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European Journal of Pharmaceutical Sciences

journal homepage: www.elsevier.com/locate/ejps

Editorial

Editorial: CPH-EUFEPS 2024 Special Issue

The Hungarian Society for Pharmaceutical Sciences (HSPS), celebrating its 100th anniversary in 2024, together with the European Federation for Pharmaceutical Sciences (EUFEPS), held its international congress in Debrecen from May 23 to 25, 2024, with nearly 700 participants. The centenary HSPS is an integral part and shaper of the achievements of Hungarian pharmacy, pharmaceutical research, and the pharmaceutical industry.

At the international congress organized on the occasion of this milestone, representatives of the field discussed the latest research findings. More than 300 presentations showcased the most recent results of pharmaceutical research, which may have a significant impact on the medicines and therapeutic methods of the future.

"We can be proud to host several hundred participants who, despite coming from various countries and professional backgrounds, agree that the role of pharmacists in maintaining public health is becoming increasingly important," emphasized Professor Éva Szökő, President of HSPS.

The discovery of new active pharmaceutical ingredients remains a key driver of pharmaceutical research (Akel et al., 2025a, 2025b; Bege et al., 2025; Hegedűs et al., 2025; Simon et al., 2025). Accordingly, the congress placed special emphasis on results related to compounds with novel mechanisms of action, such as in the fields of pain management and antimicrobial applications. Research into antibiotics and the issue of rational antibiotic use were also key topics of the congress, as combating drug-resistant bacteria remains one of the major challenges of our time (Göntér et al., 2025; Opalska et al., 2025).

Several presentations focused on advances in formulation development aimed at targeted and personalized drug delivery, which are crucial for the efficacy and safety of pharmaceutical therapies (Girgis et al., 2025; Oktay et al., 2025; Rodríguez-Castejón et al., 2025; Soliman et al., 2025). The event also addressed the potential applications of artificial intelligence (AI), which is not only shaping the future of drug research and manufacturing but is already having a profound impact today (Hornung et al., 2025).

This year's congress presented research findings in an international context, with participation not only from Hungary but also from many European countries. As Professor María Blanco-Prieto, President of EUFEPS, stated, the aim of the conference is to foster collaboration between professionals across scientific disciplines, the pharmaceutical industry, and responsible policymakers.

In this special issue, we have published 16 articles covering various areas of pharmaceutical sciences, representing the unity of traditional and modern research approaches. The articles summarize findings from research projects closely related to presentations delivered at the international congress.

A strong focus of the pharmaceutical technology section was on nanotechnology (Rodríguez-Castejón et al., 2025). One study presents lipid-based nanosystems conjugated with asialofetuin for targeting the asialoglycoprotein receptor, exploring gene delivery options to hepatocytes for the treatment of Fabry disease. Another research addresses pulmonary drug delivery as a crucial administration route, investigating the enhanced pulmonary absorption of spray-dried theophylline (Soliman et al., 2025). This was achieved through the use of innovative fine carrier systems based on combinations of trehalose and amino acids. A further study reports on the development of a cyclodextrin-based nanogel for the formulation of a transdermal Flurbiprofen patch, evaluating its dermal delivery and analgesic effects in both acute and chronic pain models in rats (Oktay et al., 2025).

The congress also featured prominent representatives of pharmaceutical chemistry. Of particular significance is the article by Prof. Dr. Anikó Borbás titled "Synthesis of 3'-modified xylofuranosyl nucleosides bearing 5'-silyl or -butyryl groups and their antiviral effect against RNA viruses" (Bege et al., 2025). As a plenary speaker, Prof. Szabolcs Fekete gave a lecture on liquid chromatography and published his research under the title "Selected new approaches and future perspectives in liquid chromatography for the analysis of emerging modalities" (Fekete et al., 2025). Prof. Károly Mazák presented the synthesis and physicochemical characterization of novel potential haptens (Simon et al., 2025). Other research in pharmaceutical chemistry includes the synthesis, transformation, and biological evaluation of 5-chloro-8-hydroxyquinoline hybrids (Hegedűs et al., 2025).

Prof. László Somsák contributed a study on half-sandwich platinum-group metal complexes with C-glucopyranosyl 1,2,3-triazoles and isoxazoles as ligands, focusing on their synthesis and evaluation as anti-neoplastic and antimicrobial agents (Akel et al., 2025a, 2025b).

The newly elected president of the Hungarian Society for Pharmaceutical Sciences, Prof. Lajos Botz, presents research on the optimization of electronic documentation of pharmacotherapy in Hungary, encompassing itemized, complete, historical, and standardized event recording methods (Göntér et al., 2025).

Within the field of regulatory science, Aleksandra Opalska's article addresses the implementation of indication restrictions introduced by European regulatory measures, using amoxicillin as a case study (Opalska et al., 2025).

A clinically relevant topic discussed is the genetic risk associated with the hypothalamic connection in migraine without aura, representing a new direction in migraine research (Németh et al., 2025).

Ria Benkő's study aimed to determine the prevalence and characteristics of drug allergies in hospitalized patients and assess the associated risk of future exposure to the reported culprit drugs to evaluate the

<https://doi.org/10.1016/j.ejps.2025.107270>

Available online 11 September 2025

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potential for allergy delabeling, highlighting the high prevalence of self-reported drug allergies and the significant proportion of low-risk cases suitable for delabeling (Nacsá et al., 2025).

The Secretary General of the Hungarian Society for Pharmaceutical Sciences, Dr. Tamás Tábi, contributed a study on the neuroprotective potential of resveratrol. His *in vitro* research demonstrates that resveratrol restores insulin signaling and rebalances mitochondrial biogenesis and autophagy in streptozotocin-induced neurodegenerative processes (Varga et al., 2025).

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