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ACCEPTANCE LETTER

Dear Dilek Yonar | Burcu Baba | Çağla Zübeyde Köprü;

VI. International Health Science and Life Congress (IHSLC2023) is pleased to inform you that your paper id **"763"**, entitled **"ALTERATIONS IN LIPID METABOLISM BY ZERUMBONE TREATMENT IN NON-SMALL CELL LUNG CANCER CELLS"** has been **accepted** at IHSLC2023. This decision is made based on a double-blind peer review process. The congress will be held in 02-05 March 2023. On behalf of the organization committee I would like to congratulate you. Dear colleague I am looking forward to seeing you in Burdur at the IHSLC 2023.

IHSLC 2023

Assoc. Prof. Dr. Mümin POLAT
President of Congress

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Uluslararası Sağlık Bilimleri ve Yaşam Kongresi

ABSTRACT BOOK

02 - 05 March 2023

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Sözel Bildiri

ALTERATIONS IN LIPID METABOLISM BY ZERUMBONE TREATMENT IN NON-SMALL CELL LUNG CANCER CELLS

Dilek YONAR[*], Burcu BABA[**], Çağla Zübeyde KÖPRÜ[**]

** Yüksek İhtisas University, Faculty of Medicine, Department of Biophysics, Ankara, Turkey, dilekyonar@yiu.edu.tr*

*** Yüksek İhtisas University, Faculty of Medicine, Department of Medical Biochemistry, Ankara, Turkey, burcubaba@yiu.edu.tr*

**** Yüksek İhtisas University, Faculty of Medicine, Department of Histology and Embryology, Ankara, Turkey, caglakopru@yiu.edu.tr*

ABSTRACT

Background: Lung cancer is the leading cause of cancer-related death worldwide. Despite rapid progress in understanding the mechanisms of lung carcinogenesis, no effective clinical treatment has been found for cancer patients yet. For this purpose, the use of natural compounds such as zerumbone (ZER) is prominent in recent years. Zerumbone exhibits potent anti-proliferative, anti-metastatic and pro-apoptotic properties against some types of cancer. **Aim:** It was aimed to evaluate the biomolecular changes induced by zerumbone on human non-small cell lung cancer cells (A549). **Methods:** A549 cells were incubated with different concentrations of ZER (0-100 μM) for 24 and 48 hours, and half-maximal inhibitory concentration (IC_{50}) values were determined by WST-1 assay. Afterwards, cells were treated with the IC_{50} values of ZER for 24 and 48 hours, and biochemical changes induced by ZER were analyzed by attenuated total reflection-Fourier transform infrared (ATR-FTIR) spectroscopy. Area/area ratio, bandwidth, peak position analyzes of the spectra obtained by ATR-FTIR spectroscopy were performed. **Results:** Total saturated and unsaturated lipid contents significantly increased in ZER-treated cells. The carbonyl/total lipid ratio significantly decreased in ZER-treated groups compared to control cells. There was a decrease in the bandwidth of the CH_2 asymmetric/symmetric stretching bands and also slight shifts in their peak positions. Furthermore, total protein content slightly decreased in ZER-treated cells. **Discussion and Conclusion:** ZER treatment of A549 cells remarkably modulated the total lipid content with significant increase in the levels of saturated and unsaturated lipids. The decrease in the bandwidth of the CH_2 asymmetric/symmetric stretching band suggests a decrease in lipid fluidity of the cells. Moreover, there was a tendency to decrease in protein contents. Consequently, lipid metabolism might be affected more than the protein metabolism after ZER treatment. The modulatory activity of ZER mainly on lipid profiles may provide insight into its possible anticancer effects.

Keywords: lung cancer, A549 cells, zerumbone, FTIR spectroscopy

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CERTIFICATE
OF ATTENDANCE

This is certify that

Dilek YONAR

Has attended 6th Health Sciences and Life Congress
02-05 March 2023 Burdur, Turkey

Assoc. Prof. Dr. Mümin POLAT
President of Congress