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**Title:** Anti-proliferative mechanism of two novel Palladium complexes against Hela cancer cell line

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**Abstract:**

**Introduction:** Palladium complexes are the first and most practical chemotherapy of cancer. Many Pd complexes have been used in chemotherapy treatments for testicular, ovarian, head and neck, bladder and lung cancers. Previous studies reported that Pd complexes demonstrated significant anti-tumor activity comparable with cisplatin. Further to that a new Pd complex demonstrating potent cytotoxic activity against different cancer cell lines has recently been reported. Better solubility of Pd complexes compared to Platinum, seems to make Pd complexes more attractive. In present study, we investigated the biological evaluations of two new designed Pd(II) complexes (1,10-phenanthroline butyl dithiocarbamato Palladium(II) nitrate and 1,10-phenanthroline hexyl dithiocarbamato Palladium(II) nitrate) via their anti-proliferative effects and death inducing mechanisms an model cancer cell line of Hela.

**Methods:**
The cytotoxicity and anti-proliferative properties of Pd(II) complexes were evaluated by 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl tetrazolium bromide (MTT) assay. In this study, various concentration of Pd(II) complexes (0 to 100 µM) were used to culture of the tumor cell lines for 24 and 48 h incubation times. Also, Doxorubicin (200 µg/ml) was as our positive control in cytotoxicity assays. In order to detective of mechanism of death inducing in Hela cancer cell line, the Flow cytometer kit of Annexin-PI was applied.

**Results:** The 50% cytotoxic concentrations (Cc<sub>50</sub>) of the both complexes were determined 10 µM at 24 hours. Results show that the Pd(II) complexes produced a dose dependent response suppression on growing of Hela cancer cell line. Also, Flow cytometer results suggested that the anti-tumor activity of these complexes reveal typical morphology features of apoptotic death.

Pd Complexes, Apoptosis, chemotherapy, Flow cytometry

**Presentation:** Poster