ABSTRACT

This study aims to determine the phytochemical screening, total flavonoid contents, antibacterial properties, antioxidant properties (using DPPH, ABTS, and FRAP methods), and cytotoxicity (using MTT assay) of Sungkai leaf (*Peronema canencens Jack*) ethanol extract nano emulsion. Sungkai leaves were sourced from Padang Pariaman Regency, West Sumatera, and extracted using the maceration method in ethanol PA solvent. The resulting extract was formulated into three concentrations: 50 ppm, 100 ppm, and 150 ppm. Phytochemical screening revealed the presence of flavonoids, tannins, alkaloids, steroids, and terpenoids. The total flavonoid content was quantified as 90.542%, 91.993%, and 91.744% for the 50 ppm, 100 ppm, and 150 ppm concentrations, respectively. Antibacterial activity test against Propionibacterium acnes showed inhibition zones of 17.6 mm, 21.2 mm, and 24.1 mm for the nano emulsion extracts at 50 ppm, 100 ppm, and 150 ppm, respectively, indicating strong to very strong antibacterial activity. The antioxidant activity, evaluated using the DPPH, ABTS, and FRAP assays, showed IC50 values of 48.870 µg/mL, 46.575 µg/mL, and 38.365 µg/mL, respectively, against Vitamin C as control, all categorized as very strong. The cytotoxicity test on fibroblast cell cultures using the MTT assay resulted in an IC50 value of 83.2 µg/mL, indicating moderate activity.These findings suggest that the Sungkai leaf ethanol extract nano emulsion is rich in bioactive compounds with significant antibacterial and antioxidant properties, along with moderate cytotoxic activity. This highlights its potential for further development in pharmaceutical and cosmetic applications.

Keywords : *Peronema canencens Jack*, nanoemulsion, antiacne, *acne vulgaris*, sungkai leaf, *Propionibacterium* acnes