EFFECTS OF CAPSAİCİN/CİSPLATİN COMBİNATİON ON İN VİTRO AND İN VİVO ZENOGRAFT TUMOR MODEL İN NON-SMALL CELL LUNG CANCER

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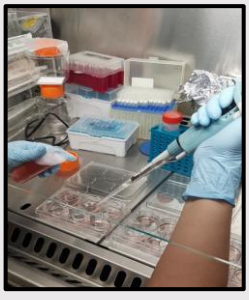

THESIS ABSTRACT

In this thesis study, the effects of the combination of capsaicin (CAP) and cisplatin (Cis) on non-small cell lung cancer (NSCLC) cells were evaluated both in vitro and in vivo xenograft tumor models to determine its anticancer potential.
A549 cells were treated with CAP, Cis, and their combination for 48 hours, followed by proliferation and apoptosis analyses using Sulforhodamine B (SRB) assay, immunocytochemistry, and Western blot. For in vivo validation, a xenograft tumor model was established in CD-1 nude mice, and post-treatment histopathological evaluations were conducted, including Ki-67 and Cleaved Caspase-3 expression analyses.
The results showed that low-dose CAP increased cell proliferation, while Cis significantly suppressed it. The CAP/Cis combination demonstrated a more pronounced antiproliferative and apoptotic effect with increasing doses. The most effective combination was identified as 150 µM Cis/CAP. In vivo findings also confirmed that the combination therapy was more effective than individual treatments.

APPLICATION AREAS OF THE THESIS RESULTS

The combination of CAP and Cis exhibited an additive effect in terms of proliferation suppression in NSCLC cells and tumor model. These findings point to the potential use of CAP as a complementary agent in chemotherapeutic treatment regimens.

ACADEMIC ACTIVITIES

Mutlu, T., Onguncan, O., & Guler, S. (26-28 September 2024). Capsaicin augments cisplatin efficacy in NSCLC: Evidence from in vitro and xenograft models. 16th National and 2nd International Congress of Histology and Embryology. Sakarya/Türkiye