

3RD WORLD PLANT GENOMICS AND PLANT SCIENCE CONGRESS & 4TH WORLD MYCOLOGY AND MUSHROOM CONGRESS

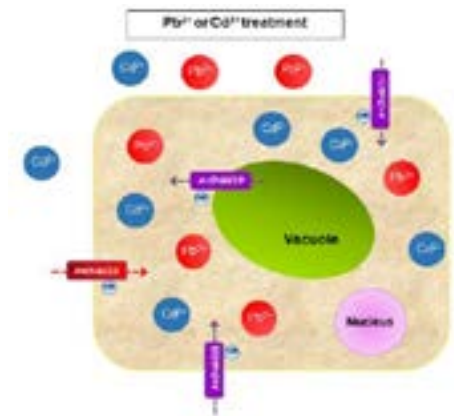
July 15-16, 2019
Osaka, Japan

Elucidation of *Arabidopsis* cyclic nucleotide-gated channels contributing to heavy metal accumulation in plants

Ryoung Shin

RIKEN Center for Sustainable Resource Science, Japan

Non-essential heavy metals and toxic concentrations of essential metals negatively affect various metabolic and cellular processes. Although only few studies have performed the regulation of heavy metal transport in plants, heavy metal ions are known to enter cells in a non-selective manner. Plant cyclic nucleotide-gated channels (CNGCs), a type of Ca²⁺-permeable-channel, have been suggested to be involved in transporting both essential and toxic heavy metal ions. To determine the candidates responsible for heavy metal ion transport, a series of *Arabidopsis* CNGC mutants were examined for their response to Pb²⁺ and Cd²⁺ ions. Results, based on the analysis of primary root length and ion content analysis verified that at least four AtCNGCs play roles in Pb²⁺ and/or Cd²⁺ accumulation in plants. These findings provide functional evidence which support the roles of these AtCNGCs in the uptake and transport of Pb²⁺ or Cd²⁺ ion in plants.



Biography

Ryoung Shin has completed his PhD at the age of 28 years from Korea University and Postdoctoral Studies from Donald Danforth Plant Science Center, USA. She is the Unit leader of RIKEN Center for Sustainable Resource Science. She has published more than 45 papers in reputed journals and has 7 patents and has been served the editorial board member of three journals including Scientific Reports.

ryoung.shin@riken.jp