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++++++++◇◆ INDEX ◇◆++++++++++++++++++++++++++++++++++++++++++++++++++++++++



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**1. IPSR forum - last minute call!**

The Institute of Plant Science and Resources (IPSR) at Okayama University will host a hybrid international forum, "IPSR International Forum 2024 on Plant Stress Sciences by/for Junior Scientists" on Friday, December 6, 2024. The registration deadline for participation is today, so do not miss this good opportunity for learning!

The aim of this forum is to foster young researchers who will lead the future of plant science. Young researchers (students, postdoctoral researchers, and junior faculty members) selected through an open call for abstracts will give oral presentations and hold discussions on the theme of "Bioinformatics Connecting Genetic Resources and Stress Science Research."

The keynote lecture will be given by Professor Jian Sun (Professor at Shenyang Agricultural University, China and Senior Researcher at Yazhou Bay National Laboratory) on the "Innovation and Applications of Weedy Rice Genetic Resources."

Registration Deadline: November 8, 2024

Format: Hybrid (in-person + online) (link will be provided at a later date)

Venue: Institute of Plant Science and Resources, Okayama University (2-20-1 Chuo, Kurashiki, Okayama Prefecture)

Presentation Language: English

Forum participation is free of charge but registration is required.

Please check the following site for more information.
https://www.rib.okayama-u.ac.jp/forum/2024

**2. Collaboration program in 2025 – Applications are accepted now!**

The Okayama University Institute of Plant Science and Resources Joint Usage/Research Center Program just opened the next call for "new and continued" collaboration proposals in FY2025. Check for application details on the IPSR website:
https://www.rib.okayama-u.ac.jp/collaboration/collaboration1/
Deadline for priority (A) and young (B) research proposals: Dec-11, 2024
Deadline for regular (C) proposals: Jan-10,2025

**3. Brief paper highlight**

Regeneration of plants if fascinating feature that distinguishes plants from most of the other organisms. This special feature enabled easy Agrobacterium-mediated transformation of plants via gene insertions into vegetative tissues, such as leaves and stem segments, followed by the whole plant regeneration. Unfortunately, many important crops are recalcitrant to transformation, mainly due to lack of efficient regeneration protocol following transgene introduction. In the current publication, it is shown that a peptide signal REF1 is involved in regulation of WIND1 master regulator that orchestrates wound-induced callus formation, vascular reconnection and defense responses. It is proposed that REF1 and similar peptides may offer an efficient approach for improved regeneration of recalcitrant crops.

Read more: Wentao Yang, Huawei Zhai, Fangming Wu et al. (2024) Peptide REF1 is a local wound signal promoting plant regeneration. Cell 187, 3024–3038, June 6, 2024

**4. Joint research introductions = 106th series =**

A Memorable Research Experience at IPSR Okayama University:
Insights from a 14-Day Journey

Odit Ferry Kurniadinata

My name is Odit Ferry Kurniadinata. I am an Associate Professor at the Faculty of Agriculture, Universitas Mulawarman. My research expertise lies in the field of Horticultural Crops, with a specific focus on the regulation of calcium metabolism within plant tissues. One of the primary plants I am currently studying is the taro plant (Colocasia esculenta). This interest in calcium regulation brought me to Okayama University's Institute of Plant Science and Resources (IPSR) for a 14-day research collaboration aimed at understanding the oxalate crystal content in taro tissues.

From July 23 to August 7, 2024, I had the privilege of visiting the Institute of Plant Science and Resources (IPSR) at Okayama University, Japan. This 14-day journey, as part of a research collaboration between the Faculty of Agriculture, Universitas Mulawarman, and IPSR, proved to be both enriching and enlightening. Our joint focus on studying the taro plant (Colocasia esculenta) and its oxalate crystal content allowed me to gain valuable knowledge and hands-on experience in cutting-edge scientific research.

Upon arriving in the picturesque city of Kurashiki, where IPSR is located, I was warmly welcomed by the research team and introduced to the state-of-the-art facilities at the institute. Over the first few days, we had in-depth discussions on research methodologies, refining the experimental design, and familiarizing myself with the equipment I would use during the study. One of the key highlights was my exposure to advanced analytical instruments such as the Gas Chromatography-Mass Spectrometry (GC-MS), Inductively Coupled Plasma Mass Spectrometry (ICP-MS), and Scanning Electron Microscopy coupled with Energy Dispersive X-ray Spectroscopy (SEM-EDX). These instruments played a crucial role in my research on taro's oxalate crystal and mineral content.

Each day at IPSR was a new learning experience. My research primarily focused on analyzing oxalate crystals found in various parts of the taro tuber. By

preparing samples and conducting trials with GC-MS, ICP-MS, and SEM-EDX, I was able to quantify oxalate levels and identify key minerals present in the tuber. The analysis revealed intriguing variations in oxalate concentrations between different taro varieties, which may have implications for both food safety and nutrition. These findings not only deepened my understanding of taro's biochemical properties but also opened up new questions for further study.

The collaborative atmosphere at IPSR was incredibly supportive. I had the opportunity to engage in productive discussions with Professor Ivan Galis and his team, who provided valuable insights and guidance throughout my stay. These exchanges fostered an environment of continuous learning, where I could share my own findings while also receiving feedback that enriched my research process.

One of the most exciting aspects of this experience was the potential for future collaborations. My research at IPSR sparked several new ideas that could be explored in greater depth in the coming years. Together with Professor Galis and the IPSR team, we discussed the possibility of conducting a follow-up study next year, which could delve further into the applications of taro as a functional food and its potential to be developed as a sustainable crop.

As I conclude this memorable journey, I would like to extend my heartfelt thanks to Professor Ivan Galis and the entire IPSR team for their hospitality and invaluable support during my 14-day visit. Their expertise and generosity allowed me to make significant progress in my research and grow as a scientist.

I am also deeply grateful to IPSR Okayama University for providing me with access to their world-class facilities and for fostering such an inspiring environment for collaboration.

I look forward to continuing our research partnership in the future and hope to return to Okayama to build on the foundation we have established. This experience has not only expanded my knowledge but has also deepened my commitment to advancing agricultural research through international cooperation.

**5. Recently released publications**

Tazawa, M., Wayne, R., Katsuhara, M.
Analysis of the effect of permeant solutes on the hydraulic resistance of the plasma membrane in cells of Chara corallina.
Protoplasma, 10.1007/s00709-024-02000-6 (2024)
Doi.org/10.1007/s00709-024-02000-6

Brunje, A., Fussl, M., Eirich, J., Boyer, J., Heinkow, P., Neumann, U., Konert, M., Ivanauskaite, A., Seidel, J., Ozawa, S., Sakamoto, W., Meinnel, T., Schwarzer, D., Mulo, P., Giglione, C., Finkemeier, I.
The plastidial protein acetyltransferase GNAT1 forms a complex with GNAT2, yet their interaction is dispensable for state transitions.
Molecular & Cellular Proteomics: 100850 (2024)
Doi.org/10.1016/j.mcpro.2024.100850

Huang, S., Sato, K., Ma, J.F.
Breeding for an elite malting barley cultivar with acid soil tolerance.
Communications Biology 7(1):1203 (2024)
Doi.org/10.1038/s42003-024-06903-1

Kodru, S., Nellaepalli, S., Ozawa, S., Satoh, C., Kuroda, H., Tanaka, R., Guan, K., Kobayashi, M., Tran, P., McCarthy, S., Wakao, S., Niyogi, K.K., Takahashi, Y.
Geranylgeranylated-chlorophyll-protein complexes in lhl3 mutant of the green alga Chlamydomonas reinhardtii.
The Plant Journal, 10.1111/tpj.17071 (2024)
Doi.org/10.1111/tpj.17071

Furuta, T., Saw, O.M., Moe, S., Win, K.T., Hlaing, M.M., Hlaing, A.L.L., Thein, M.S., Yasui, H., Ashikari, M., Yoshimura, A., Yamagata, Y.
Development of genomic and genetic resources facilitating molecular genetic studies on untapped Myanmar rice germplasms.
Breeding Science, 74(2):124-137 (2024)
Doi.org/10.1270/jsbbs.23077

Tek, A.L., Nagaki, K., Yildiz Akkamis, H., Tanaka, K., Kobayashi, H.
Chromosome-specific barcode system with centromeric repeat in cultivated soybean and wild progenitor.
Life Science Alliance, 7(12):10.26508/lsa.202402802 (2024)
Doi.org/10.26508/lsa.202402802

**6. Posting request**

We constantly encourage all PSSNet subscribers to contribute information about their latest publications, meetings and seminars, staff, postdoc, and student recruitments, etc. Please send your information to [ pssnet-admin@okayama-u.ac.jp ] E-mail address. You can also distribute your information via mailing list of the PSSNet.

**7. Plants know their friends and foes**

Plants interact with many other organisms, some of which are friendly while the others may behave as foes. The friendship of plants with bacteria may go as far as symbiosis but other bacteria can cause severe diseases in plants. It has always fascinated me how plants can distinguish friendly bacteria from those causing diseases based on the sophisticated chemical communication pathways. In nature, mutualistic relationships are thought to have evolved from ancestral parasitism but direct evidence remains scarce. Recently, a bacterium capable of both, symbiosis and pathogenesis on the same host plant was discovered. Hence, the Ensifer adhaerens T4 strain provides a novel insight on how symbiotic processes may have evolved in plants.

Read more: Magne, K., Massot, S., Folletti, T. et al. Atypical rhizobia trigger nodulation and pathogenesis on the same legume hosts. Nature Communications 15, 9246 (2024). https://doi.org/10.1038/s41467-024-53388-x

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