



BURA ARMANI (BOLE ARMENIA): AN EFFECTIVE UNANI DRUG OF MINERAL ORIGIN

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ABSTRACT

Bura Armani is a mineral-based medicine which is also known as *Bole Armenia*, obtained from the *Armenia* region of Southwestern Asia. The deposits of *borates* are found in the form of surface encrustations in the valley floor when exposed to the sun, the *borax* develops a crust of exfoliated salt which consists of sodium chloride and sodium sulphate salts. There are two types of *Bura Armani*, i.e., mineral/natural and artificial. Natural type is derived from mineral origin; a part of it escapes in liquid form and solidifies after exposure to air and artificial type of *Bura Armani* is made artificially from a mixture of *boric acid* and *sodium carbonate*, which is heated. It is also known as *Suhaga Tilia*, it possesses different properties such as *Jali* (Detergent), *Muhallil-i-auram* (Anti-inflammatory), *Muhallil-i-riyah* (Anti flatulence), *Musakkin magas* (Analgesic) *Jazib* (Absorbent), and *Qabid* (Astringent) etc. Many pharmacological activities mentioned in Unani medicine are validated, and many activities need further exploration due to the immense therapeutic scope in this drug. Overall, clinical trials are needed to confirm these prospective various health advantages of *Bura Armani* in human subjects and the most efficacious dosage, based on the current body of scientific literature. The current review is designed to give an overview of the preparation, distribution, pharmacological and therapeutic effects of *Bura Armani*.

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INTRODUCTION

Bura Armani also known as *Papadi namak* (Kabiruddin,2007; Kabiruddin, 2007) is a salt derived from the *Armenia* region known as *Bura Armani*. It has a clear white colour, bitter taste, and a slightly spongy texture that made by dissolving salty clay in water, straining it, and drying it. (Kabiruddin, 2007; Khan, 2014; Tarique, YNM) It has mild detergent properties found as a naturally occurring deposit collected from the mud of lakes surrounded by hills in Nepal, where it is contained in masses due to evaporation of water on the shores of dried up lakes in India and Tibet. (Nadkarni, 2009) Chemically it's a hydrated sodium tetraborate, is one of the most important of *boron minerals*. Its use for refining of *gold* and *silver* is known since historical times. (Anonymous, 1988) This review discusses the physiological benefits of *Bura Armani* such as anti-inflammatory, detergent, absorbent, analgesic and antiseptic etc.

MATERIAL AND METHODS

Un ni classical books available in the National Institute of *Un ni* Medicine library were reviewed for information related to *Bura Armani* (*Bole Armenia*) such as *Al-Q n n Fi'l- ibb* (English Translation), *Makhzan-ul-Mufradat*, *Kitab al-Mukhtarat Fit- ibb*, *Muhit e-Azam*, *Khazainul advia*, *Advia Ma'dania*, *Aljame-ulmufradat-al Advia wa-al Aghzia* etc. Other published books and journals were also consulted for further details. The keywords used for the search were *Bura Armani*, *Bole Armeniae*, and Unani medicine.

Mahiyat (Description in Unani Literature)

It is a mineral-based salted medicine obtained from the water of Nepalese and Tibetan lakes. It's also known as *Suhaga Tilia*, and it's non-purified greyish white. It's purified by dissolving it in water and straining it out, giving it a pure white appearance. (Khan, 2004)

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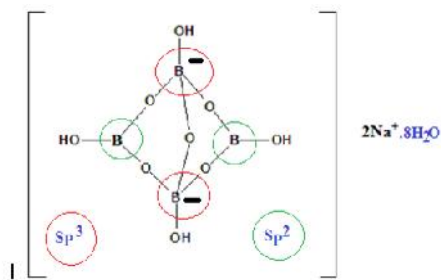


Figure 1 Bura Armani as heavy pieces Figure 2 Powder of Bura Armani

Vernacular Names

Table No. 1 Name of Bura Armani in different languages

S.NO.	Language	Name
1.	English	<i>Bole Armenia</i> , (Khan,2004; NFUM,YNM) <i>Boric, Borax</i> (Baitar, 2003)
2.	Arabic	<i>Natroon Banjavi</i> , (Khan,2004; Rafiqueuddin, 1985) <i>Boric</i> (Hakim,2002)
3.	Persian	<i>BuraArmani</i> (Tarique,YNM;Khan,2004;Rafiqueuddin,1985;Hakim,2002;Nabi,2007), <i>Bura</i> (Baitar, 2003)
4.	Urdu	<i>Papdi Namak, Sohaga, Tincal</i> (Kabiruddin, 2007; Tarique, YNM; Anonymous,1988)
5.	Hindi	<i>Paapdi Laun</i> (Khan,2014; Ghani,YNM) <i>Khaari laum</i> (Kabiruddin,2007;Tarique,YNM), <i>Sohaga, Tincal</i> (Anonymous,1988)
6.	Sanskrit	<i>Khaanz Namak</i> (Kabiruddin,2007)(Tarique,YNM) <i>Tan-kana</i> (Ghani, YNM)
7.	Sindhi	Chaneehoo (Kabiruddin,2007)(Tarique, YNM)
8.	Beng	<i>Sohaga</i>
9.	Guj	<i>Tankankhar</i>
10.	Kan	<i>Biligara</i>
11.	Mal	<i>Vellakaram</i>
12.	Tam	<i>Vengaram</i>
13.	Tel	<i>Elegaram</i> (Anonymous,1988)

Nature: Buraq is a more powerful medicine than regular salt. It is astringent-free, despite having the corresponding potency. (Ibn Sina, 1998)

- **Colour:** White
- **Taste:** Alkaline (sore) (Kabiruddin, 2007) (Tarique, YNM)
- **PH:** 2-2.5
- **SP.gr:** 1.7 (Anonymous,1988)

Source and Types: There are two types 1) Mineral/Natural. 2) Artificial

Natural type derived from the mineral origin, some Bura escape in liquid form and solidifies after exposure to air, while others are already solid. (Ghani, YNM)

There are five types in natural source,

1. **Bura Armani-** It has a simple white colour and a bitter taste. This is of the highest standard.
2. **Natroon-** It has soft and red.
3. **Boric-al-khubazeen-** It's a greyish colour that's layered.
4. **Boric-al-sana'at-** It's a white, spongy and heavy substance. It's used to keep silver clean. (Ghani, YNM)
5. **Bura Zabd'i-** It is soft, lightweight and red. (Kabiruddin,2007) (Ghani, YNM) (Usmani,2008)

Artificial: This form of Bura Armani is made artificially from a mixture of boric acid and sodium carbonate, which is heated. (Khan, 2004)

Chemical composition: Sodium, Calcium, Carbonate (Usmani, 2008) Sodium Carbonate, Calcium& Boricacid (Rafiqueuddin, 1985)

Characters

It is composed of boric acid and soda. It exists as an impure saline incrustation of a dirty white colour. Another variety known as *Telio tankana* is an impure salt met within small pieces or smooth, translucent six-sided prisms. The colour is greyish-white on exposure it becomes opaque or dirty white. It has a faintly balsamic odour and tastes like *Papada khar*. (Nadkarni, 2009) Borates are obtained commercially from

1. bedded deposits beneath old playas (shallow saline and alkaline Tertiary lakes)
2. brines of saline lakes and marshes
3. encrustations around playas
4. hot springs and fumaroles. (Anonymous,1988)

Properties

The main properties determine that their uses are ease of fusibility and high fluxing efficiency, high solubility, mild antiseptic and detergent properties. Borax fuses at a very low temperature and readily dissolves in various elements such as copper, chromium, cobalt, nickel, and others, resulting in a variety of properties. (Anonymous,1988)

Geographical Distributions (Habitat)

Borates (boron minerals) are produced in various countries of the world. The largest deposits of borates (borax and kernite) are located in the Kramer District, California, USA. USA and Turkey are the largest producers of borates, followed by the USSR, Argentina, China, Peru and Chile. World's total production of borates during the years 1979-83 was of the order of 2,519; 2, 610; 2,558; 2,271; and 2,210 thousand tones respectively. Although economically workable deposits of borax are not found in India, limited occurrences are recorded in the Puga valley in Jammu and Kashmir. The deposits of borax are found in the form of surface encrustations in the valley floor at Puga in Ladakh district and the thickness of the encrustations varies generally from 0.3cm to 6.4 cm, with a maximum of 13.5 cm. when exposed to the sun, the borax develops a crust of exfoliated salt which are consists of sodium chloride and sodium sulphate salts. (Anonymous,1988)

Preparation and Purification

The bedded borate deposits are extracted by underground mining methods, and the mined material is crushed and roasted to remove the water, separated from the clay, and refined the borax. Brines containing borax is pumped out and various

constituents are separated by complicated chemical treatment, which is essentially evaporation followed by fractional crystallization with careful control of temperature and concentration. During evaporation, the sodium carbonate, sulphide and chloride are precipitated, then, when saturation with potassium chloride occurs rapid cooling causes it to be precipitated, and further cooling gives borax and other salts, which are then refined to pure borax. (Anonymous,1988) It is purified by being steeped for a night in *Kanjika* (whey) and dried in the sun. (Nadkarni, 2009)

Ethno Scientific Description

Borax (Na₂B₄O₇·10H₂O; Na₂O, 16.2%; B₂O₃, 36.6%; H₂O, 47.2%) is transparent colorless monoclinic prisms, usually efflorescent. Though this salt is acid in the constitution, it gives alkaline reactions with litmus and methyl orange solutions. It also occurs in solution in saline lakes and as a glistening white efflorescence or a constituent of certain alkali soils. It is readily soluble in water. Its solubility is 1 in 25 of water; 2 in 1 of boiling water. (Anonymous,1988; Squire,2010)

Pharmacological Actions

- Diuretic
- Emmenagogue
- Astringent
- Antacid
- Local sedative
- Antiseptic (Nadkarni,2009)

Mizaj (Temperament)

- According to *Seikh, Harr yabis in the second degree* (Kabiruddin,2007; Khan,2014; Khan,2004; Ghani, YNM; Rafiqueuddin,1985)
- *Harr yabis in the third degree* (Kabiruddin, 2007) (Tarique, YNM)

Nafaa Khaas (Special Function)

- *Muqawwi maida* (Khan,2004;Rafiqueuddin,1985)
- *Muqawwi bah* and benefits in phlegmatic cough (Hakim, 2002)

Af I (Actions)

Table No. 2 In Classical Unani literature, there are different kinds of actions are mentioned

<i>Jali</i> (Detergent)	(Kabiruddin,2007;Kabiruddin,2007;Ghani,YNM ; Hakim,2002;Baghdadi,2007)
<i>Muhallil-i-auram</i> (Antiinflammatory)	(Khan,2014;Khan,2004;Ghani, YNM; Hakim,2002)
<i>Muhallil-i-riyah</i> (Antiflatulence)	(Kabiruddin,2007)
<i>Musakkin magas</i> (Analgesic)	(Hakim,2002)
<i>Jazib</i> (Absorbent)	(Hakim,2002)
<i>Qabid</i> (Astringent)	(Ghani, YNM)
<i>Mushil-e-balgham</i>	(Usmani,2008)
<i>Mukhrij-e-balgham</i>	(Kabiruddin,2007)
<i>Qate-Akhlate ghaleeza</i>	(Kabiruddin,2007;Usmani,2008; Baghdadi,2007)
<i>Muqawwibah</i> (Aphrodisiac)	(Hakim,2002)
<i>Tiryaaq</i> (Antidote)	(Hakim,2002)
<i>Dafa-e-Sayalan-al-rahim</i> (internally)	(Usmani,2008)
<i>DafaeTa'afun</i> (Antiseptic)	(Usmani,2008)
<i>Dafae Qlaw</i>	

<i>Dafae Harqatul baul</i>	
<i>DafaeSua'lwa</i>	(Khan,2004)
<i>zaiqulnafas</i>	
<i>Mushtahi</i> (Appetizer)	
<i>Qa'atilededan-e-ama'a</i>	(Kabiruddin,2007;Khan,2014;Rafiqueuddin,1985)
<i>Hazim</i> (Digestive)	
<i>Muhammir</i> (Rubeifacient)	(Usmani,2008; Ibrahim,2007)
<i>Qatil qamal</i>	
<i>Dafia jarb raas</i>	
<i>Mumaqqui Uzan</i>	(Ibrahim,2007)
<i>Dafia dard dandaan,</i>	
<i>Dafia kalaf</i>	

Isti m l t (Therapeutic uses)

- **Cleaning:** It can be used to clean body dirt after dissolving in water (Ghani, YNM) and it has a good detergent effect due to its *ardiyat* and *hiddat* properties, so it cleans *mawad*. (Kabiruddin,2007)
- **Cosmetics:** If applied on hair, it causes thinning and its paste is rubefacient, and blood is drawn toward the skin due to its heavy *ardiyat* and *hararat*. (Kabiruddin,2007) It improves the complexion and is useful in emaciation. (Baitar,2003;Ibn Sina,1998;Ibrahim,2007)
- **Diaphoretic (Moarrique):** Its massage all over the body with *Roghan babuna* is stimulate sweating(Baitar,2003)
- **Wound & Ulcer:** It is useful in prurigo because of its ability to dissolve pus and to treat gangrenous buboes and sloughing ulcers. (Nadkarni,2009;Ibn Sina,1998)
- **Head:** It is useful in dandruff (Ibn Sina,1998) and is used as a hair wash for dryness of hair. (Baitar,2003) Its local application reduces *Daus-salab* and *Daul-haiyya*. (Usmani,2008)
- **Eye:** It's kajaal beneficial for *Zoa'f basarat*, it's applied with honey. (Kabiruddin,2007;Tarique,YNM)
- **Ear:** Ear drops made from its foam and honey cleanse and clear the ears, providing relief from deafness. With wine or the syrup of hyssop it is useful in tinnitus. (Ibn Sina,1998;Baitar,2003)
- **Skin diseases:** Externally, it's used in lotion to treat acne, freckles, cholasma, and other skin conditions, as well as to relieve itching in urticaria, psoriasis, pruritus pudenda, vulvi, scrota, and ani and its solution is also useful for sore nipples, prickly heat, and other types of skin eruption.
- **Respiratory diseases:** This is used for a variety of *phlegmatic* symptoms ranging from common catarrh to bronchitis and pneumonia, as well as ear and nose discharges. (Nadkarni,2009) It is used in cough, phlegmatic cough, and asthma because of its cough expectorant (*Mukhrije balgham*) properties. (Tarique, YNM)
- **Gastrointestinal diseases:** Colitis- 1 tola 1.5 *masha bura*, boil in 14 tola *Sirka* and add 7 *masha Roghan zaitoon shereen* and drink it very beneficial in *Qaulanj khushk*, Colitis flatulence and Constipation-*Enema* did from 7 gm *bura*, Dropsy (Ascites) - A paste made from *Bura Armani* and *fig (anjeer)*, gives relief in dropsy. (Ghani, YNM; Baitar,2003)
- **Uses in Excretory organs:** Its suppository (*hamul*) relaxes the bowel because of its detergent properties and eliminates the *morbid matter (ghaleez khilt)*. (Kabiruddin,2007) Oral use with a syrup, cumin or

decoction of common rue and dill, removes the gripes. When used along with those medicines which kill the worms it expels the worms. (Ibn Sina, 1998; Baitar, 2003)

- **Reproductive diseases:** 7 gm *Buric* add in 10.5 gm *Roghan Sosan* and apply on reproductive organ, is a good aphrodisiac agent.
- **Joints:** It can be used to make a *Qairuti* that can be used to treat paralysis, particularly when it is advanced. It is also useful in the tortuosity of nerves. (Ibn Sina, 1998)
- **Infection:** When it applies locally, reduces fungal infection. (Ghani, YNM)
- Due to its anti-inflammatory properties reduces inflammation. (Khan, 2004)
- Due to appetizers properties, it is used in a treat of anorexia.
- It's used in stomatitis and a bad smell comes from the mouth due to antiseptic. (Khan, 2004)
- It is beneficial for phlegmatic temperament person. (Baitar, 2003)
- It eliminates *ghaliz khilt*.

Miqd r-i-Kh r k (Dosage)

- 1 gm (Khan, 2004; Rafiqueuddin, 1985)
- 3 to 5 masha (Kabiruddin, 2007)
- 1-2 gm (Usmani, 2008)

Mu irr t (Side Effects)

Maqai, It is emetics and harmful to the stomach (Khan, 2004; Hakim, 2002)

Mushil t (Correctives) In classical Unani literature, there are various correctives mentioned which reduce its adverse effects by

- *Mastagi romi and Samagh arabi (babul ka gond)* (Hakim, 2002; Usmani, 2008)
- *Banafshan and Ghulqand*
- Oral wash (gargle) with vinegar and sharaab
- Use of oily and fatty substances (Ghani, YNM)

Badal (substitutes)

- It's *badal* is 1.5 times *Natroon* or 1.5 times *Namak* (salt) (Baitar, 2003)
- *Shora qalmi* (Khan, 2004; Rafiqueuddin, 1985)
- *Namak laهوري, Namak andarani* (Usmani, 2008)

Murakkabat (Important Compounds)

- *Jawarish Kamooni*
- *Baroodi*
- *Jawarish zeera*
- *Tiryaqul kabad*
- *Safoof Muhazzil* (NFUM, YNM; Qarabadeen, 1986; Gupta, 2015; Patil, 2013; Usmani, 2008)

Evidence based Pharmacological activities

A study was conducted by, Advaryu T R et al, documented that, *Tankan* was effective against bacterial strains *E. coli*, *P. aeruginosa*, *S. aureus*, *S. pyogenes* and fungal strains *C. albicans*, *A. niger* and *A. clavatus*. The antibacterial and antifungal activity of the drug was carried out in different

concentrations of the drugs (5, 25, 50, 100, 250µg/ml). (Advaryu 2015)

DISCUSSION AND CONCLUSION

To conclude, *Bura Armani* is an important mineral origin drug used for centuries in the Unani system of medicine, that exhibits many medicinal and ethnomedicinal properties due to having different properties like *Jali* (Detergent), *Muhallil-i-auram* (Anti-inflammatory) *Muhallil-i-riyah* (Flatulent), *Musakkin magas* (Analgesic) *Jazib* (Absorbent), *Qabid* (Astringent), *Mushil-e-balgham*, *Mukhrij-e-balgham*, *Qate-Akhlate ghaleeza*, *Muqawwi bah* (Aphrodisiac), *Tiryaq* (Antidote), *Dafae Sayalan-al-rahim* (internally), *Dafae Ta'afun* etc. The review explores *Bura Armani's* pharmacological and therapeutic properties and revealed beneficial pharmacological activities in the drug. At this time, it's uncertain whether the culinary use of *Bura Armani* may be expected to deliver the health advantages substantially mentioned in this summary and is thought to be a relatively safe mineral origin drug with few and minor negative effects. More human trials are needed to determine the efficacy of *Bura Armani* and to evaluate what, if any, side effects are seen.

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Conflict of Interest

The authors report no conflict of interest.

Ethical Approval

It is not applicable.

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