

Singapore

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Please provide a paragraph describing the general impact of the COVID19 pandemic on the scientific community in your country

In Singapore, we had a “circuit breaker” measures, abbreviated as CB, during 7 April, 2020 – 1 June 2020. The measures mandated a stay-at-home order by the Government of Singapore, however they allowed essential research staff to regularly visit the labs to sustain minimal research activities. The measures were effective so that research activities could slowly resume after the CB with staggering working hours and safe-distancing among researchers. As of Dec 28, 2020, the measures were lifted to a phase in which general research activities could be performed to the level comparable to pre-Covid19 days. We still stay vigilant to keep the safe-distancing rule, temperature logging, mask-wearing and on-line meetings to avoid crowding.

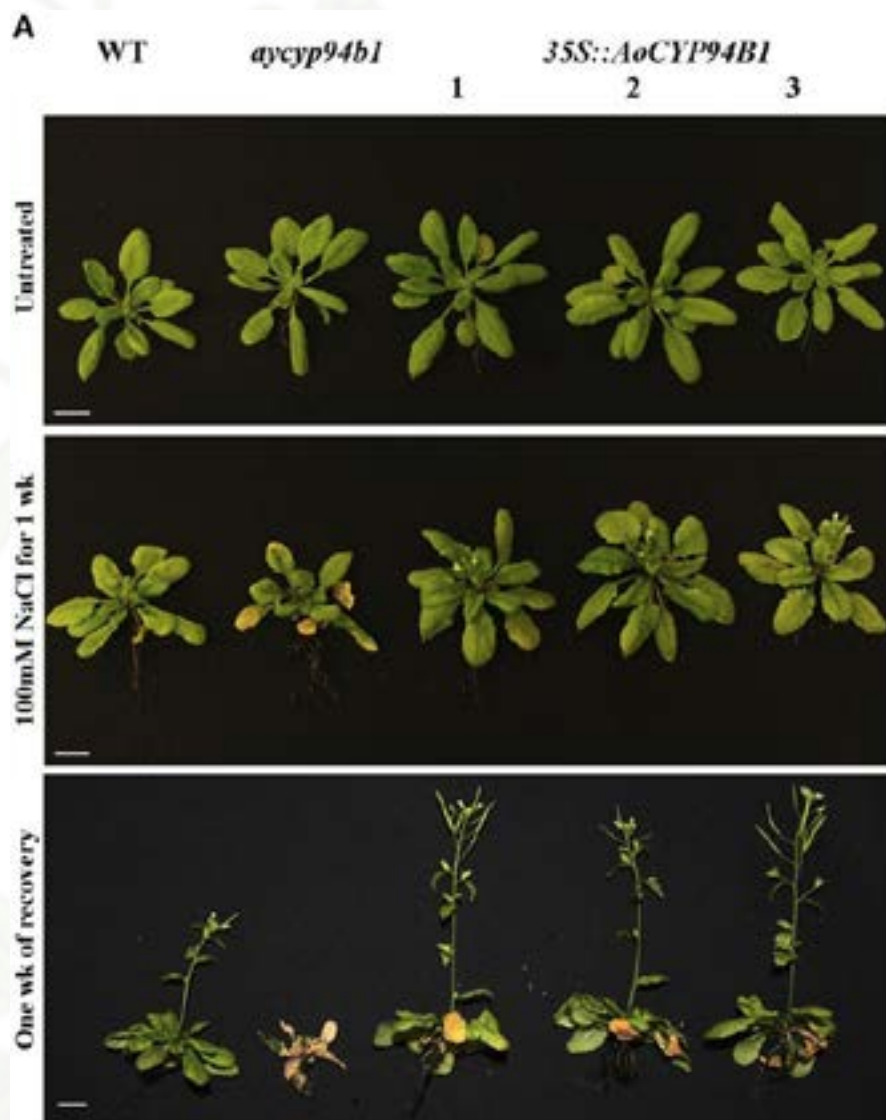
Planned events for 2021 and 2022

Due to Covid-19, most local in-person conferences were all canceled or switched to virtual events.

Selected Publications

1) Mobile TERMINAL FLOWER1 determines seed size in Arabidopsis. Zhang B, Li C, Li Y, Yu H. *Nature Plants* (2020) Sep;6(9):1146-1157. doi: 10.1038/s41477-020-0749-5. Epub 2020 Aug 24.

TFL1 is a novel mobile regulator generated in the chalazal endosperm, which moves to the peripheral endosperm to control seed size under the regulation by a group of small GTP-binding Ras-related nuclear proteins.



Heterologous expression of AoCYP94B1 increases salt tolerance and regulates Na⁺ accumulation in Arabidopsis plants. A, Growth response to salt (100 mM NaCl for 1 week) of the wild type (WT), *atcyp94b1*, and three independent lines of 35S::AoCYP94B1 heterologously expressed in the mutant background was monitored in 1-month-old, soil-grown Arabidopsis plants in the untreated and salt-treated conditions and after 1 week (wk) of recovery in normal water. Scale bar = 10 mm.

2) Regulation of CYP94B1 by WRKY33 controls root apoplastic barrier formation leading to salt tolerance. Krishnamurthy P, Vishal B, Ho WJ, Lok CJF, Lee F, Kumar PP. *Plant Physiology* (2020) 184:2199-2215. doi:<https://doi.org/10.1104/pp.20.01054>

This work identifies a cytochrome p450 gene from mangrove as a key factor to generate apoplastic barrier in roots for salinity adaption.

3) Genetics of autoimmunity: an evolutionary genetics perspective. Wan WL, Kim ST, Castel B, Charoennit N, Chae E. *New Phytologist* (2021) 229(3):1215-1233 doi: 10.1111/nph.16947

A commissioned article for Tansley review series provides a comprehensive overview on hybrid necrosis and immune system incompatibilities in plants.

Major Funding Sources

- National Research Foundation Singapore (Prime Minister's Office Singapore) <https://www.nrf.gov.sg/>
- Ministry of Education, Singapore <https://www.moe.gov.sg/>
- Singapore Food Agency (SFA) <https://www.sfa.gov.sg/>
- Temasek Foundation Innovates <http://www.temasekfoundation-innovates.org.sg/>