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Poster, Zoé terret

Finding loss-of-susceptibility resistance gene toward tospoviruses in Solanaceae

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Résumé :

Tospovirus is the only member of the Bunyavirus family which infects plants (the other members infecting animals and humans). *Tomato spotted wilt virus (TSWV)*, the most famous tospovirus, is a major pathogen for tomato and pepper cultures. Because there is no chemical treatment against viruses, the only way to fight them is to develop genetic resistance. Genetic resistances to tospoviruses are available, but are largely overcome. Therefore, there is an urgent need to characterize new sources of resistance.

The aim of my PhD is to find new genetic resistances based on susceptibility factors, which are proteins required by the virus to accomplish its cycle and infect the plant.

As a first step, I will develop a 3D model of the TSWV RNA-dependent RNA polymerase (RdRp), a key viral protein for its infectious cycle. Based on this model, a part of the RdRp protein will be selected as bait in order to identify plant protein interactors by yeast-two hybrid screening. Finally, I will search for new tomato alleles encoding variant forms of those tomato susceptibility factors. If those variants impair the interaction between the plant factor and the viral protein, those alleles are very likely to be associated with the crop resistance to the pathogen.

Mots-clés :

TSWV, loss-of-susceptibility, resistance, RdRp