8th INTERNATIONAL EURASIAN CONFERENCE ON
BIOLOGICAL AND CHEMICAL SCIENCES
17 - 19 December 2025
Ankara / Türkiye
(EurasianBioChem 2025)
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ACCEPTANCE LETTER

27.11.2025

Dear **Derya BİNAY, Fatma ÜNAL, Deniz YÜZBAŞIOĞLU,**

We are pleased to inform you that your paper titled**"Literature-Based Analysis of Cytotoxic and Genotoxic Effects of Microplastic Exposure" (Paper ID:453)** submitted to 8th International Eurasian Conference on Biological and Chemical Sciences (EurasianBioChem 2025) has been evaluated utilizing the double-blind peer review process and upon their recommendation your paper has been accepted for **Poster Presentation**.

Please, fill in the **Registration Form** to complete your registration process.

Thank you for your contribution to EurasianBioChem 2025. We hope to receive more of your research papers in our next conference.

We look forward to your participation in EurasianBioChem 2025 on 17–19 December 2025.

Sincerely yours,

QR Code Check.

Prof. Dr. Muhittin DOĞAN
Chairman of Conference

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(Abstracts and Full-Texts)

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Editor

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* This list is arranged in alphabetical order.

FOREWORD

The *8th International Eurasian Conference on Biological and Chemical Sciences* (*EurasianBioChem 2025*) was successfully held on December 17-19, 2025 with participation from many countries.

The objective of *EurasianBioChem 2025* was to bring together leading academicians, researchers, scholars, and industrial professionals from all over the world to exchange and share their experiences and research findings in all aspects of biological and chemical sciences, as well as to discuss practical challenges and the solutions adopted. In this context, we were honored to welcome distinguished scientists, and our greatest appreciation goes to all participants whose valuable contributions made this conference a success. I would also like to thank the organizing committee and the scientific committee for providing such an intensive and high-quality scientific environment.

I believe that *EurasianBioChem 2025* has made significant contributions to all participants, and I look forward to seeing you at the *9th International Eurasian Conference on Biological and Chemical Sciences (EurasianBioChem 2026)*.

Prof. Dr. Muhittin DOĞAN

Chairman of *EurasianBioChem 2025*

POSTER PRESENTATIONS 1	17 December 2025
POSTER SESSION 1.2	**Time 14:00 – 15:00**

1	73- **From resistance profiles to novel therapies: a systems approach to combat *Pseudomonas aeruginosa*** İrem Erguven*, Mehmet Mucahit Guncu, Kazim Yalcin Arga, Mehmet Burak Aksu, Ceyda Kula
2	**159- Evaluation of the in vitro genotoxicity of potassium acetate using single-cell gel electrophoresis** Merve Yıldız*, Deniz Yüzbaşıoğlu, Fatma Ünal
3	200- **Van Gölü alkalifilik fungusları üzerine ön çalışma** Nilgün Poyraz*, Suat Sezen
4	228- **The importance of sampling in the statistical study of STR markers** Ela Zaimi, Merita Xhetani
5	261- **Identification of candidate genes associated with cold tolerance in Sitka spruce (*Picea sitchensis*)** Tuğçe Önbaş, Katherine Steele
6	283- **Comparative analysis of EPS biosynthesis-related genes expression in *Ligilactobacillus salivarius* KC27L and *Limosilactobacillus reuteri* KC21L** Ayşegül Aybüke Bayburt, Zehranur Yüksekdağ*, Berat Çınar Acar
7	317- **The effect of orlistat on nitric oxide levels in LPS+IFN-γ-stimulated RAW 264.7 macrophage cells** Büşra Altay*, Aslı Koç
8	**453- Literature-based analysis of cytotoxic and genotoxic effects of microplastic exposure** Derya Binay*, Fatma Ünal, Deniz Yüzbaşıoğlu
9	536- **Cloning and expression of the *Ananas comosus* bromelain gene in *Escherichia coli*** Burcu Arıkan*, Çağla Akman, Ezgi Nur Çatı
10	547- **In silico screening and selection of the optimal asparaginase gene for cloning from *Tetrahymena thermophila*** İrem Zafnaki*, Nurçin Küçükoğlu*, Handan Açelya Kapkaç*
Discussion	

POSTER PRESENTATION

Literature-based analysis of cytotoxic and genotoxic effects of microplastic exposure

Derya Binay[1*] (Orcıd: https://orcid.org/0000-0002-0277-761X), Fatma Ünal[2] (Orcıd: https://orcid.org/0000-0001-7648-9584), Deniz Yüzbaşıoğlu[2] (Orcıd: https://orcid.org/0000-0003-2756-7712)

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Abstract

Due to the rapid increase in global population, industrialization, and fast-paced consumption patterns, plastic use has become an integral component of modern life. Plastics are widely employed in various sectors, including packaging, cosmetics, medical devices, and electronics, due to their lightweight nature, durability, low cost, and ease of production. Microplastics (MP), defined as particles ≤5 mm, are categorized as primary and secondary. Primary MPs are intentionally manufactured in small sizes for use in cosmetics, cleaning products, and industrial applications. Secondary MPs emerge from the environmental degradation of larger plastic materials through sunlight, mechanical abrasion, and other external factors. These particles vary in size, shape, and chemical composition, enabling their widespread distribution across ecological systems. Humans and other organisms are exposed to MPs through inhalation, ingestion, dermal contact, and various environmental pathways. Once internalized, MPs may accumulate in tissues, inducing cellular, biochemical, and genetic alterations. This study aims to systematically evaluate research conducted between 2019 and 2025 that investigated the genotoxic potential of MP using chromosome aberration (CA), cytokinesis-block micronucleus (CBMN), and comet assays. The reviewed literature consistently demonstrates that MP exposure poses notable genotoxic hazards, either through direct interactions with DNA or indirectly by triggering oxidative stress. MPs can disrupt redox homeostasis by increasing the production of reactive oxygen and nitrogen species (ROS/RNS), leading to lipid peroxidation, protein oxidation, and DNA base modifications or strand breaks. Inadequate DNA repair further contributes to genomic instability, chromosome aberrations, micronucleus formation, and potentially carcinogenesis, as well as neurotoxic, immunotoxic, and hepatotoxic outcomes. Overall, the findings indicate that MPs may pose significant cytotoxic and genotoxic risks to environmental and human health, with toxicity influenced by particle size, shape, surface characteristics, and chemical composition. More comprehensive and mechanistic studies are required to elucidate better the genotoxic pathways and long-term biological consequences associated with MP exposure.

Keywords: Microplastic, cytotoxicity, genotoxicity, chromosome abnormality, micronucleus, DNA damage

8th International Eurasian Conference on Biological and Chemical Sciences (EurasianBioChem 2025)

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