

## Preventive Effects of Hydroalcoholic Extracts Bottle Gourd (*Lagenaria siceraria* standl.) on Life Cells Faced with Anti-Cancer Drug Doxorubicin

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### Abstract

**Introduction:** In most cases, drugs used for chemotherapy are ineffective and have unpleasant side-effects. This has made scientists to find more effective drugs with less toxicity. *Lagenaria siceraria* is an important medicinal plant in the world and anti-tumoral activity of *Lagenaria* species has been reported in some studies. In this study, the preventive effects of hydroalcoholic *lagenaria siceraria* on the toxicity resulting from doxorubicin in the cells of normal and cancer cells were investigated.

**Methods and Results:** Hydroalcoholic extract of *Lagenaria siceraria* was prepared by percolation method. Then, the effects of solutions containing the sample with different concentrations (1, 50, 100, 250, 500, 1000 µg/ml) of each extract were provided and then were studied by the evaluation method MTT on the renal fibroblast cell line (NIH3T3) and breast cancer cell line (MCF7). Doxorubicin was considered as positive control. The results were analyzed through ANOVA and T-test.  $P < 0.05$  is considered as the level of significance. The findings indicated that the  $IC_{50}$  dose of Doxorubicin on the normal fibroblast cell line (NIH3T3) and breast cancer cell line (MCF7) is  $40 \pm 2$  and  $10 \pm 1$  µg/ml, respectively. On the other hand, *lagenaria siceraria* has no significant cytotoxic effects.

**Conclusions:** This extract *lagenaria siceraria* caused a significant decrease in proliferation of breast cancer cells. Therefore, it is recommended to diagnose the active materials in this extract and determine the mechanism of their effect.

**Key Words:** *Lagenaria siceraria* standl., Cytotoxic, Breast cancer, NIH3T3,  $IC_{50}$