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Poster Presentations

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Evaluation and comparison of miRNA-15a loaded liposome and free miRNA-15a in PC3 prostate cancer cell line

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Background: Prostate cancer is one of the most common cancers in men. mircroRNA-15a is categorized as the tumor suppressor miRNAs, but its instability in plasma and low cellular uptake highlight the essential need for an appropriate carrier to deliver this gene to the target tissue.

Objective: The aim of this study was to compare the viability percentage of prostate cancer cells treated with liposomal system containing miRNA-15a vs. free form of miRNA-15a.

Materials and Methods: In this study, miRNA-15a was synthesized on an optimized liposomal system with ratio N / p = 50.1 by incubation at 25°C for 30 minutes. Then prostate cancer cell line (PC3) were treated with non-loaded liposome, free miRNA-15a and miRNa15-a loaded liposome and cell viability was calculated by MTT assay.

Results: The MTT results showed that the viability percentage of PC3 cells treated with none loaded liposome, free miRNA-15a and miRNA-15a were 100%, 97%, and 90% respectively.

Conclusion: According to the results of MTT assay, by loading miRNA-15a on the optimized liposome, its stability and cellular uptake increased and the viability of cancer cells decreased.

Key words: *Prostate cancer, Gene therapy, Liposome, Drug delivery.*