

# Transient gene silencing - a step forward in identifying novel pathogenicity factors in the late blight pathogen, *Phytophthora infestans*

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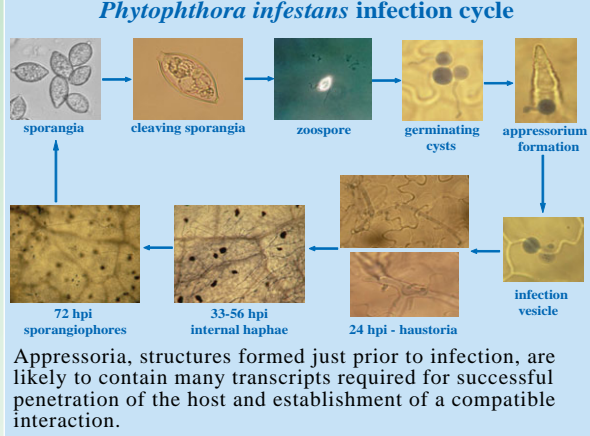
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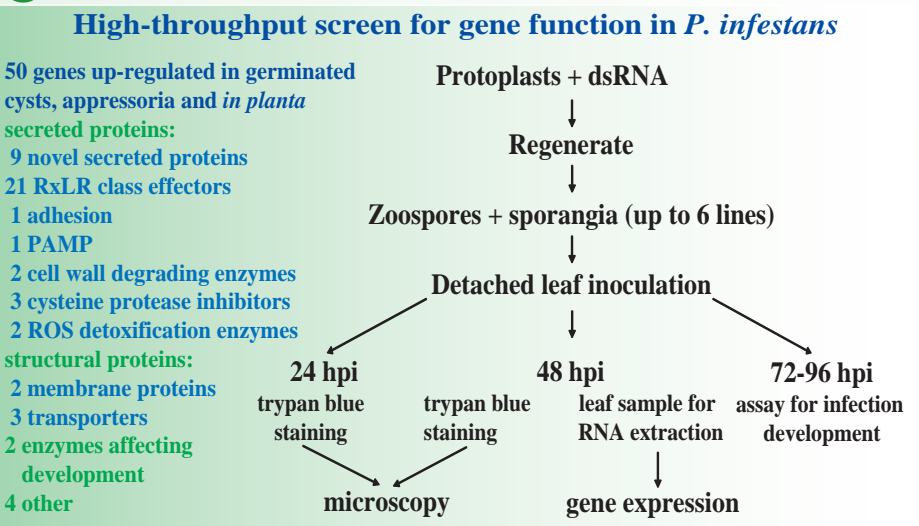


## Background

*Phytophthora infestans* causes late blight of potato and tomato. It produces several different cell types prior to host penetration and during the early stages of infection.



## Strategy



## Results

**Novel secreted proteins and RxLR effector proteins**

**Secreted protein gene expression profiles in pre-infection stages and *in planta***

**Silencing these genes affects pathogenicity**

**RxLR effector gene expression profiles in pre-infection stages and *in planta***

**Palmitoyl-protein thioesterase-2 like**

**Expression profiles**

**Silencing rpvb\_11832 affects pathogenicity and morphology *in planta***

**Oomycete-specific haustorial membrane protein, PiHMP1**

**Expression profile in pre-infection stages and *in planta***

**Silencing PiHMP1 affects pathogenicity**

**PiHMP1-mRFP fusion**

**Relative expression levels of PiHMP1 in control and silenced lines**

**accumulates inside germinated cysts and appressoria**

**localised to haustorial membrane during infection**

## Conclusions

Transient RNAi is effective for identifying genes with a major role in pathogenicity. RNAi can inform hypotheses for downstream analysis of pathogenicity in *P. infestans*. Both formation of functional pre-infection structures and pathogenicity require the action of many genes.

## Future work

Localisation of structural proteins by translational fusion to fluorescent proteins, and subsequent observation by confocal microscopy.

## Acknowledgements

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