



Indhuppu (*rock salt*) in Siddha Medicine- a comprehensive review

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Abstract

The aim of siddha medicine is to make the body perfect, imperishable and to promote longevity. For the healthy life, Siddhars have mentioned daily and seasonal regimen including dietary habits and also insisted some code of ethics. Nowadays indhuppu has also been used in a kitchen culinary as salt, because of its anti-ulcer and slow laxative properties. In siddha system of medicine, Indhuppu which is known as rock salt have been extensively used.

Among thathu sarakkugal (mineral drugs), Indhuppu is considered as a major drug under 25 Karasam (twenty five types of therapeutic salts) and having perfect cubic cleavage. Rock salt occurs in crystalline massive and granular to compact form and is brittle mineral with a conchoidal fracture and vitreous luster. It is colourless when pure but often tinged gray, blue, and brown pink because of associated impurities. In this paper, organoleptic characters, therapeutic characters, Geographical names of indhuppu, crystal natures, synthetic preparation, biological importance were discussed.

Keywords : Indhuppu, Siddha Medicine, Karasaram, Siddha minerals

Introduction

Siddha Medicine is the first system to emphasize health as the perfect state of physical, mental, social, moral and spiritual component of human beings. In ancient days, Siddhars lead a simple way of life according to the laws of nature and beyond the narrow divisions of current life. In those days, Siddhars handled the plants and herbs for long life with better health and lived more than thousand years of age.

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**"The drug which cures physical illness is called Medicine
The drug which cures mental illness is called Medicine
The drug which prevents illness is called Medicine
The drug which gives longevity is called Medicine"**

– Thirumoolar

"Siddha Medicine or Siddham is not only a medical system for curing the physical body, but also the way of life formulated by Siddhars through their vision and realisation for getting peace for the mind, health for the physical body and purity for the Soul. Siddhars through their Great powers like Attamasiddhikal (8 supernatural powers) and through immense prayers realised the fact that Soul which is ultimately a part of the Supreme is like a drop of water from sea"

In Siddha System of medicine, metals and minerals are handled large in numbers with proper purification process. *Siddhar Bhogar* classified the metals and minerals into four groups in his book "*Bhogar 7000 & Bhogar karasara thurai*" They are,

Metals (*Ulogam*)-11
Toxins (*Pasanam*)-64
Minerals (*Karasaram*)-25
Hydrochemicals (*Uparasam*)-120

In *karasaram, Indhuppu* (Rock salt) is a salt compound chemically mimics to NaCl which is in halite form. The Chemical name indhuppu is Sodium chloride impure and literally in tamil synonymic as Sainthavam, Sinthooram

Organoleptic Characters

Taste: Uvarppu (Saline)
Potency: Veppam (Heat)
Pirivu: Inippu (Sweet)

Therapeutic Actions

Laxative, Diuretic & Carminative

Other name of Indhuppu in Siddha literatures

During the review process, we have come across several books and found few literatures contains of Synonyms for indhuppu.

As per *Bogar Nigandu*, Sindhuratham, Sainthavam, Chandhiravuppu, Mathikoormai, Panikoormai, Mathi uppu, Silalam, Poorathin Mithru, Paandathirku Samaitha Vuppu.

As per *Panjakaviya Nigandu*, Vaani, Maaksasm, Saindhalavanam, Santhilagam, Naaganeai, Vithagam, Mathilavanam, Kadimaasam, Kaara kanjaragam

Vernacular Names of Indhuppu :

Tamil: Indhuppu, Sainthavam
English: Rock Salt, Halite
Hindi: Khanji namka, Saindhava, Lahori namak
Mar: Mitha
Gujarat: Mitha
Bengali: Nimok, Num

Rock salt and its science

Rock salt is mineral form (from halite mineral category) of sodium chloride, crystallizing typically in cubes and having perfect cubic cleavage.

It occurs in crystalline massive and granular to compact form and is brittle mineral with a conchoidal fracture and vitreous luster. It is colourless when pure but often tinged grey, blue, and brown pink because of associated impurities.

It is Clear (or) White also clear blue nipples with a large sack, purple pink yellow and grey. The Crystal Habit of sodium chloride impure is predominantly cubes and in massive sedimentary beds but also granular, fibrous and compact. The Crystal System looks Isometric 4/m bar 32/m with the perfect Cleavage in three directions. The hardness in Moh Scale ranges from 2 - 2.5, which is light hard and glassy luster in nature. The Refractive Index is about 1.544 and streak when its rubbed with another hard material was appeared as white in color.

The Specific Gravity was 2.1 cubic volume and 2.1 – 2.6 g/cc density. The physical properties were Soluble in water and salty flavoured in taste.

Formation of Rock salt:-

It is typically formed by the evaporation for salty water. (such a sea water). Which contain Na⁺ and Cl⁻ ions. One finds Rock salt deposits ringing at dry lake bed, island marginal sea and in closed bay and estuaries in and regions of the world.

Probable Impurities in Rock salt

Gypsum - CaSO₄
Sylvite - KCl

But it is very rare to find potassium sulphate as a mineral also occasionally polyhalite (K₂Ca₂mg(SO₄)₄.2H₂O). It found associated with Rock salt deposits.

General properties

Name - Sodium Chloride Impura
Chemical formula - NaCl
Appearance - White (or) Clear solid

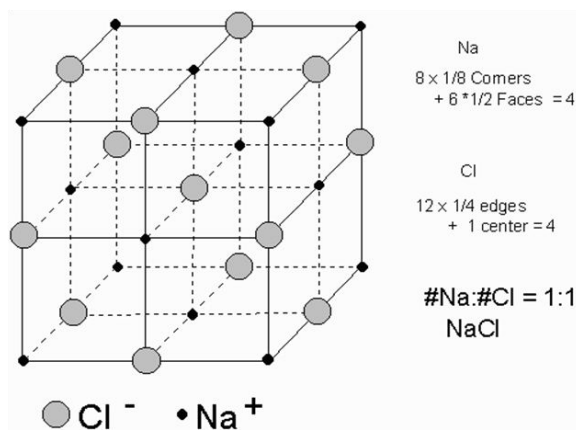
Physical properties

Molecular weight (NaCl) - 58.4428
Atomic weight (Na⁺) - 22.98768 (39.337%)
Atomic weight (Cl⁻) - 35.4527(60.663%)
Viscosity - 10¹⁸poises at 18⁰. 10¹⁷poises at 80⁰
Bulk density - 1.154 (7216/ft³)
Angle of response - 32⁰
Melting Point - 1.465⁰C (2.669⁰F)
Hardness - 2.5
Critical Humidity at 20⁰C - 75.3%
P^H of aqueous solution - Neutral
Specific gravity - 0.204
Heat and fusion - 1 – 3.5g cal/gm

Safety of Rock salt in consumption

Ingestion - Dangerous in Large quantities
Inhalation - may cause irritation
Skin - may cause irritation
Eyes - may cause irritation
Radio Active - No such Radioactive property

Crystal structure NaCl form crystals with cubic symmetry. In this the larger chloride ions are arranged in a cubes close packing



white, the smaller Sodium ions fill the octahedral gaps between them. Each ion is surrounded by six of the other kind. This same basic structure is found in many other minerals and is known as the Halite structure.

Distribution :-

Most of the rock salt are getting from mandi Himachal Pradesh (% basis). Rock salt deposits in Himachal Pradesh which the only state where Rock salt is mined in India.

Quality & Specifications:-

Quality of salt is determined by its sodium chloride content. The presence of salts other than sodium chloride like magnesium chloride, calcium chloride, sodium sulphate and sodium carbonate is considered undesirable. Magnesium chloride and sulphate being hygroscopic make the salt deliquescent and to eliminate them anti-caking agents like high magnesium carbonate tricalcium phosphate (or) hydrated calcium silicate subjects to a limit of 1% are added which make the salt free flowing and suitable for table uses. Apart from chemical composition, the quality of salt is also correlated to its Physical characteristics, viz its colour and particle size.

Colour of salt should be white as possible and the crystals should be finer particularly for table use. Composition and colour can be controlled by washing out the impurities and size by grinding.

Table 1. Medicine formulations with the drug Indhuppu

Forms	Medicine name	Medicinal uses
Chooranam	Indhuppu chooranam	- Indigestion, Vomiting
	Karum Kozhi Chooranam	- Asta gunmam, Sogai Magodharam, Pandu, Veppu
	Deepakini Chooranam	-Seetha kattu, Vadharogam, Asta gunmam, Pandu, Kamalai
	Abipathyathi chooranam	-Kirani, Swasam, Moolam
	Saamuthrara chooranam	-Gunmam 8, Vayitru vali, Aseeranam, Vatham 80, Kirani 11, Moolam, Paandu 5, Mahodaram
Mathirai(Tablet)	Kaalakkini Mathirai	-Paandu, Mahodaram, Sogai, Sanni 13, Irumal, Ratha moolam
	Saathilinga Kuligai	-Pandu, Kamalai, Moolam, Peruvayiru, Gunmam, Suram, Bethi, Sanni
Kulambu	Sinjathi Kulambu	-Erikamalai, Suzhal Kamalai, Pandu, Manjal Kamalai, Azhal Kamalai
Vadagam	Arapodiyadhi Vadagam	-Pitha pandu
	Mandoora vadagam	-Mahodaram, Kamalai, Pitha pandu, Gunmam, Kasam, Vayitru katti, Peru vayiru, Ushnam
Leghiyam	Elumichanpala leghiyam	-Erumal, Pandu, Kamalai, Vaandhi, Kai kal asathi, Athisaram, suram, Rathaminmai, VishangalVeekam, Karappan
	Vilvathi Lehiyam	-Vikkal, Kirani, Payithiyam, Irumal, Seelai, Veekam

Therapeutics Importance of Indhuppu :-

Sodium chloride is essential to life on Earth most biological issues and body fluids contains a varying amount of salt. The concentration of sodium ions in the blood is directly related to the regulation of safe body fluid levels. Propagation of nerve impulses by signal transportation is regulated by sodium ions. 0.9% sodium chloride in water is called physiological solution. Because it is isotonic with blood plasma. It is known medically as normal saline. Physiological solution is the main stay of fluid replacement therapy that is widely used in medicine in prevention and treatment of dehydration (or) as an intravenous therapy to prevent hypovolemic shock.

Sodium :

Major extra cellular (The serum of human blood contain 5.5 parts / 1000 by weight of NaCl) electrolyte responsible for regulating water balance pH and osmotic pressure.

Chloride :-

Essential for good health. It preserves acid base balance in the body fluid, potassium absorption, supplies the essence of digestive stomach acid, and enhances the ability of the blood to carry carbon di – oxide from respiring tissue to the lungs. It is to be taken daily intake of 6 – 10gm salt / day

Flavour enhancer

Salt is commonly used as a flavour enhancer for food and has been identified as one of the basic tastes. Unfortunately the excess amount of salt intake where the required intake is much, lower causes elevated levels of blood pressure, increased risks of heart attack and stroke.

Other uses

Many micro organisms cannot survive in an excessive salty environment, water is drawn out of their cells by osmosis. For this reason it is used to preserve some foods. Such as smoked bacon of fish. It has also been used to disinfect wounds. Salt promotes digestion and cell formation act as a stimulant and causes the increased flow of saliva in the human body. The serum of human blood contain 5.5 parts/1000 by weight sodium chloride which maintains the osmotic pressure in the body and keeps it in a good health.

Salt also finds many uses in medicine. It is used in the treatment of sprains, prevention of Goitre and for standard intravenous injection. Salt baths in sea water are said to have stimulant effect on the skin salt is also used in many siddha and ayurvedic preparation, surgical operations and veterinary practice.

Conclusion

The reason for the popularity of the system is attributed to its effective cure with minimal side effects. Siddhars, the founders of this system of medicine possessed Siddhic powers (supernatural power). They have left their imprints in many disciplines like medicine, alchemy etc. Likewise they are well versed in purifying the salt based drugs, making thravagams etc. The drug *Indhupu* is a *karasaram* i.e salt based, which has enormous activities for the mankind. The further more research works has to be carried out for the benefit of mankind.

Conflict of Interest

None declared

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