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A systematic review of medicinal plants with anti-cancer activity

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According to growing incidence of cancer, it seems necessary to develop more novel approaches with higher efficiency so that the disease intensity could be declined. This article is a review of Iran's medicinal plants which have been already examined for anti-cancer effects and also seeks to offer their main compounds and mechanisms of anticancer activities. In order to gather information the words such as medicinal plants, cytotoxicity, anti-cancer, cell line and plant compounds were searched in online databases such as Web of Science, Scopus, Pubmed, ISC and SID. In the studies plants such as *Ferula assa-foetida*, *Thymus vulgaris*, *Thymbra spicata*, *Taverniera sparteae*, *Peganum harmala*, *Viola tricolor*, *Achillea wilhelmsii*, *Mentha pulegium*, *Ammi visnaga*, *Camellia sinensis*, *Avicennia marina*, *Silybum marianum*, *Artemisia absinthium L.*, *Curcuma longa*, *Crocus sativus L.*, *Zingiber officinale*, *Olea europaea*, *Taxus baccata L.*, *Nigella sativa*, *Allium sativum L.*, *Lepidium sativum*, *Trigonella foenum-graceum L.*, *Glycyrrhiza glabra*, *Physalis alkekengi*, *Lagenaria siceraria Standl*, *Ferula gummosa*, *Boswellia serrata*, *Urtica dioica L.*, *Ammi majus*, *Rosa damascene*, *Astragalus cystosus*, *Myrtus communis*, *Vinca rosea*, *Citrullus colocynthis*, *Polygonum aviculare* and *Astrouardacus orientalis* have been already examined for anticancer effects. Anti-oxidant activity, cell cycle arrest, induction of apoptosis and inhibition of angiogenesis were the most mechanisms this plants for its anticancer activities. Vinblastine, vincristine, curcumin, myrtucommulone, taxol, boswellic acids, and umbelliprenin, quercetin, catechin, curcurbitacin, kaempferol, thymol, carvacrol, 1,8-cineole, α -pinene, myrecene, β -sitosterol were some compounds with reported anti-cancer effects in most works. The present study indicated that the Iran's medicinal plants contain the compounds engaging specifically in fighting cancer cells and inhibiting growth and destruction of tumor cells only by affecting cancer cells.

Biography

Majid Asadi-Samani is working as a Researcher at the Cellular and Molecular Research Center and the Medical Plants Research Center of Shahrekord University of Medical Sciences. He is the Executive Manager of some reputed international journals and the Manager of Nahalostar Charmahal Co. which is a scientific base company. He is also an Associate Member of Iranian Society of Biology, the Iranian Society of Plant Physiology and the Iranian Medicinal Plants Society. He has published more than 30 scientific papers in peer review international journals and presented his works in more than 10 national and international congresses. He has one patent on regeneration of *Kelussia odoratissima* Mozaff. He studied the effects of magnetic fields and other environmental factors on germination and enzyme activities of medicinal plants and is curious to understand how medicinal plants could treat the diseases and help human, to discover new drugs. His current focus is evaluating the pharmaceutical effects of medicinal plant on human diseases and treatment of cancer by medicinal plants and their phytochemicals.

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