

TITLE: Influence of media composition on the production of antifungal compounds by actinomycetes

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ABSTRACT: Fungal infections can cause several losses for the agriculture, also, the uncontrollable and unceasing use of synthetic antifungals is harming the environment, bringing troubles to human and animal health also, contributing to evolution of resistant fungus strains. These factors stimulated the investigation for new molecules that are effective on the control of such pathogenicities. Microbial natural products present itself as a profitable source for drug and pesticide discovery, over 50% of molecules used as antibiotic can be associated to natural products. Microbial secondary metabolites are widely used in industry and stand out those produced by genus *Streptomyces*, this genus is responsible for the production of about 45% of the identified secondary metabolites, many of which are commercially relevant antibiotics extensively used in medical and agricultural fields. In the course of our investigations of bioactive natural products from actinomycetes, one strain was cultivated on different culture media for later bioassay. We report the different metabolic profile of *Streptomyces sp.* strain Caat P₈-78, which was cultivated in PD, PMB, ISP2, MMK2 and Czapeck media at room temperature. After ten days of culture, the fermentation broth was submitted to a liquid-liquid extraction using ethyl acetate as extraction solvent. The five crude extracts were used in a diffusion disc bioassay against the fungi *Colletotrichum acutatum*, an important plant-pathogen that causes the most destructive fungal disease called anthracnose. After three days inhibitions halos can be visualized and compared. These experiments showed the activity of two crude extracts from PMB and Czapeck media. All crude extract was submitted to a LC-DAD-MS analysis, that showed the metabolic difference between the crude extracts in all five media. Another cultivation in these different media is being developed with another *Streptomyces sp.* strain called ACP₃₁-06, crude extracts generated will be assayed against the fungi *Colletotrichum acutatum*.

Keywords: Actinobacteria, Secondary Metabolites, OSMAC, Antifungal, Mass Spectrometry

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