**ID: 6513**

**Congress:** 1st Tabriz International Life Science Conference and 12th Iran Biophysical Chemistry Conference

**Title:** Synthesis and in vitro evaluation of drug-loaded nanoparticles as new drug delivery system for colon cancer

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**Abstract:**

**Introduction:** Mainly colon targeted delivery system and ideal targeted drug delivery system is the one which delivers the drug only to its sites of action and not to the non-targeted organs or tissues. Nano particles hold tremendous potential as effective drug delivery system. Beta Lactoglobulin (BLG) is the main whey protein component. Because of the physicochemical properties of this protein such as stability in low pH and presence of protease in stomach and its ability for binding to hydrophobic ligands, BLG is suitable carrier for transportation of new designed Pt(II) complex (bipyridin ethyl dithiocarbamate Pt(II) nitrate), as an anticancer drug, against colon cancer.

**Method:** The effect of the pH on the size of Nano particles and stability of them were studied using dynamic light scattering (DLS) and scanning electron microscopic (SEM) techniques. Also, dialysis studies were used to examine drug release from Nano particles in the simulated gastrointestinal conditions.

**Results:** Results of DLS and SEM show that in pH < pI, because of electrostatic and formation solution complex, Nano particles with 200-250 nm in size and high colloidal stability were obtained. Drug release profile in simulated GI conditions demonstrated the stability of BLG and secondary coating in acidic conditions and its release at pH 7.

**Conclusions:** Our results suggest that this new drug delivery system for anticancer drugs will be able to deliver the anti-cancer drugs and provides a potential to enhance anti-tumor efficacy with low systemic toxicity in the treatment of cancers, especially for colon cancer.

**Keywords:** BLG, Pt (II) complex, Nano particle, DLS

**Presentation:** Poster