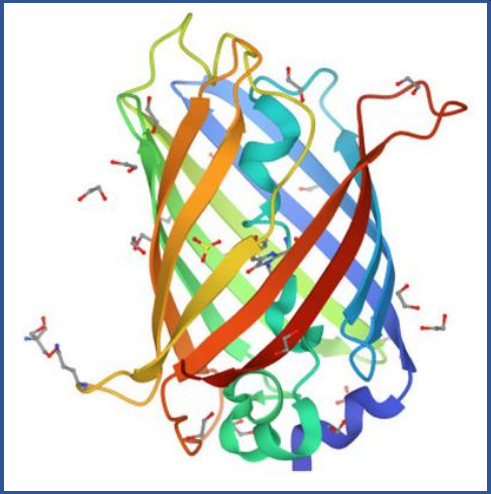
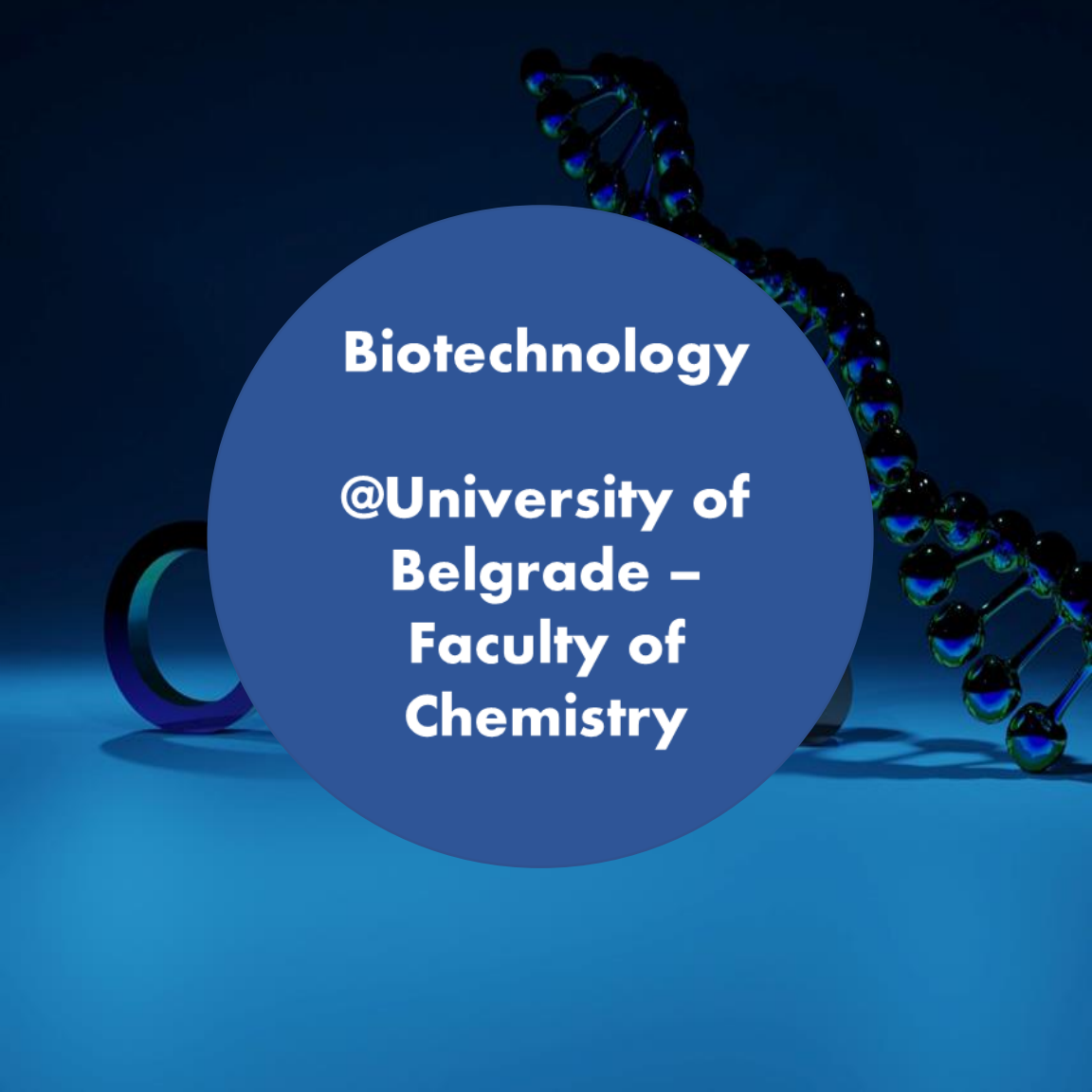



University of Belgrade
Faculty of Chemistry


Biotechnology
@University of Belgrade – Faculty of Chemistry

Biotechnology is a scientific field that today, more than any other in human history, can enable the sustainable development of human society.

THE UNIVERSITY OF BELGRADE'S FACULTY OF CHEMISTRY (UBFC) is recognized for quality of scientific research, international collaborations, as well as the number of PhD's who conduct work in the fields of (molecular) biotechnology, bio- and protein engineering.


NOVUS BIOLOGICALS
www.novusbio.com

The most essential biotechnological scientific areas implemented are in the fields of

food,

environment,

energy and

medicine.

CENTER OF RESEARCH EXCELLENCE

Strong expertise of UBFC is structural instrumental analysis and proteomics.

UBFC core facilities for NMR, HRMS and proteomics, support biotechnology research, but also serve numerous external researchers from the country and abroad.

TWINNING WITH TOP LEVEL EU INSTITUTIONS

GHENT
UNIVERSITY

KAROLINSKA INSTITUTET
ANNO 1810
Karolinska
Institutet

KATHOLIEKE UNIVERSITEIT
LEUVEN

MEDICAL UNIVERSITY
OF VIENNA

BIOTECHNOLOGY FOR FUTURE FOOD

Functional products introduced to the market : nutraceuticals "Oligogal Se" and "Dijabet Cr", as well as innovative infant formulas.

Current food industry cannot meet the current and future needs of the planet.

Novel projects and research in the field of food are the ones that develop innovative alternative protein sources based on algae and insects and functional food such as beer supplemented with hyalurone and Zn.

BIOTECHNOLOGY FOR FUTURE FOOD

Algae are rich source of bioactive phycobiliproteins:

blue-green microalgae Spirulina

red macroalga Porphyra

Stabilization of the colour of phycobilin proteins by binding of small molecules for use in the food industry.

PRESSION

PRESSION Project: "Strengthening the potential of algal proteins for food colouring and enrichment using high-pressure technology" (ANSO-CR-0PP-2021).

ANSO
Alliance of International Science Organizations

BIOTECHNOLOGY FOR FUTURE FOOD

Micro- and nanoplastics are emerging environmental and food contaminants

Impact on health, focus on allergies and asthma.

Novel methods of micro- and nanoplastics detection and quantification.

More sensitive food allergens detection.

Funded by the European Union

Фонд за науку Републике Србије

IMPTOX

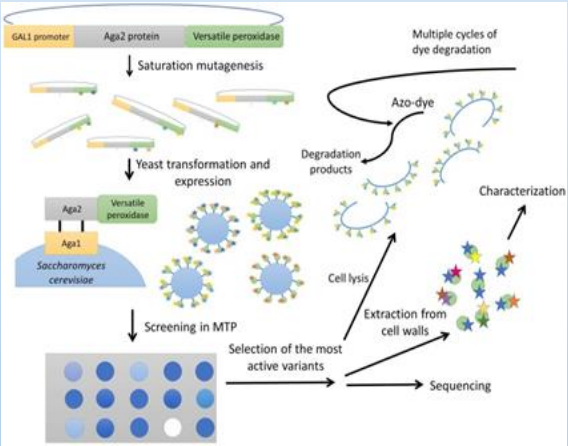
ShellPCR project

BIOTECHNOLOGY FOR ENVIRONMENT

Creation of new, biodegradable, efficient and environmentally friendly natural products for removing heavy metals from industrial wastewater.

Immobilization of algal phycobiliproteins with organic supports.

BIOTECHNOLOGY FOR ENVIRONMENT



Research on isolated,

natural; recombinantly produced and designed/engineered enzymes for oxidative pollutant degradation

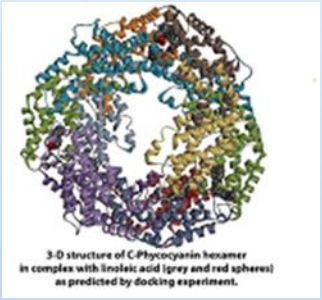
DAAD
Deutscher Akademischer Austausch Dienst
German Academic Exchange Service

BIOTECHNOLOGY FOR ENVIRONMENT

Several awards for the best technological innovation, patents for bioethanol production and insoluble dietary fibers from Triticalae, various biopolymers for wastewater treatment.

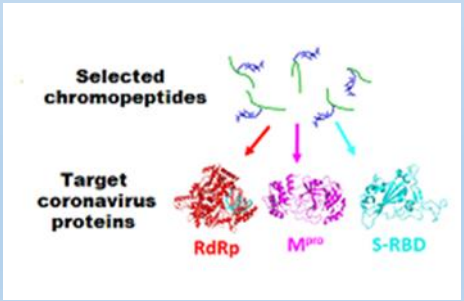
Use of various off-balance sheet raw materials and agri-food by-products for the production of bioethanol and biodiesel.

BIOTECHNOLOGY FOR MEDICINE



3-D structure of C-Phycocyanin hexamer in complex with linoleic acid (grey and red spheres) as predicted by docking experiment.

Comprehensive searching and identification of chromopeptides, obtained by directed digestion of phycobiliproteins.

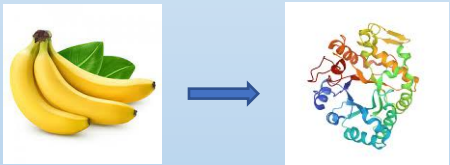


Viral targets RdRp, MPro and S-RBD proteins of SARS-CoV-2.

BIOTECHNOLOGY FOR MEDICINE

Design and development of recombinant protein therapeutics for diagnosis and allergen-specific immunotherapy in prokaryotic (E. coli) and eykariotic (P. pastoris) expression systems.

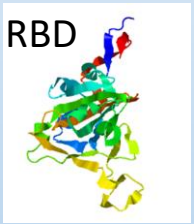
Patent rekombinant glukanase from bananas: ALLERGEN FOR DETECTION OF SPECIFIC ANTIBODIES AND USE THEREOF (Patent 57352)

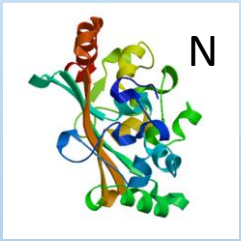


Recombinant linden pollen allergen (PoC)

РЕПУБЛИКА СРБИЈА
ФОНД ЗА ИНОВАЦИОНУ ДЕЛАТНОСТ

BIOTECHNOLOGY FOR MEDICINE





Design and production of structural viral proteins, their fragments and constructs (SARS-CoV-2, Influenza virus) in prokaryotic and eukaryotic (yeast, mamalian expression systems).

BIOTECHNOLOGY FOR MEDICINE

Recombinant protein antigens for serological SARS-CoV-2 diagnostic tests.

CAPSIDO project

UNDP project

Фонд за науку
Републике Србије

Serological test to N and RBD proteins developed in collaboration with INEP institute

UNDP

ELISA based on recombinant N/RBD antigens in cooperation with INEP institute obtained registration from ALIMS

BIOTECHNOLOGY FOR MEDICINE

Recombinant protein antigens for drug repurposing for the SARS-CoV-2 treatment.

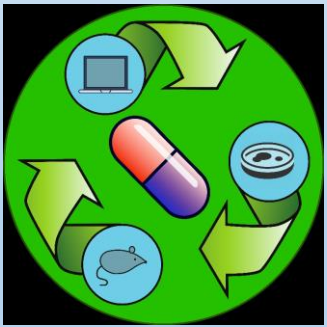
SMART REPURPOSING project

COVIDTARGET project

Eukaryotic α-glucosidase

NTD Spike SARS-CoV-2

Mpro and PLpro SARS-CoV-2 proteases

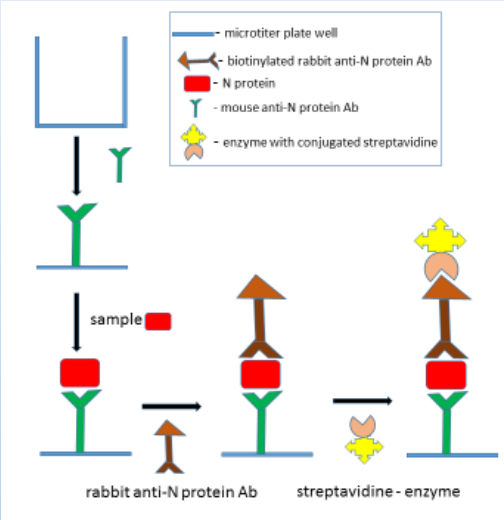


Фонд за науку
Републике Србије

BIOTECHNOLOGY FOR MEDICINE

More sensitive diagnostic test to SARS CoV-2

CAPSIDO project funded by the Science Fund of the Republic of Serbia



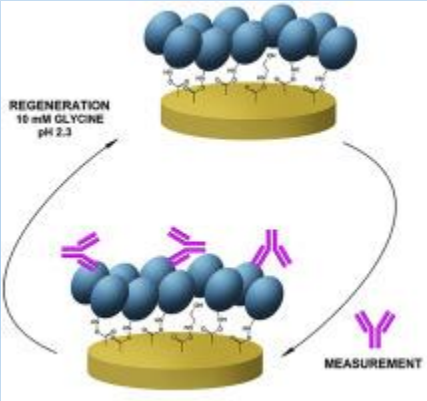
CAPSID

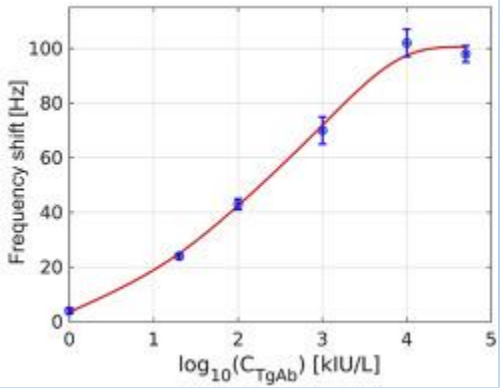
Фонд за науку
Републике Србије

BIOTECHNOLOGY FOR MEDICINE

More sensitive diagnostic test to autoimmune diseases

Quantification of antithyroglobulin antibodies in human serum – application of the quartz crystal microbalance sensors

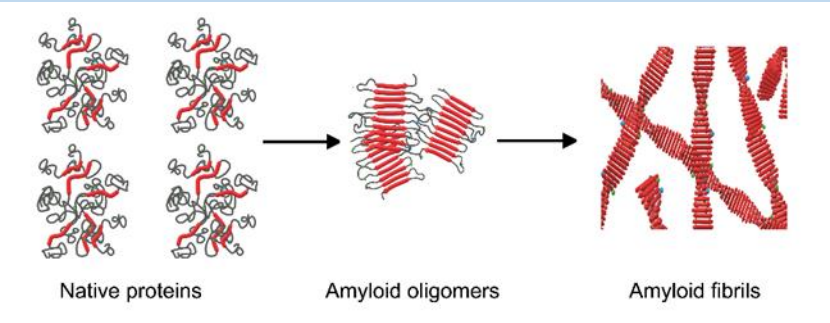




BIOTECHNOLOGY FOR MEDICINE

Detection of amyloid fibrils and amyloid oligomers in human sera by contemporary instrumental methods

Serbia-Slovenia bilateral project 337-00-21/2020-09/27

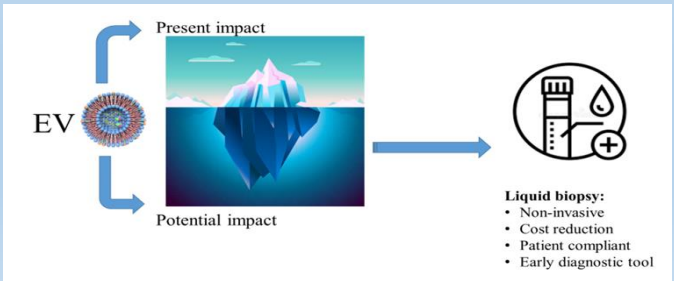


BIOTECHNOLOGY FOR MEDICINE

Creating a simple, robust, cheap, and scalable EV purification system for application of EVs in personalized medicine.

Immune-capture based approaches developed @UBFC could represent an effective purification alternative to obtain homogeneous EV samples.

МИНИСТАРСТВО ПРОСВЕТЕ, НАУКЕ И ТЕХНОЛОШКОГ РАЗВОЈА



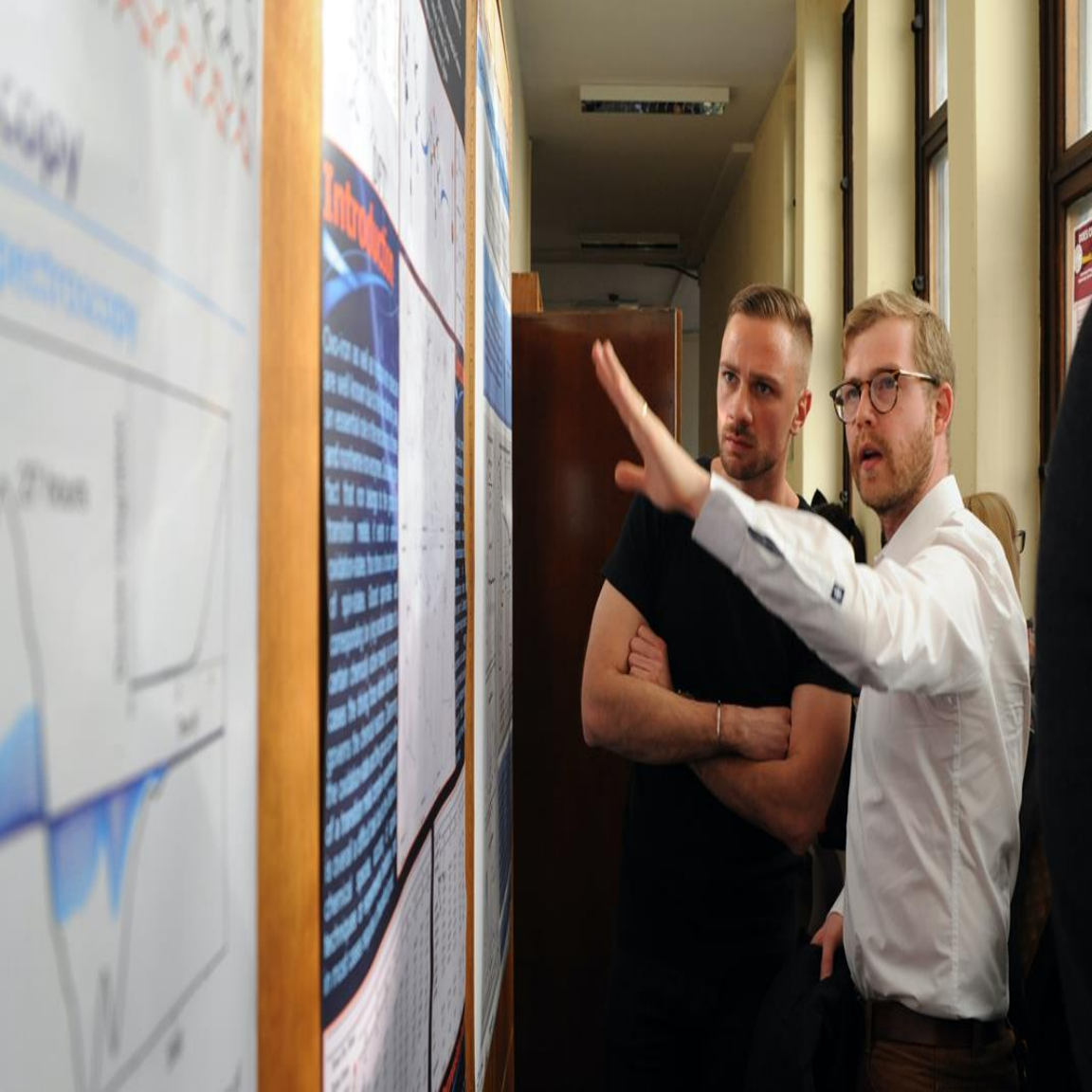
BIOCHEMISTRY STUDY PROGRAMS

Key for sustainable development of UBFC in the biotechnology field is research-based education of biochemists.

Biochemistry study program offers variety of biotechnology courses in addition to giving strong foundation in chemistry, biochemistry and cell and molecular biology.

BIOCHEMISTRY STUDY PROGRAMS

Market-oriented **Master of Biochemistry** study program offers core subjects of Molecular Biotechnology and Bioinformatics, and provides constant flux of competent young researchers to sustain expansion of biotechnology oriented research conducted at UBFC and in the country.



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