

Univerza  
v Ljubljani

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*in kemijsko tehnologijo*

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VABILO NA PREDAVANJE  
V OKVIRU DOKTORSKEGA ŠTUDIJA  
KEMIJSKE ZNANOSTI / INVITATION TO THE  
LECTURE WITHIN DOCTORAL PROGRAMME IN  
CHEMICAL SCIENCES

**Prof. dr. Renier van der Hoorn**

*Department of Plant Sciences*  
*University of Oxford, UK*

z naslovom / title:

**Exploring the plant-pathogen interface with  
activity-based proteomics**

**v sredo, 8. 6. 2022 ob 15. uri /  
on Wednesday, 8. 6. 2022 at 15.00**

**v predavalnici 1 v 1. nadstropju Fakultete za kemijo in  
kemijsko tehnologijo, Večna pot 113 / in lecture room 1,  
1st floor at the Faculty of Chemistry and Chemical  
Technology, Večna pot 113**

*Vljudno vabljeni! | Kindly invited!*

**Abstract:**

The extracellular plant-pathogen interface holds countless antagonistic interactions that remain to be explored for novel components of apoplastic immunity. We investigate this apoplastic battlefield with chemical probes to uncover novel host manipulation events. Using activity-based probe DCG04 we discovered secreted defence-related proteases in tomato that protect against bacterial, fungal and oomycete diseases, and that are targeted by unrelated inhibitors secreted by tomato pathogens, resulting in an arms-race that left a footprint of variant residues at the protease-inhibitor interface. We expanded this approach with activity-based probes for glycosidases, leading to the discovery of BGAL1, a secreted beta-galactosidase of *N. benthamiana* that is suppressed during infection by some *Pseudomonas syringae* strains to prevent its role in the release of immunogenic flagellin fragment from the glycosylated flagellin polymer. Using a cocktail of activity-based probes, we have now discovered 50 additional secreted hydrolases that are suppressed during infection, indicating that similar antagonistic interactions remain to be characterized.