



Research Doctorate (Ph.D.) in Chemical Sciences

34rd Cycle – Academic Year 2018/2019

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Project Information

1 - Title

Bioactive metabolites produced by pathogenic and endophytic fungi of forest plants.

2 - Key words

Forest plants, Wood Industry, Phytopathogenic fungi, Phytotoxins; Bioactive metabolites.

3 - Abstract

Pathogenic fungi are among the main causes of biotic stress for forest plants and those belonging to the genus *Alternaria*, *Neofusicoccum*, *Seridium*, *Sphaeropsis*, *Diplodia*, *Hymenoscyphus* continue to cause considerable damage to cypresses, oaks, juniper trees and mahogany trees. These diseases cause serious losses to the forest heritage, serious environmental damage and loss of the wood and nursery industry. In addition, they completely modify the landscapes (see e.i. cypress and cork oak cancer). In addition, both pathogenic and endophytic fungi are known producers of secondary bioactive metabolites that allow:

- 1) develop methods for the rapid and specific diagnosis of fungal diseases;
- 2) isolate new classes of natural compounds such as new herbicides, fungicides, bacteriocides and insecticides for their application in agriculture;
- 3) isolate genotypes of plants resistant to microbial diseases;
- 4) isolate metabolites with potential applications in medicine as anticancer, antimalarial and antimosquitos etc.