Two Sesquiterpenes from n-Hexane Fraction of Curcuma soloensis Rhizomes and Their Antimicrobial Activities

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Abstract	Curcuma soloensis is one of the medicinal plants that has the potential to be a source of bioactive compounds. The antimicrobial study of the bioactive compounds from C. soloensis was still limited. This study aimed to isolate the bioactive compounds from C. soloensis rhizomes and to evaluate their potential as antimicrobial agents. C. soloensis rhizome extraction was done using the maceration method with acetone and then fractionated with n-hexane: methanol (1:1). The compounds were separated and purified using vacuum liquid chromatography and radial chromatography. The structure of the isolated compounds was determined using the nuclear magnetic resonance (1H and 13C NMR) spectroscopy analysis and comparison with literature data. Antimicrobial activity assays of the extract, n-hexane fraction, and isolated compounds were carried out by microdilution methods against Escherichia coli, Staphylococcus aureus, Candida albicans, and Malaszezia furfur. Two bioactive compounds from the n-hexane extract of C. soloensis rhizome have been isolated: ar-curcumene and ar-turmerone. Antimicrobial test results on acetone extract, n-hexane fraction, and isolated compounds showed that ar-turmerone had the highest activity against S. aureus with a MIC value of 15.6 ÃŽÂ¼g / mL. In comparison, ar-curcumene showed the same activity against all test microbes with a MIC value of 62.5 ÃŽÂ¼g / mL. Ã‚Â This study showed that secondary metabolite compounds of C. soloensis rhizomes have the potential to be developed as antimicrobial agents.
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