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Editorial Open Access

With JPBP, Plants are in Good Hands!

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Dear readers of the Journal of Plant Biochemistry and Physiology,

We are pleased to introduce you to the first issue of the Journal of Plant Biochemistry and Physiology (JPBP). Nowadays with the increasing debate of implementing Open Access research publications, JPBP will be providing international plant readers a rapid turnabout which is ultimately reflected on the plant scientific community. This freely accessible journal, of OMICS Group, publishes all types of scientific findings, contributions and discoveries across the entire research spectrum of plant science.

In JPBP, our aim is to publish the most exciting novel research findings in different plant subjects related, but not limited, to biochemistry, physiology, structure, genetics, cell biology, functional biology, molecular biology, genomics and bioinformatics. Plant research at the cellular and molecular levels, and its interaction with various processes of photosynthesis, respiration, nutrition, plant hormones associated with plant morphology, ecology, microbes or environment, is welcomed.

With the globe's concern in plant science, *Arabidopsis thaliana* "pops-up" as a model for plant research. Although enormous amount of information was collected via this "weed", several plants have also been recognized as model systems, including pea, maize, rice, tomato, etc. These model systems will improve our understanding of fundamental aspects of plant growth and development, hormone signaling pathways, disease resistance and abiotic stress responses. For example, *Arabidopsis* has been deployed to understand the molecular details of the plant-pathogen interaction to be used to design plant protection strategies to reduce yield loss in other host plant species.

… The complexity of the immune signaling network is steered by both the plant and its attackers [1].

For that reason, current research exploits the powerful genetic system of *Arabidopsis* and tomato to understand the plant response to economically important pathogens, such as *Botrytis cinerea*. With the increasing call of public to limit chemicals use on plants, and the ineffectiveness of fungicides due to resistance developed by *Botrytis*, genetic resistance provides a sustainable and safe alternative to chemical control.

Despite its economic impact, knowledge of plant-*Botrytis* interaction has remained meager. Up-to-date, no genes for complete resistance to *Botrytis* have been described in its host plant species. The *Arabidopsis-Botrytis* interaction is a suitable plant-pathogen model for studying plant-microbe interactions, because of the genetic and molecular resources offered by this model plant. In Arabidopsis, many mutants altered in their responses to various environmental signals and physiological functions exist and provide valuable tools for such studies. In addition, *Arabidopsis* has been widely used to understand the biological processes underlying interactions with pathogens and abiotic stresses. The genome sequence of *Arabidopsis* has been completed offering limitless resources that are unparalleled in any other dicotyledonous plant. The features of the powerful genetics, efficient transformation, sequence indexed T-DNA insertion collections, mapped PCR markers and the well-developed genomic tools and resources make *Arabidopsis* an ideal model system for our studies. Findings will extrapolate to other plant pathogens affecting economically significant crops, such as tomato. Initiative studies of functional conservation of defense pathways using *Arabidopsis* and tomato as host plants has been well-documented [2-5]. Therefore, plant genes and pathways mediating resistance to *Botrytis* in *Arabidopsis* have been transferred directly to tomato as a crop host of *Botrytis*. The development of resistance cultivars impinges on the successful identification, characterization and transfer of genes involved in *Botrytis* resistance. Our molecular understanding of host responses to *Botrytis* infection will expedite efforts to develop new disease control strategies including the breeding of resistant cultivars, thus reducing environmental pollution by chemical pesticides.

The incorporation of biochemistry and physiology in plant research will undeniably enhance our knowledge in the vast areas of plant science. Moreover, original findings framed in peer-reviewed scholarly articles will definitely stimulate the innovation and socioeconomic development, while ensuring the quality of scientific achievements. So you can rest assured your plants are in good hands with JPBP.

References

1. van Wees SC (2012) Unravelling intimacies between plants and their enemies. Plant Biol (Stuttg).
2. Abuqamar S, Chai MF, Luo H, Song F, Mengiste T (2008) Tomato protein kinase 1b mediates signaling of plant responses to necrotrophic fungi and insect herbivory. Plant Cell 20: 1964-1983.
3. Abuqamar S, Luo H, Laluk K, Mickelbart MV, Mengiste T (2009) Crosstalk between biotic and abiotic stress responses in tomato is mediated by the AIM1 transcription factor. Plant J 58: 347-360.
4. Anderson JP, Thatcher LF, Singh KB (2005) Plant defence responses: conservation between models and crops. Functional Plant Biology 32: 21-34.
5. Schilmiller AL, Koo AJ, Howe GA (2007) Functional diversification of acyl-coenzyme A oxidases in jasmonic acid biosynthesis and action. Plant Physiol 143: 812-824.

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