EUROPEAN UNION
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CPSBB

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CENTER OF PLANT SYSTEMS BIOLOGY AND BIOTECHNOLOGY

NEWSLETTER

ISSUE 1/ 2022

Assoc. Prof. Dr. Tsanko Gechev, Director of CPSBB:

We are proud to implement Bulgaria's largest project in the field of plant systems biology, funded by the European Commission and the Bulgarian Government's Operational Programme "Science and Education for Smart Growth"

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PlantaSYST

CPSBB has received funding from the European Union's Horizon 2020 research and innovation programme, project PlantaSYST (SGA-CSA No. 739582 under FPA No. 664620), and the BG05M2OP001-1.003-001-C01 project, financed by the European Regional Development Fund through the "Science and Education for Smart Growth" Operational Programme.

OPERATIONAL PROGRAMME SCIENCE AND EDUCATION FOR SMART GROWTH

INNOVATIONS

MVCRI Cooperates with CPSBB to Develop and Analyze a Core Collection of Peppers and Tomatoes

The Maritsa Vegetable Crops Research Institute (MVCRI) and the Center of Plant Systems Biology and Biotechnology (CPSBB) currently cooperate on analyzing large collections of tomato and pepper varieties (over 150 varieties for each species) with unique properties.

Teams from both institutes are also developing more valuable plant lines and hybrids, as well as analyzing the molecular mechanisms and genes which cause diversity.

Bulgarian vegetables are famous for their taste. Unfortunately, most of them do not carry genes for disease resistance. Consequently, many farmers and producers don't cultivate them since this lack of resilience reduces crop yield.

The CPSBB is working on projects that combine the taste of traditional Bulgarian vegetables with the resistant characteristics of foreign sorts, in order to increase producer income.

In 2022, MVCRI and CPSBB plan to register two new varieties of tomatoes with excellent taste, high resistance and better productivity.

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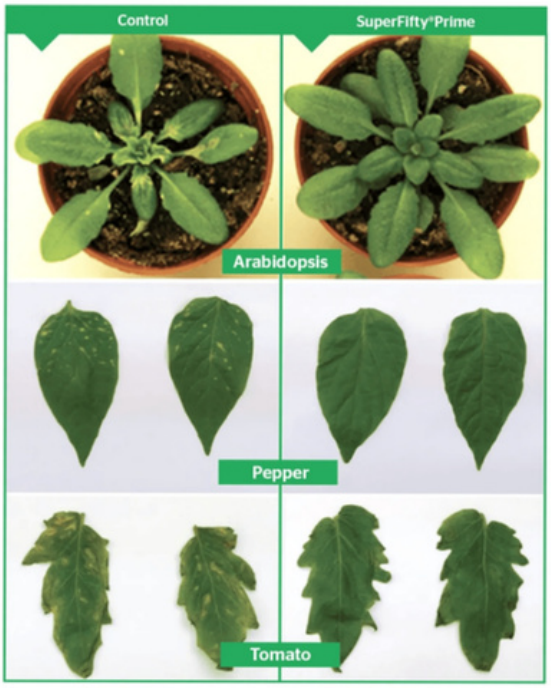
CPSBB is a Partner in an Innovative Project for Development of a Molecular Priming Technology for Crop Improvement



In collaboration with the Irish company BioAtlantis, CPSBB is developing an effective and environmentally friendly molecular priming technology, based on a biostimulant derived from the seaweed *Ascophyllum nodosum.*

The product of this technology - Super Fifty® - induces the expression of specific genes and metabolites with crop protective functions.

Researchers have explored the molecular mechanisms of action between the biostimulant and plants via RNA sequencing, metabolome, and lipidomic analyses.

Several scientific articles were published on how the Ascophyllum nodosum-derived biostimulant can protect model or/and crop plants from oxidative and abiotic stresses.

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CPSBB Received a VIHREN Grant from the Bulgarian National Science Fund (NSF)

BULGARIAN SCIENCE FUND

In 2021, the Bulgarian NSF launched the second call of the VIHREN programme for established and leading researchers.

The project of Dr. Akhtar Ali (CPSBB) "**Deciphering the cross talk between ABA signaling and floral transition in Arabidopsis**" was ranked first in the category of "Established Researcher" and was selected for funding.

The duration of the project is five years.

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CPSBB is a Partner in a Fact-Checking Project that Helps Journalists and Scientists

The project "Science and Journalism: Together Against Infodemic", which started at the end of 2021, has a primary goal of increasing trust in the media and science by creating better and more in-depth content.

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NEWS

CPSBB's Scientists are Among the TOP Cited Researchers in the World

The Elsevier global science analytics platform rated CPSBB's Plant Cell Biotechnology Department Head Prof. Dr. Milen Georgiev as one of the most cited scientists worldwide.

Elsevier provides a publicly available database of over 100 000 top-scientists, based on standardized information about citations, h-index, co-authorship adjusted hm-index, citations of papers in different authorship positions and a composite indicator. Selection is based on the top 100 000 by c-score (with and without self-citations) or a percentile rank of 2% and above.

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CPSBB's Plant Metabolomics Department Head Prof. Alisdair Fernie, and CPSBB's Plant Development Department Head Prof. Bernd Mueller-Roeber were ranked in the Clarivate's list of Highly Cited Researchers™ as two of the most cited researchers in Plant Science for 2021.

Ranking methodology draws on data and analysis performed by bibliometric experts and data scientists at the Institute for Scientific Information™ at Clarivate.

Clarivate prepares an annual list of 6 600 researchers from across the globe who have demonstrated significant influence in their chosen field through the publication of multiple highly cited papers over the past decade.

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NEWS

Bulgarian National Television Featured CPSBB and PlantaSYST Project

The Bulgarian National Television broadcast a report entitled **"The PlantaSYST Project - The Future of Bulgarian Plant Science".**

The project has had a significant scientific, social and economic impact, both locally and nation-wide. The CPSBBs team is grateful for the support and cooperation of the Bulgarian Ministry of Science and Education and the Plovdiv Municipality.

WATCH HERE

The CPSBB was Featured in the Bulgarian Science Magazine

The December '21 issue of the "**Bulgarian Science**" magazine presented some of the CPSBB's postdoctoral researchers and laboratory managers.

The presentation is part of the campaign **The Faces of Operational Programme "Science and Education for Smart Growth"** initiated by the Executive Agency "Programme Education" of the Bulgarian Ministry of Education and Science.

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NEWS

CPSBB Took Part in the Campaign "The Faces of OP Science and Education for Smart Growth"

Scientists from CPSBB were ambassadors of the information campaign **The Faces of Operational Programme "Science and Education for Smart Growth"**.

The campaign was initiated in subway stations in Sofia by the Executive Agency "Programme Education" of the Bulgarian Ministry of Education and Science.

The initiative involved researchers whose scientific work has achieved significant social and economic impact.

The CPSBB was presented in the campaign by **Dr. Gergana Zahmanova, Dr. Liliya Vasileva, Dr. Ramadoss Dhanushkodi, Dr. Rafe Lyall, Mrs. Martina Savova.**

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SCIENTIFIC PUBLICATIONS

Plant-Microbe Interactions During Phytoremediation

Dr. Aakansha Kanojia from CPSBB is a co-author of a scientific publication for the prestigious journal "**Bioresource Technology**".

The article "**Molecular insights into plant-microbe interactions for sustainable remediation of the contaminated environment**" discusses the recent advances in omics applications made hitherto to understand the mechanisms of plant-microbe interactions during phytoremediation.

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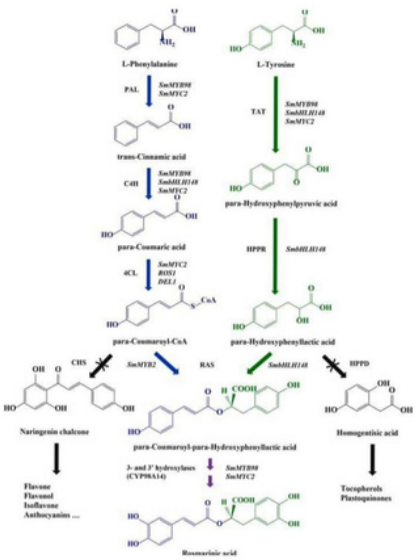
All scientific publications of CPSBB

Rosmarinic acid: From Bench to Valuable Applications in Food Industry



Scientists from CPSBB's Plant Cell Biotechnology Department have authored the free-acess article "**Rosmarinic acid - From bench to valuable applications in food industry**" for the prestigious scientific journal "**Trends in Food Science and Technology**".

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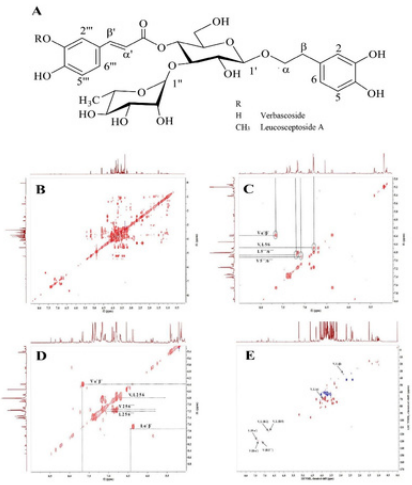
SCIENTIFIC PUBLICATIONS

Devil's Claw: Potential Mechanisms of Action Against Psoriasis

Scientists from the CPSBB Plant Cell Biotechnology Department published an article for the leading international open-access journal "**Molecules**".

The study explores Devil's claw's (*Harpagophytum procumbens*) potential mechanisms of action against psoriasis.



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All scientific publications of CPSBB

A CPSBB Scientist is a Guest-Editor of a Research Topic Hosted by Frontiers in Plant Sciences (FiPS)

Dr. Amol Nankar is guest-editing a special issue on "Enhancing Allele Mining for Crop Improvement Amid Emerging Challenge of Climate Change" hosted by Frontiers in Plant Sciences (FiPS).

The editors provoke a discussion within the context of Climate Change which will inspire novel applications and integration of interdisciplinary approaches for crop improvement.

The deadline for abstract submission is February 28, 2022.

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