

Identification and quantitation of phenolic acids of endophytic fungi isolated from *Corylus avellana*

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Abstract

Introduction: Cinnamic acid, coumaric acid, ferulic acid, caffeic acid are of hydroxy-cinnamic acid derivatives with strong antioxidant properties. A few reports are available on the content and types of phenolic acids in endophytic fungi. The present study has been focused on the isolation of endophytic fungi from hazelnut (*Corylus avellana* L.), identification and measurement of their phenolic acids.

Materials and methods: Molecular identification of the fungi was achieved based on ITS primers and the presence of cinnamic acid derivatives was studied by HPLC method.

Results and discussion: Twelve phenolic acid-producing endophytic fungi were isolated and intracellular and extracellular amounts of above-mentioned compounds was monitored. Among the isolated endophytes, *Alternaria* sp. showed the highest amount of cinnamic acid (303 µg / g Fw) and caffeic acid (17 µg / g Fw). It was also noteworthy that one hundred percent of phenolic acids produced by *Fusarium* sp. and *Stemphylium* sp., was released into the media of these fungi. Regarding to the cost effective and fast growth of endophytes, they can be introduced as alternative resources for commercial-scale production and extraction process of phenolic acids.

Keywords: *Caffeic acid, Coumaric acid, Endophytic fungi, Ferulic acid, Hydroxy cinnamic acid*