



Quantitative resistance to Plum pox virus in *Prunus davidiana* P1908: a possible resource for durable resistance in peach

Patrick Lambert, M. Rubio, Christophe Tuero, Alexandre Bachellez, Thierry Pascal

► To cite this version:

Patrick Lambert, M. Rubio, Christophe Tuero, Alexandre Bachellez, Thierry Pascal. Quantitative resistance to Plum pox virus in *Prunus davidiana* P1908: a possible resource for durable resistance in peach. International symposium on Plum pox virus; SharCo research workshop, Sep 2010, Sofia, Bulgaria. hal-02756421

HAL Id: hal-02756421

<https://hal.inrae.fr/hal-02756421>

Submitted on 3 Jun 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Quantitative resistance to *Plum pox virus* in *Prunus davidiana* P1908: a possible resource for durable resistance in peach

P. Lambert¹, M. Rubio², C. Tuero¹, A. Bachellez¹ and T. Pascal¹

¹ INRA, Unité de Génétique et d'Amélioration des Fruits et Légumes, Domaine Saint Maurice, BP 94, 84143 Montfavet Cedex, France

² Department of Plant Breeding, CEBAS-CSIC, PO. Box 164, Murcia, Spain

Email: patrick.lambert@avignon.inra.fr

Keywords: quantitative trait loci, sharka, *Prunus davidiana*, durable resistance, genetic map

The clone P1908 of *Prunus davidiana*, a peach-related species, is currently the only source of resistance to *Plum pox virus* (PPV)) that has been so far studied for resistance, both at the phenotypic and molecular levels, and which might be useful in peach (*Prunus persica*) breeding programs. Two previous studies using F₁ and F₂ populations derived from the nectarine cv. Summergrand and *P. davidiana* P1908 identified a total of six *P. davidiana* quantitative trait loci (QTLs) involved in PPV resistance (Marcus strain). The current study evaluated the incidence of PPV infection in a F₁ population derived from the susceptible peach cv. Rubira and *P. davidiana* P1908 and identified nine regions involved in differential symptom expression, among which, six were common with the previous studies. However several discrepancies were observed, suggesting interactions between the genetic background of the susceptible parent and that of *P. davidiana* P1908. Based on these findings, sequence analysis of previously published candidate genes was undertaken in order to detect SNPs useful for Marker Assisted Breeding (MAB). Part of these results will be presented and discussed but as a preliminary outcome, they suggest that i) *P. davidiana* P1908 would be a limited resource in breeding programs aimed at PPV resistance if used alone, ii) it might still remain an interesting quantitative resistance source if combined with medium to strong resistance sources such as those provided by some almond cultivars (*Prunus dulcis*).