ijrbs/v6i4.6267>
- 9) Panchacharam G, Dr. Deepa N, Indigofera Aspalathoides: Plant of Researcher's Interest-A Review, European Journal of Molecular & Clinical Medicine, Volume 9, Issue 03, 2022

- 10) G.Leelaprakash, S. Mohan Dass, “Invitro AntiInflammatory activity of Methanol extract of EnicostemmaAxillare”, Int. J. Drug Dev. & Res., July-Sept 2011, 3(3): 189-196
- 11) Jahan, N., Mushir, A., Ahmed, A. 2016. A review on Phytochemical and biological properties of Calotropis gigantea (Linn) R.Br.. Discovery Phytomedicine 3(3): 15-21. doi:10.15562/ phytomedicine.2016.32
- 12) Deepa G et al, Scientific validation of Siddha formulation rasa parpam and its anticancer property in hela cell line an in vivo and invitro, World Journal of Pharmaceutical Research, Volume 8, Issue 11, 1105-1132.
- 13) P. Shanmugapriya et al. antimicrobial efficacy of Gandhagam (Raw Sulphur), Purified Gandhagam and GandhagaMezhugu a Traditional Siddha Formulation, JOURNAL OF PURE AND APPLIED MICROBIOLOGY, June 2013. Vol. 7(2), Pg.No. 1-4.

Access this Article in Online	
	Website: www.ijcrims.com
	Subject: Siddha Medicine
Quick Response Code	

How to cite this article:

Keerthiga T, Vimala Jasmine A, Sathya Rathish M, Arihari krishnan K, Thiruvengadam P. (2023). Exploratory review on Siddha herbo mineral drug Neeradimuthu Vallathy Mezhugu. Int. J. Curr. Res. Med. Sci. 9(9): 28-35.

DOI: <http://dx.doi.org/10.22192/ijcrms.2023.09.09.004>