

Chapter 6

Phytochemical and Biological Properties of Anticancer Medicinal Plants From India

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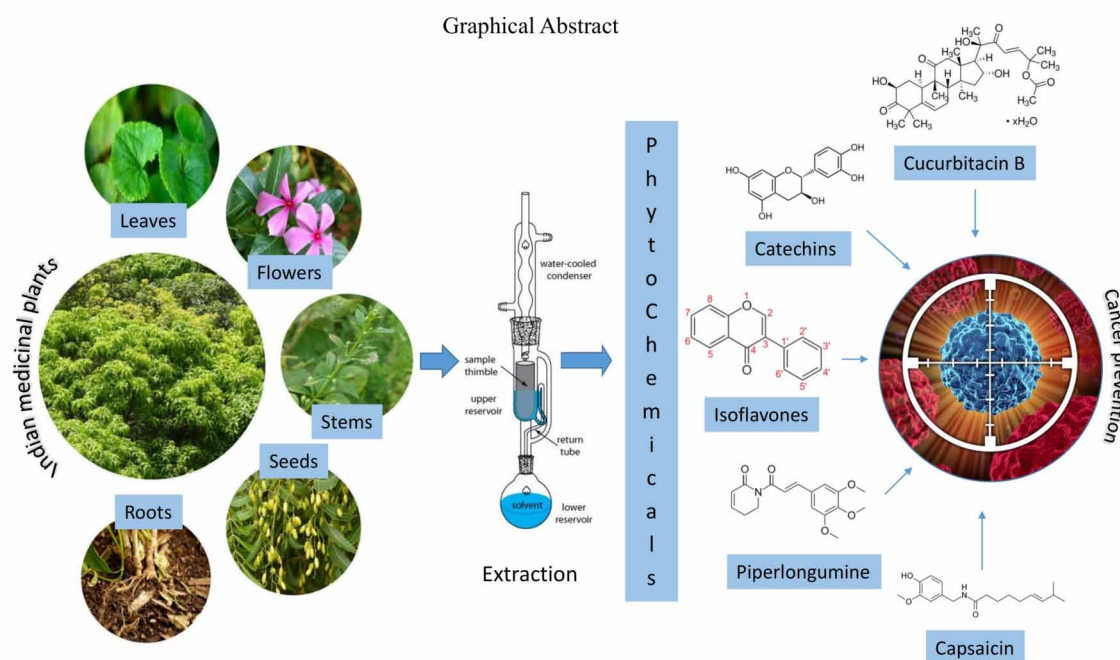
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ABSTRACT

One of the most dreadful medical conditions in the entire world is cancer, which is the second leading cause of mortality globally. The rising threat of cancer that are resistant to treatment highlights the urgent need for the development of more potent anticancer medicines because of the drawbacks and expense of standard therapy. Alternatives to contemporary cancer treatments, like herbal medicine are fairly affordable, and few plant-based medications are used to treat it. In-vitro and in-vivo studies are conducted on the phytochemicals to determine how they work to prevent cancer. This chapter provides an overview of prospective outcomes for anticancer chemicals obtained from plants in the Indian region. Many research has confirmed the anticancer efficiency of the Phytochemicals that are extracted from plants and demonstrated that these have an essential role in battling various cancer cell lines such as breast, stomach, oral, colon, lung, hepatic, cervical, and blood cancer cell lines.

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Figure 1. Indian herbs and the anticancer properties



INTRODUCTION

Cancer stands as a prominent global menace, claiming countless lives. In the year 2020, the global cancer statistics painted a grim picture, with a staggering 19.3 million new cancer cases and a heartbreaking 10 million cancer-related deaths. Predictions for the future are equally unsettling, suggesting that the worldwide cancer burden could skyrocket by an alarming 47% to reach 28.4 million cases by 2040 (Sung et al., 2021). India placed in third position after China and the USA (Ferlay et al., 2018). The ICMR (Indian Council of Medical Research) and the NCDIR (National Centre for Disease Informatics & Research) release the NCRP (National Cancer Registry Programme) Report on an annual basis. This report aims to provide estimates of the new cancer cases and fatalities in India. Using the incidence data gathered, it also gathers the most recent statistics on population-based cancer incidence and outcomes. 13.9 lakh new cases of cancer are anticipated in India year 2020. It projects a 12% rise in cancer occurrences nationwide by 2025 (Mathur et al., 2020).

Satishkumar et al. examined and presented the expected number of cancer cases, anatomical areas, cumulative risk and crude incidence rate for cancer in India for the year 2022 from the NCRP report (Sathishkumar et al., 2023). In India, the anticipated total number of cancer cases and crude incidence rate for 2022 was 14,61,427 (100.4 per 100,000), with more female cases (7,49,251; 105.4 per 100,000) than male cases (7,12,176; 95.6 per 100,000). The highest rates of cancer in both men and women were seen in the intestinal tract system (2,88,054), respiratory system (1,43,062), vaginal tract (2,18,319), mouth and throat (1,98,438), and breast (2,21,757) (Figure 2).

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