

Oncology and Phytomedicine in the Advancement of Cancer Therapy for Better Patient Care

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Abstract : Traditional medicines use medicinal plants as a source of ingredients, and many modern medications are indirectly derived from plants. Consumers in affluent nations are growing disenchanted with contemporary healthcare and looking for alternatives. Oxidative stress is the primary cause of multiple diseases, and exogenous antioxidant supplementation or strengthening the body's endogenous antioxidant defenses are potential ways to counteract the negative effects of oxidative damage. Plants can biosynthesize non-enzymatic antioxidants that can reduce ROS-induced oxidative damage. Aging often aids the propagation and development of carcinogenesis, and older animals and older people exhibit increased vulnerability to tumor promoters. Cancer is a major public health issue, with several anti-cancer medications in clinical use. Potential drugs such as flavopiridol, roscovitine, combretastatin A-4, betulinic acid, and silvestrol are in the clinical or preclinical stages of research. Methodology: Microbial Growth media, Dimethyl sulfoxide (DMSO), methanol, ethyl acetate, and n-hexane were obtained from Himedia Labs, Mumbai, India. plant were collected from the Herbal Garden of Shoolini University campus, Solan, India (Latitude - 30.8644° N and longitude - 77.1184° E). The identity was confirmed by Dr. Y.S. Parmar University of Horticulture and Forestry, Nauni, Solan (H.P.), India, and documented in Voucher specimens - UHF- Herbarium no. 13784; vide book no. 3818 Receipt No. 086. The plant materials were washed with tap water, and 0.1% mercury chloride for 2 minutes, rinsed with distilled water, air dried, and kept in a hot air oven at 40°C on blotting paper until all the water evaporated and became well dried for grinding. After drying, the plant materials were grounded using a mixer grinder into fine powder transferred into airtight containers with proper labeling, and stored at 4°C for future use (Horablaga et al., 2023). The extraction process was done according to Altemimi et al., 2017. The 5g powder was mixed with 15 ml of the respective solvents (n-hexane, ethyl acetate, and methanol), and kept for 4-5 days on the platform shaker. The solvents used are based on their increasing polarity index. Then the extract was centrifuged at 10,000rpm for 5 minutes and filtered using No.1 Whatman filter paper.

Keywords : cancer, phytomedicine, medicinal plants, oncology

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