World Academy of Science, Engineering and Technology
International Journal of Medical and Health Sciences
Vol:18, No:04, 2024

Emerging Therapeutic Approach with Dandelion Phytochemicals in Breast Cancer Treatment

Authors : Angel Champion, Sadia Kanwal, Rafat Siddiqui

Abstract : Harnessing phytochemicals from plant sources presents a novel opportunity to prevent or treat malignant diseases, including breast cancer. Chemotherapy lacks precision in targeting cancerous cells while sparing normal cells, but a phytopharmaceutical approach may offer a solution. Dandelion, a common weed plant, is rich in phytochemicals and provides a safer, more cost-effective alternative with lower toxicity than traditional pharmaceuticals for conditions such as breast cancer. In this study, an in-vitro experiment will be conducted using the ethanol extract of Dandelion on triple-negative MDA-231 breast cancer cell lines. The polyphenolic analysis revealed that the Dandelion extract, particularly from the root and leaf (both cut and sifted), had the most potent antioxidant properties and exhibited the most potent antioxidation activity from the powdered leaf extract. The extract exhibits prospective promising effects for inducing cell proliferation and apoptosis in breast cancer cells, highlighting its potential for targeted therapeutic interventions. Standardizing methods for Dandelion use is crucial for future clinical applications in cancer treatment. Combining plant-derived compounds with cancer nanotechnology holds the potential for effective strategies in battling malignant diseases. Utilizing liposomes as carriers for phytoconstituent anti-cancer agents offers improved solubility, bioavailability, immunoregulatory effects, advancing anticancer immune function, and reducing toxicity. This integrated approach of natural products and nanotechnology has significant potential to revolutionize healthcare globally, especially in underserved communities where herbal medicine is prevalent.

Keywords : apoptosis, antioxidant activity, cancer nanotechnology, phytopharmaceutical
Conference Title : ICO 2024 : International Conference on Oncology
Conference Location : Cape Town, South Africa
Conference Dates : April 11-12, 2024