

Preparation, characterization, antioxidant, anticancer and antiestrogenic activity of a copper based nano complex

L. Priyanka Dwarampudi
JSS University, India

Carcinoma of uterine cervix is the most prevalent gynecological malignancy across women in developing countries. Research in cervical cancer targeted therapy is still in infant stage probably because of multifactorial aetiopathogenes. Research demonstrated that estrogen and its receptors in combination with HPV oncogenes promote the cervical cancer progression since human cervix is highly responsive to estrogen. Hence we targeted estrogen receptors with a copper complexed with a well known phytoestrogen, quercetin which is an estrogen receptor blocker and nanotised the complex. The main objective of our research was preparation, characterization, antioxidant, anticancer and estrogenic activity evaluation of nano copper complex for targeting cervical cancer. The nano copper complex was synthesized by chelation technique and characterized by various spectroscopic methods like UV, NMR and IR, size and elemental composition was determined by HR SEM coupled with EDAX and physical properties like melting point and stability was determined by using DSC, TGA and Xeta Analysis. The antioxidant activity was performed by anti lipid peroxidation assay invitro antitumor activity was investigated by SRB assay on 3 different cervical cancer (HeLa, SiHa and ME-180) cell lines. The prepared Copper nano complex was found to be in the size range of 224nm. The copper nano complex reported highest antioxidant activity and high Antiestrogenic activity when compared with Standard quercetin. The *In vitro* anticancer activity using SRB assay showed increased cytotoxicity upto 72h ($p < 0.05$). The copper nano complex may used as promising molecule for cervical cancer treatment to overcome the related side effects associated with chemotherapy.

Biography

L. Priyanka Dwarampudi, Senior Research Fellow, CSIR, New Delhi currently pursuing Ph.D. under the guidance of Dr.K.Gowthamarajan, professor and Head, Department of Pharmaceutics from JSS University, Mysore. She finished her M.Pharmacy from JSS University, Mysore and B.Pharmacy from Andhra University, Visakhapatnam. She has been awarded several honours including Best out going student award in M.Pharmacy from JSS University, Mysore, 2 Scholarships for PG Project, 4 Best Poster Awards, 7 Publications with impact and 33 conferences (National/international), 1 Patent. Research interests include evidence based complementary therapies for psoriasis and cervical cancer.

vizpharma1@yahoo.co.in