



Apoptosis and Anti-Tumor Studies of Premna Coriacea in Breast Cancer Cell Lines and in Vivo Animal Models

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Abstract:

Premna is a genus of about 200 species including some Large climbers ; Scandent shrubs, 4 - 5 m high. Stems with pale ashy brown bark, belongs to the family Verbenaceae. Antiproliferative, apoptosis induction studies, anti-inflammatory studies and in vivo anticancer studies has been studied by various methods and models with PCEE. The Premna coriacea ethyl acetate extracts (PCEE) showed potential cytotoxicity against MCF-7 cell lines. The results showed that MCF-7 cell proliferation was significantly inhibited by PCEE with the IC50 value 560 µg/ml. The standard drug doxorubicin with the IC50 value of 2.38 µg/ml and PCEE with mild cytotoxic with the cell death of 56.3% against MCF-7 cell lines. The effect PCEE on cell cycle was studied using flow cytometry in MCF-7 cell lines. The percentage of cell in various phases like G0/G1,S and G2/M phase of the cell were calculated. The results shows that the PCEE inhibited cells in the G0/G1 phase in the MCF-7 cells. Doxorubicin arrested the G2/M phase of the cell in MCF-7 cells. Apoptotic changes in cells may be studied using AO/EB fluorescent staining. The apoptotic effect of PCEE was studied in MCF-7 cell lines and the percentage of apoptotic cells were calculated. The levels of p-53, phospho-p53, Bad, phospho-Bad ,cleaved caspase 3 and cleaved PARP in MCF-7 cell lines were studied by ELISA method. There was a slight decrease in p53 in doxorubicin. Lifespan of ascites tumour bearing animals induced by EAC cells was found to be increased by PCEE in 200mg/kg and 400mg/kg treatment. PCEE 400mg/kg b.wt group the lifespan was increased by 42.86% and PCEE 200mg/kg group the increase was 13.34%. The survival rate of solid tumour bearing animals was also significantly increased by PCEE treatment. Similar findings was reported in DLA solid tumor model. Similar findings was reported in DLA solid tumor model. Therefore, the effect of PCEE



on the inhibition of IL-1 β and TNF α was investigated.

Biography:

Dr.Karthikeyan M. is an Associate Professor at Department of Pharmacology, Ashokrao Mane College of Pharmacy, Kolhapur ,Maharashtra. His area of interest is in drug discovery from natural products for cardiovascular diseases, inflammatory diseases and cancer. He served as joint secretary for the Pharmaceutical and Biological Society, India. He is a member of the Indian Hospital Pharmacist Association (IHPA), World Association of Medical Editors (WAME), USA, Asian Pacific Association of Medical Editors (APAME) and Science Advisory Board (SAB). He has worked as editors for various national and International Journals. He has published more than 40 research and review articles in national and International Journals. He has published book chapters. He has presented papers in various national conferences. He had received grants from ICMR and Kerala State Council for Science, technology and environment.

Publication of speakers:

1. Karthikeyan M, Deepa MK, Balasubramanian T, Monika Reji, Satish RC .Modern applications of cryosurgery in oncology. Global Journal of Cancer Therapy. 2020;6 (1), 10-1.
2. M Karthikeyan, MK Deepa, E Bassim, CS Rahna, KRS Raj. Investigation of Kinetic Drug Release Characteristics and In Vitro Evaluation of Sustained-Release Matrix Tablets of a Selective COX-2 Inhibitor for Rheumatic Diseases. Journal of Pharmaceutical Innovation, 1-7. Online first Published on 8th June 2020. (Impact factor: 1.452).

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