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Rhinacanthus nasutus evokes differential response against etoposide induced apoptosis in primary cultured cells and cell line

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Cancer is a multifactorial heterogeneous disease characterized by the multistage nature of pathogenesis finally leads to death. Apoptosis, a physiological mechanism that eliminates excessive, damaged or unwanted cells, and is a highly regulated pathway, important for maintaining homeostasis in multicellular organisms. The discovery of apoptosis has contributed much to our understanding of the mechanism of cell death, in both normal and neoplastic cells, and it has been led to changes in the way that chemotherapy has been viewed. Chemotherapeutic treatment strategies attempt directly to inhibit the proliferation of cancer cells or selectively remove transformed cells by inducing apoptosis or eliminating the cause of growth advantage. Natural products are the most constituently successful source of drug leads that continue to provide structural diversity. The present study of checking the cellular events of apoptosis with the treatment of *Rhinacanthus nasutus* plant extract on primary cultured cells (embryonic cells and lymphocytes) and Hep2 cells (cell line), in which oxidative stress was induced by etoposide, was done keeping the ethics concerning animal suffering in mind. The results revealed that, in all the cell types studied, oxidative stress imposed by etoposide caused a steep increase in the number of cells that commit to apoptosis. *Rhinacanthus nasutus* leaf extract administration showed no cytotoxicity in the normal cells (primary cultured cells), but significant cytotoxicity towards Hep2 cells. Additionally, it was also noticeable that *Rhinacanthus nasutus* leaf extract protected normal cells from the death induced by etoposide, while no such response was exerted against the cancer cells treated with etoposide.

Biography

Nirmaladevi has completed her Ph.D at the age of 32 years from Avinashilingam University, Coimbatore, India. She is serving in the same University as Assistant Professor in Biochemistry. She has published 10 papers in reputed journals and undertook research training from reputed institues in India like National institute of Immunology, Indian Institute of Science, Bangalore and recently attended a workshop on Animal Tissue Culture at Pune, India. Her research interest lies in the area of cell culture and guiding M.Sc, M.Phil research scholars in the same area. Any opportunity given to attend this conference would be highly beneficial to enrich her career in this area of research.