



Assoc. Prof.
MORI Izumi



Study on Molecular Physiology of Stomatal Movement against Air Pollutants

Yield loss of crops due to airborne pollutants is estimated as 30-40% near future in Japan. Plants equip the mechanism to withstand such pollutants. One of the major mechanisms is elucidated as closing stomata to prevent the entry of gaseous toxicants. To gain insight into the molecular basis of plant response to airborne pollutant, I employ molecular genetic and physiological approaches to comprehend stress signaling mechanism of stomata.



Ion Dynamics Study of Stomata, Roots and Inside of Leaves.



Although plants seem calm, silent and static, it is not real. Plants are always active and dynamic. For example, stomata move every day, every minute; tendrils move spirally around and root architecture keeps changing. These movements of plants are more or less associated with the mobilization of ions. I am an expert in ion dynamics study through electrophysiological techniques. My main research focuses are Ca^{2+} ion transport in guard cells and CO_2 transport in mesophyll cells, which play crucial roles in photosynthesis under biotic and abiotic stresses.

Plant Hormone Quantification.

In addition to physiological analysis, chemical analysis using LC-MS is one of my missions as a staff of Institute of Plant Science and Resources, Okayama University. I am taking a part of the comprehensive plant hormone quantification analysis group. Our group is having a large number of collaborators from all around the world.