Antimicrobial Activity of Dendrobium antennatum Ethanol Extract Grown on in vitro Culture Medium with the Addition of Chitin Elisitor and Cellulose

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ABSTRACT

Infectious diseases are currently growing due to the lack of public awareness about clean lifestyles. Infectious diseases caused by microbes are a challenge for the world of pharmacy and medicine because of the emergence of microbial resistance to antibiotics given as treatment. Some studies have shown that secondary metabolite compounds contained in orchids can be used for the treatment of infectious diseases due to microbes. One of the efforts to obtain potential sources of new medicinal plants is to increase the content of secondary metabolites by modifying the growth medium of orchids grown with tissue culture techniques. The purpose of this study was to obtain Dendrobium antennatum orchid growth medium with various elicitor that can trigger the production of secondary metabolites, determine the content of secondary metabolite compounds in Dendrobium antennatum orchids and test its ability as antimicrobial, namely anti-bacterial and antifungal. Elicitor used in this study were chitin and cellulose. Several secondary metabolites were qualitatively tested. Secondary metabolites are obtained by maceration method using ethanol. The resulting secondary metabolites were tested for their antimicrobial ability against several microbes in vitro by agar diffusion method. Antimicrobial ability was seen from the resulting inhibitory zone. Minimum Inhibitory Concentration was calculated to determine the minimum concentration that can inhibit microbes. The results showed that administration of 100 mg/L cellulose elicitor in growth medium increased the antimicrobial ability of Dendrobium antennatum orchid ethanol extract

Kata Kunci: *D. antennatum, elicitor, secondary metabolite, antibacterial, antifungal*