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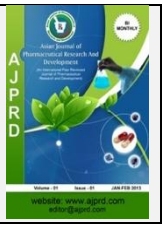

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Review Article

Anti-Cancerous, Anti-Tumour, Anti- Carcinogenic agents - Herbal Medicinal Plants and their immense pharmacological, therapeutics medicinal potent values

Pawan Kumar Sagar*[1], Harish Chandra[2], Aditya Sagar[2], Sajwan S[1], R Murugeswaran[3]

*[1]Drug Standardization Research Institute, (Under CCRUM, Ministry of AYUSH, Govt. of India), PCIM & H Campus, Ghaziabad- 201002, Uttar Pradesh State, India.

[2] Department of Botany and Microbiology, Gurukul Kangri University, Haridwar –Uttarakhand India.

[3] National Medicinal Plant Board, Indian Red Cross Society, Annexure Building, Ist & IInd Floor,1, Sansad Marg, New Delhi-110001, (Ministry of AYUSH, Govt. of India)

A B S T R A C T

At present Cancer and Tumor is a common disease and very badly affected to a large number of world population masses. Various modern medical, scientific research and treatment are available to treat Human cancer and tumor now a days. Some of them are very useful and some show many toxic, hazardous and harmful effects upon treated Human cells. At present natural occurring resources substances like herbal, medicinal plant based drugs are trending, discovered of very effected novel drug development bioactive marker compounds for the treatment of various type of illness and diseases. These are non-toxic and give us maximum efficacy and safety. In this review paper, we can studies of Pharmacological, bioactive phytochemical constituents, therapeutic uses, medicinal potent values of herbal Anti-Cancerous, Anti-Tumour's, Anti-Carcinogenic and Anti-Cytotoxic 32 species single medicinal plants which are remains a significant challenging task on global levels, explored and available in Asian and southern, northern Himalayan region on the basis of Google search engine databases. These are some 32 species herbal medicinal plants used to treat and cure of various therapeutic illness of public mankind from since ancient time. This review study aims to evaluate, numerous remarkable potent anticancerou's, antitumor's, anticarnogenic activities commonly both *In-vitro* and *In-vivo*, due to the presence of Alkaloids, flavonoids, steroidal, glycosides, terpenoids, tannin, phenolic, saponins, lignin's, proteins and phenolic acids, Anti-cancer's and Anti-tumor's major bioactive compounds. However, more research is needed to explore the *In-vivo* clinical evaluation for their future's uses, application in treating various ailments for beneficial to public, mankind. Keywords: Anticancer's, Antitumor's, Anti-Carcinogenic agent, bioactive phytochemical constituents, Pharmacological, and therapeutic medicinal potential values, electronic Google search engine databases.

Keywords: Cancer, Anti- Carcinogenic agents, Herbal Medicinal Plants, Antitumor.

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*Address for Correspondence:

Pawan Kumar Sagar, *1Drug Standardization Research Institute, (Under CCRUM, Ministry of AYUSH., Govt. of India) , PCIM&H Campus, IInd Floor, Kamla Nehru Nagar, Ghaziabad- 201002, Uttar Pradesh State, India.

INTRODUCTION

Traditional herbs and medicinal plants have been used in Asian countries, including India, for centuries to prevent and treat various ailments, including cancers and tumors, due to their therapeutic properties. The rebirth of medicines created in plants especially ones used for cancer and tumor cells treatment and autoimmunity is remarkable. The number of herbal bioactive phytochemical constituents that have been used to treat cancer and tumor is not more than 60 combinations. In both developed and developing countries, cancer is a serious public health concern. It is a type of cancer in which the body's cells develop abnormally and cause death. Normal cells are generally invaded and destroyed by cancer cells. [17,64] Cancer is a leading cause of death, affecting more than one third of the world's

population. It is the leading cause of death in the world, accounting for more than 20% of all deaths. [17,71] The critical burden of cancer rose to 18.1 million new cases and 9.6 million deaths in 2018. With 36 different types, cancer mainly affects men in the form of colorectal, liver, lung, prostate, and stomach cancer and women in the form of breast, cervix, colorectal, lung, and thyroid cancer. Recently, antibiotics and most drugs on the market have shown unwanted symptoms and the emergence of resistant pathogenic microorganisms, toxic effects related to these drugs, and withdrawal issues restricting their use in many countries.[28-29] Therefore, research on herbal plants has provided modern medicine with several useful chemical ingredients that have been used to manage various ailments. However, many people in developing countries, especially in Africa and Asia, still rely on crude herbal extracts to treat several human and animal ailments. To date, medicinal plants have been documented as an important source for discovering new pharmaceutical molecules that can been used to treat serious diseases.[28-29] Every year, more than 10 million new cases of cancer are scrutinized, according to the World Health Organization (WHO), and statistical trends predict that this number will double in the decades. It is extremely difficult to pinpoint the exact a etiology of cancer. Tobacco use, environmental pollutants, alcohol intake, infectious agents, customary practices, and lifestyles are some of the most well-known causes of this disease. Medicinal plants continue to be an important therapeutic aid in the treatment of human diseases since prehistoric times. [17] It is estimated that roughly 80-85 percent of the worldwide population relies on traditional medicines for their primary health care requirements, and it is expected that plant extracts or bioactive principles are used extensively in traditional therapy. The anticancer properties of numerous medicinal plants are being used to discover lead constituents that can stop cancer from spreading. Secondary metabolites in medicinal plants include flavonoids, alkaloids, terpenoids, and steroids, all of which have diverse pharmacological characteristics. Various therapeutic plants show a prospective role in the inhibition of cancer cell proliferation.[17,84,88] Cancer has become an important Public Health Problem with over 900,000 new cases occurring every year and is one of the ten leading causes of death in India.[13] Himalayan plants grown in high altitude are the rich source of various secondary metabolites such as anthraquinones, flavonoids, tannins, alkaloids as well as medicinal plants contain wide range of secondary metabolites which include flavonoids, flavones, anthocyanins, lignans, coumarins, isocatechins and catechins etc.[13,88] Plants contain many active compounds such as alkaloids, steroids, tannins, glycosides, volatile oils, fixed oils, resins, phenols and flavonoids etc. which are deposited in their specific parts such as whole, stems, leaves, flowers, bark, seeds, fruits, roots, etc. The beneficial medicinal effects of plant materials typically result from the combination of these secondary products. National Cancer Institute has approximately screened 35,000 plant species for their potential anticancer activities and they have found that among them about 3,000 plant species have shown reproducible anticancer activity. In 1985 Farnsworth *et al*. identified 119 secondary plant metabolites which were used as drugs. Out of 255 drugs which are considered as basic and essential by the World Health Organization (WHO), 11% are obtained from plants and a number of synthetic drugs are also obtained from natural precursors. Herbal plants based extract medicines are used worldwide in Asian, European, Chinese, Japan, Korea, Malaysian, Canadian countries for cure of human being since ancient time and has Provided human being a miraculous powerful spirit to fight again several harmful diseases which have medicinal potential and are highly safe, efficacious higher yielding, standard quality formulated products without showing any adverse and side effect. For thousands of years mankind is usage plant source to alleviate or cure illnesses. Plants attributes and constitute a hope of life lives, source of novel bioactive chemical compounds drug discovery, advance research and development of herbal medicinal plants science which are of potential use in novel medicine development and other applications.[8-9,13,19,30] Anti-Cancerous, Anti-Tumour, Anti-Carcinogenic agents Herbal Medicinal Plants and their immense pharmacological, various parts and their investigated *In-vitro* or *In-vivo* studies Graphical Illustration, investigated plant Pharmacological and theraputic medicinal potent values confirmation and identification, authenticated conscious review research data's shown in Fig.-1 and Fig.2 respectively.

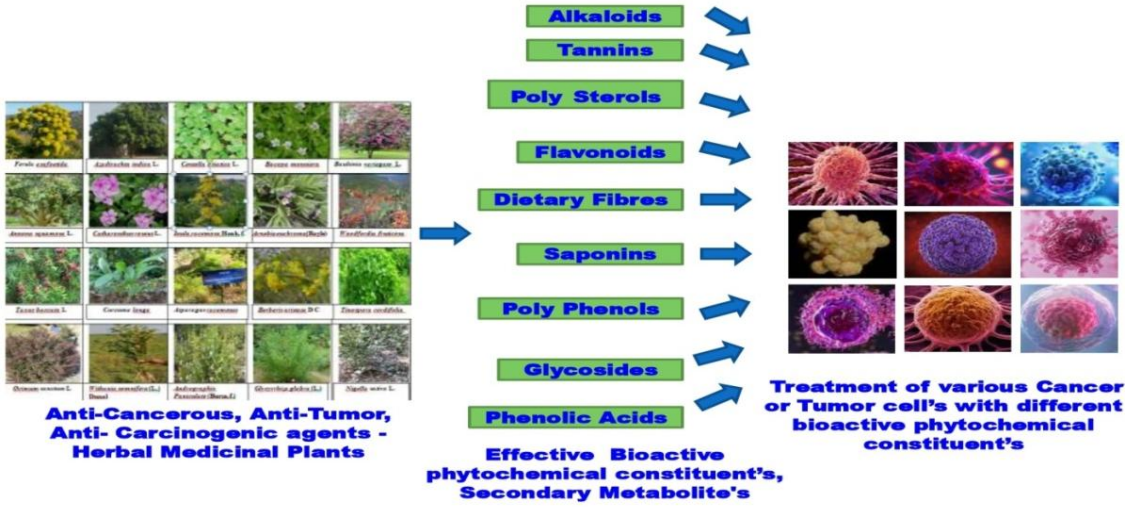


Figure.1, Different Bioactive phytochemicals Secondary Metabolite's used in the treatment of Cancer, Tumor

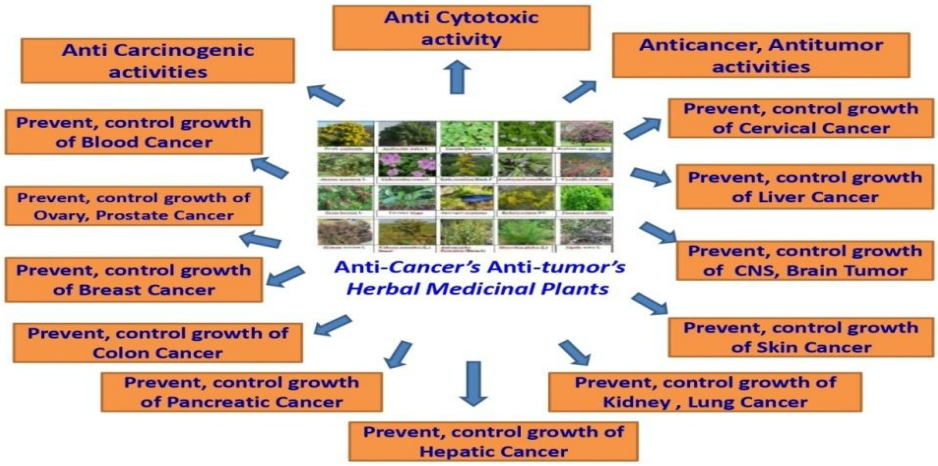


Figure 2 Graphical Illustration

Figure 3- Anti Cancer's and Anti Tumor's Herbal Medicinal Plants

Methodology: [1-5,8-9,13,17,19,30]

An extensive literature search was conducted using the Google search engine, Google Scholar and PubMed databases to gather relevant information for this comprehensive review. The main keywords used for the search were "Anti-Cancerous", "Anti-Tumour", "Anti-Carcinogenic agents", "Herbal Medicinal Plants and their immense", "bioactive phytochemical constituents", "therapeutic medicinal potent values" and "pharmacological activities" Other databases were also used to collect information, including the Web of Science. The information was rigorously gathered from Google Scholar, Pub Med, Elsevier, Wiley Online Search, Science Direct, and other literature sources of standard methods basis. A thorough review and summary were conducted on the literature concerning traditional uses, bioactive compounds, as well as *In-vitro* and *In-vitro* pharmacological activities, Active phytochemical constituents molecular structures and molecular weight reconfirmation studies of 32 selected Anti-Cancerous, Anti-Tumour herbal medicinal plants.

Discussion:

Cancer and Tumor causing factor in modern life Style :

Cancer and Tumor are a type of disease categorized by the uncontrolled development and spread of aberrant cells. It can result in death, if the spread of cancer cells known as metastasis, is not controlled. Many external (tobacco, radiation, chemicals, and infectious organisms), as well as certain internal factors (hormones, inherited mutations, immune conditions and random mutations), causes cancer. Cancer and Tumor have a wide range of causes that are complicated and only partly understood. Certain illnesses, dietary variables, obesity, a lack of physical exercise, and exposure to environmental contaminants are all known to raise the risk of cancer. These factors may interact to begin or enhance carcinogenesis in the human body, leading to cancer the main cause of mortality. Due to cancer, 10 million people died in 2020, and more than 19 million individuals are affected. For the appropriate functioning of the bodily system, normal cells proliferate in a regulated manner.[17] Cancer is often deadly and affects a considerable number of people worldwide. Ongoing research is being done throughout the world to seek out effective treatments for cancer, including the use of plants to relieve and treat cancer patients. This treatment makes use of the compounds naturally present in plants that are known to inhibit or kill carcinogenic cells. An alternative to chemotherapy, which is the most common means by which doctors and specialists treat cancer, organically based treatments may not have the severe side effects that radial treatments and chemotherapy has. The harsh side effects of cancer treatments is one motivating factor to finding alternative methods.[67] Cancer arises when cells grow uncontrollably or abnormally, and it is not limited to a particular organ, but may also spread to other tissues. Mostly, cells can detect and repair any damage to the DNA molecule. When normal cells are injured, they tend to self-destruct. When a cell can no longer heal itself, it enters apoptosis. A tumor is a term used to describe an abnormal cell mass. A benign tumor develops locally and does not spread, but a malignant tumor spreads quickly and invades adjacent tissues, a process known as metastasis. Malignant tumors can spread through the bloodstream or lymphatic system to other tissues such as the lungs, liver, brain, bones, and other organs. Only some metastatic cancers can be cured, while others are incurable. More than 100 types of cancers are there, but mainly most common types of cancers are skin cancer, breast cancer, lung cancer, liver cancer, colon cancer, lymphoma, stomach cancer, prostate cancer, cervical cancer.[13,17] (Figure-1, Graphical Illustration). The most common types of cancer in males are prostate cancer, colorectal cancer, lung cancer, and stomach cancer. The most common types in females are breast cancer, cervical cancer, colorectal cancer, and lung cancer.[17]

Types of cancer:

There are hundreds of different types of cancer. The most common cancers in the UK, European and Asian Countries are: Breast cancer, Prostate cancer, Lung cancer, Cancer of colon or rectum, Blood cancer, Bladder cancer, ovarian cancer etc. Risk factors for cancer include Gene mutations, Unhealthy Habits - smoking, highly intake drinking alcohol, tobacco use, exposure unintentionally to hazardous or harmful chemicals substances, obesity, poor diet, poor immune system, lack of exercise, and prolonged exposure to sunlight etc. [61] More significantly a globalization of unhealthy lifestyles, particularly cigarette smoking, highly intake drinking alcohol, Tobacco usage and the adoption of many features of the modern Western diet (high fat, low fibers content etc.) will increase cancer incidence. These could be self converted Stage-0 to Stage-1, Stage-2, Stage-3, and It can be self settled and shifted to stage-4 Levels through their multiplication, uncontrolled nucleus cells growths of cancer's cell which is incurable and untreated conditions. [8-9,13,17,19,30]

In the late 1800s, several ideas were proposed by various scientists to establish the origins of cancer. 19 Cancer was thought to be caused by displaced embryonal tissue by Lobstein and Recamier, and subsequently Cohnheim, although Virchow argued that persistent irritation was a major cause of cancer. 20 Viruses were later identified as one of the major causes of cancer based on a few experimental pieces of evidence. 21 All of these studies concluded that cancer is a multifaceted sickness, with a complex web of causes and there is no single factor identified for any type of cancer.

The following are some of the factors that damage DNA and are known to cause cancer:

1. Gene mutations, 2. Poor diet or Poor immune system, 3. Exposure to UV rays and air pollution are two major environmental concerns, 4. Helicobacter pylori (H. pylori), Hepatitis B virus (HBV), Hepatitis C virus (HCV), Human papillomavirus (HPV), and Epstein-Barr virus are examples of microbiological infections. 5. Unhealthy Habits (smoking, high alcohol intake, tobacco use, exposure to chemicals, obesity) 6. Intake of nonsteroidal anti-inflammatory medicines (NSAID) over a prolonged period. [17]

Treatments of Cancer:

Treatments of cancer include Surgery, Chemotherapy and Radiotherapy. Some cancers can be cured if detected early enough. Existing Chemotherapy and other Radiotherapy treatments can be shown some harmful and hazardous adverse, side effect it has been effected to other normal living

cells compared then treated Cancer or Tumor cells. Due to this reason the already existing modern medical treatments are therefore needed to be a replaced with novel traditional alternative herbal medicine drug discovery which is based on medicinal plants for treatment of complex cancerous or tumor effected diseases without showing much adverse, side effects. There are some disadvantages in cancer treatment using chemotherapy, surgery, and radiation therapy that make challenges in treatment for these methods. Chemotherapy repeatedly leaves severe adverse effects and can cause hurt to healthy cells. Radiation therapy will be effective when the tumor location is well known. Surgery will be effective when tumor location and addition are recognized but, when sensitive tissues, such as brain tissue surrounding it, are impossible. Therefore, a new approach in the treatment of cancerous tumors is unavoidable to comment.

Herbal Medicinal plants based Treatment:

In the Scenario of Herbal medicinal plants based treatment of various critical chronical disease from science ancient time. While Anti-metabolites, platinum analogs, alkylating drugs, and anti-tumor antibiotics are among the most regularly utilized as cancer chemotherapeutic drugs. Chemotherapy and radiation, on the other hand, put patients under a lot of stress and harm their health. Dietary modifications, cessation of tobacco, alcohol and carcinogenic diets uses, efficient treatment of inflammatory diseases, and the use of nutritional supplements that boost immune functioning are all essential preventative approaches for the majority of malignancies. Chemotherapy, radiotherapy, and chemically generated medications are among the current cancer treatments. Consequently, research into the efficacy of herbal medicines is important to avoid negative consequences. As a result, researchers have developed methods for determining the potential value of plant extracts in the treatment of cancer. Many plants have already been utilized to cure cancer in various forms. Herbal medicinal plants are a storehouse of diverse bioactive chemicals that exhibit a wide spectrum of biological activity, including anti-inflammatory, antiviral, anti-tumor, and anti-malarial activity. The goal of herbal medicine is to restore the body's ability to defend, regulate, and repair itself. Medicinal herbs are used to make a variety of modern medications. Herbal products are available in powdered, pilled, liquid, pasted, or raw form (extract) or Herbal extracts based formulated Tablets, Capsules etc. Certain herbal products tend to cause adverse effects and toxicity. In most situations, the problem emerges as a result of improper usage of herbal goods, mislabeling of plant materials, botanical misidentification, and so on. When taken for incorrect purposes, in high quantities, or improperly prepared, this can be poisonous.[13,17,87] In considerable confirmation novel anti-cancer medicines derived from nature, particularly plants, are now being researched. Plants have always been the foundation of traditional medicinal systems, and they have given humans ongoing cures for thousands of years. Plants' therapeutic potential has been discovered over thousands of years of use. The clay tablets include the first written data on hundreds of medicinal herbs, including opium and myrrh. Herbal remedies have been used to treat a variety of ailments for ages. Plant extracts are used in herbal therapy to cure disease and improve the patient's health. [17,88] The use of herbal medicinal plants in the manufacture of various medications has been extremely important. Medicinal plants are thought to be a rich source of a wide range of ingredients that can be used in drug development. The anticancer capabilities of numerous medicinal plants are being used to locate a lead ingredient that can stop cancer from spreading. Secondary metabolites in medicinal plants include terpenoids, flavonoids, alkaloids, glycosides and steroids, anthocyanins, lignans, anthraquinones, poly sterols, poly phenols, tannins, dietary fibers, phenolic acid, coumarins, isocatechins and catechins etc. all of which have diverse pharmacological characteristics. [8-9,13,17,30,85,88] Different bioactive phytochemicals secondary Metabolite's used in the treatment of Cancer, Tumor, Shown in Figure -1.

Herbal Medicinal plants having anticancer activity:

Anticancer, Antitumor drugs produced from plants are efficient inhibitors of cancer cell lines. As a conclusively, these plants are in great demand for their ability to produce medically significant bioactive compounds. Various more herbal medicinal plants have been utilized for cancer prevention and treatment in traditional cultures all over the world. Curcumin, allicin, Vinblastine, Vincristine, silymarin, hecogenin glycyrrhizin, berberine, campothecin, gallic acid. Plants are an important source of synthetic and herbal agents used in several modern pharmaceutical industries. Some of the prominent plant derived compound have a major role in the development of several clinically useful anticancer, antitumor, anticarcinogenic agents such as Vinblastine, Vincristine, paclitaxol, Taxol, teniposide and etoposide derivative, topotecan etc. Taxol and Camptothecin were among the most important anti-cancer compound derived from plants available today. [8-9,13,17,30,66,74] The use of gold nanoparticles based poly herbo-minerals products and especially nanoparticles is increased targeting cancer cells and Bauhinia Spp.- (Kachnar) *Bauhinia variegate* L., arial part and stem bark plant parts Herbo-mineral Bhasma preparation was shown and generated nanoparticles efficacy during the Bhasma preparations, Kanchnar Guggul Herbo-mineral preparation and fresh juice, extracts preparation traditionally it's used in treatment of skin tumor known as Gand malla, effected to Cow animal, skin tumor and several type of Human cancer treatment from since ancient time which has mentioned in classical Ayurvedic Literatures and found confirmed and reported remarkable anticancer and antitumor activities. Therefore, investigating the use of these nanoparticles with plant secondary metabolites as a new approach is recommended. and many types of bioactive constituents, which are key active ingredients of plants, have shown promise in the treatment of cancer in the future. Soyabeans are the major dietary source of saponins which have been suggested as a possible anticancer agents. There is lately great interest in screening for plants to be used in cancer prevention and treatment. [8-9,13,17,30] 32 Some of the herbal medicinal plants species - *Ferula asafoetida, Azadirachta indica* L./ *Azadirachta indica* A. Juss., *Centella asiatica* L., *Bacopa monniera, Bauhinia variegate* L.,/ *Bauhinia purpurea* L./ *Bauhinia blakeana* L./ *Bauhinia acuminate* L., *Annona squamosa* L. /*Annona muricata* L., *Catharanthus roseus* L. ,/*Vinca rosea* L., *Inula racemosa* Hook. f., *Arnebia euchroma* (Royle), *Woodfordia fruticosa*(Linn) Kurz., *Nyctanthes arbortristis* L., *Taxus wallichiana, /Taxus baccata* L.,/ *Taxus baccata* Thunb., *Curcuma domestica, /Curcuma longa, Asparagus racemosus,*

Berberis asisatica D C., *Berberis aristata* D C., *Tinospora cordifolia* (Willd.) Miers.,*Ocimum tanuiflorum* L.,/ *Ocimum sanctum* L., *Withania somnifera* (L.) Dunal, *Andrographis Paniculate* (Burm.f.) Wall, *Glycyrrhiza glabra* (L.) and *Nigella sativa* L. in these selective, studies herbal medicinal plants have been shown remarkable, inhibited, prevent and control of Cancer, Tumor , Carcinogenic cell's growth due to occurred and found immense anticancer and antitumor, anti carcinogenic agents properties and the presences of these bioactive phytochemical constituents and its secondary metabolites, shown in Figure-2 and Figure -3 respectively, their details, explored Molecular Structure's with Molecular Formula's shown in this comprehensive summarized review. that shown and possess Anticancer and Antitumor, Anti Carcinogenic agents activities are discussed in Table-1, Which has shown Herbal Medicinal Plants, plant part used, Shown type of Anticancer, Antitumor activities, Habitat Regions, Table-2, Shown active Phyto-Chemical constituents, Pharmacological medicinal potent values. and in Table-3: Shown Anti-cancerous, Anti-tumor's Anti-carcinogenic herbal medicinal plant , Molecular Structure's with Molecular Formula's respectively.

Table1: Herbal Medicinal Plants, plant part used, Shown type of Anticancer, Antitumor activities, Habitat Regions:

Name of Medicinal Plants	Local Name	Part Used	Type of Anticancer Antitumor activities	Habitat Regions	Reference
Ferula asafoetida	Asafoetida, Hing, Devil's dung	Shoot and resin parts	Inhibition and control of mutagenesis and cancer cells proliferation, cancer chemo preventer	India, Northern Himalaya, World wide Regions	Khanam *et al*.,2021[17]; Sadooghi *et al*. ,2013[65]; Mahendra *et al*.,2012[84]; Mallik *et al*.,2003
Azadirachta indica L./ *Azadirachta indica* A. Juss.	Neem, Dhrek	Aerial, Leaves parts	Anti-MCF cancer Cell, Tumor cell's suppressors, prevent and growth control	India, U.P, J&K., UK , States Northern Himalaya	Regassa *et al*., 2022[14]; Khanam *et al*.,2021[17]; Moga *et al*.,2018[41]; Alzohairy *et al*.,2016[50]; Rahmani *et al*., 2014 [57]; Jung *et al*.,2014[59]
Centella asiatica L.	Pegaga, Brahmi	Aerial, Leaves parts	Prevention and control Lung cancer growth	India, U.P, J&K., UK , States Northern Himalaya	Regassa *et al*., 2022 [14]; Achyutan *et al*., 2021[20]; Aizad *et al*., 2021[24]; Iwan *et al*., 2016[53]; Bisht *et al*., 2011[74]; Gohil *et al*., 2010[78]; Babu *et al*.,1995[89]
Bacopa monniera	Water hyssop, water hyssop, Brahmi	Plant	Ehrlich ascites carcinoma	India, U.P. Himalaya	Verma *et al*.,2024 [10]; Gupta *et al*.,2024[11]; Gudavalli *et al*.,2024 [12]; Regassa *et al*., 2022 [14]; Ghosh *et al*.,2011 [73]
Bauhinia variegate L.,/ *Bauhinia purpurea* L./ *Bauhinia blakeana* L./ *Bauhinia acuminate* L.	Kachnar, butterfly tree and Hawaiian orchid tree, Hong Kong Orchid tree	Young fresh, dried, fruits, flowers, stem bark	Prevention and control Tumor and Cancer growth	India, U.P, J&K., UK , States Himalaya, World wide	Verma *et al*.,2024[10]; Gupta *et al*.,2024[11]; Gudavalli *et al*.,2024[12] ; Parekh *et al* .,2020 [27]
Annona squamosa L. / *Annona muricata* L.	Seeta palam, Graviola, Laxmanphal, Sweet Apple, Sarifa,Custard Apple	Aerial, Leaves, Fruit, parts	Colon and breast cancer	Lower regions of the Himalayas, World wide	Regassa *et al*., 2022 [14]; Gnanga *et al*., 2021[21]; Sagar *et al*. ,2020[30]; Al-Ghazzawi *et al*. ,2019[34]; Zahid *et al*.,2018; Rahmani *et al*., 2014[57]
Catharanthus roseus L. ,/ *Vinca rosea* L.	Nayantara, Sada bahar, Sawagan	Roots, Aerial Fruit parts	Anticancer activities, Breast cancer, Colon cancer	Southern and Northern regions of India	Regassa *et al*., 2022 [14]; Achyutan *et al*., 2021[20]; Sagar *et al*. ,2020[30]; Widowati *et al*.,2011[72]; Bisht *et al*., 2011[74]
Inula racemosa Hook. f.	Pushkarmula	Roots	Cytotoxic and Anticancer activities, Colon, prostate, CNS, ovary, leukemia, and lung cancer	Jammu and Kashmir, UK States of northern India, Asian and Himalaya region	Regassa *et al*.,2022 [14]; Firdous *et al*. , 2018[39]; He *et al*., 2014[56]; Rasul *et al*., 2013[63];Ma *et al*., 2013[62];Gnanasekaran *et al*., 2012[68]; Zhang *et al*., 2010[75];Patel *et al*., 2010[76]
Arnebia euchroma (Royle)	Johnst, Ratan jot	Roots / leaves	Anti-tumor cells growth prevent and control	India, Asian region	Regassa *et al*.,2022 [14] ; Kumar *et al*.,2021 [26]; Chawla *et al*., 2021[22]; Wang *et al*.,2020[25]; Boulos *et al*.,2019[31]; Xiong *et al*.,2009[80]
Woodfordia fruticosa (Linn) Kurz.	Dhai	Whole plant/ flowers	Inhibit the proliferation of CML K562 cells	Kashmir ,UK States Northern region of India, Asian region	Sagar *et al*.,2024a; 2024b[8-9]; Regassa *et al*.,2022[14]; Das *et al*.,2007[83]
Nyctanthes arbortristis L.	Harsingar / Siharu, Parijatha, Night Jasmine/ Coral jasmine	Leaves/ Stem bark, flowers	Inhibits, prevent and control growth Tumor, cancer, - Carcinoma cells growths	Europe and Africa, Asian region's Nilgiri Hill Southern, Northern India,	Rajput *et al*.,2024[4]; Swain *et al*.,2024[5]; Chabattula *et al*.,2024 [6]; Kaliyaperumal *et al*.,2024[7]; Gadgoli *et al*.,2010[79]

				Himalaya	
Taxus wallichiana, / Taxus baccata L.,/ *Taxus baccata* Thunb.	Lauthsalla, barmi, banya, yew tree, thunder, Zarnab, Talispetta	Needles, bark, root, seed, heartwood	Anti-liver, colon, ovarian, and breast cancer cell growth prevent and control	Kashmir ,UK State Northern region of India, Asian region	Regassa *et al*., 2022 [14]; Achyutan *et al*., 2021[20]; *Sagar et al*.,2020[30]; Jain *et al*.,2016[47]; Juyal *et al*.,2014[58]
Curcuma domestica, /Curcuma longa	Haldi	Roots, Rhizomes	Dalton's lymphoma cells growth prevent and control	Southern and Northern regions of India, U.P. Himalaya, Asian region	Regassa *et al*., 2022 [14] ;Sagar *et al*., 2021 [19]; Khanam *et al*., 2021[14]; Achyutan *et al*.,2021[20]; Kasai *et al*., 2019[35]; Akter *et al*., 2019[36]; Ahmad *et al*., 2015[54]; Kuttan *et al*. ,1985[91]
Asparagus racemosus	Wild Shatavari, Ekalkanto	Roots	Anti-breast cancer, colon, adeno carcinoma, kidney carcinoma, and EAC tumor cells	Northern India, U.P. Himalaya regions	Regassa *et al*., 2022[14]; Achyutan *et al*.,2021[20]; Onloma *et al*.,2017[43]; Mitra *et al*.,2012[69]
Berberis asisatica D C	Daruharidra, Darbi (Sans), Indian barberry, Tree, Turmeric, Daru Haldi , Chitra, Kilmod	Roots	Anticancer, Dalton's lymphoma ascites tumor cells growth prevent and control	India, Northern India, Nilgiri Hill of southern India, Himalaya region	Anmol *et al*., 2024[1] ; Awari *et al*., 2024 [3]; Alam *et al*.,2022[15]; Regassa *et al*., 2022 [14]; Choudhary *et al*., 2021[18]; Wang *et al*., 2020[25]; Samadi *et al* .,2020; Srivastava *et al*., 2015; Kumar *et al*.,1998[90]
Berberis aristata D C	Daruharidra, Indian barberry, Tree Turmeric , Daru Haldi , Chitra, Rasaut, Kilmod	Root, Rhizomes, Stem bark	Cytotoxic, Anti-carcinoma and Anticancer Activities, prevention and control of Colon cancer	India, Northern India, Nilgiri Hill of southern India, Himalaya region	Anmol *et al*.,2024[1]; Moin *et al*.,2023; Regassa *et al*., 2022 [14]; Harmila *et al*., 2020[33]; Choudhary *et al*., 2021; Wang *et al*., 2020[25]; Samadi *et al* .,2020; Chander *et al*. ,2017[44]; Sood *et al*., 2019[32]; Srivastava *et al*., 2015; Potdar *et al*., 2012[70]; Das *et al*., 2009[83]; Kumar *et al*.,1998[90]
Tinospora cordifolia (Willd.) Miers	Gilo or Giloe, Giloya, Guduchi	Stem parts	Control, induced cytotoxicity in tumor cells and Control of Cancer cells growths prevent and control	Southern and Northern India, U.P. Himalaya, Asian regions	Sagar *et al*., 2021[19]; Khanam *et al*.,2021 [17]; Achyutan *et al*., 2021[20]; Jagetia *et al*., 2019[37]; Siegel *et al*., 2018[42]; Promila *et al*.,2017[45]; Jain *et al*., 2016[47]; Ahmad *et al*.,2015[54]; Singh *et al*.,2003[86]
Ocimum tanuiflorum L.,/ *Ocimum sanctum* L	Jangli Rehan or Tulsi or Ban Tulsi Rehan or Tulsi	Arial or Leaves parts	Prevention, Control and inhibited of cancer cells growth and growth of breast tumor cells	Southern ,Northern U.P. and UK States of India Himalaya Asian regions	Sagar *et al*., 2021[19]; Achyutan *et al*.,2021 [20]; Shakya AK, 2016 [48]; Sukhdev *et al*., 2016[49]; Upadhyay *et al*.,2015[55]; Bisht *et al*.,2011[74]
Withania somnifera (L.) Dunal	Asgand or Ashwagandha	Roots parts	Prevention, reduced, control and inhibited of human breast, CNS, lung, skin and colon cancer cells growth and growth of lungs tumor cells	Northern U.P. and UK States of India, Himalaya regions	Sagar *et al*., 2023[13]; Khanam *et al*.,2021 [17];Shakya, 2016[48]; Ahmad *et al*.,2015[54] ;Singh *et al*.,2013[66]
Andrographis Paniculate (Burm.f.) Wall	Kalmegh/ Kalamegha/ Kirayat	Arieal or Leaves parts	Prevention, reduced, control and inhibited of cancer cells growth	Northern U.P. and UK States of India, Himalaya region	Gonde *et al*.,2024[2]; Sagar *et al*., 2023[13]; Achyutan *et al*.,2021 [20]; Singh *et al*.,2013 [66]; Bisht *et al*.,2011 [74]
Glycyrrhiza glabra (L.)	Mulathi/ Jethimadhand Aslus-soos	Stems & Roots parts	Prevention, reduced, control and inhibited of cancer cells and tumor cells growth	Northern U.P. and UK States of India, U.P. Himalaya	Sagar *et al*., 2023[13]; Batiha *et al*.,2020b [29]; Shourie *et al*., 2017[40]; Ayeka *et al*., 2016[51]; Pandian and Chidambram,2016[52]
Nigella sativa L.	Black cumin, kalonji	Seeds, oil	Prevention, reduced, control and inhibited of various cancer's cells growths	Northern U.P. and UK States of India, Himalaya region	Dalli *et al*.,2022[16]; Shourie *et al*., 2017 [40]; Amin *et al*.,2016 [46]; Rahmani *et al*., 2014[57]; Khan *et al*., 2011[77]; Aggarwal *et al*., 2008[81]; Al-Ali *et al*.,2008[82]

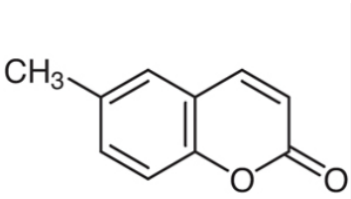
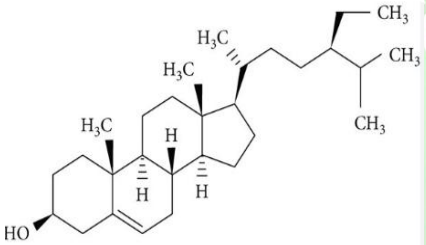
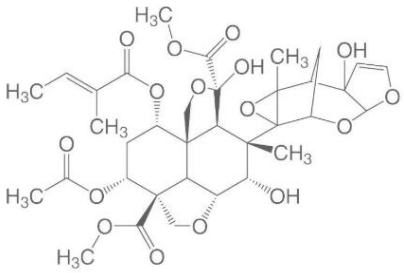
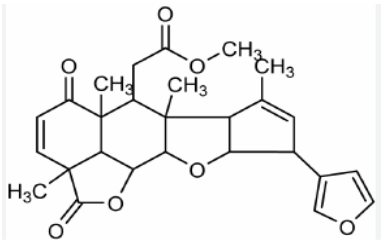
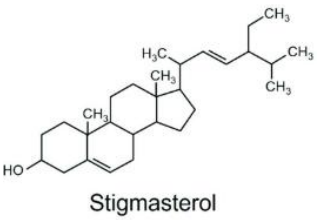
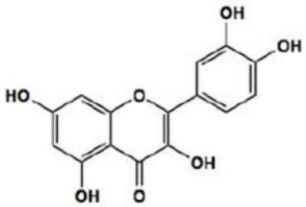
Table 2: Shown active Phyto-Chemical constituents, Pharmacological medicinal potent values:

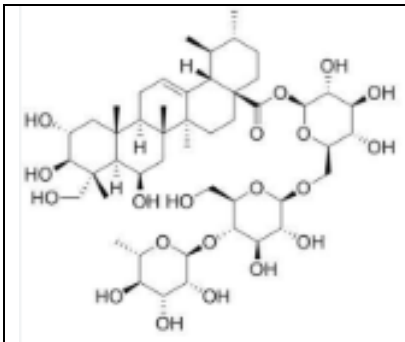
Medicinal Plants	Active Phyto-Chemical Constituents	Pharmacological , Medicinal Potent Values	References
Ferula asafoetida	Sesquicoumarin, oleic acid, β-sitosterol, α-pinene, α-terpineol, diallyldisulfi de, ferulic-acid, isopimpinellin, luteolin, umbelliferone, vanillin	In-vitro cell lines and In-vivo and pharmacological reported confirmation, cancer chemo preventive, Anti-Cancers properties	Khanam *et al*., 2021[17];Sadooghi *et al*. ,2013[65]; Mahendra *et al*.,2012[84]; Mallik *et al*.,2003
Azadirachta indica L./ *Azadirachta indica* A. Juss.	Azadirachtin, nimbolide	In-vitro cell lines and In-vivo and pharmacological reported confirmation, Anti-Cancers properties	Regassa *et al*., 2022 [14]; Khanam *et al*., 2021[17]; Moga *et al*.,2018[41];Alzohairy *et al*.,2016[50]; Rahmani *et al*., 2014 [57]; Jung *et al*., 2014 [59]
Centella asiatica L.	phytosterols (campesterol, sitosterol, stigmasterol), Madecassoside, Asiaticoside, oxyasiaticoside, Vallarine, alanine, serine, flavonoids (derivates of Quercetin and kempferol), an alkaloid (hydrochotine), a bitter component (vallerine)	In-vitro cell lines and In-vivo and pharmacological reported confirmation, prevention and control Lung Cancer cells growth, Anti-Cancers properties	Regassa *et al*., 2022 [14]; Achyutan *et al*., 2021[20]; Aizad *et al*., 2021[24]; Iwan *et al*., 2016[53]; Bisht *et al*., 2011[74]; Gohil *et al*., 2010[78]; Babu *et al*.,1995[89]
Bacopa monniera	Stigmastrerol, steroidal saponins, Bacosides A and B	In-vitro cell lines and In-vivo and pharmacological reported confirmation, prevent and control of Cancer and Carcinoma cells growth, Strong memory booster and enhancer	Verma *et al*.,2024 [10];Gupta *et al*., 2024[11];Gudavalli *et al*.,2024 [12];Regassa *et al*., 2022 [14]; Ghosh *et al*.,2011 [73]
Bauhinia variegate L.,/ *Bauhinia purpurea* L./ *Bauhinia blakeana* L./ *Bauhinia acuminate* L.	Quercetin and β-sitosterol	In-vitro cell lines and In-vivo and pharmacological reported confirmation, Anti-Tumor, Anti- cancer properties	Verma *et al*.,2024[10]; Gupta *et al*.,2024[11]; Gudavalli *et al*., 2024[12]; Parekh *et al* .,2020 [27]
Annona squamosa L.,/ *Annona muricata* L.	Muricin J, Muricin K, Muricin L, Cinnamic acid derivative, Coumaric acid hexose, 5-Caffeoylquinic acid, Annomuricin A, Annomuricin B, Annomuricin C, Annomuricin E, etc.	In-vitro cell lines and In-vivo and pharmacological reported confirmation, AntiTumor, Anti-Cancers (Prostate, Breast, Liver, Lung, Colon Cancers, Tumor cells growth)	Regassa *et al*., 2022 [14]; Gnanga *et al*., 2021[21]; Sagar *et al*. ,2020[30]; Al-Ghazzawi *et al*. ,2019[34]; Zahid *et al*.,2018; Rahmani *et al*., 2014[57]
Catharanthus roseus L. / *Vinca rosea* L.	Vinca-Alkaloid as Vinblastine, Vincristine, Vinorelbine, Vinflunine, catharanthine and vindoline alkaloids	In-vitro cell lines and In-vivo and pharmacological reported confirmation, Anti-Tumor (Breast, Colon, Cervical, neck and Head, Anti Cancer, Leukemias, testicular, Breast, ovary, cervix, lung, rectum, testis cancer and Colon Cancers) Anti-Carcinogenic	Regassa *et al*., 2022 [14]; Achyutan *et al*., 2021[20]; Sagar *et al*. ,2020[30]; Widowati *et al*.,2011[72]; Bisht *et al*., 2011[74]
Inula racemosa Hook. f.	Acemosalactones A, Alantolactone, Isoalantolactone, Alloalantolactone, 5-α-epoxyalantolactone, α-epoxyisoalantolactone and Isotelekin	*In-vitro* cell lines and *In-vivo*, confirmation, inhibited and shown Cytotoxic activities , Anticancer activates, human lung cancer, human liver cancer, human stomach cancer, human colon cancer, human ovarian cancer cells, shown tiproliferative activities.	Regassa *et al*.,2022 [14]; Firdous *et al*. , 2018[39]; He *et al*., 2014[56]; Rasul *et al*., 2013[63];Ma *et al*., 2013[62];Gnanasekaran *et al*., 2012[68]; Zhang *et al*., 2010[75];Patel *et al*., 2010[76]
Arnebia euchroma (Royle)	Deoxyshikonin, Acetylshikonin, shikonin	*In-vitro* cell lines and *In-vivo*, confirmation, inhibited and shown Cytotoxic activities , Anticancer activates	Regassa *et al*.,2022 [14] ; Kumar *et al*., 2021 [26]; Chawla *et al*., 2021[22]; Wang *et al*.,2020[25]; Boulos *et al*.,2019[31]; Xiong *et al*.,2009[80]
Woodfordia fruticosa (Linn) Kurz.	Quercetin, β-sitosterol	*In-vitro* cell lines and *In-vivo* and pharmacological reported confirmation, Anti-Tumor, Anti- cancer Cytotoxic activities properties	Sagar *et al*.,2024a; 2024b[8-9]; Regassa *et al*.,2022[14]; Das *et al*.,2007[83]
Nyctanthes arbortristis L.	α-Crocetin and β-sitosterol	*In-vitro* cell lines and *In-vivo* and pharmacological reported confirmation, Anti-Tumor, Anti- cancer properties	Rajput *et al*.,2024[4]; Swain *et al*.,2024[5]; Chabattula *et al*.,2024 [6]; Kaliyaperumal *et al*.,2024[7]; Gadgoli *et al*.,2010[79]

Taxus wallichiana , / *Taxus baccata* L.,/ *Taxus baccata* Thunb.	Taxanes-Alkaloids (Taxol and Taxotere), Larotaxol, nab-Paclitaxel or Paclitaxel	*In-vitro* cell lines and *In-vivo* and pharmacological reported confirmation, Anti-Tumor, AntiCancer (Bladder, pancreatic, Ovarian and breast cancer) and Anti Carcinogenic	Regassa *et al*., 2022 [14]; Achyutan *et al*., 2021[20]; *Sagar et al*.,2020[30]; Jain *et al*.,2016[47]; Juyal *et al*.,2014[58]; Bisht *et al*., 2011[74]
Curcuma domestica, / Curcuma longa	Alkaloids- Curcuminoids and Curcumin, Flavonoids, Phenols ,ascorbic acid etc.	*In-vitro* cell lines and *In-vivo* and pharmacological reported confirmation Anti-Cancers (Prostate esophagus, liver, skin,Oral, Breast , Ovarian, Head, Neck, Lungs, Colon, Fore Stomach, Duodenum, (melanoma, and neurological), Cancers, Leukemia, glioblastoma, AntiTumor ,(Skin Tumor), Anti Carcinogenic and Immuno modulators or Immuno- stimulation activities present	Regassa *et al*., 2022 [14] ;Sagar *et al*., 2021 [19]; Khanam *et al*., 2021[14]; Achyutan *et al*.,2021[20]; Kasai *et al*., 2019[35]; Akter *et al*., 2019[36]; Ahmad *et al*., 2015[54]; Bisht *et al*., 2011[74]; Kuttan *et al*. ,1985[91]
Asparagus racemosus	Shatavarin I, Shatavarin IV	*In-vitro* cell lines and *In-vivo* and pharmacological reported confirmation, Anti-Tumor, Anti- cancer properties, prevent and control of Cancer and Tumor cells growth.	Regassa *et al*., 2022[14]; Achyutan *et al*.,2021[20]; Onloma *et al*.,2017[43]; Mitra *et al*.,2012[69]
Berberis asisatica D C.	Barberine , Berbamine, β-sitosterol	*In-vitro* cell lines and *In-vivo* and pharmacological reported confirmation, prevent and control of Cancer and Carcinoma cells growth	Anmol *et al*., 2024[1] ; Awari *et al*., 2024 [3]; Alam *et al*.,2022[15]; Regassa *et al*., 2022 [14]; Choudhary *et al*., 2021[18]; Wang *et al*., 2020[25]; Samadi *et al* .,2020; Srivastava *et al*., 2015; Kumar *et al*.,1998[90]
Berberis aristata D C	Barberine, Berbamine, Palmatine, Karachine, Aromoline, Taxilamine	*In-vitro* cell lines and *In-vivo* and pharmacological reported confirmation, prevent and control of Cancer cells growth , Shown Cytotoxic and Anti- cancerous activities	Anmol *et al*.,2024[1]; Moin *et al*.,2023; Regassa *et al*., 2022 [14]; Harmila *et al*., 2020[33]; Choudhary *et al*., 2021; Wang *et al*., 2020[25]; Samadi *et al* .,2020; Chander *et al*. ,2017[44]; Sood *et al*., 2019[32]; Srivastava *et al*., 2015; Potdar *et al*., 2012[70]; Das *et al*., 2009[83]; Kumar *et al*.,1998[90]
Tinospora cordifolia (Willd.) Miers	Alkaloids - Berberine, Aporphine, Tinosporin, Palmetine, Isocolumbin, Aporphine, Jatrorrhizine, β-sitosterol, β-sitosteryl glycosides etc.	In-vitro cell lines and In-vivo and pharmacological reported confirmation, Anti-Cancers, (Skin, and muscles Cancers) Anti-Tumor, (Skin Tumor), Anti-Carcinogenic; and Immuno modulators or Immuno stimulation activities present	Sagar *et al*., 2021[19]; Khanam *et al*.,2021 [17]; Achyutan *et al*., 2021[20]; Jagetia *et al*., 2019[37]; Siegel *et al*., 2018[42]; Promila *et al*.,2017[45]; Jain *et al*., 2016[47]; Ahmad *et al*.,2015[54]; Singh *et al*.,2003[86]
Ocimum tanuiflorum L.,/ *Ocimum sanctum* L.	Apigenin, Taxol, Carvacrol, Vicenin Eugenol, Orintin, Luteolin, Rosmarinic acid, Ursolic acid, Sitosterol	In-vitro cell lines and In-vivo and pharmacological reported confirmation, Anti-Cancers (Skin, breast, liver and fibro sarcoma, muscles Cancers) AntiTumor,(Skin Tumor), Anti-Carcinogenic; and Immunomodulators or Immuno stimualtion acteveties present	Sagar *et al*., 2021[19]; Achyutan *et al*.,2021 [20]; Shakya AK, 2016 [48]; Sukhdev *et al*., 2016[49]; Upadhyay *et al*.,2015[55]; Bisht *et al*.,2011[74]
Withania somnifera (L.) Dunal	Withanolides, Withaferins-A, Withanone, Withanosides Steroidal, Adriamycin, 5-fluorouracil	In-vitro cell lines and In-vivo and pharmacological reported confirmation, AntiCancers (Human Cervical cancer, Human breast, CNS, lung, and Colon Skin, Cervix, prostate, Cancers), Anti-Tumor, (Skin, Brain Tumor), Anti-Carcinogenic	Sagar *et al*., 2023[13]; Khanam *et al*.,2021 [17];Shakya, 2016[48]; Ahmad *et al*.,2015[54] ;Singh *et al*.,2013[66]
Andrographis Paniculate (Burm.f.) Wall	Andrographolide, Andographiside, Andrograpanin, β-Sitosterol,	In-vitro cell lines and In-vivo and pharmacological reported confirmation ,AntiCancers (Human Breast, Prostate, lung, liver and Colon Skin, Cancers) Anti-Tumor, (Skin, colon, liver Tumor), Anti-Carcinogenic	Gonde *et al*.,2024[2]; Sagar *et al*., 2023[13]; Achyutan *et al*.,2021 [20]; Singh *et al*.,2013 [66]; Bisht *et al*.,2011 [74]

Glycyrrhiza glabra (L.)	Glycyrrhizin, Iso flavones Glaberidin, Licochalcone A	In-vitro cell lines and In-vivo and pharmacological reported confirmation Anti-Cancers (Human Breast, Prostate, and Colon ,Skin, lung, Stomach and Kidney cancer Cancers) Anti-Tumor, (breast, skin, colon, Tumor), Anti-Carcinogenic	Sagar *et al*., 2023[13]; Batiha *et al*.,2020b [29]; Shourie *et al*., 2017[40]; Ayeka *et al*., 2016[51]; Pandian and Chidambram,2016[52]
Nigella sativa L.	Nigellicine, Nigellimine, Nigellone, Thymoquinone, α-hederin, Quercetin	In-vitro cell lines and In-vivo and pharmacological reported confirmation Anti-Cancers - prevention and control growth of Blood Cancer, Breast Cancer, Colon Cancer, Pancreatic Cancer, Hepatic Cancer, Lung Cancer, Skin Cancer, Renal Cancer, Prostate Cancer, Cervical Cancer activities	Dalli *et al*.,2022[16]; Shourie *et al*., 2017 [40]; Amin *et al*.,2016 [46]; Rahmani *et al*., 2014[57]; Khan *et al*., 2011[77]; Aggarwal *et al*., 2008[81]; Al-Ali *et al*.,2008[82]

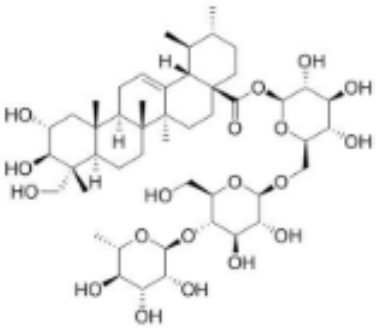
Table-3: Shown Anti-cancerous, Anti-tumor's, Anti-carcinogenic herbal medicinal plant , Molecular Structure's with Molecular Formula's:

Anti-cancerous, Anti-tumor's Anti-carcinogenic herbal medicinal plant, Molecular Structure's	**Molecular Formula's**
***Ferula asafoetida*:**  **a.- Sesquicoumarin**  **b.- β-sitosterol**	a.- C9H6O2, b.- C29H50O
***Azadirachta indica* L./ *Azadirachta indica* A. Juss.:**  **a.- Azadirachtin**  **b.- Nimbolide**	a.- C23H44O16, b.- C27H30O7
***Centella asiatica* L. / *Bacopa monniera*:**  Stigmasterol **a.- Stigmasterol**  **b.- Quercetin**	a.- C29H48O, b.- C15H10O7, c.- C48H78O20, d.- C48H78O19



Madecassoside
C48H78O20 = 975.13

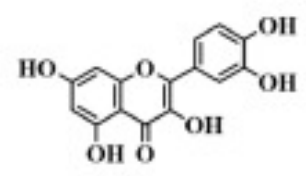
c.- Madecassoside



Asiaticoside
C48H78O19 = 959.12

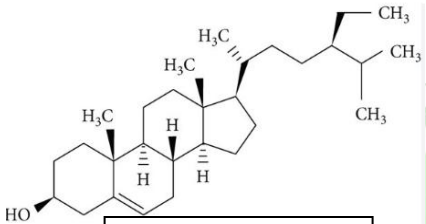
d.- Asiaticoside

***Bauhinia variegate* L.,/ *Bauhinia purpurea* L./ *Bauhinia blakeana* L./ *Bauhinia acuminate* L:**



Quercetin

a.- Quercetin

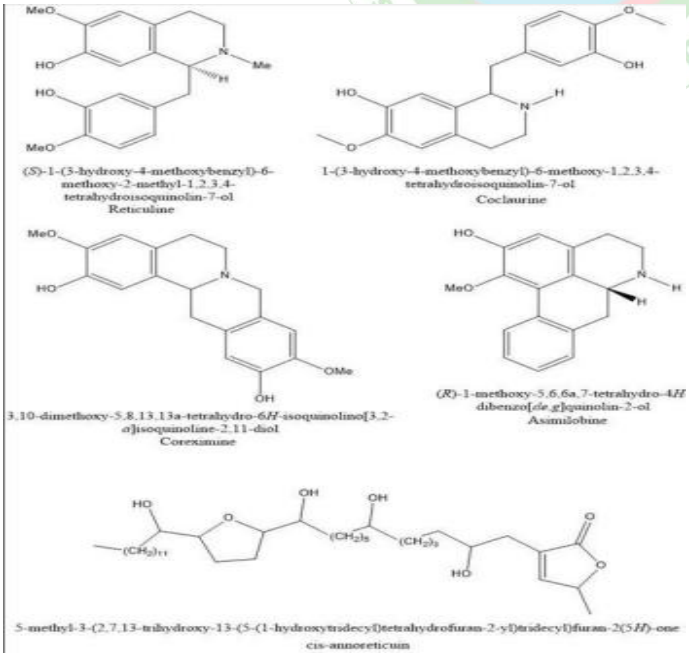


b.- ß-sitosterol

a.- C15H10O7,

b.- C29H50O

***Annona squamosa* L.,/ *Annona muricata* L.:**



a.- C35H64O8,

b.- C19H23NO4,

c.- C17H19NO3,

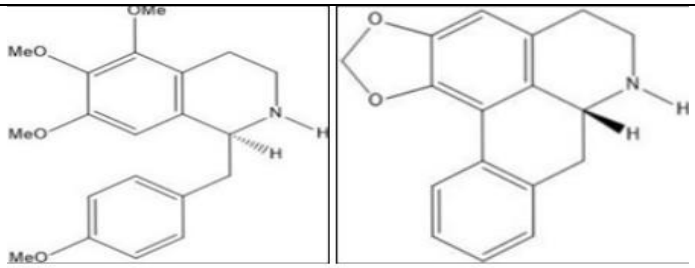
d.- C19H21NO4,

e.- C17H17NO2,

f.- C35H64O8,

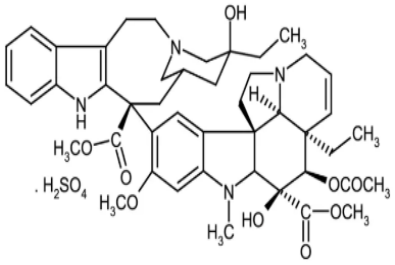
g.- C9H7O8,

h.- C20H25NO4

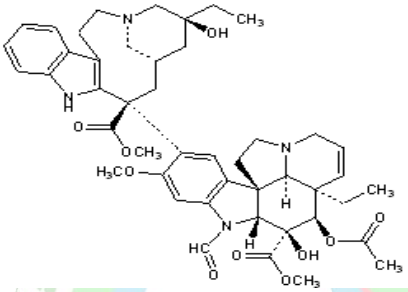


a.- Annomuricin A, b.- Reticuline, c.- Coclaurine, Coreximine, Asimilobine, d.- cis-Annoreticum, e.- Annomuricin B, f.- Annomuricin C, g.- Annomuricin E, (S)-5, 6, 7-trimetboxy-1-(4-ethoxybenzyl)-1.2,3,4-tetrahydro isoquinoline, h.-Anomurine

***Catharanthus roseus* L. / *Vinca rosea* L.:**



a.- Vinblastine

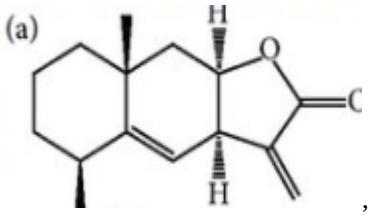


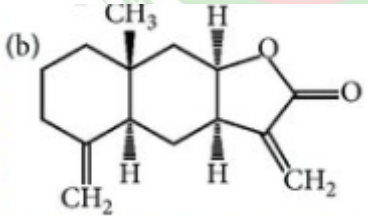
b.- Vincristine

a.- C46H58N4O9 ,

b.- C46H56N4O10

***Inula racemosa* Hook. f. :**



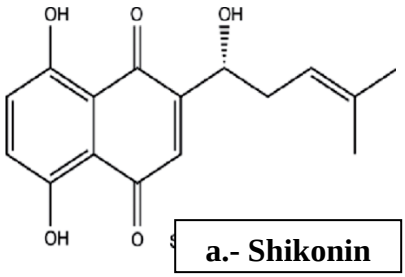


a.- Alantolactone. b.- isoalantolactone

a.-C15H20O2

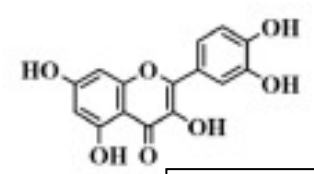
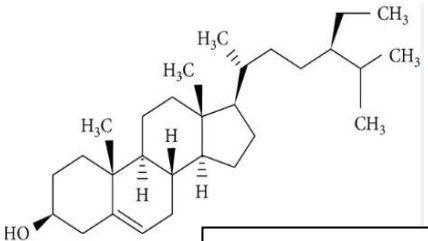
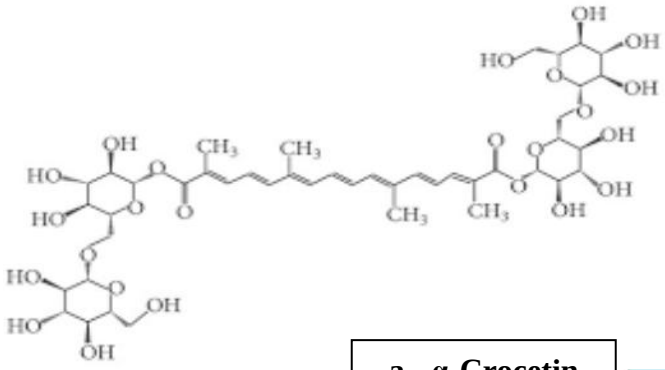
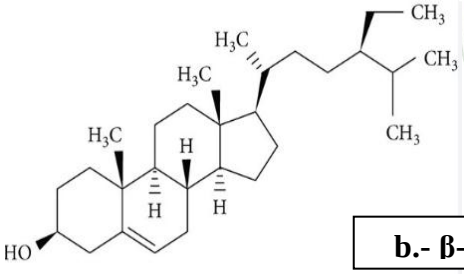
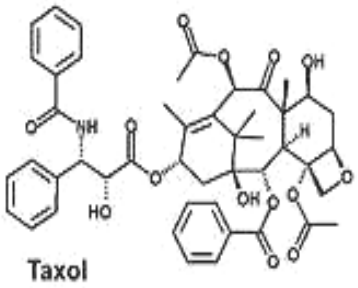
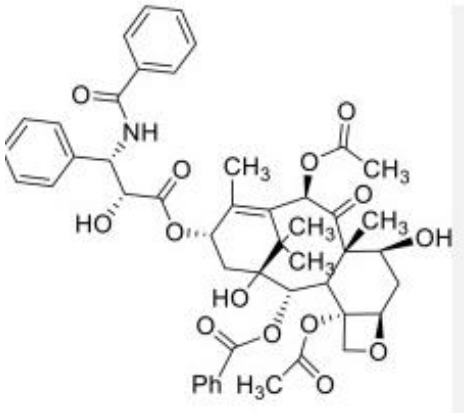
b.- C15H24

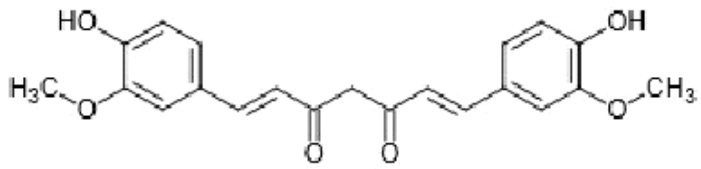
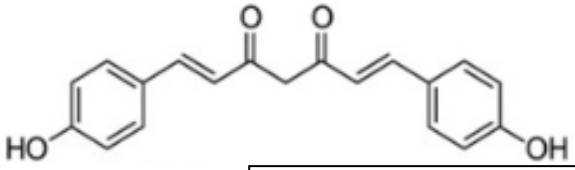
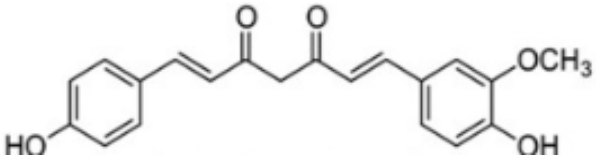
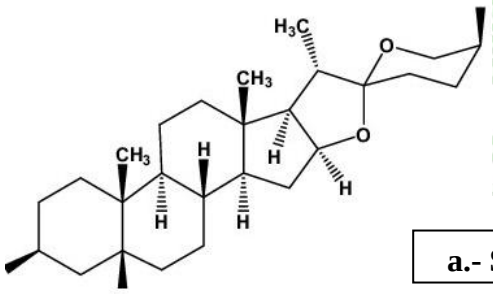
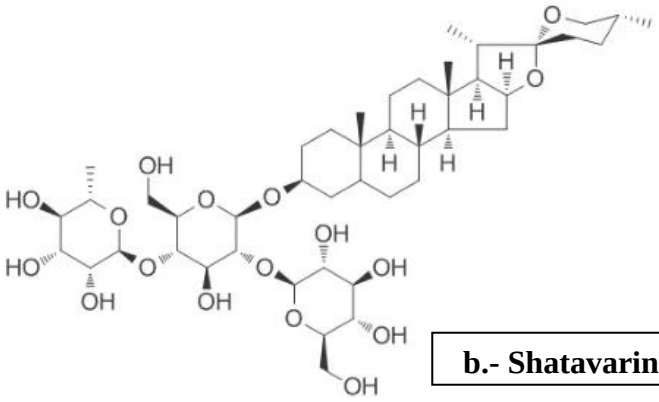
***Arnebia euchroma* (Royle):**

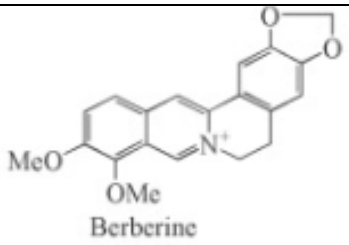


a.- Shikonin

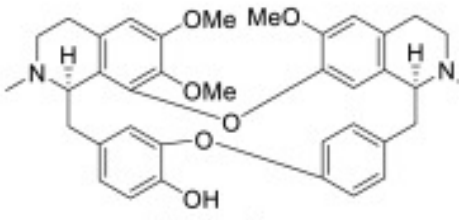
a.- C16H16O5

***Woodfordia fruticosa* (Linn) Kurz.:**  **a.- Quercetin**  **b.- ß-sitosterol**	a.- C15H10O7, b.- C29H50O
***Nyctanthes arbortristis* L.:**  **a.- α-Crocetin**  **b.- ß-sitosterol**	a.- C20H24O4, b.- C29H50O
***Taxus wallichiana* , / *Taxus baccata* L.,/ *Taxus baccata* Thunb:**  **a.- Taxol**  **b.- Paclitaxol**	a.-C47H51NO14[5,6] b.- C47H51NO14
***Curcuma domestica, / Curcuma longa*:**	a.- C21H20O6,

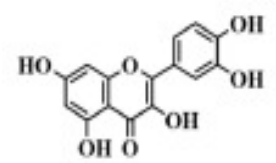
 **a.- Curcumin**  **b.- bisdemethoxycurcumin**  **c.- Demethoxycurcumin**	b.- $C_{19}H_{16}O_4$, c.- $C_{20}H_{18}O_5$
***Asparagus racemosus*:**  **a.- Shatavarin I**  **b.- Shatavarin IV**	a.- $C_{51}H_{86}O_{23}$ b.- $C_{45}H_{74}O_{17}$
***Berberis asisatica* D C. / *Berberis aristata* D C:**	a.- $C_{20}H_{18}NO_4$, c.- $C_{15}H_{10}O_7$, e.-$C_{29}H_{50}O$



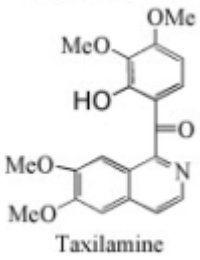
a.- Berberine



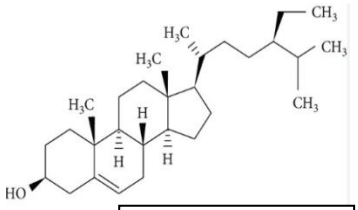
b.- Berbamine



c.- Quercetin

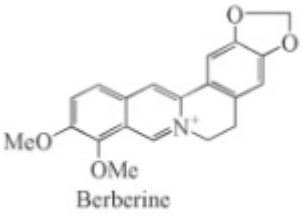


d.- Taxilamine

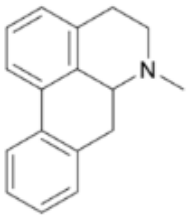


e.- β-sitosterol

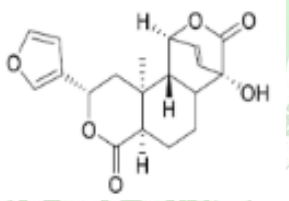
***Tinospora cordifolia* (Willd.) Miers:**



a.- Berberine



b.- Aporphine

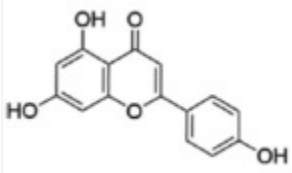


c.- Tinosporin

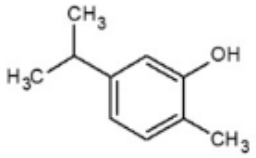
a.- C20H18NO4,

b.- C20H20O8,

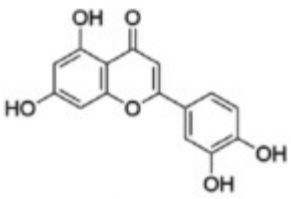
***Ocimum tanuiflorum* L.,/ *Ocimum sanctum* L.:**

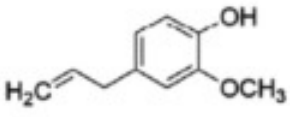


a.- Apigenin



b.- Carvacrol





a.- C15H10O5,

b.- C10H14O,

c.- C15H10O6,

d.- C10H12O2,

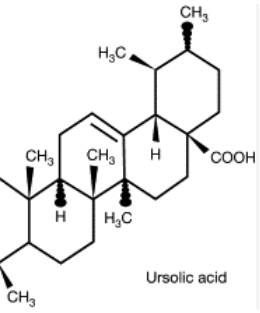
e.- C30H48O3,

f.- C47H51NO14,

g.- C18H16O8,

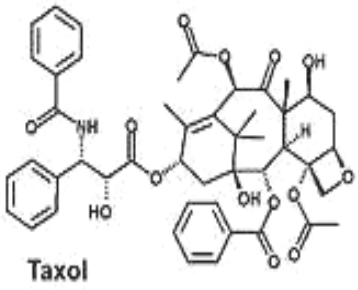
h.- C29H50O

c.- Luteolin

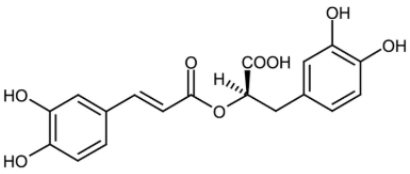


e.- Ursolic acid

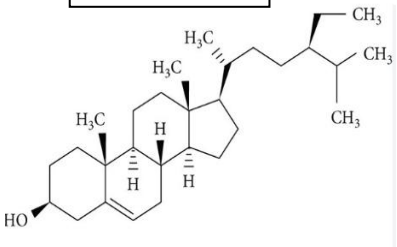
d.- Eugenol



f.- Taxol

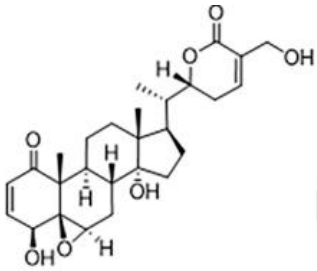


g.- Rosmarinic acid

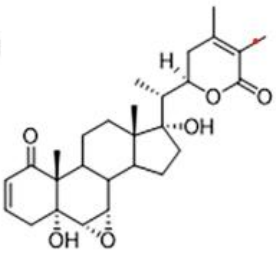


h.- Sitosterol

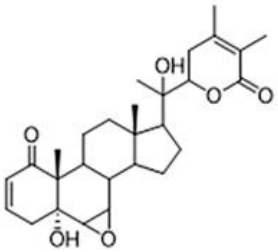
***Withania somnifera* (L.) Dunal:**



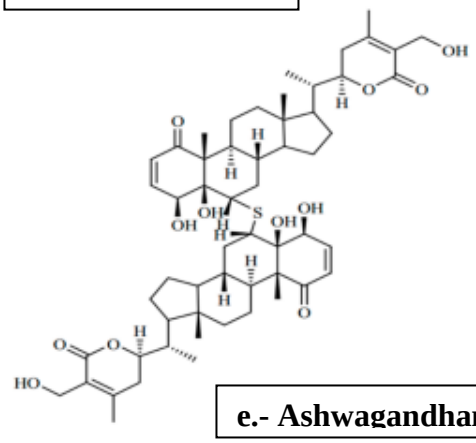
a.- Withaferin A



b.- Withanone

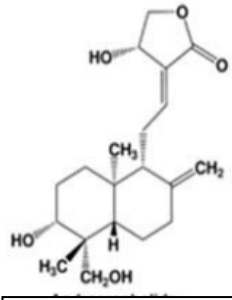
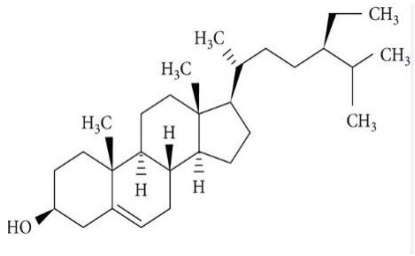
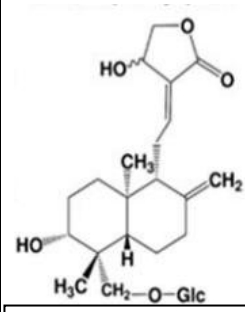
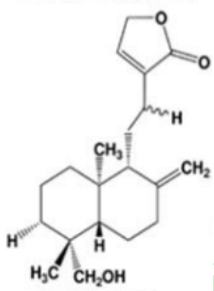
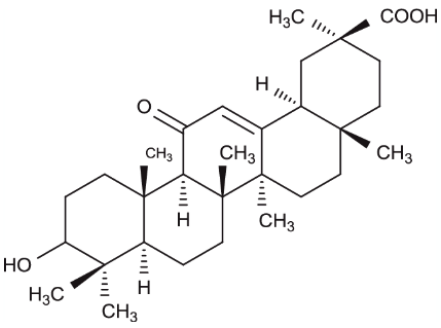
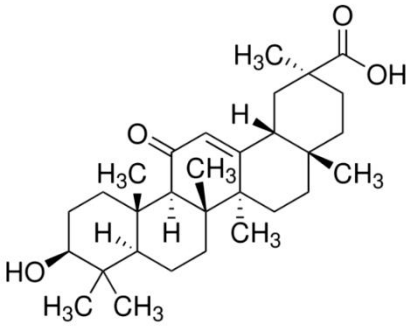
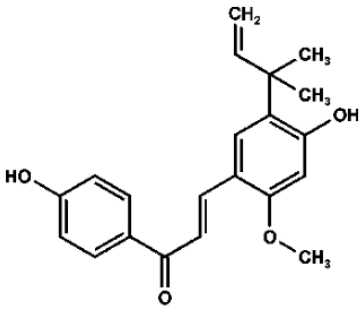


c.- Withanolide A

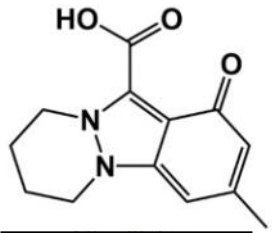


e.- Ashwagandhanolide

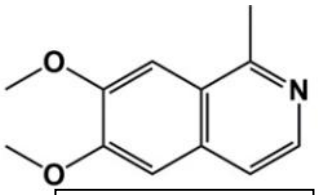
a.- C28H38O6,
b.- C28H38O6,
c.- C28H38O6,
d.- C56H78O12S

Andrographis Paniculate **(Burm.f.) Wall:**  **a.- Andrographolide**  **b.- ß-sitosterol**  **c.- Andrographiside**  **d.- Andrograpanin**	a.- C20H30O5, b.- C29H50O, c.- C26H40O10, d.- C20H30O3
Glycyrrhiza glabra **(L.):**  **a.- Glycyrrhizin**  **b.- Glaberidin**  **c.- Licochalcone A**	a.- C42H62O16, b.- C20H20O4, c.- C25H26O5

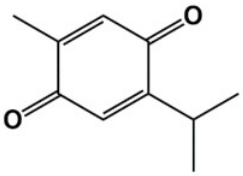
***Nigella sativa* L.:**



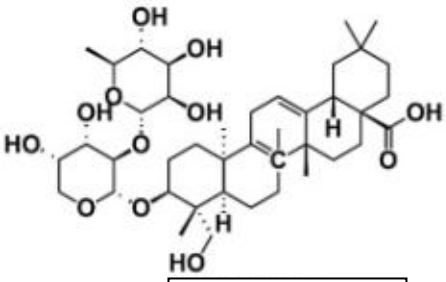
a.- Nigellicine



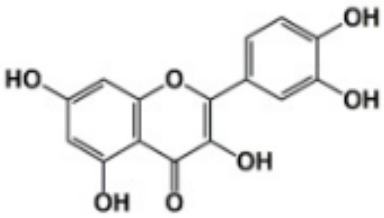
b.- Nigellimine



c.- Thymoquinone



d.- α-hederin



e.- Quercetin

a.- C13H14N2O3,
b.- C12H13NO3,
c.- C10H12O2,
d.- C41H66O12,
e.- C15H10O7

Conclusion and Future Challenges:

In this conclusion detailed analysis of different plants showed that selective herbal medicinal plants 32 species promise a huge anticancer, antitumor potential. This article comprehensively highlights the mechanism and their bioactive phytochemical constituents and its secondary metabolites, their details, explored Molecular Structure's with Molecular Formula's, its anticancer, antitumor action of some of the studies important plants. It is possible to synthetically produce these potent and effective compounds on a large scale. consequently, there is a pressing need and increasing demand to explore and manufacture novel herbal extract-based drugs derived from these herbal medicinal plants, which offer significant potential for curing and managing cancer and tumor diseases worldwide. Since there is little evidence about the helpfulness and safety of plant production compared to extracts based products commonly consumed more research can improve the appropriate use of herbal medicinal plants based drug preparations. In conclusion, the findings and explore of this comprehensive review suggest that these 32 species drugs hold promise in ensuring complete assurance and prevention, control in the treatment of dangerous and painful cancers, tumors and carcinogenic cells thereby positively impacting public health. The article presents authentic database information on certain 32 species of anticancers, antitumors medicinal plants with reported anti-cancer and anti-tumor, anticarcinogenic activities, both in *In-vitro* and *In-vivo* cell line studies. It serves as a valuable reference for researchers to further explore the potential of herbs in future studies, needed including novel drug discovery, the development of anti-cancer and anti-tumor, anticarcinogenic herbal medicinal plants extracts ingredients based various effected novel drugs formulations and development of these formulated pharmacopoeial standards, advance research on related diseases, advance toxicity studies and *In-vivo* cell lines, animal and human pharmacological and clinical trial research has essentially required for future advance research aspects and health advantages.

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Main Author ORCID ID: Dr. Pawan Kumar Sagar : 0009-0007-8695-9958

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