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Comparative review on the use of biotherapy and plant based therapy on cancer cell lines

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The pharmacological and/or biological activity of organic molecules isolated from plants or microbes can be used to treat human diseases. In this review, the anticancer effects of plant based and biotherapy has been compared. Traditional medicine systems in most countries were formed on plant-based natural products. The compound 1-(2,6-dihydroxy-4-*methoxyphenyl*)-2-(4-hydroxyphenyl) ethanone (DMHE) isolated from the ethyl acetate fraction of the Phaleria macrocarpa (Scheff.) Boerl fruit was found to cause a significant decrease in cell proliferation in HT-29 cells in a dose- and time-dependent manner after a 72 h treatment primarily due to necrosis. In another studies the potential anti-cancer activity of the Saussurea involucrata extract against hepatic cancer in vitro and its partial molecular mechanisms of activities were investigated. The results demonstrated that the extract has strong anti-cancer activity against liver cancer without significant effect on normal cells. However, probiotics known to boost human immune system are now been studied for anticancer properties through apoptosis. Interested to note is that probiotics found in human breast milk (*E. faecalis and S. hominis*) were able to cause significant decrease in MCF-7 (up to 33.29%) cell proliferation with no significant difference between the treated and the untreated MCF-10A cell line (>90% viability). Similarly, *Lactococcus* lactis spp lactis induced a strong anti-proliferative activity through S-phase accumulation in SNUC2A cells. Since apoptosis mechanism of cancer cell death is vital in chemotherapy-induced tumor cell death, biotherapy may be more comfortable supplement and future alternative to the current chemotherapy compared to the plant base therapies.

Biography

Zubaida Hassan has completed her MSc in the year 2015 from Universiti Putra Malaysia. She has published two papers in reputed journals and attended conferences and workshops. She is now an Academic Staff of the Department of Microbiology, School of Pure and Applied Sciences, Modibbo Adama University of Technology, Yola, Nigeria.

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