

GRK 1708

Molecular principles of bacterial survival
strategies

Invited guest scientist

Prof. Dr. Luciano F. Huergo

Federal University of Paraná, Brazil
Department of Biochemistry and Molecular Biology

will talk on

**“Expanding the regulatory functions
of P_{II} proteins”**

Monday, 20. March 2017

1:00 p.m.

The P_{II} protein family comprises ubiquitous and conserved trimeric proteins with the extraordinary ability to sense the intracellular levels of glutamine, 2-oxoglutarate, ATP and ADP. These metabolites affect the P_{II} protein structure thereby altering the ability of P_{II} to interact and regulate a vast list of targets proteins ranging from transcriptional regulator, enzymes and transporters. In prokaryotes, the best described function of P_{II} is to regulate nitrogen metabolism. Recent studies showed that bacterial P_{II} participate in the regulation of carbon metabolism by acting as a conserved dissociable regulatory subunit of acetyl-CoA carboxylase, the enzymes catalyzing the committed and regulatory step in fatty acid biosynthesis. We used the nitrogen fixing bacterium *Azospirillum brasilense* as a model organism to uncover the P_{II} protein-protein interaction network. Our data suggest that P_{II} may act as a master processing unit in prokaryotes controlling a vast range of metabolic pathways including: nitrogen and carbon metabolism, NAD⁺ synthesis; RNA catabolism; and production of secondary signaling molecules.

Location: Auf der Morgenstelle 28 (E-Bau), Room 9A23 (9th floor)

Host: Prof. Dr. Karl Forchhammer

Guests are cordially invited

GRK 1708

Molecular principles of bacterial survival
strategies

Methodological lecture

Basic principles of MALDI-TOF mass spectrometry and applications

Talk given by

Prof. Dr. Luciano F. Huergo

Federal University of Paraná, Brazil
Department of Biochemistry and Molecular Biology

Wednesday, 22 March 2017
9:00 a.m.

Mass spectrometry is an important analytical tool in biosciences with a vast range of applications. In this talk I will present the basic principles of a Matrix Assisted Laser Desorption Ionization (MALDI), Time Of Flight (TOF) mass spectrometer. I will focus in the use of MALDI-TOF for the identification proteins including: peptide mass fingerprint; MS/MS ion search and *de novo* peptide sequencing. I will introduce the concepts of microbial whole-cell mass spectrometry and its use in clinical isolate identification and environmental microbiology. I will briefly present the use of MALDI-TOF to generate mass based images of biological tissues and its applications (MALDI-Imaging).

Location: Auf der Morgenstelle 28 (E-Bau), Seminar room 9A23 (9th floor)

Host: Prof. Dr. Karl Forchhammer

Guests are cordially invited