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A REVIEW ON ANTI-CANCEROUS PROPERTY OF SINGLE UNANI DRUGS

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ABSTRACT

About 80% of the world's population relies on traditional medicine that involves use of plant and herb extracts for primary healthcare system. Unani is a traditional system of medicine developed during the medieval period, which employs natural drugs composed of herbal, animal and minerals. Fundamentally, it is based on the humoral theory postulated by *Hippocrates*., According to him, the state of body health and disease are regulated by qualitative and quantitative equilibrium of four humours including Blood, Phlegm, Yellow bile and Black bile. Therefore, Unani physicians believe that cancer is caused by accumulation of *Sawda* (Black bile), produced due to *Ihtiraq* (burning) of humours in the body. Treatment of cancer through various means such as evacuation of causative humour from the body, administration of *Muqawwiyat* (Tonics) such as antioxidant and immunomodulator drugs mentioned in Unani classical literature and so on.

KEYWORD: Unani, Hippocrates, Humours, Sawda and classical literature.

INTRODUCTION

Unani System of Medicine (USM) is Graeco-Arabic medicine discovered by Hippocrates and Galen and refined by Arabian and Persian doctors such as Al-Razi, Ibn-e-Sina, Al-Zahrawi, and Ibn Nafis throughout the Middle Ages (460-377 BC).[1,2] It has begun around 2500 years ago in Greece and it has been employing drugs that are 90% herbal, 4-5 percent animal and 5-

6 percent mineral origin naturally. It is not only the original science of medicine but also a vast repository of medical ideas and philosophies that can be extremely beneficial to both medicine and science in general. The diseases are thought to disrupt the body's normal temperament and humor equilibrium. So, regimental therapy (*Ilaj Bil-Tadabeer*) and pharmacology (*Ilaj Bil-Dawa*) have been used since ancient times with the express purpose of restoring humor equilibrium and correcting aberrant temperament. When this kind of treatment fails, surgery (Ilaj Bil-yad) is suggested as a final option.[3,4]

The classical literature of USM describes the Cancer as Sartan and defines it as a painful, dark coloured, hard, *sawdawi* (Melancholic) swelling with many roots, affecting any organ (external/internal) of the body.[5] Unani physicians believe that cancer is caused by accumulation of Sawda (Black bile), produced due to *Ihtiraq* (burning/oxidation) of humours in the body. This kind of black bile is known as *Sawda Muhtaraq* (Burnt/oxidized black bile). According to Ibn Sina, it is caused by the black bile which produced by burning/oxidation of yellow bile.[6,7] Razi has enlisted the causes of excessive production/accumulation of black bile in the body and these are inability of spleen to absorb black bile, excessive heat in the liver and intake of diets helping in excessive production of dam *Sawdawi* (Melancholic sanguine).

Cancer is one of the leading causes of death in the world where uncontrolled cellular growth is observed in one or more cells during surgery, chemotherapy and/or radiotherapy are applied in treatment steps.[8] Today, as cancer incidence rises for a variety of reasons, cytotoxic medication therapies are becoming more common.[9] Therefore, the demand for cytotoxic drugs is expected to increase especially in the coming years due to the rising population sensitive to cancer. In this context, the detection of new natural anticancer agents is of great importance. Hence, plants are important natural agents which synthesize a number of important metabolites for the anti-cancer applications.[10]

For the promotion and maintenance of health, the Unani system of medicine places a strong focus on lifestyle management. The diet, lifestyle, emotions, interactions with the environment and even spiritual considerations and all are taken into account for better health.

It is well documented that herbal medicine has proven its role in the treatment of inflammation, obesity, cancer, diabetes mellitus and so on. Although it is thought that the usage of herbal remedies during 1550 BC in Egypt, many of its pharmacological effects are

still unknown. Only approximately a quarter of the estimated 800,000 plant species on the planet have been classified and a small percentage of these plants have been tested for pharmacological efficacy. More plant-based drugs were sought to aid in the treatment of the various ailments that still afflict society.[11]

The objectives of treatment with Unani drugs and regimens are

- Prevention for those who are prone to cancer e.g. family history, melancholic temperament, lifestyle not in accordance with the prescribed rules (Asbab Sitta Zarooriyya).
- Treatment of cancer through various means such as evacuation of causative humour from the body, administration of *Muqawwiyat* (Tonics) i.e. antioxidant and immunomodulator drugs mentioned in Unani classical literature, etc.
- Reduction of side effects of chemotherapy or radiation therapy. Cancer can be treated through evacuation of morbid matter form the body, making the consistency of sanguine thin[12], and extinguishing the increased heat of liver.[13,14]

In addition to these, the present Unani physicians are also utilizing the unique approach of their System of Medicine to tone up the organs and immune system which has shown much utility in improving the quality of life of patients suffering from chronic and some of the intractable diseases including Cancer. Many of the *Muqawwiyat* (Tonics) mentioned in Unani literature possess antioxidant and immunomodulatory actions. These drugs when administered in single or compound form may serve as biological response modifiers by activating, increasing and restoring the reactivity of immunological effector mechanisms that are involved in resistance to tumor growth and metastasis and may assist in coping the oxidative stress responsible for many pathological conditions including cancer.[15]

Various anti-cancer single Unani drugs with botanical name are listed in table 1.

S.No.	Unani drug	Botanical name
1.	Sadabahar	*Catharanthus roseus*
2.	Aftimoon	*Cuscuta reflexa*
3.	Brahmi Booti	*Bacopa monnieri*
4.	Aamba Haldi	*Curcuma amada*
5.	Gilo	*Tinospora cordifolia*
6.	Asl-us-Soos	*Glycyrrhiza glabra*
7.	Kalonji	*Nigella sativa*
8.	Bhue Amala	*Phyllanthus niruri*

All the above anti-cancerous single Unani drugs listed in table 1 are described below with their introductory lines along-with promising pharmacological properties.

1. Sadabahar*(Catharanthus roseus)*

*Catharanthus roseus*is an herbaceous plant and evergreen subshrub growing to 32 in 80 cm in height. It is originated from the Indian Ocean Island of Madagascar. It was believed to be an endangered plant in the wild ecosystem. However, it has become a common plant in many tropical and subtropical places around the world, including the Southern United States.[16]

It has glistening, dark green and long flowers throughout the summer seasons. The flowers of the naturally appear pale pink with a purple "eye" in their centres. Stems is green often permeate with purple or red.[17] The stem of Madagascar periwinkle produced a milky sap which is the source of over 70 different indole alkaloids. Two of the common anti-cancer drugs which are derived from this plant are vincristine and vinblastine.[18] Vincristine is used in the chemotherapeutic regime for Hodgkin's lymphoma while vinblastine is used for childhood leukemia. These vinca alkaloid bind to tubulin dimers and inhibiting microtubule structures of the cells, thus inhibiting the metaphase of cellular mitosis.[19]

Taxonomical classification		**Vernacular names**	
Kingdom	Plantae	**Sanskrit**	Nityakalyani, rasna, sadampuspa, sadapushpi
Division	Magnoliophyta (Flowering plants)	**English**	Cayenne jasmine, old maid, Madagascar periwinkle, Red periwinkle
Class	Magnoliopsida (Dicotyledons)	**Hindi**	Sada suhagan, sadabahar
Order	Gentianales	**Kannada**	Batla hoo, bili kaasi kanigalu, ganeshana hoo, kempu kaasi
Family	Apocynaceae	**Telugu**	Billaganneru
Genus	*Catharanthus*	**Malayalam**	Banappuvu, nityakalyani, savanari, usamalari
Species	*roseus*[17]	**Tamil**	Cutkattu malli, Sudukadumallakai
		Gujarati	Barmasi
		Bengali	Nayantara[17]

Chemical constituent

The whole plant of*Catharanthus roseus*as well as individual parts contain diverse types of phytochemicals like alkaloids, phenols, saponins, tannins, terpenoids, steroids, flavonoids etc.[19]

In the extracts prepared from *C. roseus* plants, the presence of proteins, amino acids, reducing sugars, phenols, ortho-dihydroxyphenols, lipids and soluble sugars have also been reported.[21] It produces more than 130 terpenoid indole alkaloids. Some of the terpenoid indole alkaloids have high medicinal value.[22] Alkaloids found in *C. roseus* like vindolinine, leurosine, catharanthine and vindoline.[19,23]

Action

Rade (Repellent), *Muqawwi-e-meda* (Stomachic), *Habis* and*Qabiz* (Astringent),*Muhallil-e-warm* (Anti-inflammatory).[24]

Uses

Catharanthus roseus is used for the treatment of various diseases like diabetes andTumors[25], Alzheimer's disease.[17] Nausea, vomiting, constipation, dyspnea, chest or tumor pain, wheezing and fever. Acute leukemia, Rhabdomyosarcoma, Neuroblastoma, Wilm'stumor, Hodgkin's disease and other lymphomas.[26]

Pharmacological activity

Anticancer, Hypolipidimic, Wound healing property, Hypotensive, Anthelminthic, Antimicrobial, Antioxidant, Anti-diarrheal, Antidiabetic, Anti-Ulcer, Antifungal and Antifungal.[17,27]

2. Aftimoon*(Cuscuta reflexa)*

Cuscuta reflexa is a parasitic perennial herb belongs to family *Convolvulaceae* and found around the globe particularly in South Asian countries like Pakistan, Nepal, India and Bangladesh.[28] Cuscuta is a group of 100-170 species of yellow, orange, red or rarely green parasitic plants. Specifically, cuscuta is found at the temperate and tropical regions of the world with huge species diversity in tropical and subtropical regions.[29]

Cuscuta grows as homoparasite and it has very low level of chlorophyll and photosynthesis activity. It is completely depending over the host plant for its survival. The plant *Cuscuta reflexa* varies in the colour of flowers produced from white to pink. The flowers of the plant generally produced in the early summer and autumn and also depend on the species. The seeds are produced in the large quantities.

Taxonomical Classification		Vernacular Name	
Kingdom	Plantae	**Hindi**	Amarbel
Division	Angiospermes	**Bengali**	Swarnlata
Class	Eudicots	**Malyali**	Nirmuli
Order	Solanales	**Gujrati**	Akasbel
Family	Cuscutaceae	**Telugu**	Nulutega
Genus	*Cuscuta*	**Tamil**	Erumaikkottan
Species	*reflexa*[30,32]	**Persian**	Aftimoon
		Unani	Aftimoon
		Arabic	Kasus, Shajarus'sabagh, sharulzabiha
		Sanskrit	Amarvela, akashavalli, Amaravallari
		Assamese	Akakhilata
		English	Dodder[30,32]

Chemical constituent

There are various secondary metabolites have been reported and grouped according to their chemical structures and properties like alkaloids, flavonoids, anthroquinones, phenolic compounds, cortico steroids, essential oils, Cuscutin, quercetin, amarbelin, amino acids, cuscutaline, scoparone, melanettin, hyperoside, aromadendrin, taxifolin, astragalin, myricetin, kaempferol and others.[34] The main active principles presented in the plant are cuscutalin (1%) and cuscutin (0.02%). The seeds contain amarvelin, resins, oil (3%) and reducing sugars.[30]

Action

Muhalil-e-warm (Anti-inflammatory), *Mufatteh-suddad* (Deobstruent)[24]

Uses: Paralysis, Facial paralysis, Paresthesia, Itching, Bilious disorder, Jaundice.[24,32] Whole plant in the form of Paste is use in treatment of swollen testicles, Gout and joint pain.[32] Alopecia, AIDS, Diabetes, Epilepsy, Pain, tumor and Urinary infections.[33]

Pharmacological Activity

Antihistaminic, Anticholinergic, Anti-hypertensive, Antibacterial, Antioxidant, Anthelmintic, and Anti-inflammatory and CNS depression activity.[33] Antispasmodic, Antidiabetic, Antimicrobial, Antiviral, Antihypertensive, Muscle relaxant, Hair growth promoting activity, Antipyretic and antitumoractivity.[30]

3. Brahmi Booti*(Bacopa monnieri)*

Bacopa monnieri is a medicinal plant found in the warmer and wetlands regions of the world. It is popularly known as Brahmi or water hyssop and it is one of the perennial creeping plants

belongs to the family *Scrophulariaceae* with succulent, oblong leaves and small white flowers.[35]

Also, *Bacopa monnieri* relates to the family of Plantaginaceae based on few characteristics. It is a short, succulent and perennial herb that normally grows on the bank of the river. The leaves are elongated and 4–6 mm (0.16–0.24 in) thick and oblanceolate. An opposite leaf arrangement are also exist.[36]

A large number of literatures is available on Brahmi with extensive research on neuroprotective functions in Alzheimer's and other inflammatory neuronal disorders improving cognitive and behavioural improvements.[37]

Taxonomical Classification		**Vernacular Name**	
Kingdom	Plantae	**Telugu**	Sambarenu
Division	Anthophyta	**Chinese**	Jia-ma-chi-xian
Class	Dicotyledoneae	**Sinhala**	Lunuwila
Order	Order	**Tamil**	Neera brahmi
Family	Scrophulariaceae	**Bengali**	Birami
Genus	*Bacopa*	**Hindi**	Hindi
Species	*monnieri*	**Kannada**	Jala brahmi[38]

Chemical constituent: Increasing interest of plant-based medicine worldwide has led to discoveries of many new natural components such as sapnonins, steroid and glycosides for the treatment of various disorders.

Traditionally, a number of chemical compounds have been isolated from *Bacopa monnieri*. Bacopa contains Alkaloids (Hydrocotyline, Brahmine and Herpestine), Glycoside (Asiaticoside and Thanakunicide), Flavonoids (Apigenin and Luteonin), Saponins (D-mannitol, Acid A, Monnierin.[39] The main chemical entity of the plant responsible for above activity is triterpenoid saponins called "bacosides." Bacopa monnieri (Brahmi) is also commonly used in Indian traditional medicine as a nerve tonic and thought to improve memory.[37]

Action

Muqawwi-e-Meda (Brain tonic), *Musaffi-e-Khoon* (Blood purifier), *Mudammil-e-Qurho*(Cicatrizant), *Amraz-e-Jild* (Skin disease).[24] *Muqawwi-e-Asab* (Nervine tonic), *Mudir* (Diuretic).[35]

Uses

Bacopa monnieri has been used in treatment for epilepsy, Asthma, Ulcers, Tumors, Spleenomegally, Indigestion, Inflammations, Leprosy, Anemia, Ascites, Anxiety, and in improving intellect and memory.[39] It is also used to treat digestive complaints and skin disorders and UTIs.[35]

Pharmacological Activity

Memory Enhancer activity, Anti- Inflammatory, Anti-Oxidant, Anti-Cancer, Anti-convulsant, Antifungal, Antibacterial, Antiulcer, Antidepressant, Anti-Alzheimer, Hepatoprotective, Immunostimulatory effects, Antihyperglycemic, Antinociceptive, Wound Healing, Adaptogenic, Anti-diarrheal, Anti-hypertensive, Anti-allergic, Anti-parkinsonian and Anti-toxic effect.[36] Antiepileptic, Antipyretic and Analgesic activity.[35]

4. Aamba Haldi*(Curcuma amada)*

Mango ginger (Curcuma amada Roxb.) is a perennial, rhizomatous, fragrant herb, having morphological resemblance with ginger but imparts a raw mango flavour. The plants of genus Curcuma, *Zingiberaceae* family and it is used for many purposes such as spices, food dye and medicinal herbs for treatment of many ailments from ancient times.[40,41] Mango ginger is cultivated in Gujarat and found wild in parts of West Bengal, U. P, Karnataka and Tamil Nadu.[42]

The plant *C. amada* is a rhizomatous aromatic herb with a leafy tuft and 60-90cm in height. Leaves are long, petiolate, oblong-lanceolate, tapering at both ends, glabrous and green on both sides. Flowers are white or pale yellow, arranged in spikes in the centre of tuft of the leaves. The lip is semielliptic, yellow, 3-lobbed with the mid lobe emarginated.[43] The *C. amada* is an aromatic herb known as Amba haldi or Mango ginger.

Taxonomical Classification		**Vernacular Name**	
Kingdom	Plantae	**English**	Mango ginger
Division	Magnoliophyta	**Sanskrit**	Amrardrakam, Karpuraharida
Class	Monocotyledonae	**Hindi**	Amahaldi
Order	Zingiberales	**Malyalam**	Mangainchi
Family	Zingiberaceae	**Tamil**	Mankayinci
Genus	*Curcuma*	**Telugu**	Mamidi Allam[42,44]
Species	*amada*[42,44]		

Chemical Constituents

The major chemical components include starch, phenolic acids, volatile oils, curcuminoids and terpenoids like difurocumenonol, amadannulen and amadaldehyde.[44]

Several groups of polyphenols (anthocyanins, proanthocyanidins, flavanones, isoflavones, resveratrol andellagic acid)are also reported in this plant.[44] The Curcuma plants have a camphoraceous aroma and contain many functional compounds such as phenolics, flavonoids and different antioxidant enzymes.[40] The essential oil contains a-pinene, a-and b-curcumene, camphor, cuminylalcohol, myristic acid and turmerone. The Car-3-ene and cis-ocimene contributethe characteristic mango odour of the rhizome.[42]

It has characteristic odour of raw mango flavour due to the presence of terpene hydrocarbons cisocimene and car-3-ene which makes mango ginger a unique spice.

Action

Muhallil-e-warm (Anti-inflamatory), *Mufattit-e-hisat* (Lithotriptic), *Mushtahi* (Appitizer), *Mulaiyyan* (Laxative).[24] Unani medicinal system has given much importance to mango ginger as *Daf-e-Humma* (Antipyretic), Alexteric, *Muqawwi-e-Wah* (Aphrodisiac), *Mudir* (Diuretic), *Murakkh i*(Emolient), *Munaffis-e-Balgham* (Expectorant).[42]

Uses: It is used to cure biliousness, Itching, Skin diseases, Bronchitis, Asthma, Hiccough and inflammation due to injuries.[44]

Pharmacological Activity

Anticancer, antihyperglyceridemic, Antioxidant activity.[40] Antimicrobial, Antifungal, Hypoglycemic, Anthelmintic, Antiallergic, Anti-inflammatory and Platelet aggregation inhibitory activity.[42] Antibacterial, Cytotoxicity, Anti-allergic, Hypotriglyceridemic, CNS depressant and Analgesic activity.[44]

5. Gilo *(Tinospora cordifolia)*

Tinospora cordifolia is a large deciduous, extensively spreading climbing shrub with a number of coiling branches. This plant is a glabrous, succulent, woody climbing shrub native to India. It thrives well in the tropical region, often attains a great height and climbs up the trunk of large trees.[45] The plant *Tinospora cordifolia* (Giloy) is a prominent medicinal plant in the *Menispermaceae* family that serves as a major source of novel pharmaceuticals and

health care goods.[46] The powder of root and stem is used along with milk for the treatment of cancer.[47]

Taxonomical Classification		Vernacular Name	
Kingdom	Plantae-Plant	**Telugu**	Tippateege, Guricha
Division	Magnoliophyta	**Urdu**	Gilo, Satgilo
		Sanskrit	Guduchi, Amrita
Class	Magnoliopsida	**Hindi**	Gulancha
Order	Ranales	**Kannada**	Amrutaballi, Madhuparni
Family	Menispermaceae	**Malayalam**	Amrytu, Chittamritam
Genus	*Tinospora*	**Gujarati**	Gulvel
Species	*cordifoli*	**Bengali**	Golancha
		Oriya	Gulochi
		Tamil	Amudam, Chindil[45]

Chemical constituent

Tinospora cordifolia synthesizes different classes of chemical constituents such as alkaloids, diterpenoid lactones, glycosides, steroids, sesquiterpenoid, phenolics, aliphatic compounds and polysaccharides have been isolated from different parts of the plant.[48,49,50] Leaves of the plants are enriched with phosphorus, calcium and protein.[46,49,50]

Action

Munzij (Concoctive), *Muhallil-e-riya* (Carminative), *Mudir-e-Baul* (Diuretic), *Mudir-e-Haiz* (Diuretic), *Hurqat-ul Boul* (Burning Micturition).[24]

Uses: *Tinospora cordifolia*is used in fevers, diabetes, dyspepsia, jaundice, urinary problems, skin diseases, chronic diarrhea and dysentery. It is also useful in the treatment of heart disease, leprosy, and helmenthiasis.[48] This plat is also used in Parkinson, Hepatic Disorder, Antiulcer and anti diarrhoel.[45,49] Moreover, Inflammation, Rheumatism, Anemia, Urinary disorder, Skin diseases, Jaundice, Allergic condition. Colitis, Hyperacidity, Abdominal pain, Vomiting, Worm infestation are also reported.[49]

Pharmacological Activity

There are numerous pharmacological applications are reported such as Anti-periodic, Anti-inflammatory, Anti-arthritic, Anti-oxidant, Anti-allergic, Hepatoprotective, Immunomodulatory and Anti-neoplasticism activities.[51] Moreover, Anti-Osteoporotic, Immunomodulating, Wound healing property, Anti-HIV potential, Anti-proliferative potential, Hypolipidemic, Anti-Anxiety, Antidiabetic and Antimicrobial activity are also well documented.[49] Neuroprotective, Anti cancer, Cardioprotective, Analgesic, Anti-

dyslipidemic, Anti-bacterial, Anti-diabetic and Anti-malarial activity are also reported in this plant.[45]

6. Asl-us-Soos (*Glycyrrhiza glabra)*

Glycyrrhiza glabra is a typical herbaceous perennial plant growing to 1 m in height, presenting pinnate leaves with a length of 7 to 15 cm. The flowers are purple to pale whitish blue, being arranged in a hermaphrodite inflorescence, whereas the fruit is an oblong legume with 2 to 3 cm of length and containing several seeds.

The genus Glycyrrhiza consists of about 30 species. Likewise, the other plants of *Fabaceae*, *G. glabra* is able to fix nitrogen due to symbiosis with bacteria *Rhizobium* spp., at the root level. The roots are the most used parts whereas leaves are considered an agrochemical waste.[52] The root extracts of the plant exhibit significant antioxidant, antimicrobial and antiproliferative activity[10]

Taxonomical Classification		**Vernacular Name**	
Kingdom	Plantae	**Arabic**	Sus, Irik Sus, rib el-sus;
Division	Magnoliophyta	**English**	licorice, licorice-root, liquorice
Class	Magnoliopsida	**French**	Réglisse
Order	Fabales	**German**	Lakritze, Süßholz
Family	Fabaceae-Pea family	**Hindi**	Mulhatti, Jethimadh, Mithilakdi
Genus	*Glycyrrhiza*	**Italian**	liquirizia
Species	*glabra*	**Portuguese**	alcaçuz, pau-doce
		Spanish	alcazuz, licorice, orozuz, regaliz
		Swedish	Lakritsrot[53]
Al-Snafi,2018			

Chemical constituents

The phyto-constituents like glycyrrhizin and glycyrrhizinic acid, triterpenoid glycosides (saponins), flavonoids (including liquiritigetol) are potent components for health benefits.[55]

The preliminary qualitative phytochemical screening of the ethanolic extract of *Glycyrrhiza glabra* root revealed the presence of alkaloids, glycosides, carbohydrates, starches, phenolic compounds, flavonoids, proteins, pectin, mucilage, saponins, lipids, tannins, sterols and steroids.[53]

Action

Mushtahi (Appetizer), *Muqawwi-e-Me'da* (Stomachic).[24] *Mulattif* (Demulcent), *Munaffis*-e-*Balgham* (Expectorant), *Daf-e-Sual* (Anti-tussive), *Mulayyin* (Laxative)and sweetener.[54]

Uses: It is used for Gastrointestinal problems, Cough, Bronchitis, Arthritis, Gastritis, Peptic ulcers, Respiratory infections and tremors.[52] It is also used in arthritis and Rheumatism gastric, duodenal and esophageal ulcer, heartburn and mouth ulcers also.[55]

Pharmacological activities

Several pharmacological activities of the plant like Antioxidant, Anticancer, Hepatoprotective, Anti-diabetic, Anti-inflammatory, Skin lightening activity, Hair growth stimulation, Antithrombotic, Anti-bacterial, Anti-viral, Anti-malarial, Anti-fungal, Immunostimulatory, Antiulcer, Anti dyslipidaemic, Anti-tussive and Antidemulcent activity are widely documented.[54]

7. *Kalonji (Nigella sativa)*

Nigella sativa is an annual flowering plant belonging to the family *Ranunculaceae* and is a native of Southern Europe, North Africa, and Southwest Asia.[56] It is classified as a mild spice based on plant parts used. *Nigella sativa* is commonly known as 'black seed'. The seeds of and its oil have been widely used for centuries in the treatment of various ailments throughout the world and it is an important in the Indian traditional system of medicine especially in Unani. Thymoquinone is the major compound isolated from the black seed of this plant.[57]

According to the Unani Tibb system of medicine, the herb is a valuable remedy for several diseases. The famous book of medicine "The cannon of medicine" by Ibn-Sina mentioned that black seeds stimulate the body's energy and helps in recovery from fatigue.[58,59]

Taxonomical Classification		**Vernacular Name**	
Kingdom	Plantae	**Hindi**	Kalaunji
Division	Magnoliophyta	**Urdu**	Mangrail
Order	Ranunculates	**Russian**	Chernushka, Herbrew, Ketzakh
Family	Ranunculates	**Turkish**	Corek out
Genus	*Nigella*	**English**	Fennel Flower, Nutmeg Flower
Species	*sativa*	**Arabic**	Habbat ak-barkah
		Indonesian	Jintan hitam
		Germany	Schwarzkummel
		Portuguese	Cominho-negro
		Spanish	Ajenuz, aranuel
		Bengali	Kalo jeeray
		Kannada	Krishna Jeeriage
		Tamil	Karum, jeerakam
		Assamese	Kaljeera, kolajeera[59,60,61]

Chemical Composition

It is one of the most common herbal plants used worldwide and possesses various chemical constituents such as thymoquinone, thymohydroquinone, dithymoquinone, thymol, nigellicine, carvacrol, nigellicine, nigllimine, nigellidine, and alpha-hederin.[59] It contains many bioactive constituents like thymoquinone, thymohydroquinone, dithymoquinone, thymol, carvacrol, nigellimine, nigellicine and alphaahederin.[62]

The seeds of the plant contain oil, proteins, carbohydrates, vitamins and minerals. Fixed oil contains appreciable quantities of unsaturated fatty acids (linoleic, oleic, and inolenic acids) as well as saturated fatty acids in minor amounts (arachidonic and eicosenoic acids).[63]

Action

There are various actions including *Munzij* (Concoctive), *Mudirr-e-Boul* (Diuretic), *Mudirr-e-Tams* (Emmenagogue), *Deedan-e-Am'a* (Intestinal Worms)[24] are reported in this plant.

Uses: Holitosis (Bad Breath), Anorexia, Indigestion, Flatulence, Dysmenorrhea, Galacotogenic, Bronchitis, Asthma, Inflammatory, Infectious, Gastrointestinal diseases, Boils Eczema, Fever, Chronic headache, Migraine, Hypertension, Paralysis, Diarrhea.[59]

Pharmacological Activity

Several pharmacological applications such as Antioxidant, Antidiabetic, Antihypertensive, Neuroprotective, Anti-Inflammatory and Analgesic Effects. Antimicrobial, Antibacterial, Antifungal, Antiviral, Antiparasitic, Anticancer, Effects on Male Infertility are reported.[58] Also, Anti-tumour, Hypotensive, hypocholesterolemic, hypoglycemic, Immunomodulation, Gastro-protective[64], Astringent, Stimulant and Diuretic are documented in this plant.[62]

8. **BhueAmala** ***(Phyllanthus niruri)***

Phyllanthus niruri Linn. belongs to *Euphorbiaceae* family and it is a small herb, having wide range of medicinal properties, and it is used widely across the world.[64] The plant *Phyllanthus niruri* originated in India, usually occurring as a winter weed throughout the hotter parts. The Phyllanthus genus contains over 600 species of shrubs, trees and annual or biennial herbs distributed throughout the tropical and subtropical areas.[66]

The annual herb is 30-60 cm high, quite glabrous, stem often branched at the base. Leaves of the plant are numerous, sbsessile distichous often imbricating, elliptic oblong obtuse. The stipules present very acute. Flowers of the plant are yellowish, very numerous and axillary.

The male flowers are one to three in number while the female flowers are solitary in nature. Capsules are 2.5mm in diameter, depressed globose and smooth scarcely lobed.[67]

Taxonomical Classification		**Vernacular Name**	
Kingdom	Plantae	**Konkani**	Bhuin-avalae
Division	Magnoliophyta	**Assamese**	Holpholi; Poram-lokhi
Class	Magnoliopsida	**Hindi**	Chalmeri, Harfarauri, Bhuiaonla.Kannada: Kirunelli, Nela Nelli
Order	Euphorbiales	**Konkani**	Bhuin-avalae
Family	Euphorbiaceae	**Bengali**	Noar
Genus	*Phyllanthus*	**Telugu**	Ratsavusirike, Nela Usiri
Species	*Niruri*	**Tamil**	Arunelli, Keela Nelli
		Malayalam	Arinelli, Kizhanelli, Nellipuli
		Marathi	Rayavali, Bhuiavli
		Oriya	Narakoli
		Sanskrit	Amala, Bhumyamlaki, Sukshmadala, Vitunika, Bhoodatri.[65]

Chemical Constituents

A large number of chemical constituents including Alkaloid, Benzenoid, Coumarin, Flavonoid, Lignin, Lipid, Sterol, Tannin, Triterpene.[65] Lignans, tannins, coumarins, terpenes, flavonoids, alkaloids, saponins and phenylpropanoids have been found in the leaves, stem and roots of this plant. The common lipids, sterols and flavonols are also occur in the plant.[70,71,72]

Action

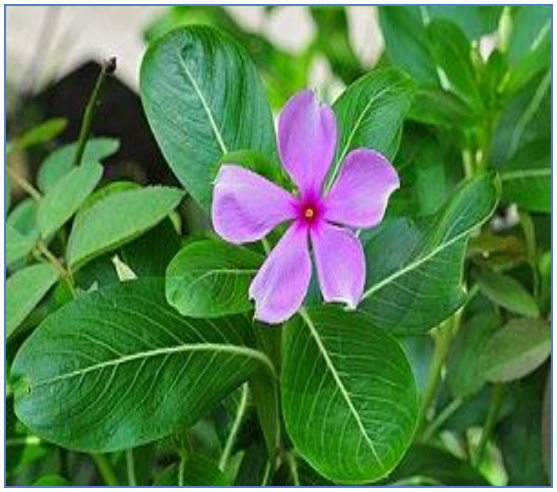
There are various actions of the plant like *Mudir* (Diuretic), *Daf-e-Humma* (Antipyretic), *Mulayyin* (Laxative), *Mohallil-e-Waram* (Anti-inflammatory) are well documented.[67]

Uses

The uses of the plant are as follows: Jaundice, Asthma, Hepatitis and Urolithic disease.[68] The fruits of this plant are commonly used in the treatment of Hemorrhages, Diarrheas, Dysentery, Cough, Anaemia, Bronchitis and Leprosy.[65] In Unani medicine, the roots of this plant are used for the remedy of liver diseases and seeds were used in the treatment of ulcers, wounds and scabies and ring worms.[65,69]

Pharmacological Activity

Numerous pharmacological activities like Antidiabetic, Hyperlipidemic, Hyperuricemic, Nephroprotective, Antiplasmodial, Antinematodal, Antibacterial, Hepatoprotective, Cancer and Cytotoxicity.[68] Anti-inflammatory, Anti-fungal, Anti-Viral, Anti-bacterial, Anti-oxidant, Hepatoprotective, Hypoglycemic, Hypotensive and Analgesic activity are reported.[70,71,72]



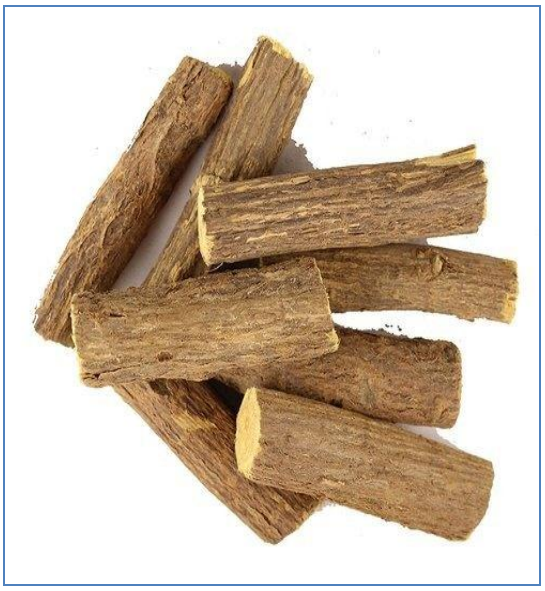
Catharanthus roseus

Cuscuta reflexa

Bacopa monnieri

Curcuma amada

Tinospora cordifolia



Glycyrrhiza glabra

Nigella sativa

Phyllanthus niruri

CONCLUSION

Cancer is a group of diseases characterized by the uncontrolled growth and spread of abnormal cells. Its uncontrolled spread may result in death. Studies on these single drugs reported to possess anticancer, antioxidant and immunomodulatory activities. These plants possess various bioactive marker which are rich source of anti-cancer potential and anti-tumor activities. These plants still require detailed research in concern of in-vivo cancer cell lines, animal models and human clinical trials, drug designing of novel bioactive marker compounds. So that the drug can be developed in large scale for the benefits of mankind. This review had given some of the plants possessing authentic database about anticancer and antitumor investigated and reported In-vitro and In-vivo activities. This article can help and provide referential supporting evidence research data to explore herbs.

Conflict of Interest: None.

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