Pengaruh penggunaan lioprotektan trehalosa terhadap protransfersom asam azelat = Effects of using lyoprotectant trehalose on protransfersome azelaic acid

Dwita Medya Pangesti, author

Abstrak

ABSTRAK
Asam azelat merupakan senyawa kimia yang banyak digunakan dalam dermatologi. Untuk meningkatkan efektivitas asam azelat dibentuk ke dalam vesikel transfersom. Transfersom adalah vesikel yang berkemampuan deformabilitas dan dibuat dengan metode lapis tipis. Namun transfersom memiliki kekurangan yaitu tidak stabil selama masa penyimpanan. Maka dari itu dibentuk protransfersom melalui metode freeze dry. Lioprotektan trehalosa digunakan untuk menjaga stabilitas protransfersom selama proses freeze dry. Tujuan dari penelitian ini adalah membandingkan stabilitas transfersom dan protransfersom asam azelat serta mengetahui pengaruh lioprotektan trehalosa terhadap protransfersom asam azelat. Selama masa penyimpanan 4 minggu pada suhu 4o transfersom, protransfersom dengan trehalosa, dan protransfersom tanpa trehalosa mengalami penurunan presentase efisiensi penjerapan sebesar 34,23 ; 12,19 ; 29,96 . Sedangkan pada suhu 28o masing-masing mengalami penurunan sebesar 35,36 ; 24,54 rsquo; 32,06 . Ukuran partikel transfersom dan protransfersom dengan trehalosa yang disimpan pada suhu 4o cenderung stabil. Hasil dari penelitian ini yaitu protransfersom memiliki stabilitas lebih baik dibandingkan transfersom. Penggunaan lioprotektan trehalosa memberikan stabilitas yang lebih baik pada protransfersom. Selain itu, penyimpanan pada suhu rendah dan dalam bentuk kering mampu mempertahankan stabilitas protransfersom asam azelat.
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ABSTRACT
Azelaic acid is a chemical compound widely used in dermatology. To increase the effectiveness of azelaic acid was formed into transfersome. Transfersome is a vesicle capable of deformability which was made by thin layer method. Transfersome did not stabilized during storage, so it was formed protransfersome through freeze dry method. Lyoprotectant trehalose was used to maintain the stability of protransfersome during freeze dry process. The purposes of this research were comparing transfersome and protransfersome azelaic acid stability, and detecting the effects of trehalose lyoprotectant on protransfersome azelaic acid. During storage period at 4oC for 4 weeks, the entrapment efficiency of transfersome, protransfersome with trehalose, and protransfersome without trehalose were decreased by 34,23 12,19 29,96 respectively. On the other hand, at 28oC for 4 weeks, the percentage were decreased by 35,36 24,54 rsquo 32,06 respectively. Particle size of transfersome and protransfersome with trehalose were stable at 4oC. The result of this study shows that protransfersomes have better stability than transfersomes. Trehalose provides better stability on protransfersome azelaic acid. In addition, protransfersome stability can be mantain by storing at low temperature and dry form.