THE EFFECT OF ORALLY ADMINISTERED CAPSAICIN ON THE STRUCTURE OF MACROSCOPIC SALIVARY GLANDS AND MAST CELLS

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THESIS ABSTRACT

The aim of this study was to investigate the effects of capsaicin (CAP) the active ingredient in hot red peppers administered orally at a low dose (0.04%) on the major salivary glands of rats (Gl. parotis, Gl. submandibularis, and Gl. sublingualis) and on the mast cells found in these glands, which form a natural barrier against antigens, toxins, and pathogens entering the body.
While no differences in histological structure were observed between the tissues of the control and experimental groups, it was found that the total number of mast cells, the number of degranulated mast cells, and the number of tryptase-positive and chymase-positive mast cells were higher in the experimental groups compared to the control groups.
In conclusion, it was observed that dietary CAP increases mast cell activity in the major salivary glands, thereby triggering an increase in mast cell numbers and degranulation.

APPLICATION AREAS OF THE THESIS RESULTS

Low-dose, orally administered CAP appears to increase mast cell activation in the major salivary glands and suggests that inflammatory processes may develop with long-term use.
These findings are the first in the literature to demonstrate that CAP may influence neuroimmune mechanisms in the major salivary glands, there by providing a scientific foundation for future experimental and clinical studies.

ACADEMIC ACTIVITIES

1. Aktaş, N., & Özgüden Akkoç, C. G. (2026). Effects of dietary capsaicin on mast cells in the parotid gland of rats. *In 9th International Food, Agriculture and Veterinary Sciences Congress Abstract Book* (p. 36). Konya, Turkey.

KEY WORDS

- ✓ Capsaicin
- ✓ Mast cell
- ✓ Rat
- ✓ Salivary gland

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