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Green Anticancer Activity of *Polyalthia longifolia*: From Ancient Idea to Cost-Effective Medicinal Plant-Based Therapeutic Product

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Medicinal plants always get greatest attention due to their good pharmacological activities such anticancer activity. A number of herbal preparations either in wholesome or in their components have been shown to exhibit good anticancer activity. Hence, the current study was reported the anticancer activity of *Polyalthia longifolia*. The MTT assay results disclosed a lowest IC_{50} value of 14.181 $\mu\text{g/ml}$ as *P. longifolia* leaf extract debilitate HeLa cells. The cytological observations underlined formation of apoptotic bodies, which are correlating within Light Microscope, Scanning Electron Microscope, Transmission Electron Microscope and HoloMonitor images. The Annexin V/PI flow cytometry analysis was showed that *P. longifolia* leaf induces apoptosis whereas the cell cycle analysis demonstrated the accumulation of cells at sub G0/G1, G0/G1 and G2/M phases with an increase in mitochondria membrane potential depolarisation. Subsequently, the radioprotective effect of *P. longifolia* was studied in mice. *P. longifolia* treatment rendered remarkable improvement in mice survival (27 days) compared to 100% mortality in irradiated groups mice within 14 days. We also firstly reported the protective effect of *P. longifolia* leaf on DNA damage-induced by hydroxyl radicals. Therefore, we have reported the potential uses of *P. longifolia* leaf as green therapeutic approaches, as well as radioprotectors against the adverse effects of irradiation on healthy cells during radiotherapy as future prospects. *P. longifolia* leaf preparation also can be consumed in a range of methods such as by drinking as teas, capsules and tinctures as a supplement or functional food by the patient as cost-effective medicinal plant-based therapeutics.

Biography:

Currently, Associate Professor Dr. Sreenivasan Sasidharan serves as the Deputy Director in Institute for Research in Molecular Medicine. He has over 165 publications with total impact factor of 185 (With more than 2300 citation in Scopus), multiple book chapters, as well as Keynote, Invited Speaker and Chair of International & National Congresses. Has been serving as an Editorial Board Member and Reviewer of international journals and grants. He reviewed more than 250 manuscripts for international journal. His research interests include medicinal plants and their role in Health and Disease Management. He also graduated more than 15 post graduate student as main supervisor.