

Research Article



Elaeocarpus Ganitrus (Rudraksha): A Reservoir Plant with their Pharmacological Effects

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ABSTRACT

Elaeocarpus ganitrus (syn: *Elaeocarpus sphaericus*; *Elaeocarpaceae*) is a large evergreen big-leaved tree. *Elaeocarpus ganitrus* is a medium sized tree occurring in Nepal, Bihar, Bengal, Assam, Madhya Pradesh and Bombay, and cultivated as an ornamental tree in various parts of India. Hindu mythology believes that, anyone who wears Rudraksha beads get the mental and physical prowess to get spiritual illumination. According to Ayurvedic medicine Rudraksha is used in the managing of blood pressure, asthma, mental disorders, diabetes, gynecological disorders and neurological disorders. The *Elaeocarpus ganitrus* is an inhabitant shrub that has a good rich history of traditional uses in medicine. Present review has been attempting to make to collect the botanical, ethnomedicinal, pharmacological information and therapeutic utility of *Elaeocarpus ganitrus* on the basis of current science.

Keywords: *Elaeocarpus ganitrus*, Antidepressant, Rudraksha, Pharmacological activity.

INTRODUCTION

Elaeocarpus ganitrus commonly known as Rudraksha in India belongs to the *Elaeocarpaceae* family and grows in the Himalayan region¹. Type *Elaeocarpus* has about 360 species, occurs during Australia, East Asia, Malaysia and the Pacific Islands. About 120 species belonging to this genus from different parts of Asia and out of this, 25 species occur in India alone². According to Hindu mythology, Rudraksha beads bear a great religious, spiritual, and materialistic significance. The Hindu mythology considers Rudraksha as symbol of link between earth and heaven. It is believed that it contains the secrets of evolution of entire cosmos within itself³.

Elaeocarpus ganitrus Roxb. (Syn. *E. angustifolius* Blume, *E. sphaericus* Gaertn.) is an evergreen tree, ripe fruits of which contain a hard and highly ornamental stony endocarp known as bead or nut⁴. *Elaeocarpus ganitrus* has an important position in Hindu religion and in Ayurveda, the ancient Indian system of medicine. Fruits of the plant are wearing by Hindu mystics as necklaces and in their daily worship for purpose of counting prayers and various magical properties are recognized to them⁵. Rudraksha is a dried herbal fruit. Birth place or motherland of Rudraksha is mountains of Himalayas. Rudraksha is the King of herbal medicine working effectively and positively, are measured to be sacred and have many spiritual and medicinal values both as defensive and remedial. *Elaeocarpus ganitrus* (syn. *Elaeocarpus sphaericus*) commonly known as Rudraksha in Sanskrit and Rudraki in Hindi is grown in Himalayan region in India for its medicinal properties and attractive fruit stones⁶. It is used in folk medicine in treatment of stress, anxiety, depression, palpitation, nerve pain, epilepsy, migraine, lack of concentration, asthma,

hypertension, arthritis and liver diseases. According to the Ayurvedic medicinal system, wearing of Rudraksha can have a positive effect on nerves and heart⁷⁻⁹. As stated by Ayurvedic system of medicine, wearing Rudraksha beads relieves strain, anxiety, lack of concentration, insomnia, depression, hypertension, palpitation, infertility, rheumatism, and asthma. It has also anti-aging effect¹. The seed of Rudraksha has been given an individual place and it is attributed with numinous and heavenly properties. Rudraksha beads have been traditionally used in India and other Asian countries. This species name is synonymous with *E. sphaericus*, whose fruits or seeds are used in Ayurveda for psycho-somatic diseases. Previous studies shows that *E. ganitrus* possesses sedative, anticonvulsive, antiepileptic hypnotic, tranquillizing, and antihypertensive activities. *E. ganitrus* contains quercetin, gallic and ellagic acids, (-) elaeocarpine, (-) iso-elaecarpine and Rudrakine^{10,11}. People use fruit of *E. ganitrus* to treat different ailments. The pulp or flesh of drupe in green and fresh state is sour in taste, stimulates appetite and is given in epilepsy, diseases of the head and mental illness. The fruit stone (seed kernel) is sweet, cooling and emollient. Externally the stone is rubbed with water and then it is applied to small-pox eruptions. Similarly, it is applied on organs having burning sensation and in other conditions i.e. eruptions, measles, fevers, etc¹². In the biological studies, extracts of *E. ganitrus* exhibited large range of pharmacological activities and are identified as active beside specific biological targets during large scale screening of multiple plant extracts. Many Literature reports are available on various pharmacological activities which include anti-inflammatory and analgesic¹³, CNS activities, tranquillizing, hypnosis potentiation, sedative, antiasthmatic, hydrocholeretic, antidepressant¹⁴, antidiabetic¹⁵, anticonvulsant¹⁶, antihypertensive, cardio



stimulation,⁹ etc. Rudraksha (*Elaeocarpus sphaericus*) beads have numerous amazing powers due to their electrical Properties, electromagnetic character, and bio electric circuit. Rudraksha is also useful for women suffering from hysteria and coma. It can be used as a cure for skin diseases, pimples, boils mental diseases, ringworm and possess anti ageing property. *E. ganitrus*, belongs to the family Elaeocarpaceae, is used for treating diverse diseases such as mental illness, epilepsy, hysteria, cough and hepatic diseases¹⁷. A combination of bark, stem and leaf of *Elaeocarpus floribundus* has been used as mouth wash and fruits has been used as antiseptic. *Elaeocarpus oblongus* fruit is used as antiseptic. *Elaeocarpus* is used in ulcers, rheumatism, piles, pneumonia, and leprosy. The bark of the *Elaeocarpus parvifolius* used in especially in the treatment of malarial Infection. Bark of *Elaeocarpus petiolatus* is bitter and sour juice of leaves is used to check sunstroke and given in fevers¹⁸. Herbal drugs derived from plant extracts are being more and more utilized to treat a broad variety of clinical diseases, however relatively tiny knowledge about their mode of action is available. There is a growing interest in the pharmacological evaluation of various therapies used in Indian traditional systems of medicine.

Plant Profile

Elaeocarpus ganitrus wild

Taxonomy- *Elaeocarpus ganitrus* falls under the classification of scientific as follows:

Scientific Classification¹⁹

Botanical Name- *Elaeocarpus Ganitrus* (Roxb.)

Kingdom- Plantae

Division- Magnoliophyta

Class- Magnoliopsida

Order- Oxalidales

Family- Elaeocarpaceae

Genus- *Elaeocarpus*

Species- *E. Ganitrus*

Common Name- Rudraksha

Type- *E. Serratus* Linn, *E. Ganitrus* Roxb, etc.

Habit- Tree

Habitat

Elaeocarpus ganitrus is an average sized evergreen tree with a spreading attractive crown, found in tropical and subtropical areas at the altitude ranging from the sea coast to 2,000 meters more than the sea level. *Elaeocarpus ganitrus* generally dispersed from Madagascar in the west through India, Malaysia, Southeast Asia, Southern China, and Japan, through Australia to New Zealand, Fiji, and Hawaii in the east with it's around 350 species. The islands of Borneo and New

Guinea have the greatest concentration of species *E. ganitrus* found in Assam, Bihar, Bengal, Maharashtra, Madhya Pradesh and Sikkim in India^{20,21}. Tree of Rudraksha is common along the foothills of all districts of Arunachal Pradesh, except tawang and upper subansiri and some other high-altitude areas. Tree of Rudraksha is originated in humid evergreen forests, which are characterized by three-tier forest structure²².

Botanical Description

It is a large evergreen tree with large leaves. Its height ranges from 50–200 feet. Leaves are large and shining green on the sun facing side and dull stringy on earth facing side. Flowers become visible in the month of April-May and are white or yellow in colour^{20,21}. Fruits start appearing in June and ripen near October. Ripe fruit is fleshy and has a seed with blue shell. Inner part or bead lying in the seed is called *Rudraksha*¹⁹.

Morphological & Macroscopical Description^{20,21,23,24}

The morphological characters of plant are shown below as follow as, and macroscopically description given in the table 1 and 2.

Leaves- Simple, glabrous, oblong-lanceolate, sub-entire or irregularly crenate, acute or acuminate

Flower- White or yellow colored, in dense racemes and mostly from axils of fallen leaves, fringed petals, anthers are linear, appear in April-may

Fruits- Round or oval, small, violet or blue colored and acidic in taste

Endocarp- Stony endocarp is hard, globular, strongly tubercule, marked with 5 to longitudinal ridges, rarely 1 to 4, reddish brown in color

Table 1: Macroscopically Examination of leaf²⁴

S. No.	Leaf	Inspection/Observation
1	Apex	Acute
2	Base	symmetric
3	Color	Shining green
4	Margin	Undulate
5	Shape	Ovate
6	Size	5-6 inch in length, 2 inch broad

Table 2: Macroscopically Examination of seed²⁴

S. No.	Seed	Inspection/Observation
1	Color	Blue (on fully ripening)
2	Texture	Hard
3	Taste	Sour
4	Shape	Round, Bulbous
5	Size	½ -1 inch

Synonym of Rudraksha in other Language - Different synonyms of *Elaeocarpus ganitrus* in other language listed in Table 3 are mentioned in classical books like



Bhavaprakash Nighantu, Raj Nighantu, Shankar Nighantu, Dravyaguna Vigyan, Nighantu Adarsha, etc.^{21,25-31}

Table 3: Synonym of Rudraksha

Language	Synonyms
Sanskrit	Chattu sampangi, Rudraksha, Bhutnasan
Hindi	Rudraki, Rudraksha
English	Utrasum Bead Tree, Wooden Begger bead
Gujarati	Rudraksh
Bengali	Rudrakya
Kannada	Rudrakshi mara, Rudraksh
Malayalam	Rudraksha, Rudraksam
Marathi	Rudraksha
Punjabi	Rudraksha
Tamil	Rudraksha, Ruttiratcam
Telgu	Rudraksha, Rudraksi
Assam	Rudrai, Ludrok, Udruk
Other	Sivaksha, Sarwaksh, Paawan, Nilkanthaksha, Haraksha, Sivpriye

Important Formulations of *Elaeocarpus Ganitrus*

Gorochanadi vati, Mrtasanjivani gutika, Svarnamukladi gutika, Dhanwantara gutika and Cukkumitpalyadi gutika³². Rudraksha Churan, rudraksha Hima (Cold infusion), Rudraksha Milk, Rudraksha decoction for Gargling, Rudraksha Lehyam, Rudraksha Vibhuti, Rudraksha Oil, Rudraksha eyedrops, Rudraksha Paste and Rudraksha Bhasma³³.

Bioactive Compounds in *Elaeocarpus*

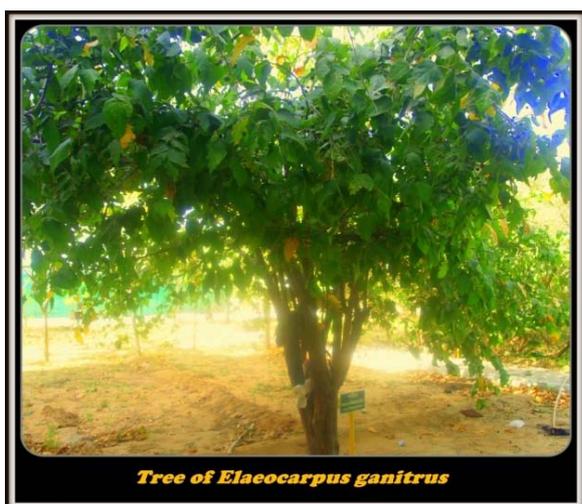


Figure 1: Tree of *E. ganitrus*

The *Elaeocarpus ganitrus* fruit have many phytoconstituents such as alkaloids, flavonoids, tannins, steroids, triterpenoids, carbohydrates and cardiac glycosides. Singh¹⁰ says that a significant amount of phytocomponents such as isoelaecarpine, elaeocarpine

isoelaecarpine and quercetin, gallic, ellagic acids and rudrakine. Three new ellagic acid derivatives of eleocarpaceae, 4-Omethylellagic acid 3-O-a-rhamnoside, 4-Omethylellagic acid 3O-(300-O-acetyl)-a-rhamnoside and 4-Omethylellagic acid 3O-(400-Oacetyl)- a-rhamnoside in addition to the known ellagic acid derivative, 4-O-methylellagic acid 3O- (200,300-di-O-acetyl)-a-rhamnoside are used in multi besieged therapy of cancer and a significant antioxidant ability due to its wealthy content of tannins and flavonoids³⁴. *Prosopis* species has been widely used to cure basic ailments in the usual system of medicine³⁵. *Elaeocarpus ganitrus* have gallic, quercetin, and ellagic acids, (-) elaeocarpine, (-) iso-elaecarpine and rudrakine^{10,11}.

Gaseous Composition of Rudraksha^{9,17}

Rudraksha beads are containing carbon, nitrogen, hydrogen, oxygen and trace elements in combined form. Percentage composition of gaseous elements in Rudraksha beads are shown in figure 2:

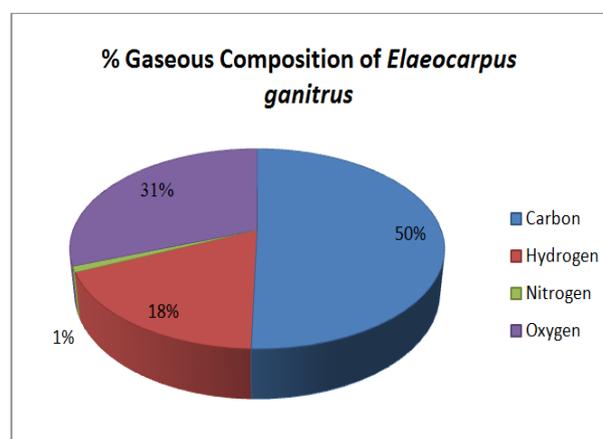


Figure 2: Percentage Compositions of Gaseous Elements in *E. ganitrus*

Traditional Properties³⁶⁻³⁸

An Unripe and ripped fruit of *Elaeocarpus sphaericus* shows different traditional uses:

- *Elaeocarpus sphaericus* imposes positive effect on Stress, Anxiety, Depression, Palpitations and Lack of Concentration.
- It cools down the body temperature and brings calm to mind. Those who suffer from anxiety should keep big size five mukhi *Elaeocarpus sphaericus* with themselves and whenever they feel nervous; they should hold them tight in their right palm for ten minutes. It will help them to regain their confidence and their body would become stable.
- *Elaeocarpus sphaericus* is an excellent bead for pregnant women. Wearing Garbh Gauri *Elaeocarpus sphaericus* helps women who have problems in conceiving a child and are prone to abortion.
- *Elaeocarpus sphaericus* is also useful for women suffering from hysteria and coma.

- *Elaeocarpus sphaericus* also help to cure prolonged cough, the paste of ten-faced. *Elaeocarpus sphaericus* with milk relieves prolonged cough. This medicine should be taken thrice a day. It can be used as a cure for skin diseases, sores, ringworm, pimples, boils and burns also.
- *Elaeocarpus sphaericus* is also good for children who suffer from frequent fever. Such children should wear three-faced *Elaeocarpus sphaericus*.
- To cure smallpox equal quantity of black pepper and *Elaeocarpus sphaericus* should be powdered and taken with water.
- *Elaeocarpus sphaericus* is also useful in mental diseases. Milk boiled with four faced Rudraksha seed is good medicine for mental diseases. This also helps in increasing memory.
- *Elaeocarpus sphaericus* also possess anti ageing property.

Ayurvedic Properties of Rudraksha^{37,38}

Rudraksha have many Ayurvedic properties that refer to this wonderful bead and gives details of rudraksha for increase body constitutions. The beads, bark and leaves of Rudraksha all are used to cure various ailments like mental disorders, headache, fever, skin diseases etc. Rudraksha may be worn either on arm, wrist or other parts of the body.

For improving memory power

Rudraksha can be used for improving memory power when taken with milk.

For all brain diseases

Rudraksha can be used for treating all brain diseases like brain fever etc.

As a blood purifier

Rudraksha shall be used for treating the blood impurities and strengthens the body substance.

As antibacterial

Rudraksha can be used for treating the burns and marks. It can also be used for curing cough and breathing problems.

For controlling epilepsy

By using pulp of Rudraksha fruit or bark, can be used for controlling epilepsy.

For curing liver related problems, jaundice, and stomachache

Rudraksha can be used for treating stomach pain and liver problems.

For blood pressure

Rudraksha can be used to treat high blood pressure, heart diseases etc.

As Cosmetic product

Rudraksha can be used in cosmetics to bring skin glow, also brings in a charming face.

Electric Properties of Rudraksha³⁹

Rudraksha beads hold the property of a stabilizing secure. These beads controls and normalizes the flow of bio-electric current in body. Rudraksha exhibits the following electric properties.

Confrontation

Rudraksha of particular type of mukhi contain an ultimate factor of resistance. It resists the flow of bio-electrical current generated due to potential difference among different organs or parts of the body. This resistance generates a specific ampere of current flow depending on the aspect of conflict.

It is important to reveal here that specific variety of Rudraksha sends precise impulses acting on a specific type of bio-chemicals in the brain thus bringing specific positive changes in the personality.

Capacitance

This phrase earnings ability to store the bio-electrical energy. The values are exact in the units of Farad. This property of Rudraksha makes them able of stabilizing and anchoring the flow of bio-electrical current thus controlling and normalizing heart beat and sensory activities in the body. The increased level of stress results in increased physical activity in the body along with increase in heart beats, hormonal and nervine activities, thus increasing energy levels and impending differences at different levels. As a result the magnitude of flow of bio electric current increases. Rudraksha beads acts as dielectric store or capacitor when directly comes in contact with body and store or absorbs this surplus of bio-energy streamlining the generally activity in the body to normalcy.

Inductance

Specific type of Rudraksha sends out specific inductive ambience because of unique magnetic properties. These ambiances are the reason for why the people feel better even when the beads do not touch them physically.

Methods for Identification of real *Elaeocarpus Sphaericus*^{17,40-42}

It is very simple to identify a real *Elaeocarpus sphaericus*. It is made falsely and the artificial *Elaeocarpus sphaericus* are also being sold in market. There are many methods of testing a actual (or fake) *Elaeocarpus sphaericus*:

Properties Test

This test gives information that whether the beads show properties like inductance, capacitance, conduction of electric current etc.



Cut Test

It is most reliable methods and for this cut the *Elaeocarpus sphaericus* bead horizontally. When it will be cut one can find the same number of section as the number of lines. If it is not then drawback of this method is that bead gets damaged.

Eye test

Sometimes the fake or the artificial *Elaeocarpus sphaericus* may seem same as real one but these fake *Elaeocarpus sphaericus* facets cannot be made as real as those present on the real *Elaeocarpus sphaericus*. This is a natural partition on *Elaeocarpus sphaericus* which just like the closed lips with deep natural. See these deep linings (facets) with the help of a magnifying glass (Lenses) and thus can be easily distinguish a real *Elaeocarpus sphaericus*.

Copper Coin Test

Generally it is believed that when an *Elaeocarpus sphaericus* bead is placed between two copper coins it will slightly rotate either clockwise or the anticlockwise direction. This phenomenon occurs due to physical and magnetic properties of the *Elaeocarpus sphaericus* beads.

X-Ray

One way is to follow the X-ray technique one can see the internal structure without damaging the beads. This digital X-ray test is done without complication for *Elaeocarpus sphaericus* up to nine Mukhi but higher Mukhi beads may not give 100% accurate results due to overlapping of the internal seeds.

Water test

Some of the rare *Elaeocarpus sphaericus* beads like Gauri Shankar *Elaeocarpus sphaericus* or a trijuti can be made by synthetically joining two or three *Elaeocarpus sphaericus* with help of paste etc. if here is any of hesitation this *Elaeocarpus sphaericus* bead, kept in boiling water for some minutes. A sharp streak will take place at the joint in case of synthetic *Elaeocarpus sphaericus*.

CT scanning

CT scanning is another method for identification of *Elaeocarpus sphaericus* but it is more expensive than X-ray. It gives much clear results for any *Elaeocarpus sphaericus* than X-ray.

Pharmacological Effects

In mainly biological studies, *E. ganitrus* exhibited the broad range of pharmacological actions and identified as active beside specific biological targets during large scale screening of multiple plant extracts. On the basis of a variety of *in vitro*, investigational and scientific researches, the following pharmacological activities of *E. ganitrus* have been reported³⁵. Literature information are available on a mixture of pharmacological effects which

include analgesic, CNS activities, typical behavioral actions, sedative, tranquilizing, hypnosis potentiation, anti-inflammatory, antiasthmatic, antidepressant, antidiabetic, cardio stimulation, hydrocholeretic, anticonvulsant and antihypertensive, etc⁶¹.

Antiasthmatic activity

Singh reported the chloroform, acetone, petroleum ether, benzene, and ethanolic extracts of *Elaeocarpus sphaericus* fruits were found to have mast-cell stabilizing activity, substantiating the effectiveness of *Elaeocarpus sphaericus* in bronchial asthma. In another study the petroleum ether, benzene, chloroform, acetone and ethanol extracts protected guinea-pigs against bronchospasm induced by acetylcholine aerosols and histamine⁴³.

Antidepressant activity

Ethanol and Petroleum ether extracts of *Elaeocarpus sphaericus*'s fruit decreased the swim stress immobility in mice signifying some scale of antidepressant activity^{14,43}. Pharmacological investigations with the 90 % ethanolic extract of the fruits of *E. ganitrus* showed the occurrence of a major central nervous system depressant effect, characterized by typical behavioral actions, morphine analgesia, anticonvulsant, potentiating of hexobarbitone hypnosis and anti-amphetamine effects. In this study the extract showed a cardio stimulant, depressor, part of these being mediated through beta adreno receptor stimulation and in part through a direct musculotropic effect¹⁴.

Antianxiety activity

E. ganitrus was evaluated for antianxiety activity in mice using elevated plus maze model. The chloroform and ethanol extractives were shown effective against anxiety at all doses, but a dose of 200 mg/kg of ethanol extractive was at equality with that of diazepam as clear from statistical equivalence between the results of this dose and that manifested by diazepam. Chloroform extractives also effective at all doses but most effective at a dose of 400 mg/kg⁴⁴. Fruit extract (methanolic) of *Elaeocarpus sphaericus* showed anxiolytic effect in Swiss albino mice⁴⁵.

Antidiabetic activity

According to Rao, *E. ganitrus* also shows the Antidiabetic potential effect by chitosan based aqueous extract of *Elaeocarpus ganitrus* by producing hypoglycemic effect in normal rats.

At 100 mg/kg body weight doses of given orally formed clinically significant hypoglycemia. The % reduction of blood glucose of the chitosan based aqueous extract at a 200mg/kg dose is comparable with the standard anti diabetic drug glimeperide 20mg/kg dose body weight⁴⁶. In another study Bualee and Rahman showed that water extract of leaves, fruit and twigs of *Elaeocarpus grandiflorus* has been usually used to treat diabetic patients. *Elaeocarpus grandiflorus* water extract



possesses a hypoglycemic effect^{47,48}. In the study of aqueous extract of *Elaeocarpus ganitrus* showed potential antidiabetic effects⁴⁹.

Antihypertension activity

In the study of Sakat, Aqueous Seeds extract of *Elaeocarpus ganitrus* showed the antihypertensive effect in renal artery occluded hypertensive in male wistar rats⁹.

Anti-inflammatory activity

The benzene, chloroform, acetone, petroleum ether, and ethanol, fruits extracts of *Elaeocarpus sphaericus* at a dose level of 200 mg/kg body weight was studied in rat paw edema using different inflammogens. The ethanolic and petroleum ether fruit extracts are effective against carrageenan, bradykinin and PGE.

The chloroform fruit extract of *Elaeocarpus sphaericus* showed effect against histamine. Chloroform extract, was essentially effective in 5-HT induced inflammation⁵⁰ and ethanolic extract also inhibit histamine. In other study petroleum ether, benzene, acetone, chloroform, and ethanol fruit extracts showed significant anti-inflammatory action against both acute and subacute models⁴³.

Antimicrobial activity

In the study of Singh showed that the petroleum ether, benzene, chloroform, acetone, and ethanol extracts of dried fruit of *Elaeocarpus sphaericus* was investigated against 28 gram-positive and gram-negative bacteria using the plate dilution and disc diffusion methods. The acetone fraction showed marked antimicrobial activity against ten organisms.

Benzene extracts was active against *Morganella morganii* and *Salmonella typhimurium*, and ethanol extracts against *Shigella flexnerii*, *Plesiomonas shigelloides*, and *Sh. Sonneii*¹¹. According to Shazid ethanolic leaves extract of *Elaeocarpus serratus* showed antibacterial activity against, *Salmonella typhi*, *Plesiomonas* and *Proteus spp.*⁵¹

Antiulcerogenic activity

The benzene, petroleum ether, acetone, chloroform and ethanol, extracts of dried fruit of *Elaeocarpus sphaericus*, showed antiulcerogenic activities in rats⁴³.

Antioxidant activity

Kumar reported that positive correlation between the total phenolic content and antioxidant capacity showed in the results of the ethanolic leave extracts of *E. ganitrus*. Ethanolic leave extracts of *E. sphaericus* exhibited metal chelating, total antioxidant capacity, reducing power,

ABTS (2, 2-azinobis-3-benzothiazoline- 6-sulphonate) radical scavenging and hydroxyl radical scavenging activities. Result shows that the extract showed maximum Iron chelating activity (76.70%) at 500 µg/ml concentration followed by the scavenging of the ABTS+ radical (55.77%) at the same concentration.

However, the extract showed only restrained hydroxyl radical scavenging activity (13.43%). Total antioxidant capacity was found to be 24.18 mg ascorbic acid equivalents at 500 µg/ml extract concentration³⁴.

Cytotoxic activity

Chloroform-soluble bark extract of *Elaeocarpus mastersii* was found to reveal significant cytotoxic activity when evaluated against a panel of human cancer cell line⁵². Cucurbitacin D, cucurbitacins, and cucurbitacin F isolated from *Elaeocarpus mastersii* showed cytotoxic effect beside KB (human oral epidermoid carcinoma) cells⁵³. Ethanolic leaves extract of *Elaeocarpus serratus* showed Cytotoxic activity of plant extracts against brine shrimps⁵⁴.

Other activities

Ethanolic fruits extract of *Elaeocarpus ganitrus* exhibit sedative, anticonvulsive, hypnotic, tranquillizing, and antiepileptic properties¹⁴. A combination of bark, leaf and stem of *Elaeocarpus floribundus* has been used as mouth wash and fruits has been used as antiseptic⁵⁵. *Elaeocarpus grandis* indolizidine alkaloids grandisine A and isoelaecarpiline compounds combine to opioid receptor and have analgesic effect⁵⁶.

Types of Rudraksha with its Astrological uses, Beej Mantra, Ruling GOD and shape

There are many types of Rudraksha beads are listed depending on the number of "mukhi's" – the clefts and furrows – they have on the surface. The scriptures state of 1 to 38 mukhi's, but Rudraksha of 1 to 14 mukhis are usually bring to light^{1,25,39}. Five faceted or Punch mukhi Rudraksha bead is most commonly found. The higher mukhi's or faces are very rare. Each bead imposes a different influence associated with the number of mukhi's it has as catalogues listed in table 4. The traditional scriptures sort out and mark the value and importance to different mukhi seeds according to the number or type of mukha (faces) the seed has⁵⁷⁻⁶⁰.



Table 4: Different Type of Rudraksha with their Ruling God, Beej Mantra (Empowering Verse), Indication, Planet, Shape and Its Astrological Uses^{1,25,39,57,58}

Type of Rudraksha	Ruling God	Beej Mantra	Indications/ Major Benefits	Planet and Zodiac sign	Shape	Astrological uses
1 Faced	Shiva	Om Hreem Nama, Om Namaha Shivaya	Chronic asthma heart problems, mental anxiety, T.B, paralysis, stroke, eye problem bone pain and head ache	Sun / Leo	Half moon shape	Enlightens the super consciousness, provides improved concentration and mental structure changes specific to renunciation form Worldly affairs. The wearer enjoys all comforts at his command but still remains unattached
2 Faced	Ardhnarees hwar	Om Namah, Om Shiva Shaktihi Namah	Impotency, renal failure, stress, anxiety, lack of concentration, depression, negative thinking, eye problems, mental chaos, hysteria and intestinal disorder	Moon/Cancer, Scorpio	Two natural lines or facets on its surface	Blesses the wearer with 'UNITY'. It could be related to guru-shishya, parents-children, husband-wife or friends. Maintaining oneness is its peculiarity
3 Faced	Agni	Om kleem Namha	Depression, schizophrenia, weakness multifarious, directive of the menstrual cycle/menstrual stress, fixation or guilt induced complexes, blood pressure, mood swings, fever or weakness, jaundice and mental disability.	Mars/Aries, Cancer, Leo, Pisces	Three natural lines or mukhas on its surface	The wearer gets free from sins or wrongs from his life and returns to purity. Ideal for those who suffer from inferior complexes, subjective fear, guilt and depression
4 Faced	Brahma	Om Kleem Namha	Blood circulation, cough and brain linked illness, asthma, hesitate, memory lapse and respiratory strip problems.	Mercury/Gemini, Virgo	Four lines on its surface	The wearer gains power of creativity when blessed. Increases memory power and intelligence
5 Faced	Kalaagni	Om Hreem Namah	Blood pressure, heart problems, stress, mental disability, fatness, anger management, diabetics, piles, neurotic and maladjustment problems.	Jupiter/Aries, Scorpio, Pisces	Five natural lines (mukhas) on its surface	Wearer gains health and peace. It increases memory also
6 Faced	Kartikeya	Om Hreem Hoom Namah	Epilepsy and gynecological problems.	Venus/Taurus, Gemini, Virgo, Libra, Capricorn, Aquarius	Six natural lines (mukhas) on its surface	Saves from the emotional trauma of worldly sorrows and gives learning, wisdom and knowledge. Affects understanding and appreciation of love, sexual pleasure, music and personal relationships
7 Faced	Mahalaxmi	Om Hoom Namah	Asthma, pharyngitis, impotency, foot related disease, respiratory and confusion.	Saturn/Taurus, Libra, Capricorn, Aquarius	Seven natural lines (mukhas) on its surface	It should be worn by those who are suffering from miseries pertaining to body, finance and mental set-up. By wearing this man can progress in business and service and spends his life happily
8 Faced	Ganesh	Om Hoom Namah, Om Ganesha-ya Namah	Stomach ache, stress, skin diseases and anxiety.	Rahu/-	Eight natural lines (mukhas) on its surface	Removes all obstacles and brings success in all undertakings. It gives the wearer all kinds of attainments-Riddhies and Siddhies. His opponents are finished i.e. the minds or intentions of his opponents are changed
9 Faced	Durga	Om Hreem Hoom Namah	Work as mysterious medicine for treating strange diseases.	Ketu/ -	9 natural lines (mukhas) on its surface	Wearer is blessed with lot of energy, powers, Dynamism and fearlessness, which are useful to live a life of success
10 Faced	Vishnu	Om Hreem Namha Namah	Hormonal inequality in the body, mental insecurity and whooping cough.	None/ -	10 natural lines (mukhas) on its surface	This contains the influence of ten incarnations and the ten directions. It works like a shield on one's body and drives evils away
11 Faced	Hanuman	Om Hreem Hoom Namah	Body pain, backache, chronic alcoholism and liver diseases.	None/ -	11 natural lines (mukhas) on its surface	Blesses wearer with wisdom, right judgment, powerful vocabulary, adventurous life, fearlessness and success. Above all, it also protects from accidental death. It also helps in Meditation and removes the problems of yogic practices

12 Faced	Sun	Om Drom Sarom Ram Namah, Aum Kraum Sraum Raum Namah	Bone diseases, rickets, osteoporosis, mental disability and anxiety.	Sun/ Leo, Sagittarius	12 natural lines (mukhas) on its surface	Wearer gets the quality of the sun - to rule and to move continuously with brilliant radiance and strength. Good for ministers, politicians, administrators, businessmen and executives. Removes worry, suspicion and fear. Increases self image and motivation
13 Faced	Indra	Om Hreem Namah	Muscular dystrophies	Venus/ Taurus, Gemini, Capricorn, Aquarius	13 natural lines (mukhas) on its surface	Showers all possible comforts of life one can ever desire. It gives riches and honor and fulfills all the earthly desires and gives eight accomplishments (Siddhies), and the god cupid (Kamadeva) pleases with the man who wears it. It is helpful for meditation and spiritual and materialistic attainments
14 Faced	Hanuman	Om Namah Shivaya	Brain related and many other types of disease.	None/Taurus, Gemini, Capricorn, Aquarius	14 natural lines (mukhas) on its surface	Most precious divine gem - Deva Mani. It awakens the sixth sense organ by which the wearer foresees the future happenings. Its wearer never fails in his decisions. Its wearer gets rid of all the calamities, miseries, worries. It protects from ghosts, evil spirits and black magic. It provides the wearer safety, security and riches and self power
15 faced Pashupati - nath		Om Pashupataya Namah	Skin diseases, recurring miscarriage and still birth. It is measured as a blessing for women who are incapable to imagine and in such case both the partner should wear it for fruitfulness	Rahu/ -	15 natural lines (mukhas) on its surface	This represents Lord Pashupati and is especially beneficial for economic progress. Its possessor is neither bereft of wealth nor inflicted by any kinds of skin diseases
16 faced / Hari and Shankar		Om Namah Shivaya	Leprosy, tuberculosis and lung diseases	Ketu/ -	16 natural lines (mukha) on its surface	It represents victory and the possessor is never affected by heat or cold. It is especially useful for the saints living in jungles. The house in which it is kept is free from fire, theft or robbery
17 faced/Lord Viswakarma		Om Namah Shivay	Memory lapse and body functional disorders	None/ -	17 natural lines (mukhas) on its surface	It represents Vishvakarma the builder of this world. It is very effective in gaining unexpected money. It is especially useful in attaining property, vehicles and all physical assets
18 faced/Bhair av		Om Namah Shivay	Mental harmonization and loss or power	None/ -	18 natural lines (mukhas) on its surface	It represents the mother earth. The possessor remains happy and healthy. It is especially beneficial for the pregnant women in protecting their child
19 faced/Vishu narayan		Om Namah Shivay	Blood disorder and spinal disorder	Mercury/ -	19 natural lines (mukhas) on its surface	It represents Lord Narayana. The possessor is bestowed with all worldly pleasures. There is no scarcity in their life
Gauri Shanker / Shiva & Parvati	Moon	Om Shri Gauri shankarey Namah	Sexual and behavioral disorders.	None/Cancer, Scorpio	Two naturally joined Rudrakshas	Regarded the best for peace and comfort in the family. If a man worships Gauri Shankar at his worshipping place, the pain and suffering and other earthly obstacles are destroyed and the peace and pleasure of family are increased
Ganesh Rudraksha/ Garbha - gauri/Parvat i & Ganesh	Ganesh	Om garbha Gauriya Namah	Gynecological disorders	None/ -	Two beads joined together naturally	For women wanting to have children. Her motherhood gains perfection
Trijuti/tribh agi	-	Om Namah Shivay	Internal and external body disorders	None/ -	Three naturally joined Rudrakshas are a rare phenomenon	Wearer becomes invincible



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