



Dear Readers,

I am pleased to introduce the fourth and final issue of *BioTechnologia* for 2024. This issue features a selection of original research papers and review articles, which I hope you find engaging and insightful.

Specifically, you will find biochemical studies, including the investigation of the antioxidant and antimicrobial activity of thermophilic cyanobacteria, which show that their properties make them potentially useful in biotechnology and industry. You will also learn about the specific amino acid composition of red algae (*Gracilaria*) from Central Java, revealed through proteomic analysis. As algae proteins are often analyzed to identify potentially new bioactive molecules, the exploration of *Gracilaria* proteins opens new possibilities for developing algae-derived compounds.

Next, you will read about genetic research on *Musa textilis* Nee, which leads to the proposal of new SSR markers that improve and facilitate genetic and phenotypic studies of Abaca. Additionally, we present *in vitro* and *in silico* studies demonstrating the potential anticancer properties of curcumin-nimbin-loaded nanosuspensions. Another article in the field of medical biotechnology discusses the application of gliclazide, an oral antihyperglycemic agent. The potential effect of gliclazide was evaluated against ionizing radiation (IR)-induced intestinal injury in mice. Interestingly, gliclazide exhibited a radioprotective effect against intestinal injury by inhibiting oxidative stress and apoptosis.

Alongside the research papers, you are invited to explore two review articles. The first provides a detailed characterization of quercetin nanoparticles. The increased stability, improved bioavailability, and antioxidant and anticarcinogenic properties make quercetin nanoparticles highly attractive compounds in the medical and pharmacological fields. The second article reviews the latest insights into the architecture and dynamics of oral biofilms and the factors that influence their composition and properties.

As we approach the end of 2024, together with Edyta Kościańska, Editor-in-Chief, and the entire editorial team, we would like to thank all the authors and reviewers who have contributed to *BioTechnologia* this year. A full list of our esteemed reviewers is included on the final page of this issue. We are also sincerely thankful to our readers for their continued interest and support.

Finally, we would like to express our heartfelt gratitude to our Technical Editors, Paulina Urbanowska and Andrzej Wójtowicz, as well as our Cover Designer, Ewa Rozmiarek, for their invaluable contributions to *BioTechnologia*. Their dedication, meticulous attention to detail, and unwavering commitment have ensured the highest editorial and graphic standards for every article published in our journal. We deeply appreciate their efforts, which they have consistently shown.

Thank you, and we hope you enjoy this issue!

AGATA ŚWIĄTKOWSKA  
Vice-Editor