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 Extraction Temperature on Protein Recovery and Molecular Weight Distribution of *Lemna minor* Protein Concentrates

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Duckweed (*Lemna minor*) is attracting attention as a sustainable and fast-growing source of plant proteins, particularly due to the abundance of ribulose-1,5-bisphosphate carboxylase/oxygenase (RuBisCO), the major photosynthetic protein in green biomass. Since processing conditions may affect protein recovery and molecular characteristics of obtained concentrates, this study investigated the effect of temperature during ultrasound-assisted alkaline extraction on protein yield, protein content, and molecular weight distribution of Lemna minor protein concentrates. Dried duckweed biomass, previously pretreated with 70% ethanol to reduce phenolic compounds, was subjected to ultrasonic pretreatment to enhance cell disruption and protein accessibility. Alkaline extraction was then performed at pH 11.5 for 2h at different temperatures, followed by isoelectric precipitation at pH 4.5. The concentrates were evaluated for extraction yield and protein content by the Kjeldahl method, while molecular weight distribution was analysed by capillary gel electrophoresis using an Agilent 2100 Bioanalyzer. The temperature treatment during alkaline extraction affected protein recovery and concentrate composition. The control sample showed a protein content of 59.93% and a yield of 0.562 g/100 g biomass. Extraction at 50 °C resulted in 50.88% protein and a yield of 2.533 g/100 g, while treatment at 60 °C yielded 49.80% protein and 2.358 g/100 g. The most favourable result was obtained at 80 °C, where protein content reached 75.34%, with a yield of 4.587 g/100 g biomass, indicating improved protein release and higher extraction selectivity. Capillary electrophoresis revealed changes in molecular weight profile related to temperature treatment. Control, 50 °C and 60 °C protein samples were dominated by low-molecular weight fractions below 50 kDa, accounting for 89.61%, 99.47% and 92.88% of total quantified protein concentration, respectively. These fractions may be associated with RuBisCO subunits commonly reported at 12–15 kDa and 50–60 kDa. In contrast, extraction at 80 °C promoted a broader molecular weight distribution, with higher-molecular weight fractions up to 250 kDa, suggesting protein unfolding, association, and formation of larger complexes or aggregates. Overall, the results indicate that extraction temperature can be used to modulate both recovery efficiency and molecular properties of Lemna minor protein concentrates.

Keywords: Duckweed, RuBisCO, Alkaline Extraction, Extraction Temperature, Capillary Electrophoresis

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