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(71)**Name of Applicant :**
1)Holy Cross College (Autonomous)
Address of Applicant :Holy Cross College (Autonomous), Roch Nagar, Nagercoil, Tamilnadu, India 629004. Tamil Nadu India
(72)**Name of Inventor :**
1)Santhiya.S
2)Sheeba Daniel

(57) Abstract :
ABSTRACT The in vitro antiproliferative and cytotoxic effect of novel [Ru(bpy)2(bzpic)2]2+ (complex 1) and [Ru(phen)2(bzpic)2]2+ (complex 2) (bpy = 2,2'-bi pyridine, bzpic = 3-benzoylpicolinic acid and phen = 1,10-phenanthroline) on SK-MEL-28 cell line and normal L6 cell line has been carried out using direct microscopic and MTT assay methods: The synthesized complexes are characterized by elemental and spectral analysis. The morphological changes of cancerous and living cells at different concentrations (6.25, 12.5, -25, 50 and 100 (ig/mL) of the synthesised complexes 1 and 2 are individually determined using direct microscopic method. The percentage viability and growth inhibition of the complexes on SKMEL-28 and normal L6 cell lines at various concentrations are determined using MTT assay method. The ICso values of complexes 1 and 2 against the SK-MEL-28 cell line are found to be 39.109 and 38.323 ug/mL, whereas for normal L6 cell lines are 55.315 and 75.409 ug/mL. The ICso values predicts that complex 2 shows better antiproliferative effect and lower cytotoxicity than that of complex 1. The results revealed that the percentage of growth inhibition of the cells is based on dose-dependent manner and this is indicated by the formation of formazan crystal. The fluorescent microscopy observation clearly determines that both the synthesised complexes 1 and 2 shows late apoptosis on SK-MEL-28 cell line and early apoptosis on normal L6 cell line. Hence it is evident that complex 2 have low ICso value on cancerous cells and higher ICso value on normal living L6 cells which exhibit, better in vitro antiproliferative effect with lower cytotoxicity and therefore suggested as an anti-skin cancer drug.

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