ABSTRAK

Daun binahong (*Anredera cordifolia*) memiliki potensi antikanker berkat kandungan flavonoidnya, vitexin. Namun, kelarutan rendah vitexin menghambat bioavailabilitasnya dalam kulit, sehingga diperlukan teknologi enkapsulasi *nanocarrier* transfersom dalam bentuk gel transfersom. Stratum korneum menjadi penghalang utama penetrasi vitexin, yang dapat diatasi dengan penambahan asam oleat sebagai permeation enhancer. Asam oleat meningkatkan fluiditas lipid pada stratum korneum sehingga dapat membantu penetrasi vitexin. Penelitian ini bertujuan mengevaluasi pengaruh asam oleat terhadap penetrasi vitexin menggunakan metode Uji Difusi Otomatis *In-Line Cell*

Penelitian dilakukan secara eksperimental murni dengan variasi konsentrasi asam oleat sebagai variabel bebas dan jumlah kumulatif serta fluks penetrasi vitexin sebagai variabel tergantung. Evaluasi mencakup pengujian sifat fisik sediaan (organoleptis, homogenitas, pH, viskositas, daya sebar, dan stabilitas fisik) pada lima formulasi yang diuji menggunakan Kromatografi Cair Kinerja Tinggi (KCKT). Analisis statistik melibatkan uji Shapiro-Wilk, Levene, dan Kruskal-Wallis menggunakan SPSS Statistic 29. Hasil menunjukkan formulasi memenuhi karakterisasi organoleptis, homogenitas, viskositas (27,33–39,5 Pa.s), dan stabilitas (<10%), tetapi tidak memenuhi standar pH (6,64–7,62) dan daya sebar (3,337–5,21 cm). Uji Kruskal-Wallis menunjukkan tidak ada perbedaan signifikan pada jumlah kumulatif vitexin dan fluks penetrasi vitexin antar formulasi degan nilai p secara berturut-turut adalah 0,307 dan 0,019. Dengan demikian, asam oleat belum cukup efektif meningkatkan penetrasi vitexin.

Kata kunci : Vitexin, Transfersom, Asam oleat, Uji in-vitro, Kromatografi Cair Kinerja Tinggi (KCKT)

ABSTRACT

Binahong leaves (Anredera cordifolia) possess anticancer potential due to their flavonoid content, particularly vitexin. However, the poor solubility of vitexin limits its bioavailability in the skin, necessitating the development of nanocarrier encapsulation technology in the form of transfersomal gels. The stratum corneum serves as the primary barrier to vitexin penetration, which can be addressed through the addition of oleic acid as a permeation enhancer. Oleic acid enhances lipid fluidity within the stratum corneum, thereby facilitating vitexin penetration. This study aimed to evaluate the effect of oleic acid on vitexin penetration using the Automated In-Line Diffusion Cell Test method.

The research was conducted as a pure experimental study, with varying concentrations of oleic acid as the independent variable and the cumulative amount and penetration flux of vitexin as the dependent variables. The evaluation included physical property tests of the formulations (organoleptic properties, homogeneity, pH, viscosity, spreadability, and physical stability) on five formulations analyzed using High-Performance Liquid Chromatography (HPLC). Statistical analysis involved the Shapiro-Wilk test, Levene's test, and the Kruskal-Wallis test, conducted using SPSS Statistics 29. Results showed that the formulations met the requirements for organoleptic properties, homogeneity, viscosity (27.33–39.5 Pa.s), and stability (<10%), but failed to meet the standards for pH (6.64–7.62) and spreadability (3.337–5.21 cm). The Kruskal-Wallis test indicated no significant differences in the cumulative amount of vitexin and vitexin penetration flux across formulations, with p-values of 0.307 and 0.019, respectively. Thus, oleic acid was not sufficiently effective in enhancing vitexin penetration.

Keywords: Vitexin, Transfersome, Oleic Acid, In vitro testing, High-Performance Liquid Chromatography (HPLC)