PBA2023

33rd International Symposium on

Pharmaceutical and Biomedical Analysis



ABSTRACTS & PROCEEDINGS

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FOREWORD

Dear Friends and Colleagues,

On behalf of the Organizing Committee, we cordially invite you to join us for the 33rd International Symposium on Pharmaceutical and Biomedical Analysis (PBA 2023) to be held between July 2nd and 6th, 2023, in Ankara University Faculty of Pharmacy.

PBA 2023 will cover all aspects where pharmaceutical and biomedical analysis plays a role, including fundamental and applied sciences. It will offer plenary and keynote presentations on cutting-edge topics by internationally renowned leaders of the field, followed by contributed talks and poster presentations to stimulate interdisciplinary discussions as its long traditions of it. A young researcher's session will be organized to provide opportunities for and encourage Ph.D. students and postdocs to share their findings.

It has long been said that Türkiye is a bridge between Europe and Asia, and now we can expand that to all continents as we are happy to welcome premier analytical chemists and other chemistry-related scientists from all over the world to enrich our knowledge with their lectures and presentations.

In addition to the scientific program, exciting social events are being planned. Amazing sights, tranquil places off the beaten trail, world-renowned cuisine, and a very rich cultural tradition await you.

We look forward to your participation in PBA 2023 in July 2023 and to welcoming you to our capital city Ankara.

Prof. Dr. Sibel A. OZKAN
Chair of the Symposium

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mass concentration simultaneously.

In this study, naked and liposome-encapsulated SeNPs of two different sizes (70 and 140 nm) were incubated with β TC cells for 24 hours and a SP-ICP-MS method was developed for the size characterization and quantification of SeNPs uptake by cells. It was observed that the size of nanoparticles uptaken into the β TC cells remain same, and the liposome encapsulated nanoparticles were more uptake for 80 nm SeNPs. However, no difference was observed for 140 nm SeNPs with or without liposomes. The size detection limit (LOD_{size}) and the LOD value for SeNPs of the proposed SP-ICP-MS method were calculated as 35.6 nm, and 770 particles mL^{-1}, respectively.

Acknowledgement: This study was supported by The Scientific and Technological Research Council of Turkey (TUBITAK) (grant number 123Z013) and Gazi University Scientific Research Fund (grant number TDK-2023-7802)

Keywords: Selenium nanoparticles, SP-ICP-MS, pancreatic β TC cells, liposomal SeNP, nanoparticle characterization

References:

[1.] Srivastava P, Braganca JM, Kowshik M, 2014. "In vivo synthesis of selenium nanoparticles by Halococcus salifodinae BK18 and their anti-proliferative properties against HeLa cell line", Biotechnol Prog, 30(6):1480–1487.

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PM-042

Electrochemical Determination of Enzyme Inhibitor Thiram Based on Bimetallic Nanoparticles Utilizing Green Electroanalytical Nanosensor

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In this study, it is aimed to develop the first bimetallic electrochemical nanosensor for thiram determination. This nanosensor has been modified with AuNPs and green synthesis AgNPs. A newly formed AuNPs@AgNPs/GCE has been successfully applied as a novel electrochemical nanosensor for thiram analysis in commercial preparation and human serum sample. The oxidation behavior of thiram were examined by cyclic voltammetry (CV) and adsorptive stripping differential pulse voltammetry (AdSDPV). The effect of basic parameters such as pH, amount of nanomaterial coated on the surface, deposition time, deposition potential was optimized for the sensitive determination. The peak current of thiram was significantly increased with the modified electrode compared to the bare GCE. The electrochemical performance of the developed electrode can be attributed to the large surface area and high conductivity of AgNPs and AuNPs. The proposed nanosensor has linear response between of 0.2 ppm to 2 ppm with a low detection limit value of 0.0298 ppm, which is lower than the limits set in MRLs (0.1 ppm). High recoveries of 103.6–104.3% in commercial preparation and human serum indicated that the developed method for real sample analysis was successfully applied. To investigate the selectivity of the method, some interfering agents such as KCl, NaCl, glucose, dopamine and ascorbic acid were studied. These compounds were separately included in the phosphate buffer solution (0.2 M, pH 3.0) containing thiram at the same concentration, taking $1x10^{-5}$ M of each. The electrochemical responses of thiram at the AuNPs@AgNPs/GCE revealed that they did not significantly effect thiram analysis in the studied conditions.

Acknowledgments: This study was supported by a grant of TUBITAK (123Z070)

Keywords: Pesticide, thiram, nanosensor, electrochemistry, bimetallic nanoparticles, green synthesis

PM-043

An ITO-based Biosensor for the Detection of Citrullinated Vimentin as an Important Biomarker for Rheumatoid Arthritis

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Rheumatoid arthritis (RA) is a chronic autoimmune disease that primarily affects the joints. In RA, the immune system mistakenly attacks the body's healthy tissues, leading to inflammation in the lining of the joints (synovium), which can cause joint damage, pain, stiffness, and swelling. [1,2] According to the results of a meta-analysis suggesting that various environmental factors and genetics influence the prevalence of