Holistic Healing Traditions: Ancient Insights for Modern Wellness

Hina[1], Farah Akmal[1*], Faiza Hassan [1], Nawal Altaf [1], Maria Akmal [2], Shehryar ahmed[2], Sehar Javed[1], Faiza Mohsin [3]

1Institute of Physiology and Pharmacology, University of Agriculture, Faisalabad, Pakistan

2Yusra Institute of Pharmaceutical Sciences, Rawalpindi, Pakistan

3Akhtar Saeed College of Pharmacy, Rawalpindi, Pakistan

*Corresponding author: farahakmal009@gmail.com

Abstract

Plants as a whole or their components are used for medical or spiritual purposes. For thousands of years, people have been using herbal remedies that have a divergent history and spanning nations and civilizations. *Zingiber officinale* (Ginger) and *Echinacea* have a vast history of use in Orthodox and complementary medicine, because ginger improves digestion problems, eases nausea, and fights against flu and the common cold. It belongs to the Zingiberacea family. Gingerol is an important component of ginger that provides its characteristic smell and taste. It has pharmacological effects on almost all systems of the body. That's why it is widely used now a days and since 19's for health and wellness. *Echinacea* is a genus of flowering plants renowned for its medicinal properties and cultural significance. It explores the historical use of *Echinacea* in traditional medicine, particularly by Native American communities, and examines its transition into contemporary herbal practices. The pharmacological properties of *Echinacea*, include its immunomodulatory effects, anti-inflammatory activity, and potential therapeutic applications (anxiolytic, antiviral, antimicrobial, anti-osteoporotic, and antioxidant activity). It also addresses the challenges associated with *Echinacea* research, such as variability in plant species and preparation methods, and the implications for clinical efficacy. By synthesizing current scientific evidence with traditional knowledge, this chapter offers a nuanced perspective on *Echinacea* and ginger in modern herbal medicine and its prospects in therapeutic interventions. Its popularity as a natural remedy continues, warranting ongoing investigation into its pharmacological properties and clinical applications.

Key Words: Complimentary medicine, antioxidant, antimicrobial, anti-osteoporotic, antiviral

1. INTRODUCTION

Herbs formed the foundation of almost all medical therapy until the eighteenth century, when synthetic medications were discovered. Forty percent of prescriptions still contain herbal medicines today, and due to their few adverse effects, people are showing more interest in using herbal therapies instead of artificial ones (Craig, 1999). World Health Organization (WHO) reported that treatment from herbs and they used two times more than synthetic medicines for treatment (Gesler, 1992). WHO in his new definition of traditional medicine that includes herbs demonstrates that the origin of herbal drugs is very old hundreds of years ago people used herbs when there was no emergence and prevalence of artificial medicines. There are some main differences between the herbal and synthetic therapeutic agents, herbal drugs when prepared whole plant used, and the concept of buffering applied. it is believed that by botanist whole plants is better for therapeutic purposes despite using their active chemical constituents for disease treatment. While, in modern medicines, this concept is considered not acceptable. Some experimental evidence also supports the concept of synergy. (Vickers & Zollman,1999). Herbs combination is common practice in herbal medicine systems but in synthetic medicine preparations polypharmacy is despised. The diagnostic criteria of both these drugs also contrast. People's intentions towards complementary medicines is due to a holistic approach and they believe that using artificial medicines is just wasting of time and natural resources and also it is awkward and overpriced (Winslow & Kroll, 1998).

A huge portion of the Indian rural public has no access to modern medicines, due to this fact the ayurveda system of herbal therapy is widely practiced in India (Mudur, 1997). Therapeutic agents from natural plants contemplate less toxic than agents of artificial origin proved by a report. Herbal medicines regulation needs European association rules and regulations for the marketing of herbal drugs. British naturally grown market still un registered due to 2 problems including safety and quality issues, high authorizing expenses (De Smet, 1995). Safety issues of herbal treatments; conventional home- made therapeutic particles varied in nature because of which it faces many issues like quality assurance and regulatory process. Many herbal agents contain arsenic, cyanide and corticosteroids in them that can be proved lethal for public. Moreover, some people ingest herbal drugs along with synthetic ones that are dangerous to their health. (De Smet, 1997). Current status of use of herbal drugs is still huge and its use not stop in evolving countries. Research shows that 70% France and German doctors write herbal drugs in their prescriptions. (Marray & Pizzorno, 2000). In short herbal drugs cover large part medical for treatment purposes.

2. *ZINGIBER OFFICINALE*

Zingiber (Z.) officinale is an herbaceous perennial plant belonging to the Zingiberaceae family, commonly known as ginger. It has its applications as a spice, food, flavoring, and medicinal herb. Zingiberis is a Greek word where the generic name is *Zingiber*. The dried ginger rhizomes can be palmate, branching, or uneven in configuration. Their color ranges from pale buff to light brown or dark yellow. It has roughly 2 percent essential oil, of which zingiberene is the main constituent, and zingerone is the spicy principle of the spice (Ijinu et al., 2022). Nigeria in 1927 starts its cultivation for the first time. Before being harvested, it has a short growth cycle only of eight months. It can be planted as an intercrop with other crops, such as yam, or planted alone. The early April and May rains are excellent period to grow the crop.

2.1 Morphological description

Overall appearance is a horizontal rhizome with sympodial branching. Size is 5 to 15 cm in length, 3 to 6 cm in breadth, and thickness is 0.5 to 1.5 cm. Its shape is short, flattened, oblique, obovate branches or fingers with lateral flattening on the upper side. Each branch has a flattened scar of the stem at its apex and approximately in length from 1 to 3 cm. On the surface occasionally fiber projections along a longitudinal striation pattern are present. Gingers broken surface reveals a broad stele, a well-defined endodermis, and a lot of dispersed grayish points (fibro-vascular bundles) as well as tiny yellowish points (secretion cells). The color is buff. The aromatic smell and taste are strong. (Castro et al.,2018)

2.2 **Chemical components of *Z. officinale***

It contains various compounds that have medicinal properties and used for many years. The following oils are volatile (1–2%); zingiberene, borneol, cineole, limonene, camphene, gingerol, citral, citronellal, geranial, and linalool. Zingiberene: hydrocarbon sesquiterpene (6 percent). Phenols: zingerone and gingerols Phenolic compounds Gingerol is an oily, odorous, yellow liquid that produces aliphatic aldehyde, paradols, and shogaols. Lipids (1–2%): phosphatidic acid, lecithins, free fatty acids, triglycerides. Vitamins include A, B3 (niacin), B6 (riboflavin), and C. Minerals include potassium, phosphorus, magnesium, and calcium. Proteins (2–3%) and 50% starch. The alcoholic group of the oleoresin, gingerol (5 to 8%), is responsible for the intense flavor of ginger. One to two percent of ginger's odor is due to volatile oils present in it. All parameters in this table show the dry weight values of ginger components.

Table 1. Nutritional composition of ginger **(Per 100g)**

Moisture	15.02
Protein(g)	5.087
Fat (g)	3.72
Insoluble fibre (%)	23.5
Soluble fibre (%)	25.5
Carbohydrate (g)	38.35
Vitamin C (mg)	9.33
Total carotenoids (mg)	7.9

2.3 Healing properties of *Z. officinale*

In arthritis, it lowers inflammatory eicosanoids without having any side effects of NSAIDS or other anti-inflammatory substances.

2.3.1 Cardiovascular and anti-oxidant effects

Ginger provides vital protection against heart attacks and strokes because it can aid in the anticipation of blood clotting. Research has indicated that it neutralizes the deleterious effects of the so-called "bad eicosanoids" hormones, which cause inflammation, blood clotting, and vasoconstriction. It interfered with the production of cholesterol, the formation of the heart muscle, and reduced serum cholesterol levels. The unique antioxidant property of ginger made it useful for many health- related problems. through this property ginger controls the process of aging in population. Its antioxidant potential due to its active ingredient gingerol (Dugasani et al., 2010). Lavish chemistry of many active compounds in ginger that have property to scavenge free radicals produced during various metabolic pathways of body. Some free radicals are essential for energy production if these free radicals become in extra quantity, it can cause oxidative stress that causes the DNA damage. To compensate this problem external antioxidant agents are used. Ginger's active metabolites like shogaol, paradols, gingerols, are excellent for this purpose. Antioxidant potential of ginger's proved many in vitro and in vivo diagnostic test methods.

Ginger's antioxidant property made it precious for enhancing body immunity and treatment of many chronic health issues. Active compound shagoal in ginger have antioxidant property due to alpha and beta ketones derivates present in it, with antioxidant potential it has anti-inflammatory activity as well. Research on animal models proved ginger raise amount of antioxidant enzymes and prevent from lethal illness like cancer that caused by free radicals and

uncontrolled cell division. (Tjendraputra et al., 2001). Many studies proved the antioxidant property of ginger especially fresh ginger in one study ginger ethanol extract with vitamin E used for medicine induced nephron toxicity and it proved helpful. It works through maintaining the renal defeating system. Another study shows that ginger protective property to liver which was damage by ccl and acetaminophen drugs. Gingers antioxidant property made it widely used herbal agent. (Ajith et al., 2007).

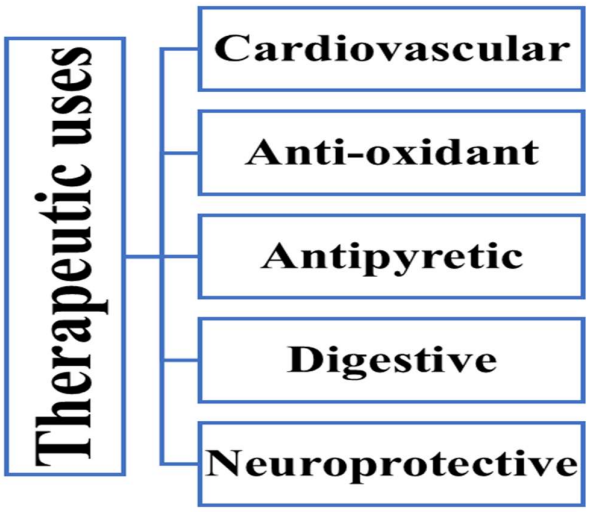

Figure 1: Therapeutic uses of *Z. officinale*

2.3.2 Fever-reducing and digestive treatment efficacy

It can help bring down a fever. Its antiviral and antibacterial characteristics contribute to a general decrease in cold frequency. The unique antioxidant, anti-inflammatory and antipyretic properties of ginger are helpful for the improvement of viral fever. All active ingredients work by inhibiting the prostaglandins and reducing inflammation in fever. Because it absorbs and neutralizes toxins in the stomach, it is frequently used to treat dyspepsia. There are many other medicinal and medical benefits of this plant, such as analgesic, antibacterial, antiviral, antidiabetic, antiemetic, antifungal, anthelmintic, anti-inflammatory, antithrombic, antitumor, antitussive, antiulcer, and gas or flatulence are some of its reported effects. Headaches, immune-stimulating, headache from migraines, nausea, morning sickness, sinus congestion, and thermoregulation, etc.

2.3.3 Holistic and traditional healing

Ginger has been used as a spice for medicinal purposes in the past 200 years in traditional Chinese medicine and Asia because of its nutritional and medicinal characteristics. Its leaves are also used for flavoring food as a yang plant, ginger is considered to lower Yin and help nourish the body. It is also used in traditional Chinese medicine. It is designated as a

spicy and hot ingredient used to treat chilly extremities, improves the body's ability to compensate the blood loss after any harsh condition and after injury, increases a weak and slow heart rate, and addresses pale skin (Mishra & Kumar, 2012). Ginger has long been employed as an antiemetic agent in East Asian traditional medicine, and this approach is reflected in the use of ginger as an herbal remedy in traditional Chinese medicine. Ginger's antiemetic properties have long been recognized in traditional medicine, particularly in Chinese and Iranian medicine (Wynn et al., 2001). it is stated that one of the most popular spices used in India is ginger which is most frequently used in traditional oriental medicine for the treatment of common cold, rheumatism and digestive problems.

As a potent antioxidant, ginger extract can eradicate illnesses caused by oxidative stress. It also has demonstrated the numerous neuroprotective benefits due to phenolic compounds and anthocyanins, such as gingerols and the sugevals, which delay aging, and Ginger is useful in cooking for numerous of dishes, including savory ones like soups, sauces, stews, savory puddings, grills, roasts, and candies, as well as sweet ones like beverages, puddings, apple pie, cakes, bread, and candies. The heat did not affect the active hypoglycemic constituent of ginger (Ojewole, 2006). As a result, consuming ginger in both raw and cooked forms in a variety of cuisines may be helpful in the diabetes control routine. Phytochemical analysis of various varieties of ginger rhizomes has indicated the presence of bioactive compounds, such as gingerols, which are antibacterial agents, and shogaols, phenylbutenoids, diarylheptanoids, flavonoids, have antioxidant properties as well that are very precious for healing (CSIR,p 2001). If the women suffering from vomiting and nausea due to pregnancy ginger was used as a safe alternative to prevent or treat this problem in the past years (Viljoen E, et al.,2014). In Iranian traditional medicine, it is used as an anti-edema drug for the treatment of atherosclerosis, gastric ulcers, respiratory disorders, gastrointestinal disorders, migraine, cholesterol; misery and vomiting (Niksokhan et al., 2015).

Ginger is a memory-boosting agent dementia is a major medical condition in elderly people research has proved that ginger has the potential to delay or improve this condition by increasing the level of nerve growth factor in the hippocampus which then activates the ERK (extracellular signal-regulating kinases) and further CAMP binding proteins activate as a result of which synaptogenesis enhance and dementia treat (Kim & Ohri, 2013). Antiepileptic characteristics of the 6-gingerol compound present in it have the potential to inhibit the synthesis of No (nitrous oxide) which then activates the guanyl cyclase enzyme which can reduce the seizure thresh hold (Ippoushi et al., 2003).

3. *Echinacea*

Echinacea belongs to the composite family of *Asteraceae*. Also known as purple coneflower. The perennial herbaceous plant *Echinacea* is primarily found in eastern North America (Kumar et al., 2011). In the United States, a liquid extract derived from the root of *Echinacea (E.)* purpurea is the most commonly used herbal product. There are three most used species of *Echinacea (E.) pallida*, *angustifolia* and *purpurea*, from which mainly used for healing purposes is *Echinacea (E.) angustifolia* (Kligler, 2003). Native Americans utilize the natural remedy *Echinacea* to treat a range of illnesses, from intestinal problems to coughs, sore gums, and snake bites. It also strengthens the human immune system. The root extract is marketed as an anti-infective agent and utilized as a blood purifier (Kumar et al., 2011). *Echinacea* is now one of the top three herbs sold in the US due to its recent popularity as a remedy for upper respiratory infections (URIs). Depending on the product, different *Echinacea* dosages are advised. A liquid extract of *E. purpurea* root is the most widely used preparation in the United States; it is often dosed as follows: 3 mL every three to four hours for the first one to two days of upper respiratory sickness, then three times daily for the next week. It seems that using *Echinacea* can have very few serious side effects and that there is little chance of significant herb-drug interactions. Even though there is insufficient data to support *Echinacea*'s effectiveness, many doctors are nonetheless at ease when their patients choose to use this incredibly safe herbal remedy (Kligler, 2003).

3.1 Cultivation and harvesting

In North-Western United States and Western Canada *Echinacea* is mostly commercially cultivated. There are reports of the highest *Echinacea* yields in California. *Echinacea* is also widely cultivated in Austria, Germany, Russia, New Zealand, Ukraine, Yugoslavia, and the Republic of South Africa (RSA), primarily *E. purpurea* or *E. pallida* (Letchamo et al., 2002) Many gardeners produce *E. purpurea* from seed, which is easily cultivated, *E. angustifolia* is known to be difficult to sprout and requires a lot of work to cultivate. Due to these challenges, *E. angustifolia* cultivation has historically and predominantly been restricted to very small-scale medicinal plant growers. Furthermore, it takes three to four years to harvest the roots of *E. angustifolia*, and during that period, the prices and market rate are subject to significant fluctuations. Several significant commercial producers have decided against planting *E. angustifolia* in the future and will instead continue to cultivate *E. purpurea*, which is far easier to cultivate, requires significantly less work, and has no economic significance as wild-harvested equivalent. The ideal time to harvest based on the growth pattern of the aerial parts and roots throughout the first 12 months of cultivation. *E.*

pallida herbage was best harvested annually during flowering, while the roots were best harvested in the third year of growth (Li, 1998).

3.2 Morphology

The Greek word "echinos," which meaning sea urchin or hedgehog, is where the name "*Echinacea*" originates. Its name is most likely derived from the prickly spikes on the flower head. A "flower" or head unit that resembles a daisy is made up of several smaller florets. The outer (ray) florets are drooping and have teeth at the edges; the interior (disc) florets end in spines. The spiky flowering heads of the *Echinacea* genus are distinguished by an elevated terminal that forms the "cone." Ray florets might be white, pink, or deep purple, whereas disc florets can be reddish-brown to green. The leaf can be lanceolate or oval. Different species are discussed below.

3.3 *Echinacea purpurea*

Cauline leaves are sessile above and petiolate below i.e. 1.5–8 cm broad and 7–20 cm long, entirely serrate, and both surfaces are rough to touch. Stems are branched, erect, stout, hirsute, or glabrous, and 60–180 cm high. Basal leaves are ovate to ovate-lanceolate, sharply or coarsely serrate, acute, and petioles up to 25 cm long. Blades are 20 cm in length and 15 cm wide, with a sudden narrowing towards the base and often cordate (Figure 2a). Dark brown exodermis made up of polygonal cells covers the root. Compared to the secondary phloem, the walls of the cortical parenchyma are thinner. The secondary xylem's vessels and fibers are arranged into cuneiform bundles that taper inward toward the root's center. Powder is long fiber bundles; a small number of isodiametric sclereids coated in phytomelanin; and vessels with pitted or reticulate secondary cavities that contain orange to brown material (Mistríková & Vaverková, 2007).

3.4 *Echinacea angustifolia*

It is one of many species in the genus with a confined growing habit, ranging up to a maximum height of 0.5 m. Leaves that are oblong-lanceolate to elliptical, dark green, tuberculate hirsute to hispid; basal leaves that are short to long-petiolate, 5–27 cm in length, 1-4 cm wide; lower cauline leaves that are petiolate, upper cauline leaves that are sessile, acute; heads that are 1.5 cm high and 1.5–2.5 cm broad. In relation to their length, which is less than or equal to the disk's width, ligules are reflexed and broad. Bright yellow is the color of pollen. *E. angustifolia* and *E. pallida* can be clearly distinguished from one another using these three basic macroscopic characteristics: the short height of the plant, the short, broad, reflexed ligule, and the yellow color of the pollen (Figure 2b). Blossoming of wild populaces of *E. angustifolia* for the most part happens in June and July. Roots contain alkyl amides and caffeic corrosive

subordinates. the expansive conveyance of this species all through the fields locale of the US might be the consequence of its ethnic utilization and human dispersal instead of that of regular methods of seed appropriation, which for this variety incorporate water and potentially birds and vertebrates. *E. angustifolia* has an undeniable possibility for the determination of cold strength since it has adjusted to northern environments. McGregor (1968) revealed that *E. angustifolia* is the main species in the family with sclereid cells in the essence, and that all half breeds with this species keep up with this character, which is possibly helpful in rearing for stem strength.

3.5 *Echinacea pallida*

Simple, seldom branched flowering stems that reach heights of up to 0.9 m.; leaves that are whole, dark green, hirsute on both sides and can range from oblong-lanceolate to long-elliptic; basal leaves measure 10–35 cm in length and 1–2.5 cm in width, with an acute petiolate base that transitions to sessile above. This species is distinguished by long, delicate ray flowers that are much longer than the disk's width, drooping or reflexed, and this species typically produces white pollen, phyllaries lanceolate to narrowly oblong, hirsute, ciliate, 0.8–1.7 cm long, 0.2–0.4 cm broad, grouped in three-four series, gradually encroaching upon the *Echinacea*'s pales (Figure 2c). The blossoming time of E. pallida follows a cline running south to north, May to July. This intriguing area of hybridization is sadly likewise a region visited by root diggers and wild seed authorities. E. pallida is the just tetraploid in the sort (n = 22) except for periodic tetraploid settlements of E. angustifolia. E. pallida is one of the three animal groups under concentrate as a restorative plant. Its foundations contain various polyacetylenes that with a couple of exemptions have not been seen as in any of different types of the family to date. McGregor (1968) found sterile triploids in this space which he described as having an ochre-like, light yellow dust tone (Mckeown, 1999).

3.6 Chemical Constituents

Many different chemical components found in *Echinacea* species contribute to their action. High molecular weight polysaccharides, polyacetylenes, highly unsaturated alkamides, and derivatives of caffeic acid are the main substances that are responsible for activity.

3.6.1 Phenolic Compounds

Echinacosides are not found in E. *pupurea* but in concentration of 0.3–1.3% and 0.4-1.7% of dry weight is present in roots of E. angustifolia and *E. pallida*. Cichoric acid is found in the flowers and roots of *E. purpurea* as the major active compound ranging from 0.6-3.1% of dry weight and barely present in *E. angustifolia* and *E. pallida*. *E. angustifolia*, *E. pallida*,

and *E. purpurea* constitute the major *flavonoid* i.e. *Rutoside* in the stems and leaves. In *E. purpurea* and *E. angustifolia* leaves flavonoid content is reported as 0.48% and 0.38% respectively.

3.6.2 Terpenoid and lipid Compounds

Essential oil concentration varies in commercial *Echinacea* species typically ranging from 0.05-0.48% for fresh materials and <0.1% to 1.25% for dried materials depending on different parts of the plant. Bornyl acetate is present in essential oils and responsible for aroma in plants. The main constituents from class of *Polyacetylenes* as trideca-1-en-3,5,7,9,10-pentayne and ponticaepoxyde are found in *E. purpurea* and *E. angustifolia*. *E. pallida* contain the major lipophilic constituents *Polyacetylenes* and *polyenes*, which have very low concentrations of amides present in roots.

3.6.3 Nitrogenous and Carbohydrates Compounds

The echinacein is the first ever isolated *alkylamide* from *Echinacea*, was reportedly found in the roots of *E. pallida* (0.001%) and *E. angustifolia* (0.01%). In the roots of *E. purpurea*, the principal lipophilic constituents are natural alkylamides (or alkamides). A heteroxylan and an arabinogalactan (Figure 3) were isolated from the aerial parts of *E. purpurea* which are immunostimulatory *polysaccharides*. From the leaves and stems of *E. purpurea* A xyloglucan was also isolated (Mistríková & Vaverková, 2006).

3.7 Pharmacological Activities of *Echinacea*

3.7.1 Anti-inflammatory and Immunomodulatory Effect

Echinacea boosts innate immunity and defense mechanisms of humans against pathogenic infections via neutrophils, NK cells (natural killer), and macrophage activation. *Echinacea* treatment results in improved motility of leukocytes, the establishment of cytokines production and the process of phagocytosis. Three pathways are liable for the immunostimulant activity of *Echinacea* species or arrangements: phagocytosis enactment, fibroblast provoked and escalated respiratory action all add to expanded leukocyte motility. A root concentrate of *E. purpurea* figured out in a water/oil (W/O) emulsion applies important calming impacts clinically, upgrades the epidermal lipid hindrance and relieves skin grumblings of patients with atopic dermatitis. Consequently, this W/O emulsion containing EP separate has been demonstrated to be an exceptionally encouraging item for the everyday clinical consideration of the skin in subjects with atopic dermatitis.

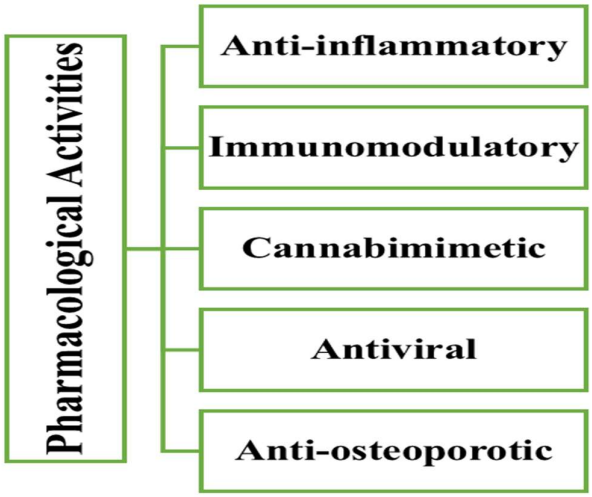

Figure 2: Pharmacological Activities of *Echinacea*

3.7.2 Cannabimimetic Activity

Aklomides in *Echinacea* have cannabimimetic action on GPCR's two specific types CB1 and CB2. The anxiolytic effect is also associated with this property. Inhibition of TNF-α and stimulated LPS, mRNA modulation via CB2 receptor is achieved after administration of *Echinacea* extract. Cannabinoid receptors have action on the periphery and CNS for the conduction of physiological activities. As opposed to the psychoactive impacts of CB1 receptor agonists, medicates that follow up on CB2 receptors show up as promising medications to battle fiery sicknesses. One review showed that *Echinacea* sp. that is expected to alkylamide subsidiaries ties significantly more emphatically to the CB2 receptor than endogenous cannabinoids. It is known that the endocannabinoid framework manages a few pieces of the insusceptible capabilities and the skin hindrance; hence, focusing on it very well might be a practical strategy for lessening the side effects of atopic dermatitis.

3.7.3 Antiviral Property

For Herpes simplex virus 1 and 2, *Echinacea* aqueous extract was effective. Plant roots having constituents like hexane and chicoric acid suppresses HSV-1, additionally, integrase enzyme of the HIV type-1 is also inhibited by chicoric acid. The avian strains (H7N7) and (H5N1), flu infections A (H1N1) and (H3N2) and the pandemic new pig beginning flu (H1N1) in direct contact with the standard product of the plant showed significant restraint. EP could impact the clinical side effects of flu by means of tweaking cytokines. There are now clinical preliminaries of SARS-CoV supporting the utilization of EP against the Covid. Arrangements

of *E. purpurea* might be proficient as precaution treatment for all CoVs as a result of their primary similarities in structure, however further investigations are required.

3.7.4 Antimicrobial Action

Echinacea extracts are selectively antibacterial depending on the type of specie. *E. purpura* can relieve the symptoms of respiratory infections because of its anti-inflammatory properties. Purple coneflower can for the most part upset proinflammatory cytokine feeling, no matter what the microbes or infection that is causing the disease. The concentrate got from the ethereal components of *E. purpura* has higher antibacterial and cell reinforcement properties than the concentrate gained by ultrasonic extraction. Anti-toxins and immunizations are presently used to regard bacterial diseases as prophylactic measures. different arrangements of EP have perceptibly shown different bacterial effects, exhibiting that EP has different antibacterial activities against every microbe. Studies propose that EP is an overall calming drug equipped for reducing a few of the side effects of respiratory contaminations.

3.7.5 Anti-osteoporotic Property

E. purpurea is potentially effective for the treatment and prevention of osteoporosis in menopause women. Echinacoside the active constituent has the property to improve bone regeneration by uplifting ratio of OPG and aid cell signaling pathways. *Echinacea* sp. in combination with Gentiana sp. is marketed as pharmaceutical preparation for prevention and treatment of osteoporosis. Echinacoside was found to counteract the damage caused by ovariectomy in an in vivo follow-up study, resulting in improved bone mineral density and biomechanical properties. Numerous osteoclast suppressants share anti-inflammatory and antioxidant properties. *Echinacea*'s antioxidant and anti-inflammatory properties have already been studied. As a result, it has also been thought to aid in osteo-clastogenesis caused by inflammation.

3.7.6 Antioxidant Property

Extra protection is given by *E. purpurea* during infection by managing normal redox reaction. The aqueous ethanolic extraction preparation of aerial parts of *E. purpurea* shows a greater concentration of bioactive components as compared to other species. Polyphenols have anticarcinogenic and photoprotective properties due to their antioxidant nature (Burlou-Nagy et al., 2022). Bioactive, natural, and non-toxic antioxidants can be found in 70% aqueous ethanolic extracts of *E.* purpurea. Polyphenols are cell reinforcements acquired from plants, which have photoprotective, anticarcinogenic and mitigating properties. Using the aerial parts,

the EP extract has all of these therapeutic properties that help the cosmeceutical effectiveness in preventing skin aging (Burlou-Nagy et al., 2022).

3.8 Holistic and Traditional Healing by *Echinacea*

For centuries *Echinacea* has been used as a traditional herbal medicine for healing. Some examples of traditional herbal healing applications are: *Echinacea* is believed to promote immunity and enhance the natural defense system of the human body. Traditionally *Echinacea* was used as an immunity booster. It has been used to relieve flu, cold, and respiratory tract infection symptoms. It reduces the duration and austerity of these ailments. Wound healing process was promoted by the topical application of *Echinacea*. It has been believed that *Echinacea* has both anti-bacterial and anti-inflammatory properties, which are helpful in the healing process. It was believed that it has been useful in relieving the pain and inflammation in various conditions like toothaches, headaches, and arthritis. Improvement of overall vitality and well-being is achieved by *Echinacea* as it has been used as a healthy tonic (Gupta et al.,2012).

4. Conclusion

Besides the various modern medicines that contain synthetic compounds available still the herbal medicines from natural plants like ginger and *Echinacea* as a whole or its extract has the various beneficial medical effects in our today life and was in ancient time. History shows that our ancestors mostly used herbal remedies for the treatment of countless illnesses. They believe and still practice it in their daily life. Health-related beneficial effects of herbal drugs cannot be denied. People all over the world accept the medical properties of ginger and attracting towards it because of fewer adverse effects. The pharmacological effects of it proved by clinical research trials. All over the world it uses as spice in food as well as flavoring purpose and as a home remedy for many diseases.

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