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ABSTRACT BOOK

Authors are responsible for the content of the abstract.

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E-POSTER PRESENTATIONS

Number	TITLE/AUTHORS
EP-1	IMPORTANT PESTS AND THEIR BIOLOGICAL CONTROL IN GREENHOUSE VEGETABLE GROWING IN TURKEY Naime Zulal ELEKCIOGLU
EP-2	EVALUATION OF THE EFFECT OF INDUSTRIAL AND ENVIRONMENTAL FACTORS ON HEEL SPUR IN ANATOLIAN CIVILIZATIONS Ahmet Kursad ACIKGOZ, Ahmet Cem ERKMAN, Pınar GOKER, Memduha Gulhal BOZKIR
EP-3	ANALYSIS OF ARTICULAR FACET VARIATIONS AND ENVIRONMENTAL RELATIONS IN ANCIENT ANATOLIAN CIVILIZATIONS Ahmet Kursad ACIKGOZ, Ahmet Cem ERKMAN, Pınar GOKER, Memduha Gulhal BOZKIR
EP-4	INVESTIGATION OF TOXIC, GENOTOXIC AND CYTOTOXIC EFFECTS ON ALLIUM CEPA AND CAENORHABDITIS ELEGANS TEST SYSTEMS OF VARIOUS NANOPARTICLES Sifa TURKOGLU, Gamze ATACI
EP-5	EFFECT OF 1800 MHZ RADIOFREQUENCY RADIATION ON P21 AND CASPASE-3 GENES EXPRESSION LEVEL IN RAT LIVER TISSUE Sezin Sevinc OZDEMIR, Nurcan ARAS, Aysegul CETINKAYA, Ugurgul YAS, Badel ARSLAN
EP-6	EFFECT OF DIFFERENT FACTORS ON PARTICLE MATTER MODELLING AROUND POLLUTION SOURCE AREA Sukru DURSUN, Ibrahim KARACOBAN
EP-7	KINETIC STUDY OF RHODAMINE B REMOVAL FROM WASTE WATER USING VAN PUMICE Ali Riza KUL, Hasan ELIK, Veysel BENEK
EP-8	THERMODYNAMIC AND ISOTHERM STUDIES OF RHODAMINE B REMOVAL FROM WASTE WATER USING VAN PUMICE Ali Riza KUL, Hasan ELIK, Veysel BENEK
EP-9	INSTITUTIONAL RESPONSIBILITIES FOR MONITORING OF ENVIRONMENTAL POLLUTION Nermin Merve YALCINKAYA, Gulay TOKGOZ, Nuriye SAY
EP-10	EVALUATION of STONE QUARRIES in VAN PROVINCE within the SCOPE of LEGISLATION Tuba BAYRAM, Emrah BOZKAYA
EP-11	INVESTIGATION OF THE NABR - BA(H ₂ PO ₂) ₂ - H ₂ O WATER-SALT TERNARY SYSTEM AT +50°C Hasan ERGE, Vedat TAVSAN, Ali Riza KUL, Firat KAHRAMANER
EP-12	KINETICS STUDIES OF ZINC ADSORPTION ON VAN PUMICE Ali Riza KUL, Veysel BENEK, Ihsan ALACABEY, Nilgun ONURSAL
EP-13	THERMODYNAMIC AND ISHOTERM STUDIES OF ZINC ADSORPTION ON VAN PUMICE Ali Riza KUL, Veysel BENEK, Hasan ELIK, Nilgun ONURSAL
EP-14	DETERMINATION OF THE LEAD AND CHROME AMOUNT IN WATER SAMPLES FROM THE RURAL AREAS OF VAN PROVINCE Nuran BAZANCIR GORENTAS, Sema KATANOGLU, Hasan ERGE
EP-15	DETERMINATION OF THE SALINITY OF THE SOIL SAMPLES TAKEN FROM THE RURALS OF VAN PROVINCE Nuran BAZANCIR GORENTAS
EP-16	REMOVAL OF CATIONIC DYE IN AQUATIC MEDIUM BY USING A NEW COMPOSITE MATERIAL Zeynep Mine HASDEMIR, Selcuk SIMSEK
EP-17	INVESTIGATION OF ATMOSPHERIC DEPOSITION OF SOME NATURAL RADIONUCLIDES (210Po, 210Pb, AND 7Be) IN AEGEAN REGION Isik FILIZOK, Aysun UGUR GORGUN

**EP- 5 EFFECT OF 1800 MHZ RADIOFREQUENCY RADIATION ON P21 AND CASPASE-3 GENES
EXPRESSION LEVEL IN RAT LIVER TISSUE**

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Purpose: As mobile phone usage increases, research on human health of mobile phone radiation has increased. p21 is an apoptotic agent and caspase-3 is an endoprotease providing apoptosis. We aimed to investigate the effect of 1800 MHz radiofrequency radiation on the *p21* and *caspase-3* genes expression levels in rats liver tissue.

Method: 21 Wistar albino female rats were divided into three groups; experimental, sham and control. The experimental group were exposed to 1800 MHz radiofrequency radiation for 2h/day for 8 weeks. Control group were kept in their own conditions. Sham group were kept in the same conditions with experimental group without EMF exposure. The rats livers were removed and total RNA was extracted from whole liver homogenate. cDNA was synthesized from total RNA and gene expression levels were determined with Real-Time PCR.

Findings: *Caspase-3* expression level increased in the exposed group according to sham and control group ($p<0,001$). However, the level of *p21* expression didn't altered ($p=0,435$).

Conclusions: The results showed that *caspase-3* expression level increased in rat liver. But *p21* expression level didn't altered.

Discussion: Our results showed that 1800 MHz mobile phone radiation increased *caspase-3* gene expression level in liver. In the literature review, there was no study about *caspase-3* and *p21* expression level in liver exposed by mobile phones radiation. But there were studies at different radiation levels in rats liver. For example, in the study conducted by Zeng et al., *p21* expression level in rats liver exposed to 8 Gy radiation significant increased. In study conducted by Jimenez et al., showed it didn't alter *caspase-3* expression in rat liver exposed to 120 Hz low frequency radiation. Further investigations should be performed to support our findings.

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