**Cytotoxicity of Nisin on Human Gastric Carcinoma (AGS) Cell Line**

Fariba Goodarzi1, Asadollah Asadi1, Saber Zahri1

1.Department of Biology, Faculty of Science, University of MohagheghArdabili, Ardabil, Iran

*Introduction and purpose*: Gastrointestinal cancers are among the most frequently occurring cancers worldwide. Environmental and inherited factors could be contributed to the etiology of these cancers. Lifestyle factors such as dietary habits, physical activity and smoking may play an important role in the occurrence of these types of cancer. Gastric cancer is the fourth most common cancer and second leading cause of cancer death worldwide. Nisin is an antimicrobial peptide with 34 amino acids and due to having the Lantionin amino acid categorized as Lantibiotic peptides family. The purpose of this study is to evaluate the nisin effect on cell cytotoxicity of gastric cancer.

*Method*: For evaluation of nisin cytotoxic effect on AGS cell line, they were cultured in 96-well plates at a density of 1×104 cells per well and incubated for overnight 37°C. After 24 h, cells were treated in a triplicate manner with different concentrations of nisin including 0, 10, 20, 40, 60 and 80 micromolar and for each concentration was repeated 3 times. The cytotoxic effect of nisin on cells in the intervals 24, 48 and 72 h after treatment were investigated.

*Results*: In each interval with concentration increase, cells viability reduction was observed, In addition, Cytotoxicity increased in longer time treatment.

*Discussion:* Many peptides having biological activities are used as therapeutic agents. These peptides, including nisin, which causes death in AGS cells, Cytotoxicity effect of nisin on cells is concentration and time depended.

**Keywords:** Nisin, AGS, Cytotoxicity