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Antimicrobial activity and identification of chemical compounds of secondary metabolites bioproduction of endophytic fungi from Jamblang plant (*Eugenia cumini* L)

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Colletotrichum capsici endophytic fungi isolated from Jamblang plant (*Eugenia cumini* L.). Endophytic microbes were microbes that spent part or all of their life within plant tissue or of a host plant. They produce secondary metabolites with potent anti-microbial activity. Jamblang (*Eugenia cumini* L.) is one of the traditional medicinal plants that grow in Indonesia and were known by the layman as a plant that has efficacy as anti-diarrheal and anti-diabetic. This research focused on isolation of the endophytic microbes from branches of Jamblang plants and their secondary metabolites. Isolation of endophytes were performed in PDA (potato dextrose agar) using direct seed plant. Endophytic fungi isolates have the greatest antimicrobial activity against the bacteria *Staphylococcus aureus*, *Escherichia coli* and then fermented in *Potato Dextrose Yeast* (PDY) in large scale. Supernatant was extracted with ethyl acetate solvent. Ethyl acetate extract fractionated by column chromatography (SiO₂, *n*-hexane- ethyl acetate = 50:1 ~ 1:1) and obtained three fractions. Further, agar diffusion method was performed to assess their anti-microbial activity. Antibacterial test results indicate the fraction III had the antibacterial activity against *Staphylococcus aureus* with the inhibition diameter of 10.7 mm and but no antibacterial activity against *Escherichia coli*. Identification of chemical compounds by GC-MS showed that the fraction III is dominated by compound fatty acids and phenolic groups. In conclusion, secondary endohpytes isolated from Jamblang plants branches contained predominantly fatty acid and phenol related compounds that could be responsible for its potent anti microbial activity.

Biography

Shirly Kumala has completed her PhD from Biomedik Faculty of Medical, University of Indonesia, Jakarta. She is the Dean of Faculty Pharmacy, Pancasila University, Jakarta Indonesia. She has published more than 25 papers in accredited journals and has been serving as a reviewer in *Journal of Pharmacy*.

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