


14th **hranom** **do** **zdravlja** **with** **food** **to** **health**



14th International Scientific
and Professional Conference
WITH FOOD TO HEALTH

14. međunarodni
znanstveno-stručni skup
HRANOM DO ZDRAVLJA

KNJIGA SAŽETAKA
BOOK OF ABSTRACTS

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FUNCTIONAL FOOD AND FOOD SUPPLEMENTS

GREEN METHODS FOR PROTEIN ISOLATION: SUSTAINABLE APPROACHES FOR ENHANCED PROTEIN RECOVERY

**Aleksandar Marić*, Bojana Šarić, Marijana Sakač, Branislava Đermanović,
Jovana Kojić, Ljubiša Šarić, Pavle Jovanov**

*Univesity of Novi Sad, Institute of Food Technology in Novi Sad,
Bulevar cara Lazara 1, 21000 Novi Sad, Serbia
aleksandar.maric@fins.uns.ac.rs

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Protein isolation is a crucial step in obtaining pure and functional proteins for various applications. Traditional protein isolation methods often involve the use of harsh chemicals, high energy consumption, and generate significant amounts of waste. In contrast, green methods employ environmentally friendly techniques that minimize the use of hazardous chemicals, conserve energy, and promote the efficient utilization of resources. Several innovative green approaches for protein isolation have emerged, including enzyme-assisted extraction, aqueous two-phase systems, and membrane-based separation techniques. These methods offer numerous advantages such as higher selectivity, improved protein recovery, and reduced environmental footprint. Enzyme-assisted extraction utilizes proteolytic enzymes to selectively cleave proteins from their matrix, enabling gentle and efficient protein isolation. Aqueous two-phase systems exploit the phase separation of two immiscible aqueous phases to partition proteins based on their physicochemical properties, facilitating their separation. Membrane-based separation techniques employ membranes with specific pore sizes or affinity ligands to selectively isolate proteins from complex mixtures. By adopting green methods, researchers and industries can contribute to sustainable protein production, reduce waste generation, and minimize the use of hazardous chemicals. Additionally, the recovered proteins can be used in various applications, including food, pharmaceuticals, and biotechnology, ensuring their valuable utilization.

Keywords: protein isolation, green methods, enzyme-assisted extraction, aqueous two-phase systems, membrane-based separation techniques

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