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BOOK OF ABSTRACTS

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COMPARISON OF THE SIGNAL TRANSDUCTION EFFICIENCY IN THE VFM QUORUM SENSING SYSTEM OF THE GENUS DICKEYA ACCORDING TO THE POLYMORPHISM OF THE VFM GENES

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Text

The Vfm quorum sensing (QS) system is preponderant for the virulence of different species of the phytopathogenic bacteria of the genus *Dickeya*. In the model strain *D. dadantii* 3937, the Vfm QS system was shown to be responsible for the control of the production of plant cell wall degrading enzymes (PCWDEs). The transduction of the Vfm QS signal results into the activation of the promoter of the gene *vfmE* encoding a transcriptional regulator of the AraC family which itself activates the promoter of PCWDE genes. The *vfm* gene cluster includes 26 genes involved in the biosynthesis, sensing or transduction of the QS signal. It encodes several nonribosomal peptide synthetases (NRPS), indicating that the Vfm QS signal is a complex short peptide. To date, the Vfm QS signal has escaped detection by analytical chemistry methods. Using a strain-specific polymorphism in the NRPS genes *vfmO* and *vfmP* was shown to determine the production of different analogs of the Vfm QS signal. By analogy with the Agr QS system of *Staphylococcus aureus*, the production of different analogs of the signal is expected to be related to variations in the signal transduction activity of the Vfm QS system, resulting in variations in the level of activation of the promoter of the regulator gene *vfmE*. To explore this hypothesis, we used a reporter gene fused to the promoter of the gene *vfmE* to compare the activity of the *vfmE* promoter among strains of *Dickeya* producing different analogs of the Vfm QS signal.

P2.1-010

A PUTATIVE MULTI-SENSOR HYBRID HISTIDINE KINASE, BARAAC, INHIBITS THE EXPRESSION OF THE TYPE III SECRETION SYSTEM REGULATOR HRPG IN ACIDOVORAX CITRULLI

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Text

Bacterial fruit blotch, caused by *Acidovorax citrulli*, severely damages watermelon, melon, and other cucurbit crops worldwide. Although many virulence determinants have been identified in *A. citrulli*, including swimming motility, twitching motility, biofilm formation, and the type III secretion system (T3SS), research on their regulation is lacking. To study virulence regulation mechanisms, we found a putative histidine kinase $BarA_{Ac}$ that may