

生命機能研究科セミナー

Graduate School of Frontier Biosciences, Osaka University

Monday, January 19, 2015

16:00 – 17:30

生命機能研究科 生命システム棟 2階セミナー室
FBS BioSystems Building 2F Seminar Room

Lecturer: Dr. Ali Ferjani

Associate Professor
Department of Biology,
Tokyo Gakugei University



Please join us for Dr. Ferjani's talk:

“The metabolic catastrophe of PPi over-accumulation: Major targets and potential benefits”

Pyrophosphate (PPi) is generated in anabolic reactions such as synthesis of UDP-glucose, the substrate for glycogen synthesis in animals and cellulose in plants. Until recently, the biological roles of PPi were obscured because loss of pyrophosphatase (PPase) activity caused growth arrest, and developmental defects in many organisms, hampering in depth investigation. Our screening identified *fugu5* as a viable H⁺-PPase loss-of-function mutant of *Arabidopsis thaliana*. In the first half of this seminar, I will present detailed functional analysis of H⁺-PPase, and show that elevated level of cytosolic PPi inhibits gluconeogenesis. Then, I will present our metabolomics data which identified UDP-glucose pyrophosphorylase as the major target of PPi *in vivo*. Finally, being highly expressed in several cancer cell types, PPase may represent a unique target for cancer therapy.

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