

Biological Activities of Endophytic *Xylaria* sp. Isolated from Tropical forest in Chaiyapoom Province, Thailand

Krittapong Orachaiapunlap¹, Nuttika Suwannasai², Anthony J.S. Whalley³, Cherdchai Phosri⁴, Prakitsin Sihanonth^{5*}

¹ Program of Biotechnology, Faculty of science, Chulalongkorn University

² Department of Biology, Srinakharinwirot University, Thailand

³ School of Pharmacy and Biomolecular Sciences, Liverpool John Moores University, Byrom Street, Liverpool L3 3AF, United Kingdom

⁴ Department of Biology, Pibulsongkram Rajabhat University, Thailand

⁵ Department of Microbiology, Faculty of science, Chulalongkorn University

*Correspondence author. E-mail: sprakits@chula.ac.th, okrittapong@gmail.com

Received: June 08, 2015 / Accepted: July 12, 2016 / Published: July 25, 2016

Abstract:

The ultimate goal in this study is to screen biological activities from endophytic *Xylaria* sp. isolated from leaf of 4 Dipterocarp forest tree species such as *Cinnamomum iners*, *Shorea siamensis*, *Fernandoa adenophylla*, *Quercus semiserrata*. All endophytic fungi isolates were obtained and identified based on morphological characteristics. Sixty-four from 125 endophyte isolates were belong to *Xylaria* genera. Moreover, the typical endophytic fungi genera such as *Phomopsis* spp., *Pestalotiopsis* sp., *Colletotrichum* sp., *Phyllosticta* sp., *Daldinia* sp., *Aspergillus* sp., *Mycelia sterilia* spp., were commonly found in tropical forest. *Xylaria* isolate sp.1 was the only one isolate that showed excellent broad spectrum antimicrobial against *Bacillus subtilis*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Escherichia coli*, and *Candida albicans*. Moreover, *Xylaria* isolate sp.9 showed strong inhibitory activity against all test bacteria. Moreover, *Xylaria* sp.1 showed the best efficiency of cytotoxicity against Jurkat cell line with IC₅₀ value of 2.63 µg/mL and *Xylaria* sp.2 showed best efficiency of cytotoxicity against HEK293 cell line with IC₅₀ value of 2.94 µg/mL.

Key words: Endophytic fungi, *Xylaria* sp., Antimicrobial activity, Anticancer activity, Bioactive compound

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