

INTISARI

Kerontokan rambut merupakan masalah rambut yang banyak dijumpai di masyarakat. Produk sintetik sediaan pencegah dan penumbuh rambut memiliki masalah efek samping sehingga digunakan alternatif menggunakan bahan alam yang memiliki aktivitas penumbuh rambut antara lain ekstrak daun mangkoka dan minyak kemiri. Penelitian ini bertujuan untuk memperoleh formulasi, mengetahui karakteristik fisik serta memprediksi aktivitas pertumbuhan rambut terhadap tikus jantan galur *Sprague Dawley* secara *in vivo*.

Penentuan 3 formula nanoemulsi kombinasi menggunakan metode *Trial and Error* serta metode emulsifikasi spontan. Nanoemulsi dibuat dengan komposisi variasi perbandingan konsentrasi ekstrak daun mangkoka dan minyak kemiri yaitu F1 (2,5% : 2,5%), F2 (1,67% : 3,33%), dan F3 (3,33% : 1,67%). Laju pertumbuhan rambut serta karakterisasi nanoemulsi yang meliputi viskositas, ukuran partikel dan stabilitas fisik menggunakan beberapa *review* penelitian yang diambil dari jurnal atau tesis internasional maupun nasional pada rentang tahun 2008 hingga 2020.

Tiga variasi kombinasi sediaan nanoemulsi menghasilkan tampilan semi-transparan, berwarna hijau-kehitaman, berbau khas, homogen, tipe emulsi m/a, pH 5,8-6,3 dan stabil selama 2 minggu penyimpanan suhu ruang. Tiga variasi kombinasi nanoemulsi diprediksi memiliki ukuran partikel berkisar 17,7-109,56 nm, viskositas 1,01-5,8 cP, dan diasumsikan stabil setelah uji *cycling test* dan uji sentrifugasi. Nanoemulsi kombinasi ekstrak daun mangkoka dan minyak kemiri diprediksi memiliki aktivitas yang efektif dalam meningkatkan pertumbuhan rambut tikus jantan.

Kata kunci : Nanoemulsi, Ekstrak Daun Mangkoka, Minyak Kemiri, Pertumbuhan Rambut, Tikus Jantan

ABSTRACT

Hair loss is a hair problem that is often found in the community. Synthetic products for hair growth prevention and growth have side effects that are used alternatively using natural ingredients that have hair growth activity such as mangkokan leaves extract and candlenut oil. This study aims to obtain formulations, study physical characteristics and predict hair growth activity in male rat Sprague Dawley strains *in vivo*.

Determination of 3 combination nanoemulsion formulas using Trial and Error method and spontaneous emulsification method. Nanoemulsion was made with a variation composition made from mangkokan leaves extract and candlenut oil namely F1 (2.5%: 2.5%), F2 (1.67%: 3.33%), and F3 (3.33%: 1, 67%). The rate of hair growth and characterization of nanoemulsions which contain viscosity, particle size, and physical use of several research reviews taken from international or national journals or theses in the range of 2008 to 2020.

Three variations of the combination of nanoemulsion preparations produce a semi-transparent appearance, blackish-green color, characteristic odor, homogeneous, o/w emulsion type, pH 5.8-6.3 and stable for 2 weeks of room temperature storage. Three variations of nanoemulsion combination were predicted to have particle size of 17.7-109.56 nm, viscosity of 1.01-5.8 cP, and were assumed to be stable after the cycle test and centrifugation test. Nanoemulsion combination of mangkokan leaves extract and candlenut oil is predicted to have effective activity in increasing male rat hair.

Kata kunci : Nanoemulsion, mangkokan extract leaves, candlenut oil, hair growth, male rat