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Bioactive natural products in cancer prevention and therapy: Progress and promise

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ABSTRACT

Natural products represent a rich source for the discovery and development of cancer preventive and anticancer drugs. Nearly, 80% of all drugs approved by the United States Food and Drug Administration during the last three decades for cancer therapy are either natural products *per se* or are based thereon, or mimicked natural products in one form or another. With the advent and refinement of new technologies, such as genetic techniques for production of secondary plant metabolites, combinatorial synthesis and high-throughput screening, it is expected that novel compounds from natural sources, including medicinal plants, would be identified and developed as safe and effective chemopreventive and anticancer drugs. Numerous bioactive natural compounds have been shown to be useful in prevention and therapy of cancer by targeting various signaling molecules and pathways. Extensive literature underscores the anticancer and chemopreventive activity of a plethora of naturally occurring agents, including phytochemicals. Several of these molecules have been tested in clinical trials and some of them have shown promise in combination therapy when administered along with standard chemotherapeutic agents. Thus, accelerated chemopreventive and chemotherapeutic drug development from natural sources is of great importance. In this special theme issue,

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