THE EFFECT OF HEAT TREATMENT ON THE EXPRESSION LEVELS OF SELECTED MIRNAS IN CHICKEN EGGS

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KEY WORDS

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- ✓ Egg White/yolk
- ✓ RT-qPCR
- ✓ microRNA

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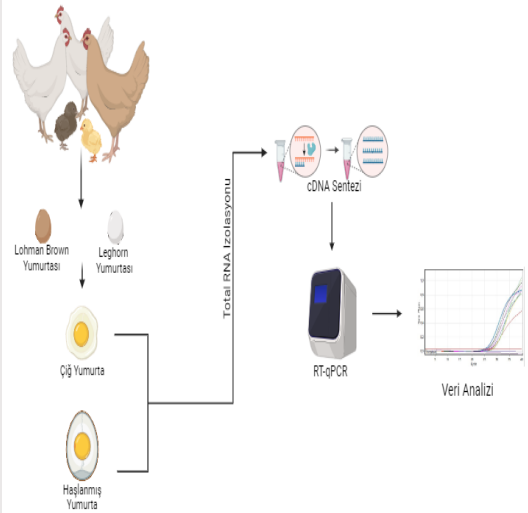

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THESIS ABSTRACT

MicroRNAs (miRNAs) are small non-coding RNA molecules involved in the regulation of gene expression. It has been reported that food-derived miRNAs can enter mammalian circulation and exert biological effects. In this study, the expression levels of miR-30c-5p and miR-191-5p, which show high homology between chicken and humans, were investigated in raw and boiled chicken eggs. miRNA levels in eggs belonging to Lohmann Brown and Leghorn breeds were analyzed using the RT-qPCR method. The results showed that heat treatment significantly decreased the expression of miR-191-5p, whereas miR-30c-5p remained relatively more stable. These findings indicate that egg miRNAs exhibit molecule-specific sensitivity to heat treatment.

APPLICATION AREAS OF THE THESIS RESULTS

The results of this study provide important insights into how miRNAs present in animal-derived foods change during heat treatment, contributing to the fields of food biotechnology and nutrigenomics. Furthermore, the findings may serve as baseline data for future studies evaluating the stability of biological molecules in foods and the molecular effects of food processing methods.

ACADEMIC ACTIVITIES

1. Yildiz, G., Ozturk, S., Bagci, F. A., Pirim, D., & Cobanoglu, O. (2025). Effects of heat treatment on gga-miR-30c-5p, gga-miR-191-5p, and gga-miR-215-5p in poultry eggs. In *Proceedings of the 8th International Eurasian Conference on Biological and Chemical Sciences (EurasianBioChem 2025)* (p. 242). EurasianBioChem.