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ECZACILIK FAKÜLTESİ

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- Farmasötik Toksikoloji Anabilim Dalı

Temel Eczacılık Bilimleri Bölümü

- Analitik Kimya Anabilim Dalı
- Biyokimya Anabilim Dalı
- Farmasötik Mikrobiyoloji Anabilim Dalı





ECZACILIK FAKÜLTESİ

Kasım

2025 Yılı Türk Eczacıları Birliği Hizmet ödülü Farmakoloji Anabilim Dalı Öğretim Üyemiz Prof. Dr. Yusuf ÖZTÜRK'e verilmiştir. Öztürk, 45 yıl süren akademik yaşamı süresince gerçekleştirdiği, araştırma ve eğitim faaliyetleri, araştırma ve eğitim alt-yapı geliştirme, idari ve topluma hizmet çalışmaları ile ödüle layık görülmüştür.





ECZACILIK FAKÜLTESİ

Kasım

Farmasötik Toksikoloji Anabilim Dalı öğretim üyemiz Dr. Öğr. Üyesi Gizem Sena ELAGÖZ 6–9 Kasım 2025 tarihleri arasında Hilton Mall of Istanbul Hotel’de düzenlenen 12th International Congress of the Turkish Society of Toxicology kapsamında “*Biomarker-Based Assessment of Mycotoxin Exposure in Children*” başlıklı sözlü sunumunu gerçekleştirmiştir.





ECZACILIK FAKÜLTESİ

Kasım

Farmasötik Mikrobiyoloji Anabilim Dalı öğretim üyemiz Dr. Öğr. Üyesi Tuğçe TÜCCAR'ın "*Fungal composition in deteriorated historical manuscripts: a comparative study of sampling and media factors using molecular and cultural approaches*" başlıklı makalesi *Journal of Cultural Heritage* dergisinde yayınlanmıştır.

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Original article

Fungal composition in deteriorated historical manuscripts: A comparative study of sampling and media factors using molecular and cultural approaches

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ABSTRACT

Cultural heritage objects reflect the social memory of humanity, making their protection essential. Fungal colonization is widely acknowledged as a principal agent of deterioration in historical manuscripts (HMs). However, standardized sampling and analysis protocols that integrate both culture-based and culture-independent approaches to accurately reflect in situ fungal diversity, along with the identification of the most suitable culture media, have not yet been comprehensively established. This persistent knowledge gap not only highlights the limited understanding of fungal-induced biodegradation in historical manuscripts but also critically hampers the development of targeted, evidence-based preventive measures for priceless collections that already exhibit fungal staining and cellulose degradation. This study aimed to (i) characterize the total fungal community in deteriorated HMs found in the Süleymaniye Manuscript Library using both culture-independent and culture-dependent approaches, (ii) assess the effect of different sampling methods and media selection on the identification of fungal biota, and (iii) screen for extracellular enzymes associated with HMs deterioration. In essence, this research moves beyond descriptive fungal inventories to deliver a methodological blueprint for future assessments, enabling the development of more accurate, microbiologically informed conservation strategies for invaluable historical manuscript collections by highlighting the critical impact of sampling and media choices on biodiversity data. To achieve the objectives, 10 deteriorated HMs were sampled by swab (S) and membrane filter methods. Fungal community was analyzed by denaturing gradient gel electrophoresis (DGGE). The fungal load in HMs was determined using both dichloran glycerol 18 (DG18) and malt extract agar media, and fungi were isolated. All isolates were screened for producing cellulase, amylase, and gelatinase, and also identified by molecular methods. In both DGGE and culture-dependent analyses of HMs, *Aspergillus* was the predominant genus, with *A. halophilicus* most frequently detected by DGGE and *A. versicolor* predominantly identified through culture-dependent methods. The S method proved more effective in recovering fungal communities. Moreover, combining different media enhanced the detection of fungal diversity. However, fungal counts in HMs were more clearly determined on DG18. The K20 isolate closely related to *Aspergillus* sp. demonstrated notable enzymatic activity, exhibiting the highest enzymatic index values for both cellulase and gelatinase. Concurrently, another isolate (K19), identified as closely related to *A. versicolor*, displayed the highest amylase activity among those tested. These findings collectively suggest that the genus *Aspergillus* may play a significant role in the biodeterioration and/or the acceleration of biodeterioration in HMs.

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1. Introduction and research aims

Cultural heritage includes historical manuscripts (HMs), and books that have been preserved from the past and passed on to future generations. HMs provide a favorable nutrient source for cellulolytic, amylolytic, and gelatinolytic fungi, due to both the raw cellulose fibers used in paper production and additional components

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ECZACILIK FAKÜLTESİ

Kasım

Analitik Kimya Anabilim Dalı Öğretim Üyemiz Prof. Dr. Abdülhadi BAYKAL'ın "**Synthesis and tracking of novel Mn and Se co-doped iron oxide nanoparticles: a promising nanofertilizer for plant growth and nutrient enrichment without genotoxic impact**" başlıklı makalesi *Journal of the Saudi Society of Agricultural Sciences* dergisinde yayınlanmıştır.

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RESEARCH ARTICLE

Synthesis and tracking of novel Mn and Se co-doped iron oxide nanoparticles: a promising nanofertilizer for plant growth and nutrient enrichment without genotoxic impact

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Abstract

Novel nanoformulations are promising agents to enhance plant growth and nutritional value. On the other hand, their inclusion in agricultural systems and environmental effects should be monitored carefully. This study synthesizes a novel nanofertilizer containing plant essential and beneficial elements, namely manganese (Mn) and selenium (Se) co-doped iron (Fe) oxide nanocomposites (MnSeFe₂O₄ NCs) and clarifies its growth-promoting property, cytotoxicity, and genotoxicity on a common crop, barley (*Hordeum vulgare* L.). To characterize the NCs, analytical procedures including XRD, EDX, TEM, SEM, and XPS were employed. Following this, barley sprouts were grown for three weeks in an aquacultural setup, containing varied NC doses: 0 (control), 50 to 400 mg L⁻¹. The study then assessed germination rates, various growth parameters, photosynthetic efficiency, and macro- and micro-element quantities. Microscopy techniques (i.e., confocal and scanning electron) and RAPD-PCR techniques were utilized to assess cellular, morphological, and genotoxic effects. Results demonstrated that MnSeFe₂O₄ NCs, crystal size of 36.3 nm, were taken up by the plant roots and translocated to the leaves, leading to a significant increase in Mn, Se, and Fe contents. The abundances of Ca, Mg, K, P, Zn, Ni, and Co were also remarkably improved over the control. Improvement in physiological and photosynthetic indices, such as germination rate (~25%), tissue growth (26–50%), chlorophyll, and carotenoid pigments (~50–75%), ETR, Fv/Fm, and Y(II) (10–27%) was evident upon NCs' inclusion. Importantly, the applied concentrations of the MnSeFe₂O₄ NCs did not cause genotoxicity or significant cellular and morphological changes in the barley plants, suggesting their safe application at the tested doses. These findings indicate that the MnSeFe₂O₄ NCs are effective at enhancing plant growth and nutrient uptake, making them promising agents for use in nutrient-deficient agricultural systems and plant breeding programs.

Keywords Nanofertilizer · Manganese · Selenium · Iron · Growth · Barley

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Kasım

Analitik Kimya Anabilim Dalı Öğretim Üyemiz Prof. Dr. Abdülhadi BAYKAL'ın "Efficient visible-light-active ZnO/Cs_{0.33}WO₃/g-C₃N₄ double Z-type heterojunction photocatalyst for rhodamine b photodegradation" başlıklı makalesi *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* dergisinde yayınlanmıştır.

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Efficient visible-light-active ZnO/Cs_{0.33}WO₃/g-C₃N₄ double Z-type heterojunction photocatalyst for rhodamine B photodegradation

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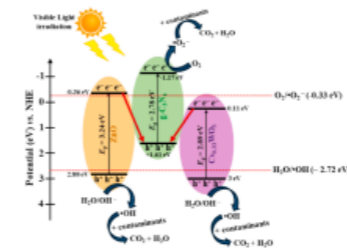
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HIGHLIGHTS

- A novel ZnO/Cs_{0.33}WO₃/g-C₃N₄ nanocomposite was synthesized for photocatalytic dye degradation.
- The proposed double Z-type heterojunction charge transfer mechanism enhanced the photocatalytic performance.
- The kinetic rate constant is 31 times faster than Cs_{0.33}WO₃ and 3.5 times faster than ZnO.
- The nanocomposite demonstrated high efficiency and rapid visible-light photodegradation of RhB dye.
- The ternary nanocomposite photocatalyst showed excellent stability and reusability.

GRAPHICAL ABSTRACT



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ABSTRACT

Developing highly efficient photocatalyst systems for the removal of cancer-causing organic dye substances from polluted water and wastewater is now in high demand because of the growing problem of contaminated water. An affordable technique was employed to create a ternary ZnO/Cs_{0.33}WO₃/g-C₃N₄ heterojunction nanocomposite with highly efficient and rapid photodegradation capabilities for degrading rhodamine B (RhB) dye. Using visible-light irradiation, the photocatalytic tests revealed that the proposed ZnO/Cs_{0.33}WO₃/g-C₃N₄ heterojunction nanocomposite is efficiently able to degrade more than 91 % of RhB dye within 15 min, 97.5 % within 20 min, and 99.9 % within 30 min, which is significantly efficient compared to sole ZnO and Cs_{0.33}WO₃.

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Anadolu Eğitim ve Kültür Vakfı (AKEV) tarafından gerçekleştirilen Bilgelik Programı kapsamında düzenlenen Mezunlar Buluşması, İstanbul Aydın Üniversitesi Eczacılık Fakültesi koordinasyonunda 27 Kasım 2025 tarihinde T Blok Mor Salon'da saat 11.00'de gerçekleştirilmiştir. Etkinlikte “*Beslenme ve Sağlık*” teması ele alınmış ve katılımcılara güncel bilimsel bilgiler aktarılmıştır. Program kapsamında; Prof. Dr. Fikriye URAS “*K vitamininin sağlıktaki önemi üzerine kapsamlı bir sunum yapmış*, Dr. Öğr. Üyesi Tuğçe TÜCCAR, “*Sağlıklı Bir Yaşamın Anahtarı: Bağırsak Mikrobiyotası*” başlıklı konuşmasıyla bağırsak mikrobiyotasının sağlık üzerindeki etkilerini değerlendirmiş, Dr. Öğr. Üyesi Gizem Sena ELAGÖZ ise “*Gıda Güvenliği: Tabağımızdaki Görünmeyen Riskler*” sunumunda gıda güvenliği ile ilgili görünmeyen tehlikelere ve koruyucu yaklaşımlara dikkat çekmiştir.

