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Study of the plant derivatives flavonoid in cancer treatment: Role of pinostrobin

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Cancer is the second highest leading cause of death following the cardiovascular diseases. Despite rigorous efforts since long, development of a cost effective cancer therapeutic with minimal side effects has continued to be a major challenge. Considering the use of medicinal plants in traditional medicine, plant derived molecules with potential anti-cancer activity offer an alternative therapeutics that are likely to have minimal adverse effect. We evaluated anti-cancer efficacy of a naturally occurring flavonoid pinostrobin, widely found in a number of fruits and vegetables. Flavonoids are generally present in human diets as secondary metabolites and well known for their pharmacological activities. The outcomes of present study highlight the dose dependent cytotoxic potential of pinostrobin against the cervical cancer cells (HeLa, CaSki and SiHa) without any cytotoxicity in non cancerous cells. Morphological examination and live cell imaging indicated that pinostrobin was capabale of inducing apoptosis in cancer cells. Therefore, we performed the cellular assay to assess the apoptosis in cancerous cells with the help of their respective markers and found altered mitochondrial membrane potential, elevated ROS generation and fragmentation of DNA. Drug quality determination of pinostrobin revealed that it quickly penetrated the cell and had long retention time. Thus, pinostrobin exhibited growth inhibitory action and apoptosis inducing effect against cervical cancer *in vitro* and can be explored as a promising therapeutic in combination therapy.

Biography

Alka Jadaun is pursuing her PhD from School of Biotechnology, Jawaharlal Nehru University, India. She has published some papers in reputed journals and presently, working as Senior Research Fellow (SRF) in School of Biotechnology, Jawaharlal Nehru University, India.

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