

MBG FOCUS TALK

hosted by Centre for Structural Biology



Friday 21st August 2015 at 10:00

The conference room, building 3130-303, Gustav Wieds vej 10c

Prof. Dr. Thorsten Nürnberger

University of Tübingen, ZMBP - Plant Biochemistry

Pattern recognition receptors in plant immunity

Host pattern recognition receptor-mediated perception of microbe-associated molecular patterns (MAMP) is a prerequisite for the initiation of antimicrobial defenses in all multicellular organisms including plants. I here report on the rapid identification of two novel pattern recognition receptors (RLP23, RLP32) by exploiting the natural variation among Arabidopsis ecotypes. Both receptors belong to the class of leucine rich-repeat (LRR) proteins lacking a cytoplasmic kinase domain and require SOBIR1 as a co-receptor. Another co-receptor, BAK1, is recruited into the RLP/SOBIR1 complex in a ligand-dependent manner. Stable expression of RLP23 in tomato or potato conferred NLP recognition specificity to both plant species and enhanced immunity to microbial infection in these transgenic plants. I will further address how BAK1 activation is negatively regulated in non-infected plants and how plants mediate the breakdown of complex microbial surface patterns, such as bacterial peptidoglycans, to generate soluble ligands for the Arabidopsis peptidoglycan receptor complex LYM1/LYM3/CERK1.