

## Plant based natural products and herbal extracts as promising apoptotic agents: Their implications for cancer prevention and treatment

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Natural products continue to impress drug discovery scientists by their amazing bioactivity profiles coupled with their highly complex molecular architecture. These compounds have been the principal source of anticancer chemotherapeutic agents over the last few decades. About 60-70% of the anticancer drugs which are clinically used have been either pure natural products, their synthetic or semi-synthetic derivatives. Among natural products, plant-derived compounds play a pivotal role in anticancer drug discovery programme. These plant-derived compounds include vincristine, vinblastine, camptothecin and its derivatives, etoposide, topotecan, irinotecan, paclitaxel etc. Various novel and promising anticancer drugs are currently under various phases of clinical trials. Natural products have seen many ups and downs viz-a-viz their role in cancer chemotherapy. During 90<sup>ts</sup> these compounds saw a dip in the top-notch pharmaceutical companies mainly because of the high throughput screening programmes which involve targeted therapies using small molecules. However, barring few cancers, these therapies were confronted with the ineffectiveness with respect to several solid tumors. This has hugely revitalized their importance in anticancer drug discovery. The current review focuses on the plant-based natural compounds and herbal extracts which specifically induce anticancer effects via the induction of apoptosis. This review also discusses their mode of action along with their botanical origin.