



Anticarcinogenic Property Of *Allium Sativum*

Dr. Sandeep Kumar Yadav

Assistant Professor- Botany

Govt. Dungar College, Bikaner (Raj.)

Abstract

The earliest cultivated plant is garlic, or *Allium sativum*. It has been utilized as an oral medicine for a very long time. It is an amazing plant with several health benefits, including antibacterial, antithrombotic, hypolipidemic, anti-arthritic, and anti-tumor action. In this review will focus on this agent's mostly preclinical usage in the prevention and treatment of cancer. Organosulfur chemicals found in garlic have been suggested to be responsible for the chemo- preventive action.

Key words- *Allium sativum*, Anticancer, Medicinal plant.

Introduction

Folk remedies as the greatest cancer therapy option-The active compounds of medicinal plants are mostly antioxidants, which contribute to their anticancer potential. The principal groups of bioactive components responsible for antioxidant activity are flavones, isoflavones, flavonoids, carotenoids, tannins, lignans, catechins, and isocatechins (Nema *et al.*, 2013). Plant-based chemicals have a high promise for cancer therapy and prevention because of their efficacy, low price, and oral bioavailability. A few plant-based chemicals, however, have certain adverse effects. These adverse effects are manageable by dose-dependent dosing and usage, and they are not in any way undesirable for phytochemical study. Existing expensive traditional cancer treatments, such as chemotherapy and radiation, have a multitude of adverse effects, including myelosuppression and neurological, cardiovascular, pulmonary, and renal damage, which have a substantial effect on life quality (Alonso-Castro *et al.*, 2011). As a result, there is a need to create therapy alternatives that include more strong and far less toxic anticancer medications than are now available. According to market figures, around 60% of plant-based anticancer medicines are available. Several nations throughout the world use medicinal plants as an alternative to cancer therapy. A variety of plants have been screened for cytotoxicity in order to link their anticancer activities and broaden their potential for medication development (Akter *et al.*, 2014). Because of the potential benefits of plant-based medications for cancer therapy, their usage is increasing from 10% to 40%

worldwide; notably, it has reached 50% on the Asian continent. Natural plant derivatives' anticancer properties necessitate rigorous scientific testing and clinical trials in order to generate better medications.

Allium sativum- characteristics and medicinal properties

Allium sativum, also known as garlic, is a member of the Liliaceae (Alliaceae) family. It ranks among the most studied and popular herbal items on the market. For ages, it was utilized as a traditional cure for a wide range of health problems. It is also frequently used as a spice and an aphrodisiac in meals. Garlic's qualities are the consequence of a mixture of physiologically active chemicals that work together to provide its therapeutic effect.

Garlic's chemicals interact with one another in a way that allows them to have varied effects. Garlic's active constituents include enzymes (for example, alliinase), sulfur-containing compounds like alliin, and chemicals created proteolytic enzymes from alliin (e.g. allicin). Garlic products offered for therapeutic purposes vary significantly.

The amount of Allicin (the major active element) as well as the sources of garlic's characteristic odour are affected by the technique of processing. Allicin is highly unstable and rapidly degrades into other compounds. It has been demonstrated that products derived without allicin, including such aged garlic extract (AGE), have such a clear and substantial biological effect on immune development and enhancement, treatment of cardiovascular disorders, cancer, and liver, among other areas. Certain items are coated (enteric coated) to protect them from stomach acids.

Garlic has been studied clinically for a variety of purposes, including the cure for hypertension, high cholesterol, diabetes, rheumatoid arthritis, colds, and the prevention of atherosclerosis and tumor growth. Numerous published studies suggest that garlic may have antimicrobial, anti-hypertensive, and anti-thrombotic characteristics.

It is rich in Sulphur compounds, enzymes, 17 amino acids, and minerals such as selenium. Garlic includes a lot of accessible selenium, which is an antioxidant and may help with cancer prevention (Ip and Lisk, 1996). It is prescribed for earaches, deafness, leprosy, severe diarrhea, fever, and stomachaches. One of its primary therapeutic benefits is the treatment of cardiovascular disease by decreasing blood pressure and cholesterol. It also has antibacterial and chemo preventive properties. The most prominent anticancer ingredient of old garlic extract is S-Allylmercaptocysteine. The antiproliferative activity of thioallyl compounds has been researched in a variety of cell lines, and the results reveal that these compounds are sensitive to breast and prostate cell cultures (Sigounas et al., 1997). Ogar *et al* 2022 studied the Influence of ethanolic extract of *Allium sativum* on TP53 gene and also determine its hepatocellular anticancer potential in male albino rats. Many garlic-derived compounds, phytochemicals, and nanoformulations have been examined by Abdur *et al* 2022, and analysed that for their effected to cure on hepatic, mouth, prostate, breast, gastric, colon, cutaneous, and pancreatic cancers. Our research revealed that the bioactive compounds in garlic prevent cancer in its different stages.

Discussion

Medicinal plants have made significant contributions to human health. The huge potential of plant-based pharmaceuticals in the treatment of a wide range of ailments has long contributed to the plant community's importance as a key research and development area. Chemotherapy is an essential treatment option in contemporary cancer treatment, and plant-derived chemotherapeutic drugs have made significant contributions to the advancement of oncology/chemotherapy development and clinical practice. The urge to treat cancer and develop new ways to battle it has increased the demand for anticancer chemicals found in plants. Plant extracts and their bioactive components, which are accountable for anticancer action, must be examined for useful information. Interdisciplinary research methodology advancements hold significant potential for plant-derived medication discovery and development. This review contains *Allium sativum* (medicinal plant) that have chemical components with anticancer effects.

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