

## Control of Sigatoka Disease using a Ribonuclease T2 from *G.lucidum*: The Way to Improve Colombian Banana Production

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On banana crops, *Mycosphaerella fijiensis* is the most important pathogens causing the black sigatoka disease. At list nearly of 50% of the banana yield it is lost, due to a reduction of the photosynthetic area of the leaves, poor quality of bunch and decrease of planted area per farm, causing the greatest amount of losses on commercial plantations. Previously, we have patent to a novel process for potentiating the production of substances with antifungal activity obtained from *Ganoderma lucidum*. However, the reology of the submerged culture fermentation of filamentous fungi makes harder this process. Therefore, recombinant technology becomes a biotechnological tool for the rapid, efficient and economic production of specific enzymes from *G. lucidum*. A 60kDa RNase, with a tag of eGFP was produced in *E. coli* the gen was isolated from submerged culture of *G.lucidum*. The purification process involves affinity chromatography on IMAC cartridges. It suppressed fragmented mycelium upgrowth of *M. fijiensis* with an IC<sub>50</sub> of 7.6 ppm compared to Mancozeb with an IC<sub>50</sub> of 1.8 ppm. However, it does not inhibit the elongation of germ tube but it is true that has antifungal activity, it does not have the capacity to cross bacterial and yeast's membranes.

### Biography:

Angela Rocio started this process in the Institute for the study of Inborn Errors of Metabolism in 2009 working as a Bacteriologist on the clinical diagnosis of these diseases. Since 2010 by degree he has been inclined for the study of the production of recombinant proteins, starting this process in the purification of recombinant GALNS protein produced in *E.coli*; analyzed its stability and its uptake capability for HEK293 cells. Then, he will be tied to work of developed of purification model for Hexosaminidase A produced in *P.pastoris*. On the other hand, in 2014 as Ph.D research, he started the study of Ribonucleases from mushroom expressed in *E. coli* and *P. pastoris* systems at Antioquia University.