

DEVELOPMENT OF A PROTEIN EXPRESSION SYSTEM FOR
XANTHOMONAS AXONOPODIS PV. CITRI (XAC)

Oehlmeier, T.L. and Ferreira, H.

Departamento de Bioquímica e Microbiologia e Centro de Estudos de Insetos Sociais, Instituto de Biociências, Universidade Estadual Paulista, Rio Claro, São Paulo, Brasil

Brazil is today the world's biggest producer of concentrate orange juice, an economic activity that surpasses a billion of dollars annually. Nevertheless, Brazilian citriculture struggles with recurrent problems like diseases, pests, deficit of water and nutritional factors, resulting in a relative lower production of oranges per tree when compared to other producers like the USA. Among the diseases, citrus canker, caused by the bacterium Xac, is the most severe; it affects all the varieties and species of citrus, and control is based solely on the elimination of infected plants in the field. Attempting to boost the understanding of the pathogenicity of Xac its genome was completely sequenced. Several biochemical traits were identified based on gene homology searches, but around 30% of the annotated ORFs did not display similarities with anything known (hypothetical). In order to launch a systematic characterization of unknown factors codified by Xac we constructed a series of plasmids for protein expression in this recipient. As main characteristics, vectors carry a xylose promoter for fine-tuned induction, an optimized RBS sequence based on consensus described for *Bacillus subtilis* and *E. coli*, and TAGs aimed for the affinity purification of protein complexes containing hypothetical factors interacting with diverse cellular proteins. Here we show the use of our expression systems.