

ABSTRAK

Pityriasis versicolor (panu) adalah infeksi kulit akibat *Malassezia furfur* dengan prevalensi hampir 50% penduduk Indonesia. Penggunaan antijamur sintetik jangka panjang beresiko menimbulkan resistensi sehingga diperlukan alternatif alami. Daun kelor (*Moringa oleifera* Lam.) mengandung senyawa flavonoid yakni kuersetin yang berpotensi antijamur namun memiliki kelarutan rendah sehingga diformulasikan dalam nanoemulgel dengan variasi ekstrak 1%, 3% dan 5% berbasis karbopol 940 untuk meningkatkan penetrasinya pada kulit. Ekstrak diperoleh melalui Ultrasound-Assisted Extraction dengan rendemen 31,9%. Identifikasi awal menggunakan KLT menunjukkan bercak dengan R_f sampel (0,83) mendekati R_f standar kuersetin (0,82) mengindikasikan adanya senyawa flavonoid dengan polaritas serupa kuersetin. Nanoemulsi yang dihasilkan berukuran 16,7 – 16,8 nm; indeks polidispersitas 0,378-0,415; zeta potensial -30,9- hingga -31,9 mV dengan tipe emulsi M/A. Seluruh formula nanoemulgel memenuhi syarat parameter karakteristik fisik sediaan semisolid dan stabil selama penyimpanan 28 hari namun mengalami penurunan pada parameter viskositas.

Uji antijamur metode sumuran menunjukkan nanoemulgel konsentrasi 3% dan 5% menghasilkan zona hambat kategori sedang (9,7 mm dan 9,0 mm) sedangkan konsentrasi 1% tidak berbeda bermakna dengan kontrol negatif. Ketiga formula menghasilkan zona hambat jauh lebih kecil dibanding kontrol positif ketoconazole gel 2% (37,7 mm) akibat keterbatasan pelepasan zat aktif dari sistem nanoemulgel. Diperoleh bahwa sediaan nanoemulgel konsentrasi 3% merupakan formula paling optimum dari segi kemampuan antijamur dan karakteristik serta stabilitas fisik sediaan.

Kata kunci: *Pityriasis versicolor*, *Malassezia furfur*, Daun kelor, Kuersetin, Nanoemulgel.

ABSTRACT

Pityriasis versicolor (panu) is a skin infection caused by *Malassezia furfur* with a prevalence of almost 50% of the Indonesian population. Long-term use of synthetic antifungals risks causing resistance, so natural alternatives are needed. Moringa leaves (*Moringa oleifera* Lam.) contain flavonoid compounds, namely quercetin which has antifungal potential but has low solubility, so it is formulated in nanoemulgels with 1%, 3% and 5% extract variations based on carbopol 940 to increase its penetration into the skin. The extract is obtained through Ultrasound-Assisted Extraction with a yield of 31.9%. Initial identification using KLT showed spots with Rf of the sample (0.83) close to the standard Rf of quercetin (0.82) indicating the presence of flavonoid compounds with quercetin-like polarity. The resulting nanoemulsion is 16.7 – 16.8 nm in size; polydispersion index 0.378-0.415; zeta potential -30.9- to -31.9 mV with emulsion type O/W. All nanoemulgel formulas meet the physical characteristics parameters of semisolid preparations and are stable during 28-day storage but have decreased viscosity parameters.

The antifungal test of the spraying method showed that nanoemulgels with concentrations of 3% and 5% produced medium category inhibition zones (9.7 mm and 9.0 mm) while the concentration of 1% was not significantly different from the negative control. All three formulas produced a much smaller inhibition zone than the 2% (37.7 mm) positive control of ketoconazole gel due to the limited release of the active substance from the nanoemulgel system. It was found that the 3% concentration nanoemulgel preparation is the most optimal formula in terms of antifungal ability and the characteristics and physical stability of the preparation

Keywords: *Pityriasis versicolor*, *Malassezia furfur*, Moringa leaves, *Quercetin*, Nanoemulgel.