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## Determination of enzymatic action mechanisms of protein extracts obtained from the mushroom MM1-UDEA involved on *Mycosphaerella fijiensis* Morelet growth inhibition

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Mycosphaerella fijiensis Morelet, is an ascomycete fungus and is one of the most important pathogens of banana crops. This disease causes nearly 50% of the banana yield losses, due to a reduction of the photosynthetic area of the leaves. The disease has been effectively managed through the use of appropriate traditional mechanic methods and fungicide application, however chemical based management has caused pathogen resistance, which decreases the crops productivity and affects the banana agroindustry utilities, a quite important sector for the economy of several countries like Colombia, besides that, fungicide control also has negative impacts on non-target species.

To solve this problem, the transition from fungicides to alternative methods, such as biological control has been proposed, in this context, antifungal proteins obtained from mushrooms emerge as a potential biocontrol alternative, since they have been used for growth inhibition over several phytopathogens. In the Biotechnology laboratory, the proteins of a fungal strain called MM1-UDEA have been obtained, showing *in vitro* and *in vivo* inhibitory activity over M.fijiensis; an optimized protocol to obtain and solubilize these proteins also has been determined, and their electrophoretic profile has been established too; however the mechanisms that explain this inhibitory phenomenon remain unknown, for this reason the aim of this work was to determine the action mechanism involved in this process; chitinolityc, glucanolytic, protease, DNase and RNase activities were evaluated, in order to take the first step to access the identity of the proteins involved in the inhibitory effect over M.fijiensis.

## Biography

Monica Arias has completed her bachelor degree at the age of 23 years, currently is a M.Sc. student at the Biology program, University of Antioquia. She started her research career in the Biotechnology group at the age of 19 years in the middle of her undergraduate studies, performing antagonism tests over *Mycosphaerella fijiensis*; and took her first steps on mushroom proteomics during the last year for her graduate studies. She likes molecular biology and has passion for research. This work has allowed her to participate into several biotechnology events as expositor.

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