

**TITLE:** Enzymatic Profile of Endofitic Actinobacteria Isolated from Cerrado

**AUTHORS:** YOSHINAGA, T.T; FARIA, R.V.J; FARIA, E.M; NOBRE, S.A.M.

**INSTITUTION:** Laboratório de Epidemiologia e Biocontrole de Microrganismos, Universidade Estadual de Montes Claros – UNIMONTES. Cx. Postal 126, CEP 39.401 - 089, Montes Claros – MG.

**ABSTRACT:**

The metabolic response presented by each microorganism is a result of the relationship of factors such as available genetic resources and environmental stress acting on it. The diversity of secondary metabolites, although dependent on genetic ability, need the stimulus coming from the environment in which it is inserted. In this work, 17 endophytic actinomycetes, isolated from the cerrado, were evaluated for the presence of extracellular enzymes: amylase, cellulase, caseinase, gelatinase, esterase, lipase and pectinase. The isolates were cultured in Czapek-Dox medium for 7 days and suspended in bacteriological agar medium (0.3% m / v) and then 10 $\mu$ L were inoculated in media specific for each enzyme and subsequently evaluated, and the enzymatic profiles of each isolate were generated. Eight different metabolic profiles were observed, based on the expressed extracellular enzymes. Profile 1 was observed in 70% of the isolates, comprising the genera: *Nocardiopsis*, *Streptoalloteichus*, *Sreptosporangium*, *Thermoactinomyces* and *Streptomyces*. Profile 2 was observed in 47% of the collection, being found in the genera *Actinopolyspora*, *Micromonospora*, *Saccaropolyspora*. Profile 3 was observed in 12% of the isolates, in the genera *Nocardioides* and *Streptomyces*. Profile 4, 5 and 6: was observed in *Terrabacter* isolates. Profile 7 was observed in the isolate of the genus *Nocardia*. Profile 8: was observed in the isolate of the genus *Saccharopolyspora*. The different enzymatic profiles show that although they belong to the same genus, the isolates have different behavior resulting from different ecological origins and functions. The environment and its various formations give the microorganism adverse situations, it will respond according to the metabolic and genetic plasticity, which allows them to adapt to the environment.

**KEYWORDS:** Bioprospection, Actinobacteria, Enzymatic Profile, Cerrado.