

Mano, E.T.; Neves, A.A.; Santos, V.C.; Ferreira, A.; and Araújo, W.L. 2010. Identification of *Burkholderia* sp. genes related to biological control of phytopathogens. *Phytopathology* 100:S77.

The species from *Burkholderia* genus have been considered important target for molecular studies mainly due the potential for biological control of phytopathogens. These species are able to produce a huge variety of antimicrobial compounds, which have been biochemically characterized. However, the genes associated to the synthesis of these molecules are poorly described, mainly due the low number of genetic studies in this area. In this context, molecular techniques have been applied to identification and genetic characterization of this pathway. Therefore, the aim of this work was the identification of genes from endophytic bacterium *Burkholderia* sp. associated to biocontrol of *Pectobacterium carotovora* in Orchids and biocontrol *in vitro* of fungal *Fusarium oxysporum*, *Fusarium verticillioides*, *Ceratocystis paradoxa*, *Colletotrichum* sp., and the *Phytophthora parasitica*. For this, a library with 1788 clone was obtained by random mutagenesis based on Tn5 transposon insertion. Mutants were confirmed by specific PCR for Tn5 transposon and hybridization with specific probes confirmed the number of Tn5 insertion. Clones defectives to control of these pathogens or showing a variation in this phenotype were selected. Some mutants showed different growth rate and colony pigmentation. The analysis of partial sequence of 15 DNA sequences showed that 40% is *hypothetical protein*, allowing the association of some phenotypes to these putative genes. The identification and cloning of such genes will allow a better understanding of the production of these antimicrobial compounds and further applying in a biotechnological view.