



KEY WORDS

- ✓ Canine Mammary Cancer
- ✓ Vincristine Sulfate
- ✓ Curcumin
- ✓ Cytotoxicity
- ✓ Gene Expression

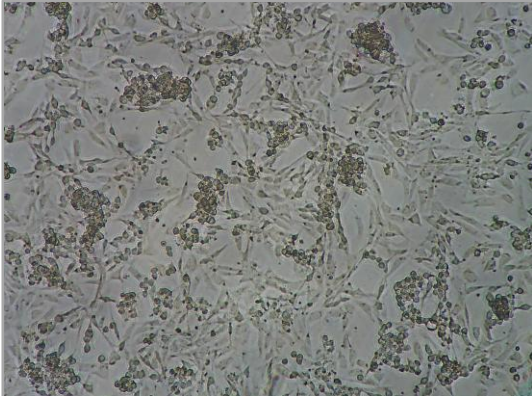
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MOLECULAR INVESTIGATION OF THE CYTOTOXIC EFFECTS OF CURCUMIN, VINCRIStINE SULFATE AND THEIR COMBINATIONS IN CANINE BREAST CANCER

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THESIS ABSTRACT

This thesis evaluated the cytotoxic and apoptotic effects of vincristine sulfate, curcumin, and a combination of these two compounds on CMT-U27 canine mammary carcinoma cells. Cell viability was analyzed using the XTT cell viability assay, and apoptotic and necrotic changes were examined under a fluorescence microscope using Hoechst 33342, Annexin V, and Propidium Iodide dyes. Furthermore, expression levels of P53, BCL-2, MCL1, BAX, and BID genes, which are involved in the apoptosis mechanism, were determined using quantitative real-time PCR. The findings showed that the combination of vincristine sulfate and curcumin significantly reduced cell viability and that this combination therapy significantly increased the expression of the pro-apoptotic BAX and BID genes, as well as the tumor suppressor P53 gene. These results suggest that vincristine sulfate combined with curcumin can induce apoptotic cell death in canine mammary tumor cells and that combination therapy may be considered as a potential strategy in the treatment of canine mammary tumors.

APPLICATION AREAS OF THE THESIS RESULTS

- Veterinary Oncology
- Genetics

ACADEMIC ACTIVITIES

BAP Supported Project: TYL-2024-1626

Taşkın, S. D., Şamlı, H., Şentürk, N., & Ardıçlı, S. (2025). Molecular investigation of cytotoxic effects of curcumin, vincristine sulfate and their combination on canine breast cancer [Abstract]. 8th International Food, Agriculture and Veterinary Sciences Congress Abstract Book (pp. 338–339). Konya Food and Agriculture University. ISBN 979-8-89695-086-8.

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