96th CRC Seminar

Dr. Hong Wang

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Dr. Hong Wang of University of Saskatchewan is the speaker of 96th CRC seminar. Dr. Wang is one of the leading experts in plant cell cycle regulation research. He has published numerous articles in high impact journals like The Plant Cell, Plant Journal, Plant Physiology etc. He will talk about the plant unique CDK inhibitors, ICK/KRPs and their biochemical properties, cellular localization and functional role. Dr. Hong will also introduce the recent work of his group on protein ubiquitination.

"Plant Cell Cycle Regulation and Protein Ubiquitination"

時間：2016 年 05 月 30 日(月）16:30～17:30

場所：遠隔講義室（生命系スペース C）

The cell division cycle in eukaryotes is regulated by cyclin-dependent kinases (CDKs) and the activity of CDKs can be modulated positively or negatively by several mechanisms, including transcriptional regulation, binding by other proteins, phosphorylation, and proteolysis. Plants have a unique family of CDK inhibitors called ICK/KRPs (interactor/inhibitor of Cdc2 kinase/Kip-related proteins). Apart from having sequence similarity only in a short C-terminal region with a family of mammalian CDK inhibitors, these plant CDK inhibitors do not share sequence similarity with other proteins. I will present results on the regulation and functions of this family of plant cell cycle regulators. Another area of my research is in protein ubiquitnation. It involves a cascade of three biochemical reactions namely ubiquitin (Ub) activation, Ub conjugation and Ub ligation onto the substrate, which are catalyzed by three enzymes referred to as E1, E2 and E3. While Lys48-linked polyubiquitination is known to be important for proteolysis, much less is known about the other forms of polyubiquitination in plants. Previously, we identified Arabidopsis UBC13, the only known E2 responsible for Lys63-linked polyubiquitination. Recently, we identified another E2, UBC22, which likely catalyzes Lys11-linked ubiquitination. The roles of UBC13 in root development and UBC22 in female gametophyte development will be discussed.

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