IBSC 2026

10th Joint International PSU-UNS Bioscience Conference

28-29 September 2026, Novi Sad, Serbia

Book of Abstracts

Bio4Future – Life Sciences for a Sustainable and Smart Future

Organised by:

Prince of Songkla University, Thailand

and

University of Novi Sad,
Faculty of Sciences, Serbia

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Conference Report of IBSC 2026 Scientific Committee

On behalf of the Scientific and Organizing committees of *The International Bioscience Conference and the 10th Joint international PSU-UNS Bioscience Conference 2026* between the Prince of Songkla University, Thailand and the University of Novi Sad, Faculty of Sciences, Serbia, we are honored to host this Conference on 28 – 29 September, in Novi Sad, as a hybrid conference, in-person and on-line (via platform).

The International Bioscience Conferences are held every two years and represent the seal of a long-standing partnership between the Prince of Songkla University from Thailand and the University of Novi Sad from Serbia. The IBSC conferences are a joint endeavor to create a forum for networking, sharing ideas and achievements and hence contribute to the overall advancement in the complex and multifaceted field of bioscience. The chosen conference topics aim at providing knowledge, expertise, results and novel ideas in biosciences ranging from fundamental to applied research, advancement in industrial research and strengthening the ties between industry and academia.

IBSC 2026 has followed the tradition of the previous conferences and brought together experts to discuss and share state-of-the-art in the complex and multifaceted field of biosciences. Under the conference tagline: Bio4Future - Life Sciences for a Sustainable and Smart Future, international academic community led by PSU and UNS has been invited to present their results in four conference tracks that well reflect the topics which need urgent attention and viable solutions of the international research community:

Track 1. Life Science Frontiers: Systems Biology, Biodiversity, and Environmental Resilience

Track 2: Changing seasonality in the era of climate change: Biological timing, phenology and

ecosystem responses

Track 3. Bioactive Natural Products, Food, and Biomedicine

Track 4. AI-powered Bioscience, Biosensing Technology, and Data Science.

The Scientific Program of the IBSC 2026 is greatly enriched by the participation and the presence of Prof. Dr. Young Hae Choi from the Natural Products Laboratory, Institute of Biology, Leiden University, The Netherlands; Asst. Prof. Dr. Itthipon Jeerapan, Faculty of Science, Prince of Songkla University, Hat Yai, Thailand; Prof. Dr. Antonio Jesus Meléndez-Martínez, from University of Seville, Spain; Prof. Dr. Vladimir Beškoski from Faculty of Chemistry, University of Belgrade, Serbia; Prof. Dr. Kosana Suvočarev from College of Agricultural and Environmental Sciences, UC Davis California, USA and Prof. Dr. Michel Chalot from Chrono-environment Laboratory, University of Marie and Louis Pasteur, Montbeliard, France, who will immensely contribute to the Conference as the plenary speakers.

We believe that together with the 6 plenary, 30 other top quality invited speakers from around the world, overall number of 24 oral presentations and around 86 posters, this Conference can enlighten and inspire all of us, especially the young scientists, to invest more in creating innovative approaches to solving the key challenges that society is facing. Additionally, one session, for all participants, is dedicated to capacity building in research and innovation support, development and management.

We look forward to welcoming around 120 international, regional and local scientists to Novi Sad, the city on the River Danube, the city of European history and hospitality, the cultural, economic, political and administrative center of the Autonomous Province of Vojvodina in the north of Serbia, a modern university city, multicultural and multilingual urban center, famous for its hospitality.

We wish to express sincere gratitude to all contributors, colleagues, sponsors and enthusiasts who provided selfless and generous support to make the Conference a success. The Conference IBSC 2026 is financially supported by The Ministry of Science, Technological Development and Innovation of the Republic of Serbia.

Prof. Dr. Srđan Rončević

The IBSC 2026 Chairperson - President of the IBSC 2026

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Effect of Enzyme-Assisted Extraction on Protein Yield and Purity of Duckweed Proteins

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Duckweed is an aquatic plant rich in proteins and other valuable nutrients, making it a promising sustainable alternative protein source. Its rapid growth, low environmental footprint, and minimal resource requirements have attracted increasing interest for protein recovery and valorization. However, alkaline extraction of duckweed proteins is often limited by low extraction efficiency and insufficient protein isolate purity. Therefore, the aim of this study was to evaluate the effect of ultrasound-assisted enzymatic pretreatment on the yield and purity of protein isolates obtained from duckweed biomass. Dried duckweed biomass, which had been pretreated with ethanol (70%) to reduce phenolic compounds, was used for protein extraction. The control sample was subjected to the same processing conditions as the enzyme-assisted treatments, including ultrasound pretreatment and incubation at pH 4.5 and 35 °C for 2 h, but without enzyme addition. In the enzyme-assisted treatments, ultrasound pretreatment was combined with Viscozyme® and pectinase from *Aspergillus aculeatus* at enzyme concentrations of 3% and 5% v/w, calculated based on dry biomass weight. After pretreatment, alkaline extraction was performed at pH 11 for 2 h, followed by protein precipitation at pH 4.5. The control sample showed the highest precipitation yield of 9.3%, but the lowest protein purity of 25%. The addition of 3% enzyme mixture reduced the precipitation yield to 6.4%, while increasing protein purity to 43.3%. Treatment with 5% enzyme mixture resulted in a slightly higher yield of 7.58%, with a protein purity of 40.6%. Although enzyme-assisted extraction did not increase the overall precipitation yield compared with the control, it markedly improved the protein purity of the isolates. These findings indicate that enzymatic pretreatment with Viscozyme® and pectinase from *Aspergillus aculeatus* can improve the quality of duckweed protein isolates by increasing protein purity, despite a moderate reduction in yield. Among the tested treatments, the 3% enzyme concentration provided the highest protein purity, whereas the 5% treatment offered a slightly better balance between yield and purity.

Keywords: Duckweed, Alternative Proteins, Enzymatic Extraction, Protein Purity

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