**Making paclitaxel nanoliposomal and evaluating its effect on the MCF-7**

**Abstract**

**Aim and background**

Regarding that the breast cancer is the most prevalent disease among women, Paclitaxel, an anti-cancer drug, could be used in treatment of this disease. As Paclitaxel has some adverse effects, we made use of the nanoliposomal drug delivery technology in order to reduce adverse effects and improve drug efficacy.

**Materials and Methods**

Certain ratios of Phosphatidylinositol choline, cholesterol and Paclitaxel were synthesized to prepare nanoliposomal paclitaxel. The mean diameter of the nanoliposomal paclitaxel was measured by the Zeta sizer device. Using dialysis, the pattern of drug release from nanoliposomes has been studied and the cytotoxicity effect of the nanoliposomal drug was finally measured with the MTT assay.

**Results**

Using the Zeta sizer device, the mean diameter of the nanoliposomal Paclitaxel was obtained 421.4 nanometers and its encapsulation efficiency was 91.3%. By dialysis, drug release in the nanoliposomal Paclitaxel formulation was studied within 28 hours which was 5.53%.

**Conclusion**

The present study showed that the cytotoxicity effect of nanoliposomal Paclitaxel is more than that of the standard form.