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TITLE

Indian Medicinal Plants and their Phytochemicals as an Anticancer and Antigout Agent

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India is very good source of natural drugs; having dynamic biodiversity among the plant species. Development of novel plant-derived products and their analogs for anticancer and antigout agent depending up on the activity based bioactivity and mechanism of action. Activity directed isolation and characterization coupled with rational drug design based modification. Also, the anticancer and antigout activity can be enhanced based on active pharmacophore models; drug resistance and solubility and metabolic limitations can be overcome by appropriate molecular modifications. Preclinical screening for in vitro using human cell line panels and selected in vivo xenograft testing then identifies the most promising drug development targets. Several potential lead molecules may be isolated from plants and further modified by using in silico modeling to yield better analogues for activity, toxicity or solubility. This study focusing on major phytochemicals as an important anticancer and antigout leads, which are basically flavonoid derivatives, quinone derivatives, colchicine derivatives catechol, etc. In cancer and gout drug discovery program, a paradigm based on ethnobotanical and ethnopharmacological data would be more economical and beneficial for identifying potential anticancer antigout molecules than mass screening of plant species. Since ancient times, we have relied on nature for our basic needs food, protection, clothing, transport and pharmaceuticals. The medical armamentarium includes many examples of important agents that were first isolated from plants and microorganisms and that are now in routine clinical use. In the field of anticancer therapy, urolithiasis and kidney stone etc, many active cytotoxic agents were originally developed from natural sources. This study provides the basis for further investigation on Indian plants to isolate and characterize the active constituents and drug developments against the disease like cancer and gout after successful clinical trials.