

SYNERGETIC AND ANTIGONISTIC EFFECT OF ENRICHED PAPAYA LEAF EXTRACT AGAINST CISPLATINS INDUCED IN MCF-7 CANCER CELL LINES

Surekha Agraharam¹, Aruna Kumari Mullangi², Obaiah Jamakala³, Kutagolla Peera^{4*}

¹ Lecturer in Botany, Department of Botany, Sri Venkateswara Arts College, Tirupati-517502, Andhra Pradesh, India.

² Lecturer in Botany, Department of Botany, Government Degree College, Nagari, Chittoor Dist. Andhra Pradesh, India.

³ Department of Zoology, Sri Venkateswara University, Tirupati-517502, Andhra Pradesh, India.

⁴ Department of Zoology & DBT-BIF Centre, Sri Venkateswara University, Tirupati-517502, Andhra Pradesh, India.

ABSTRACT:

The present study aimed to prove that enriched papaya extract as an anti-thrombocytopenic drug, synergetic and antagonistic effect on efficacy of cisplatin against MCF-7 cell progression. MTT test was carried out to test the cytotoxicity of enriched papaya extract against the MCF-7 cell lines. Inhibitory efficacy of enriched papaya extract alone and in presence of cisplatin on MCF-7 cells was observed to analyze the antagonistic and/synergetic effect. DAPI, PI and Green fluorescence strains were used to observe the morphology and nucleus of the cells. BAD gene, an proapoptotic gene expression (qualitative) was carried out by using PCR and agarose gel electrophoresis to observe its gene expression in untreated, treatment with cisplatin and papaya extract in MCF-7 cell lines. The present study revealed that papaya extract don't exhibit significant inhibition/progression against MCF-7 Cells. Even it did not affect the efficacy of cisplatin against MCF-7 cell progression. The PCR results revealed that BAD genes expression was happened in cisplatin and papaya + cisplatin treated and did not get clear bands in untreated and papaya alone treated cells. Thus concluding that enriched papaya extract might be useful in management of thrombocytopenia induced by cisplatin without any interactions.

Key words: Cancer, Papaya Leaf Extract, MCF-7 Cell Line, Electrophoresis, MTT assay, Antagonistic effect.

INTRODUCTION

The word 'cancer' emanates from the Greek word 'karkinos' meaning crab. Hippocrates, the Greek physician (460-370 B.C.) gave this name because the tumors that are the visible evidence of cellular mass in many types of cancer like a crab with a central body (the tumor or lump) from which several rays-the legs, spread into the surrounding tissue (Moss, 2004; Hajdu, 2010). It is a genetic disorder involving dynamic changes in the genome leading to uncontrolled cell growth, ability to invade and metastasize. Cancer is characterized by uncontrolled, abnormal growth of cells (proliferation). The first historical description of